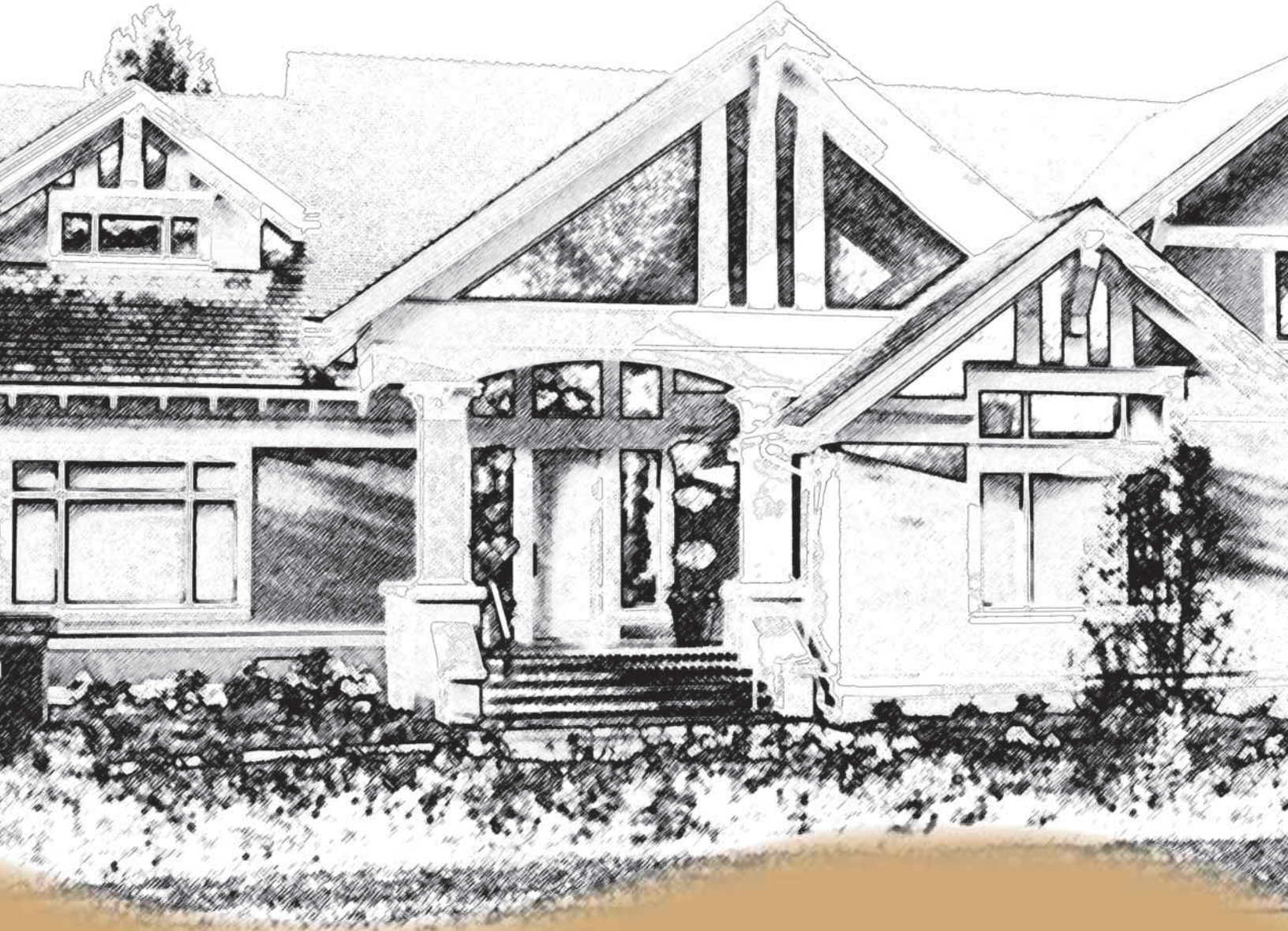




**bryant**<sup>®</sup>  
Heating & Cooling Systems



## GT-PCS Digital Split (50YGS and 50YGP) Series

TWO-STAGE  
INDOOR AND OUTDOOR SPLIT PURON<sup>®</sup> SYSTEMS  
SIZES 026 - 064 [7.0 - 19.3 kW]

Created 29 Aug., 2013

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## Rounding Out the Product Line

Expanding upon the current GT-PC product line, the split system uses communicating control in a more flexible configuration. The GT-PCS split system compressor section can be coupled with a FE/FV4 air handler or CNP cased coil to achieve ultra high efficiency, while still providing the flexibility of an all-electric or dual fuel system and a remote compressor section location. Split systems are often used in areas where it would be difficult to install a packaged unit, such as in an attic, crawl space or even outdoors.

### Integrated Variable Speed Water Flow Control

Employing the Two-Way Communicating System, GT-PCS (50YGS and 50YGP) Digital brings another feature - Integrated Variable-Speed Water Flow Control. Two-Way Communicating System facilitates intelligent communication between the DXM2 controls and internal water pump to make true variable water flow a reality. Compared to conventional units that can just turn the water-flow on or off, GT-PCS (50YGS and 50YGP) Digital varies the water-flow, which results in significantly lower operating cost and longer system life. Bryant takes ease and speed of installation of geothermal heating and cooling systems to the next level. Integrated Variable-Speed Water Flow Control integrates water-flow control inside the unit.

### DXM2 Digital Two-Way Communicating Controls

GT-PCS (50YGS and 50YGP) Digital units also offer optimized comfort, efficiency, and serviceability, utilizing Two-Way Communicating Controls as a standard option with every unit.

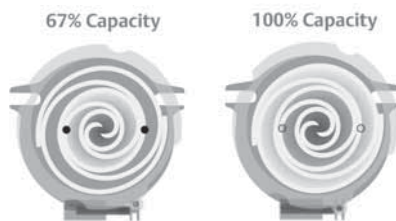
The digital two-way communicating controls make installation and service of the system easy and effective by allowing configuration and diagnosis of the system on a Configuration/Diagnostic Tool. Furthermore, two-way communication between the intelligent components inside the system ensures precise coordination of operation to achieve optimized comfort AND efficiency. The DXM2 records the operating conditions of the unit at the time of the fault to help narrow down diagnosis.



Configuration/Diagnostic Tool

### Two-Stage Copeland Scroll Compressor

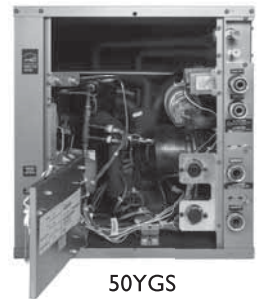
Achieve a greater level of comfort. The Copeland Scroll UltraTech™ provides superior comfort than fixed-capacity compressors by incorporating a revolutionary two-step design. With a unique 67% part-load capacity step, systems with UltraTech™ maintain precise temperature levels and lower relative humidity. This eliminates uneven peaks and valleys and allows for steady cooling comfort. Homeowners now have a better, more efficient way to power their heating and cooling system, raising their level of comfort, while lowering energy bills. So when your customers need a new heating and cooling system, make sure it has the best technology inside – the Copeland Scroll UltraTech™ compressor.



Learn the beauty of the design. With Copeland Scroll UltraTech™, two internal bypass ports enable the system to run at 67% part-load capacity for better efficiency and humidity control. Based on demand, the modulation ring is activated, sealing the bypass ports and instantly shifting capacity to 100%. Take advantage of “shift on the fly” stage changing (no stopping and starting required like other two-stage compressors).

### Easy to Install, Easy to Service – A Technician’s Dream Machine

The GT-PCS (50YGS and 50YGP) Digital unit was designed with the technician in mind. From built-in water flow components that cut down on installation time and space, to easy access panels to a swing out control panel to refrigerant pressure ports right in the front of the unit, to easy connect water connections... the list goes on and on. The new digital two-way controls make understanding unit faults significantly easier by displaying information on the Accessory Configuration/Diagnostic Tool.



50YGS

## Two-Way Unit Communicating System

### Two-Way Communication System and a Gateway Into the GT-PCS (50YGS/50YGP) Digital System

GT-PCS (50YGS and 50YGP) Digital is equipped with a Two-Way Communication System that allow users to interact with their geothermal system in plain English AND delivers improved reliability and efficiency by precisely controlling smart variable speed components.

#### Precise operation:

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

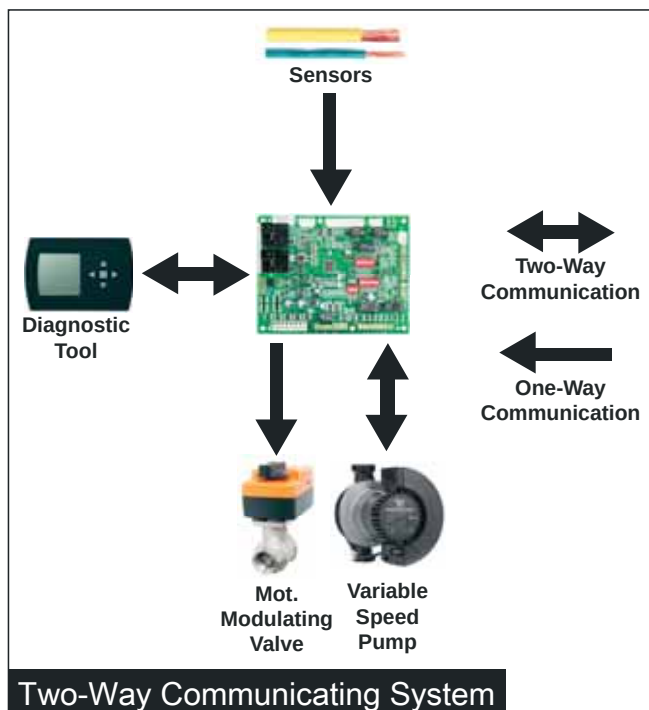
#### Plain English communication:

Two-Way Communication System allows users to interact with their GT-PCS (50YGS and 50YGP) Digital system in PLAIN ENGLISH, through the configuration/diagnostic tool (ACDU). It enables configuration, monitoring and diagnostics of the system.

**Configuration** – Installers can configure GT-PCS (50YGS and 50YGP) Digital units including: entering/leaving water  $\Delta T$ , water-flow option configuration, unit configuration, accessory configuration, and demand reduction (optional, to limit unit operation during peak times).

**Monitoring and Diagnostics** – In the rare case there's an issue with the unit, the unit will communicate that service is needed to the thermostat for consumers to see. From the thermostat, a fault code is displayed to aid in diagnostics. The ACDU01A tool can diagnose the units much faster with possible causes shown on the tool and with system operating conditions at the time of the fault.

With the Two-Way Communication System, consumers and contractors have a gateway to system information.



### POSSIBLE FAULT CAUSES LOW WATER COIL TEMP

LOW WATER TEMP - HTG  
LOW WATER FLOW - HTG  
LOW REFRIG CHARGE - HTG  
INCORRECT LT1 SETTING  
BAD LT1 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

## Integrated Variable-Speed Water Flow Control

### Integrated Variable-Speed Water Flow Control

Employing the Two-Way Communicating System, GT-PCS (50YGS and 50YGP) Digital is powered Integrated Variable-Speed Water Flow Control. This technology is built inside the unit with intelligent variable speed components, controlled directly by the DXM2 control based on information from the pump and sensors across the system.

Integrated Variable-Speed Water Flow Control delivers three main benefits:

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

#### Internal components

GT-PCS (50YGS and 50YGP) can be installed more easily and compactly than its predecessors by building water-flow components internal to the unit. It also saves installing contractors labor and time by eliminating the need to install a bulky external flow regulator or pumping module.

#### Variable flow

Integrated Variable-Speed Water Flow Control technology enables variable water flow through the unit, with the DXM2 control maintaining entering and leaving water  $\Delta T$ . Refrigerant pressures are maintained at levels closer to optimal by precisely managing the water flow and thus indirectly the heat of extraction and rejection.

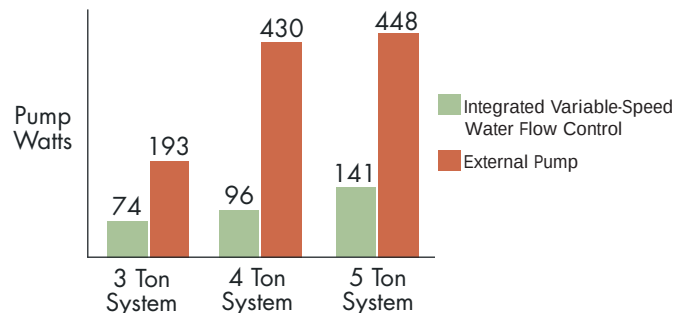
Integrated Variable-Speed Water Flow Control is available for three applications:

- 1) Closed loop – individual unit pumping: Integrated Variable-Speed Water Flow Control Internal Flow Controller model ("2" in Position 9) 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: Integrated Variable-Speed Water Flow Control Internal Motorized Modulating Valve ("5" in Position 9) would be used. Copper water coil is standard with this option (50YGS Only).
- 3) Open loop: Integrated Variable-Speed Water Flow Control Internal Motorized Modulating Valve ("6" in Position 11) 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 (50YGS Only).

#### Energy Savings with water circulation

Units with Integrated Variable-Speed Water Flow Control technology deliver higher operating cost savings by varying the water flow to match the unit's operation (ex: slows down when unit is in 1st stage). Slowing down the flow results in lower energy consumption by the water pump (= higher cost savings) in Integrated Variable-Speed Water Flow Control units (with pump either inside the unit or outside the unit).

Specifically, units with Integrated Variable-Speed Water Flow Control technology with INTERNAL ECM/Variable speed pump consume fewer watts than a PSC/fixed speed pump, even at full speed / load. When demand and load are lower (ex: 1st stage), the ECM pump slows down to consume less than 50% of the watts compared to its PSC counterpart. On average, the savings can be over 60 watts/ton by using the ECM pump vs. a fixed speed PSC pump.



How to Use this Catalog

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, GT-PCS Split 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 units. The maximum possible pump curve for the 25-140 is shown in the table below. The 25-140 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.

1. Determine the desired flow rate through the unit from the performance pages (as described above). Read the associated pressure drop in feet of head for the worst case condition (lowest

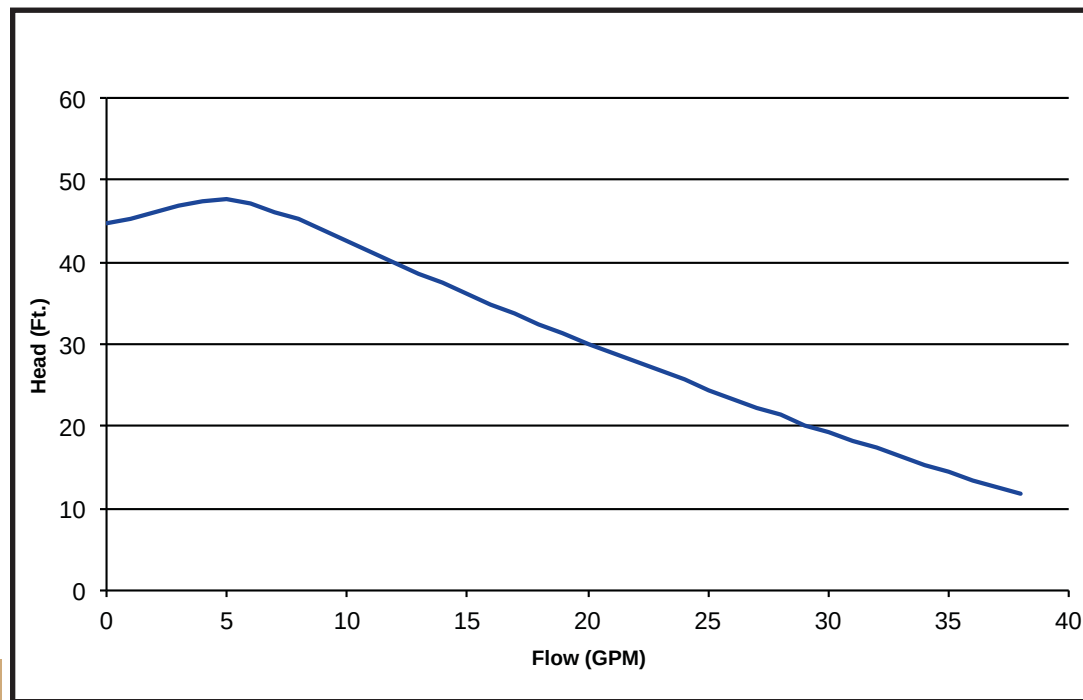
- anticipated entering water temperature) at the required flow rate.
2. Determine the maximum pump head from the pump curve associated with the required flow rate from step 1.
3. Subtract the unit pressure drop (from step 1) from the maximum available pump head (from step 2).
4. The remainder is the 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 ¾" circuit piping and 1 ¼" 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 ½" 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.

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.

Magna Geo 25-140 Pump Performance



Bryant: Whatever It Takes.

## How to Use this Catalog

Bryant's Pressure Drop Software can be used in conjunction with the pump performance information presented here to determine actual flow rate when the internal circulator is not able to provide the desired design flow rate.

For secondary pumping applications follow the above steps except do not consider the pressure drop of the loop. The internal 25-140 circulator will only need to overcome the pressure drop of the unit and any piping connecting the unit to the primary loop.

GT-PCS Split Units 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

GT-PCS (50YGS) Split Units 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

| 50YGS 026      |                      |                        |
|----------------|----------------------|------------------------|
| Valve Cv = 4.7 |                      |                        |
| 60°F Water     |                      |                        |
| GPM            | Valve □P @ GPM (psi) | Valve □P @ 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                    |

| 50YGS 038      |                      |                        |
|----------------|----------------------|------------------------|
| Valve Cv = 7.4 |                      |                        |
| 60°F Water     |                      |                        |
| GPM            | Valve □P @ GPM (psi) | Valve □P @ 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                    |

| 50YGS 049     |                      |                        |
|---------------|----------------------|------------------------|
| Valve Cv = 10 |                      |                        |
| 60°F Water    |                      |                        |
| GPM           | Valve □P @ GPM (psi) | Valve □P @ 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                    |

| 50YGS 064     |                      |                        |
|---------------|----------------------|------------------------|
| Valve Cv = 19 |                      |                        |
| 60°F Water    |                      |                        |
| GPM           | Valve □P @ GPM (psi) | Valve □P @ 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

| 50YGS 026, 038 & 049 |                      |                        |
|----------------------|----------------------|------------------------|
| Valve Cv = 4.7       |                      |                        |
| 60°F Water           |                      |                        |
| GPM                  | Valve □P @ GPM (psi) | Valve □P @ 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                   |

| 50YGS 064      |                      |                        |
|----------------|----------------------|------------------------|
| Valve Cv = 7.4 |                      |                        |
| 60°F Water     |                      |                        |
| GPM            | Valve □P @ GPM (psi) | Valve □P @ 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                   |

## GT-PCS Design Features

The GT-PCS Split system compressor sections (indoor / outdoor) have abundant features and ultra high efficiency.

### Application Flexibility

- Four Capacities 026, 038, 049, and 064.
- Ideal for remote applications like 2nd floor or crawl space areas. Indoor and outdoor models available.
- Can be used as a total electric heat pump or add on heat pump with fossil fuel backup.
- Ideal for unit replacement market, designed for quiet outdoor installations with weather tight cabinet (outdoor model).
- Built-in industry first Variable Waterflow for 60-80% savings in pumping watts (pump models)
- Internal Flow Controls-Closed loop models include pump, flushing valves, expansion tank and copper water coil
- Motorized Modulating valve-Closed loop models include Motorized Modulating valve, Copper water coil
- Motorized Modulating valve-Open loop models include Motorized Modulating valve, Cupro-Nickel water coil (indoor split only)
- Extended range operation (20-120°F EWT) and flow rates directly controlled by DXM2 control based on  $\Delta T$
- Circuit breaker protected loop and hot water generator pumps (indoor model).
- Field selectable low-temperature protection setting for GWHP or GLHP (indoor model).
- Open service-friendly cabinet (i.e., all components in compressor section can be serviced from the front).
- Pre-charged compressor section with back-seating refrigerant service valves for quick installation.
- AHRI matched and rated with CNP Cased coil and FE/FV4 Air Handler products.
- Exceeds Federal requirements for 30% tax credit on installation costs.\*
- Exceeds ASHRAE 90.1 and Energy Star 3.0 efficiencies.\*
- Thru-the-Bottom loop access (outdoor model).

\* When installed with an AHRI listed coil or air handler

### Operating Efficiencies

- Exceeds ASHRAE 90.1 and Energy Star Tier 3 efficiency levels
- Energy Star® Most Efficient
- Puron® HFC-410A zero ozone depletion refrigerant.
- Among the highest efficiencies in AHRI/ISO/ASHRAE/ANSI 13256-1 ratings for heating COPs, cooling EERs with low water flow rates.
- 29 EER/4.7 COP
- Rugged and highly efficient next generation Copeland UltraTech scroll compressors provide Two-stage operation for ultra-high efficiencies and unsurpassed comfort with reduced cycling losses.
- Optional hot water generator generates hot water at considerable savings.
- Oversized coaxial tube water-to-refrigerant heat exchangers operate at low liquid pressure drop.

### Service & Installation Advantages

- Bryant's GT-PCS Split series incorporates features that make it extremely easy to install:
- Ease of installation:

- 1) Integrated Variable-Speed Water Flow Control - 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) DXM2 Unit Controller – when coupled with the accessory ACDU01A Configuration/Diagnostic Tool allows easy installer set-up and system monitoring/diagnostics.
- Internal variable speed circulator includes an internal check valve for multiple unit/ shared loop installations.
  - Standard corner-post schrader ports provide access to source pressure drop across unit coaxial heat exchanger.
  - Multiple unit access panels for service ease.
  - Service friendly highly accessible high/low refrigerant pressure ports are located on a service bracket at the front of the unit.
  - 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.
  - Diagnostic display of system inputs, outputs, and configuration settings at Configuration/Diagnostic tool.
  - Diagnostic display of system temperatures at configuration/ diagnostic tool (ACDU01A).
    - Geo source in and out
    - Compressor discharge line
    - LT1 and LT2 Refrigerant Line Temperature Sensors
    - Entering potable hot water to HWG
  - Immediate manual control of all DXM2 outputs is available at the Configuration/Diagnostic tool (ACDU01A) 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.

### 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

## GT-PCS Design Features

- All units are deep evacuated to less than 180 microns prior to refrigerant charging
- All joints are both helium and halogen leak tested to insure annual leak rate of less than ¼ ounce
- 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

Two-Way Communicating System communicating control provides advanced unit functionality and comprehensive configuration, monitoring and diagnostic capabilities through digital communication links with the variable-speed source pump (or modulating valve) and communicating Configuration/Diagnostic tool.

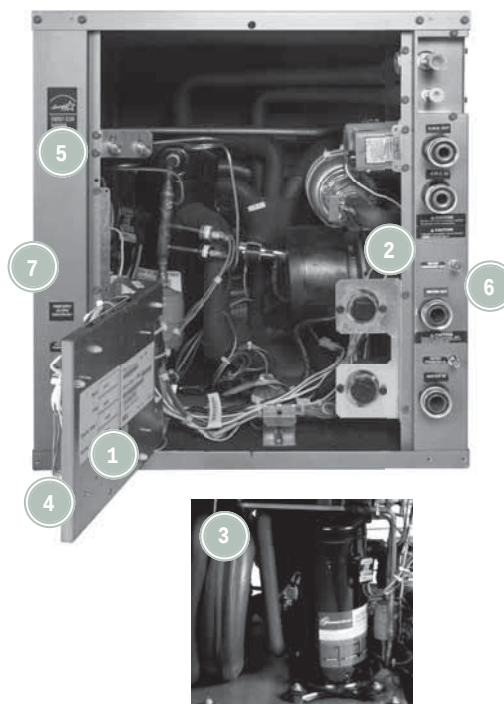
- 7 temperature sensor inputs for system protection and control
- Anti-short cycle and over/under voltage protection
- High pressure, loss of charge, and condensate overflow protection
- LED fault and status indication at controller
- Service tool port for optional setup and diagnostics at unit

### Options & Accessories

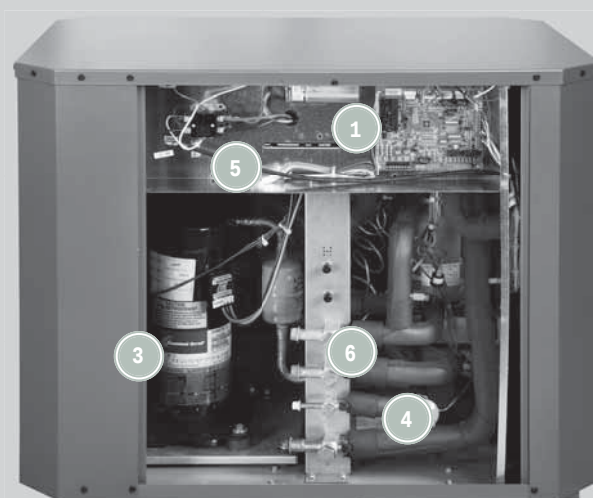
- Hot water generator with internally mounted pump and advanced logic control
- Communicating Configuration / Diagnostic Tool (ACDU01A)
- Anti Scald Valve (AVAS4)
- Secure Start Compressor Soft Start Kit (13B0045N01)
- Unit Vibration Isolation Pad

## GT-PCS Split (50YGS and 50YGP) Design Features

- 1 Two-Way Communicating Control to easily configure and diagnose
- 2 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 Two-Section Swing-out Control Box design provides wide-open service access
- 5 Refrigerant Schrader Ports Located on bracket at the front access panel for easy service access
- 6 Water Schrader Ports located on corner post to easily read pressure drop across water heat exchanger for easy troubleshooting
- 7 Heavy Gauge Galvanized Steel Cabinet is epoxy powder-coated in a durable and attractive finish



- 1 Two-Way Communicating Control to easily configure and diagnose
- 2 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 Fully Insulated Water and Refrigerant Lines
- 5 Large Easily Accessible Control Box
- 6 Backseating Brass Service Valves with Service Port
- 7 Stainless Steel Braided Hoses for Easy Connection to Loop Piping



## Model Key, Reference Calculations & Legend

### Unit Model Key

GT-PCS Indoor

50 1 2 3 4 5 6 7 8 9 10 11 12 13

YGS 026 N D 2 C 3 1 1

**PREFIX**

**SERIES (Extended Range UltraHigh Efficiency)**  
YGS = Indoor Split Residential

**UNIT SIZE**  
026  
038  
049  
064

**AIR FLOW CONFIGURATION**  
N = Not Applicable

**CONTROLS**  
D=DXM2

**PACKAGING**  
1 = Single Pack, Domestic

**REVISION LEVEL**  
1=Current Revision

**VOLTAGE**  
3 = 208-230/60/1

**HEAT EXCHANGER OPTIONS**

|                       | Copper | Cupro-Nickel |
|-----------------------|--------|--------------|
| HWG w/Pump (Standard) | C      | N            |
| No - HWG              | A      | J            |

**WATER CIRCUIT OPTIONS**

2 = Internal Flow Controller High Head Magna Pump  
5 = Motorized Valve (Modulating)  
Closed Loop Applications, Low System Pressure Drop  
6 = Motorized Valve (Modulating)  
Open Loop Applications, High System Pressure Drop

In Position 9 and 10, only the following combinations are available:

| With HWG | Without HWG | Description                                             |
|----------|-------------|---------------------------------------------------------|
| 2C       | 2A          | Internal Flow Controller with Copper Water Coil         |
| 5C       | 5A          | Motorized Modulating Valve with Copper Water Coil       |
| 6N       | 6J          | Motorized Modulating Valve with Cupro-Nickel Water Coil |

GT-PCS Outdoor

50 1 2 3 4 5 6 7 8 9 10 11 12 13

YGP 026 N D 2 A 3 1 1

**PREFIX**

**SERIES (Extended Range UltraHigh Efficiency)**  
YGP = Outdoor Split Residential

**UNIT SIZE**  
026  
038  
049  
064

**AIR FLOW CONFIGURATION**  
N = Not Applicable

**CONTROLS**  
D=DXM2

**PACKAGING**  
1 = Single Pack, Domestic

**REVISION LEVEL**  
1=Current Revision

**VOLTAGE**  
3 = 208-230/60/1

**HEAT EXCHANGER OPTIONS**  
A = Non Hot Water Generator with Copper

**WATER CIRCUIT OPTIONS**  
2 = Internal Flow Controller High Head Magna Pump

| Heating                                  |  | Cooling                                            |                       |
|------------------------------------------|--|----------------------------------------------------|-----------------------|
| $LWT = EWT - \frac{HE}{GPM \times 500}$  |  | $LWT = EWT + \frac{HR}{GPM \times 500}$            | $LC = TC - SC$        |
| $LAT = EAT + \frac{HC}{CFM \times 1.08}$ |  | $LAT (DB) = EAT (DB) - \frac{SC}{CFM \times 1.08}$ | $S/T = \frac{SC}{TC}$ |

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                               | HE = total heat of extraction, Mbtuh                      |
| EWT = entering water temperature, °F                           | HWC = Hot Water Generator (desuperheater) capacity, Mbtuh |
| GPM = water flow in US gallons/minute                          | WPD = Water coil pressure drop (psi & ft hd)              |
| EAT = entering air temperature, Fahrenheit (dry bulb/wet bulb) | EER = Energy Efficiency Ratio = BTU output/Watt input     |
| HC = air heating capacity, Mbtuh                               | COP = Coefficient of Performance = BTU output/BTU input   |
| TC = total cooling capacity, Mbtuh                             | LWT = leaving water temperature, °F                       |
| SC = sensible cooling capacity, Mbtuh                          | LAT = leaving air temperature, °F                         |
| KW = total power unit input, KiloWatts                         | LC = latent cooling capacity, Mbtuh                       |
| HR = total heat of rejection, Mbtuh                            | S/T = sensible to total cooling ratio                     |

Residential Products Technical Guide

GT-PCS  
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## About AHRI/ISO/ASHRAE 13256-1

### 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.AHRIdirectory.org> is constantly being updated and immediately available on the Internet. All ratings are submitted by the manufacturer for certification, and must be approved by AHRI. Therefore, there is a significant difference between AHRI “certified” and AHRI “rated.” Thirty percent of a manufacturer's basic models must be tested each year. AHRI selects models at random from stock for testing on the basis of its evaluation of a participant's certification data.

Units that fail one or more certified test (90% of declared performance or lower) may be declared defective. If the initial failure is a performance test, the manufacturer must obsolete all units within the same basic model group or elect to have a second sample tested. If the second unit fails a performance test, it must be obsoleted, together with all units within the same basic model group.

Temperatures used in AHRI certification standards are S.I. (Système International – metric) based. For example, typical catalog data for cooling is shown at 80°F DB/67°F WB [26.7°C DB/19.4°C] entering air temperature, but the AHRI standard for cooling is 80.6°F DB/66.2°F WB [27°C DB/19°C], since it is based upon whole numbers in degrees Celsius. Water and air temperatures for the standard are shown below.

### Test Condition Comparison Table

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

\*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. Within each model, only one water flow rate is specified for all three groups, and pumping Watts are calculated using the formula below. This additional power is added onto the existing power consumption.

- Pump power correction = (gpm x 0.0631) x (Press Drop x 2990)/300

Fan power is corrected to zero external static pressure using the equation below. The nominal airflow is rated at a specific external static pressure. This effectively reduces the power consumption of the unit and increases cooling capacity but decreases heating capacity.

- Fan Power Correction = (cfm x 0.472) x (esp x 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) =  
ISO Cooling Capacity (Btuh)/[Power Input (Watts) – Fan Power Correction (Watts) + Pump Power Correction (Watts)]
- ISO Heating Capacity = Heating Capacity (Btuh) – [Fan Power Correction (Watts) x 3.412]
- ISO COP Efficiency (Btuh/Btuh) =  
ISO Heating Capacity (Btuh) x 3.412/[Power Input (Watts) - Fan Power Correction (Watts) + Pump Power Correction (Watts)]

## AHRI/ISO/ASHRAE/ANSI 13256-1 Performance 50YGS, 50YGP Models

ASHRAE/AHRI/ISO 13256-1 with FE/FV4 Air Handler

| Model | Capacity   | 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<br>Full Load 77°F<br>Part Load 68°F |               | Heating<br>Full Load 32°F<br>Part Load 41°F |     |
|       | Modulation | Capacity<br>Btuh     | EER<br>Btuh/W | Capacity<br>Btuh | COP | Capacity<br>Btuh       | EER<br>Btuh/W | Capacity<br>Btuh | COP | Capacity<br>Btuh                            | EER<br>Btuh/W | Capacity<br>Btuh                            | COP |
| 026   | Full       | 25,300               | 16.6          | 28,800           | 5.5 | 28,400                 | 24.7          | 25,300           | 4.9 | 26,000                                      | 18.6          | 19,200                                      | 4.1 |
|       | Part       | 19,000               | 18.2          | 22,800           | 6.3 | 21,600                 | 30.8          | 18,800           | 5.3 | 20,500                                      | 25.1          | 16,300                                      | 4.6 |
| 038   | Full       | 38,700               | 16.1          | 40,300           | 5.2 | 41,900                 | 24.0          | 34,300           | 4.7 | 38,600                                      | 18.4          | 27,800                                      | 4.1 |
|       | Part       | 27,000               | 17.7          | 30,000           | 5.9 | 30,100                 | 30.3          | 24,800           | 5.0 | 28,900                                      | 24.9          | 22,200                                      | 4.4 |
| 049   | Full       | 47,900               | 16.5          | 53,000           | 5.0 | 52,700                 | 24.0          | 46,600           | 4.6 | 49,000                                      | 17.3          | 37,100                                      | 3.8 |
|       | Part       | 35,800               | 17.3          | 41,600           | 5.8 | 40,000                 | 29.1          | 34,500           | 5.0 | 38,100                                      | 23.3          | 30,100                                      | 4.2 |
| 064   | Full       | 57,000               | 14.9          | 67,300           | 4.7 | 63,000                 | 21.3          | 57,900           | 4.2 | 59,000                                      | 16.6          | 45,800                                      | 3.7 |
|       | Part       | 42,800               | 16.7          | 52,300           | 5.5 | 47,600                 | 27.3          | 43,000           | 4.6 | 46,000                                      | 22.5          | 37,100                                      | 4.1 |

Cooling capacities based upon 80.6°F DB, 66.2°F WB entering air temperature  
Heating capacities based upon 68°F DB, 59°F WB entering air temperature  
All ratings based upon 208V operation

ASHRAE/AHRI/ISO 13256-1 with CNP Air Coil

| Model | Capacity   | 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<br>Full Load 77°F<br>Part Load 68°F |               | Heating<br>Full Load 32°F<br>Part Load 41°F |     |
|       | Modulation | Capacity<br>Btuh     | EER<br>Btuh/W | Capacity<br>Btuh | COP | Capacity<br>Btuh       | EER<br>Btuh/W | Capacity<br>Btuh | COP | Capacity<br>Btuh                            | EER<br>Btuh/W | Capacity<br>Btuh                            | COP |
| 026   | Full       | 23,900               | 15.1          | 30,300           | 5.0 | 27,100                 | 22.7          | 25,500           | 4.5 | 24,700                                      | 17.1          | 19,300                                      | 3.8 |
|       | Part       | 17,600               | 16.0          | 23,000           | 5.0 | 20,200                 | 27.6          | 18,600           | 4.3 | 19,200                                      | 22.3          | 16,300                                      | 3.9 |
| 038   | Full       | 35,700               | 15.4          | 41,000           | 4.6 | 40,100                 | 22.8          | 34,800           | 4.2 | 37,200                                      | 17.5          | 27,300                                      | 3.5 |
|       | Part       | 25,800               | 16.8          | 30,300           | 4.8 | 28,700                 | 28.1          | 25,200           | 4.2 | 27,500                                      | 23.1          | 22,000                                      | 3.7 |
| 049   | Full       | 47,800               | 15.9          | 54,300           | 5.0 | 52,500                 | 23.2          | 47,000           | 4.5 | 48,600                                      | 17.5          | 36,500                                      | 3.8 |
|       | Part       | 35,500               | 17.0          | 42,600           | 5.3 | 39,800                 | 27.9          | 34,700           | 4.5 | 38,500                                      | 23.4          | 30,100                                      | 4.0 |
| 064   | Full       | 56,700               | 14.8          | 66,700           | 4.6 | 62,000                 | 21.6          | 57,100           | 4.2 | 58,300                                      | 16.6          | 45,400                                      | 3.7 |
|       | Part       | 42,400               | 15.8          | 52,000           | 4.8 | 47,600                 | 26.4          | 42,600           | 4.2 | 45,600                                      | 21.7          | 37,500                                      | 3.8 |

Cooling capacities based upon 80.6°F DB, 66.2°F WB entering air temperature  
Heating capacities based upon 68°F DB, 59°F WB entering air temperature  
All ratings based upon 208V operation

### Indoor Coil Selection – GT-PCS (50YGS and 50YGP)

Split system heat pumps are designed for and rated in the AHRI directory with specific air handlers and cased coils. GT-PCS models are rated with FE/FV4 Air Handlers and CNP Cased coils. **Applying these heat pumps to other brands/models of air handlers or cased coils may result in unsatisfactory performance and make them ineligible for the Energy Star program, utility rebates, or tax credits.**

| Unit Size                | 26  | 38  | 49  | 64  |
|--------------------------|-----|-----|-----|-----|
| Air Handler Model FE/FV4 | 002 | 005 | 006 | 006 |
| Cased Coil Model CNP     | 24  | 36  | 48  | 60  |

## Full Load Correction Factors

### Air Flow Correction Table

| Airflow<br>% of<br>Nominal | Heating |       |                       |           | Cooling  |       |       |                      |
|----------------------------|---------|-------|-----------------------|-----------|----------|-------|-------|----------------------|
|                            | Htg Cap | Power | Heat of<br>Extraction | Total Cap | Sens Cap | S/T   | Power | Heat<br>of Rejection |
| 60.00                      | 0.946   | 1.153 | 0.896                 | 0.925     | 0.788    | 0.852 | 0.913 | 0.922                |
| 68.75                      | 0.959   | 1.107 | 0.924                 | 0.946     | 0.829    | 0.876 | 0.926 | 0.942                |
| 75.00                      | 0.969   | 1.078 | 0.942                 | 0.960     | 0.861    | 0.897 | 0.937 | 0.955                |
| 81.25                      | 0.977   | 1.053 | 0.959                 | 0.972     | 0.895    | 0.921 | 0.950 | 0.968                |
| 87.50                      | 0.985   | 1.032 | 0.974                 | 0.983     | 0.930    | 0.946 | 0.965 | 0.979                |
| 93.75                      | 0.993   | 1.014 | 0.988                 | 0.992     | 0.965    | 0.973 | 0.982 | 0.990                |
| 100.00                     | 1.000   | 1.000 | 1.000                 | 1.000     | 1.000    | 1.000 | 1.000 | 1.000                |
| 106.25                     | 1.006   | 0.989 | 1.011                 | 1.007     | 1.033    | 1.027 | 1.020 | 1.009                |
| 112.50                     | 1.012   | 0.982 | 1.019                 | 1.012     | 1.064    | 1.052 | 1.042 | 1.018                |
| 118.75                     | 1.018   | 0.979 | 1.027                 | 1.016     | 1.092    | 1.075 | 1.066 | 1.025                |
| 125.00                     | 1.022   | 0.977 | 1.033                 | 1.018     | 1.116    | 1.096 | 1.091 | 1.032                |
| 130.00                     | 1.026   | 0.975 | 1.038                 | 1.019     | 1.132    | 1.110 | 1.112 | 1.037                |

### Entering Air Correction Tables

| Full Load Heating Corrections |                     |       |                       |
|-------------------------------|---------------------|-------|-----------------------|
| Entering<br>Air DB°F          | Heating<br>Capacity | Power | Heat of<br>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, 1 and Heating - 68°F DB/59°F WB entering air temperature

| Cooling                 |                   |                                                       |       |       |       |       |       |       |       |       |       |       |                      |
|-------------------------|-------------------|-------------------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------------------|
| Entering<br>Air<br>WB°F | Total<br>Capacity | Sensible Cooling Capacity Multiplier - Entering DB °F |       |       |       |       |       |       |       |       |       | Power | Heat of<br>Rejection |
|                         |                   | 60                                                    | 65    | 70    | 75    | 80    | 80.6  | 85    | 90    | 95    | 100   |       |                      |
| 45                      | 0.832             | 1.346                                                 | 1.461 | 1.603 | *     | *     | *     | *     | *     | *     | *     | 0.946 | 0.853                |
| 50                      | 0.850             | 1.004                                                 | 1.174 | 1.357 | *     | *     | *     | *     | *     | *     | *     | 0.953 | 0.870                |
| 55                      | 0.880             | 0.694                                                 | 0.902 | 1.115 | 1.331 | *     | *     | *     | *     | *     | *     | 0.964 | 0.896                |
| 60                      | 0.922             |                                                       | 0.646 | 0.875 | 1.103 | 1.329 | 1.356 | *     | *     | *     | *     | 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 | 1.482 | *     | *     | 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 | 1.517 | *     | 1.011 | 1.035                |
| 75                      | 1.117             |                                                       |       |       |       | 0.601 | 0.627 | 0.821 | 1.046 | 1.275 | 1.510 | 1.033 | 1.101                |

\* Sensible capacity equals total capacity.

## Part Load Correction Factors

### Air Flow Correction Table

| Airflow<br>% of<br>Nominal | Heating |       |                       |           | Cooling  |       |       |                      |
|----------------------------|---------|-------|-----------------------|-----------|----------|-------|-------|----------------------|
|                            | Htg Cap | Power | Heat of<br>Extraction | Total Cap | Sens Cap | S/T   | Power | Heat<br>of Rejection |
| 60.00                      | 0.946   | 1.153 | 0.896                 | 0.925     | 0.788    | 0.852 | 0.913 | 0.922                |
| 68.75                      | 0.959   | 1.107 | 0.924                 | 0.946     | 0.829    | 0.876 | 0.926 | 0.942                |
| 75.00                      | 0.969   | 1.078 | 0.942                 | 0.960     | 0.861    | 0.897 | 0.937 | 0.955                |
| 81.25                      | 0.977   | 1.053 | 0.959                 | 0.972     | 0.895    | 0.921 | 0.950 | 0.968                |
| 87.50                      | 0.985   | 1.032 | 0.974                 | 0.983     | 0.930    | 0.946 | 0.965 | 0.979                |
| 93.75                      | 0.993   | 1.014 | 0.988                 | 0.992     | 0.965    | 0.973 | 0.982 | 0.990                |
| 100.00                     | 1.000   | 1.000 | 1.000                 | 1.000     | 1.000    | 1.000 | 1.000 | 1.000                |
| 106.25                     | 1.006   | 0.989 | 1.011                 | 1.007     | 1.033    | 1.027 | 1.020 | 1.009                |
| 112.50                     | 1.012   | 0.982 | 1.019                 | 1.012     | 1.064    | 1.052 | 1.042 | 1.018                |
| 118.75                     | 1.018   | 0.979 | 1.027                 | 1.016     | 1.092    | 1.075 | 1.066 | 1.025                |
| 125.00                     | 1.022   | 0.977 | 1.033                 | 1.018     | 1.116    | 1.096 | 1.091 | 1.032                |
| 130.00                     | 1.026   | 0.975 | 1.038                 | 1.019     | 1.132    | 1.110 | 1.112 | 1.037                |

### Entering Air Correction Tables

| Full Load Heating Corrections |                     |       |                       |
|-------------------------------|---------------------|-------|-----------------------|
| Entering<br>Air DB°F          | Heating<br>Capacity | Power | Heat of<br>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, 1 and Heating - 68°F DB/59°F WB entering air temperature

| Cooling           |                |                                                       |       |       |       |       |       |       |       |       |       |       |                   |
|-------------------|----------------|-------------------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------------|
| 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          | 1.286                                                 | 1.302 | 1.389 | *     | *     | *     | *     | *     | *     | *     | 0.981 | 0.895             |
| 50                | 0.883          | 1.002                                                 | 1.099 | 1.241 | *     | *     | *     | *     | *     | *     | *     | 0.985 | 0.901             |
| 55                | 0.903          | 0.706                                                 | 0.871 | 1.060 | 1.271 | *     | *     | *     | *     | *     | *     | 0.989 | 0.918             |
| 60                | 0.935          |                                                       | 0.617 | 0.844 | 1.079 | 1.319 | 1.349 | *     | *     | *     | *     | 0.993 | 0.945             |
| 65                | 0.979          |                                                       |       | 0.595 | 0.849 | 1.096 | 1.128 | 1.342 | *     | *     | *     | 0.998 | 0.982             |
| 66.2              | 0.991          |                                                       |       | 0.531 | 0.789 | 1.040 | 1.070 | 1.284 | 1.522 | *     | *     | 0.999 | 0.993             |
| 67                | 1.000          |                                                       |       | 0.486 | 0.747 | 1.000 | 1.030 | 1.245 | 1.481 | *     | *     | 1.000 | 1.000             |
| 70                | 1.035          |                                                       |       |       | 0.583 | 0.842 | 0.873 | 1.090 | 1.327 | 1.552 | *     | 1.003 | 1.030             |
| 75                | 1.105          |                                                       |       |       |       | 0.552 | 0.584 | 0.811 | 1.057 | 1.290 | 1.510 | 1.008 | 1.086             |

\* Sensible capacity equals total capacity.

## Performance Data Selection Notes

For operation in the shaded area when water is used in lieu of an anti-freeze 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 anti-freeze 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 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.

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

$$TD = 22,500 / (1.5 \times 500)$$

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

$$LWT = EWT - TD$$

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

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).

### Antifreeze Correction Table

| Antifreeze Type  | Antifreeze % | Cooling   |          |       | Heating  |       | WPD<br>Corr. Fct.<br>EWT 30°F |
|------------------|--------------|-----------|----------|-------|----------|-------|-------------------------------|
|                  |              | EWT 90°F  |          |       | EWT 30°F |       |                               |
|                  |              | Total Cap | Sens Cap | Power | Htg Cap  | Power |                               |
| Water            | 0            | 1.000     | 1.000    | 1.000 | 1.000    | 1.000 | 1.000                         |
| Propylene Glycol | 5            | 0.995     | 0.995    | 1.003 | 0.989    | 0.997 | 1.070                         |
|                  | 15           | 0.986     | 0.986    | 1.009 | 0.968    | 0.990 | 1.210                         |
|                  | 25           | 0.978     | 0.978    | 1.014 | 0.947    | 0.983 | 1.360                         |
| Methanol         | 5            | 0.997     | 0.997    | 1.002 | 0.989    | 0.997 | 1.070                         |
|                  | 15           | 0.990     | 0.990    | 1.007 | 0.968    | 0.990 | 1.160                         |
|                  | 25           | 0.982     | 0.982    | 1.012 | 0.949    | 0.984 | 1.220                         |
| Ethanol          | 5            | 0.998     | 0.998    | 1.002 | 0.981    | 0.994 | 1.140                         |
|                  | 15           | 0.994     | 0.994    | 1.005 | 0.944    | 0.983 | 1.300                         |
|                  | 25           | 0.986     | 0.986    | 1.009 | 0.917    | 0.974 | 1.360                         |
| Ethylene Glycol  | 5            | 0.998     | 0.998    | 1.002 | 0.993    | 0.998 | 1.040                         |
|                  | 15           | 0.994     | 0.994    | 1.004 | 0.980    | 0.994 | 1.120                         |
|                  | 25           | 0.988     | 0.988    | 1.008 | 0.966    | 0.990 | 1.200                         |

Performance capacities shown in thousands of Btu/h

| Heating - EAT 70°F |     |      |      |      |       |      |     |
|--------------------|-----|------|------|------|-------|------|-----|
| ER                 | HWC | HC   | kW   | HE   | LAT   | COP  | HW  |
|                    |     | 39.4 | 3.90 | 26.5 | 93.2  | 2.96 | 4.0 |
|                    |     | 40.0 | 3.78 | 27.2 | 90.0  | 3.10 | 3.5 |
| 19.3               | -   | 43.5 | 4.06 | 30.0 | 95.6  | 3.14 | 4.1 |
| 18.6               | -   | 44.1 | 3.93 | 30.8 | 92.1  | 3.29 | 3.6 |
| 20.5               | -   | 45.3 | 4.11 | 31.7 | 96.6  | 3.23 | 4.1 |
| 19.8               | -   | 46.0 | 3.98 | 32.5 | 93.0  | 3.39 | 3.5 |
| 21.4               | -   | 46.2 | 4.14 | 32.5 | 97.2  | 3.27 | 4.0 |
| 20.6               | -   | 46.9 | 4.01 | 33.4 | 93.5  | 3.43 | 3.5 |
| 18.5               | -   | 50.1 | 4.29 | 35.9 | 99.5  | 3.42 | 4.3 |
| 17.9               | -   | 50.8 | 4.16 | 36.8 | 95.4  | 3.58 | 3.7 |
| 19.8               | -   | 52.2 | 4.36 | 37.7 | 100.7 | 3.51 | 4.2 |
| 19.1               | -   | 53.0 | 4.22 | 38.7 | 96.5  | 3.68 | 3.6 |
| 20.4               | -   | 53.4 | 4.39 | 38.8 | 101.4 | 3.57 | 4.1 |
| 20.6               | -   | 54.2 | 4.25 | 39.8 | 97.1  | 3.74 | 3.6 |
| 2.0                |     | 57.0 | 4.53 | 41.8 | 103.5 | 3.69 | 4.0 |
| 2.1                |     | 57.8 | 4.39 | 42.9 | 98.9  | 3.86 | 3.5 |
| 1.8                |     | 59.5 | 4.60 | 44.1 | 105.0 | 3.79 | 3.9 |
| 1.8                |     | 60.4 | 4.46 | 45.3 | 100.2 | 3.97 | 3.4 |
|                    |     | 61.0 | 4.64 | 45.4 | 105.9 | 3.97 | 3.9 |
|                    |     | 61.9 | 4.50 | 46.6 | 101.0 | 4.14 | 3.4 |
|                    |     |      | 4.78 | 48.1 |       |      |     |

## Performance Data — 50YGS/50YGP026 Part Load

700 CFM Nominal (Rated) Airflow Cooling, 700 CFM Nominal (Rated) Airflow Heating

| EWT<br>°F | Cooling - EAT 80/67°F |     |     |                           |      |      |      |      |       |            | Heating - EAT 70°F |     |     |     |      |      |      |     |       |      |            |            |
|-----------|-----------------------|-----|-----|---------------------------|------|------|------|------|-------|------------|--------------------|-----|-----|-----|------|------|------|-----|-------|------|------------|------------|
|           | GPM                   | WPD |     | TC                        | SC   | kW   | HR   | EER  | LWT   | YGS<br>HWC | YGP<br>HWC         | GPM | WPD |     | HC   | kW   | HE   | COP | LAT   | LWT  | YGS<br>HWC | YGP<br>HWC |
|           |                       | PSI | FT  |                           |      |      |      |      |       |            |                    |     | PSI | FT  |      |      |      |     |       |      |            |            |
| 20        | 1.0                   | 0.4 | 1.0 | 22.3                      | 15.9 | 0.76 | 24.9 | 29.2 | 70.0  | 0.9        | 0.9                | 4.5 | 2.5 | 5.8 | 12.1 | 1.07 | 8.5  | 3.3 | 84.6  | 17.2 | 1.2        | 1.1        |
| 30        | 1.2                   | 0.3 | 0.7 | 22.3                      | 15.9 | 0.76 | 24.9 | 29.2 | 70.0  | 0.9        | 0.9                | 2.3 | 0.7 | 1.7 | 13.3 | 1.08 | 9.6  | 3.6 | 86.2  | 21.5 | 1.3        | 1.2        |
|           | 1.2                   | 0.3 | 0.7 | 22.3                      | 15.9 | 0.76 | 24.9 | 29.2 | 70.0  | 0.9        | 0.9                | 3.4 | 1.3 | 3.0 | 14.0 | 1.09 | 10.3 | 3.8 | 87.1  | 23.9 | 1.4        | 1.3        |
|           | 1.2                   | 0.3 | 0.7 | 22.3                      | 15.9 | 0.76 | 24.9 | 29.2 | 70.0  | 0.9        | 0.9                | 4.5 | 2.0 | 4.6 | 14.3 | 1.09 | 10.6 | 3.9 | 87.6  | 25.3 | 1.4        | 1.3        |
| 40        | 1.7                   | 0.3 | 0.8 | 22.3                      | 15.9 | 0.76 | 24.9 | 29.2 | 70.0  | 0.9        | 0.9                | 2.3 | 0.5 | 1.2 | 15.6 | 1.10 | 11.8 | 4.2 | 89.3  | 29.5 | 1.5        | 1.4        |
|           | 1.7                   | 0.3 | 0.8 | 22.3                      | 15.9 | 0.76 | 24.9 | 29.2 | 70.0  | 0.9        | 0.9                | 3.4 | 1.0 | 2.4 | 16.4 | 1.10 | 12.7 | 4.4 | 90.5  | 32.5 | 1.6        | 1.5        |
|           | 1.7                   | 0.3 | 0.8 | 22.3                      | 15.9 | 0.76 | 24.9 | 29.2 | 70.0  | 0.9        | 0.9                | 4.5 | 1.6 | 3.8 | 16.9 | 1.10 | 13.1 | 4.5 | 91.1  | 34.2 | 1.6        | 1.5        |
| 50        | 2.3                   | 0.5 | 1.1 | 22.1                      | 15.8 | 0.79 | 24.8 | 28.1 | 71.6  | 1.1        | 1.0                | 2.3 | 0.4 | 1.0 | 17.9 | 1.11 | 14.1 | 4.7 | 92.5  | 37.5 | 1.7        | 1.6        |
|           | 2.5                   | 0.6 | 1.3 | 22.3                      | 15.9 | 0.76 | 24.9 | 29.2 | 70.0  | 0.9        | 0.9                | 3.4 | 0.9 | 2.0 | 18.9 | 1.12 | 15.1 | 5.0 | 93.9  | 41.1 | 1.8        | 1.7        |
|           | 2.5                   | 0.6 | 1.3 | 22.3                      | 15.9 | 0.76 | 24.9 | 29.2 | 70.0  | 0.9        | 0.9                | 4.5 | 1.4 | 3.2 | 19.5 | 1.12 | 15.6 | 5.1 | 94.6  | 43.0 | 1.8        | 1.7        |
| 60        | 2.3                   | 0.4 | 1.0 | 21.4                      | 15.9 | 0.91 | 24.5 | 23.5 | 81.3  | 1.5        | 1.4                | 2.3 | 0.4 | 1.0 | 20.2 | 1.12 | 16.3 | 5.3 | 95.6  | 45.5 | 1.9        | 1.8        |
|           | 3.4                   | 0.8 | 1.8 | 22.0                      | 16.1 | 0.82 | 24.8 | 26.7 | 74.6  | 1.2        | 1.1                | 3.4 | 0.8 | 1.8 | 21.3 | 1.13 | 17.5 | 5.5 | 97.2  | 49.7 | 1.9        | 1.8        |
|           | 4.5                   | 1.3 | 2.9 | 22.3                      | 16.2 | 0.78 | 24.9 | 28.4 | 71.1  | 1.0        | 1.0                | 4.5 | 1.3 | 2.9 | 21.9 | 1.14 | 18.1 | 5.7 | 98.0  | 52.0 | 2.0        | 1.9        |
| 70        | 2.3                   | 0.5 | 1.1 | 20.3                      | 15.4 | 1.05 | 23.8 | 19.4 | 90.7  | 2.0        | 1.9                | 2.3 | 0.4 | 1.0 | 22.4 | 1.14 | 18.5 | 5.8 | 98.6  | 53.6 | 2.0        | 1.9        |
|           | 3.4                   | 0.8 | 1.8 | 21.1                      | 15.8 | 0.95 | 24.3 | 22.2 | 84.3  | 1.6        | 1.5                | 3.4 | 0.8 | 1.8 | 23.6 | 1.15 | 19.7 | 6.0 | 100.3 | 58.3 | 2.1        | 2.0        |
|           | 4.5                   | 1.2 | 2.7 | 21.5                      | 16.0 | 0.90 | 24.5 | 23.7 | 80.9  | 1.4        | 1.3                | 4.5 | 1.2 | 2.7 | 24.2 | 1.15 | 20.3 | 6.2 | 101.2 | 61.0 | 2.2        | 2.1        |
| 80        | 2.3                   | 0.5 | 1.2 | 18.9                      | 14.8 | 1.20 | 23.0 | 15.8 | 100.0 | 2.7        | 2.6                | 2.3 | 0.5 | 1.1 | 24.4 | 1.15 | 20.5 | 6.2 | 101.4 | 61.8 | 2.2        | 2.1        |
|           | 3.4                   | 0.8 | 1.8 | 19.8                      | 15.2 | 1.09 | 23.6 | 18.1 | 93.9  | 2.2        | 2.1                | 2.8 | 0.6 | 1.5 | 25.2 | 1.16 | 21.2 | 6.4 | 102.4 | 65.0 | 2.2        | 2.1        |
|           | 4.5                   | 1.2 | 2.7 | 20.3                      | 15.4 | 1.04 | 23.8 | 19.4 | 90.6  | 2.0        | 1.9                | 2.8 | 0.6 | 1.5 | 25.2 | 1.16 | 21.2 | 6.4 | 102.4 | 65.0 | 2.2        | 2.1        |
| 90        | 2.3                   | 0.5 | 1.2 | 17.5                      | 14.1 | 1.36 | 22.2 | 12.8 | 109.3 | 3.5        | 3.3                | 1.7 | 0.4 | 1.0 | 25.2 | 1.16 | 21.2 | 6.4 | 102.4 | 65.0 | 2.2        | 2.1        |
|           | 3.4                   | 0.8 | 1.9 | 18.4                      | 14.6 | 1.25 | 22.7 | 14.7 | 103.4 | 2.9        | 2.8                | 1.7 | 0.4 | 1.0 | 25.2 | 1.16 | 21.2 | 6.4 | 102.4 | 65.0 | 2.2        | 2.1        |
|           | 4.5                   | 1.2 | 2.7 | 18.9                      | 14.8 | 1.20 | 23.0 | 15.8 | 100.2 | 2.7        | 2.6                | 1.7 | 0.4 | 1.0 | 25.2 | 1.16 | 21.2 | 6.4 | 102.4 | 65.0 | 2.2        | 2.1        |
| 100       | 2.3                   | 0.5 | 1.3 | 16.2                      | 13.6 | 1.56 | 21.5 | 10.4 | 118.7 | 4.4        | 4.2                | 1.2 | 0.4 | 0.9 | 25.2 | 1.16 | 21.2 | 6.4 | 102.4 | 65.0 | 2.2        | 2.1        |
|           | 3.4                   | 0.8 | 1.9 | 17.0                      | 13.9 | 1.44 | 21.9 | 11.8 | 112.9 | 3.8        | 3.6                | 1.2 | 0.4 | 0.9 | 25.2 | 1.16 | 21.2 | 6.4 | 102.4 | 65.0 | 2.2        | 2.1        |
|           | 4.5                   | 1.2 | 2.7 | 17.4                      | 14.1 | 1.38 | 22.1 | 12.7 | 109.8 | 3.5        | 3.3                | 1.2 | 0.4 | 0.9 | 25.2 | 1.16 | 21.2 | 6.4 | 102.4 | 65.0 | 2.2        | 2.1        |
| 110       | 2.3                   | 0.5 | 1.1 | 15.1                      | 13.3 | 1.77 | 21.1 | 8.5  | 128.4 | 5.5        | 5.2                | 0.9 | 0.3 | 0.7 | 25.2 | 1.16 | 21.2 | 6.4 | 102.4 | 65.0 | 2.2        | 2.1        |
|           | 3.4                   | 0.8 | 1.8 | 15.7                      | 13.4 | 1.64 | 21.3 | 9.6  | 122.5 | 4.8        | 4.6                | 0.9 | 0.3 | 0.7 | 25.2 | 1.16 | 21.2 | 6.4 | 102.4 | 65.0 | 2.2        | 2.1        |
|           | 4.5                   | 1.1 | 2.6 | 16.1                      | 13.6 | 1.57 | 21.5 | 10.2 | 119.5 | 4.5        | 4.3                | 0.9 | 0.3 | 0.7 | 25.2 | 1.16 | 21.2 | 6.4 | 102.4 | 65.0 | 2.2        | 2.1        |
| 120       | 2.3                   | 0.4 | 0.8 | Operation Not Recommended |      |      |      |      |       |            |                    | 0.8 | 0.1 | 0.2 | 25.2 | 1.16 | 21.2 | 6.4 | 102.4 | 65.0 | 2.2        | 2.1        |
|           | 3.4                   | 0.7 | 1.5 | 14.7                      | 13.3 | 1.87 | 21.1 | 7.9  | 132.4 | 6.0        | 5.7                | 0.8 | 0.1 | 0.2 | 25.2 | 1.16 | 21.2 | 6.4 | 102.4 | 65.0 | 2.2        | 2.1        |
|           | 4.5                   | 1.0 | 2.4 | 15.0                      | 13.3 | 1.80 | 21.1 | 8.3  | 129.4 | 5.6        | 5.3                | 0.8 | 0.1 | 0.2 | 25.2 | 1.16 | 21.2 | 6.4 | 102.4 | 65.0 | 2.2        | 2.1        |

Interpolation is permissible; extrapolation is not.

All entering air conditions are 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.

All performance is based upon the lower voltage of dual voltage rated units.

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

See performance correction tables for operating conditions other than those listed above.

See Performance Data Selection Notes for operation within the shaded areas.

# GT-PCS Split (50YGS and 50YGP) Series

## Performance Data — 50YGS/50YGP026 Full Load

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

| EWT<br>°F | Cooling - EAT 80/67°F |     |     |                           |      |      |      |      |       |            |            | Heating - EAT 70°F |     |     |      |      |      |     |       |      |            |            |
|-----------|-----------------------|-----|-----|---------------------------|------|------|------|------|-------|------------|------------|--------------------|-----|-----|------|------|------|-----|-------|------|------------|------------|
|           | GPM                   | WPD |     | TC                        | SC   | kW   | HR   | EER  | LWT   | YGS<br>HWC | YGP<br>HWC | GPM                | WPD |     | HC   | kW   | HE   | COP | LAT   | LWT  | YGS<br>HWC | YGP<br>HWC |
|           |                       | PSI | FT  |                           |      |      |      |      |       |            |            |                    | PSI | FT  |      |      |      |     |       |      |            |            |
| 20        | 1.3                   | 0.6 | 1.4 | 29.5                      | 20.6 | 1.20 | 33.6 | 24.5 | 70.0  | 1.4        | 1.3        | 6.0                | 3.7 | 8.6 | 16.2 | 1.36 | 11.5 | 3.5 | 85.6  | 16.2 | 1.6        | 1.5        |
| 30        | 1.7                   | 0.5 | 1.1 | 29.5                      | 20.6 | 1.20 | 33.6 | 24.5 | 70.0  | 1.4        | 1.3        | 3.0                | 1.1 | 2.5 | 18.2 | 1.39 | 13.5 | 3.8 | 87.8  | 21.0 | 1.7        | 1.6        |
|           | 1.7                   | 0.5 | 1.1 | 29.5                      | 20.6 | 1.20 | 33.6 | 24.5 | 70.0  | 1.4        | 1.3        | 4.5                | 2.0 | 4.6 | 19.2 | 1.41 | 14.4 | 4.0 | 88.9  | 23.6 | 1.9        | 1.8        |
|           | 1.7                   | 0.5 | 1.1 | 29.5                      | 20.6 | 1.20 | 33.6 | 24.5 | 70.0  | 1.4        | 1.3        | 6.0                | 3.1 | 7.1 | 19.8 | 1.42 | 14.9 | 4.1 | 89.5  | 25.0 | 1.9        | 1.8        |
| 40        | 2.2                   | 0.5 | 1.2 | 29.5                      | 20.6 | 1.20 | 33.6 | 24.5 | 70.0  | 1.4        | 1.3        | 3.0                | 0.9 | 2.0 | 21.3 | 1.45 | 16.4 | 4.3 | 91.2  | 29.1 | 2.1        | 2.0        |
|           | 2.2                   | 0.5 | 1.2 | 29.5                      | 20.6 | 1.20 | 33.6 | 24.5 | 70.0  | 1.4        | 1.3        | 4.5                | 1.6 | 3.8 | 22.5 | 1.47 | 17.5 | 4.5 | 92.4  | 32.2 | 2.2        | 2.1        |
|           | 2.2                   | 0.5 | 1.2 | 29.5                      | 20.6 | 1.20 | 33.6 | 24.5 | 70.0  | 1.4        | 1.3        | 6.0                | 2.6 | 6.0 | 23.1 | 1.48 | 18.0 | 4.6 | 93.1  | 34.0 | 2.3        | 2.2        |
| 50        | 3.0                   | 0.7 | 1.6 | 29.3                      | 20.6 | 1.23 | 33.5 | 23.8 | 72.3  | 1.5        | 1.4        | 3.0                | 0.7 | 1.6 | 24.2 | 1.50 | 19.1 | 4.7 | 94.3  | 37.3 | 2.5        | 2.4        |
|           | 3.4                   | 0.8 | 1.9 | 29.5                      | 20.6 | 1.20 | 33.6 | 24.5 | 70.0  | 1.4        | 1.3        | 4.5                | 1.4 | 3.2 | 25.4 | 1.53 | 20.2 | 4.9 | 95.6  | 41.0 | 2.6        | 2.5        |
|           | 3.4                   | 0.8 | 1.9 | 29.5                      | 20.6 | 1.20 | 33.6 | 24.5 | 70.0  | 1.4        | 1.3        | 6.0                | 2.3 | 5.2 | 26.0 | 1.54 | 20.8 | 5.0 | 96.3  | 38.4 | 2.7        | 2.6        |
| 60        | 3.0                   | 0.7 | 1.5 | 28.2                      | 20.1 | 1.36 | 32.8 | 20.8 | 81.9  | 1.9        | 1.8        | 3.0                | 0.7 | 1.5 | 26.8 | 1.56 | 21.5 | 5.1 | 97.1  | 45.7 | 2.8        | 2.7        |
|           | 4.5                   | 1.3 | 2.9 | 29.0                      | 20.5 | 1.26 | 33.4 | 23.0 | 74.8  | 1.6        | 1.5        | 4.5                | 1.3 | 2.9 | 28.0 | 1.58 | 22.6 | 5.2 | 98.5  | 49.9 | 3.0        | 2.9        |
|           | 6.0                   | 2.0 | 4.7 | 29.4                      | 20.6 | 1.22 | 33.5 | 24.2 | 71.2  | 1.4        | 1.3        | 6.0                | 2.0 | 4.7 | 28.7 | 1.59 | 23.2 | 5.3 | 99.1  | 52.3 | 3.1        | 2.9        |
| 70        | 3.0                   | 0.6 | 1.5 | 26.7                      | 19.4 | 1.50 | 31.9 | 17.8 | 91.2  | 2.4        | 2.3        | 3.0                | 0.6 | 1.5 | 29.2 | 1.60 | 23.7 | 5.3 | 99.7  | 54.2 | 3.2        | 3.0        |
|           | 4.5                   | 1.2 | 2.7 | 27.8                      | 19.9 | 1.39 | 32.6 | 19.9 | 84.5  | 2.0        | 1.9        | 4.5                | 1.2 | 2.7 | 30.3 | 1.63 | 24.8 | 5.5 | 101.0 | 59.0 | 3.4        | 3.2        |
|           | 6.0                   | 1.9 | 4.4 | 28.3                      | 20.1 | 1.34 | 32.9 | 21.1 | 81.0  | 1.9        | 1.8        | 6.0                | 1.9 | 4.4 | 30.9 | 1.64 | 25.3 | 5.5 | 101.6 | 61.6 | 3.5        | 3.3        |
| 80        | 3.0                   | 0.7 | 1.5 | 25.1                      | 18.6 | 1.67 | 30.8 | 15.0 | 100.5 | 3.1        | 2.9        | 3.0                | 0.7 | 1.5 | 31.2 | 1.65 | 25.6 | 5.5 | 101.9 | 62.9 | 3.5        | 3.3        |
|           | 4.5                   | 1.2 | 2.7 | 26.3                      | 19.2 | 1.55 | 31.5 | 16.9 | 94.0  | 2.6        | 2.5        | 3.5                | 0.8 | 1.8 | 31.6 | 1.66 | 26.0 | 5.6 | 102.4 | 65.0 | 3.6        | 3.4        |
|           | 6.0                   | 1.8 | 4.2 | 26.8                      | 19.5 | 1.49 | 31.9 | 18.0 | 90.6  | 2.4        | 2.3        | 3.5                | 0.8 | 1.8 | 31.6 | 1.66 | 26.0 | 5.6 | 102.4 | 65.0 | 3.6        | 3.4        |
| 90        | 3.0                   | 0.7 | 1.6 | 23.3                      | 17.8 | 1.87 | 29.7 | 12.5 | 109.8 | 3.8        | 3.6        | 2.1                | 0.5 | 1.2 | 31.6 | 1.66 | 26.0 | 5.6 | 102.4 | 65.0 | 3.6        | 3.4        |
|           | 4.5                   | 1.2 | 2.7 | 24.5                      | 18.3 | 1.73 | 30.4 | 14.1 | 103.5 | 3.3        | 3.1        | 2.1                | 0.5 | 1.2 | 31.6 | 1.66 | 26.0 | 5.6 | 102.4 | 65.0 | 3.6        | 3.4        |
|           | 6.0                   | 1.8 | 4.1 | 25.1                      | 18.6 | 1.67 | 30.8 | 15.1 | 100.3 | 3.0        | 2.9        | 2.1                | 0.5 | 1.2 | 31.6 | 1.66 | 26.0 | 5.6 | 102.4 | 65.0 | 3.6        | 3.4        |
| 100       | 3.0                   | 0.7 | 1.6 | 21.7                      | 16.9 | 2.12 | 28.9 | 10.2 | 119.3 | 4.6        | 4.4        | 1.5                | 0.4 | 0.9 | 31.6 | 1.66 | 26.0 | 5.6 | 102.4 | 65.0 | 3.6        | 3.4        |
|           | 4.5                   | 1.2 | 2.7 | 22.8                      | 17.5 | 1.95 | 29.4 | 11.6 | 113.1 | 4.0        | 3.8        | 1.5                | 0.4 | 0.9 | 31.6 | 1.66 | 26.0 | 5.6 | 102.4 | 65.0 | 3.6        | 3.4        |
|           | 6.0                   | 1.8 | 4.1 | 23.3                      | 17.7 | 1.88 | 29.7 | 12.4 | 109.9 | 3.8        | 3.6        | 1.5                | 0.4 | 0.9 | 31.6 | 1.66 | 26.0 | 5.6 | 102.4 | 65.0 | 3.6        | 3.4        |
| 110       | 3.0                   | 0.7 | 1.5 | 20.2                      | 16.3 | 2.42 | 28.5 | 8.3  | 129.0 | 5.5        | 5.2        | 1.2                | 0.3 | 0.7 | 31.6 | 1.66 | 26.0 | 5.6 | 102.4 | 65.0 | 3.6        | 3.4        |
|           | 4.5                   | 1.1 | 2.6 | 21.1                      | 16.7 | 2.22 | 28.7 | 9.5  | 122.7 | 4.9        | 4.7        | 1.2                | 0.3 | 0.7 | 31.6 | 1.66 | 26.0 | 5.6 | 102.4 | 65.0 | 3.6        | 3.4        |
|           | 6.0                   | 1.7 | 4.0 | 21.6                      | 16.9 | 2.13 | 28.9 | 10.1 | 119.6 | 4.6        | 4.4        | 1.2                | 0.3 | 0.7 | 31.6 | 1.66 | 26.0 | 5.6 | 102.4 | 65.0 | 3.6        | 3.4        |
| 120       | 3.0                   | 0.5 | 1.2 | Operation Not Recommended |      |      |      |      |       |            |            | 0.9                | 0.1 | 0.2 | 31.6 | 1.66 | 26.0 | 5.6 | 102.4 | 65.0 | 3.6        | 3.4        |
|           | 4.5                   | 1.0 | 2.4 | 19.7                      | 16.1 | 2.55 | 28.4 | 7.8  | 132.6 | 5.8        | 5.5        | 0.9                | 0.1 | 0.2 | 31.6 | 1.66 | 26.0 | 5.6 | 102.4 | 65.0 | 3.6        | 3.4        |
|           | 6.0                   | 1.7 | 3.9 | 20.1                      | 16.3 | 2.44 | 28.4 | 8.3  | 129.5 | 5.5        | 5.2        | 0.9                | 0.1 | 0.2 | 31.6 | 1.66 | 26.0 | 5.6 | 102.4 | 65.0 | 3.6        | 3.4        |

Interpolation is permissible; extrapolation is not.

All entering air conditions are 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.

All performance is based upon the lower voltage of dual voltage rated units.

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

See performance correction tables for operating conditions other than those listed above.

See Performance Data Selection Notes for operation within the shaded areas.

## Performance Data — 50YGS/50YGP038 Part Load

1050 CFM Nominal (Rated) Airflow Cooling, 1050 CFM Nominal (Rated) Airflow Heating

| EWT<br>°F | Cooling - EAT 80/67°F |     |     |                           |      |      |      |      |       |            | Heating - EAT 70°F |     |     |      |      |      |      |     |       |      |            |            |
|-----------|-----------------------|-----|-----|---------------------------|------|------|------|------|-------|------------|--------------------|-----|-----|------|------|------|------|-----|-------|------|------------|------------|
|           | GPM                   | WPD |     | TC                        | SC   | kW   | HR   | EER  | LWT   | YGS<br>HWC | YGP<br>HWC         | GPM | WPD |      | HC   | kW   | HE   | COP | LAT   | LWT  | YGS<br>HWC | YGP<br>HWC |
|           |                       | PSI | FT  |                           |      |      |      |      |       |            |                    |     | PSI | FT   |      |      |      |     |       |      |            |            |
| 20        | 1.5                   | 1.1 | 2.5 | 32.7                      | 23.8 | 1.12 | 36.5 | 29.3 | 70.0  | 1.2        | 1.1                | 6.0 | 4.9 | 11.2 | 16.5 | 1.46 | 11.6 | 3.3 | 83.3  | 16.2 | 1.7        | 1.6        |
| 30        | 1.8                   | 0.7 | 1.7 | 32.7                      | 23.8 | 1.12 | 36.5 | 29.3 | 70.0  | 1.2        | 1.1                | 3.0 | 1.5 | 3.4  | 18.4 | 1.47 | 13.4 | 3.7 | 85.0  | 21.1 | 1.8        | 1.7        |
|           | 1.8                   | 0.7 | 1.7 | 32.7                      | 23.8 | 1.12 | 36.5 | 29.3 | 70.0  | 1.2        | 1.1                | 4.5 | 2.6 | 6.0  | 19.4 | 1.47 | 14.4 | 3.9 | 85.9  | 23.6 | 1.9        | 1.8        |
|           | 1.8                   | 0.7 | 1.7 | 32.7                      | 23.8 | 1.12 | 36.5 | 29.3 | 70.0  | 1.2        | 1.1                | 6.0 | 3.8 | 8.9  | 19.9 | 1.47 | 14.9 | 4.0 | 86.4  | 25.0 | 2.0        | 1.9        |
| 40        | 2.4                   | 0.7 | 1.7 | 32.7                      | 23.8 | 1.12 | 36.5 | 29.3 | 70.0  | 1.2        | 1.1                | 3.0 | 1.1 | 2.5  | 21.5 | 1.48 | 16.4 | 4.2 | 87.8  | 29.1 | 2.1        | 2.0        |
|           | 2.4                   | 0.7 | 1.7 | 32.7                      | 23.8 | 1.12 | 36.5 | 29.3 | 70.0  | 1.2        | 1.1                | 4.5 | 2.0 | 4.7  | 22.7 | 1.49 | 17.6 | 4.5 | 88.9  | 32.2 | 2.2        | 2.1        |
|           | 2.4                   | 0.7 | 1.7 | 32.7                      | 23.8 | 1.12 | 36.5 | 29.3 | 70.0  | 1.2        | 1.1                | 6.0 | 3.1 | 7.2  | 23.3 | 1.49 | 18.3 | 4.6 | 89.6  | 33.9 | 2.3        | 2.2        |
| 50        | 3.0                   | 0.9 | 2.0 | 32.3                      | 23.6 | 1.19 | 36.3 | 27.2 | 74.2  | 1.3        | 1.2                | 3.0 | 0.9 | 2.0  | 24.6 | 1.50 | 19.4 | 4.8 | 90.7  | 37.0 | 2.4        | 2.3        |
|           | 3.7                   | 1.2 | 2.8 | 32.7                      | 23.8 | 1.12 | 36.5 | 29.3 | 70.0  | 1.2        | 1.1                | 4.5 | 1.7 | 3.9  | 26.0 | 1.51 | 20.9 | 5.1 | 92.0  | 40.7 | 2.5        | 2.4        |
|           | 3.7                   | 1.2 | 2.8 | 32.7                      | 23.8 | 1.12 | 36.5 | 29.3 | 70.0  | 1.2        | 1.1                | 6.0 | 2.7 | 6.2  | 26.8 | 1.51 | 21.7 | 5.2 | 92.8  | 42.8 | 2.6        | 2.5        |
| 60        | 3.0                   | 0.8 | 1.8 | 30.9                      | 23.1 | 1.37 | 35.6 | 22.6 | 83.7  | 1.9        | 1.8                | 3.0 | 0.8 | 1.8  | 27.7 | 1.52 | 22.5 | 5.4 | 93.6  | 45.0 | 2.7        | 2.6        |
|           | 4.5                   | 1.5 | 3.5 | 32.1                      | 23.5 | 1.22 | 36.2 | 26.2 | 76.1  | 1.4        | 1.3                | 4.5 | 1.5 | 3.5  | 29.4 | 1.53 | 24.2 | 5.6 | 95.2  | 49.2 | 2.8        | 2.7        |
|           | 6.0                   | 2.4 | 5.6 | 32.5                      | 23.7 | 1.15 | 36.4 | 28.2 | 72.1  | 1.3        | 1.2                | 6.0 | 2.4 | 5.6  | 30.4 | 1.53 | 25.1 | 5.8 | 96.1  | 51.6 | 2.9        | 2.8        |
| 70        | 3.0                   | 0.8 | 1.9 | 29.2                      | 22.3 | 1.58 | 34.6 | 18.4 | 93.1  | 2.7        | 2.6                | 3.0 | 0.8 | 1.9  | 30.9 | 1.54 | 25.7 | 5.9 | 96.5  | 52.9 | 2.9        | 2.8        |
|           | 4.5                   | 1.5 | 3.4 | 30.6                      | 22.9 | 1.41 | 35.4 | 21.6 | 85.7  | 2.1        | 2.0                | 4.5 | 1.5 | 3.4  | 32.9 | 1.55 | 27.6 | 6.2 | 98.4  | 57.7 | 3.0        | 2.9        |
|           | 6.0                   | 2.3 | 5.3 | 31.2                      | 23.2 | 1.33 | 35.8 | 23.4 | 81.9  | 1.8        | 1.7                | 6.0 | 2.3 | 5.3  | 34.1 | 1.55 | 28.8 | 6.4 | 99.5  | 60.4 | 3.1        | 2.9        |
| 80        | 3.0                   | 0.9 | 2.0 | 27.2                      | 21.4 | 1.82 | 33.4 | 14.9 | 102.3 | 3.7        | 3.5                | 3.0 | 0.9 | 2.0  | 34.2 | 1.56 | 28.9 | 6.4 | 99.6  | 60.7 | 3.1        | 2.9        |
|           | 4.5                   | 1.5 | 3.4 | 28.8                      | 22.1 | 1.64 | 34.3 | 17.5 | 95.3  | 2.9        | 2.8                | 4.1 | 1.3 | 3.0  | 36.1 | 1.57 | 30.7 | 6.7 | 101.3 | 65.0 | 3.2        | 3.0        |
|           | 6.0                   | 2.2 | 5.2 | 29.5                      | 22.4 | 1.55 | 34.8 | 19.1 | 91.6  | 2.6        | 2.5                | 4.1 | 1.3 | 3.0  | 36.1 | 1.57 | 30.7 | 6.7 | 101.3 | 65.0 | 3.2        | 3.0        |
| 90        | 3.0                   | 0.9 | 2.1 | 25.0                      | 20.3 | 2.10 | 32.1 | 11.9 | 111.4 | 4.9        | 4.7                | 2.5 | 0.8 | 1.8  | 36.1 | 1.57 | 30.7 | 6.7 | 101.3 | 65.0 | 3.2        | 3.0        |
|           | 4.5                   | 1.5 | 3.5 | 26.6                      | 21.1 | 1.89 | 33.1 | 14.1 | 104.7 | 4.0        | 3.8                | 2.5 | 0.8 | 1.8  | 36.1 | 1.57 | 30.7 | 6.7 | 101.3 | 65.0 | 3.2        | 3.0        |
|           | 6.0                   | 2.2 | 5.2 | 27.4                      | 21.5 | 1.79 | 33.6 | 15.3 | 101.2 | 3.6        | 3.4                | 2.5 | 0.8 | 1.8  | 36.1 | 1.57 | 30.7 | 6.7 | 101.3 | 65.0 | 3.2        | 3.0        |
| 100       | 3.0                   | 0.9 | 2.1 | 22.6                      | 19.0 | 2.40 | 30.8 | 9.4  | 120.5 | 6.3        | 6.0                | 1.8 | 0.6 | 1.3  | 36.1 | 1.57 | 30.7 | 6.7 | 101.3 | 65.0 | 3.2        | 3.0        |
|           | 4.5                   | 1.5 | 3.5 | 24.3                      | 19.9 | 2.18 | 31.7 | 11.1 | 114.1 | 5.2        | 4.9                | 1.8 | 0.6 | 1.3  | 36.1 | 1.57 | 30.7 | 6.7 | 101.3 | 65.0 | 3.2        | 3.0        |
|           | 6.0                   | 2.2 | 5.1 | 25.1                      | 20.4 | 2.07 | 32.2 | 12.1 | 110.7 | 4.8        | 4.6                | 1.8 | 0.6 | 1.3  | 36.1 | 1.57 | 30.7 | 6.7 | 101.3 | 65.0 | 3.2        | 3.0        |
| 110       | 3.0                   | 0.8 | 1.8 | 20.1                      | 17.7 | 2.73 | 29.5 | 7.4  | 129.6 | 7.9        | 7.5                | 1.4 | 0.3 | 0.7  | 36.1 | 1.57 | 30.7 | 6.7 | 101.3 | 65.0 | 3.2        | 3.0        |
|           | 4.5                   | 1.4 | 3.2 | 21.8                      | 18.6 | 2.50 | 30.3 | 8.7  | 123.5 | 6.7        | 6.4                | 1.4 | 0.3 | 0.7  | 36.1 | 1.57 | 30.7 | 6.7 | 101.3 | 65.0 | 3.2        | 3.0        |
|           | 6.0                   | 2.1 | 4.9 | 22.6                      | 19.1 | 2.39 | 30.8 | 9.5  | 120.3 | 6.2        | 5.9                | 1.4 | 0.3 | 0.7  | 36.1 | 1.57 | 30.7 | 6.7 | 101.3 | 65.0 | 3.2        | 3.0        |
| 120       | 3.0                   | 0.5 | 1.1 | Operation Not Recommended |      |      |      |      |       |            |                    | 1.1 | 0.1 | 0.1  | 36.1 | 1.57 | 30.7 | 6.7 | 101.3 | 65.0 | 3.2        | 3.0        |
|           | 4.5                   | 1.1 | 2.6 |                           |      |      |      |      |       |            |                    | 1.1 | 0.1 | 0.1  | 36.1 | 1.57 | 30.7 | 6.7 | 101.3 | 65.0 | 3.2        | 3.0        |
|           | 6.0                   | 1.9 | 4.4 | 20.1                      | 17.7 | 2.74 | 29.4 | 7.3  | 129.8 | 7.8        | 7.4                | 1.1 | 0.1 | 0.1  | 36.1 | 1.57 | 30.7 | 6.7 | 101.3 | 65.0 | 3.2        | 3.0        |

Interpolation is permissible; extrapolation is not.

All entering air conditions are 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.

All performance is based upon the lower voltage of dual voltage rated units.

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

See performance correction tables for operating conditions other than those listed above.

See Performance Data Selection Notes for operation within the shaded areas.

# GT-PCS Split (50YGS and 50YGP) Series

## Performance Data — 50YGS/50YGP038 Full Load

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

| EWT<br>°F | Cooling - EAT 80/67°F |     |      |                                       |      |      |      |      |       |            |            | Heating - EAT 70°F |     |      |      |      |      |     |       |      |            |            |
|-----------|-----------------------|-----|------|---------------------------------------|------|------|------|------|-------|------------|------------|--------------------|-----|------|------|------|------|-----|-------|------|------------|------------|
|           | GPM                   | WPD |      | TC                                    | SC   | kW   | HR   | EER  | LWT   | YGS<br>HWC | YGP<br>HWC | GPM                | WPD |      | HC   | kW   | HE   | COP | LAT   | LWT  | YGS<br>HWC | YGP<br>HWC |
|           |                       | PSI | FT   |                                       |      |      |      |      |       |            |            |                    | PSI | FT   |      |      |      |     |       |      |            |            |
| 20        | 2.1                   | 1.5 | 3.4  | 45.7                                  | 31.2 | 1.88 | 52.2 | 24.4 | 70.0  | 1.9        | 1.8        | 9.0                | 8.3 | 19.2 | 24.7 | 1.98 | 17.9 | 3.5 | 86.2  | 16.0 | 2.1        | 2.0        |
| 30        | 2.6                   | 1.2 | 2.8  | 45.7                                  | 31.2 | 1.88 | 52.2 | 24.4 | 70.0  | 1.9        | 1.8        | 4.5                | 2.6 | 6.0  | 27.3 | 2.02 | 20.4 | 3.6 | 88.1  | 20.9 | 2.4        | 2.3        |
|           | 2.6                   | 1.2 | 2.8  | 45.7                                  | 31.2 | 1.88 | 52.2 | 24.4 | 70.0  | 1.9        | 1.8        | 6.8                | 4.6 | 10.6 | 28.6 | 2.05 | 21.6 | 3.6 | 89.2  | 23.6 | 2.6        | 2.5        |
|           | 2.6                   | 1.2 | 2.8  | 45.7                                  | 31.2 | 1.88 | 52.2 | 24.4 | 70.0  | 1.9        | 1.8        | 9.0                | 6.9 | 16.0 | 29.4 | 2.06 | 22.3 | 3.6 | 89.7  | 25.0 | 2.6        | 2.5        |
| 40        | 3.5                   | 1.4 | 3.2  | 45.7                                  | 31.2 | 1.88 | 52.2 | 24.4 | 70.0  | 1.9        | 1.8        | 4.5                | 2.0 | 4.7  | 31.5 | 2.10 | 24.3 | 4.1 | 91.3  | 29.2 | 2.9        | 2.8        |
|           | 3.5                   | 1.4 | 3.2  | 45.7                                  | 31.2 | 1.88 | 52.2 | 24.4 | 70.0  | 1.9        | 1.8        | 6.8                | 3.8 | 8.8  | 33.1 | 2.13 | 25.8 | 4.1 | 92.5  | 32.3 | 3.1        | 2.9        |
|           | 3.5                   | 1.4 | 3.2  | 45.7                                  | 31.2 | 1.88 | 52.2 | 24.4 | 70.0  | 1.9        | 1.8        | 9.0                | 5.9 | 13.6 | 34.0 | 2.15 | 26.7 | 3.9 | 93.1  | 34.1 | 3.2        | 3.0        |
| 50        | 4.5                   | 1.7 | 3.9  | 45.5                                  | 31.1 | 1.93 | 52.1 | 23.5 | 73.1  | 1.9        | 1.8        | 4.5                | 1.7 | 3.9  | 35.7 | 2.18 | 28.3 | 4.3 | 94.4  | 37.4 | 3.4        | 3.2        |
|           | 5.2                   | 2.1 | 4.9  | 45.7                                  | 31.2 | 1.88 | 52.2 | 24.4 | 70.0  | 1.9        | 1.8        | 6.8                | 3.3 | 7.6  | 37.6 | 2.22 | 30.0 | 4.4 | 95.8  | 41.1 | 3.6        | 3.4        |
|           | 5.2                   | 2.1 | 4.9  | 45.7                                  | 31.2 | 1.88 | 52.2 | 24.4 | 70.0  | 1.9        | 1.8        | 9.0                | 5.2 | 11.9 | 38.6 | 2.24 | 31.0 | 4.5 | 96.6  | 43.1 | 3.7        | 3.5        |
| 60        | 4.5                   | 1.5 | 3.5  | 44.0                                  | 30.6 | 2.12 | 51.2 | 20.7 | 82.8  | 2.6        | 2.5        | 4.5                | 1.5 | 3.5  | 40.0 | 2.27 | 32.2 | 4.6 | 97.5  | 45.7 | 3.9        | 3.7        |
|           | 6.8                   | 2.9 | 6.8  | 45.2                                  | 31.0 | 1.97 | 51.9 | 22.9 | 75.4  | 2.1        | 2.0        | 6.8                | 2.9 | 6.8  | 42.2 | 2.32 | 34.2 | 4.7 | 99.2  | 49.9 | 4.1        | 3.9        |
|           | 9.0                   | 4.7 | 10.8 | 45.6                                  | 31.1 | 1.90 | 52.1 | 24.0 | 71.6  | 1.9        | 1.8        | 9.0                | 4.7 | 10.8 | 43.4 | 2.35 | 35.4 | 4.7 | 100.0 | 52.1 | 4.2        | 4.0        |
| 70        | 4.5                   | 1.5 | 3.4  | 41.8                                  | 29.8 | 2.34 | 49.8 | 17.9 | 92.1  | 3.4        | 3.2        | 4.5                | 1.5 | 3.4  | 44.3 | 2.37 | 36.2 | 4.8 | 100.7 | 53.9 | 4.4        | 4.2        |
|           | 6.8                   | 2.8 | 6.4  | 43.5                                  | 30.4 | 2.17 | 50.9 | 20.0 | 85.1  | 2.8        | 2.7        | 6.8                | 2.8 | 6.4  | 46.8 | 2.42 | 38.5 | 4.9 | 102.6 | 58.6 | 4.6        | 4.4        |
|           | 9.0                   | 4.4 | 10.1 | 44.2                                  | 30.7 | 2.09 | 51.4 | 21.1 | 81.4  | 2.5        | 2.4        | 9.0                | 4.4 | 10.1 | 48.2 | 2.46 | 39.8 | 5.0 | 103.6 | 61.1 | 4.7        | 4.5        |
| 80        | 4.5                   | 1.5 | 3.4  | 39.2                                  | 28.7 | 2.61 | 48.1 | 15.0 | 101.4 | 4.3        | 4.1        | 4.5                | 1.5 | 3.4  | 48.7 | 2.47 | 40.3 | 5.0 | 104.0 | 62.1 | 4.8        | 4.6        |
|           | 6.8                   | 2.7 | 6.2  | 41.1                                  | 29.5 | 2.41 | 49.4 | 17.1 | 94.6  | 3.7        | 3.5        | 5.6                | 2.0 | 4.7  | 50.4 | 2.51 | 41.8 | 5.9 | 105.2 | 65.0 | 4.9        | 4.7        |
|           | 9.0                   | 4.2 | 9.7  | 42.1                                  | 29.9 | 2.31 | 50.0 | 18.2 | 91.1  | 3.3        | 3.1        | 5.6                | 2.0 | 4.7  | 50.4 | 2.51 | 41.8 | 5.9 | 105.2 | 65.0 | 4.9        | 4.7        |
| 90        | 4.5                   | 1.5 | 3.5  | 36.4                                  | 27.5 | 2.93 | 46.4 | 12.4 | 110.6 | 5.4        | 5.1        | 3.3                | 1.0 | 2.4  | 50.4 | 2.51 | 41.8 | 5.9 | 105.2 | 65.0 | 4.9        | 4.7        |
|           | 6.8                   | 2.7 | 6.2  | 38.4                                  | 28.4 | 2.70 | 47.6 | 14.2 | 104.1 | 4.7        | 4.5        | 3.3                | 1.0 | 2.4  | 50.4 | 2.51 | 41.8 | 5.9 | 105.2 | 65.0 | 4.9        | 4.7        |
|           | 9.0                   | 4.1 | 9.5  | 39.4                                  | 28.8 | 2.59 | 48.2 | 15.2 | 100.7 | 4.3        | 4.1        | 3.3                | 1.0 | 2.4  | 50.4 | 2.51 | 41.8 | 5.9 | 105.2 | 65.0 | 4.9        | 4.7        |
| 100       | 4.5                   | 1.5 | 3.5  | 33.5                                  | 26.1 | 3.32 | 44.9 | 10.1 | 119.9 | 6.6        | 6.3        | 2.4                | 0.7 | 1.7  | 50.4 | 2.51 | 41.8 | 5.9 | 105.2 | 65.0 | 4.9        | 4.7        |
|           | 6.8                   | 2.7 | 6.1  | 35.5                                  | 27.0 | 3.05 | 45.9 | 11.6 | 113.6 | 5.8        | 5.5        | 2.4                | 0.7 | 1.7  | 50.4 | 2.51 | 41.8 | 5.9 | 105.2 | 65.0 | 4.9        | 4.7        |
|           | 9.0                   | 4.1 | 9.4  | 36.5                                  | 27.5 | 2.92 | 46.4 | 12.5 | 110.3 | 5.4        | 5.1        | 2.4                | 0.7 | 1.7  | 50.4 | 2.51 | 41.8 | 5.9 | 105.2 | 65.0 | 4.9        | 4.7        |
| 110       | 4.5                   | 1.4 | 3.2  | 30.9                                  | 24.8 | 3.81 | 43.9 | 8.1  | 129.5 | 8.1        | 7.7        | 1.9                | 0.4 | 1.0  | 50.4 | 2.51 | 41.8 | 5.9 | 105.2 | 65.0 | 4.9        | 4.7        |
|           | 6.8                   | 2.6 | 6.0  | 32.6                                  | 25.6 | 3.48 | 44.5 | 9.4  | 123.2 | 7.1        | 6.7        | 1.9                | 0.4 | 1.0  | 50.4 | 2.51 | 41.8 | 5.9 | 105.2 | 65.0 | 4.9        | 4.7        |
|           | 9.0                   | 4.0 | 9.2  | 33.5                                  | 26.1 | 3.32 | 44.9 | 10.1 | 120.0 | 6.7        | 6.4        | 1.9                | 0.4 | 1.0  | 50.4 | 2.51 | 41.8 | 5.9 | 105.2 | 65.0 | 4.9        | 4.7        |
| 120       | 4.5                   | 1.1 | 2.6  | Operation Not Recommended             |      |      |      |      |       |            |            | 1.5                | 0.1 | 0.1  | 50.4 | 2.51 | 41.8 | 5.9 | 105.2 | 65.0 | 4.9        | 4.7        |
|           | 6.8                   | 2.4 | 5.5  |                                       |      |      |      |      |       |            |            | 1.5                | 0.1 | 0.1  | 50.4 | 2.51 | 41.8 | 5.9 | 105.2 | 65.0 | 4.9        | 4.7        |
|           | 9.0                   | 3.9 | 8.9  | 30.8 24.7 3.82 43.9 8.1 129.7 8.1 7.7 |      |      |      |      |       |            |            | 1.5                | 0.1 | 0.1  | 50.4 | 2.51 | 41.8 | 5.9 | 105.2 | 65.0 | 4.9        | 4.7        |

Interpolation is permissible; extrapolation is not.

All entering air conditions are 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.

All performance is based upon the lower voltage of dual voltage rated units.

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

See performance correction tables for operating conditions other than those listed above.

See Performance Data Selection Notes for operation within the shaded areas.

## Performance Data — 50YGS/50YGP049 Part Load

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

| EWT<br>°F | Cooling - EAT 80/67°F |     |     |                           |      |      |      |      |       |            | Heating - EAT 70°F |     |     |     |      |      |      |     |       |      |            |            |
|-----------|-----------------------|-----|-----|---------------------------|------|------|------|------|-------|------------|--------------------|-----|-----|-----|------|------|------|-----|-------|------|------------|------------|
|           | GPM                   | WPD |     | TC                        | SC   | kW   | HR   | EER  | LWT   | YGS<br>HWC | YGP<br>HWC         | GPM | WPD |     | HC   | kW   | HE   | COP | LAT   | LWT  | YGS<br>HWC | YGP<br>HWC |
|           |                       | PSI | FT  |                           |      |      |      |      |       |            |                    |     | PSI | FT  |      |      |      |     |       |      |            |            |
| 20        | 2.0                   | 0.1 | 0.2 | 43.4                      | 30.5 | 1.64 | 49.0 | 26.5 | 70.0  | 1.5        | 1.4                | 9.0 | 3.2 | 7.4 | 22.7 | 2.08 | 15.7 | 3.2 | 85.5  | 16.5 | 2.5        | 2.4        |
| 30        | 2.5                   | 0.1 | 0.1 | 43.4                      | 30.5 | 1.64 | 49.0 | 26.5 | 70.0  | 1.5        | 1.4                | 4.5 | 0.6 | 1.4 | 25.1 | 2.10 | 18.0 | 3.5 | 87.3  | 22.0 | 2.6        | 2.5        |
|           | 2.5                   | 0.1 | 0.1 | 43.4                      | 30.5 | 1.64 | 49.0 | 26.5 | 70.0  | 1.5        | 1.4                | 6.8 | 1.6 | 3.6 | 26.2 | 2.11 | 19.0 | 3.6 | 88.2  | 24.4 | 2.6        | 2.5        |
|           | 2.5                   | 0.1 | 0.1 | 43.4                      | 30.5 | 1.64 | 49.0 | 26.5 | 70.0  | 1.5        | 1.4                | 9.0 | 2.8 | 6.4 | 26.8 | 2.11 | 19.6 | 3.7 | 88.6  | 25.6 | 2.6        | 2.5        |
| 40        | 3.3                   | 0.1 | 0.3 | 43.4                      | 30.5 | 1.64 | 49.0 | 26.5 | 70.0  | 1.5        | 1.4                | 4.5 | 0.5 | 1.1 | 29.2 | 2.13 | 21.9 | 4.0 | 90.4  | 30.3 | 2.7        | 2.6        |
|           | 3.3                   | 0.1 | 0.3 | 43.4                      | 30.5 | 1.64 | 49.0 | 26.5 | 70.0  | 1.5        | 1.4                | 6.8 | 1.3 | 3.0 | 30.6 | 2.14 | 23.4 | 4.2 | 91.6  | 33.1 | 2.7        | 2.6        |
|           | 3.3                   | 0.1 | 0.3 | 43.4                      | 30.5 | 1.64 | 49.0 | 26.5 | 70.0  | 1.5        | 1.4                | 9.0 | 2.4 | 5.6 | 31.5 | 2.14 | 24.2 | 4.3 | 92.2  | 34.6 | 2.7        | 2.6        |
| 50        | 4.5                   | 0.4 | 0.9 | 43.2                      | 30.4 | 1.68 | 48.9 | 25.8 | 71.7  | 1.5        | 1.4                | 4.5 | 0.4 | 0.9 | 33.6 | 2.15 | 26.2 | 4.6 | 93.8  | 38.4 | 2.8        | 2.7        |
|           | 4.9                   | 0.5 | 1.2 | 43.4                      | 30.5 | 1.64 | 49.0 | 26.5 | 70.0  | 1.5        | 1.4                | 6.8 | 1.2 | 2.7 | 35.5 | 2.17 | 28.1 | 4.8 | 95.3  | 41.7 | 2.9        | 2.8        |
|           | 4.9                   | 0.5 | 1.2 | 43.4                      | 30.5 | 1.64 | 49.0 | 26.5 | 70.0  | 1.5        | 1.4                | 9.0 | 2.2 | 5.1 | 36.6 | 2.17 | 29.1 | 4.9 | 96.1  | 43.5 | 2.9        | 2.8        |
| 60        | 4.5                   | 0.4 | 0.8 | 41.4                      | 29.8 | 1.90 | 47.9 | 21.8 | 81.3  | 2.1        | 2.0                | 4.5 | 0.4 | 0.8 | 38.2 | 2.18 | 30.8 | 5.1 | 97.4  | 46.3 | 2.9        | 2.8        |
|           | 6.8                   | 1.1 | 2.5 | 42.7                      | 30.2 | 1.74 | 48.6 | 24.6 | 74.4  | 1.6        | 1.5                | 6.8 | 1.1 | 2.5 | 40.6 | 2.20 | 33.1 | 5.4 | 99.2  | 50.2 | 3.0        | 2.9        |
|           | 9.0                   | 2.0 | 4.7 | 43.3                      | 30.4 | 1.66 | 48.9 | 26.1 | 70.9  | 1.5        | 1.4                | 9.0 | 2.0 | 4.7 | 41.9 | 2.21 | 34.4 | 5.6 | 100.3 | 52.4 | 3.1        | 2.9        |
| 70        | 4.5                   | 0.4 | 0.9 | 39.3                      | 28.9 | 2.17 | 46.7 | 18.1 | 90.8  | 2.8        | 2.7                | 4.5 | 0.4 | 0.9 | 43.0 | 2.21 | 35.5 | 5.7 | 101.1 | 54.2 | 3.1        | 2.9        |
|           | 6.8                   | 1.1 | 2.4 | 40.9                      | 29.5 | 1.98 | 47.6 | 20.7 | 84.1  | 2.3        | 2.2                | 6.8 | 1.0 | 2.4 | 45.8 | 2.23 | 38.2 | 6.0 | 103.3 | 58.7 | 3.3        | 3.1        |
|           | 9.0                   | 2.0 | 4.5 | 41.6                      | 29.8 | 1.89 | 48.0 | 22.0 | 80.7  | 2.0        | 1.9                | 9.0 | 2.0 | 4.5 | 47.3 | 2.24 | 39.7 | 6.2 | 104.4 | 61.2 | 3.3        | 3.1        |
| 80        | 4.5                   | 0.4 | 0.9 | 36.8                      | 27.9 | 2.48 | 45.3 | 14.9 | 100.1 | 3.8        | 3.6                | 4.5 | 0.4 | 0.9 | 47.9 | 2.25 | 40.3 | 6.3 | 104.9 | 62.1 | 3.4        | 3.2        |
|           | 6.8                   | 1.1 | 2.4 | 38.6                      | 28.6 | 2.26 | 46.3 | 17.1 | 93.7  | 3.1        | 2.9                | 5.6 | 0.7 | 1.6 | 49.7 | 2.26 | 42.0 | 6.4 | 106.2 | 65.0 | 3.5        | 3.3        |
|           | 9.0                   | 1.9 | 4.4 | 39.4                      | 28.9 | 2.16 | 46.8 | 18.3 | 90.4  | 2.8        | 2.7                | 5.6 | 0.7 | 1.6 | 49.7 | 2.26 | 42.0 | 6.4 | 106.2 | 65.0 | 3.5        | 3.3        |
| 90        | 4.5                   | 0.4 | 1.0 | 34.0                      | 26.8 | 2.82 | 43.7 | 12.0 | 109.4 | 4.9        | 4.7                | 3.4 | 0.3 | 0.6 | 49.7 | 2.26 | 42.0 | 6.4 | 106.2 | 65.0 | 3.5        | 3.3        |
|           | 6.8                   | 1.1 | 2.4 | 35.9                      | 27.5 | 2.59 | 44.7 | 13.9 | 103.3 | 4.1        | 3.9                | 3.4 | 0.3 | 0.6 | 49.7 | 2.26 | 42.0 | 6.4 | 106.2 | 65.0 | 3.5        | 3.3        |
|           | 9.0                   | 1.9 | 4.4 | 36.8                      | 27.9 | 2.47 | 45.3 | 14.9 | 100.1 | 3.8        | 3.6                | 3.4 | 0.3 | 0.6 | 49.7 | 2.26 | 42.0 | 6.4 | 106.2 | 65.0 | 3.5        | 3.3        |
| 100       | 4.5                   | 0.4 | 1.0 | 31.0                      | 25.5 | 3.22 | 42.0 | 9.6  | 118.7 | 6.3        | 6.0                | 2.4 | 0.2 | 0.4 | 49.7 | 2.26 | 42.0 | 6.4 | 106.2 | 65.0 | 3.5        | 3.3        |
|           | 6.8                   | 1.1 | 2.4 | 33.0                      | 26.3 | 2.96 | 43.1 | 11.1 | 112.8 | 5.4        | 5.1                | 2.4 | 0.2 | 0.4 | 49.7 | 2.26 | 42.0 | 6.4 | 106.2 | 65.0 | 3.5        | 3.3        |
|           | 9.0                   | 1.9 | 4.3 | 33.9                      | 26.7 | 2.84 | 43.6 | 12.0 | 109.7 | 5.0        | 4.8                | 2.4 | 0.2 | 0.4 | 49.7 | 2.26 | 42.0 | 6.4 | 106.2 | 65.0 | 3.5        | 3.3        |
| 110       | 4.5                   | 0.4 | 0.9 | 27.8                      | 24.0 | 3.66 | 40.3 | 7.6  | 127.9 | 7.8        | 7.4                | 1.9 | 0.1 | 0.2 | 49.7 | 2.26 | 42.0 | 6.4 | 106.2 | 65.0 | 3.5        | 3.3        |
|           | 6.8                   | 1.0 | 2.4 | 29.8                      | 24.9 | 3.39 | 41.3 | 8.8  | 122.2 | 6.8        | 6.5                | 1.9 | 0.1 | 0.2 | 49.7 | 2.26 | 42.0 | 6.4 | 106.2 | 65.0 | 3.5        | 3.3        |
|           | 9.0                   | 1.8 | 4.3 | 30.8                      | 25.4 | 3.25 | 41.9 | 9.5  | 119.3 | 6.4        | 6.1                | 1.9 | 0.1 | 0.2 | 49.7 | 2.26 | 42.0 | 6.4 | 106.2 | 65.0 | 3.5        | 3.3        |
| 120       | 4.5                   | 0.3 | 0.7 | Operation Not Recommended |      |      |      |      |       |            |                    | 1.5 | 0.1 | 0.2 | 49.7 | 2.26 | 42.0 | 6.4 | 106.2 | 65.0 | 3.5        | 3.3        |
|           | 6.8                   | 0.9 | 2.2 | 26.4                      | 23.3 | 3.86 | 39.6 | 6.8  | 131.7 | 8.5        | 8.1                | 1.5 | 0.1 | 0.2 | 49.7 | 2.26 | 42.0 | 6.4 | 106.2 | 65.0 | 3.5        | 3.3        |
|           | 9.0                   | 1.8 | 4.1 | 27.4                      | 23.8 | 3.72 | 40.1 | 7.4  | 128.9 | 8.0        | 7.6                | 1.5 | 0.1 | 0.2 | 49.7 | 2.26 | 42.0 | 6.4 | 106.2 | 65.0 | 3.5        | 3.3        |

Interpolation is permissible; extrapolation is not.

All entering air conditions are 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.

All performance is based upon the lower voltage of dual voltage rated units.

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

See performance correction tables for operating conditions other than those listed above.

See Performance Data Selection Notes for operation within the shaded areas.

# GT-PCS Split (50YGS and 50YGP) Series

## Performance Data — 50YGS/50YGP049 Full Load

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

| EWT<br>°F | Cooling - EAT 80/67°F |     |     |                           |      |      |      |      |       |            |            | Heating - EAT 70°F |     |      |      |      |      |     |       |      |            |            |
|-----------|-----------------------|-----|-----|---------------------------|------|------|------|------|-------|------------|------------|--------------------|-----|------|------|------|------|-----|-------|------|------------|------------|
|           | GPM                   | WPD |     | TC                        | SC   | kW   | HR   | EER  | LWT   | YGS<br>HWC | YGP<br>HWC | GPM                | WPD |      | HC   | kW   | HE   | COP | LAT   | LWT  | YGS<br>HWC | YGP<br>HWC |
|           |                       | PSI | FT  |                           |      |      |      |      |       |            |            |                    | PSI | FT   |      |      |      |     |       |      |            |            |
| 20        | 2.7                   | 0.3 | 0.6 | 58.4                      | 39.0 | 2.55 | 67.1 | 22.9 | 70.0  | 2.3        | 2.2        | 12.0               | 5.3 | 12.1 | 33.3 | 2.77 | 23.9 | 3.5 | 88.5  | 16.0 | 3.3        | 3.1        |
| 30        | 3.4                   | 0.3 | 0.6 | 58.4                      | 39.0 | 2.55 | 67.1 | 22.9 | 70.0  | 2.3        | 2.2        | 6.0                | 1.2 | 2.8  | 36.0 | 2.81 | 26.4 | 3.8 | 90.2  | 21.2 | 3.5        | 3.3        |
|           | 3.4                   | 0.3 | 0.6 | 58.4                      | 39.0 | 2.55 | 67.1 | 22.9 | 70.0  | 2.3        | 2.2        | 9.0                | 2.8 | 6.4  | 37.5 | 2.84 | 27.8 | 3.9 | 91.1  | 23.8 | 3.5        | 3.3        |
|           | 3.4                   | 0.3 | 0.6 | 58.4                      | 39.0 | 2.55 | 67.1 | 22.9 | 70.0  | 2.3        | 2.2        | 12.0               | 4.7 | 10.8 | 38.4 | 2.85 | 28.7 | 3.9 | 91.6  | 25.2 | 3.6        | 3.4        |
| 40        | 4.5                   | 0.5 | 1.1 | 58.4                      | 39.0 | 2.55 | 67.1 | 22.9 | 70.0  | 2.3        | 2.2        | 6.0                | 1.0 | 2.3  | 41.2 | 2.90 | 31.3 | 4.2 | 93.4  | 29.6 | 3.7        | 3.5        |
|           | 4.5                   | 0.5 | 1.1 | 58.4                      | 39.0 | 2.55 | 67.1 | 22.9 | 70.0  | 2.3        | 2.2        | 9.0                | 2.4 | 5.6  | 43.3 | 2.94 | 33.3 | 4.3 | 94.7  | 32.6 | 3.8        | 3.6        |
|           | 4.5                   | 0.5 | 1.1 | 58.4                      | 39.0 | 2.55 | 67.1 | 22.9 | 70.0  | 2.3        | 2.2        | 12.0               | 4.2 | 9.7  | 44.5 | 2.96 | 34.4 | 4.4 | 95.4  | 34.3 | 3.9        | 3.7        |
| 50        | 6.0                   | 0.9 | 2.0 | 58.1                      | 38.9 | 2.60 | 66.9 | 22.3 | 72.3  | 2.4        | 2.3        | 6.0                | 0.9 | 2.0  | 47.1 | 3.01 | 36.8 | 4.6 | 97.0  | 37.7 | 4.0        | 3.8        |
|           | 6.7                   | 1.1 | 2.6 | 58.4                      | 39.0 | 2.55 | 67.1 | 22.9 | 70.0  | 2.3        | 2.2        | 9.0                | 2.2 | 5.1  | 49.8 | 3.06 | 39.3 | 4.8 | 98.6  | 41.3 | 4.1        | 3.9        |
|           | 6.7                   | 1.1 | 2.6 | 58.4                      | 39.0 | 2.55 | 67.1 | 22.9 | 70.0  | 2.3        | 2.2        | 12.0               | 3.9 | 9.0  | 51.3 | 3.09 | 40.7 | 4.9 | 99.6  | 43.2 | 4.2        | 4.0        |
| 60        | 6.0                   | 0.8 | 1.9 | 56.3                      | 38.3 | 2.85 | 66.0 | 19.8 | 82.0  | 2.9        | 2.8        | 6.0                | 0.8 | 1.9  | 53.3 | 3.13 | 42.6 | 5.0 | 100.8 | 45.8 | 4.4        | 4.2        |
|           | 9.0                   | 2.0 | 4.7 | 57.7                      | 38.8 | 2.66 | 66.7 | 21.7 | 74.8  | 2.5        | 2.4        | 9.0                | 2.0 | 4.7  | 56.4 | 3.20 | 45.5 | 5.2 | 102.8 | 49.9 | 4.5        | 4.3        |
|           | 12.0                  | 3.6 | 8.4 | 58.2                      | 39.0 | 2.57 | 67.0 | 22.6 | 71.2  | 2.3        | 2.2        | 12.0               | 3.6 | 8.4  | 58.2 | 3.24 | 47.1 | 5.3 | 103.8 | 52.1 | 4.6        | 4.4        |
| 70        | 6.0                   | 0.8 | 1.8 | 54.0                      | 37.4 | 3.14 | 64.8 | 17.2 | 91.6  | 3.7        | 3.5        | 6.0                | 0.8 | 1.8  | 59.5 | 3.27 | 48.4 | 5.3 | 104.7 | 53.9 | 4.8        | 4.6        |
|           | 9.0                   | 2.0 | 4.5 | 55.7                      | 38.1 | 2.92 | 65.7 | 19.1 | 84.6  | 3.1        | 2.9        | 9.0                | 2.0 | 4.5  | 63.0 | 3.34 | 51.6 | 5.5 | 106.8 | 58.5 | 5.0        | 4.8        |
|           | 12.0                  | 3.5 | 8.1 | 56.5                      | 38.4 | 2.82 | 66.1 | 20.0 | 81.0  | 2.9        | 2.8        | 12.0               | 3.5 | 8.1  | 64.9 | 3.39 | 53.4 | 5.6 | 108.0 | 61.1 | 5.1        | 4.8        |
| 80        | 6.0                   | 0.8 | 1.8 | 51.4                      | 36.4 | 3.48 | 63.3 | 14.8 | 101.1 | 4.5        | 4.3        | 6.0                | 0.8 | 1.8  | 65.6 | 3.40 | 54.0 | 5.6 | 108.4 | 62.0 | 5.2        | 4.9        |
|           | 9.0                   | 1.9 | 4.4 | 53.3                      | 37.1 | 3.23 | 64.3 | 16.5 | 94.3  | 3.9        | 3.7        | 7.4                | 1.3 | 3.0  | 67.6 | 3.45 | 55.9 | 5.7 | 109.7 | 65.0 | 5.4        | 5.1        |
|           | 12.0                  | 3.4 | 7.8 | 54.2                      | 37.5 | 3.11 | 64.9 | 17.4 | 90.8  | 3.6        | 3.4        | 7.4                | 1.3 | 2.9  | 67.6 | 3.45 | 55.9 | 5.7 | 109.7 | 65.0 | 5.4        | 5.1        |
| 90        | 6.0                   | 0.8 | 1.9 | 48.5                      | 35.2 | 3.88 | 61.8 | 12.5 | 110.6 | 5.6        | 5.3        | 4.5                | 0.4 | 1.0  | 67.6 | 3.45 | 55.9 | 5.7 | 109.7 | 65.0 | 5.4        | 5.1        |
|           | 9.0                   | 1.9 | 4.4 | 50.6                      | 36.1 | 3.60 | 62.8 | 14.1 | 104.0 | 4.9        | 4.7        | 4.5                | 0.4 | 1.0  | 67.6 | 3.45 | 55.9 | 5.7 | 109.7 | 65.0 | 5.4        | 5.1        |
|           | 12.0                  | 3.3 | 7.7 | 51.6                      | 36.5 | 3.46 | 63.4 | 14.9 | 100.6 | 4.6        | 4.4        | 4.5                | 0.4 | 1.0  | 67.6 | 3.45 | 55.9 | 5.7 | 109.7 | 65.0 | 5.4        | 5.1        |
| 100       | 6.0                   | 0.8 | 1.9 | 45.5                      | 34.1 | 4.36 | 60.4 | 10.4 | 120.1 | 6.9        | 6.6        | 3.2                | 0.2 | 0.5  | 67.6 | 3.45 | 55.9 | 5.7 | 109.7 | 65.0 | 5.4        | 5.1        |
|           | 9.0                   | 1.9 | 4.3 | 47.6                      | 34.9 | 4.03 | 61.3 | 11.8 | 113.6 | 6.1        | 5.8        | 3.2                | 0.2 | 0.5  | 67.6 | 3.45 | 55.9 | 5.7 | 109.7 | 65.0 | 5.4        | 5.1        |
|           | 12.0                  | 3.3 | 7.6 | 48.6                      | 35.3 | 3.87 | 61.8 | 12.6 | 110.3 | 5.7        | 5.4        | 3.2                | 0.2 | 0.5  | 67.6 | 3.45 | 55.9 | 5.7 | 109.7 | 65.0 | 5.4        | 5.1        |
| 110       | 6.0                   | 0.8 | 1.8 | 42.4                      | 32.9 | 4.92 | 59.2 | 8.6  | 129.7 | 8.5        | 8.1        | 2.5                | 0.1 | 0.3  | 67.6 | 3.45 | 55.9 | 5.7 | 109.7 | 65.0 | 5.4        | 5.1        |
|           | 9.0                   | 1.8 | 4.3 | 44.4                      | 33.7 | 4.54 | 59.9 | 9.8  | 123.3 | 7.5        | 7.1        | 2.5                | 0.1 | 0.3  | 67.6 | 3.45 | 55.9 | 5.7 | 109.7 | 65.0 | 5.4        | 5.1        |
|           | 12.0                  | 3.3 | 7.5 | 45.5                      | 34.1 | 4.36 | 60.4 | 10.4 | 120.1 | 7.0        | 6.7        | 2.5                | 0.1 | 0.3  | 67.6 | 3.45 | 55.9 | 5.7 | 109.7 | 65.0 | 5.4        | 5.1        |
| 120       | 6.0                   | 0.7 | 1.6 | Operation Not Recommended |      |      |      |      |       |            |            | 2.0                | 0.1 | 0.2  | 67.6 | 3.45 | 55.9 | 5.7 | 109.7 | 65.0 | 5.4        | 5.1        |
|           | 9.0                   | 1.8 | 4.1 |                           |      |      |      |      |       |            |            | 2.0                | 0.1 | 0.2  | 67.6 | 3.45 | 55.9 | 5.7 | 109.7 | 65.0 | 5.4        | 5.1        |
|           | 12.0                  | 3.2 | 7.4 | 42.3                      | 32.8 | 4.93 | 59.2 | 8.6  | 129.9 | 8.6        | 8.2        | 2.0                | 0.1 | 0.2  | 67.6 | 3.45 | 55.9 | 5.7 | 109.7 | 65.0 | 5.4        | 5.1        |

Interpolation is permissible; extrapolation is not.

All entering air conditions are 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.

All performance is based upon the lower voltage of dual voltage rated units.

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

See performance correction tables for operating conditions other than those listed above.

See Performance Data Selection Notes for operation within the shaded areas.

## Performance Data — 50YGS/50YGP064 Part Load

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

| EWT<br>°F | Cooling - EAT 80/67°F |     |     |      |      |      |      |      |       |            | Heating - EAT 70°F |      |     |      |      |      |      |     |       |      |            |            |
|-----------|-----------------------|-----|-----|------|------|------|------|------|-------|------------|--------------------|------|-----|------|------|------|------|-----|-------|------|------------|------------|
|           | GPM                   | WPD |     | TC   | SC   | kW   | HR   | EER  | LWT   | YGS<br>HWC | YGP<br>HWC         | GPM  | WPD |      | HC   | kW   | HE   | COP | LAT   | LWT  | YGS<br>HWC | YGP<br>HWC |
|           |                       | PSI | FT  |      |      |      |      |      |       |            |                    |      | PSI | FT   |      |      |      |     |       |      |            |            |
| 20        | 2.3                   | 0.1 | 0.2 | 51.5 | 37.1 | 2.00 | 58.3 | 25.8 | 70.0  | 1.8        | 1.7                | 12.0 | 5.2 | 11.9 | 28.1 | 2.68 | 18.9 | 2.8 | 85.3  | 16.8 | 3.1        | 2.9        |
| 30        | 2.9                   | 0.1 | 0.2 | 51.5 | 37.1 | 2.00 | 58.3 | 25.8 | 70.0  | 1.8        | 1.7                | 6.0  | 0.9 | 2.1  | 31.5 | 2.71 | 22.3 | 3.0 | 87.4  | 22.6 | 3.2        | 3.0        |
|           | 2.9                   | 0.1 | 0.2 | 51.5 | 37.1 | 2.00 | 58.3 | 25.8 | 70.0  | 1.8        | 1.7                | 9.0  | 2.5 | 5.7  | 33.0 | 2.72 | 23.7 | 3.1 | 88.3  | 24.7 | 3.2        | 3.0        |
|           | 2.9                   | 0.1 | 0.2 | 51.5 | 37.1 | 2.00 | 58.3 | 25.8 | 70.0  | 1.8        | 1.7                | 12.0 | 4.2 | 9.6  | 33.8 | 2.73 | 24.5 | 3.1 | 88.8  | 25.9 | 3.2        | 3.0        |
| 40        | 3.9                   | 0.1 | 0.2 | 51.5 | 37.1 | 2.00 | 58.3 | 25.8 | 70.0  | 1.8        | 1.7                | 6.0  | 0.5 | 1.1  | 37.2 | 2.76 | 27.8 | 3.4 | 90.9  | 30.7 | 3.3        | 3.1        |
|           | 3.9                   | 0.1 | 0.2 | 51.5 | 37.1 | 2.00 | 58.3 | 25.8 | 70.0  | 1.8        | 1.7                | 9.0  | 1.9 | 4.4  | 39.1 | 2.78 | 29.7 | 3.5 | 92.1  | 33.4 | 3.4        | 3.2        |
|           | 3.9                   | 0.1 | 0.2 | 51.5 | 37.1 | 2.00 | 58.3 | 25.8 | 70.0  | 1.8        | 1.7                | 12.0 | 3.4 | 7.9  | 40.2 | 2.79 | 30.7 | 3.5 | 92.8  | 34.9 | 3.4        | 3.2        |
| 50        | 5.8                   | 0.2 | 0.4 | 51.5 | 37.1 | 2.00 | 58.3 | 25.8 | 70.0  | 1.8        | 1.7                | 6.0  | 0.2 | 0.6  | 43.2 | 2.82 | 33.6 | 3.8 | 94.6  | 38.8 | 3.5        | 3.3        |
|           | 5.8                   | 0.2 | 0.4 | 51.5 | 37.1 | 2.00 | 58.3 | 25.8 | 70.0  | 1.8        | 1.7                | 9.0  | 1.5 | 3.5  | 45.6 | 2.84 | 35.9 | 3.9 | 96.1  | 42.0 | 3.6        | 3.4        |
|           | 5.8                   | 0.2 | 0.4 | 51.5 | 37.1 | 2.00 | 58.3 | 25.8 | 70.0  | 1.8        | 1.7                | 12.0 | 3.0 | 6.9  | 46.9 | 2.86 | 37.2 | 4.0 | 96.9  | 43.8 | 3.6        | 3.4        |
| 60        | 6.0                   | 0.2 | 0.4 | 50.0 | 36.7 | 2.26 | 57.7 | 22.2 | 79.2  | 2.3        | 2.2                | 6.0  | 0.2 | 0.4  | 49.2 | 2.88 | 39.4 | 4.2 | 98.3  | 46.9 | 3.7        | 3.5        |
|           | 9.0                   | 1.4 | 3.2 | 51.1 | 37.0 | 2.08 | 58.2 | 24.6 | 72.9  | 1.9        | 1.8                | 9.0  | 1.4 | 3.2  | 51.9 | 2.90 | 42.0 | 4.4 | 100.0 | 50.7 | 3.8        | 3.6        |
|           | 11.7                  | 2.6 | 5.9 | 51.5 | 37.1 | 2.00 | 58.3 | 25.8 | 70.0  | 1.9        | 1.8                | 12.0 | 2.7 | 6.3  | 53.3 | 2.92 | 43.4 | 4.5 | 100.8 | 52.8 | 3.9        | 3.7        |
| 70        | 6.0                   | 0.2 | 0.4 | 47.8 | 35.8 | 2.57 | 56.5 | 18.6 | 88.8  | 3.2        | 3.0                | 6.0  | 0.2 | 0.4  | 54.8 | 2.93 | 44.8 | 4.6 | 101.8 | 55.1 | 4.0        | 3.8        |
|           | 9.0                   | 1.3 | 3.0 | 49.3 | 36.4 | 2.36 | 57.3 | 20.9 | 82.7  | 2.7        | 2.6                | 9.0  | 1.3 | 3.0  | 57.5 | 2.95 | 47.4 | 4.8 | 103.4 | 59.5 | 4.1        | 3.9        |
|           | 12.0                  | 2.6 | 6.0 | 50.0 | 36.7 | 2.27 | 57.7 | 22.0 | 79.6  | 2.4        | 2.3                | 12.0 | 2.6 | 6.0  | 58.9 | 2.96 | 48.7 | 4.9 | 104.2 | 61.9 | 4.2        | 4.0        |
| 80        | 6.0                   | 0.3 | 0.6 | 45.0 | 34.7 | 2.92 | 54.9 | 15.4 | 98.3  | 4.2        | 4.0                | 6.0  | 0.3 | 0.6  | 59.7 | 2.97 | 49.5 | 5.0 | 104.8 | 63.5 | 4.3        | 4.1        |
|           | 9.0                   | 1.3 | 3.1 | 46.8 | 35.4 | 2.69 | 56.0 | 17.4 | 92.4  | 3.6        | 3.4                | 6.7  | 0.5 | 1.2  | 60.4 | 2.98 | 50.3 | 5.9 | 105.2 | 65.0 | 4.5        | 4.3        |
|           | 12.0                  | 2.6 | 5.9 | 47.6 | 35.8 | 2.59 | 56.4 | 18.4 | 89.4  | 3.3        | 3.1                | 6.7  | 0.5 | 1.2  | 60.4 | 2.98 | 50.3 | 5.9 | 105.2 | 65.0 | 4.6        | 4.4        |
| 90        | 6.0                   | 0.3 | 0.7 | 41.9 | 33.3 | 3.31 | 53.2 | 12.6 | 107.7 | 5.4        | 5.1                | 4.0  | 0.1 | 0.2  | 60.4 | 2.98 | 50.3 | 5.9 | 105.2 | 65.0 | 4.3        | 4.1        |
|           | 9.0                   | 1.4 | 3.2 | 43.8 | 34.1 | 3.07 | 54.3 | 14.3 | 102.1 | 4.7        | 4.5                | 4.0  | 0.1 | 0.2  | 60.4 | 2.98 | 50.3 | 5.9 | 105.2 | 65.0 | 4.3        | 4.1        |
|           | 12.0                  | 2.6 | 6.0 | 44.7 | 34.6 | 2.95 | 54.8 | 15.2 | 99.1  | 4.4        | 4.2                | 4.0  | 0.1 | 0.2  | 60.4 | 2.98 | 50.3 | 5.9 | 105.2 | 65.0 | 4.3        | 4.1        |
| 100       | 6.0                   | 0.3 | 0.8 | 38.7 | 31.7 | 3.76 | 51.5 | 10.3 | 117.2 | 6.8        | 6.5                | 2.9  | 0.1 | 0.2  | 60.4 | 2.98 | 50.3 | 5.9 | 105.2 | 65.0 | 4.3        | 4.1        |
|           | 9.0                   | 1.4 | 3.2 | 40.6 | 32.6 | 3.49 | 52.5 | 11.6 | 111.7 | 6.0        | 5.7                | 2.9  | 0.1 | 0.2  | 60.4 | 2.98 | 50.3 | 5.9 | 105.2 | 65.0 | 4.3        | 4.1        |
|           | 12.0                  | 2.6 | 6.0 | 41.5 | 33.1 | 3.36 | 53.0 | 12.4 | 108.8 | 5.6        | 5.3                | 2.9  | 0.1 | 0.2  | 60.4 | 2.98 | 50.3 | 5.9 | 105.2 | 65.0 | 4.3        | 4.1        |
| 110       | 6.0                   | 0.3 | 0.6 | 35.6 | 30.2 | 4.25 | 50.1 | 8.4  | 126.7 | 8.5        | 8.1                | 2.2  | 0.1 | 0.2  | 60.4 | 2.98 | 50.3 | 5.9 | 105.2 | 65.0 | 4.3        | 4.1        |
|           | 9.0                   | 1.3 | 3.1 | 37.3 | 31.1 | 3.96 | 50.9 | 9.4  | 121.3 | 7.6        | 7.2                | 2.2  | 0.1 | 0.2  | 60.4 | 2.98 | 50.3 | 5.9 | 105.2 | 65.0 | 4.3        | 4.1        |
|           | 12.0                  | 2.5 | 5.8 | 38.2 | 31.5 | 3.82 | 51.3 | 10.0 | 118.5 | 7.1        | 6.7                | 2.2  | 0.1 | 0.2  | 60.4 | 2.98 | 50.3 | 5.9 | 105.2 | 65.0 | 4.3        | 4.1        |
| 120       | 6.0                   | 0.0 | 0.0 | 32.7 | 28.9 | 4.80 | 49.1 | 6.8  | 136.4 | 10.3       | 9.8                | 1.8  | 0.1 | 0.2  | 60.4 | 2.98 | 50.3 | 5.9 | 105.2 | 65.0 | 4.3        | 4.1        |
|           | 9.0                   | 1.1 | 2.6 | 34.3 | 29.6 | 4.49 | 49.6 | 7.6  | 131.0 | 9.3        | 8.8                | 1.8  | 0.1 | 0.2  | 60.4 | 2.98 | 50.3 | 5.9 | 105.2 | 65.0 | 4.3        | 4.1        |
|           | 12.0                  | 2.4 | 5.4 | 35.1 | 30.0 | 4.34 | 49.9 | 8.1  | 128.3 | 8.8        | 8.4                | 1.8  | 0.1 | 0.2  | 60.4 | 2.98 | 50.3 | 5.9 | 105.2 | 65.0 | 4.3        | 4.1        |

Interpolation is permissible; extrapolation is not.

All entering air conditions are 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.

All performance is based upon the lower voltage of dual voltage rated units.

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

See performance correction tables for operating conditions other than those listed above.

See Performance Data Selection Notes for operation within the shaded areas.

# GT-PCS Split (50YGS and 50YGP) Series

## Performance Data — 50YGS/50YGP064 Full Load

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

| EWT<br>°F | Cooling - EAT 80/67°F |     |      |      |      |      |      |      |       |            |            | Heating - EAT 70°F |     |      |      |      |      |     |       |      |            |            |
|-----------|-----------------------|-----|------|------|------|------|------|------|-------|------------|------------|--------------------|-----|------|------|------|------|-----|-------|------|------------|------------|
|           | GPM                   | WPD |      | TC   | SC   | kW   | HR   | EER  | LWT   | YGS<br>HWC | YGP<br>HWC | GPM                | WPD |      | HC   | kW   | HE   | COP | LAT   | LWT  | YGS<br>HWC | YGP<br>HWC |
|           |                       | PSI | FT   |      |      |      |      |      |       |            |            |                    | PSI | FT   |      |      |      |     |       |      |            |            |
| 20        | 3.1                   | 0.1 | 0.1  | 67.5 | 46.6 | 3.24 | 78.6 | 20.8 | 70.0  | 2.8        | 2.7        | 15.0               | 7.3 | 16.8 | 40.0 | 3.65 | 27.6 | 3.2 | 86.5  | 16.3 | 3.8        | 3.6        |
| 30        | 3.9                   | 0.1 | 0.2  | 67.5 | 46.6 | 3.24 | 78.6 | 20.8 | 70.0  | 2.8        | 2.7        | 7.5                | 1.7 | 3.9  | 44.9 | 3.73 | 32.2 | 3.5 | 88.0  | 21.4 | 4.0        | 3.8        |
|           | 3.9                   | 0.1 | 0.2  | 67.5 | 46.6 | 3.24 | 78.6 | 20.8 | 70.0  | 2.8        | 2.7        | 11.3               | 3.7 | 8.6  | 47.3 | 3.77 | 34.4 | 3.7 | 88.9  | 23.9 | 4.1        | 3.9        |
|           | 3.9                   | 0.1 | 0.2  | 67.5 | 46.6 | 3.24 | 78.6 | 20.8 | 70.0  | 2.8        | 2.7        | 15.0               | 6.1 | 14.1 | 48.6 | 3.79 | 35.6 | 3.8 | 89.3  | 25.2 | 4.1        | 3.9        |
| 40        | 5.2                   | 0.1 | 0.3  | 67.5 | 46.6 | 3.24 | 78.6 | 20.8 | 70.0  | 2.8        | 2.7        | 7.5                | 1.2 | 2.7  | 52.6 | 3.87 | 39.4 | 4.0 | 90.8  | 29.5 | 4.3        | 4.1        |
|           | 5.2                   | 0.1 | 0.3  | 67.5 | 46.6 | 3.24 | 78.6 | 20.8 | 70.0  | 2.8        | 2.7        | 11.3               | 3.0 | 7.0  | 55.5 | 3.93 | 42.1 | 4.1 | 92.0  | 32.5 | 4.4        | 4.2        |
|           | 5.2                   | 0.1 | 0.3  | 67.5 | 46.6 | 3.24 | 78.6 | 20.8 | 70.0  | 2.8        | 2.7        | 15.0               | 5.3 | 12.2 | 57.1 | 3.96 | 43.6 | 4.2 | 92.6  | 34.2 | 4.5        | 4.3        |
| 50        | 7.5                   | 0.9 | 2.0  | 67.5 | 46.6 | 3.27 | 78.6 | 20.6 | 71.0  | 2.8        | 2.7        | 7.5                | 0.9 | 2.0  | 60.2 | 4.02 | 46.5 | 4.4 | 93.8  | 37.6 | 4.6        | 4.4        |
|           | 7.9                   | 1.1 | 2.4  | 67.5 | 46.6 | 3.24 | 78.6 | 20.8 | 70.0  | 2.8        | 2.7        | 11.3               | 2.6 | 6.0  | 63.5 | 4.10 | 49.6 | 4.5 | 95.2  | 41.2 | 4.8        | 4.6        |
|           | 7.9                   | 1.1 | 2.4  | 67.5 | 46.6 | 3.24 | 78.6 | 20.8 | 70.0  | 2.8        | 2.7        | 8.0                | 1.1 | 2.5  | 65.3 | 4.14 | 51.2 | 4.6 | 95.9  | 43.2 | 4.9        | 4.7        |
| 60        | 7.5                   | 0.8 | 1.7  | 65.9 | 46.2 | 3.56 | 78.1 | 18.5 | 80.8  | 3.4        | 3.2        | 7.5                | 0.8 | 1.7  | 67.7 | 4.19 | 53.4 | 4.7 | 96.7  | 45.8 | 5.1        | 4.8        |
|           | 11.3                  | 2.4 | 5.4  | 67.1 | 46.6 | 3.35 | 78.6 | 20.0 | 74.0  | 2.9        | 2.8        | 11.3               | 2.4 | 5.4  | 71.3 | 4.27 | 56.7 | 4.9 | 98.1  | 49.9 | 5.3        | 5.0        |
|           | 15.0                  | 4.3 | 10.0 | 67.5 | 46.6 | 3.26 | 78.6 | 20.7 | 70.5  | 2.7        | 2.6        | 15.0               | 4.3 | 10.0 | 73.2 | 4.32 | 58.5 | 5.0 | 98.8  | 52.2 | 5.4        | 5.1        |
| 70        | 7.5                   | 0.7 | 1.7  | 63.5 | 45.3 | 3.91 | 76.8 | 16.3 | 90.5  | 4.3        | 4.1        | 7.5                | 0.7 | 1.7  | 74.7 | 4.36 | 59.9 | 5.0 | 99.3  | 54.0 | 5.5        | 5.2        |
|           | 11.3                  | 2.3 | 5.2  | 65.3 | 46.0 | 3.66 | 77.8 | 17.8 | 83.8  | 3.7        | 3.5        | 11.3               | 2.3 | 5.2  | 78.6 | 4.45 | 63.4 | 5.2 | 100.5 | 58.7 | 5.8        | 5.5        |
|           | 15.0                  | 4.1 | 9.6  | 66.0 | 46.3 | 3.55 | 78.1 | 18.6 | 80.4  | 3.4        | 3.2        | 15.0               | 4.1 | 9.6  | 80.6 | 4.50 | 65.2 | 5.2 | 101.0 | 61.3 | 5.9        | 5.6        |
| 80        | 7.5                   | 0.8 | 1.8  | 60.4 | 44.1 | 4.30 | 75.1 | 14.1 | 100.0 | 5.4        | 5.1        | 7.5                | 0.8 | 1.8  | 81.4 | 4.52 | 66.0 | 5.3 | 101.2 | 62.4 | 6.1        | 5.8        |
|           | 11.3                  | 2.2 | 5.2  | 62.6 | 44.9 | 4.03 | 76.3 | 15.5 | 93.6  | 4.7        | 4.5        | 9.0                | 1.3 | 3.1  | 83.3 | 4.57 | 67.7 | 5.3 | 110.7 | 65.0 | 6.1        | 5.8        |
|           | 15.0                  | 4.1 | 9.4  | 63.6 | 45.3 | 3.90 | 76.9 | 16.3 | 90.2  | 4.3        | 4.1        | 9.0                | 1.3 | 3.1  | 83.3 | 4.57 | 67.7 | 5.3 | 110.7 | 65.0 | 6.1        | 5.8        |
| 90        | 7.5                   | 0.8 | 2.0  | 57.0 | 42.6 | 4.75 | 73.2 | 12.0 | 109.5 | 6.7        | 6.4        | 5.4                | 0.1 | 0.3  | 83.3 | 4.57 | 67.7 | 5.3 | 110.7 | 65.0 | 6.1        | 5.8        |
|           | 11.3                  | 2.3 | 5.2  | 59.3 | 43.6 | 4.44 | 74.4 | 13.3 | 103.2 | 5.8        | 5.5        | 5.4                | 0.1 | 0.3  | 83.3 | 4.57 | 67.7 | 5.3 | 110.7 | 65.0 | 6.1        | 5.8        |
|           | 15.0                  | 4.0 | 9.3  | 60.4 | 44.1 | 4.30 | 75.1 | 14.1 | 100.0 | 5.4        | 5.1        | 5.4                | 0.1 | 0.3  | 83.3 | 4.57 | 67.7 | 5.3 | 110.7 | 65.0 | 6.1        | 5.8        |
| 100       | 7.5                   | 0.9 | 2.0  | 53.4 | 41.1 | 5.27 | 71.4 | 10.1 | 119.0 | 8.1        | 7.7        | 3.9                | 0.1 | 0.2  | 83.3 | 4.57 | 67.7 | 5.3 | 110.7 | 65.0 | 6.1        | 5.8        |
|           | 11.3                  | 2.3 | 5.2  | 55.7 | 42.1 | 4.92 | 72.5 | 11.3 | 112.9 | 7.2        | 6.8        | 3.9                | 0.1 | 0.2  | 83.3 | 4.57 | 67.7 | 5.3 | 110.7 | 65.0 | 6.1        | 5.8        |
|           | 15.0                  | 4.0 | 9.3  | 56.9 | 42.6 | 4.76 | 73.1 | 11.9 | 109.7 | 6.7        | 6.4        | 3.9                | 0.1 | 0.2  | 83.3 | 4.57 | 67.7 | 5.3 | 110.7 | 65.0 | 6.1        | 5.8        |
| 110       | 7.5                   | 0.8 | 1.8  | 50.0 | 39.7 | 5.86 | 69.9 | 8.5  | 128.7 | 9.7        | 9.2        | 3.0                | 0.1 | 0.2  | 83.3 | 4.57 | 67.7 | 5.3 | 110.7 | 65.0 | 6.1        | 5.8        |
|           | 11.3                  | 2.2 | 5.1  | 52.1 | 40.6 | 5.48 | 70.8 | 9.5  | 122.6 | 8.7        | 8.3        | 3.0                | 0.1 | 0.2  | 83.3 | 4.57 | 67.7 | 5.3 | 110.7 | 65.0 | 6.1        | 5.8        |
|           | 15.0                  | 4.0 | 9.2  | 53.2 | 41.0 | 5.29 | 71.3 | 10.1 | 119.5 | 8.2        | 7.8        | 3.0                | 0.1 | 0.2  | 83.3 | 4.57 | 67.7 | 5.3 | 110.7 | 65.0 | 6.1        | 5.8        |
| 120       | 7.5                   | 0.6 | 1.3  | 46.9 | 38.6 | 6.54 | 69.2 | 7.2  | 138.5 | 11.5       | 10.9       | 2.5                | 0.1 | 0.2  | 83.3 | 4.57 | 67.7 | 5.3 | 110.7 | 65.0 | 6.1        | 5.8        |
|           | 11.3                  | 2.0 | 4.7  | 48.7 | 39.2 | 6.11 | 69.6 | 8.0  | 132.4 | 10.4       | 9.9        | 2.5                | 0.1 | 0.2  | 83.3 | 4.57 | 67.7 | 5.3 | 110.7 | 65.0 | 6.1        | 5.8        |
|           | 15.0                  | 3.8 | 8.8  | 49.7 | 39.6 | 5.90 | 69.9 | 8.4  | 129.3 | 9.9        | 9.4        | 2.5                | 0.1 | 0.2  | 83.3 | 4.57 | 67.7 | 5.3 | 110.7 | 65.0 | 6.1        | 5.8        |

Interpolation is permissible; extrapolation is not.

All entering air conditions are 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.

All performance is based upon the lower voltage of dual voltage rated units.

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

See performance correction tables for operating conditions other than those listed above.

See Performance Data Selection Notes for operation within the shaded areas.

## Physical Data & Electrical Data

### Physical Data

| Physical Data                           | 50YGS                               |            |            |            | 50YGP                               |            |                  |            |
|-----------------------------------------|-------------------------------------|------------|------------|------------|-------------------------------------|------------|------------------|------------|
| Model                                   | 026                                 | 038        | 049        | 064        | 026                                 | 038        | 049              | 064        |
| Compressor [1 Each)                     | Copeland UltraTech Two-Stage Scroll |            |            |            | Copeland UltraTech Two-Stage Scroll |            |                  |            |
| Factory Charge HFC-410A (oz) [kg]       | 102 [2.89]                          | 122 [3.46] | 143 [4.05] | 180 [5.10] | 102 [2.89]                          | 122 [3.46] | 143 [4.05]       | 180 [5.10] |
| Water Connection Size                   |                                     |            |            |            |                                     |            |                  |            |
| (In) [cm]                               | 1 [2.5] (Swivel)                    |            |            |            | 3/4 [1.875] (Swivel)                |            | 1 [2.5] (Swivel) |            |
| HWG Connection Size                     |                                     |            |            |            |                                     |            |                  |            |
| (In) [cm]                               | 1 [2.5] (Swivel)                    |            |            |            | 5/8 [1.56] (I.D. Sweat)             |            |                  |            |
| Line Set Connection Size                |                                     |            |            |            |                                     |            |                  |            |
| Liquid Line Sweat Connection (in.) [cm] | 3/8 [.95]                           | 3/8 [.95]  | 3/8 [.95]  | 1/2 [1.25] | 3/8 [.95]                           | 3/8 [.95]  | 3/8 [.95]        | 1/2 [1.25] |
| Vapor Line Sweat Connection (in.) [cm]  | 3/4 [1.9]                           | 7/8 [2.25] | 7/8 [2.25] | 7/8 [2.25] | 3/4 [1.9]                           | 7/8 [2.25] | 7/8 [2.25]       | 7/8 [2.25] |
| Weight - Operating, (lbs) [kg]          | 233 [106]                           | 251 [114]  | 280 [127]  | 295 [134]  | 245 [111]                           | 263 [119]  | 309 [140]        | 337 [153]  |
| Weight - Packaged, (lbs) [kg]           | 248 [112]                           | 266 [121]  | 295 [134]  | 310 [141]  | 260 [118]                           | 278 [126]  | 324 [147]        | 352 [160]  |

Units have grommet compressor mountings, TXV expansion devices, and 1/2" [12.2mm] & 3/4" [19.1mm] electrical knockouts.  
 Maximum working water pressure for units with Internal Flow Controller is 100 PSI (689 kPa).  
 Maximum working water pressure for units with Modulating Water Valve is 500 PSI (3447 kPa).  
 Maximum close off pressure for units with Modulating Water Valve is 200 PSI (1379 kPa).

### Electrical Data (50YGS with Modulating Valve)

| Model | Compressor |       |     | HWG Pump FLA | Total Unit FLA | Min Circuit Amps | Max Fuse/HACR |
|-------|------------|-------|-----|--------------|----------------|------------------|---------------|
|       | RLA        | LRA   | Qty |              |                |                  |               |
| 026   | 11.7       | 58.3  | 1   | 0.5          | 12.2           | 15.1             | 25            |
| 038   | 15.3       | 83.0  | 1   | 0.5          | 15.8           | 19.6             | 30            |
| 049   | 21.2       | 104.0 | 1   | 0.5          | 21.7           | 27.0             | 45            |
| 064   | 27.1       | 152.9 | 1   | 0.5          | 27.6           | 34.3             | 60            |

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

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

### Electrical Data (50YGS with Internal Variable Speed Flow Controller)

| Model | Compressor |       |     | HWG Pump FLA | Total Unit FLA | Min Circuit Amps | Max Fuse/HACR |
|-------|------------|-------|-----|--------------|----------------|------------------|---------------|
|       | RLA        | LRA   | Qty |              |                |                  |               |
| 026   | 11.7       | 58.3  | 1   | 0.5          | 13.9           | 16.8             | 25            |
| 038   | 15.3       | 83.0  | 1   | 0.5          | 17.5           | 21.3             | 35            |
| 049   | 21.2       | 104.0 | 1   | 0.5          | 23.4           | 28.7             | 45            |
| 064   | 27.1       | 152.9 | 1   | 0.5          | 29.3           | 36.0             | 60            |

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

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

### Electrical Data (50YGP with Internal Variable Speed Flow Controller)

| Model | Compressor |       |     | Total Unit FLA | Min Circuit Amps | Max Fuse/HACR |
|-------|------------|-------|-----|----------------|------------------|---------------|
|       | RLA        | LRA   | Qty |                |                  |               |
| 026   | 11.7       | 58.3  | 1   | 13.4           | 16.3             | 25            |
| 038   | 15.3       | 83.0  | 1   | 17.0           | 20.8             | 35            |
| 049   | 21.2       | 104.0 | 1   | 22.9           | 28.2             | 45            |
| 064   | 27.1       | 152.9 | 1   | 28.8           | 35.6             | 60            |

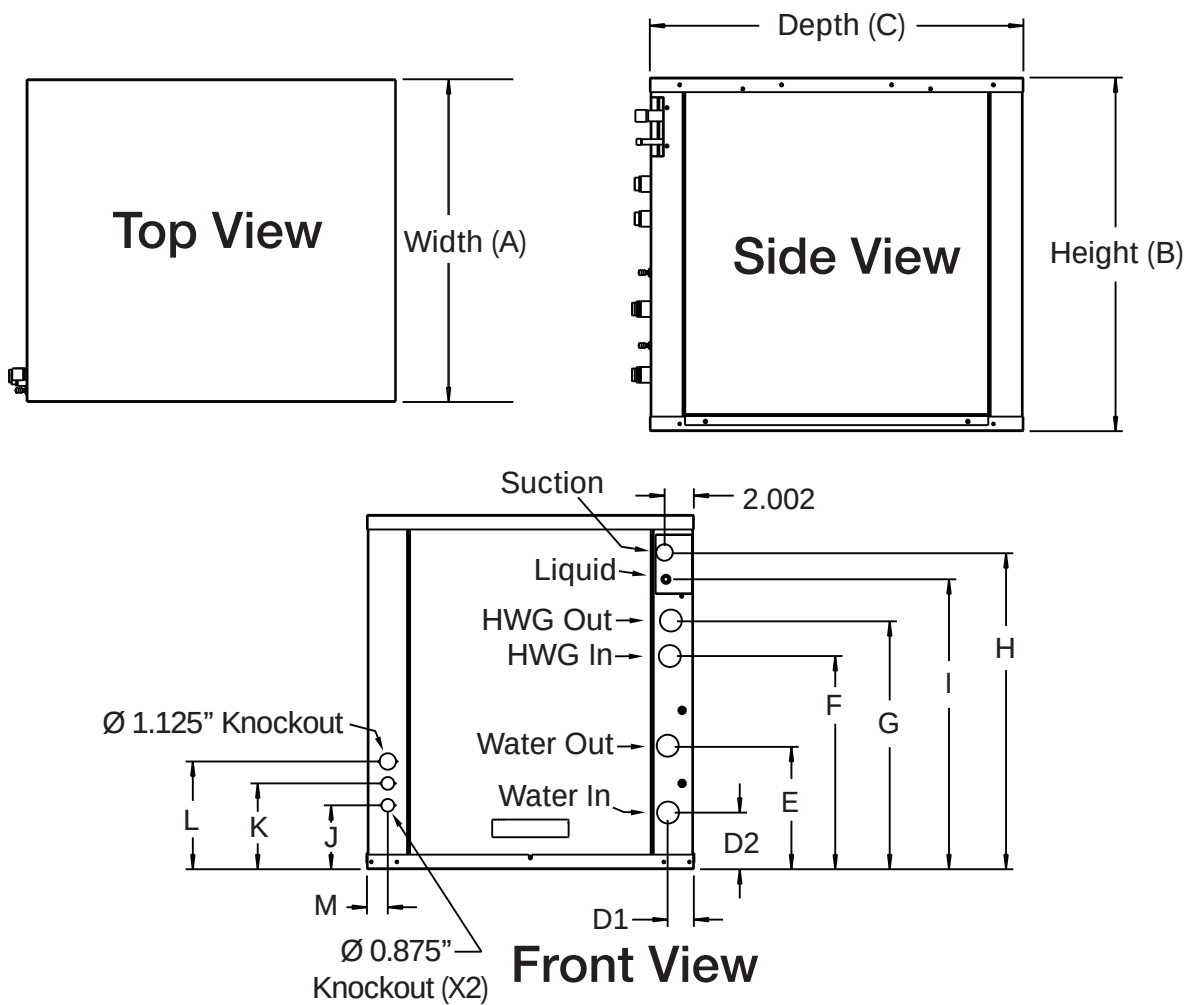
Rated Voltage of 208/230/60/1  
 HACR circuit breaker in USA only

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

| Remote HWG Module | Voltage      | Pump FLA | Total FLA | Min Circuit Amps |
|-------------------|--------------|----------|-----------|------------------|
| AHWG1BACS         | 115/60/1     | 0.52     | 0.52      | 1.20             |
| AHWG1BGCS         | 208/230/60/1 | 0.40     | 0.40      | 0.90             |

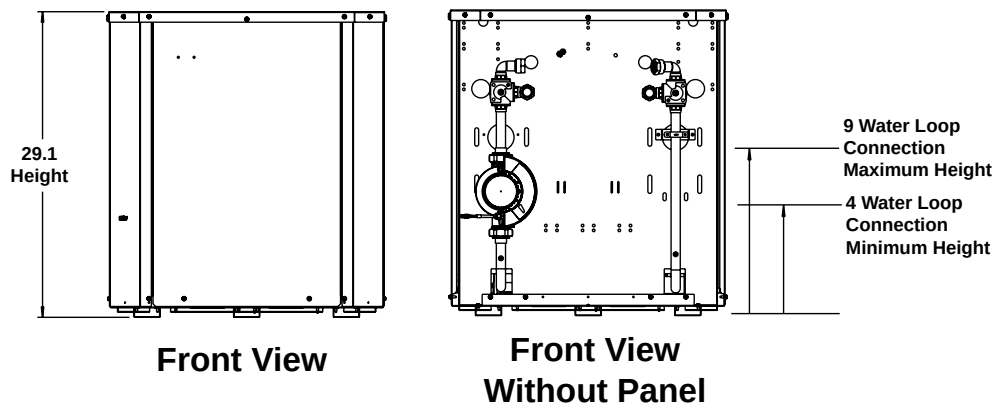
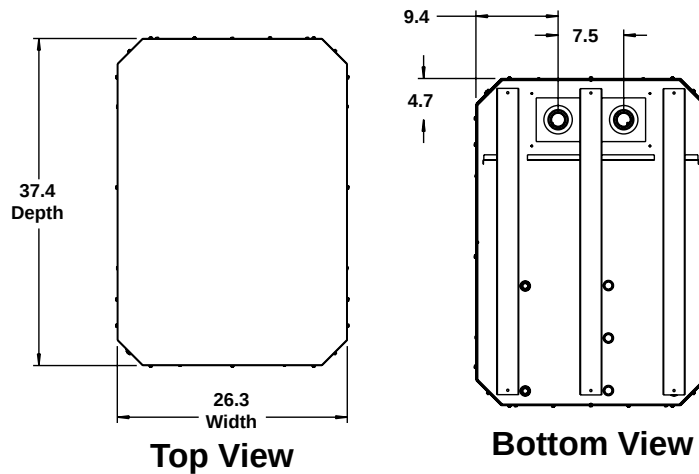
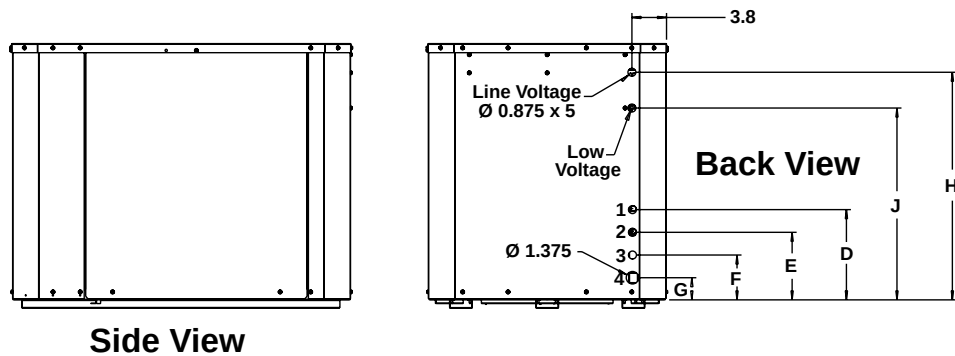
## GT-PCS (50YGS) Dimensional Data

| Model |    | Overall Cabinet |             |            | Water Connections    |                    |                   |                   |                   |                | Refrigerant Connection |              |             |              | Electrical Knockouts |      |      |      |     |
|-------|----|-----------------|-------------|------------|----------------------|--------------------|-------------------|-------------------|-------------------|----------------|------------------------|--------------|-------------|--------------|----------------------|------|------|------|-----|
|       |    | A<br>Width      | B<br>Height | C<br>Depth | 1<br>Water<br>In/Out | 2<br>HWG<br>In/Out | D1<br>Water<br>In | D2<br>Water<br>In | E<br>Water<br>Out | F<br>HWG<br>In | G<br>HWG<br>Out        | 3<br>Suction | 4<br>Liquid | H<br>Suction | I<br>Liquid          | J    | K    | L    | M   |
|       |    |                 |             |            | Swivel               |                    |                   |                   |                   |                |                        |              |             |              |                      |      |      |      |     |
| 026   | in | 22.4            | 24.3        | 25.6       | 1"                   | 1"                 | 1.8               | 3.9               | 8.4               | 14.6           | 17.0                   | 3/4"         | 3/8"        | 21.6         | 19.8                 | 4.4  | 5.9  | 7.4  | 1.4 |
|       | cm | 56.9            | 61.7        | 65.0       |                      |                    | 4.6               | 9.9               | 21.3              | 37.1           | 43.2                   |              |             | 54.9         | 50.3                 | 11.2 | 15.0 | 18.8 | 3.5 |
| 038   | in | 25.4            | 26.3        | 30.6       | 1"                   | 1"                 | 2.0               | 3.9               | 8.4               | 15.4           | 18.7                   | 7/8"         | 3/8"        | 23.6         | 21.8                 | 4.4  | 5.9  | 7.4  | 1.7 |
|       | cm | 64.5            | 66.8        | 77.7       |                      |                    | 5.1               | 9.9               | 21.3              | 39.1           | 47.5                   |              |             | 59.9         | 55.4                 | 11.2 | 15.0 | 18.8 | 4.3 |
| 049   | in | 25.4            | 26.3        | 30.6       | 1"                   | 1"                 | 2.0               | 3.9               | 8.4               | 15.4           | 18.7                   | 7/8"         | 3/8"        | 23.6         | 21.8                 | 4.4  | 5.9  | 7.4  | 1.7 |
|       | cm | 64.5            | 66.8        | 77.7       |                      |                    | 5.1               | 9.9               | 21.3              | 39.1           | 47.5                   |              |             | 59.9         | 55.4                 | 11.2 | 15.0 | 18.8 | 4.3 |
| 064   | in | 25.4            | 26.3        | 30.6       | 1"                   | 1"                 | 2.0               | 3.9               | 8.4               | 15.4           | 18.7                   | 7/8"         | 1/2"        | 23.6         | 21.8                 | 4.4  | 5.9  | 7.4  | 1.7 |
|       | cm | 64.5            | 66.8        | 77.7       |                      |                    | 5.1               | 9.9               | 21.3              | 39.1           | 47.5                   |              |             | 59.9         | 55.4                 | 11.2 | 15.0 | 18.8 | 4.3 |



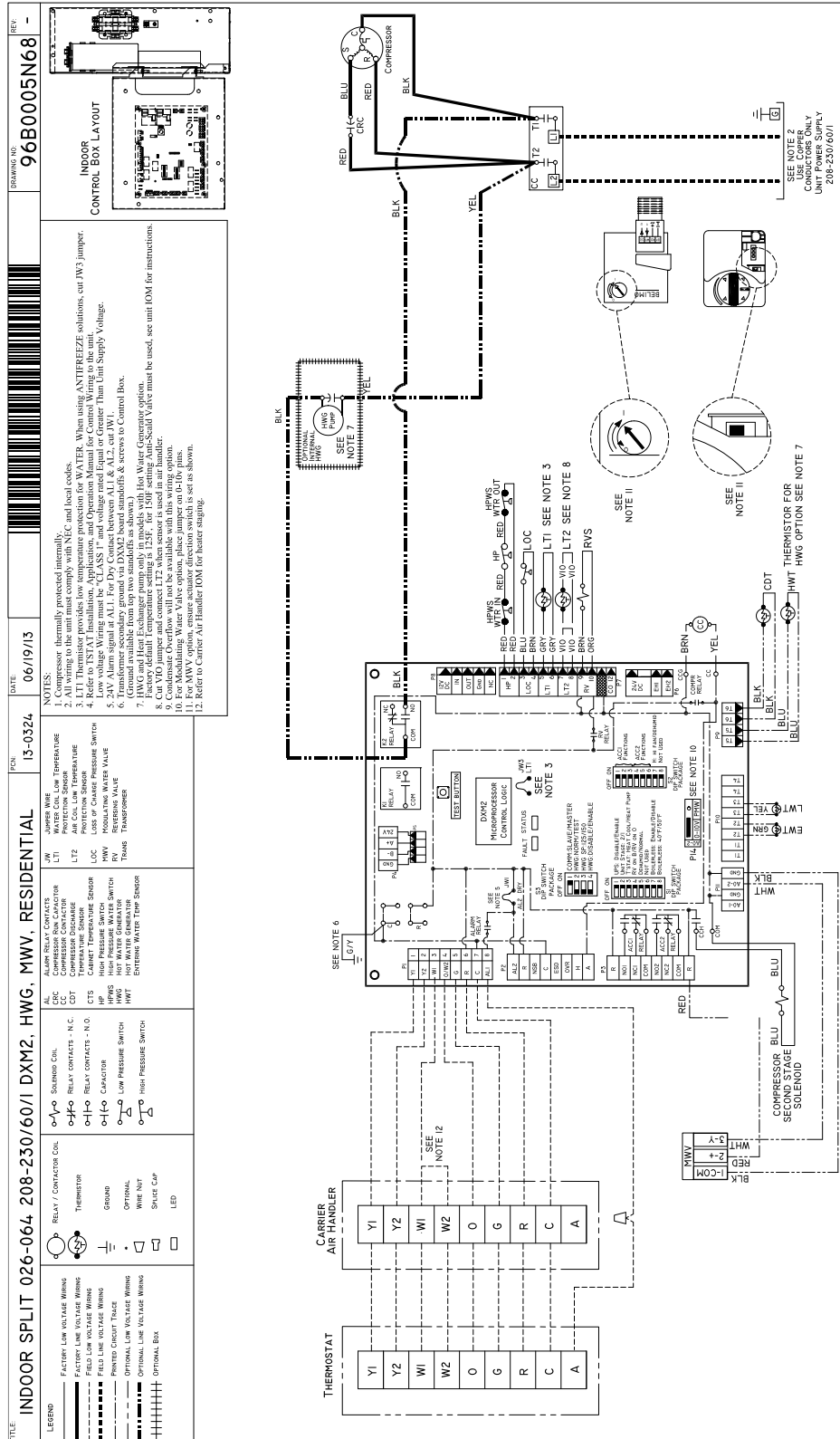
## GT-PCS (50YGP) Dimensional Data

| Model |    | Overall Cabinet |             |            | Refrigerant Line Connections |                  |     |     |                     |                    |     |     | Electrical Knockouts |                |      |      |
|-------|----|-----------------|-------------|------------|------------------------------|------------------|-----|-----|---------------------|--------------------|-----|-----|----------------------|----------------|------|------|
|       |    | A<br>Width      | B<br>Height | C<br>Depth | 1<br>To<br>HWG               | 2<br>From<br>HWG | D   | E   | 3<br>Liquid<br>Line | 4<br>Vapor<br>Line | F   | G   | Line<br>Voltage      | Low<br>Voltage | H    | J    |
| 026   | in | 26.3            | 29.1        | 37.4       | 5/8"                         | 5/8"             | 9.9 | 7.4 | 3/8"                | 3/4"               | 4.9 | 2.4 | 7/8"                 | 7/8"           | 25.1 | 21.1 |
| 038   | in | 26.3            | 29.1        | 37.4       | 5/8"                         | 5/8"             | 9.9 | 7.4 | 3/8"                | 7/8"               | 4.9 | 2.4 | 7/8"                 | 7/8"           | 25.1 | 21.1 |
| 049   | in | 26.3            | 29.1        | 37.4       | 5/8"                         | 5/8"             | 9.9 | 7.4 | 3/8"                | 7/8"               | 4.9 | 2.4 | 7/8"                 | 7/8"           | 25.1 | 21.1 |
| 064   | in | 26.3            | 29.1        | 37.4       | 5/8"                         | 5/8"             | 9.9 | 7.4 | 1/2"                | 7/8"               | 4.9 | 2.4 | 7/8"                 | 7/8"           | 25.1 | 21.1 |





# GT-PCS (50YGS) Split Modulating Water Valve Electrical Wiring Diagram - 96B0005N68





## Engineering Guide Specifications

### General

The liquid source heating/cooling split condensing units shall be AHRI/ISO/ASHRAE 13256-1 (ground-source closed-loop) performance certified and listed by a nationally recognized safety-testing laboratory or agency. Each unit shall be water run-tested at the factory. Each unit shall be pallet mounted and shipped with appropriate protective packaging to help avoid damage in transportation.

Units shall be warranted by the manufacturer against defects in materials and workmanship for a period 10 years on the compressor and refrigerant circuit parts and 10 years on all remaining parts, with a service labor allowance for the first five years on the compressor and refrigerant circuit parts and 2 years on all remaining parts. An optional extended labor warranty is available which extends the service labor allowance to 10 years for the compressor and refrigeration circuit parts and 10 years on all remaining parts.

The water source units shall be designed to operate with entering fluid temperature between 20°F and 120°F.

### Casing & Cabinet

The cabinet shall be fabricated from heavy-gauge galvanized steel and painted with an epoxy powder coating. The interior shall be insulated with 1/2" thick, multi-density, coated glass fiber. Three service access panels shall be provided and shall be removable with linesets and water piping in place. The internal component layout shall provide for major service with the unit in-place for restricted access installations.

### Refrigerant Circuit

All units shall contain Puron® sealed refrigerant circuit employing a hermetic motor compressor, bidirectional thermal expansion valve, reversing valve, coaxial tube water-to-refrigerant heat exchanger and service ports. An optional Hot Water Generator (desuperheater) coil shall be provided. Compressors shall be Copeland UltraTech™ Two-Stage scroll type designed for heat pump duty and mounted on dual level compressor vibration isolation. Compressor motors shall be single phase PSC with internal over load protection. A factory provided bidirectional filter drier shall be included in all models. The coaxial water-to-refrigerant heat exchangers shall be designed for close approach temperatures and be constructed of a convoluted copper (optional cupro-nickel) inner tube and a steel outer tube. The thermal expansion valve shall provide proper superheat over the entire fluid temperature range with minimal "hunting". The valve shall operate only in the heating mode with the use of an internal check valve. The water-to-refrigerant heat exchanger, optional desuperheater coil and refrigerant suction lines shall be insulated to prevent condensation at low liquid temperatures.

### Electrical

DXM2 Control - A microprocessor-based compressor controller shall be provided to monitor and control unit operation. The control shall provide compressor sequencing, high and low pressure monitoring, field selectable low water temperature sensing, over/under voltage monitoring, and unit performance sentinel (UPS). The control shall also provide for water valve connection, a test mode,

short cycle protection, random start-up, as well as fault LED, fault memory, and intelligent fault retry.

The control shall employ quick attach harness assemblies for low voltage connections to the control board to aid in troubleshooting or replacement. An integral terminal block with screw terminals shall be provided on the control for field low voltage connections. A circuit breaker protected 75VA transformer shall be employed. Line voltage box lugs shall be provided for unit wiring. Units shall have knockouts for entrance of low and line voltage wiring. The control box shall be harness plug-connected for easy removal.

### Piping (Indoor Compressor Section Only)

Supply and return water connections, as well as Hot Water Generator (desuperheater) connections shall be 1" FPT brass swivel fittings which provide a union and eliminate the need for pipe wrenches and sealants when making field connections. A thread by sweat fitting shall be provided for connection to the water heater. All water piping shall be insulated to prevent condensation at low liquid temperatures.

### Internal Flow Controller (Outdoor Compressor Section only)

The unit shall include a factory-installed Flow Controller. The internal Flow Controller shall include the loop circulating pump(s), flushing/fill valves, and an expansion tank to reduce loop pressure variation. The circulating pump head shall be removable from the volute for easy replacement and the circulating pump shall be ECM style.

Stainless steel braided flexible hoses with swivel connections and MPT adapters shall be included for connection to the water loop.

## Accessories & Warranty

### Accessories & Options

#### Hot Water Generator

An optional heat reclaiming desuperheater coil of vented double-wall copper construction suitable for potable water shall be provided. (Internally factory mounted on indoor units. Externally field mounted on outdoor units.)

#### Cupro-Nickel Heat Exchanger

An optional corrosion resistant CuNi coaxial heat exchanger shall be factory installed in lieu of standard copper construction (50YGS only).

#### Thermostat (field installed)

A multistage auto-changeover electronic digital thermostat shall be provided. The thermostat shall offer 3 heating and 2 cooling stages with precise temperature control. An OFF-HEAT-AUTO-COOL-EMERG system switch, OFF-AUTO fan switch, and indicating LED's shall be provided. The thermostat shall read out in °F or °C and be calibratable.

#### Internal Flow Controller

Factory installed controller providing fluid pumping, fill and connection requirements for ground-source closed loop systems. Included variable speed ECM pump, flushing ports, three-way flushing valves, and expansion tank.

#### Motorized Modulating Water Valve

Factory internally installed and available in either Closed Loop low system pressure drop or Open Loop high system pressure drop configuration. Open Loop configuration includes a cupro-nickel water coil. Available for 50YGS only.

#### Hose Kits (field installed)

A rubber hose kit shall provide connections between the unit and water loop piping. Rubber 1" hose allows flexible connection and absorbs vibration. Brass elbows with MPT fittings for unit connection, barbed fittings for hose connection and FPT fittings for Pressure/Temperature ports shall be included to allow service and troubleshooting of the unit. Hose clamps shall be used to connect the hose to the brass elbows.

#### Configuration / Diagnostic Tool

An ACDU01A tool shall provide configuration changes from the factory defaults and any future service/diagnostic needs.

### Warranty Information

The 2010 standard warranty applies to units ordered on or after July 1, 2010. See Bryant's 2010 Limited Express Residential Warranty Certificate CA234 for specific coverage and limitation.

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

Bryant goes even further to back up its commitment to quality by including a service labor allowance for the first five years on refrigeration circuit components and two years on all other parts, auxiliary heaters and geothermal pumping modules.

The Optional Extended Factory Service Labor Allowance Warranty offers additional length of term protection to the consumer by offsetting service labor costs for 10 years.

To order this warranty, contact your Bryant distributor. This coverage must be purchased within 90 days of unit installation. See Limited Express Extended Labor Warranty Certificate CA235 for details.

## Notes

## Revision History

| Date        | Page # | Description     |
|-------------|--------|-----------------|
| 29 Aug., 13 | All    | First Published |