



# Trilogi<sup>®</sup> 45 Q-Mode<sup>®</sup> (QE) Series

VARIABLE SPEED  
HORIZONTAL VERTICAL AND DOWNFLOW  
EARTHPURE<sup>®</sup> SYSTEMS SIZES 0930 – 1860



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## What's New with ClimateMaster's Trilogy® 45 (QE)?

### OVERVIEW

Trilogy® 45 Q-Mode® is the next revolution in residential energy efficiency and will set ClimateMaster dealers in a class of their own in the home heating and cooling market. It is the first geothermal heat pump ever certified by AHRI to exceed 45 EER and is 47% more efficient than any other geothermal heat pump available today.

Trilogy® Q-Mode® far exceeds the capabilities of any other HVAC unit on the market today with the four significant differentiators:

1. The fully variable system exceeds **45 EER** (highest in industry), driven by a variable speed compressor, fan and pump (the Trilogy).
2. **Q-Mode®** technology, the only system that provides year-round full-time domestic water heating, along with space heating and cooling to further reduce operating costs. The Trilogy 45 unit combined with the iGate Smart Tank is capable of storing water at up to 135°F (57°C) degrees.
3. The MOST INTELLIGENT system in the residential industry with **Advanced Monitoring and Diagnostics**. The communicating control monitors smart sensors across the unit to display operation, faults and possible causes in PLAIN ENGLISH on the thermostat, laptop software tool and on a web portal.
4. **Web-enabled configuration and diagnostics** not only provides dealers to web access the Trilogy®'s real-time operating data and fault information, but, also make changes to configuration of the unit from any web-enabled computer or tablet.

The Trilogy® Q-Mode® is a packaged water-to-air system that far exceeds ENERGY STAR® Tier 3 efficiency levels. Trilogy® is available in two models, with the capacity range of the first model between 9K–30K and the second model between 18k–60k BTUH.

### FEATURES

#### Ultra-High Efficiency

The revolutionary new Trilogy® utilizes variable speed technology matched with communicating controls and a micro-channel air coil to deliver the highest efficiency (45 EER+) in the industry. It also delivers an extremely wide range of heating and cooling capacities, with the ability to perfectly match loads to as low as 30% of maximum, thus delivering ultra-high efficiency and low operating costs. Due to the wide range of operation, it can also completely eliminate the use of auxiliary heat even in far Northern climates.

#### Q-Mode®

Hot water is a significant portion (18%) of the energy use of a residence. Beyond the 45 EER space cooling efficiency, Trilogy® Q-Mode® further delivers lower operating costs by providing year-round, full-time domestic water heating (at 500% efficiency) along with space heating and cooling. It's the only system on the market that delivers all four modes (Q-Mode®)—space cooling, space heating, hot water generation while space cooling and dedicated hot water. Bottom line: It's even more operating cost savings for homeowners. The Trilogy 45 unit combined with the iGate Smart Tank is capable of storing water at up to 135°F (57°C) degrees.

#### Ultimate in Comfort, Humidity Control and Low Sound Levels

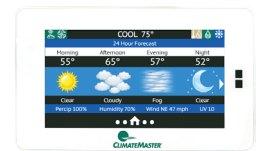
In addition to efficiency, the Trilogy® Q-Mode® delivers unsurpassed comfort and humidity control by precisely matching capacity to the heating and cooling load while also operating at very low sound levels. It provides better humidity control compared to any system in the market by controlling the air coil temperature, modulating the variable speed fan, and running longer to increase moisture removal.

#### iGate® Advanced Monitoring and Diagnostics On the Web



Trilogy® Q-Mode® is THE MOST INTELLIGENT residential unit in the market with Advanced Monitoring and Diagnostics. The communicating control monitors unit operation from 15 sensors in the unit to display operation, faults and possible causes in PLAIN ENGLISH.

If a fault occurs, the homeowner will first see a "Service Needed" on the thermostat, along with dealer name/ phone number, fault condition and possible causes. The homeowner can then relay this information to their dealer and the dealer can access the **real-time operating information on a web portal** and make configuration adjustments from the web. The unit can be configured and diagnosed from the thermostat or using a laptop service tool as well.



If the issue requires the dealer's attention, the dealer can put the thermostat in Installer Mode in order to:

1. Obtain the fault description and possible causes.
2. Read the conditions AT THE TIME OF THE FAULT across all aspects of the unit (water circuit, refrigerant circuit and air circuit) to determine the cause.
3. Manually operate the unit, from the thermostat or laptop service tool, to isolate the issue.

The system electronically measures, calculates and displays:

1. Refrigerant circuit:
  - a. Superheat, Subcool
  - b. Suction pressure/temperature, discharge pressure/temperature, refrigerant temperature at entering / leaving the source coil and air coil
  - c. Compressor speed
  - d. Electronic Expansion Valve operation
2. Water circuit / loop
  - a. Entering/ Leaving water temperature
  - b. Water flow rate
  - c. Loop pressure
  - d. Internal Pump speed
3. Air section
  - a. Airflow CFM and blower RPM
  - b. Leaving air temperature
4. Other information
  - a. Internal pump speed
  - b. Entering/ Leaving hot water

## What's New with ClimateMaster's Trilogy® Q-Mode®?

### iGate® ClimaZone™

This optional addition to the Trilogy® 45 Q-Mode® is a zoning system (AZC06CAR) that allows a single unit to be controlled by multiple iGate® Connect thermostats, conditioning the home in smaller zones instead of a single large zone. The Trilogy® system accommodates six zones with a single zone panel or up to twelve zones with the addition of a second panel. With zoning a home is more comfortable and the HVAC system more efficient by directing conditioned air only when and where it is needed giving the homeowner complete control over their cooling and heating. System configuration and diagnostics are available via the Trilogy® PC service tool.

### PC / Laptop Service Tool

To help crunch all the operating and fault data coming out of the Trilogy® unit, ClimateMaster offers a PC/laptop tool to configure and diagnose the system. PC/laptop loaded with the software plugs in to the EXM board using an optional cable to help download and analyze the data.

### iGate® Web-Enabled Configuration and Diagnostics

Trilogy® Q-Mode® has industry-exclusive two-way communicating controls, which allow for communication between smart components/sensors, the board, and the web-enabled thermostat. For installing and servicing contractors, this means **unprecedented ease of setup and troubleshooting** through the thermostat and **through the dealer portal on the internet**. The unit uses this technology to monitor every aspect of system operation to ensure peak performance. This unit so advanced, it requires minimal configuration at start up and it easily tells the homeowner/contractor if something is wrong.



Digital Communicating Control Features:

- Communicating interface to compressor, web-enabled thermostat, fan motor and geo source pump
- Comprehensive setup and diagnostics via system thermostat, PC service tool, and the internet
- High pressure, loss of charge, freeze and condensate overflow protection
- Intelligent fault retry with history retention
- Service tool port for optional setup and diagnostics at unit
- Auxiliary relay outputs for accessory connections

Thermostat interface:

Configure / setup:

- Minimum setup required as the unit self-adjusts air and water flow to demand
- Accessory configuration
- User-configurable utility demand reduction

Monitor (displayed on thermostat):

- Blower CFM, air temperature and RPM
- Water entering/leaving temperature, loop pressure and flow (GPM), geo source pump speed
- Refrigerant pressure/temperature (at compressor suction/discharge, at Air coil, at water coil)
- Calculation and display of SuperHeat, SubCool

Diagnose (on thermostat):

- Fault description, possible causes
- System status at time of fault (all temperature, pressure, flows)
- Diagnostic display of system inputs, outputs, and configuration settings at thermostat
- Immediate manual control of EXM outputs at thermostat for rapid troubleshooting

### Internal Variable Water-Flow Control

The Trilogy® Q-Mode® offers integrated variable speed source control for ground loop geothermal applications, which includes: three-way flush valves and ports, expansion tank, high efficiency variable-speed pump, transducers and a communicating system to display this information. The system provides optimal geothermal source flow to maximize overall system efficiency and performance for each operating mode.

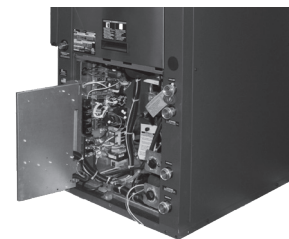


Installers can now directly connect the source loop to the unit, which decreases the labor involved with installing a bulky external pumping module. The variable speed pump, part of the "Trilogy" system, also provides homeowners significant operating cost savings by consuming fewer watts than fixed speed external pumping modules. As vFlow matches flow to the unit operation and the Trilogy® unit operates at lower speeds most of the time, the savings from vFlow on the Trilogy® are even greater than Tranquility® two-stage units with vFlow.

Other new features include, flow & temperature and pressure & temperature transducers for monitoring the source water. These allow more accurate loop water measurements and allow for easier troubleshooting of source loop issues.

### Dealer-Friendly Cabinet and Swing-out Control

The cabinet for Trilogy® Q-Mode® has been designed with the dealer in mind. A unique swing-out control box and thoughtful internal layout allow nearly all servicing from the front access panel. For items requiring access from other sides, just three more panels give a dealer full access to any component in the unit. The low voltage panel can even be quickly pulled off the hinges and removed. Harness connections make controller replacement a snap.



Of course, majority of the unit troubleshooting can be done at the thermostat, web portal or using the PC/laptop service tool, keeping the technician out of tight spaces. Since geothermal source functions are integrated within the cabinet, there is no additional space required for bulky external pumping modules.

## iGate® Web-Enabled Communicating Controls

**iGate® Information gateway to monitor, control and diagnose your system – on the internet through a computer or mobile device**

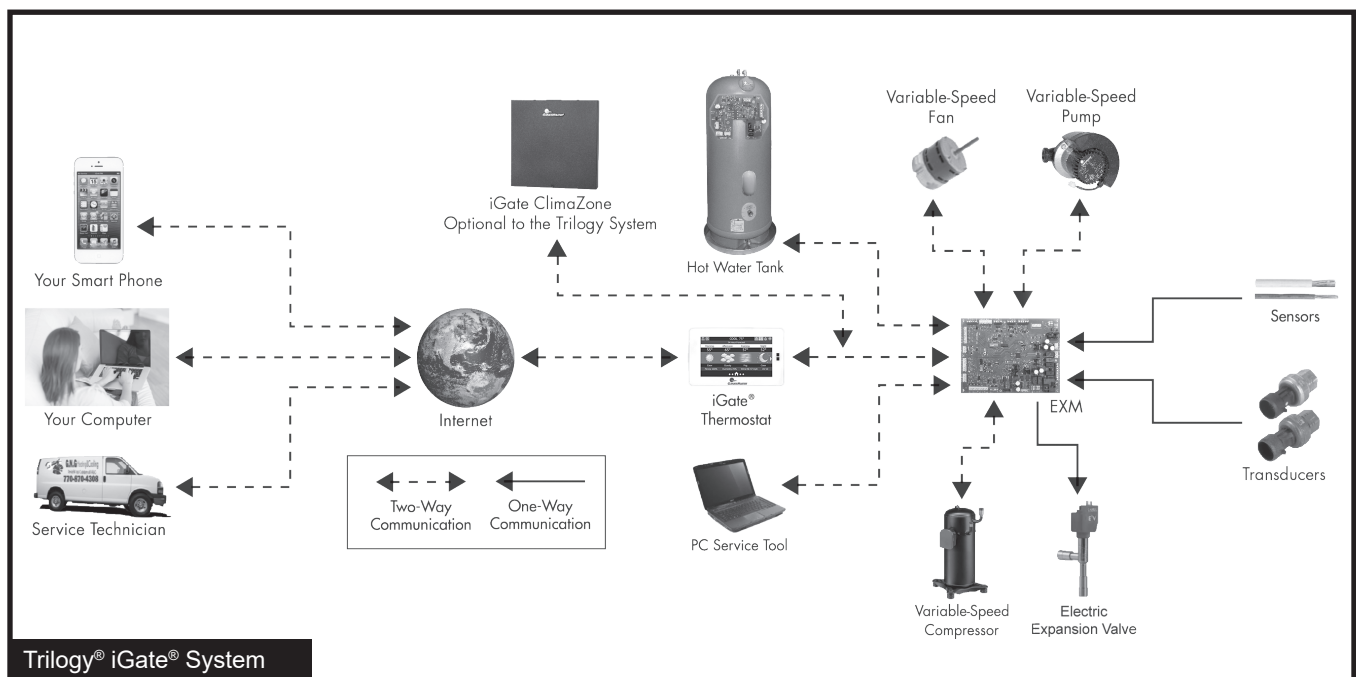


The Trilogy® 45 Q-Mode® is equipped with industry-first, iGate® Connect – Web-enabled Information Gateway – a 2-way communicating system that allows users to interact with their geothermal system in plain English on the thermostat / internet AND delivers improved reliability and efficiency by precisely controlling smart variable speed components. iGate® makes the Trilogy® Q-Mode® series easiest geothermal products to install and service.

**Monitor/Configure**—Installers can configure Trilogy® units from the thermostat, PC service tool or dealer portal on the internet, including max/min unit capacity, airflows, water ΔT, etc. Users can look up the current system status: temperature sensor readings and operational status all 15 sensors and resulting performance information, in plain English on the AWC99 thermostat, PC Service tool or dealer portal on the internet.

**Precise Control**—The new EXM board enables intelligent, 2-way communication between the EXM board and smart components like the communicating thermostat, fan motor, Compressor, Electronic Expansion Valve and water pump. The Intelligent EXM board uses information received from the smart components and sensors to precisely control operation of the variable-speed fan, compressor and water pump to deliver the highest efficiency, reliability and increased comfort.

**Diagnostics**—iGate® takes diagnosing geothermal units to the next level of access and simplicity, by providing a dashboard of system and fault information, in plain English, on the iGate® Connect thermostat, PC service tool and the dealer portal on the internet. iGate® Service Warning warns the homeowner and dealer of a fault and displays status on the dealer portal on the internet. In iGate® Service Mode, the service personnel can access fault descriptions, possible causes and most importantly, conditions (temp, flow, i/o conditions, configuration) at the time of the fault and at the time of the call. Manual Operation mode allows the service personnel to manually command operation to help troubleshoot specific components. With the iGate® communicating system, consumers and contractors have a web-enabled gateway to system information never before available.



The industry's first and patent pending Q-Mode® delivers four modes of operation to deliver the highest efficiencies across all AHRI rating points.

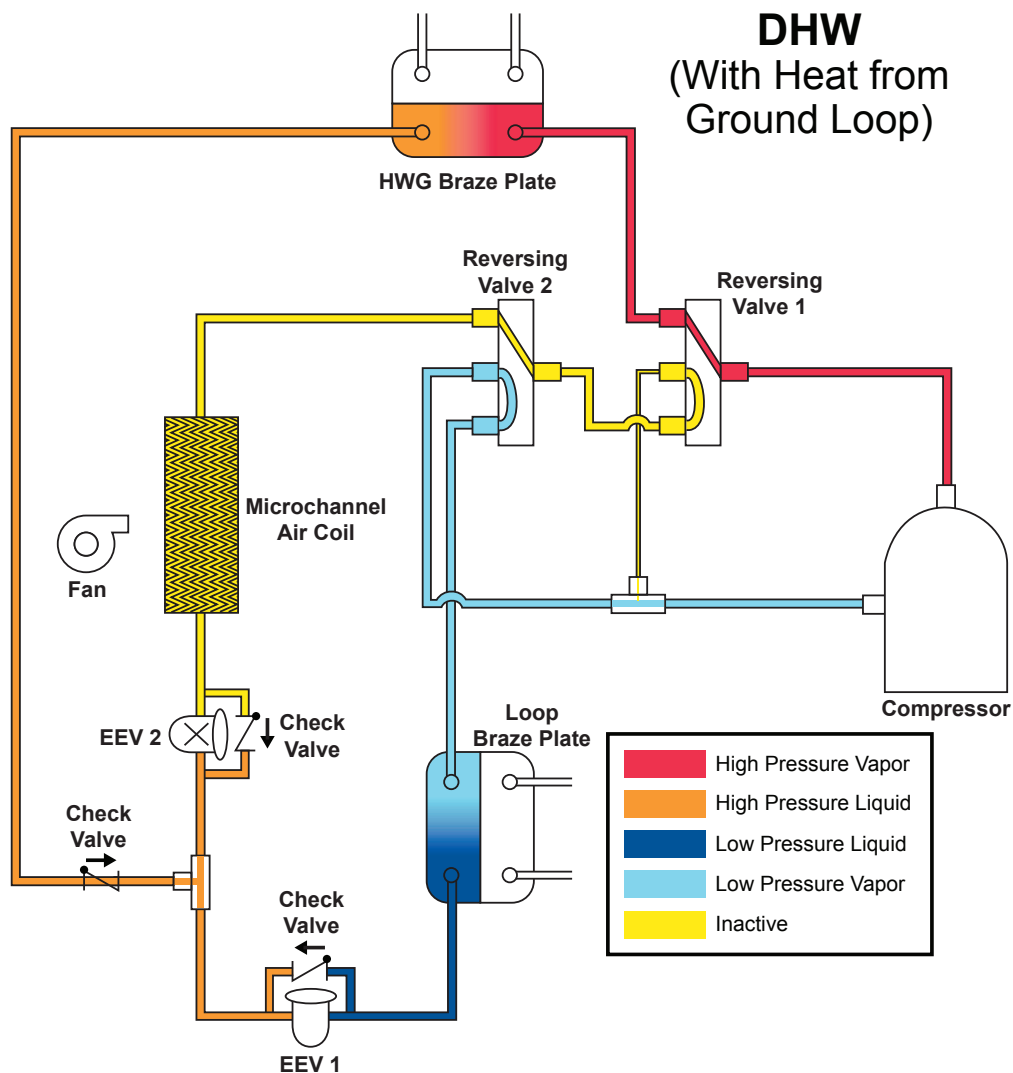
Q-Mode® (4-modes) include:

- Space Cooling
- Space Heating
- Hot water while space cooling
- Hot water only operation

While Trilogy®'s 45 EER and 5.1 COP are impressive, what sets it in a league of its own is the ADDITIONAL savings of full time hot water produced by the heat pump at up to 5.0 COP. This results in over 80% savings in hot water production vs. an electric water heater and 50%+ savings vs. the next best heat pump. The Trilogy 45 unit combined with the iGate Smart Tank is capable of storing water at up to 135°F (57°C) degrees.

What makes Q-Mode® unique and patent pending is it's ability to heat hot water during cooling AND ability to generate hot water while not space heating/cooling to deliver year-round, full-time, on-demand hot water.

Particularly impressive is the fact that in hot-water during cooling mode, the heat from the home is transferred to the tank and NOT to the loop. It's free space cooling while heating water.



## iGate® ClimaZone™ Zoning Panel

iGate® ClimaZone is the the zoning panel used with the Trilogy System and the iGate Thermostat.



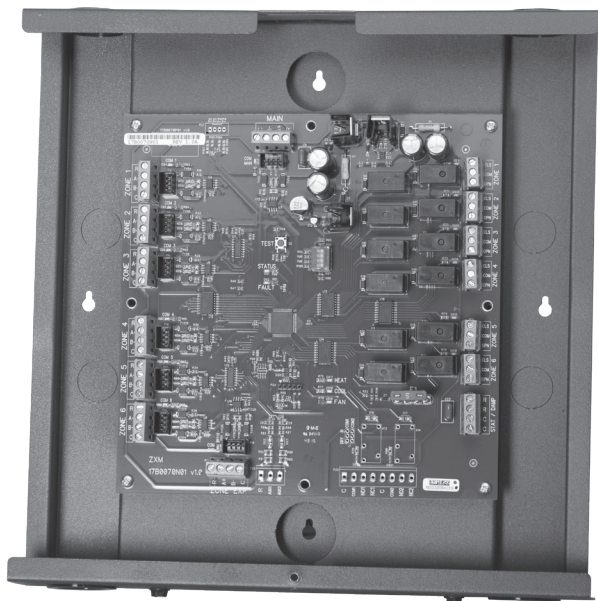
### Features

- Designed for use with Trilogy Q-Mode System
- Compatible with new and existing Trilogy systems
- One unit accommodates up to six zones with a single zone panel or up to twelve zones with two zone panels
- Each zone may have up to 3 dampers (purchased separately)
- iGate Connect thermostat controls each zone and provides internet-connected communications
- System configuration and diagnostics available via ClimateMaster Trilogy PC Service Tool

### Application Flexibility

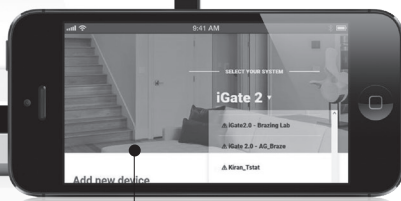
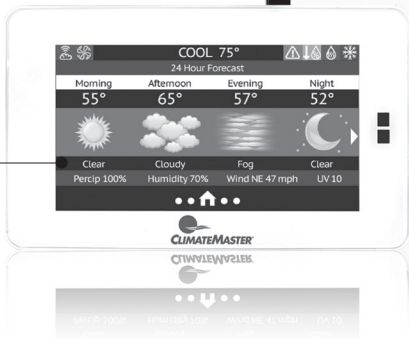
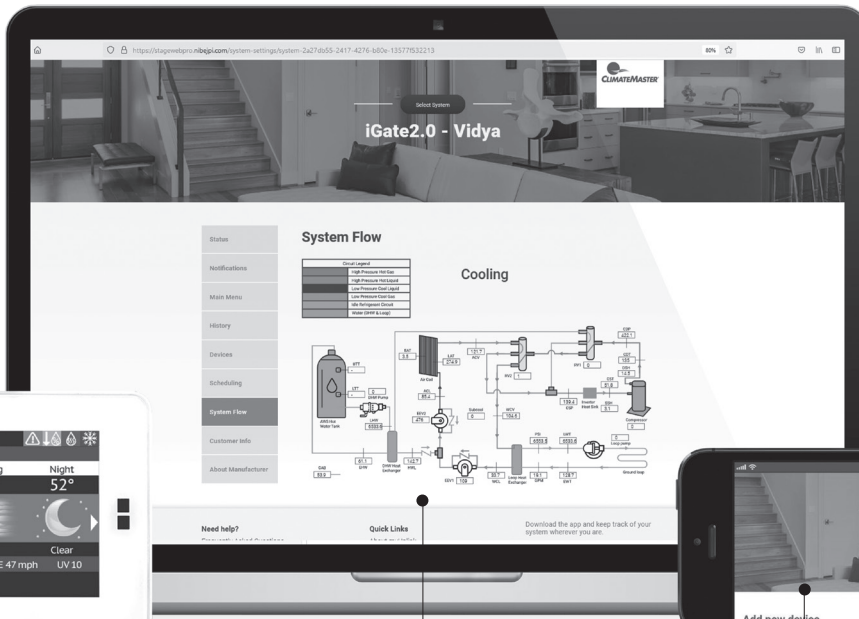
#### Zoning Components

- iGate ClimaZone Zone Panel – up to 2 per Trilogy system
- iGate Connect Thermostat – 1 per zone
- Zone Damper – up to 3 per zone
- Transformer – for damper and thermostat power
- Trilogy PC Service Tool Outdoor Temperature Sensor
- Indoor Remote Temperature Sensor
- Wall Mounted Remote Indoor Temperature sensor





iGate® Connect features a variety of ways to access and control your Trilogy® Geothermal Heating and Cooling System.



**Web-Enabled Home Thermostat**

- Communicates personal settings and reminders through the iGate® communication system
- Easy to use, full color, high resolution interface
- Receives notification for routine maintenance
- Sleek, intuitive button control
- Secure internet connection keeps your information private
- Contains Trilogy® unit model, serial number and dealer contact information
- Service and system performance information is stored in the thermostat, increasing the accuracy of diagnosis

**Web Portal Accessible Any Time, Any Where**

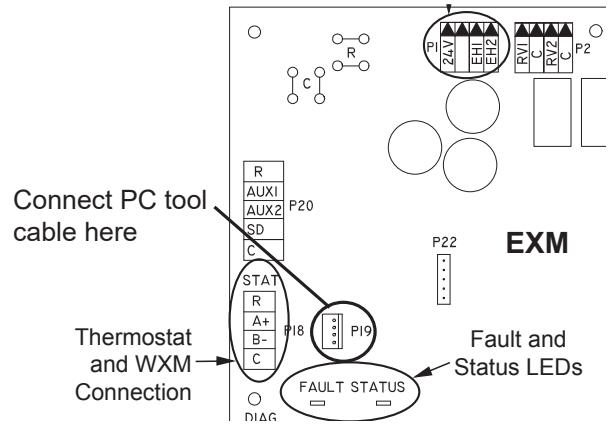
- Remote login from anywhere, anytime from any device and adjust settings
- Set personal schedule by day, week or month including those times when you will be away from home for vacation or business
- Information is remotely available (if you wish) to your dealer through a dealer portal for remote troubleshooting and diagnosis.
- Secure internet connection keeps your information private
- Access your thermostat with Android and iPhone mobile apps

# Trilogy® PC Service Tool – Exclusively Available on Trilogy® Q-Mode®

To help utilize the considerable data generated by the Trilogy® Q-Mode® and make configuration, monitoring and diagnostics easier, ClimateMaster has developed the Trilogy® Service Tool for PC.



The service tool software installs on a PC / laptop. Connect the PC to the EXM board in the Trilogy® using the cables from service tool kit ASVCTOOL01.



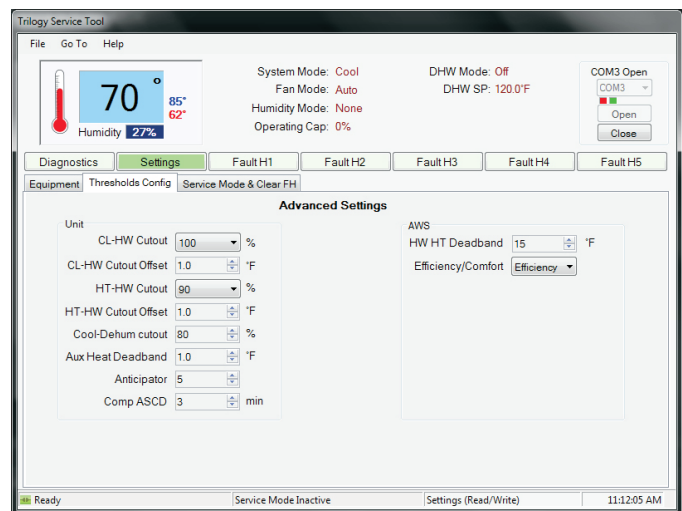
From the software you can:

1. Update the software on the EXM board using the boot-loader.
2. Configure, diagnose and manual operation of the Trilogy® from the service tool.

### Configuration:

The service tool software includes three pages of configuration data for your Trilogy® and the following are values that can be configured on these pages:

1. Equipment
  - a. Unit family, blower type, loop config
  - b. Loop delta T; single/parallel; Anti-freeze
  - c. Capacity: Min/Max Cool/Heat
  - d. Airflows
  - e. Serial # updates
  - f. Hot water delta T
  - g. Aux. heat operating mode
2. Thresholds (limits)
  - a. Cooling + Hot-Water %
  - b. Cooling + Hot-Water offset
  - c. Heating + Hot-water cutout
  - d. Heating + Hot-water cutout offset
  - e. Cooling-Dehumid cutout
  - f. Anticipator
  - g. Compressor ASCD minutes



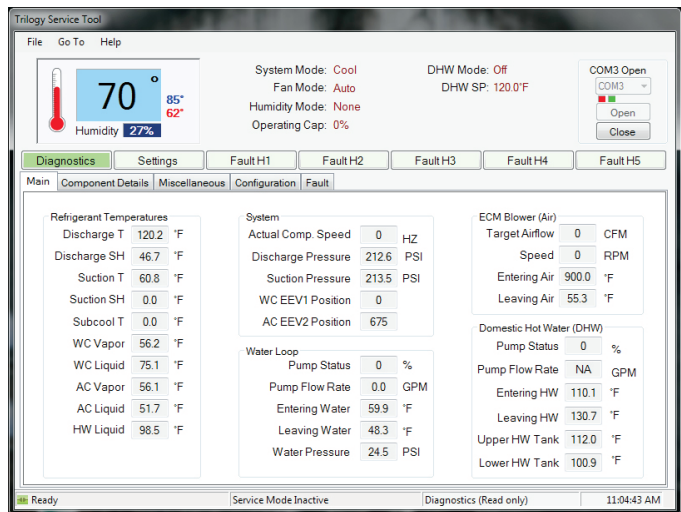
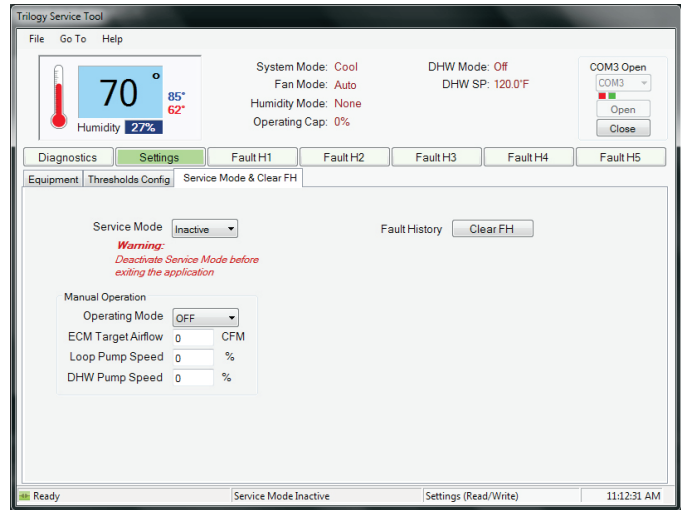
Trilogy® PC Service Tool – Exclusively Available on Trilogy® Q-Mode®

3. Service mode/ clear fault history
  - a. Enter service mode
  - b. Manual operation:
  - c. Operating mode
  - d. Target airflow
  - e. Loop pump speed
  - f. Hot water pump speed
  - g. Clear Fault History

**Diagnostics / REAL-TIME operating data:**

The service tool software includes five pages of configuration data for your Trilogy® and you can get all 39 readings and 8 calculated values in REAL TIME from the EXM board. The following are values that can be viewed on these pages:

1. Calculations
  - a. Discharge Superheat
  - b. Suction Superheat
  - c. Subcooling
  - d. HR/HE
  - e. Loop Pump Watts
  - f. Hot Water GPM
  - g. Hot Water Pump Watts
  - h. Current % Capacity
2. Sensor values
  1. Space Temp
  2. Space Humidity
  3. Upper Hot Water Tank Temp
  4. Lower Hot Water Tank Temp
  5. Discharge Pressure
  6. Discharge Temp
  7. Suction Pressure
  8. Suction Temp
  9. Hot Water Liq Temp
  10. Air Coil Liq Temp
  11. Air Coil Vap Temp
  12. Loop Water Coil Liq Temp
  13. Loop Water Coil Vap Temp
  14. Loop Entering Water Temp
  15. Loop Leaving Water Temp
  16. Loop GPM
  17. Loop Pressure
  18. Loop Pump Speed
  19. Loop Pump Return
  20. Hot Water Entering Water Temp
  21. Hot Water Leaving Water Temp
  22. Hot Water Pump Speed
  23. Hot Water Pump Return
  24. Fan CFM
  25. Fan RPM
  26. Fan Watts
  27. Leaving Air temperature
  28. Target Compressor Speed
  29. Compressor Current
  30. Inverter Current
  31. Inverter DC Bus Volt
  32. Inverter Sink Temp
  33. Compressor Watts
  34. Electronic Expansion Valve1 Step



35. Electronic Expansion Valve2 Step
36. Reversing Valve1 Status
37. Reversing Valve2 Status
38. Ambient Cabinet Temp
39. EXM Control Voltage
40. Dip switch status

**Fault Codes**

The service tool software includes five pages of data for every fault code and saves up to 5 fault codes. You can get all 39 readings and 8 calculated values in AT TIME OF FAULT from the EXM board.

## myUplinkPRO Web Portal

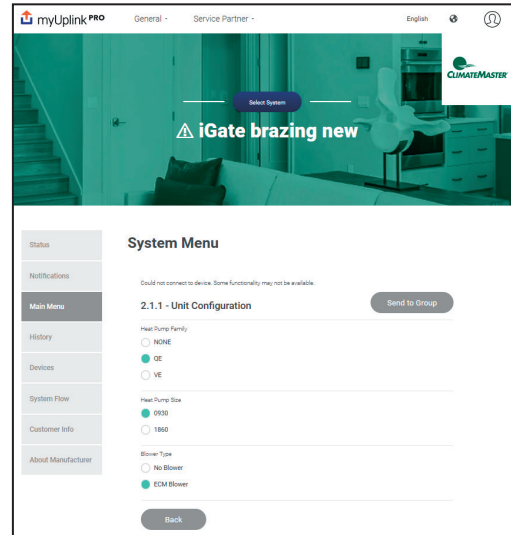
ClimateMaster has taken the convenience of monitoring, configuring and diagnosing the Trilogy® to the next level by making all unit operating information available on the Internet through the web portal.

The myUplinkPRO web portal is your gateway to all your iGate® 2.0 Connect thermostats.

### Configure

Change settings of 25 adjustments in the Trilogy® – from the INTERNET! These adjustments include:

- Airflow (min/max for every mode)
- Capacity (min/max for every mode)
- Delta T (cooling, heating and hot water)
- Blower off delays
- Compressor short cycle time
- Loop pump – single unit or multiple on one loop (parallel)
- Hot water “cutout” (give priority for space cooling / heating)
- Aux heat deadband

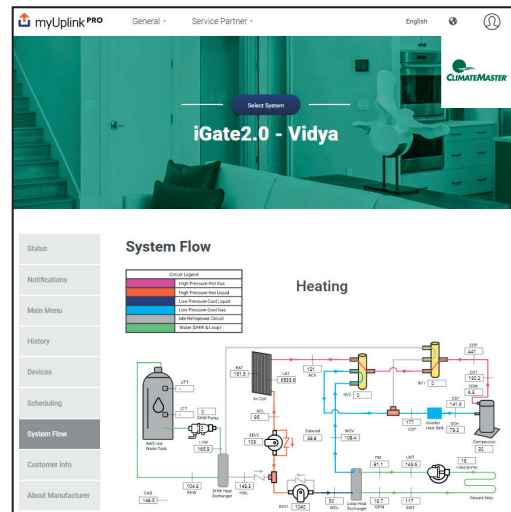


### Monitor

Monitor 47 diagnostic data points – real time. The system also stores data at 5 minute increments for the last 3 days of operation.

Examples of data available on the dealer portal is:

- Superheat / subcool
- HE/ HR
- Current compressor % capacity
- Loop entering and leaving water temperature; Loop flow (GPM); Loop pressure
- Refrigerant temperature at
  - Air coil
  - Loop water coil
  - Hot water coil (liquid only)
- Compressor suction + discharge temperature and pressure
- Loop pump speed, return and watts (watts calculated)
- Fan CFM, RPM and watts; Leaving air temperature
- Compressor speed, current, inverter current, inverter sink temp, compressor watts, EXM control voltage
- iGate® smart tank upper and lower element temperature; hot water pump GPM and watts
- Expansion valve step and reversing valve status
- Cabinet ambient temp



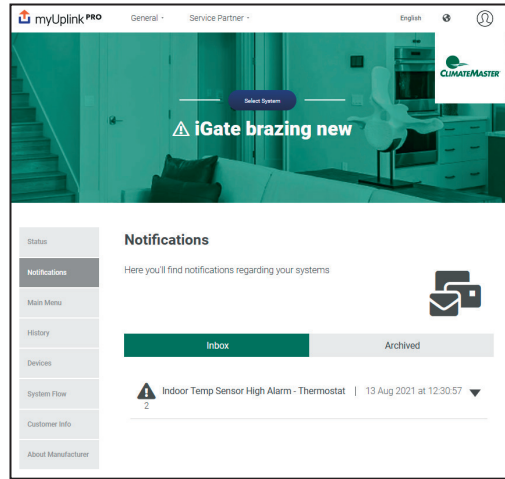
## myUplinkPRO Web Portal

### Diagnose

Last 5 fault codes and operating condition are saved on the EXM and communicated to the dealer portal. You can then reference the troubleshooting smart phone app (see section below) to find possible causes and instructions on fixing the issue.

### Smart phone App

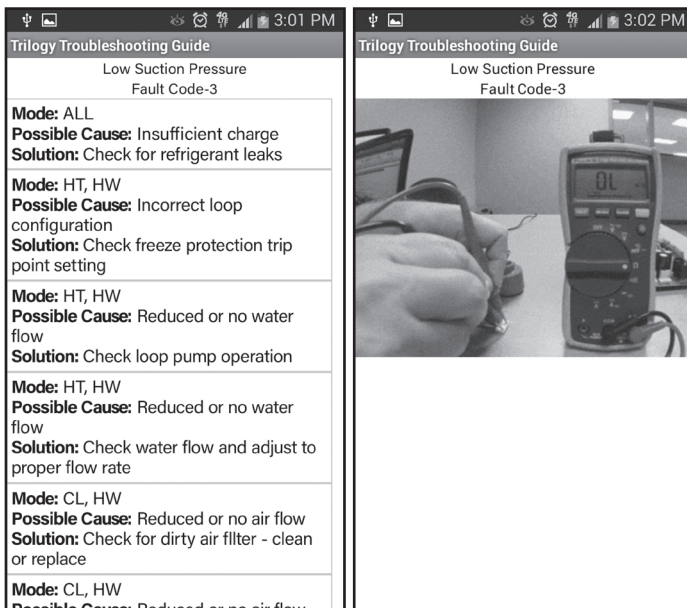
The Climatemaster Trilogy® Troubleshooter allows GeoElite service technicians access to the latest, web-based information\* on any of the 90+ possible fault causes, as well as troubleshooting tips and possible solutions for the Trilogy® Q-Mode® Variable Speed heat pump.



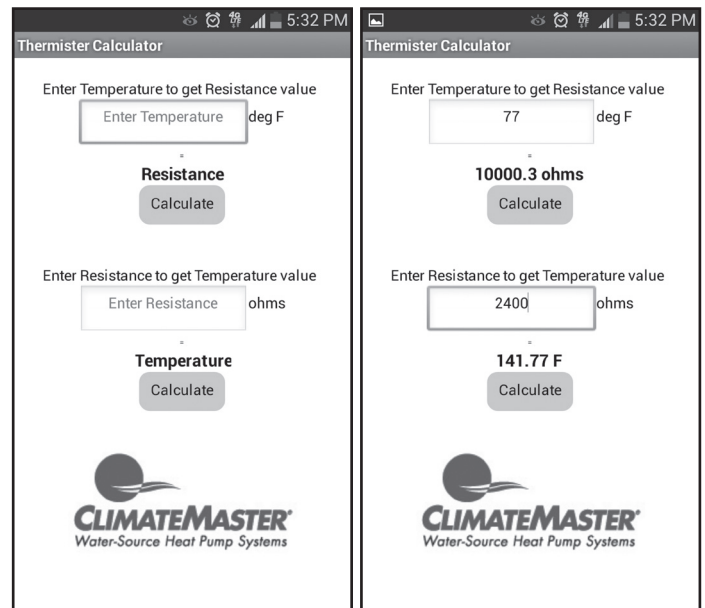
The Trilogy® Troubleshooter uses a companion application, the Thermister Calculator (T-Calc is a separate download), so that technicians can quickly convert between temperatures and resistance to troubleshoot temp sensors.

\* Internet/Data connection required to access fault information The Android app is available at: [https://play.google.com/store/apps/details?id=appinventor.ai\\_soward\\_dane.Trilogy\\_Troubleshooter](https://play.google.com/store/apps/details?id=appinventor.ai_soward_dane.Trilogy_Troubleshooter)

### Troubleshooting App

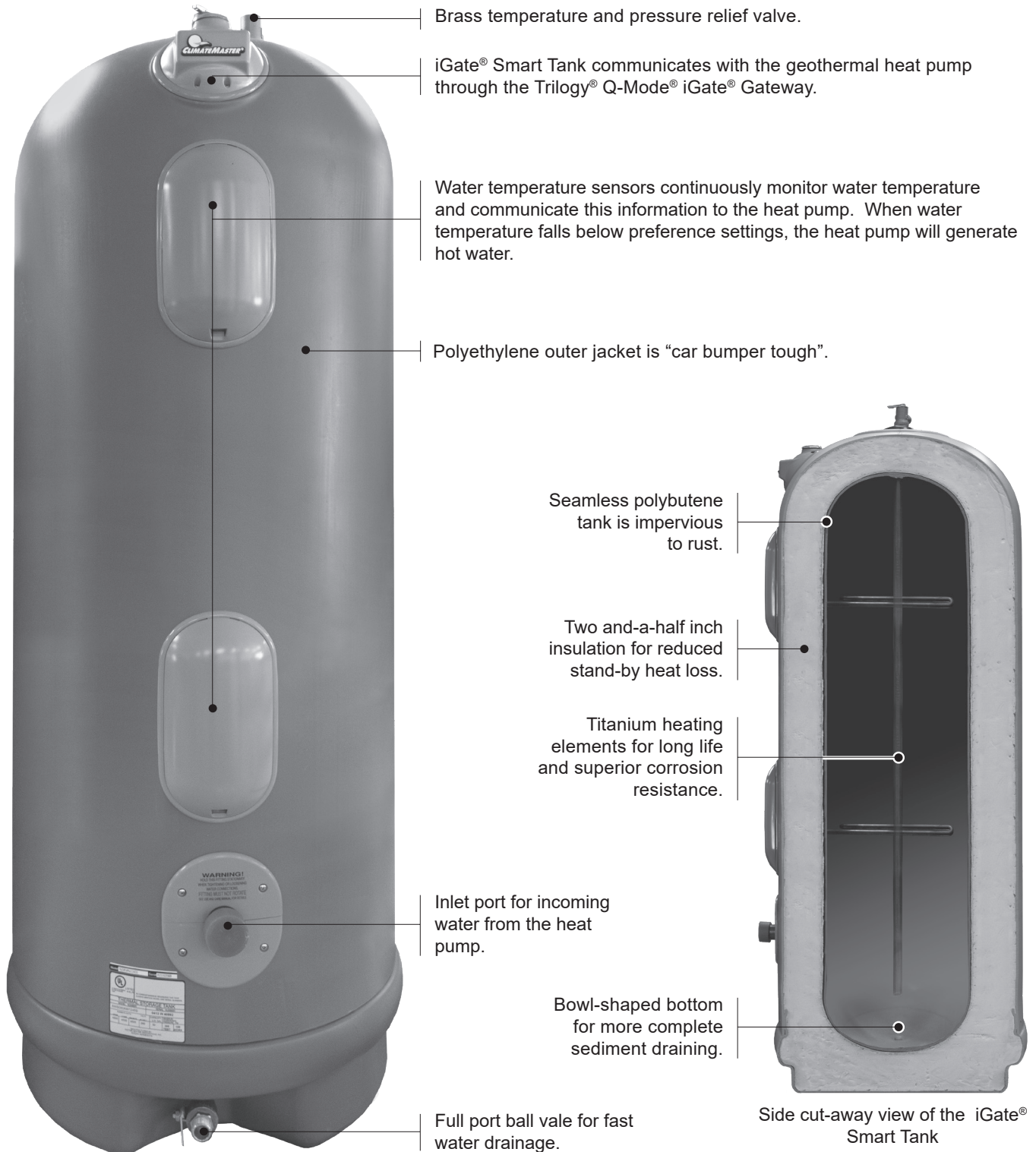


### Thermister Calculator



## iGate® Smart Tank

The iGate® Smart Tank is the geothermal heating and cooling industry's first communicating storage tank.



## vFlow® Internal Variable Water Flow Control

### vFlow® Internal Variable Water Flow

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

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

### vFlow® delivers three main benefits:

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

### Internal components

Trilogy® 45 can be installed more easily and compactly than its predecessors because water-flow components are internal to the unit. It also saves installing contractors labor and time by eliminating the need for an external flow regulator or a bulky external pumping module. Included are variable-speed pump, flushing ports, 3-way flushing valves, and expansion tank.



### Variable flow

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

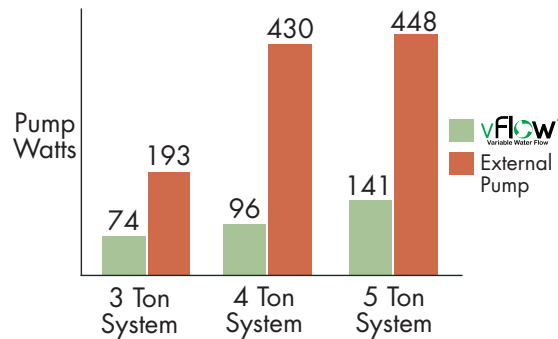


Variable speed pump delivers variable water-flow based on loop water  $\Delta T$ .

### Energy Savings with water circulation control

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

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



## Trilogy® 45 Q-Mode® Design Features

The Trilogy® 45 Q-Mode® Series is a fully variable system with abundant features and ultra-high efficiency.

### Application Flexibility

- Two Capacities 0930 and 1860 (modulates between 9K - 30K or 18K - 60K Btuh)
- Fully variable/modulating system. Set your desired capacity within capacity range and the unit modulates to hold that capacity across the ENTIRE operating range.
- Entering water temperature operation range (20-120°F EWT) and flow rates as low as 1.5 gpm per ton
- Q-Mode® allows for four modes of operation to deliver the lowest operating cost in the industry.
- Upflow, downflow, and horizontal right or left return
- Internal (upflow and downflow only) electric heat unit (optional) designed for easy field installation.
- Optional external (horizontal units) electric heat unit designed for easy field installation
- Web-enabled remote access on internet:
  - Homeowner can set setpoints, schedules, vacation, etc. from a smartphone/computer.
  - Dealers can remotely troubleshoot and diagnose units from anywhere through a smartphone, computer or mobile device.
- Standard pre-installed 2" filter frame with 2" high performance MERV 11 pleated air filter
- Integrated vFlow® allows a cleaner, compact installation and saves time in installation

### Operating Efficiencies

- Exceeds ASHRAE 90.1 and Energy Star Tier 3 efficiency levels
- EarthPure® HFC-410A zero ozone depletion refrigerant.
- Rugged and highly efficient Mitsubishi variable speed compressor (0930 system includes rotary, 1860 system includes scroll) provides ultra-high efficiencies and unsurpassed comfort.
- Full-time, on-demand hot water generation in (1) cooling mode and (2) hot water mode for up to 80% savings on hot water heating.
- Brazed plate water-to-refrigerant heat exchangers deliver higher efficiencies in smaller sizes.
- Next generation all aluminum microchannel air coil for high efficiency
- Large low RPM blowers with variable speed ECM fan motors provide quiet, efficient air movement with high static capability. Installer electronically selectable ECM air flow provides the ultimate in comfort optimization.

### Service & Installation Advantages

ClimateMaster's Trilogy® 45 Q-Mode® series incorporates features that are industry firsts, which make it extremely easy to install:

- Ease of installation:
  - 1) vFlow® - with the industry exclusive features, these units are ready to install out of the box with no requirement for external pumps, expansion tanks, or valves for the ground loop, removing a lot of the complexity of installation.
  - 2) Web-enabled iGate®: Full digital controls that communicate with the thermostat which allows all unit configuration from the thermostat, PC service tool connected to the unit or through the dealer portal on the internet... the easiest installation setup for any level of installer. Far simpler than the use of dip switches on the unit control board.
- Trilogy® 45 only requires 4 wires between the communicating thermostat and the unit. Others require up to 9 or 14 wires for full functionality. This is achieved by leveraging the full power of the microprocessor on the control.
- Internal variable speed circulator includes an internal check valve for multiple unit/ shared loop installations.

- The communicating EXM control board diagnostic and communicating thermostat features allow web-enabled iGate® Connect access to performance information on thermostat, PC service tool or dealer portal on internet.
- The two-section swing-out and removable control box design provides wide-open service access to the compressor section. Multiple unit access panels allow technicians to access any side of the cabinet. Service friendly highly accessible high/low refrigerant pressure ports are located on a service bracket at the front of the unit. No other product / manufacturer in the geothermal segment offer this convenience.
- An innovative two-section electrical control box design that tucks the stationary line voltage components safely behind a swing-out low voltage control panel to provide clear service access through the front of the unit. The low voltage panel can even be quickly pulled off the hinges and removed. Harness connections make controller replacement a snap.
- ¾" MPT condensate connection directly from condensate drain pan eliminates internal plastic drain tubing that is subject to clogging and avoids the need for a fitting that reduces the drain opening size.
- Diagnostic display of system inputs, outputs, and configuration settings at thermostat, PC service tool or on the internet.
- Web-enabled communicating iGate® Connect Thermostat only uses the AWC99\*\* thermostat.
- Diagnostic display of system temperatures at thermostat (AWC99\*\*):
  1. Refrigerant circuit:
    - a. Superheat, Subcool
    - b. Suction pressure/temperature, discharge pressure/temperature, refrigerant temperature at entering / leaving the source coil and air coil
    - c. Compressor speed
    - d. Electronic Expansion Valve operation
  2. Water circuit / loop
    - a. Entering/ Leaving water temperature
    - b. Water flow rate
    - c. Loop pressure
    - d. Internal Pump speed
  3. Air section
    - a. Airflow CFM and blower RPM
    - b. Leaving air temperature
  4. Other information
    - a. Internal pump speed
    - b. Entering/ Leaving hot water
- Immediate manual control of all EXM outputs is available at the thermostat (AWC99\*\*) or iGate® Connct Service tool or dealer portal 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.



## Trilogy® 45 Q-Mode® Design Features

Our IPCS system:

- Verifies that the correct components are being assembled.
- Automatically performs special leak tests on all joints
- Conducts pressure tests
- Performs detailed run test
- Automatically disables packaging for a “failed” unit
- Creates computer database for future service analysis and diagnostics from run test results
- All refrigerant brazing is done in a nitrogen atmosphere
- All units are deep evacuated to less than 100 microns prior to refrigerant charging
- All joints are both helium and halogen leak tested to insure annual leak rate of less than ¼ ounce
- AHRI/ASHRAE/ANSI/ISO 13256-1 certified.
- ETL listed.
- US EPA “Energy Star” Tier 3 compliant.

### Advanced Controls

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

- 15 temperature sensors/transducers 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

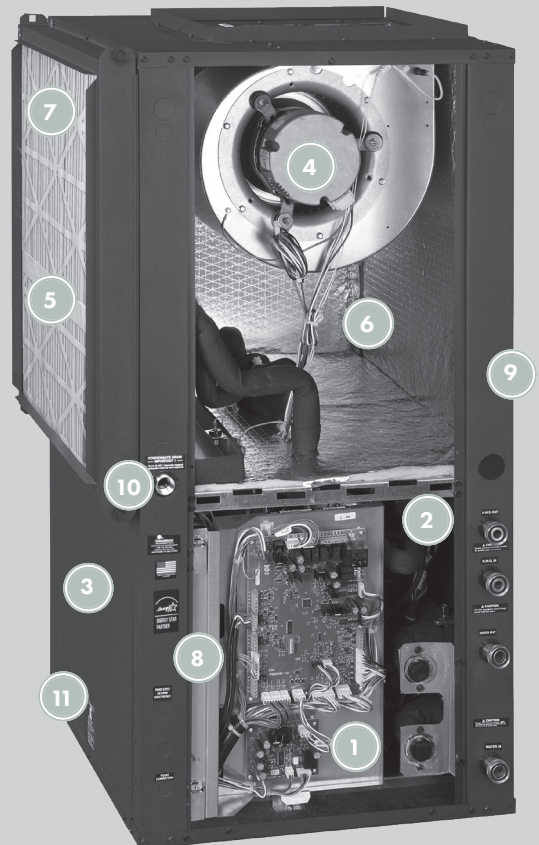
### Field Installed Accessories

- iGate® Connect Web-Enabled Communicating, Programmable Thermostat (AWC99\*\*)
- iGate® ClimaZone™ Zoning Panel
- Auxiliary Electric Heater
- Earthpure® Polarized Media Electric Air Cleaner
- Unit Vibration Isolation Pad
- Unit Stand
- Secondary Drain Pan (Horizontal Units)
- Service tool/cable/software kit (ASVCT00L01).

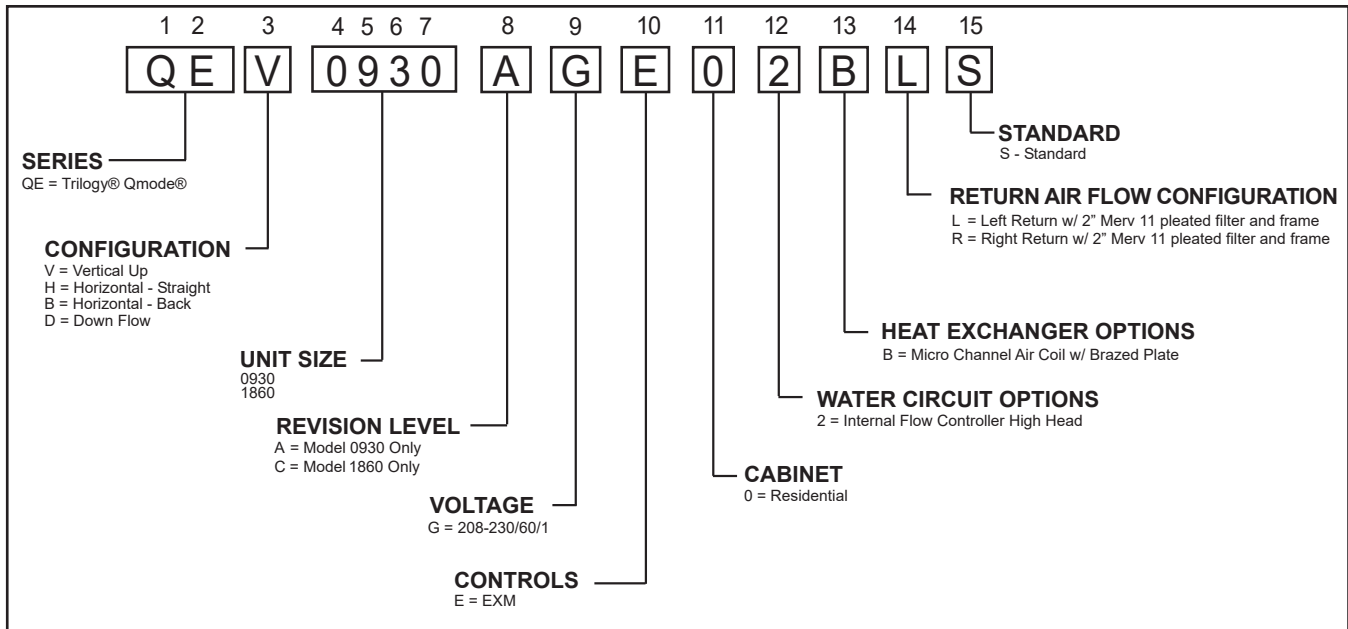
### Warranty

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

- 1 Exclusive iGate® Two-Way Communicating Control to configure, monitor and diagnose AT THERMOSTAT/PC SERVICE TOOL
- 2 vFlow® Internal Variable Water Flow System with Variable Speed Internal Flow Center for optimized efficiency and reliability
- 3 Mitsubishi Variable Speed Compressor with dual-level isolation for ultra-quiet and high-efficiency operation
- 4 Emerson UltraTech® Variable-Speed Communicating Fan Motor with soft start and constant CFM control
- 5 Microchannel Aluminum Air Coils to resist formicary corrosion
- 6 Foil-Faced Insulation in the blower section and fully insulated compressor section conform to ASHRAE 62 specifications
- 7 Two-inch high-efficiency MERV 11 Filter (standard) or EarthPure® Air Cleaner for high quality indoor air
- 8 Two-Section Swing-out Control Box design provides wide-open service access
- 9 Heavy Gauge Galvanized Steel Cabinet is epoxy powder-coated in a durable and attractive black matte finish with stainless steel front access panels
- 10 Designed for External P-trap to eliminate internal drain-line cleanouts
- 11 Double wall vented brazed plate heat exchanger suitable for potable water use



## Unit Model Key



*NOTE: Above model nomenclature is a general reference. Consult individual specification sections for detailed information.*

## AHRI/ISO/ASHRAE 13256-1

ASHRAE/AHRI/ISO 13256-1

Model	Capacity Modulation	Water Loop Heat Pump				Ground Loop Heat Pump			
		Cooling 86°F		Heating 68°F		Cooling Full Load 77°F Part Load 68°F		Heating Full Load 32°F Part Load 41°F	
		Capacity Btuh	EER Btuh/W	Capacity Btuh	COP	Capacity Btuh	EER Btuh/W	Capacity Btuh	COP
QE0930	Part 1	9,000	24.1	12,000	8.7	9,000	43.2	12,000	5.1
	Full	24,000	19.3	30,000	6.6	24,000	24.3	30,000	3.6
QE1860	Part 1	18,000	25.2	24,000	8.6	18,000	45.1	24,000	5.1
	Full	48,000	17.3	60,000	5.5	48,000	21.6	60,000	3.3

Tested in Accordance with ISO 13265-1

Ground Loop Heat Pump ratings based on 15% methanol antifreeze solution

All ratings based upon operation at lower voltage of dual voltage rated models

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

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

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

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

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

### Test Condition Comparison Table

	WLHP	GLHP
<b>Cooling</b>		
Entering Air Temperature - DB/WB °F [°C]	80.6/66.2 [27/19]	80.6/66.2 [27/19]
Entering Water Temperature - °F [°C]	86 [30]	77 [25]
Fluid Flow Rate	*	*
<b>Heating</b>		
Entering Air Temperature - DB/WB °F [°C]	68 [20]	68 [20]
Entering Water Temperature - °F [°C]	68 [20]	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. Fan power is corrected to zero external static pressure using the equation below. The nominal airflow is rated at a specific external static pressure.

- Fan Power Correction = (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)]

## Reference Calculations & Legend

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

CFM/T = airflow, cubic feet/minute per ton	COP = Coefficient of Performance = BTU output/BTU input
EWT = entering water temperature, °F	LWT = leaving water temperature, °F
GPM = water flow in US gallons/minute	LAT = leaving air temperature, °F
EAT = entering air temperature, Fahrenheit (dry bulb/wet bulb)	LC = latent cooling capacity, Mbtuh
HC = heating capacity, Mbtuh	S/T = sensible to total cooling ratio
TC = total cooling capacity, Mbtuh	EWTS = entering water temperature (source)
SC = sensible cooling capacity, Mbtuh	EWTL = entering water temperature (load)
KW = total power unit input, KiloWatts	DTS = temperature difference (source)
HR = total heat of rejection, Mbtuh	DTL = temperature difference (load)
DT = temperature difference	LWTS = leaving water temperature (source)
HZ = hertz	LWTL = leaving water temperature (load)
HE = total heat of extraction, Mbtuh	HW = hot water (potable)
WPD = Water coil pressure drop (ft hd)	HWC = hot water capacity, Mbtuh
EER = Energy Efficiency Ratio = BTU output/Watt input	

## Entering Air Correction Factors

Cooling													
Entering Air WB°F	Total Capacity	Sensible Cooling Capacity Multiplier - Entering DB °F										Power	Heat of Rejection
		65	70	75	80	80.6	85	90	95	100	100		
50	0.734	1.046	*	*	*	*	*	*	*	*	1.017	0.770	0.853
55	0.811	0.871	1.062	1.240	*	*	*	*	*	*	1.017	0.837	0.896
60	0.890	0.666	0.876	1.073	1.257	*	*	*	*	*	1.013	0.906	0.932
65	0.957		0.660	0.876	1.079	1.103	1.269	*	*	*	1.008	0.963	0.979
66.2	0.989		0.604	0.825	1.032	1.056	1.227	*	*	*	1.002	0.990	0.991
67	1.000		0.566	0.789	1.000	1.024	1.197	1.381	*	*	1.000	1.000	1.000
70	1.058			0.650	0.872	0.898	1.081	1.276	*	*	0.989	1.052	1.035
75	1.146				0.635	0.663	0.862	1.077	1.278	1.466	0.969	1.166	1.101

\* Sensible capacity equals total capacity.

Heating			
Entering Air DB°F	Heating Capacity	Power	Heat of Extraction
50	1.052	0.806	1.114
55	1.042	0.852	1.090
60	1.030	0.901	1.063
65	1.016	0.951	1.032
70	1.000	1.000	1.000
75	0.983	1.046	0.967
80	0.966	1.087	0.935

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













Performance Data — Trilogy® QE 0930 Hot Water

High									
EWTS °F	DTS	LWTS	DTL	8					
			→ EWTL	HC	KW	HE	COP	H <sub>z</sub>	LWTL
20	6	14.0	70	26.1	2.02	19.2	3.8	130	78.0
	6	14.0	90	24.4	2.41	16.2	3.0	130	98.0
	6	14.0	110	20.7	2.52	12.1	2.4	119	118.0
	6	14.0	130	13.3	1.83	7.1	2.1	83	138.0
	6	14.0	135	13.0	1.90	6.5	2.0	83	143.0
30	12	18.0	70	26.1	1.89	19.7	4.0	124	78.0
	12	18.0	90	24.6	2.27	16.8	3.2	124	98.0
	12	18.0	110	20.9	2.39	12.7	2.6	113	118.0
	12	18.0	130	13.4	1.73	7.5	2.3	78	138.0
	12	18.0	135	13.1	1.80	6.9	2.1	78	143.0
	6	24.0	70	26.2	1.71	20.3	4.5	114	78.0
	6	24.0	90	24.7	2.08	17.6	3.5	114	98.0
	6	24.0	110	21.1	2.20	13.6	2.8	104	118.0
	6	24.0	130	13.5	1.60	8.0	2.5	71	138.0
	6	24.0	135	13.1	1.68	7.4	2.3	71	143.0
40	12	28.0	70	26.2	1.60	20.7	4.8	108	78.0
	12	28.0	90	24.8	1.95	18.2	3.7	108	98.0
	12	28.0	110	21.2	2.09	14.1	3.0	98	118.0
	12	28.0	130	13.5	1.53	8.3	2.6	67	138.0
	12	28.0	135	13.2	1.61	7.7	2.4	67	143.0
	6	34.0	70	26.2	1.43	21.3	5.4	99	78.0
	6	34.0	90	24.9	1.77	18.9	4.1	99	98.0
	6	34.0	110	21.4	1.92	14.9	3.3	90	118.0
	6	34.0	130	13.5	1.44	8.6	2.7	62	138.0
	6	34.0	135	13.2	1.52	8.1	2.6	62	143.0
50	13	37.0	70	26.1	1.35	21.5	5.7	95	78.0
	13	37.0	90	25.0	1.68	19.2	4.3	95	98.0
	13	37.0	110	21.5	1.84	15.2	3.4	87	118.0
	13	37.0	130	13.6	1.41	8.8	2.8	59	138.0
	13	37.0	135	13.3	1.48	8.2	2.6	59	143.0
	7	43.0	70	26.0	1.19	22.0	6.4	87	78.0
	7	43.0	90	25.0	1.51	19.8	4.8	87	98.0
	7	43.0	110	21.6	1.69	15.8	3.7	80	118.0
	7	43.0	130	13.6	1.34	9.0	3.0	55	138.0
	7	43.0	135	13.3	1.41	8.5	2.8	55	143.0
60	13	47.0	70	25.9	1.09	22.2	7.0	82	78.0
	13	47.0	90	25.0	1.41	20.2	5.2	82	98.0
	13	47.0	110	21.6	1.59	16.2	4.0	75	118.0
	13	47.0	130	13.6	1.29	9.2	3.1	53	138.0
	13	47.0	135	13.3	1.36	8.7	2.9	53	143.0
	7	53.0	70	25.8	0.95	22.5	8.0	75	78.0
	7	53.0	90	25.0	1.25	20.7	5.8	75	98.0
	7	53.0	110	21.7	1.45	16.7	4.4	69	118.0
	7	53.0	130	13.6	1.23	9.4	3.2	49	138.0
	7	53.0	135	13.3	1.30	8.9	3.0	49	143.0
70	13	57.0	70	25.6	0.86	22.7	8.7	71	78.0
	13	57.0	90	24.9	1.15	21.0	6.3	71	98.0
	13	57.0	110	21.7	1.36	17.1	4.7	66	118.0
	13	57.0	130	13.6	1.19	9.6	3.4	47	138.0
	13	57.0	135	13.3	1.26	9.1	3.1	47	143.0
	7	63.0	70	25.4	0.73	22.9	10.2	65	78.0
	7	63.0	90	24.8	1.01	21.4	7.2	65	98.0
	7	63.0	110	21.7	1.23	17.5	5.2	60	118.0
	7	63.0	130	13.6	1.12	9.8	3.6	44	138.0
	7	63.0	135	13.3	1.19	9.3	3.3	44	143.0
80	13	67.0	70	25.2	0.65	23.0	11.4	62	78.0
	13	67.0	90	24.7	0.92	21.6	7.9	62	98.0
	13	67.0	110	21.7	1.14	17.8	5.6	57	118.0
	13	67.0	130	13.6	1.07	10.0	3.7	42	138.0
	13	67.0	135	13.3	1.13	9.5	3.4	42	143.0
	7	73.0	70	24.9	0.53	23.0	13.6	57	78.0
	7	73.0	90	24.5	0.79	21.8	9.1	57	98.0
	7	73.0	110	21.6	1.02	18.1	6.2	52	118.0
	7	73.0	130	13.6	0.98	10.3	4.1	38	138.0
	7	73.0	135	13.3	1.04	9.8	3.7	38	143.0
90	13	77.0	70	24.6	0.46	23.1	15.6	54	78.0
	13	77.0	90	24.4	0.71	21.9	10.0	54	98.0
	13	77.0	110	21.5	0.94	18.3	6.7	50	118.0
	13	77.0	130	13.6	0.91	10.5	4.4	36	138.0
	13	77.0	135	13.3	0.97	10.0	4.0	36	143.0
	7	83.0	70	24.2	0.36	23.0	19.7	50	78.0
	7	83.0	90	24.1	0.60	22.1	11.8	50	98.0
	7	83.0	110	21.4	0.81	18.6	7.7	46	118.0
	7	83.0	130	13.6	0.79	10.9	5.0	32	138.0
	7	83.0	135	13.3	0.85	10.4	4.6	32	143.0

\* pressure drop is less than 1 ft Interpolation is permissible, extrapolation is not.  
Above data is based on 15% methanol.

Performance Data — Trilogy® QE 0930 Cooling and Hot Water

EWTL °F	DT	CFM/T	TC					SC					S/T					kW					HR (HWC)				
			Compressor Speed %					Compressor Speed %					Compressor Speed %					Compressor Speed %					Compressor Speed %				
			30	40	60	80	100	30	40	60	80	100	30	40	60	80	100	30	40	60	80	100	30	40	60	80	100
70	12	300	9.0	12.0	18.0	24.0	30.0	5.7	7.7	11.7	15.7	19.7	0.64	0.65	0.65	0.65	0.66	0.33	0.44	0.70	1.05	1.50	10.1	13.5	20.4	27.6	35.1
	12	400	9.0	12.0	18.0	24.0	30.0	6.6	8.8	13.3	17.8	22.0	0.74	0.73	0.74	0.74	0.73	0.29	0.39	0.63	0.97	1.44	10.0	13.3	20.1	27.3	34.9
	12	500	9.0	12.0	18.0	24.0	30.0	7.4	10.0	14.9	19.6	24.2	0.83	0.83	0.83	0.82	0.81	0.27	0.35	0.63	1.04	1.56	9.9	13.2	20.1	27.5	35.3
	8	300	9.0	12.0	18.0	24.0	30.0	5.6	7.6	11.6	15.6	19.6	0.63	0.64	0.64	0.65	0.65	0.28	0.39	0.65	0.98	1.42	10.0	13.3	20.2	27.4	34.9
	8	400	9.0	12.0	18.0	24.0	30.0	6.6	8.7	13.2	17.7	21.9	0.73	0.73	0.73	0.74	0.73	0.25	0.35	0.58	0.90	1.35	9.8	13.2	20.0	27.1	34.6
	8	500	9.0	12.0	18.0	24.0	30.0	7.4	10.0	14.8	19.5	24.2	0.83	0.83	0.82	0.81	0.81	0.24	0.32	0.58	0.97	1.47	9.8	13.1	20.0	27.3	35.0
90	12	300	9.0	12.0	18.0	24.0	30.0	5.9	7.9	11.9	15.8	19.9	0.65	0.66	0.66	0.66	0.66	0.58	0.73	1.10	1.62	2.29	11.0	14.5	21.8	29.5	37.8
	12	400	9.0	12.0	18.0	24.0	30.0	6.7	9.0	13.5	18.0	22.1	0.75	0.75	0.75	0.75	0.74	0.52	0.64	0.99	1.49	2.20	10.8	14.2	21.4	29.1	37.5
	12	500	9.0	12.0	18.0	24.0	30.0	7.4	10.0	15.1	19.8	24.4	0.82	0.84	0.84	0.83	0.81	0.49	0.60	0.99	1.57	2.33	10.7	14.1	21.4	29.4	38.0
	8	300	9.0	12.0	18.0	24.0	30.0	5.9	7.9	11.9	15.8	19.9	0.65	0.66	0.66	0.66	0.66	0.53	0.66	1.01	1.48	2.16	10.8	14.3	21.4	29.1	37.4
	8	400	9.0	12.0	18.0	24.0	30.0	6.7	9.0	13.5	18.0	22.2	0.75	0.75	0.75	0.75	0.74	0.47	0.58	0.90	1.36	2.07	10.6	14.0	21.1	28.7	37.0
	8	500	9.0	12.0	18.0	24.0	30.0	7.4	10.0	15.0	19.8	24.4	0.82	0.84	0.83	0.82	0.81	0.44	0.54	0.90	1.44	2.21	10.5	13.9	21.1	28.9	37.5
110	12	300	9.0	12.0	18.0	24.0	30.0	5.8	7.8	11.7	15.7	19.8	0.64	0.65	0.65	0.66	0.66	0.85	1.10	1.72	2.53	3.56	11.9	15.7	23.9	32.6	42.1
	12	400	9.0	12.0	18.0	24.0	30.0	6.6	8.9	13.4	17.9	21.9	0.73	0.74	0.75	0.74	0.73	0.80	1.01	1.57	2.35	3.39	11.7	15.4	23.4	32.0	41.6
	12	500	9.0	12.0	18.0	24.0	30.0	7.5	10.2	15.2	19.9	24.4	0.83	0.85	0.84	0.83	0.81	0.78	0.97	1.55	2.40	3.49	11.7	15.3	23.3	32.2	41.9
	8	300	9.0	12.0	18.0	24.0	30.0	5.8	7.8	11.8	15.7	19.8	0.64	0.65	0.65	0.66	0.66	0.80	1.02	1.58	2.32	3.44	11.7	15.5	23.4	31.9	41.7
	8	400	9.0	12.0	18.0	24.0	30.0	6.6	8.9	13.5	17.9	22.0	0.74	0.74	0.75	0.75	0.73	0.74	0.93	1.44	2.15	3.27	11.5	15.2	22.9	31.3	41.2
	8	500	9.0	12.0	18.0	24.0	30.0	7.5	10.1	15.2	19.9	24.4	0.83	0.84	0.84	0.83	0.81	0.72	0.89	1.42	2.21	3.38	11.5	15.0	22.9	31.5	41.5
130	12	300	9.0	12.0	18.0	24.0	24.0	5.9	7.8	11.8	15.7	15.7	0.65	0.65	0.65	0.66	0.66	1.1	1.5	2.5	3.8	3.8	12.8	17.2	26.6	36.9	36.9
	12	400	9.0	12.0	18.0	24.0	24.0	6.7	8.9	13.5	17.8	17.8	0.74	0.75	0.75	0.74	0.74	1.1	1.5	2.4	3.5	3.5	12.8	17.0	26.0	36.0	36.0
	12	500	9.0	12.0	18.0	24.0	24.0	7.6	10.3	15.3	19.8	19.8	0.85	0.86	0.85	0.83	0.83	1.1	1.4	2.3	3.5	3.5	12.8	16.9	25.8	35.9	35.9
	8	300	9.0	12.0	18.0	24.0	26.8	5.8	7.8	11.7	15.7	17.6	0.65	0.65	0.65	0.65	0.66	1.1	1.4	2.4	3.6	4.3	12.6	16.9	26.0	36.2	41.5
	8	400	9.0	12.0	18.0	24.0	27.4	6.6	8.9	13.4	17.8	20.1	0.74	0.74	0.75	0.74	0.73	1.1	1.4	2.2	3.3	4.2	12.6	16.7	25.4	35.3	41.8
	8	500	9.0	12.0	18.0	24.0	28.4	7.6	10.3	15.3	19.9	23.0	0.84	0.85	0.85	0.83	0.81	1.1	1.3	2.1	3.3	4.5	12.6	16.5	25.3	35.3	43.7
135	8	300	9.0	12.0	18.0	18.0	18.0	5.9	7.8	11.8	11.8	11.8	0.65	0.65	0.65	0.65	0.65	1.1	1.6	2.6	2.6	2.6	12.9	17.3	26.8	26.8	26.8
	8	400	9.0	12.0	18.0	18.0	18.0	6.7	9.0	13.5	13.5	13.5	0.75	0.75	0.75	0.75	0.75	1.1	1.5	2.4	2.4	2.4	12.9	17.1	26.2	26.2	26.2
	8	500	9.0	12.0	18.0	18.0	18.0	7.6	10.3	15.3	15.3	15.3	0.85	0.86	0.85	0.85	0.85	1.1	1.5	2.3	2.3	2.3	12.9	17.0	26.0	26.0	26.0
	8	300	9.0	12.0	18.0	18.0	18.0	5.9	7.8	11.8	11.8	11.8	0.65	0.65	0.65	0.65	0.65	1.1	1.6	2.6	2.6	2.6	12.9	17.3	26.8	26.8	26.8
	8	400	9.0	12.0	18.0	18.0	18.0	6.7	9.0	13.5	13.5	13.5	0.75	0.75	0.75	0.75	0.75	1.1	1.5	2.4	2.4	2.4	12.9	17.1	26.2	26.2	26.2
	8	500	9.0	12.0	18.0	18.0	18.0	7.6	10.3	15.3	15.3	15.3	0.85	0.86	0.85	0.85	0.85	1.1	1.5	2.3	2.3	2.3	12.9	17.0	26.0	26.0	26.0

\* pressure drop is less than 1 ft

Above performance is based on 80°F db / 67°F wb entering air conditions.

Performance Data — Trilogy® QE 0930 Cooling and Hot Water

EWTL °F	EER					Hz					HW LWT					HW GPM					HW PD				
	Compressor Speed %					Compressor Speed %					Compressor Speed %					Compressor Speed %					Compressor Speed %				
	30	40	60	80	100	30	40	60	80	100	30	40	60	80	100	30	40	60	80	100	30	40	60	80	100
70	27.6	27.5	25.5	22.8	19.9	29	37	59	82	98	82.0	82.0	82.0	82.0	82.0	1.7	2.2	3.4	4.6	5.9	*	*	1.4	2.6	3.9
	31.5	31.1	28.6	24.8	20.9	27	35	53	73	91	82.0	82.0	82.0	82.0	82.0	1.7	2.2	3.4	4.6	5.8	*	*	1.4	2.5	3.9
	33.0	33.8	28.6	23.1	19.3	25	33	51	71	89	82.0	82.0	82.0	82.0	82.0	1.7	2.2	3.4	4.6	5.9	*	*	1.4	2.5	4.0
	32.3	30.8	27.6	24.4	21.1	28	36	58	80	97	78.0	78.0	78.0	78.0	78.7	2.5	3.3	5.1	6.8	8.0	*	1.4	3.1	5.0	5.8
	36.7	34.6	30.8	26.6	22.1	25	34	52	72	90	78.0	78.0	78.0	78.0	78.7	2.5	3.3	5.0	6.8	8.0	*	1.4	3.0	4.9	5.8
	37.4	37.3	30.8	24.8	20.4	25	32	50	69	87	78.0	78.0	78.0	78.0	78.8	2.5	3.3	5.0	6.8	8.0	*	1.4	3.0	5.0	5.8
90	15.5	16.6	16.3	14.8	13.1	35	44	67	92	111	102.0	102.0	102.0	102.0	102.0	1.8	2.4	3.6	4.9	6.3	*	*	1.6	2.8	4.3
	17.4	18.6	18.2	16.1	13.7	32	41	60	81	102	102.0	102.0	102.0	102.0	102.0	1.8	2.4	3.6	4.9	6.2	*	*	1.5	2.8	4.2
	18.3	19.9	18.2	15.3	12.9	30	39	59	81	101	102.0	102.0	102.0	102.0	102.0	1.8	2.3	3.6	4.9	6.3	*	*	1.5	2.8	4.3
	17.0	18.2	17.9	16.2	13.9	34	42	65	90	109	98.0	98.0	98.0	98.0	99.3	2.7	3.6	5.4	7.3	8.0	1.0	1.5	3.3	5.1	5.5
	19.2	20.5	20.0	17.6	14.5	31	40	59	79	100	98.0	98.0	98.0	98.0	99.3	2.6	3.5	5.3	7.2	8.0	1.0	1.5	3.2	5.0	5.5
	20.4	22.1	20.0	16.7	13.6	29	37	57	78	99	98.0	98.0	98.0	98.0	99.4	2.6	3.5	5.3	7.2	8.0	1.0	1.5	3.2	5.1	5.5
110	10.6	10.9	10.5	9.5	8.4	41	51	77	105	127	122.0	122.0	122.0	122.0	122.0	2.0	2.6	4.0	5.4	7.0	*	*	1.9	3.4	4.8
	11.3	11.9	11.5	10.2	8.8	38	48	70	95	120	122.0	122.0	122.0	122.0	122.0	2.0	2.6	3.9	5.3	6.9	*	*	1.8	3.3	4.7
	11.5	12.4	11.6	10.0	8.6	36	46	69	94	118	122.0	122.0	122.0	122.0	122.0	1.9	2.6	3.9	5.4	7.0	*	*	1.8	3.3	4.7
	11.3	11.8	11.4	10.3	8.7	40	50	75	102	126	118.0	118.0	118.0	118.0	120.4	2.9	3.9	5.8	8.0	8.0	1.1	1.8	3.8	5.3	5.2
	12.2	12.9	12.5	11.1	9.2	37	46	68	92	119	118.0	118.0	118.0	118.0	120.3	2.9	3.8	5.7	7.8	8.0	1.1	1.7	3.7	5.2	5.2
	12.5	13.5	12.6	10.9	8.9	35	44	67	91	116	118.0	118.0	118.0	118.0	120.4	2.9	3.8	5.7	7.9	8.0	1.1	1.7	3.6	5.2	5.2
130	8.0	7.8	7.1	6.4	6.4	46	57	86	118	118	142.0	142.0	142.0	142.0	142.0	2.1	2.9	4.4	6.1	6.1	0.7	1.1	2.4	4.1	4.1
	8.0	8.1	7.6	6.8	6.8	43	55	83	114	114	142.0	142.0	142.0	142.0	142.0	2.1	2.8	4.3	6.0	6.0	0.7	1.1	2.3	4.0	4.0
	8.0	8.4	7.8	6.9	6.9	43	55	81	110	110	142.0	142.0	142.0	142.0	142.0	2.1	2.8	4.3	6.0	6.0	0.7	1.0	2.3	4.0	4.0
	8.4	8.3	7.7	6.7	6.2	45	56	84	116	130	138.0	138.0	138.0	139.0	140.4	3.2	4.2	6.5	8.0	8.0	1.3	2.2	4.4	5.2	5.2
	8.5	8.7	8.2	7.2	6.5	42	53	80	110	130	138.0	138.0	138.0	138.8	140.4	3.2	4.2	6.4	8.0	8.0	1.3	2.1	4.3	5.2	5.2
	8.5	9.0	8.4	7.3	6.3	41	53	79	107	130	138.0	138.0	138.0	138.8	140.9	3.2	4.1	6.3	8.0	8.0	1.3	2.1	4.2	5.2	5.2
135	7.9	7.7	7.0	7.0	7.0	46	57	87	87	87	143.0	143.0	143.0	143.0	143.0	3.2	4.3	6.7	6.7	6.7	1.3	2.3	4.6	4.6	4.6
	7.9	8.0	7.5	7.5	7.5	43	55	83	83	83	143.0	143.0	143.0	143.0	143.0	3.2	4.3	6.5	6.5	6.5	1.3	2.3	4.5	4.5	4.5
	7.9	8.2	7.7	7.7	7.7	43	55	82	82	82	143.0	143.0	143.0	143.0	143.0	3.2	4.2	6.5	6.5	6.5	1.3	2.2	4.4	4.4	4.4
	7.9	7.7	7.0	7.0	7.0	46	57	87	87	87	143.0	143.0	143.0	143.0	143.0	3.2	4.3	6.7	6.7	6.7	1.3	2.3	4.6	4.6	4.6
	7.9	8.0	7.5	7.5	7.5	43	55	83	83	83	143.0	143.0	143.0	143.0	143.0	3.2	4.3	6.5	6.5	6.5	1.3	2.3	4.5	4.5	4.5
	7.9	8.2	7.7	7.7	7.7	43	55	82	82	82	143.0	143.0	143.0	143.0	143.0	3.2	4.2	6.5	6.5	6.5	1.3	2.2	4.4	4.4	4.4

Interpolation is permissible, extrapolation is not.













Performance Data — Trilogy® QE 1860 Hot Water

High									
EWTS °F	DTS	LWTS	DTL →	12					
			EWTL	HC	KW	HE	COP	Hz	LWTL
20	6	14.0	70	47.2	4.31	32.5	3.2	105	82.0
	6	14.0	90	45.1	5.42	26.6	2.4	105	102.0
	6	14.0	110	39.1	5.81	19.3	2.0	94	122.0
	6	14.0	130	27.2	5.23	9.4	1.5	72	142.0
	6	14.0	135	26.8	5.54	7.9	1.4	72	147.0
30	12	18.0	70	48.8	4.06	34.9	3.5	101	82.0
	12	18.0	90	46.7	5.13	29.2	2.7	101	102.0
	12	18.0	110	39.9	5.48	21.2	2.1	90	122.0
	12	18.0	130	27.1	4.86	10.5	1.6	67	142.0
	12	18.0	135	26.7	5.14	9.1	1.5	67	147.0
	6	24.0	70	50.5	3.68	37.9	4.0	94	82.0
	6	24.0	90	48.5	4.70	32.4	3.0	94	102.0
	6	24.0	110	40.8	4.99	23.8	2.4	83	122.0
	6	24.0	130	27.0	4.35	12.1	1.8	61	142.0
	6	24.0	135	26.4	4.61	10.7	1.7	61	147.0
40	12	28.0	70	51.2	3.43	39.5	4.4	89	82.0
	12	28.0	90	49.3	4.41	34.2	3.3	89	102.0
	12	28.0	110	41.1	4.68	25.2	2.6	78	122.0
	12	28.0	130	26.9	4.04	13.1	1.9	57	142.0
	12	28.0	135	26.3	4.29	11.7	1.8	57	147.0
	6	34.0	70	51.8	3.05	41.4	5.0	82	82.0
	6	34.0	90	50.0	3.98	36.4	3.7	82	102.0
	6	34.0	110	41.4	4.22	27.0	2.9	72	122.0
	6	34.0	130	26.7	3.63	14.3	2.2	52	142.0
	6	34.0	135	26.1	3.86	12.9	2.0	52	147.0
50	13	37.0	70	51.8	2.87	42.1	5.3	79	82.0
	13	37.0	90	50.2	3.76	37.3	3.9	79	102.0
	13	37.0	110	41.4	4.00	27.7	3.0	69	122.0
	13	37.0	130	26.6	3.45	14.8	2.3	49	142.0
	13	37.0	135	25.9	3.66	13.5	2.1	49	147.0
	7	43.0	70	51.6	2.51	43.1	6.0	70	82.0
	7	43.0	90	50.3	3.35	38.9	4.4	70	102.0
	7	43.0	110	41.3	3.59	29.0	3.4	62	122.0
	7	43.0	130	26.4	3.11	15.8	2.5	45	142.0
	7	43.0	135	25.7	3.31	14.4	2.3	45	147.0
60	13	47.0	70	51.3	2.28	43.5	6.6	67	82.0
	13	47.0	90	50.2	3.08	39.7	4.8	67	102.0
	13	47.0	110	41.1	3.32	29.8	3.6	59	122.0
	13	47.0	130	26.3	2.92	16.3	2.6	42	142.0
	13	47.0	135	25.5	3.10	15.0	2.4	43	147.0
	7	53.0	70	50.5	1.97	43.8	7.5	63	82.0
	7	53.0	90	50.0	2.71	40.7	5.4	63	102.0
	7	53.0	110	40.8	2.96	30.7	4.0	55	122.0
	7	53.0	130	26.1	2.65	17.1	2.9	39	142.0
	7	53.0	135	25.3	2.82	15.7	2.6	39	147.0
70	13	57.0	70	50.0	1.78	43.9	8.2	60	82.0
	13	57.0	90	49.8	2.48	41.3	5.9	60	102.0
	13	57.0	110	40.6	2.73	31.2	4.3	52	122.0
	13	57.0	130	26.0	2.49	17.5	3.1	37	142.0
	13	57.0	135	25.1	2.65	16.1	2.8	37	147.0
	7	63.0	70	49.0	1.54	43.8	9.3	56	82.0
	7	63.0	90	49.5	2.18	42.1	6.7	56	102.0
	7	63.0	110	40.3	2.43	32.0	4.9	48	122.0
	7	63.0	130	25.8	2.28	18.0	3.3	34	142.0
	7	63.0	135	24.9	2.42	16.6	3.0	34	147.0
80	13	67.0	70	48.4	1.40	43.7	10.1	53	82.0
	13	67.0	90	49.4	2.00	42.5	7.2	53	102.0
	13	67.0	110	40.1	2.25	32.4	5.2	46	122.0
	13	67.0	130	25.6	2.15	18.3	3.5	32	142.0
	13	67.0	135	24.7	2.29	16.9	3.2	32	147.0
	7	73.0	70	47.7	1.25	43.4	11.2	48	82.0
	7	73.0	90	49.4	1.79	43.3	8.1	48	102.0
	7	73.0	110	40.1	2.02	33.2	5.8	42	122.0
	7	73.0	130	25.4	1.98	18.7	3.8	30	142.0
	7	73.0	135	24.4	2.10	17.2	3.4	30	147.0
90	13	77.0	70	47.3	1.19	43.3	11.7	45	82.0
	13	77.0	90	49.6	1.68	43.9	8.6	45	102.0
	13	77.0	110	40.2	1.89	33.7	6.2	40	122.0
	13	77.0	130	25.3	1.87	18.9	4.0	28	142.0
	13	77.0	135	24.2	1.99	17.4	3.6	28	147.0
	7	83.0	70	47.0	1.15	43.1	11.9	41	82.0
	7	83.0	90	50.3	1.58	44.9	9.3	41	102.0
	7	83.0	110	40.6	1.75	34.7	6.8	36	122.0
	7	83.0	130	25.1	1.71	19.2	4.3	26	142.0
	7	83.0	135	24.0	1.83	17.7	3.8	26	147.0

\* pressure drop is less than 1 ft Interpolation is permissible, extrapolation is not.  
Above data is based on 15% methanol.

Performance Data — Trilogy® QE 1860 Cooling and Hot Water

EWT °F	DT	CFM/T	TC					SC					S/T					kW					HR (HWC)				
			Compressor Speed %					Compressor Speed %					Compressor Speed %					Compressor Speed %					Compressor Speed %				
			30	40	60	80	100	30	40	60	80	100	30	40	60	80	100	30	40	60	80	100	30	40	60	80	100
70	12	300	18.0	24.0	36.0	48.0	60.0	11.3	15.7	23.1	29.7	36.9	0.63	0.66	0.64	0.62	0.62	0.62	0.71	1.33	2.40	3.79	20.1	26.4	40.5	56.2	72.9
	12	400	18.0	24.0	36.0	48.0	60.0	13.2	17.5	25.7	33.7	42.1	0.73	0.73	0.72	0.70	0.70	0.55	0.71	1.23	2.10	3.53	19.9	26.4	40.2	55.2	72.1
	12	500	18.0	24.0	36.0	48.0	60.0	14.7	19.1	28.1	36.9	45.1	0.82	0.80	0.78	0.77	0.75	0.50	0.70	1.25	2.21	3.91	19.7	26.4	40.3	55.5	73.3
	8	300	18.0	24.0	36.0	48.0	60.0	11.4	15.9	23.2	29.7	36.9	0.63	0.66	0.65	0.62	0.62	0.55	0.63	1.28	2.40	3.79	19.9	26.1	40.4	56.2	72.9
	8	400	18.0	24.0	36.0	48.0	60.0	13.2	17.6	25.8	33.7	42.1	0.73	0.73	0.72	0.70	0.70	0.46	0.62	1.18	2.10	3.53	19.6	26.1	40.0	55.2	72.1
	8	500	18.0	24.0	36.0	48.0	60.0	14.7	19.2	28.2	36.9	45.1	0.82	0.80	0.78	0.77	0.75	0.41	0.62	1.21	2.21	3.91	19.4	26.1	40.1	55.5	73.3
90	12	300	18.0	24.0	36.0	48.0	60.0	11.3	15.5	22.8	29.5	37.4	0.63	0.65	0.63	0.61	0.62	1.04	1.26	2.26	4.09	6.70	21.5	28.3	43.7	61.9	82.9
	12	400	18.0	24.0	36.0	48.0	60.0	13.0	17.2	25.3	33.1	41.3	0.72	0.72	0.70	0.69	0.69	0.98	1.23	2.04	3.52	6.00	21.3	28.2	43.0	60.0	80.5
	12	500	18.0	24.0	36.0	48.0	60.0	14.6	19.0	27.8	36.5	44.9	0.81	0.79	0.77	0.76	0.75	0.94	1.19	2.00	3.57	6.39	21.2	28.1	42.8	60.2	81.8
	8	300	18.0	24.0	36.0	48.0	60.0	11.3	15.5	22.8	29.5	37.4	0.63	0.65	0.63	0.61	0.62	0.94	1.12	2.19	4.09	6.70	21.2	27.8	43.5	61.9	82.9
	8	400	18.0	24.0	36.0	48.0	60.0	13.0	17.3	25.3	33.1	41.3	0.72	0.72	0.70	0.69	0.69	0.89	1.11	1.97	3.52	6.00	21.0	27.8	42.7	60.0	80.5
	8	500	18.0	24.0	36.0	48.0	60.0	14.6	19.0	27.8	36.5	44.9	0.81	0.79	0.77	0.76	0.75	0.85	1.07	1.93	3.57	6.39	20.9	27.7	42.6	60.2	81.8
110	12	300	18.0	24.0	36.0	44.0	44.0	11.1	15.3	22.6	27.1	27.1	0.61	0.64	0.63	0.62	0.62	1.66	2.19	3.94	5.99	5.99	23.7	31.5	49.5	64.5	64.5
	12	400	18.0	24.0	36.0	48.0	49.0	12.5	16.8	24.8	32.5	33.2	0.70	0.70	0.69	0.68	0.68	1.50	2.02	3.45	6.20	6.49	23.1	30.9	47.8	69.2	71.2
	12	500	18.0	24.0	36.0	48.0	50.0	14.1	18.4	27.3	36.1	37.5	0.78	0.77	0.76	0.75	0.75	1.48	1.95	3.33	6.11	6.74	23.0	30.7	47.4	68.8	73.0
	8	300	18.0	24.0	36.0	44.0	44.0	11.2	15.4	22.6	27.1	27.1	0.62	0.64	0.63	0.62	0.62	1.51	1.97	3.94	5.99	5.99	23.2	30.7	49.5	64.5	64.5
	8	400	18.0	24.0	36.0	48.0	49.0	12.6	16.9	24.8	32.5	33.2	0.70	0.70	0.69	0.68	0.68	1.38	1.83	3.45	6.20	6.49	22.7	30.3	47.8	69.2	71.2
	8	500	18.0	24.0	36.0	48.0	50.0	14.3	18.6	27.3	36.1	37.5	0.79	0.78	0.76	0.75	0.75	1.36	1.78	3.32	6.11	6.74	22.6	30.1	47.3	68.8	73.0
130	12	300	18.0	24.0	33.0	33.0	33.0	9.1	13.5	19.1	19.1	19.1	0.51	0.56	0.58	0.58	0.58	2.67	3.68	5.85	5.85	5.85	27.1	36.6	52.9	52.9	52.9
	12	400	18.0	24.0	36.0	36.0	36.0	12.2	16.5	24.5	24.5	24.5	0.68	0.69	0.68	0.68	0.68	2.32	3.28	5.96	5.96	5.96	25.9	35.2	56.4	56.4	56.4
	12	500	18.0	24.0	36.0	36.0	36.0	12.5	16.9	25.9	25.9	25.9	0.70	0.71	0.72	0.72	0.72	2.16	3.02	5.50	5.50	5.50	25.4	34.3	54.8	54.8	54.8
	8	300	18.0	24.0	33.0	33.0	33.0	9.7	14.0	19.1	19.1	19.1	0.54	0.58	0.58	0.58	0.58	2.43	3.33	5.85	5.85	5.85	26.3	35.4	52.9	52.9	52.9
	8	400	18.0	24.0	36.0	36.0	36.0	12.3	16.5	24.5	24.5	24.5	0.68	0.69	0.68	0.68	0.68	2.13	2.98	5.96	5.96	5.96	25.3	34.2	56.4	56.4	56.4
	8	500	18.0	24.0	36.0	36.0	36.0	13.0	17.3	25.9	25.9	25.9	0.72	0.72	0.72	0.72	0.72	2.01	2.78	5.50	5.50	5.50	24.9	33.5	54.8	54.8	54.8
135	8	300	18.0	24.0	28.0	28.0	28.0	9.0	13.1	15.5	15.5	15.5	0.50	0.55	0.55	0.55	0.55	2.74	3.90	4.99	4.99	4.99	27.3	37.3	45.0	45.0	45.0
	8	400	18.0	24.0	28.0	28.0	28.0	12.2	16.5	19.2	19.2	19.2	0.68	0.69	0.69	0.69	0.69	2.38	3.43	4.37	4.37	4.37	26.1	35.7	42.9	42.9	42.9
	8	500	18.0	24.0	28.0	28.0	28.0	12.4	16.7	19.6	19.6	19.6	0.69	0.70	0.70	0.70	0.70	2.20	3.12	3.97	3.97	3.97	25.5	34.7	41.5	41.5	41.5

\* pressure drop is less than 1 ft  
Interpolation is permissible, extrapolation is not.

Above performance is based on 80°F db / 67°F wb entering air conditions.

Performance Data — Trilogy® QE 1860 Cooling and Hot Water

EWT °F	EER					Hz					HW LWT					HW GPM					HW WPD				
	Compressor Speed %					Compressor Speed %					Compressor Speed %					Compressor Speed %					Compressor Speed %				
	30	40	60	80	100	30	40	60	80	100	30	40	60	80	100	30	40	60	80	100	30	40	60	80	100
70	28.9	33.9	27.0	20.0	15.8	22	29	44	62	84	82.0	82.0	82.0	84.0	88.2	3.4	4.4	6.8	8.0	8.0	1.1	1.8	4.1	5.8	5.8
	32.8	33.6	29.2	22.8	17.0	20	27	41	57	76	82.0	82.0	82.0	83.8	88.0	3.3	4.4	6.7	8.0	8.0	1.1	1.8	4.0	5.8	5.8
	36.3	34.5	28.7	21.8	15.4	19	26	39	55	75	82.0	82.0	82.0	83.9	88.3	3.3	4.4	6.7	8.0	8.0	1.1	1.8	4.1	5.8	5.8
	32.8	38.2	28.2	20.0	15.8	22	29	44	62	84	78.0	78.0	80.1	84.0	88.2	5.0	6.5	8.0	8.0	8.0	2.3	3.9	5.8	5.8	5.8
	39.4	38.5	30.6	22.8	17.0	20	26	40	57	76	78.0	78.0	80.0	83.8	88.0	4.9	6.5	8.0	8.0	8.0	2.2	3.9	5.8	5.8	5.8
43.5	38.6	29.8	21.8	15.4	19	25	39	55	75	78.0	78.0	80.0	83.9	88.3	4.9	6.5	8.0	8.0	8.0	2.2	3.9	5.8	5.8	5.8	
90	17.4	19.1	15.9	11.7	9.0	26	34	53	77	109	102.0	102.0	102.0	105.5	110.7	3.6	4.7	7.3	8.0	8.0	1.1	2.0	4.7	5.7	5.6
	18.4	19.5	17.7	13.6	10.0	24	31	48	69	96	102.0	102.0	102.0	105.0	110.1	3.6	4.7	7.2	8.0	8.0	1.1	1.9	4.6	5.7	5.6
	19.1	20.1	18.0	13.5	9.4	23	30	45	66	96	102.0	102.0	102.0	105.0	110.5	3.5	4.7	7.1	8.0	8.0	1.1	1.9	4.5	5.7	5.6
	19.1	21.3	16.4	11.7	9.0	25	33	52	77	109	98.0	98.0	100.9	105.5	110.7	5.3	7.0	8.0	8.0	8.0	2.5	4.3	5.7	5.7	5.6
	20.2	21.5	18.3	13.6	10.0	23	30	47	69	96	98.0	98.0	100.7	105.0	110.1	5.3	7.0	8.0	8.0	8.0	2.5	4.3	5.7	5.7	5.6
21.3	22.3	18.7	13.5	9.4	22	29	45	66	96	98.0	98.0	100.6	105.0	110.5	5.2	6.9	8.0	8.0	8.0	2.4	4.3	5.7	5.7	5.6	
110	10.8	11.0	9.1	7.3	7.3	32	42	68	90	90	122.0	122.0	122.4	126.1	126.1	3.9	5.2	8.0	8.0	8.0	1.3	2.4	5.5	5.5	5.5
	12.0	11.9	10.4	7.7	7.5	28	38	59	90	93	122.0	122.0	122.0	127.3	127.8	3.9	5.1	8.0	8.0	8.0	1.2	2.3	5.5	5.5	5.5
	12.2	12.3	10.8	7.9	7.4	28	36	56	86	92	122.0	122.0	122.0	127.2	128.2	3.8	5.1	7.9	8.0	8.0	1.2	2.3	5.4	5.5	5.5
	11.9	12.2	9.1	7.3	7.3	30	41	68	90	90	118.0	118.0	122.4	126.1	126.1	5.8	7.7	8.0	8.0	8.0	2.9	5.1	5.5	5.5	5.5
	13.0	13.1	10.4	7.7	7.5	27	37	59	90	93	118.0	118.0	121.9	127.3	127.8	5.7	7.6	8.0	8.0	8.0	2.8	5.0	5.5	5.5	5.5
13.2	13.5	10.9	7.9	7.4	27	35	56	86	92	118.0	118.0	121.8	127.2	128.2	5.7	7.5	8.0	8.0	8.0	2.8	4.9	5.5	5.5	5.5	
130	6.7	6.5	5.6	5.6	5.6	36	51	76	76	76	142.0	142.0	143.2	143.2	143.2	4.5	6.1	8.0	8.0	8.0	1.7	3.2	5.3	5.3	5.3
	7.7	7.3	6.0	6.0	6.0	34	47	78	78	78	142.0	142.0	144.1	144.1	144.1	4.3	5.9	8.0	8.0	8.0	1.6	2.9	5.3	5.3	5.3
	8.3	7.9	6.5	6.5	6.5	31	43	71	71	71	142.0	142.0	143.7	143.7	143.7	4.2	5.7	8.0	8.0	8.0	1.5	2.8	5.3	5.3	5.3
	7.4	7.2	5.6	5.6	5.6	35	49	76	76	76	138.0	138.0	143.2	143.2	143.2	6.6	8.8	8.0	8.0	8.0	3.7	6.4	5.3	5.3	5.3
	8.5	8.1	6.0	6.0	6.0	33	45	78	78	78	138.0	138.0	144.1	144.1	144.1	6.3	8.5	8.0	8.0	8.0	3.4	6.0	5.3	5.3	5.3
8.9	8.6	6.5	6.5	6.5	31	42	71	71	71	138.0	138.0	143.7	143.7	143.7	6.2	8.4	8.0	8.0	8.0	3.3	5.8	5.3	5.3	5.3	
135	6.6	6.2	5.6	5.6	5.6	36	52	64	64	64	143.0	144.3	146.3	146.3	146.3	6.8	8.0	8.0	8.0	8.0	3.9	5.3	5.2	5.2	5.2
	7.6	7.0	6.4	6.4	6.4	34	48	58	58	58	143.0	143.9	145.7	145.7	145.7	6.5	8.0	8.0	8.0	8.0	3.6	5.3	5.2	5.2	5.2
	8.2	7.7	7.1	7.1	7.1	31	43	53	53	53	143.0	143.7	145.4	145.4	145.4	6.4	8.0	8.0	8.0	8.0	3.5	5.3	5.2	5.2	5.2

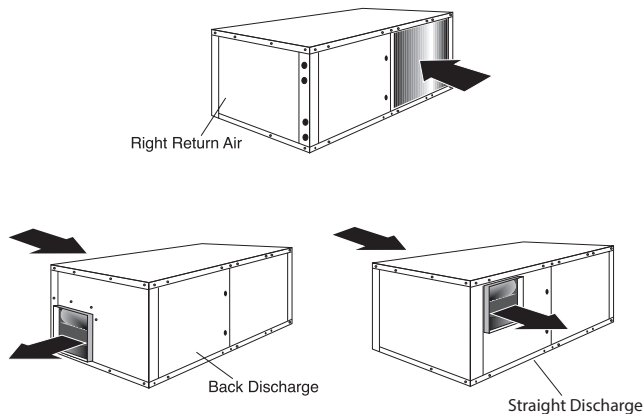
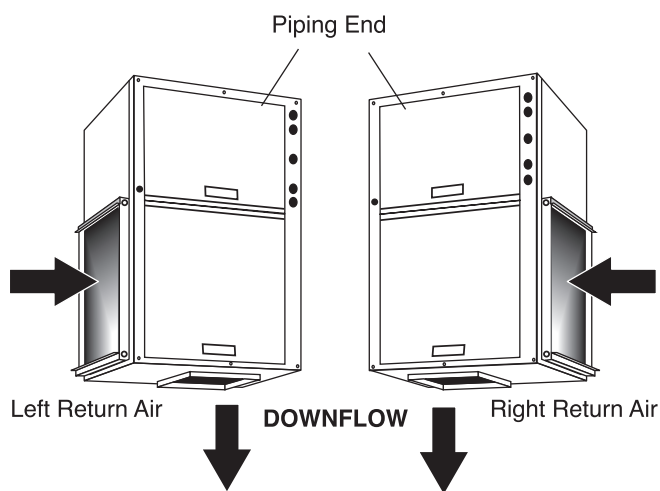
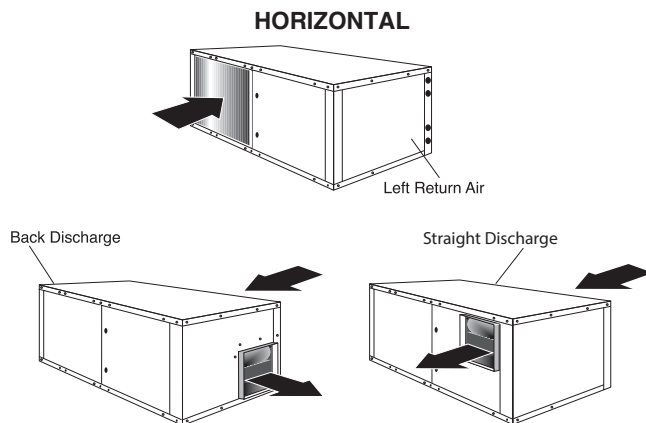
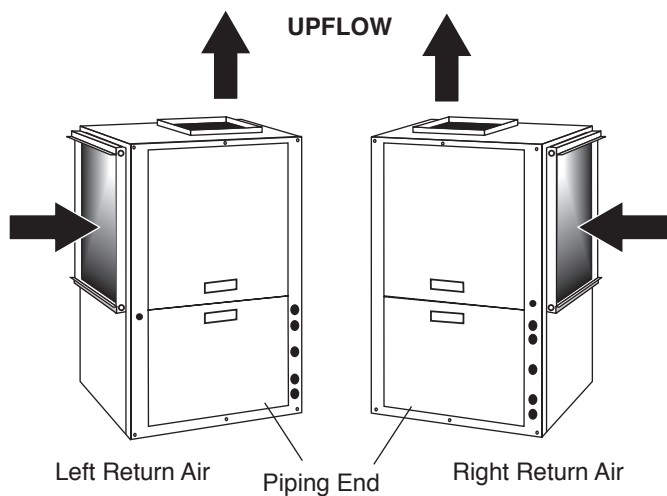
\* pressure drop is less than 1 ft  
Interpolation is permissible, extrapolation is not.

Above performance is based on 80°F db / 67°F wb entering air conditions.

## Physical Data

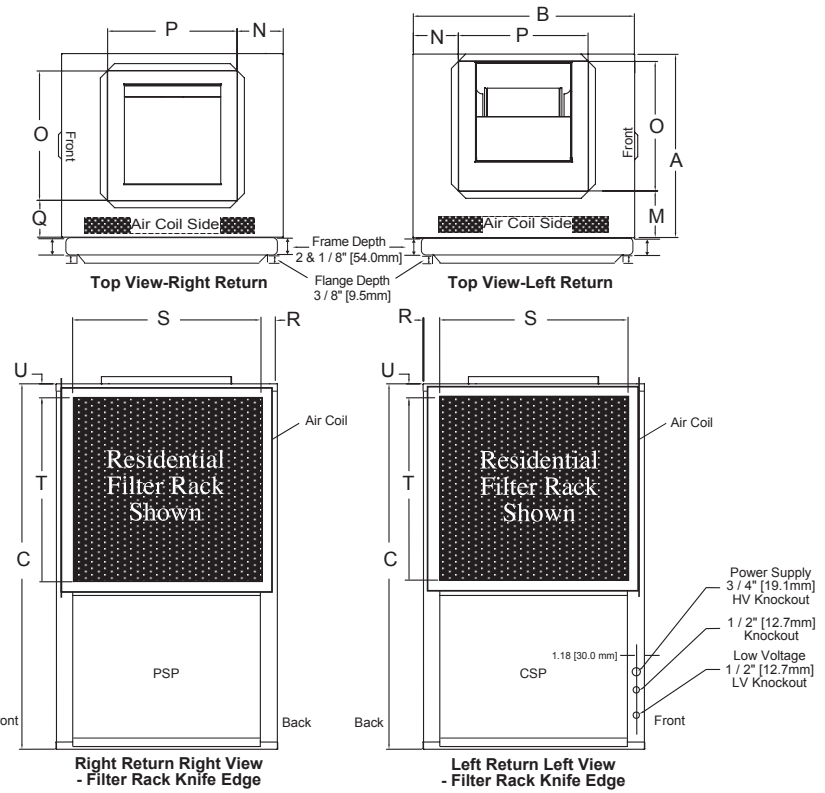
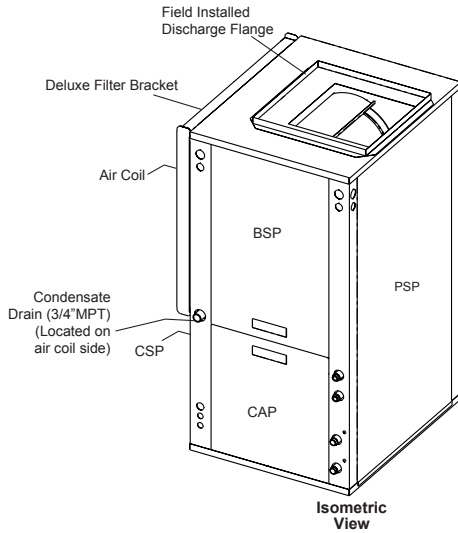
Model	0930	1860
Compressor (1 Each)	Rotary	Scroll
Factory Charge HFC-410a, oz [kg]	52	86
<b>ECM Motor &amp; Blower</b>		
Fan Motor, hp [W]	1/2 [373]	1 [746]
Blower Wheel Size (Dia x W), in [mm]	9 x 7 [229 x 178]	11 x 10 [279 x 254]
<b>Water Connection Size</b>		
Swivel - Residential Class	1"	1"
<b>HWG Water Connection Size</b>		
Swivel - Residential Class	1"	1"
<b>Vertical Upflow</b>		
Air Coil Dimensions (H x W), in [mm]	28 x 20 [711 x 542]	32 x 25 [813 x 635]
Standard Filter - 2" [25.4mm] Pleated MERV11 Throwaway, in [mm]	28 x 24 [712 x 610]	32 x 29.5 [813 x 749]
Weight - Operating, lbs [kg]	298 [135]	448 [203]
Weight - Packaged, lbs [kg]	309 [140]	458 [208]
<b>Horizontal</b>		
Air Coil Dimensions (H x W), in [mm]	18 x 31 [457 x 787]	20 x 40 [508 x 1016]
Standard Filter - 2" [25.4mm] Pleated MERV11 Throwaway, in [mm]	2 - 18 x 18 [457 x 457]	1 - 18 x 20 [457 x 508] 1 - 20 x 24 [508 x 610]
Weight - Operating, lbs [kg]	298 [135]	448 [203]
Weight - Packaged, lbs [kg]	309 [140]	458 [208]

## Unit Airflow Configurations



# Dimensions – Vertical Upflow Trilogy® 45

**Legend**  
 CAP= Control Access Panel  
 CSP=Compressor Service Panel  
 BSP=Blower Service Panel  
 PSP=Pump and Flow Meter Service Panel



Vertical Upflow Model		Overall Cabinet		
		A Width	B Depth	C Height
0930	in	22.4	25.6	52.0
	cm	56.8	65.1	132.1
1860	in	25.4	30.6	56.0
	cm	64.5	77.8	142.2

Vertical Upflow Model		Discharge Connection Duct Flange Installed					Return Connection Standard Deluxe Filter Rack			
		M Left Return	N	O Supply Width	P Supply Depth	Q Right Return	R	S Return Depth	T Return Height	U
0930	in	7.8	5.8	14.0	14.0	4.9	1.7	22.2	26.2	1.7
	cm	18.3	14.8	35.6	35.6	12.4	4.3	56.4	66.5	4.3
1860	in	6.4	6.3	18.0	18.0	5.3	1.7	27.2	30.2	1.7
	cm	16.1	16.0	45.7	45.7	13.5	4.3	69.1	76.7	4.3

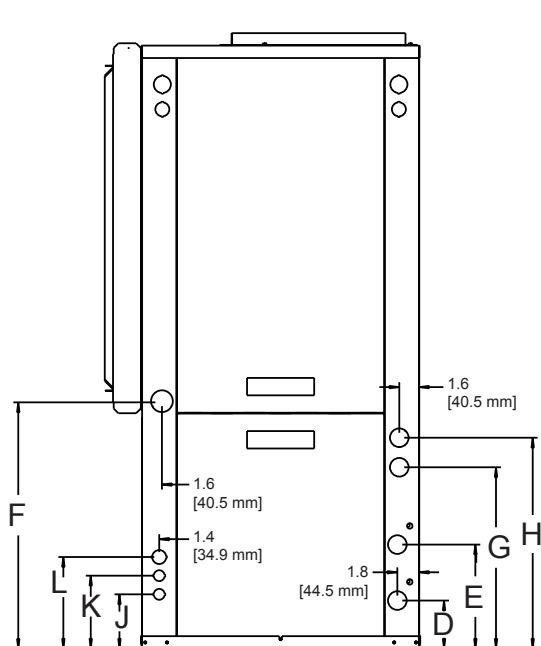


## Dimensions – Vertical Upflow Trilogy® 45

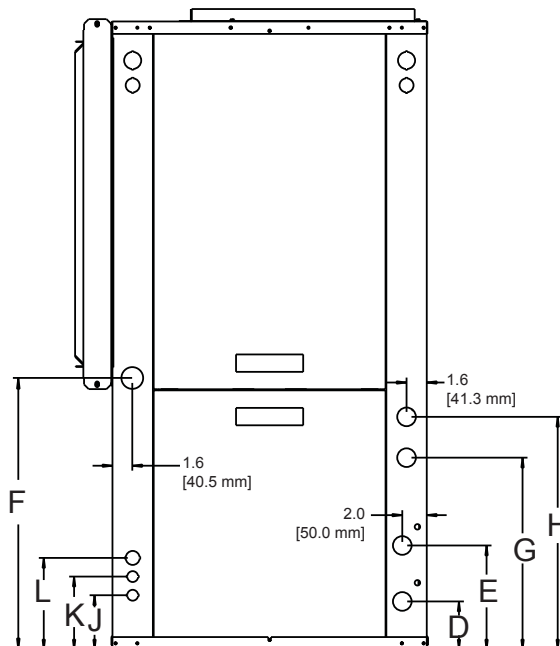
Vertical Upflow Model		Water Connections							
		D	E	F	G	H	Loop Water FPT	HWG FPT	Cond. Drain
		In	Out	Condensate	HW In	HW Out			
0930	in cm	3.82 9.7	8.32 21.1	22.93 58.2	16.65 42.3	19.56 49.74	1" Swivel	1" Swivel	3/4" MPT
1860	in cm	3.82 9.7	8.32 21.1	22.93 58.2	16.65 42.3	19.56 49.74	1" Swivel	1" Swivel	3/4" MPT

Vertical Upflow Model		Electrical Knockouts		
		J	K	L
		1/2" cond Low Voltage	1/2" cond Ext Pump	3/4" cond Power Supply
0930	in cm	3.81 9.7	5.43 13.8	7.18 18.2
1860	in cm	3.81 9.7	5.43 13.8	7.18 18.2

Condensate connection is 3/4" MPT and is located on the air coil side of the front of the unit.  
 Unit shipped with deluxe duct collar/filter frame extending from unit 3" [7.6cm] and is suitable for duct connection.  
 Discharge flange is field installed.



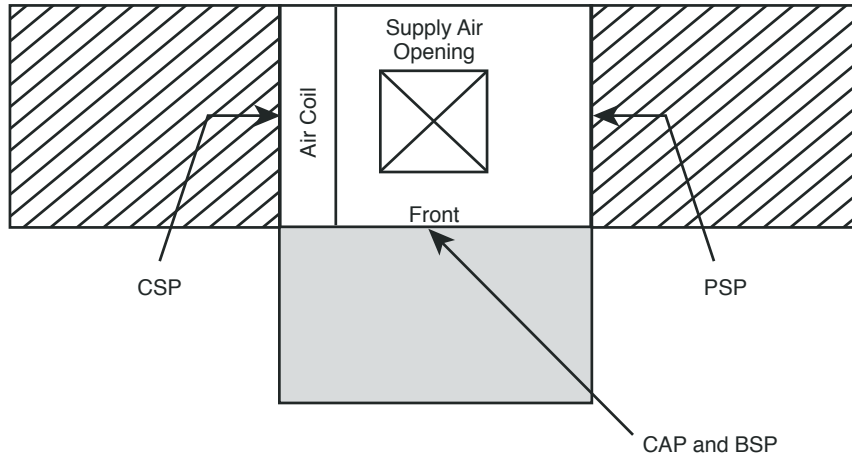
**Front-View  
QE0930**



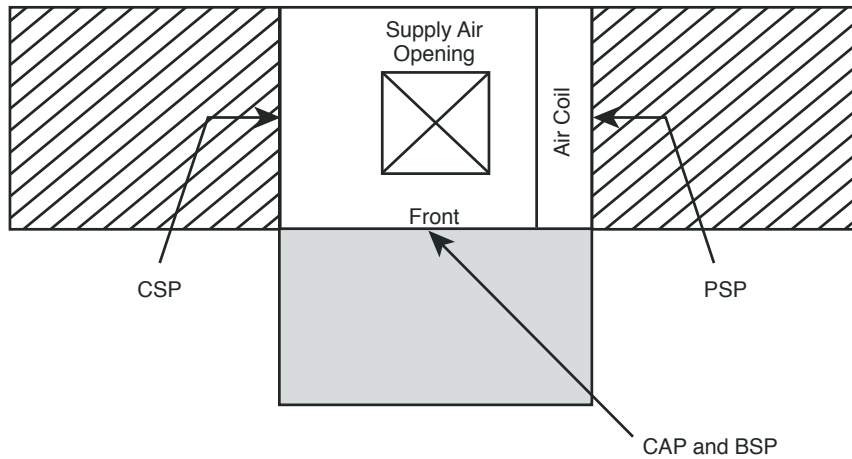
**Front-View  
QE1860**

## Service Access – Vertical Upflow Trilogy® 45

### Left Return



### Right Return



 = mandatory 2' service access

 = (optional) additional 2' service access

#### Notes:

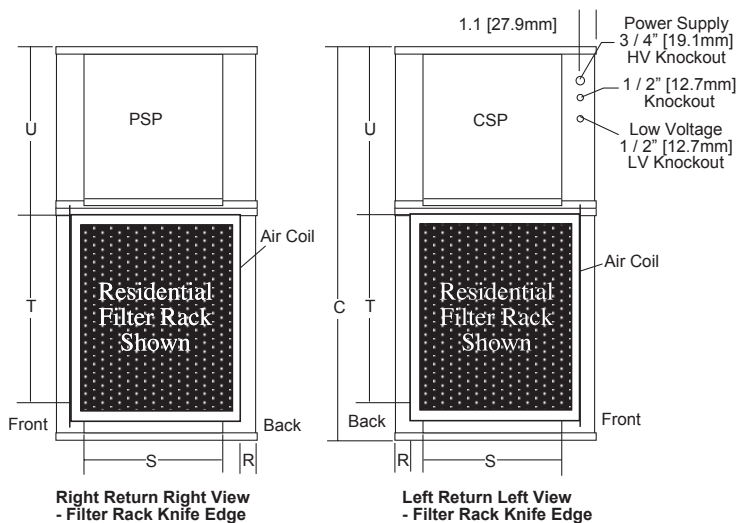
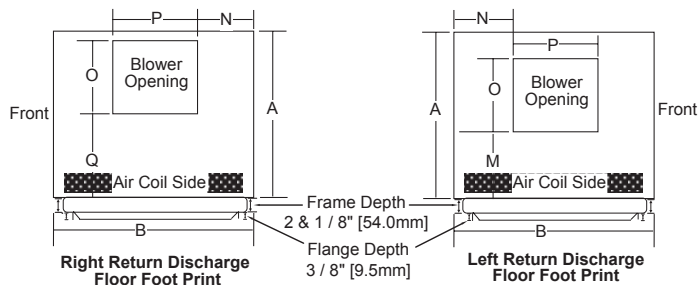
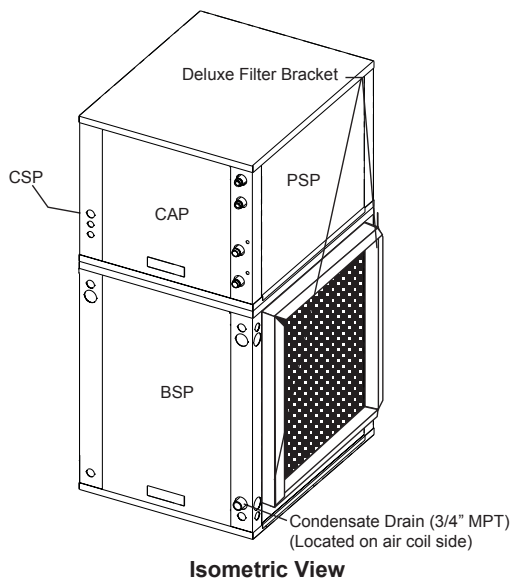
1. While clear access to all removable panels is not required, installer should take care to comply with all building codes and allow adequate clearance for future field service.
2. Front & Side access is preferred for improved service access. However, side access is not required if it is acceptable to slide the unit forward into the open if a compressor, pump volute, or heat exchanger replacement is required.
3. Top supply air is shown, the same clearances apply to bottom supply air units.

#### Legend:

CAP = Control/Compressor Access Panel  
 BSP = Blower Service Panel  
 CSP = Compressor Service Panel  
 PSP = Pump and Flow Meter Service Panel

## Dimensions – Vertical Downflow Trilogy® 45

**Legend**  
 CAP= Control Access Panel  
 CSP=Compressor Service Panel  
 BSP=Blower Service Panel  
 PSP=Pump and Flow Meter Service Panel



Vertical Downflow Model	Overall Cabinet			
	A Width	B Depth	C Height	
0930	in	22.4	25.6	56.0
	cm	56.8	65.1	142.2
1860	in	25.4	30.6	60.0
	cm	64.5	77.8	152.4

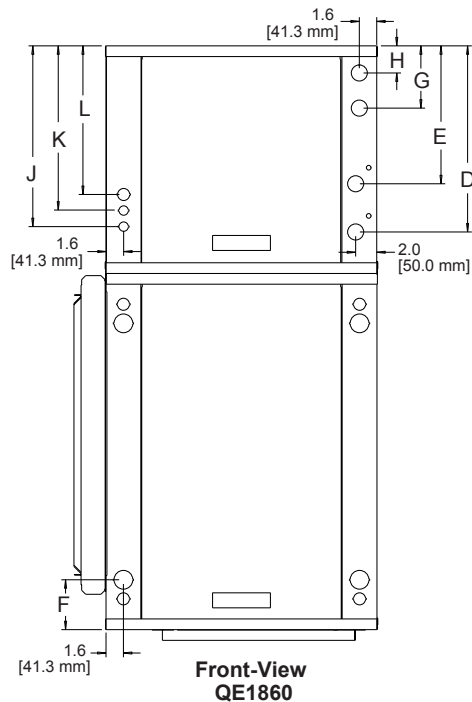
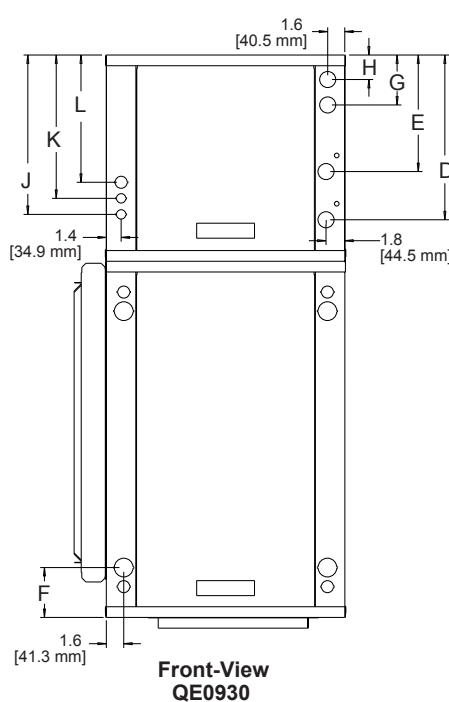
Vertical Downflow Model		Discharge Connection Duct Flange Installed					Return Connection Standard Deluxe Filter Rack			
		M Left Return	N	O Supply Width	P Supply Depth	Q Right Return	R	S Return Depth	T Return Height	U
0930	in	6.7	8.4	9.9	9.1	10.8	1.7	22.2	26.2	21.9
	cm	17.1	21.4	25.3	23.0	27.4	4.3	56.4	66.5	55.6
1860	in	7.4	9.0	13.1	12.9	10.4	1.7	27.2	30.2	23.9
	cm	18.7	22.9	33.3	32.7	26.5	4.3	69.1	76.7	60.7

## Dimensions – Vertical Downflow Trilogy® 45

Vertical Downflow Model		Water Connections							
		D	E	F	G	H	Loop Water FPT	HWG FPT	Cond. Drain
		In	Out	Condensate	HWG In	HWG Out			
0930	in cm	18.36 46.6	13.87 35.2	4.62 11.7	5.54 14.1	2.62 6.6	1" Swivel	1" Swivel	3/4" MPT
1860	in cm	18.36 46.6	13.87 35.2	4.62 11.7	5.54 14.1	2.62 6.6	1" Swivel	1" Swivel	3/4" MPT

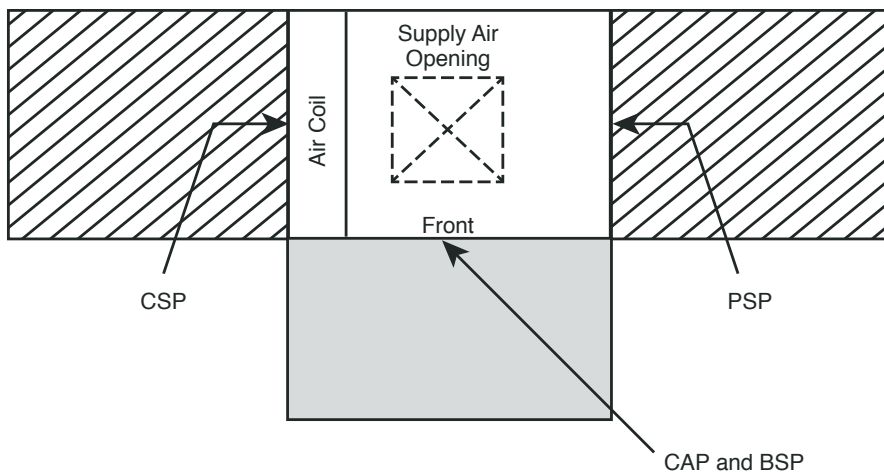
Vertical Downflow Model		Electrical Knockouts		
		J 1/2" cond	K 1/2" cond	L 3/4" cond
		Low Voltage	Ext Pump	Power Supply
0930	in cm	17.62 44.7	16.25 41.3	14.62 37.1
1860	in cm	17.62 44.7	16.25 41.3	14.62 37.1

Condensate connection is 3/4" MPT and is located on the air coil side of the front of the unit.  
 Unit shipped with deluxe duct collar/filter rack extending from unit 3" [7.6cm] and is suitable for duct connection.  
 Downflow unit does not have discharge flange, and is rated for zero clearance installation.

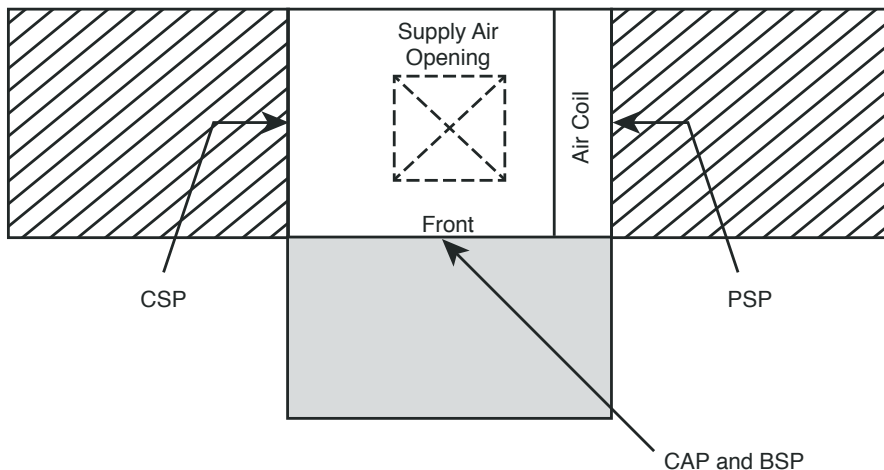


## Service Access – Vertical Downflow Trilogy® 45

### Left Return



### Right Return



 = mandatory 2' service access

 = (optional) additional 2' service access

#### Notes:

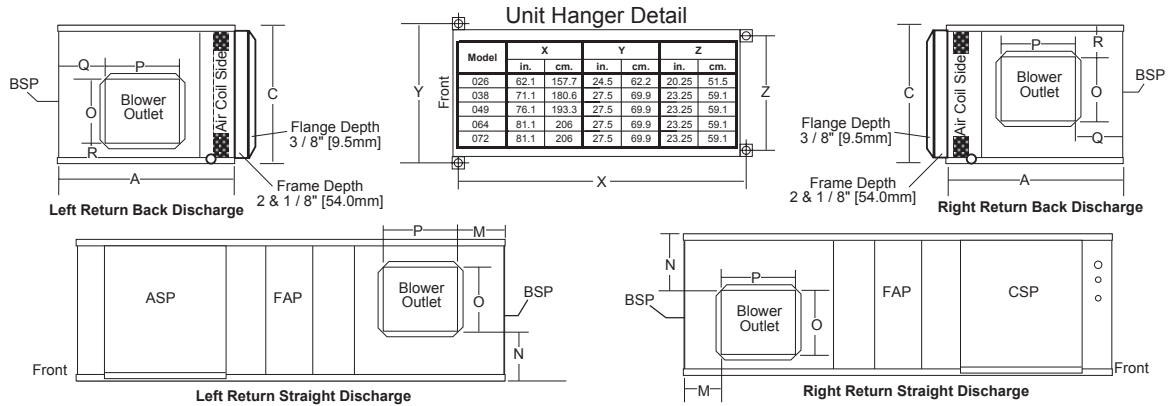
1. While clear access to all removable panels is not required, installer should take care to comply with all building codes and allow adequate clearance for future field service.
2. Front & Side access is preferred for improved service access. However, side access is not required if it is acceptable to slide the unit forward into the open if a compressor, pump volute, or heat exchanger replacement is required.
3. Top supply air is shown, the same clearances apply to bottom supply air units.

#### Legend:

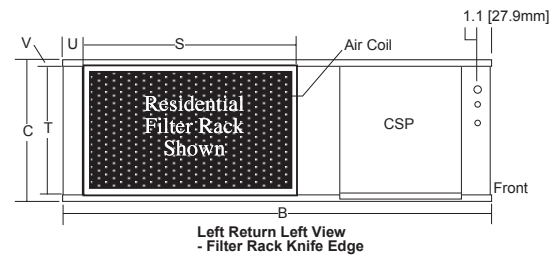
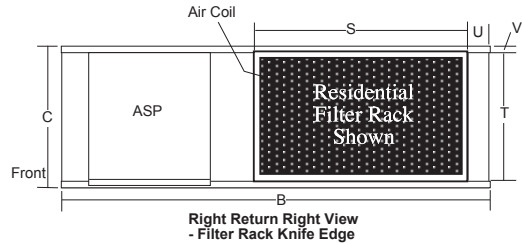
CAP = Control/Compressor Access Panel  
 BSP = Blower Service Panel  
 CSP = Compressor Service Panel  
 PSP = Pump and Flow Meter Service Panel

# Dimensions – Horizontal Trilogy® 45

**Legend**  
 CAP= Control Access Panel  
 CSP=Compressor Service Panel  
 BSP=Blower Service Panel  
 PSP=Pump and Flow Meter Service Panel  
 FAP=Filter Drier Access Panel

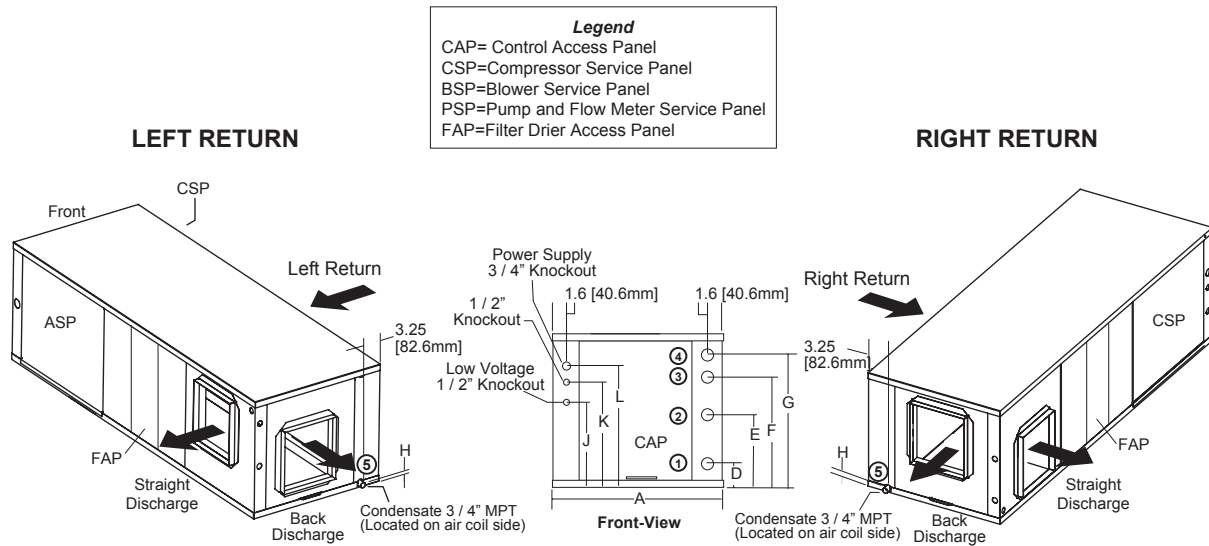


Horizontal Model		Overall Cabinet		
		A Width	B Depth	C Height
0930	in	22.5	62.2	22.3
	cm	57.2	158.0	56.6
1860	in	25.4	76.2	22.3
	cm	64.5	193.5	56.6



Horizontal Model		Discharge Connection Duct Flange Installed						Return Connection Standard Deluxe Filter Rack			
		M	N	O Supply Height	P Supply Width	Q	R	S Return Depth	T Return Height	U	V
0930	in	3.58	1.74	15.48	12.5	3.58	5.03	34.05	16.7	2.02	3.75
	cm	9.1	4.4	39.3	31.8	9.1	12.8	86.5	42.4	5.1	9.5
1860	in	3.1	1.2	19.0	17.5	3.09	2.04	39.58	18.16	3.22	2.3
	cm	7.9	3.1	48.3	44.4	7.8	5.2	100.5	46.1	8.2	5.8

Dimensions – Horizontal Trilogy® 45



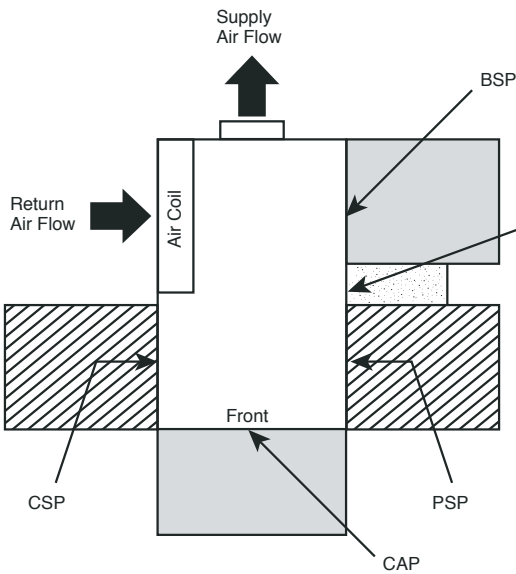
Vertical Downflow Model		Water Connections							
		D	E	F	G	H	Loop Water FPT	HWG FPT	Cond. Drain
		In	Out	HW In	HW Out	Condensate			
0930	in cm	3.82 9.6	8.32 21.1	22.93 58.2	16.65 42.3	19.56 49.7	1" Swivel	1" Swivel	3/4" MPT
1860	in cm	3.82 9.6	8.32 21.1	22.93 58.2	16.65 42.3	19.56 49.7	1" Swivel	1" Swivel	3/4" MPT

Vertical Downflow Model		Electrical Knockouts		
		J	K	L
		1/2" cond Low Voltage	1/2" cond Ext Pump	3/4" cond Power Supply
0930	in cm	3.81 9.7	5.43 13.8	7.18 18.2
1860	in cm	3.81 9.7	5.43 13.8	7.18 18.2

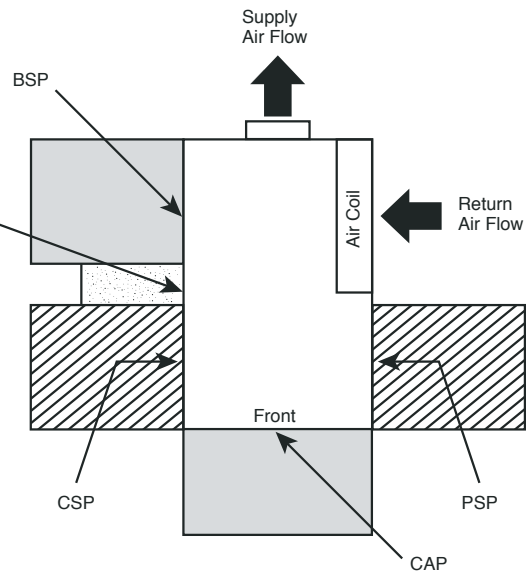
Condensate is 3/4" MPT.  
 Unit shipped with deluxe duct collar/filter rack extending from unit 3" [7.6cm] and is suitable for duct connection.  
 Discharge flange and hanger brackets are factory installed.

## Service Access – Horizontal Trilogy® 45

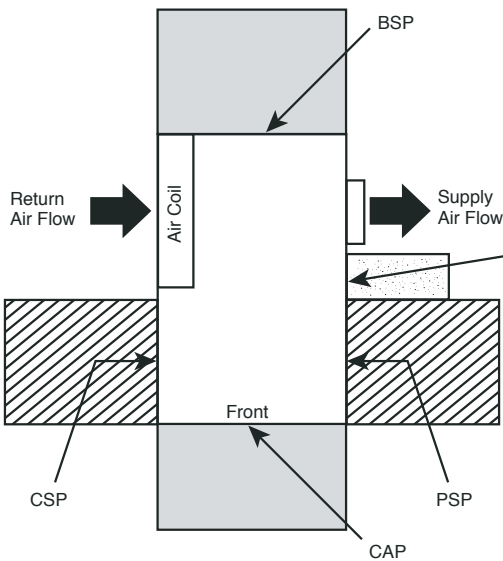
**Left Return Back Discharge**



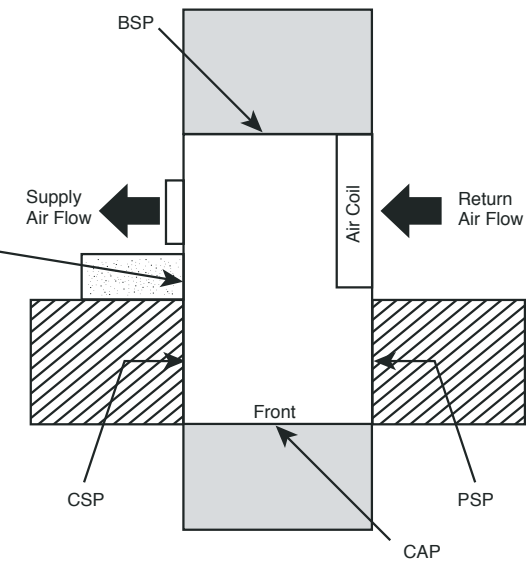
**Right Return Back Discharge**



**Left Return Straight Discharge**



**Right Return Straight Discharge**



**Notes:**

1. While clear access to all removable panels is not required, installer should take care to comply with all building codes and allow adequate clearance for future field service.
2. CCP and BSP requires 2' service access.
3. Blower service access is through back panel on straight discharge units or through panel opposite air coil on back discharge units.
4. Side access is not required if it is acceptable to drop the unit if major service such as compressor, pump volute, heat exchanger, or filter drier replacement is required.

= mandatory 2' service access

= (optional) additional 2' service access

**Legend:**

- CAP = Control Access Panel
- BSP = Blower Service Panel
- CSP = Compressor Service Panel
- PSP = Pump and Flow Meter Service Panel
- FAP = Filter Drier Access Panel



Electrical Data

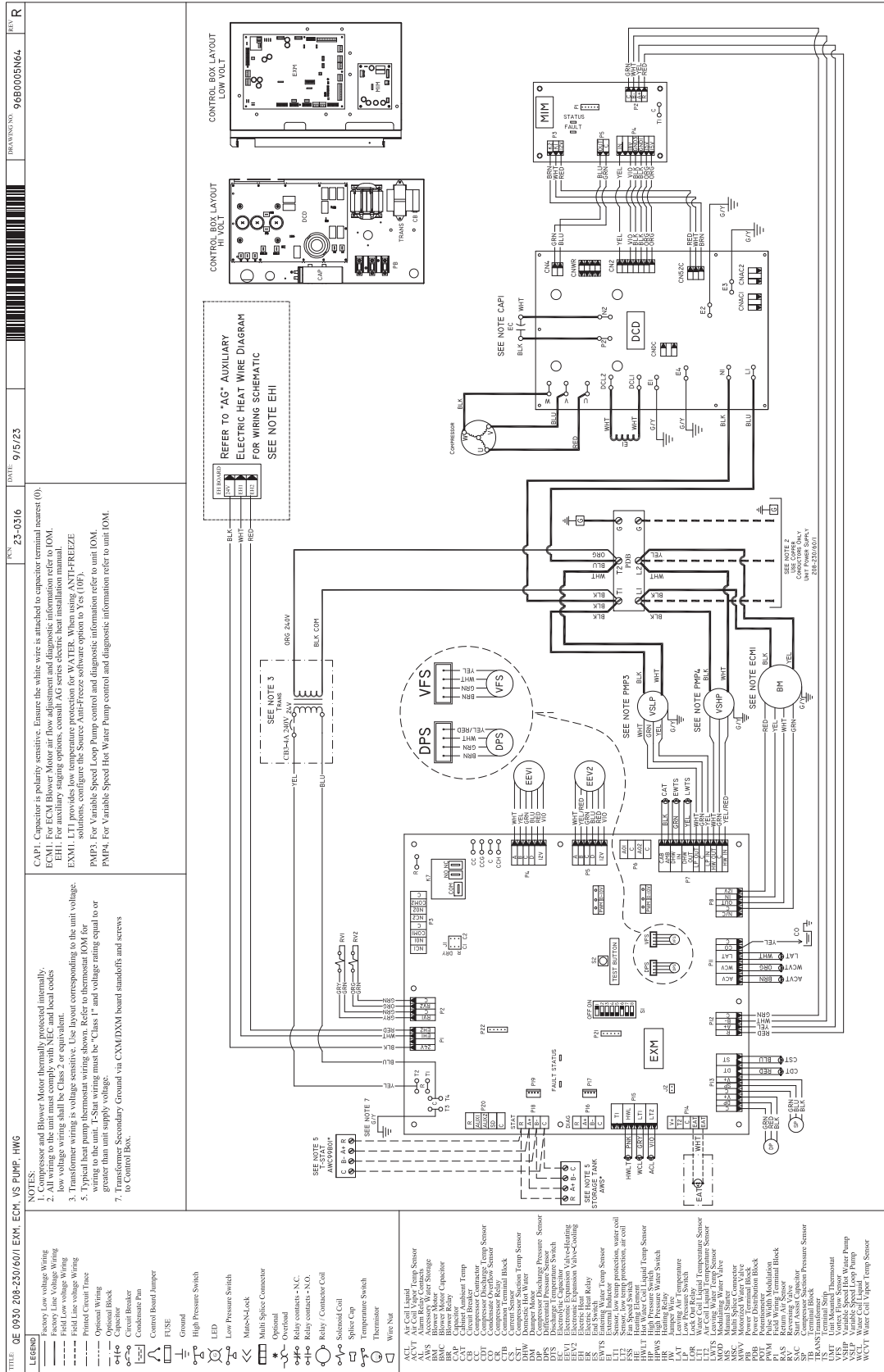
**Trilogy® (QE) Series with Internal Flow Controller**

QE Model	Rated Voltage	Compressor		HW Pump FLA	Ext Loop FLA	Fan Motor FLA	Total Unit FLA	Min Circ Amp	Max/ Fuse HACR
		RLA	LRA						
<b>0930</b>	208/230/60/1	20.0	20.0	0.5	1.44	3.9	25.3	30.3	50
<b>1860</b>	208/230/60/1	32.0	32.0	0.5	1.44	6.9	40.3	48.3	80

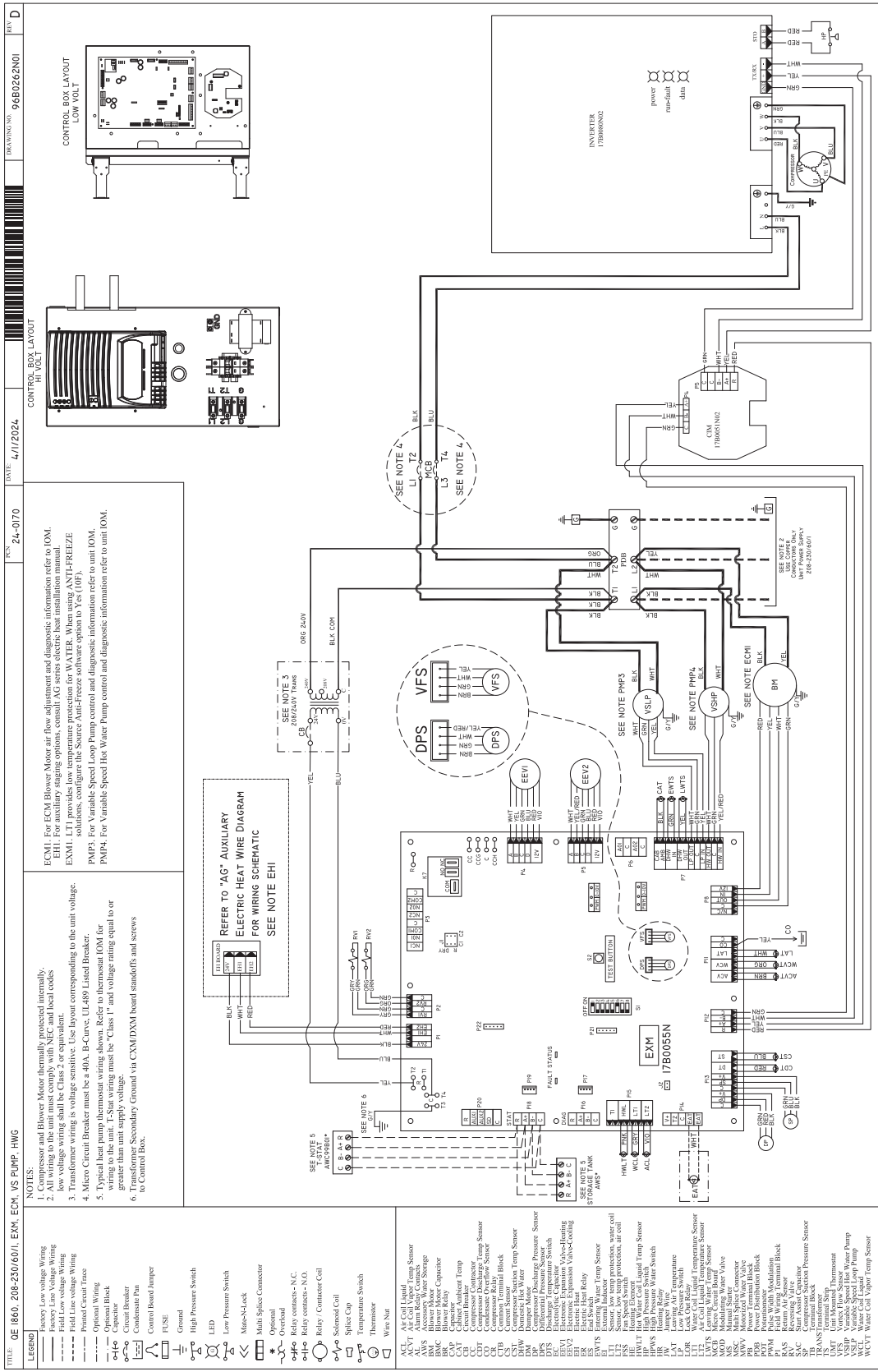
Rated Voltage of 208/230/60/1  
HACR circuit breaker in USA only

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

# Trilogy® 45 0930 Internal Flow Controller Electrical Wiring Diagram - 96B0005N64



# Trilogy® 45 1860 Internal Flow Controller Electrical Wiring Diagram - 96B0262N01



## ECM Blower Performance Data

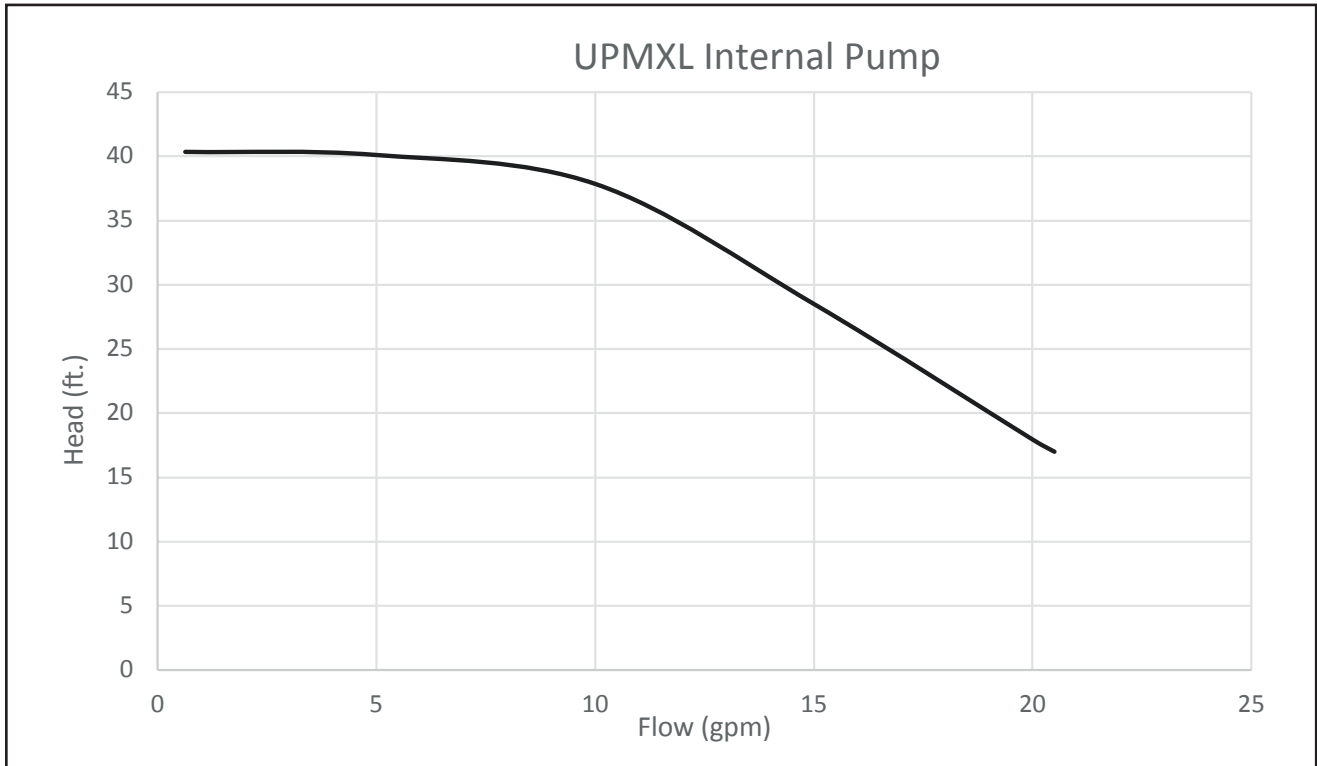
Airflow in CFM with wet coil and clean air filter

Trilogy® Model	Max ESP (in wg)	Fan Motor (hp)	Range	Capacity	Cooling Mode	Dehum	Heating Mode	Fan Only Mode	Aux Emerg Mode
0930	0.45 at 1125; 0.75 at 1000	1/2	Default	9,000	300	275	300	350	850
				12,000	425	375	425		
				15,000	500	450	500		
				18,000	600	525	600		
				21,000	700	600	700		
				24,000	775	675	775		
				27,000	875	750	875		
				30,000	950	800	950		
			Minimum	9,000	225	225	200	225	700
				12,000	275	275	225		
				15,000	325	325	300		
				18,000	425	425	375		
				21,000	500	500	450		
				24,000	575	575	525		
				27,000	650	650	600		
				30,000	750	750	700		
			Maximum	9,000	375	375	375	1125	1125
				12,000	525	525	525		
				15,000	650	650	650		
				18,000	750	750	750		
				21,000	850	850	850		
				24,000	975	975	975		
				27,000	1075	1075	1075		
				30,000	1125	1125	1125		
1860	0.45 at 2250; 0.75 at 2000	1	Default	18,000	600	525	600	700	1500
				24,000	775	675	775		
				30,000	975	825	975		
				36,000	1150	1000	1150		
				42,000	1325	1150	1325		
				48,000	1525	1325	1525		
				54,000	1700	1475	1700		
				60,000	1875	1625	1875		
			Minimum	18,000	425	425	375	425	1350
				24,000	575	575	525		
				30,000	725	725	675		
				36,000	875	875	800		
				42,000	1025	1025	950		
				48,000	1200	1200	1075		
				54,000	1350	1350	1225		
				60,000	1500	1500	1375		
			Maximum	18,000	750	750	750	2250	2250
				24,000	975	975	975		
				30,000	1175	1175	1175		
				36,000	1400	1400	1400		
				42,000	1600	1600	1600		
				48,000	1825	1825	1825		
				54,000	2025	2025	2025		
				60,000	2250	2250	2250		

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

Pump Curves Data

High Head Variable Pump with Check Valve



## Auxiliary Electric Heat

### Auxiliary Heat Ratings

Auxiliary Electric Heat Model	QE Models		kW Rating		Btuh Rating		Minimum CFM Required
	0930	1860	240V	208V	240V	208V	
AGM4A			3.8	2.9	13000	9900	500
AGM5A			4.8	3.6	16300	12300	500
AGM8A			7.6	5.7	25900	19400	650
AGM10A			9.6	7.2	32700	24600	650
AGL4A			3.8	2.9	13000	9900	500
AGL10A			9.6	7.2	32700	24600	1300
AGL15A			14.4	10.8	49100	36900	1350
AGL20A			19.2	14.4	65500	49200	1350

Black area denotes compatibility

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

### Auxiliary Heat Electrical Data

Auxiliary Electric Heat Model	Supply Circuit	Heater Amps		Minimum Circuit Amps		Maximum Fuse	
		208 V	230 V	208 V	230 V	208 V	230 V
AGM4A	Single	13.7	15.1	17.1	18.9	30	30
AGM5A	Single	17.3	19.2	21.6	24.0	30	40
AGM8A	Single	27.4	30.3	34.3	37.9	60	60
AGM10A	Single	34.7	38.3	43.4	47.9	70	80
AGL10A	Single	34.7	38.3	43.4	47.9	70	80
AGM12A	Single	41.1	45.4	51.4	56.8	90	100
	Dual - L1/L2	27.4	30.3	34.3	37.9	60	60
	Dual - L3/L4	13.7	15.1	17.1	18.9	30	30
AGL15A	Single	52.0	57.5	65.0	71.9	100	100
	Dual - L1/L2	34.7	38.3	43.4	47.9	70	80
	Dual - L3/L4	17.3	19.2	21.6	24.0	30	40
AGL20A	Single	69.3	76.6	86.6	95.8	150	150
	Dual - L1/L2	34.7	38.3	43.4	47.9	70	80
	Dual - L3/L4	34.7	38.3	43.4	47.9	70	80

All heaters rated single phase 208/230 V 60 Hz

All Fuses UL Class K general purpose

All models 12 kW or larger feature internal circuit breakers

## Accessories & Warranty

### Accessories & Options

#### **iGate® Connect web-enabled thermostat**

The iGate® Connect (AWC99\*\*) is the industry's first communicating web-enabled thermostat that allows dealers to monitor performance and make configuration changes from anywhere using a web enabled device like a computer, Smart Phone or tablet. iGate® Connect also offers homeowners access to their thermostat on the internet to perform tasks like changing set-points, schedules, schedule vacation, set reminders and view alerts. The system also emails alerts and reminders to homeowners and dealers.

iGate® Connect (AWC99) is the ONLY thermostat compatible with the Trilogy® Q-Mode® system.

AWC99 is a programmable variable-stage auto-changeover electronic digital thermostat and offers completely variable operation of the Trilogy® heat pump, as well as hot water settings for the iGate® Smart Tank.

#### **iGate® ClimaZone™**

This optional addition to the Trilogy® 45 Q-Mode® is a zoning system (AZC06CAR) that allows a single unit to be controlled by multiple iGate® Connect thermostats, conditioning the home in smaller zones instead of a single large zone. The Trilogy® system accommodates six zones with a single zone panel or up to twelve zones with the addition of a second panel. With zoning a home is more comfortable and the HVAC system more efficient by directing conditioned air only when and where it is needed giving the homeowner complete control over their cooling and heating. System configuration and diagnostics are available via the Trilogy® PC service tool.

#### **Auxiliary Heater (field installed)**

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

### Warranty Information

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

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

See ClimateMaster's 2010 Limited Express Residential Warranty Certificate RP851 for specific coverage and limitation.

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 ClimateMaster distributor. This coverage must be purchased within 90 days of unit installation. See Limited Express Extended Labor Warranty Certificate RP852 for details.

## Revision History

Date	Page #	Description
May 22, 2024	Various	Updated decoder, graphics, tables, terminology, and diagrams
	92	Updated Customer Experience phone number and title
Dec. 22, 2021	48	Updated Electrical Data for 1860 Revision B, moved Unit Airflow Configurations to separate page
Nov. 29, 2021	17, 18, 49, 50	Minor edits, updated Decoder,insertion of revised diagrams
Sept.30, 2021	9, 12, 13	Added iGate2 and myUplinkPRO information
June 23, 2021	22-25, 28-33, 36-37	Added Compressor Speed to tables
Feb. 17, 2021	38, 48, 50	Updated tables
Oct. 28, 2019	17	Edited feature 12
Oct. 22, 2019	51	Update Curve for Check Valve
Jan. 24, 2019	48, 51	High Head Variable Pump update
Jan. 27, 2017	Various	Removed Federal Tax Incentive reference
17 December, 2016	Page 19,51	Update Performance Table, Removed UPM GEO
30 March, 16	Page 17	Run test description
2 Febuary,16	various	iGate ClimaZone Zoning Panel Addition
12 Sept., 14	48	Updated Capacity Column for Size 1860
	13	Miscellaneous Text Edits
21 August, 14	46	Updated Electrical Data
2 June, 14	6	AHRI COP Rating Updated
	14	Design Features Updated
1 May, 14	10-11	Internet Dealer Portal Information Added
19 March, 14	All	First Published



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ClimateMaster: Declare your personal energy independence.