



Product Catalog

# Water Source Heat Pump Axiom™ Rooftop - GWS\*

3 to 20 Tons - 60 Hz





# Introduction

## WSHP Rooftop Air Conditioners

Through the years, Trane has designed and developed the most complete line of packaged rooftop products available in the market today. Trane was the first to introduce the microelectronic unit controls and has continued to improve and revolutionize this design concept.

The ReliaTel™ control platform offers the same great features and functionality as the original Micro, with additional benefits for greater application flexibility.

Axiom™ rooftop continues to provide the highest standards in quality and reliability, comfort, ease of service, and the performance of Trane products.

Trane customers demand products that provide exceptional reliability, meet stringent performance requirements, and are competitively priced. Trane delivers all of this with Axiom™ rooftops.

Axiom™ rooftop features cutting edge technologies: reliable compressors, Trane engineered ReliaTel™ controls, computer-aided run testing, and Integrated Comfort™ Systems. So whether you're the contractor, the engineer or the owner, you can be certain Axiom™ rooftop products are built to meet your needs.

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## Revision History

Updated to include 6 to 10 ton units.



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# Features and Benefits

## Standard Features and Available Options

**Table 1. Axiom™ rooftops control options - standard and optional**

	Standard Features	Options <sup>(a)</sup>		
		Factory Installed	Factory or Field Installed	Field Installed
BACnet® Communications Interface (BCI)			X	
LonTalk® Communications Interface (LCI)			X	
ReliaTel™ Microprocessor Controls	X			
ReliaTel™ Options Module			X	
Trane® Air-Fi® Wireless Communication Interface		X		
Trane® Communications Interface (TCI)			X	
Zone Sensors and Remote Zone Sensors				X

<sup>(a)</sup> Refer to model number description for option availability.

**Table 2. Axiom™ rooftops features - standard and optional**

	Standard Features	Options <sup>(a)</sup>		
		Factory Installed	Factory or Field Installed	Field Installed
1-year Limited Parts Warranty	X			
5-year Limited Compressor Warranty	X			
2" MERV 8 Filters or 2" MERV 13 Filters with Filter Removal Tool		X		
2" throwaway filters	X			
Anti-Short Cycle Timer	X			
Barometric Relief			X	
Belt Drive Motors <sup>(b)</sup>	X			
Clogged Filter/Fan Failure Switch			x	
CO <sub>2</sub> Sensor				X
CO <sub>2</sub> Sensor Wiring (Wiring Only)		X		
Colored and Numbered Wiring	X			
Condensate Overflow Switch		X		
Crankcase Heaters	X			
Dedicated Airflow	X			
Digital Display Zone Sensor				X
Discharge Air Temperature Sensing Kit			X	
Easy Access Low Voltage Terminal Board (LTB)	X			
Economizer - Standard, Downflow			X	



## Features and Benefits

**Table 2. Axiom™ rooftops features - standard and optional (continued)**

	Standard Features	Options <sup>(a)</sup>		
		Factory Installed	Factory or Field Installed	Field Installed
Economizer - Standard, Horizontal				X
Electric Heaters			X	
Fault Detection Diagnostics (FDD)		X		
Foil-Faced and Edge Captured Insulation	X			
Frostat™			X	
High Efficiency Motors		X		
High Pressure Cutout	X			
High Short Circuit Current Rated (SCCR) Electrical Subsystem <sup>(c)</sup>		X		
High Static Drive				X
Hinged Access Doors		X		
Human Interface - 5 inch Color Touchscreen		X		
IAQ Sloped Condensate Drain Pan	X			
Indoor Fan Motor Shaft Grounding Ring			X	
Liquid Line Refrigerant Drier	X			
Low Leak Economizer - Downflow			X	
Low Leak Economizer - Downflow and Horizontal				X
Manual Outside Air Dampers				X
Motorized Outside Air Dampers				X
Multi-Speed Indoor Fans		X		
Operating Charge of R-410A	X			
Oversized Motors			X	
Phase Monitor	X			
Powered Exhaust				X
Powered or Unpowered Convenience Outlet		X		
Quick Access Panels	X			
Quick Adjust Idler Arm Pulley <sup>(c)</sup>	X			
Reference or Comparative Enthalpy			X	
Remote Potentiometer				X
Roof Curb (Downflow Only)				X
Single Point Power	X			
Single Side Service	X			
Single Zone Variable Air Volume (SZ VAV)		X		
Stainless Steel Drain Pan		X		

**Table 2. Axiom™ rooftops features - standard and optional (continued)**

	Standard Features	Options <sup>(a)</sup>		
		Factory Installed	Factory or Field Installed	Field Installed
Standardized Components	X			
Supply and/or Return Air Smoke Detector		X		
Through the Base Electrical Access		X		
Through the Base Electrical with Circuit Breaker		X		
Through the Base Electrical with Disconnect Switch		X		
U-shaped Airflow Pattern	X			
Variable Frequency Drive (Multispeed Indoor Fan and Single Zone VAV) <sup>(c)</sup>	X			
Ventilation Override Accessory				X

<sup>(a)</sup> Refer to model number description for option availability

<sup>(b)</sup> Belt drive motors are standard on 6 and 12.5 to 20 ton models. Direct drive is standard on the other sizes.

<sup>(c)</sup> 12.5 to 20 ton only

**Note:** Most Factory Installed Options (FIOPS) available for downflow air discharge units only. Please verify with ordering system for availability.

## Anti-Short Cycle Timer

Provides a 3 minute minimum “ON” time and 3 minute “OFF” time for compressors to enhance compressor reliability by assuring proper oil return.

## Colored And Numbered Wiring

Save time and money tracing wires and diagnosing the unit.

## Compressors

Axiom™ rooftops contain the best compressor technology available to achieve the highest possible performance. Dual compressors are outstanding for humidity control, light load cooling conditions and system back-up applications. Dual compressors are available only on 12.5 to 20 ton models. Two stage compressors are available on the 7.5 and 10 ton models.

## Coaxial Water-to-Refrigerant Coil

The internal heat exchanging water coil is a copper or cupro-nickel tube-within-a-tube design. The inner tube of the coil is deeply fluted to enhance heat transfer and to minimize fouling and scaling. Insulated coaxial heat exchangers are available as an option.

## Controls - ReliaTel™

ReliaTel™ microprocessor controls provide unit control for heating, cooling and ventilating utilizing input from sensors that measure indoor and outdoor temperature and other zone sensors. ReliaTel™ also provides outputs for building automation systems and expanded diagnostics.

## Conversion-less Units

The dedicated design units (either downflow or horizontal) require no panel removal or alteration time to convert in the field — a major cost savings during installation. Horizontal units come complete with duct flanges so the contractor doesn’t have to field fabricate them. These duct flanges are a time and cost saver.

**Note:** Only available on 12.5 to 20 ton units.



## Features and Benefits

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### Convertible Units

The units ship in a downflow configuration. They can be easily converted to horizontal by simply moving two panels.

Units come complete with horizontal duct flanges so the contractor doesn't have to field fabricate them. These duct flanges are a time and cost saver.

**Note:** Only available on 3 to 10 ton units.

### Crankcase Heaters

These band heaters provide improved compressor reliability by warming the oil to prevent migration during off-cycles or low ambient conditions.

### Discharge Line Thermostat

A bi-metal element discharge line thermostats installed as a standard feature on the discharge line of each system. This standard feature provides extra protection to the compressors against high discharge temperatures in case of loss of charge, extremely high ambient and other conditions which could drive the discharge temperature higher.

### Easy Access Low Voltage Terminal Board

The low voltage terminal board is external to the electrical control cabinet. It is extremely easy to locate and attach the thermostat wire and test operation of all unit functions. This is another cost and time saving installation feature.

### Foil Faced and Edge Captured Insulation

All panels in the evaporator section of the unit have cleanable foil-faced insulation. All edges are either captured or sealed to ensure no insulation fibers get into the airstream.

### Low Voltage Connections

The wiring of the low voltage connections to the unit and the zone sensors is as simple as 1-1, 2-2, and 3-3. This simplified system makes it easy for the installer to wire.

### Phase Monitor

The phase monitor provides 100% protection for motors and compressors against problems caused by phase loss, phase imbalance, and phase reversal. It is also equipped with an LED that provides an ON or FAULT indicator.

### Quick-Access Panels

Remove three or fewer screws for access to the standardized internal components and wiring.

### Quick-Adjust Idler Arm

With the quick-adjust idler arm, the belt and sheaves can be quickly adjusted without moving the mounted fan motor. The result is a major savings in time and money.



**Note:** Only available on 12.5 to 20 ton units.



## Single Point Power

A single electrical connection powers the unit.

## Standardized Components

Components are placed in the same location on all units. Due to standardized components throughout the line, contractors/owners can stock fewer parts.

## Thermal Expansion Valve

This feature is standard on all units.

## U-Shaped Airflow Pattern

The U-shaped airflow allows for improved static capabilities.

## Variable Frequency Drives - VFD (Multispeed Indoor Fan and SZVAV Only)

Variable Frequency Drives are factory installed and tested to provide supply fan motor speed modulation. VFDs on the supply fan, as compared to inlet guide vanes or discharge dampers, are quieter, more efficient, and are eligible for utility rebates. All VFDs are designed to allow bypass if required. Bypass control will simply provide full nominal airflow in the event of drive failure.

*Note: Only available on 12.5 to 20 ton models.*

## Factory Installed Options

### Trane® Air-Fi® Wireless Communication

Trane® Air-Fi® wireless communication is a reliable, flexible solution that frees you from the hassles associated with wired components for your building controls system. With Air-Fi wireless, you get easy problem solving, efficient performance, and cost savings over the life of the equipment.

### Condensate Overflow Switch

A condensate overflow switch is available to shut the unit down in the event that the condensate drain line becomes clogged. This option protects the unit from water overflowing from the drain pan and entering the base of the units.

### High Efficiency Filtration

Axiom™ rooftop units offer a variety of high efficiency filtration options. MERV 8 and MERV 13 filters provide additional filtration beyond the capabilities of typical 2" throwaway filters. Also, when MERV 8 or MERV 13 filters are ordered, units come equipped with a filter removal tool.

### High Efficiency Motors

This option is available with efficiency ratings from 86.5 up to 91.0. It is not available for all models.

### High Short Circuit Current Rating (SCCR)

Axiom™ rooftop units now have an optional high short circuit current rated electrical subsystem for units with an MOP above 60A. This option is a perfect fit for applications that need protection against high potential fault currents. This option also includes individual over current protection for each compressor and the indoor fan. When the high SCCR is ordered, the control box will have components separated into two sections - high and low voltage components.

*Note: Only available on 12.5 to 20 ton units.*

### Hinged Access Doors

These doors permit easy access to the filter, fan/heat and compressor/control sections. They reduce the potential roof damage from screws or sharp access door corners.



## Features and Benefits

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### Human Interface



The 5 inch color touchscreen human interface provides an intuitive user interface to the rooftop unit that speeds up unit commissioning, shortens unit troubleshooting times, and enhances preventative maintenance measures. The human interface includes several features such as:

- Data trending capabilities by means of time series graphs
- Historical alarm messages
- Real-time sensor measurements
- On board system setpoints
- USB port that enables the downloading of component runtime information as well as trended historical sensor data
- Customized reports

*Note: Refer to RT-SVX49\*-EN for additional information.*

### Multi-Speed Indoor Fan System

Multi-speed indoor fan system is designed for use in applications for meeting the minimum requirement of CA Title 24.

This system incorporates a multi-speed fan control to change the speed of the fan to 66% of full airflow based off of compressor stages.

### Powered or Unpowered Convenience Outlet

This option is a GFCI, 120V/15amp, 2-plug, convenience outlet, either powered or unpowered. This option can only be ordered when through-the-base electrical with either the disconnect switch or circuit breaker option is ordered. This option is available on all models.

### Single Zone VAV (SZVAV)

Single Zone VAV (SZVAV) is designed for use in single zone applications such as gymnasiums, auditoriums, manufacturing facilities, retail box stores, and any large open spaces where there is

a diversity in the load profile. It is an ideal replacement to "yesterday's" constant-volume (CV) systems, as it reduces operating costs while improving occupant comfort.

SZVAV systems combine Trane application, control and system integration knowledge to exactly match fan speed with cooling and heating loads, regardless of the operating condition. Trane algorithms meet and/or exceed ASHRAE 90.1 SZVAV energy-saving recommendations and those of CA Title 24. The result is an optimized balance between zone temperature control and system energy savings. Depending on your specific application, energy savings can be as much as 20+%.

**Note:** *Building system modeling in energy simulation software such as TRACE is recommended to evaluate performance improvements for your application.*

SZVAV is fully integrated into the control system. It provides the simplest and fastest commissioning in the industry through proven factory-installed, wired, and tested system controllers. All control modules, logic boards and sensors are factory installed and tested to ensure the highest quality and most reliable system available. This means no special programming of algorithms, or hunting at the jobsite for field installed sensors, boards, etc. SZVAV is a quick and simple solution for many applications and is available from your most trusted rooftop VAV system solution provider -Trane.

**Note:** *Only available on 7.5 to 20 ton units.*

### **Stainless Steel Drain Pan**

For excellent corrosion and oxidation resistance, the optional stainless steel drain pan provides a cleanable surface that complement other IAQ solutions such as high efficiency filtration (MERV 8 or 13), and demand control ventilation (CO<sub>2</sub>).

### **Supply, Return, and Plenum Air Smoke Detector**

With this option (pictured below) installed, if smoke is detected, all unit operation will be shut down. Reset will be manual at the unit. return air smoke detectors require minimum allowable airflow when used with certain models.

Supply and/or return smoke detectors may not be used with the plenum smoke detector.

**Figure 1. Supply/Return Air Smoke Detector**



**Figure 2. Plenum Air Smoke Detector**



### **Through the Base Electrical/Horizontal Side Access with Circuit Breaker**

This option is a factory installed thermal-magnetic, molded case, HACR Circuit Breaker with provisions for through the base electrical connections.

### **Through the Base Electrical/Horizontal Side Access with Disconnect Switch**

Factory installed 3-pole, molded case, disconnect switch with provisions for through the base electrical connections are available.



## Features and Benefits

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### Through the Base Utilities Access

An electrical service entrance shall be provided allowing electrical access for both control and main power connections inside the curb and through the base of the unit. This option will allow for field installation of liquid-tight conduit and an external, field-installed disconnect switch.

### Factory or Field Installed Options

#### BACnet® Communications Interface

The BACnet communications interface allows the unit to communicate directly with a generic open protocol BACnet MS/TP Network Building Automation System Controls.

#### Barometric Relief

Designed to be used on downflow units, barometric relief is an unpowered means of relieving excess building pressure.

#### Clogged Filter/Fan Failure Switch

A dedicated differential pressure switch is available to achieve active fan failure indication and/or clogged filter indication.

#### Discharge Air Sensing Kit

Provides true discharge air sensing in heating models. The kit is functional only with the ReliaTel™ Options Module.

#### Economizer - Standard, Downflow

Economizers are equipped with either dry bulb, reference, or comparative enthalpy sensing. These economizers provide free cooling as the outdoor temperature and/or humidity decreases. Correctly installed, they offer a valuable energy savings. Factory-installed economizers save time and ensure proper installation.

*Note: Factory-installed economizers require some field set-up.*

#### Economizer - Low Leak, Downflow

This accessory meets low leak requirements for ASHRAE 90.1, IECC, and CA Title 24 standards (3 cfm/ft<sup>2</sup>@1" wg exterior air, 4 cfm/ft<sup>2</sup>@1" wg return air). This option allows 100% outdoor air supply from 0-100% modulating dampers and is standard with barometric relief on the 12.5 to 20 ton models.. It can be paired with powered exhaust for additional building pressure relief. Available on downflow units only. The economizers come with three control options, dry bulb and reference or comparative enthalpy (optional).

#### Electric Heaters

Electric heat modules are available within the basic unit. If ordering the through-the-base electrical option with an electrical heater, the heater must be factory installed.

#### Frostat™

This capillary bulb embedded in the face of the evaporator coil or thermostat on the suction line monitors coil temperature to prevent evaporator icing and protect the compressor. Recommended for applications with low leaving air temperatures, low airflow and or high latent load applications.

*Note: Frostat™ is standard on all single-zone VAV models.*

#### Indoor Fan Motor Shaft Grounding Ring

Shaft grounding rings are used on all VFD driven motors to provide a conductive discharge path away from the motor bearings to ground. Bearing Protection Rings shall be maintenance free circumferential rings of conductive micro fibers that discharge voltages to ground.

## **LonTalk® Communications Interface**

The LonTalk communications interface allows the unit to communicate as a Tracer® LCI-V device or directly with generic LonTalk Network Building Automation System Controls.

## **Oversized Motors**

Factory or field installed oversized motors are available for high static applications.

## **Reference or Comparative Enthalpy**

Measures and communicates humidity while maximizing comfort control.

## **ReliaTel™ Options Module (RTOM)**

The RTOM monitors the supply fan proving, clogged filter, supply air temperature, exhaust fan setpoint, dehumidification setpoint, supply air tempering, Froststat™ and smoke detector.

## **Trane Communication Interface (TCI)**

Available factory or field installed. This module when applied with the ReliaTel™ easily interfaces with Trane's Integrated Comfort™ System.

## **Field Installed Options**

### **CO<sub>2</sub> Sensor Wiring**

This unit is wired for field installed CO<sub>2</sub> sensors.

### **Dampers**

0–25 percent manual or 0–50 percent motorized outside air dampers are available.

### **Digital Display Zone Sensor**

The Digital LCD (Liquid Crystal Display) zone sensor has the look and functionality of standard zone sensors.

### **Economizer - Standard, Horizontal**

Economizers are equipped with either dry bulb or reference or comparative enthalpy sensing. These economizers provide free cooling as the outdoor temperature and/or humidity decreases. Correctly installed, they offer a valuable energy savings.

### **Economizer - Low Leak, Downflow & Horizontal**

This accessory meets low leak requirements for ASHRAE 90.1, IECC, and CA Title 24 standards (3 cfm/ft<sup>2</sup>@1" wg exterior air, 4 cfm/ft<sup>2</sup>@1" wg return air). This option allows 100% outdoor air supply from 0-100% modulating dampers and is standard with barometric relief on the 12.5 to 20 ton models. It can be paired with powered exhaust for additional building pressure relief.

### **High Static Drive Accessory**

Available on many models, this high static drive accessory extends the capability of the standard motor. Avoid expensive motors and operating costs by installing this optimized sheave accessory.

### **Powered Exhaust**

This option is available on downflow units and provides exhaust of the return air, when using a downflow economizer, to maintain proper building pressurization. Great for relieving most building overpressurization problems.



## Features and Benefits

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### Remote Potentiometer

When properly installed in the economizer control circuitry, this accessory provides a remote variable resistance to enable the operator to adjust the minimum damper position.

### Ventilation Override Accessory

With the ventilation override accessory installed, the unit can be set to transition to up to 3 different pre-programmed sequences for smoke purge, pressurization, and exhaust. The transition occurs when a binary input on the RTOM is closed (shorted). This would typically be a hard wired relay output from a smoke detector or fire control panel. The ventilation override kit is available as a field installed accessory.

### Zone Sensors/Thermostats

Available in programmable, automatic and manual styles.

**Note:** Zone sensors required for units configured for Single Zone VAV indoor fan system control to enable Single Zone VAV functionality.

## Other Benefits

### Cabinet Integrity

For added water integrity, Axiom™ rooftop has a raised 1 1/8" lip around the supply and return of the downflow units to prevent water from blowing into the ductwork.

### Easy to Install, Service and Maintain

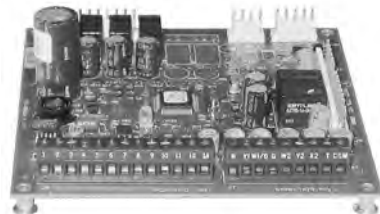
Because today's owners are very cost-conscious when it comes to service and maintenance, this unit was designed with direct input from service contractors. This valuable information helped to design a product that would get the service technician off the job quicker and save the owner money. This product line offers outstanding standard features enhanced by a variety of factory and field installed options, multiple control options, rigorously tested proven designs and superior product and technical support.

### Outstanding Airflow Distribution

Airflow is outstanding. The unit can replace an older machine with old ductwork and, in many cases, improve the comfort through better air distribution.

### ReliaTel™ Controls

Figure 3. ReliaTel board



ReliaTel controls provide unit control for heating, cooling, and ventilating, utilizing input from sensors that measure outdoor and indoor temperature. ReliaTel also provides outputs for building automation systems and expanded diagnostics. Quality and reliability are enhanced through ReliaTel control and logic:

- Prevents the unit from short cycling, considerably improving compressor life.
- Ensures the compressor will run for a specific amount of time which allows oil to return for better lubrication, enhancing the reliability of the compressor.

- Reduces the number of components required to operate the unit, reducing possibilities for component failure.

### **ReliaTel Makes Installing and Servicing Easy**

ReliaTel eliminates the need for field-installed, anti-short cycle timer and time delay relays. The wiring of the low voltage connections to the unit and the zone sensors is as easy as 1-1, 2-2, and 3-3. This simplified system makes wiring easier for the installer.

### **ReliaTel Makes Testing Easy**

ReliaTel requires no special tools to run the unit through its paces. Simply place a jumper between Test 1 and Test 2 terminals on the Low Voltage Terminal Board and the unit will walk through its operational steps automatically. The unit automatically returns control to the zone sensor after stepping through the test mode a single time, even if the jumper is left on the unit. As long as the unit has power and the "system on" LED is lit, ReliaTel is operational. The light indicates that the controls are functioning properly. ReliaTel features expanded diagnostic capabilities when utilized with Trane Integrated Comfort™ Systems. Some zone sensor options have central control panel lights which indicate the mode the unit is in and possible diagnostic information (dirty filters for example).

### **ReliaTel Has Other Benefits**

- The ReliaTel built-in anti-shortcycle timer, time delay relay and minimum "on" time control functions are factory tested to assure proper operation.
- ReliaTel softens electrical "spikes" by staging on fans, compressors and heaters.
- Intelligent Fallback is a benefit to the building occupant. If a component goes astray, the unit will continue to operate at predetermined temperature setpoint.
- Intelligent Anticipation is a standard feature. It functions continuously as ReliaTel and zone sensor(s) work together in harmony to provide much tighter comfort control than conventional electromechanical thermostats.
- The ReliaTel design is standardized across the board, ensuring a lower cost to owners.

## **Rigorous Testing**

All of Axiom™ rooftop's designs were rigorously rain tested at the factory to ensure water integrity. Axiom™ rooftop units incorporate either a one piece top or the Trane-Tite-Top (T3). Each part of the top (either two or three pieces) overlaps in such a way that water cannot leak into the unit. These overlapped edges are gasketed and sealed to ensure superior water integrity.

Actual shipping tests were performed to determine packaging requirements. Units were test shipped around the country to determine the best packaging. Factory shake and drop tests were used as part of the package design process to help assure that the unit arrives at the job site in top condition.

Rigging tests include lifting a unit into the air and letting it drop one foot, assuring that the lifting lugs and rails hold up under stress.

We perform a 100% coil leak test at the factory. All coils are pressure and leak tested at a minimum of 450 psig. The completely assembled refrigerant system is leak tested at a minimum of 240 psig with a refrigerant and nitrogen mixture.

All parts are inspected at the point of final assembly. Sub-standard parts are identified and rejected immediately. Every unit receives a 100 percent unit run test before leaving the production line to make sure it lives up to rigorous Trane requirements.

## **Unmatched Support**

Trane Sales Representatives are a Support Group that can assist you with:

- Product
- Application
- Service
- Training



## Features and Benefits

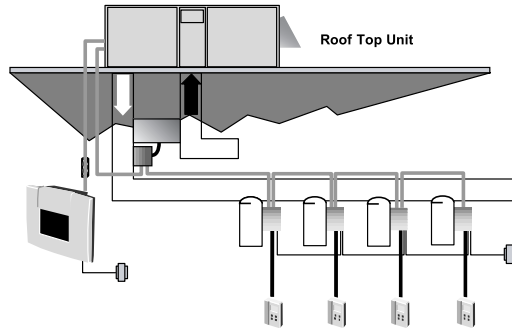
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- Special Applications
- Specifications
- Computer Programs and much more

### VariTrac™

When Trane's changeover VAV System for light commercial applications is coupled with Axiom™ rooftop, it provides the latest in technological advances for comfort management systems and can allow thermostat control in every zone served by VariTrac™.

**Note:** *VariTrac™ is not recommended for SZVAV and multi-speed indoor fan applications.*







## Application Considerations

Application of this product should be within the catalogued airflow and cooling considerations.

### Trane® Air-Fi® Wireless

Please refer to Air-Fi Network Design Installation, Operation, and Maintenance manual BAS-SVX55\*-EN for additional details on applications with factory installed wireless.

### Barometric Relief

This product line offers an optional barometric relief damper included in the downflow economizer accessory. This accessory consists of gravity dampers which open with increased pressure. As the building air pressure increases, the pressure in the unit return air section also increases, opening the dampers and relieving the conditioned space.

*Important: The effectiveness of barometric relief damper during economizing operation is limited, depending on the pressure drop of the return-air path. For some applications, powered exhaust may be better suited for preventing over-pressurization when economizing.*

### Power Exhaust Accessory

The power exhaust accessory is available on all downflow units. This accessory can be field installed and will assist in relieving a building's pressurization.

### Condensate Trap

The evaporator is a draw-thru configuration. A trap must be field provided prior to start-up on the cooling cycle.

### Clearance Requirements

The recommended clearances identified with unit dimensions should be maintained to assure adequate serviceability, maximum capacity and peak operating efficiency. Actual clearances which appear inadequate should be reviewed with the local Trane sales personnel.

### Unit Pitch

These units have sloped condensate drain pans. Units must be installed level, any unit slope must be toward the side of unit where condensate drain is connected.

### VariTrac™

VariTrac™ is not recommended for SZVAV and multi-speed indoor fan applications.



# Model Number Description

## Digit 1

**G** = WSHP

## Digit 2 — Unit Type

**W** = Packaged Heat Pump

## Digit 3 — Efficiency

**S** = Standard Efficiency

## Digit 4 — Airflow Configuration

**C** = Convertible  
**D** = Downflow  
**H** = Horizontal

## Digit 5, 6, 7 — Nominal Gross Cooling Capacity (MBh)

**036** = 3 Ton  
**048** = 4 Ton  
**060** = 5 Ton  
**072** = 6 Ton  
**092** = 7.5 Ton  
**120** = 10 Ton  
**150** = 12.5 Ton  
**180** = 15 Ton  
**240** = 20 Ton

## Digit 8 — Major Design Sequence

### Digit 9 — Voltage Selection

**3** = 208-230/60/3  
**4** = 460/60/3  
**W** = 575/60/3

### Digit 10 — Unit Controls

**R** = ReliaTel™ Microprocessor

## Digit 11 — Electric Heat Option

**0** = No Electric Heat  
**B** = 6 kW<sup>1</sup>  
**C** = 9 kW<sup>1</sup>  
**E** = 12 kW<sup>1</sup>  
**G** = 18 kW  
**J** = 23 kW<sup>1</sup>  
**K** = 27 kW<sup>1</sup>  
**N** = 36 kW  
**P** = 54 kW  
**R** = 72 kW

## Digit 12 — Minor Design Sequence

\* First Sequence

## Digit 13, 14 — Service Sequence

\*\* Factory Assigned

## Digit 15 — Fresh Air Selection<sup>6</sup>

**A** = Manual Outside Air Damper<sup>2 3</sup>  
**B** = Motorized Outside Air Damper 0-50%<sup>2 4</sup>  
**C** = Economizer, Dry Bulb 0-100% without Barometric Relief<sup>2 5</sup>  
**D** = Economizer, Dry Bulb with Barometric Relief<sup>5</sup>  
**E** = Economizer, Reference Enthalpy without Barometric Relief<sup>5</sup>  
**F** = Economizer, Reference Enthalpy with Barometric Relief<sup>5</sup>  
**G** = Economizer, Comparative Enthalpy without Barometric Relief<sup>2 5</sup>  
**H** = Economizer, Comparative Enthalpy with Barometric Relief  
**K** = Low Leak Economizer Barometric Relief  
**M** = Low Leak Economizer with Reference Enthalpy with Barometric Relief  
**P** = Low Leak Economizer with Comparative Enthalpy with Barometric Relief

## Digit 16 — Supply Fan/DriveType/ Motor

**0** = Standard<sup>7</sup>  
**1** = Oversized Motor<sup>7 8</sup>  
**3** = High Efficiency Motor<sup>9 8</sup>  
**6** = Single Zone Variable Air Volume (SZVAV)<sup>9</sup>  
**7** = Multi-Speed Indoor Fan<sup>9</sup>  
**8** = Single Zone Variable Air Volume Oversized Motor<sup>9</sup>  
**9** = Multi-Speed Oversized Motor<sup>9</sup>  
**A** = Single Zone Variable Air Volume Standard Motor w/ Shaft Ground Ring<sup>9</sup>  
**B** = Multi-Speed Standard Motor w/ Shaft Ground Ring<sup>9</sup>  
**C** = Single Zone Variable Air Volume Oversized Motor w/ Shaft Ground Ring<sup>9</sup>  
**D** = Multi-Speed Oversized Motor w/ Shaft Ground Ring<sup>9</sup>

## Digit 17 — Hinged Service Access / Filters<sup>8</sup>

**0** = Standard Panels/Standard Filters<sup>10</sup>  
**A** = Hinged Access /Standard Filters<sup>10</sup>  
**B** = Standard Panels/2" MERV 8 Filters  
**C** = Hinged Access/2" MERV 8 Filters  
**D** = Standard Panels/MERV 13 Filters  
**E** = Hinged Access/MERV 13 Filters

## Digit 19 — Through The Base Provisions

**0** = No Through The Base Provisions  
**A** = Through The Base Electric<sup>11</sup>  
**D** = Through The Base Utilities Access

## Digit 20 — Disconnect/Circuit Breaker<sup>12</sup>

**0** = No Disconnect/No Circuit Breaker  
**1** = Unit Mounted Non-Fused Disconnect<sup>13</sup>  
**2** = Unit Mounted Circuit Breaker<sup>13</sup>

## Digit 21 — Convenience Outlet Option

**0** = Without Convenience Outlet  
**A** = Unpowered Convenience Outlet<sup>14</sup>  
**B** = Powered Convenience Outlet<sup>14</sup>

## Digit 22 — Communications Options

**0** = No Communications Interface  
**1** = Trane® Communications Interface<sup>15</sup>  
**2** = LonTalk® Communications Interface  
**6** = BACnet® Communications Interface  
**7** = Air-Fi® Wireless Communications<sup>16</sup>

## Digit 23 — Refrigeration System Option

**0** = Standard Refrigeration System

## Digit 24 — Refrigeration Controls

**0** = Without Refrigeration Controls  
**1** = Frostat™

## Digit 25 — Smoke Detector<sup>17 18</sup>

**0** = No Smoke Detector  
**A** = Return Air Smoke Detector  
**B** = Supply Air Smoke Detector  
**C** = Supply and Return Air Smoke Detectors  
**D** = Plenum Smoke Detector

## Digit 26 — System Monitoring Controls<sup>17</sup>

**0** = No Monitoring Controls  
**1** = Clogged Filter Switch  
**2** = Fan Failure Switch  
**3** = Discharge Air Sensing  
**4** = Clogged Filter Switch and Fan Failure  
**5** = Clogged Switch and Discharge Air Sensing  
**6** = Fan Failure Switch and Discharge Air Sensing  
**7** = Clogged Filter Switch, Fan Failure Switch and Discharge Air Sensing  
**A** = Condensate Drain Pan Overflow Switch  
**B** = Clogged Filter Switch and Condensate Drain Pan Overflow Switch  
**C** = Fan Failure Switch and Condensate Drain Pan Overflow Switch  
**D** = Discharge Air Sensing and Condensate Drain Pan Overflow Switch  
**E** = Clogged Filter Switch, Fan Failure Switch and Condensate Drain Pan Overflow Switch  
**F** = Clogged Filter Switch, Discharge Air Sensing Tube and Condensate Drain Pan Overflow Switch  
**G** = Fan Failure Switch, Discharge Air Sensing Tube and Condensate Drain Pan Overflow Switch  
**H** = Clogged Filter Switch, Fan Failure Switch, Discharge Air Sensing and Condensate Drain Pan Overflow Switch

### Digit 27 — System Monitoring Controls

- 0** = No Monitoring Controls
- A** = Demand Control Ventilation (CO<sub>2</sub>)<sup>22</sup>
- B** = Low Leak Economizer with FDD (Fault Detection & Diagnostics)
- C** = FDD (Fault Detection & Diagnostics) with DVC (Demand Control Ventilation)

### Digit 28— Unit Hardware Enhancements

- 0** = No Enhancements
- 1** = Stainless Steel Drain Pan

### Digit 29 — Short Circuit Current Rating

- 0** = Standard SCCR
- A** = 65kA SCCR Option <sup>19 20</sup>

### Digit 30–31

- 0** = Standard

### Digit 32

- 0** = Standard Unit Controls
- 1** = Human Interface<sup>21</sup>

### Digit 32–41

- 0** = Standard

### Digit 42 — Heat Exchanger

- 1** = Copper Water Coil
- 2** = Cupro—nickel Water Coil
- 7** = Insulated copper heat ex/partial suction
- 8** = Insulated CU—NI heat ex/partial suction

### Digit 43 — Freeze Protection

- A** = 20 °F Freezestat (Extended Range)
- B** = 30 °F Freezestat (Standard Range)

### Digit 44 — Special

- 0** = Standard Unit
- S** = Special Unit

### 45 — Minor Design Sequence

- \*Factory Assigned

## Model Number Notes

### Notes:

1. Not available on 12.5 to 20 ton models.
2. Only available on 3 to 10 ton models.
3. 3 to 10 ton models - Manual outside air damper will ship factory supplied within the unit, but must be field installed.
4. Motorized outside air damper is not available on Multi-Speed orSZVAV (Single Zone Variable AirVolume)
5. On the 3 to 10 ton models the economizer with barometric relief is for downflow configured units only. Order economizer without barometric relief for horizontal configuration. Barometric relief for horizontal configured units must be ordered as field installed accessory.
6. Some field set up required.
7. Multi-stage, direct drive standard on 3 to 5 ton models. Belt drive standard on 6 and 12.5 to 20 ton models. Variable speed direct drive standard on 7.5 to 10 ton models.
8. Available factory installed on downflow AND horizontal units. Verify with ordering system.
9. Only available on 7.5 to 20 ton models, verify with ordering system.
10. Standard filters are not available with Low Leak Economizers.
11. Through-the-base electrical option or Horizontal-Side Access must be ordered with either unit mounted disconnect or circuit breaker. When adding heat, you must order Trane Electric Heat.
12. Unit mounted disconnect and circuit breakers are mutually exclusive of each other.
13. Through-the-base electric required when ordering disconnect/circuit breaker options
14. Must be ordered with Through-the-Base Electrical option or Horizontal-Side Access and either Unit Mounted Disconnect or Circuit Breaker.
15. TCI is for use with non-VariTrac™ systems and VariTrac™ systems.
16. Must be used with BACnet™ open protocol.
17. Requires ReliaTel™ Options Module.
18. Option cannot be ordered in conjunction with field installed economizer on downflow units. Must be factory installed. The return air smoke detector may not fit up or work properly on the Axiom™ rooftop units when used in conjunction with 3<sup>rd</sup> party accessories (such as bolt on heat wheels, economizers, and power exhaust). Do not order the return air smoke detectors when using this type of accessory.
19. 575 VAC option is 25kA.
20. Only available on 15 to 20 ton models.
21. Human Interface is standard with FDD (Fault Detection Diagnostics). Not available on 20 ton model.
22. Demand control ventilation option includes wiring only. The CO<sub>2</sub> sensor is a field-installed only option.



# General Data

**Table 3. General data – 3 to 5 tons**

	Downflow & Horizontal Units		
	3 Tons	4 Tons	5 Tons
	GWSC036H3,4,W	GWSC048H3,4,W	GWSC060H3,4,W
<b>Unit Size</b>			
Length of Cabinet (in)	69.875	69.875	88.625
Width of Cabinet (in)	44.25	44.25	53.25
Height (in)	40.875	40.875	40.875
Maximum Net Weight (lb)	507	540	682
<b>Compressor</b>			
Quantity/Type	1 / Scroll	1 / Scroll	1 / Scroll
<b>Indoor Coil</b>			
Type	Lanced	Lanced	Lanced
Tube Size (in.) OD	0.3125	0.3125	0.3125
Face Area (sq. ft.)	12.33	12.33	17.00
Rows/FPI	2 / 16	3 / 16	3 / 16
Refrigerant Control	Expansion Valve	Expansion Valve	Expansion Valve
Drain Connection Size (in.)(NPT)	0.75	0.75	0.75
<b>Water Connection</b>			
Size (in.)	1	1	1
<b>Indoor Fan</b>			
Type	FC Centrifugal	FC Centrifugal	FC Centrifugal
Diameter (in.)	11x11	11x11	11x11
Drive Type/No. Speeds	Direct / 5	Direct / 5	Direct / 5
Motor Quantity	1	1	1
Motor HP (Standard/Oversized)	0.75 / 1.5	1.0 / 1.5	1.0 / 1.5
Motor Frame Size (Standard/Oversized)	48 / 48	48 / 48	48 / 48
<b>Filters</b>			
Type Furnished	Throwaway	Throwaway	Throwaway
Quantity and Size Recommended	(2) 20x35x2	(2) 20x35x2	(4) 16x25x2

**Table 4. General data – 6 to 10 tons**

	Downflow & Horizontal Units		
	6 Tons	7.5 Tons	10 Tons
	GWSC072H3,4,W	GWSC092H3,4,W	GWSC120H3,4,W
<b>Unit Size</b>			
Length of Cabinet (in.)	88.625	88.625	88.625
Width of Cabinet (in.)	53.25	53.25	53.25
Height (in.)	40.875	46.875	46.875
Maximum Net Weight (lb)	740	796	850
<b>Compressor</b>			

**Table 4. General data – 6 to 10 tons (continued)**

	<b>Downflow &amp; Horizontal Units</b>		
	<b>6 Tons</b>	<b>7.5 Tons</b>	<b>10 Tons</b>
	<b>GWSC072H3,4,W</b>	<b>GWSC092H3,4,W</b>	<b>GWSC120H3,4,W</b>
Quantity/Type	1 / Scroll	1 / Scroll (2 stage)	1 / Scroll (2 stage)
<b>Indoor Coil</b>			
Type	Lanced	Lanced	Lanced
Tube Size (in.) ID	0.3125	0.3125	0.3125
Face Area (sq. ft.)	9.9	12.4	12.4
Rows/FPI	4 / 16	3 / 16	4 / 16
Refrigerant Control	Expansion Valve	Expansion Valve	Expansion Valve
Drain Connection Size (in.) (NPT)	0.75	0.75	0.75
<b>Water Connection</b>			
Size (in.)	1.5	1.5	2
<b>Indoor Fan</b>			
Type	FC Centrifugal	BC Plenum	BC Plenum
Diameter (in.)	12x12	19.7x15	19.7x15
Drive Type/No. Speeds	Belt/Variable	Direct/Variable	Direct/Variable
Motor Quantity	1	1	1
Motor HP (Standard/Oversized)	1.0/2.0	2.75/—	2.75/—
Motor Frame Size (Standard/Oversized)	56/56	—/—	—/—
<b>Filters</b>			
Type Furnished	Throwaway	Throwaway	Throwaway
Quantity and Size Recommended	(4) 16x25x2	(4) 20x25x2	(4) 20x25x2

**Table 5. General data – 12.5 to 20 tons**

	<b>Downflow &amp; Horizontal Units</b>		
	<b>12.5 Tons</b>	<b>15 Tons</b>	<b>20 Tons</b>
	<b>GWS*150E3,4,W</b>	<b>GWS*180E3,4,W</b>	<b>GWS*240E3,4,W</b>
<b>Unit Size</b>			
Length of Cabinet (in.)	121.6875	121.6875	121.6875
Width of Cabinet (in.)	84.1875	84.1875	84.1875
Height (in.)	56.125	56.125	66.25
Maximum Net Weight (lb)	2024	2028	2198
<b>Compressor</b>			
Quantity/Type	2 / Scrolls	2 / Scrolls	2 / Scrolls
<b>Indoor Coil</b>			
Type	Hi Performance	Hi Performance	Hi Performance
Tube Size (in.) ID	0.3125	0.3125	0.3125
Face Area (sq. ft.)	26.0	26.0	31.4
Rows/FPI	3 / 15	4 / 15	4 / 15
Refrigerant Control	Expansion Valve	Expansion Valve	Expansion Valve
Drain Connection Size (in.) (NPT)	1	1	1
<b>Water Connection</b>			
Size (in.)	1.5	1.5	2
<b>Indoor Fan</b>			
Type	FC Centrifugal	FC Centrifugal	FC Centrifugal
Diameter (in.)	18x18	18x18	18x18



## General Data

**Table 5. General data – 12.5 to 20 tons (continued)**

	<b>Downflow &amp; Horizontal Units</b>		
	<b>12.5 Tons</b>	<b>15 Tons</b>	<b>20 Tons</b>
	<b>GWS*150E3,4,W</b>	<b>GWS*180E3,4,W</b>	<b>GWS*240E3,4,W</b>
Drive Type/No. Speeds	Belt / 1	Belt / 1	Belt / 1
Motor Quantity	1	1	1
Motor HP (Standard/Oversized)	3.0 / 5.0	3.0 / 5.0 or 7.5	5.0 / 7.5
Motor RPM (Standard/Oversized)	1740 / 3,450	1740 / 3,450	3450 / 3,470
Motor Frame Size (Standard/Oversized)	56HZ / 56HZ	184TZ / 56HZ or 184TZ	56HZ / 184T
<b>Filters</b>			
Type Furnished	Throwaway	Throwaway	Throwaway
Quantity and Size Recommended:			
Downflow	(4)20x20x2 (4)20x25x2	(4)20x20x2 (4)20x25x2	(8)20x20x2 (4)20x16x2
Horizontal	(8)20x25x2	(8)20x25x2	(12)20x20x2



# Performance Data

**Table 6. ANSI/AHRI/ASHRAE/ISO 13256-1 WLHP, GWHP and GLHP performance - 3.5 to 20 tons**

Size	Rated GPM	Rated CFM	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 77 ° F		Heating 32 ° F	
			Capacity Btuh	EER	Capacity Btuh	COP	Capacity Btuh	EER	Capacity Btuh	COP	Capacity Btuh	EER	Capacity Btuh	COP
GWSC036H	9.0	1200	40,900	14.95	46,700	4.62	46,200	23.29	38,800	4.12	42,700	17.31	30,000	3.41
GWSC048H	12.0	1600	52,700	16.56	60,100	5.14	59,700	25.72	50,000	4.56	55,100	19.28	39,000	3.77
GWSC060H	15.0	2000	60,200	14.83	74,800	4.86	68,300	22.57	61,900	4.33	63,000	17.22	47,800	3.59
GWSC072H	18.0	2400	75,200	14.20	91,100	4.80	84,800	20.10	75,000	4.30	78,600	16.00	58,600	3.60
GWSC092H	22.5	3000	91,700	14.30	113,800	4.70	100,300	20.70	92,200	4.20	95,700	16.50	70,800	3.40
GWSC120H	30.0	4000	122,000	15.70	145,000	4.90	138,200	23.40	118,100	4.40	127,300	18.10	91,900	3.40
GWS*150E	38.8	4750	160,300	15.90	181,500	5.10	178,700	22.70	150,800	4.50	166,800	18.00	118,800	3.70
GWS*180E	46.5	5700	184,400	14.20	201,000	4.60	204,200	19.70	162,900	4.00	192,500	15.90	123,200	3.20
GWS*240E	62.0	7600	261,600	13.20	313,100	4.40	290,500	17.70	265,900	4.00	273,500	14.80	210,000	3.50

**Notes:**

1. Rated in accordance ANSI/AHRI/ASHRAE/ISO13256-1. Certified conditions are 80.6°F DB/66.2°F WB EAT in cooling and 68°F DB/59°F WB EAT in heating.
2. Models with capacities greater than 135,000 Btuh are not included in the ANSI/AHRI/ASHRAE/ISO13256-1 certification program.
3. \* stands for both downflow and horizontal units.

## Accessories

### System Balancing Hose Kit

For automatic system balancing of a water source heat pump, the Mesurflo® self-balancing hose kit provides a constant flow rate over the pressure differential range of 2 to 80 psid. As system pressure changes (through further addition of heat pumps, for example) each individual flow control valve will automatically adjust to the new system conditions. In variable water volume applications, a self-balancing hose kit can provide continuous balancing because of its ability to automatically adjust to the varying system conditions.

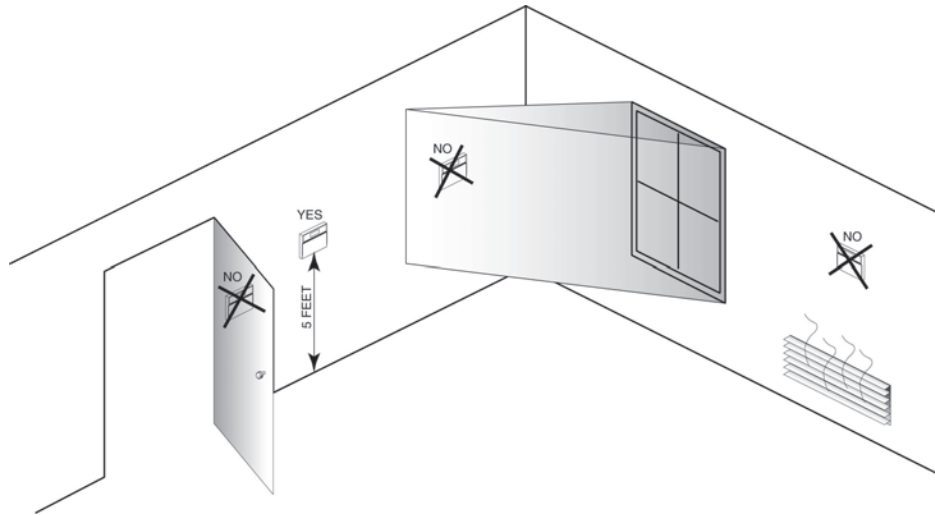
A variety of manual and automatic flow control kits including hoses are available as accessories for balancing a water source heat pump system. For a complete product listing, refer to the Hose Kit Accessories product catalog, WSHP- PRC025\*-EN.

### Thermostat/Sensor Location

Location of thermostat or zone sensor is an important element of effective room control and comfort. The best location is typically on a wall, remote from HVAC unit's supply/return-air grille. Readings at this location assure the desired setpoint is achieved across the space, not just near the unit. It may be necessary to subdivide the zone to ensure adequate control and comfort is accomplished. See below where the thermostat or zone sensor should not be mounted. These include:

- Near drafts or dead spots (e.g. behind doors or corners)
- Near hot or cold air ducts
- Near radiant heat (e.g., heat emitted from appliances or the sun)
- Near concealed pipes or chimneys
- On outside walls or other non conditioned surfaces
- In air flows from adjacent zones or other units

**Figure 4. Thermostat/sensor location**







# Gross Cooling Capacities

Table 7. Gross cooling capacities (MBh) 3 tons three phase GWSC036H

EWT	GPM	Gross Mbtuh	Gross Sen Mbtuh	SHR	Power kW	Reject Mbtuh	LWT	Feet Head
45	5.90	50.20	37.30	0.74	1.64	55.80	63.90	4.20
45	7.20	50.50	37.60	0.74	1.56	55.80	60.50	6.10
45	8.10	50.70	37.70	0.74	1.52	55.90	58.80	7.60
45	9.00	50.80	37.80	0.74	1.49	55.90	57.40	9.10
45	9.50	50.80	37.80	0.74	1.48	55.80	56.70	10.00
45	9.90	50.90	37.80	0.74	1.47	55.90	56.30	10.60
45	10.80	51.00	37.90	0.74	1.45	56.00	55.40	11.90
55	5.90	49.00	36.80	0.75	1.88	55.40	73.80	3.80
55	7.20	49.30	37.00	0.75	1.80	55.40	70.40	5.50
55	8.10	49.40	37.10	0.75	1.76	55.40	68.70	6.90
55	9.00	49.50	37.10	0.75	1.73	55.40	67.30	8.30
55	9.50	49.60	37.20	0.75	1.72	55.50	66.70	9.10
55	9.90	49.60	37.20	0.75	1.71	55.40	66.20	9.70
55	10.80	49.70	37.30	0.75	1.69	55.50	65.30	10.90
68	5.90	46.70	35.80	0.77	2.19	54.20	86.40	3.60
68	7.20	47.00	36.00	0.77	2.12	54.20	83.10	5.10
68	8.10	47.20	36.10	0.76	2.08	54.30	81.40	6.40
68	9.00	47.30	36.20	0.77	2.05	54.30	80.10	7.70
68	9.50	47.30	36.20	0.77	2.04	54.30	79.40	8.40
68	9.90	47.40	36.30	0.77	2.03	54.30	79.00	8.90
68	10.80	47.50	36.40	0.77	2.01	54.40	78.10	9.90
75	5.90	45.40	35.20	0.78	2.37	53.50	93.10	3.60
75	7.20	45.70	35.50	0.78	2.29	53.50	89.90	5.00
75	8.10	45.80	35.60	0.78	2.25	53.50	88.20	6.20
75	9.00	45.90	35.60	0.78	2.22	53.50	86.90	7.40
75	9.50	45.90	35.60	0.78	2.21	53.40	86.20	8.10
75	9.90	46.00	35.70	0.78	2.20	53.50	85.80	8.60
75	10.80	46.10	35.80	0.78	2.18	53.50	84.90	9.60
86	5.90	43.10	34.30	0.80	2.67	52.20	103.70	3.50
86	7.20	43.40	34.50	0.79	2.60	52.30	100.50	4.90
86	8.10	43.50	34.60	0.80	2.56	52.20	98.90	6.00
86	9.00	43.60	34.70	0.80	2.53	52.20	97.60	7.20
86	9.50	43.70	34.80	0.80	2.52	52.30	97.00	7.80
86	9.90	43.70	34.80	0.80	2.51	52.30	96.60	8.30
86	10.80	43.90	34.90	0.79	2.49	52.40	95.70	9.30
95	5.90	41.30	33.60	0.81	2.97	51.40	112.40	3.50
95	7.20	41.60	33.80	0.81	2.89	51.50	109.30	4.80
95	8.10	41.70	33.90	0.81	2.85	51.40	107.70	5.90
95	9.00	41.80	34.00	0.81	2.82	51.40	106.40	7.10



## Gross Cooling Capacities

**Table 7. Gross cooling capacities (MBh) 3 tons three phase GWSC036H (continued)**

EWT	GPM	Gross Mbtuh	Gross Sen Mbtuh	SHR	Power kW	Reject Mbtuh	LWT	Feet Head
95	9.50	41.90	34.00	0.81	2.81	51.50	105.80	7.70
95	9.90	41.90	34.00	0.81	2.80	51.50	105.40	8.20
95	10.80	42.00	34.10	0.81	2.78	51.50	104.50	9.10
105	5.90	39.20	32.70	0.83	3.33	50.60	122.20	3.40
105	7.20	39.50	32.90	0.83	3.26	50.60	119.10	4.70
105	8.10	39.70	33.10	0.83	3.22	50.70	117.50	5.80
105	9.00	39.80	33.20	0.83	3.19	50.70	116.30	7.00
105	9.50	39.80	33.20	0.83	3.18	50.60	115.70	7.60
105	9.90	39.90	33.30	0.83	3.17	50.70	115.20	8.10
105	10.80	40.00	33.40	0.84	3.15	50.70	114.40	9.00
115	5.90	37.10	31.90	0.86	3.73	49.80	131.90	3.30
115	7.20	37.40	32.10	0.86	3.66	49.90	128.90	4.60
115	8.10	37.50	32.20	0.86	3.62	49.80	127.30	5.70
115	9.00	37.60	32.30	0.86	3.59	49.80	126.10	6.90
115	9.50	37.70	32.40	0.86	3.58	49.90	125.50	7.50
115	9.90	37.70	32.40	0.86	3.57	49.90	125.10	8.00
115	10.80	37.80	32.50	0.86	3.55	49.90	124.20	8.90

**Note:** Rated in accordance with ANSI/AHRI/ASHRAE/ISO13256-1. Certified conditions are 80.6F DB/66.2F WB EAT in cooling and 68F DB/59F WB EAT in heating. For conditions other than what is tabulated, multipliers must be used to correct performance. See performance correction tables for fan correction factors for CFM other than rated and the cooling correction factors for variations in entering air temperature. Rated GPM 9; Minimum CFM 960; Rated CFM 1200; Maximum CFM 1440.

**Table 8. Gross heating capacities (MBh) 3 tons three phase GWSC036H**

EWT	GPM	Htg Cap Mbtuh	Absorb Mbtuh	Power kW	LWT	Feet Head
25	9.90	28.00	19.90	2.38	21.00	13.50
25	10.80	28.20	20.10	2.38	21.30	15.10
32	5.90	30.10	21.90	2.41	24.60	5.00
32	7.20	30.70	22.40	2.42	25.80	7.10
32	8.10	31.00	22.70	2.43	26.40	8.90
32	9.00	31.30	23.00	2.43	26.90	10.60
32	9.50	31.40	23.10	2.44	27.10	11.60
32	9.90	31.50	23.20	2.44	27.30	12.30
32	10.80	31.80	23.50	2.44	27.60	13.80
45	5.90	36.20	27.60	2.52	35.60	4.20
45	7.20	37.10	28.40	2.54	37.10	6.10
45	8.10	37.50	28.80	2.54	37.90	7.60
45	9.00	37.90	29.20	2.55	38.50	9.10
45	9.50	38.10	29.40	2.55	38.80	10.00
45	9.90	38.30	29.60	2.56	39.00	10.60
45	10.80	38.60	29.90	2.56	39.50	11.90
55	5.90	41.10	32.20	2.61	44.10	3.80
55	7.20	42.10	33.10	2.63	45.80	5.50
55	8.10	42.60	33.60	2.63	46.70	6.90

**Table 8. Gross heating capacities (MBh) 3 tons three phase GWSC036H (continued)**

<b>EWT</b>	<b>GPM</b>	<b>Htg Cap Mbtuh</b>	<b>Absorb Mbtuh</b>	<b>Power kW</b>	<b>LWT</b>	<b>Feet Head</b>
55	9.00	43.00	34.00	2.64	47.40	8.30
55	9.50	43.20	34.20	2.64	47.80	9.10
55	9.90	43.30	34.30	2.65	48.10	9.70
55	10.80	43.70	34.70	2.65	48.60	10.90
68	5.90	47.10	37.80	2.72	55.20	3.60
68	7.20	48.00	38.70	2.73	57.30	5.10
68	8.10	48.40	39.10	2.73	58.30	6.40
68	9.00	48.80	39.50	2.74	59.20	7.70
68	9.50	49.00	39.70	2.74	59.60	8.40
68	9.90	49.10	39.70	2.74	60.00	8.90
68	10.80	49.30	39.90	2.74	60.60	9.90
75	5.90	49.90	40.50	2.76	61.30	3.60
75	7.20	50.70	41.20	2.77	63.60	5.00
75	8.10	51.10	41.60	2.77	64.70	6.20
75	9.00	51.40	41.90	2.78	65.70	7.40
75	9.50	51.50	42.00	2.78	66.20	8.10
75	9.90	51.60	42.10	2.78	66.50	8.60
75	10.80	51.70	42.20	2.78	67.20	9.60
86	5.90	53.30	43.70	2.80	71.20	3.50
86	7.20	54.00	44.40	2.81	73.70	4.90
86	8.10	54.20	44.60	2.80	75.00	6.00
86	9.00	54.30	44.70	2.80	76.10	7.20
86	9.50	54.30	44.70	2.80	76.60	7.80
86	9.90	54.30	44.70	2.80	77.00	8.30
86	10.80	54.30	44.80	2.80	77.70	9.30

**Note:** Rated in accordance with ANSI/AHRI/ASHRAE/ISO13256-1. Certified conditions are 80.6F DB/66.2F WB EAT in cooling and 68F DB/59F WB EAT in heating. For conditions other than what is tabulated, multipliers must be used to correct performance. See performance correction tables for fan correction factors for CFM other than rated and the cooling correction factors for variations in entering air temperature. Rated GPM 9; Minimum CFM 960; Rated CFM 1200; Maximum CFM 1440.

**Table 9. Fan correction factors 3 tons GWSC036H**

<b>Entering CFM</b>	<b>Cooling Capacity</b>	<b>Sensible Capacity</b>	<b>Cooling Input Values</b>	<b>Heating Capacity</b>	<b>Heating Input Watts</b>
960	0.963	0.890	1.005	0.970	1.096
1020	0.974	0.918	1.003	0.979	1.068
1080	0.984	0.946	1.002	0.987	1.042
1140	0.992	0.973	1.001	0.994	1.020
1200	1.000	1.000	1.000	1.000	1.000
1320	1.013	1.053	0.998	1.011	0.966
1380	1.019	1.080	0.997	1.016	0.951
1440	1.025	1.106	0.997	1.020	0.937



## Gross Cooling Capacities

**Table 10. Correction factors for variation in entering air temperature 3 tons GWSC036H**

Cooling Entering Air WB °F	Cooling Capacity	Cooling Input Watts	Sensible vs. Entering Dry Bulb Multipliers					Heating Entering Air DB °F	Heating Capacity	Heating Input Watts
			65.6	70.6	75.6	80.6	85.6			
49.4	0.768	1.015	0.964	1.038	1.091	*	*	53.0	0.961	0.822
56.3	0.863	1.012	0.825	0.959	1.058	*	*	58.0	0.974	0.881
60.3	0.918	1.008	0.685	0.864	1.001	1.106	*	63.0	0.987	0.940
63.2	0.959	1.005	0.551	0.767	0.934	1.065	1.171	68.0	1.000	1.000
66.2	1.000	1.000	-----	0.635	0.839	1.000	1.130	73.0	1.013	1.062
72.1	1.082	0.988	-----	-----	0.559	0.790	0.979	78.0	1.027	1.127
77.1	1.151	0.973	-----	-----	-----	-----	0.760	83.0	1.041	1.195

**Note:** \* = Sensible equals total capacity

**Table 11. Gross cooling capacities (MBh) 4 tons three phase GWSC048H**

EWT	GPM	Gross Mbtuh	Gross Sen Mbtuh	SHR	Power kW	Reject Mbtuh	LWT	Feet Head
45	7.80	64.20	48.60	0.76	1.79	70.30	63.00	4.70
45	9.60	64.50	48.90	0.76	1.69	70.30	59.60	6.90
45	10.80	64.70	49.00	0.76	1.64	70.30	58.00	8.40
45	12	65	49	1	2	70	57	10
45	12.60	64.90	49.20	0.76	1.58	70.30	56.20	11.10
45	13.20	64.90	49.20	0.76	1.57	70.30	55.70	12.00
45	14.40	65.00	49.20	0.76	1.54	70.30	54.80	14.00
55	7.80	62.30	47.70	0.77	2.12	69.50	72.80	4.30
55	9.60	62.60	47.90	0.77	2.01	69.50	69.50	6.30
55	10.80	62.80	48.10	0.77	1.97	69.50	67.90	7.70
55	12.00	62.90	48.10	0.76	1.93	69.50	66.60	9.30
55	12.60	62.90	48.10	0.76	1.91	69.40	66.00	10.10
55	13.20	63.00	48.20	0.77	1.90	69.50	65.50	11.00
55	14.40	63.00	48.20	0.77	1.87	69.40	64.60	12.90
68	7.80	59.90	46.70	0.78	2.53	68.50	85.60	4.00
68	9.60	60.10	46.90	0.78	2.43	68.40	82.30	5.80
68	10.80	60.20	46.90	0.78	2.38	68.30	80.60	7.10
68	12.00	60.30	47.00	0.78	2.34	68.30	79.40	8.60
68	12.60	60.30	47.00	0.78	2.32	68.20	78.80	9.30
68	13.20	60.30	47.00	0.78	2.31	68.20	78.30	10.10
68	14.40	60.40	47.10	0.78	2.28	68.20	77.50	11.80
75	7.80	58.50	46.20	0.79	2.75	67.90	92.40	3.80
75	9.60	58.70	46.30	0.79	2.64	67.70	89.10	5.60
75	10.80	58.80	46.40	0.79	2.60	67.70	87.50	6.90
75	12.00	58.80	46.40	0.79	2.56	67.50	86.30	8.30
75	12.60	58.90	46.50	0.79	2.54	67.60	85.70	9.00
75	13.20	58.90	46.50	0.79	2.53	67.50	85.20	9.80
75	14.40	58.90	46.50	0.79	2.50	67.40	84.40	11.40
86	7.80	56.10	45.30	0.81	3.13	66.80	103.10	3.70

**Table 11. Gross cooling capacities (MBh) 4 tons three phase GWSC048H (continued)**

EWT	GPM	Gross Mbtuh	Gross Sen Mbtuh	SHR	Power kW	Reject Mbtuh	LWT	Feet Head
86	9.60	56.30	45.40	0.81	3.03	66.60	99.90	5.30
86	10.80	56.40	45.50	0.81	2.98	66.60	98.30	6.60
86	12.00	56.40	45.50	0.81	2.94	66.40	97.10	7.90
86	12.60	56.40	45.50	0.81	2.93	66.40	96.50	8.60
86	13.20	56.50	45.60	0.81	2.91	66.40	96.10	9.30
86	14.40	56.50	45.60	0.81	2.89	66.30	95.20	10.90
95	7.80	54.00	44.50	0.82	3.50	65.90	111.90	3.60
95	9.60	54.20	44.70	0.82	3.40	65.80	108.70	5.20
95	10.80	54.20	44.70	0.82	3.35	65.60	107.10	6.40
95	12.00	54.30	44.70	0.82	3.31	65.60	105.90	7.70
95	12.60	54.30	44.70	0.82	3.30	65.50	105.40	8.30
95	13.20	54.30	44.70	0.82	3.28	65.50	104.90	9.00
95	14.40	54.40	44.80	0.82	3.25	65.50	104.10	10.60
105	7.80	51.50	43.50	0.84	3.95	65.00	121.70	3.50
105	9.60	51.60	43.60	0.84	3.85	64.70	118.50	5.00
105	10.80	51.70	43.70	0.85	3.80	64.70	117.00	6.20
105	12.00	51.70	43.70	0.85	3.76	64.50	115.80	7.40
105	12.60	51.80	43.80	0.85	3.75	64.60	115.30	8.10
105	13.20	51.80	43.80	0.85	3.73	64.50	114.80	8.80
105	14.40	51.80	43.80	0.85	3.70	64.40	113.90	10.30
115	7.80	48.70	42.40	0.87	4.43	63.80	131.40	3.50
115	9.60	48.80	42.50	0.87	4.33	63.60	128.30	4.90
115	10.80	48.90	42.50	0.87	4.28	63.50	126.80	6.10
115	12.00	49.00	42.60	0.87	4.24	63.50	125.60	7.30
115	12.60	49.00	42.60	0.87	4.23	63.40	125.10	7.90
115	13.20	49.00	42.60	0.87	4.21	63.40	124.60	8.60
115	14.40	49.00	42.60	0.87	4.18	63.30	123.80	10.00

**Note:** Rated in accordance with ANSI/AHRI/ASHRAE/ISO13256-1. Certified conditions are 80.6F DB/66.2F WB EAT in cooling and 68F DB/59F WB EAT in heating. For conditions other than what is tabulated, multipliers must be used to correct performance. See performance correction tables for fan correction factors for CFM other than rated and the cooling correction factors for variations in entering air temperature. GPM 12.0; Minimum CFM 1280; Rated CFM 1600; Maximum CFM 1920.

**Table 12. Gross heating capacities (MBh) 4 tons three phase GWSC048H**

EWT	GPM	Htg Cap Mbtuh	Absorb Mbtuh	Power kW	LWT	Feet Head
25	14.40	36.40	27.40	2.65	21.20	17.60
32	7.80	38.30	29.20	2.68	24.50	5.60
32	9.60	39.20	30.00	2.69	25.80	8.00
32	10.80	39.60	30.40	2.70	26.40	9.80
32	12.00	40.00	30.80	2.70	26.90	11.80
32	12.60	40.10	30.90	2.71	27.10	12.80
32	13.20	40.20	31.00	2.71	27.30	13.90
32	14.40	40.50	31.20	2.71	27.70	16.20
45	7.80	45.70	36.10	2.80	35.70	4.70



## Gross Cooling Capacities

**Table 12. Gross heating capacities (MBh) 4 tons three phase GWSC048H (continued)**

EWT	GPM	Htg Cap Mbtuh	Absorb Mbtuh	Power kW	LWT	Feet Head
45	9.60	46.90	37.30	2.82	37.20	6.90
45	10.80	47.50	37.80	2.83	38.00	8.40
45	12.00	48.00	38.30	2.84	38.60	10.20
45	12.60	48.20	38.50	2.84	38.90	11.10
45	13.20	48.40	38.70	2.85	39.10	12.00
45	14.40	48.80	39.10	2.85	39.60	14.00
55	7.80	51.70	41.80	2.91	44.30	4.30
55	9.60	53.10	43.10	2.93	46.00	6.30
55	10.80	53.80	43.80	2.94	46.90	7.70
55	12.00	54.30	44.20	2.95	47.60	9.30
55	12.60	54.50	44.40	2.96	48.00	10.10
55	13.20	54.80	44.70	2.96	48.20	11.00
55	14.40	55.20	45.10	2.96	48.70	12.90
68	7.80	59.60	49.20	3.05	55.40	4.00
68	9.60	61.00	50.50	3.07	57.50	5.80
68	10.80	61.70	51.20	3.08	58.50	7.10
68	12.00	62.20	51.70	3.09	59.40	8.60
68	12.60	62.40	51.90	3.09	59.80	9.30
68	13.20	62.60	52.10	3.09	60.10	10.10
68	14.40	63.00	52.40	3.10	60.70	11.80
75	7.80	63.60	53.00	3.12	61.40	3.80
75	9.60	65.00	54.30	3.13	63.70	5.60
75	10.80	65.60	54.90	3.14	64.80	6.90
75	12.00	66.10	55.40	3.15	65.80	8.30
75	12.60	66.20	55.50	3.15	66.20	9.00
75	13.20	66.40	55.70	3.15	66.60	9.80
75	14.40	66.60	55.80	3.15	67.30	11.40
86	7.80	69.20	58.30	3.19	71.10	3.70
86	9.60	70.40	59.50	3.21	73.60	5.30
86	10.80	70.90	59.90	3.21	74.90	6.60
86	12.00	71.20	60.20	3.21	76.00	7.90
86	12.60	71.30	60.30	3.21	76.40	8.60
86	13.20	71.40	60.40	3.21	76.80	9.30
86	14.40	71.40	60.50	3.21	77.60	10.90

**Note:** Rated in accordance with ANSI/AHRI/ASHRAE/ISO13256-1. Certified conditions are 80.6F DB/66.2F WB EAT in cooling and 68F DB/59F WB EAT in heating. For conditions other than what is tabulated, multipliers must be used to correct performance. See performance correction tables for fan correction factors for CFM other than rated and the cooling correction factors for variations in entering air temperature. GPM 12.0; Minimum CFM 1280; Rated CFM 1600; Maximum CFM 1920.

**Table 13. Fan correction factors 4 tons GWSC048H**

Entering cfm	Cooling Capacity	Sensible Capacity	Cooling Input Watts	Heating Capacity	Heating Input Watts
1280	0.960	0.890	1.005	0.974	1.096
1360	0.972	0.918	1.003	0.982	1.068
1440	0.982	0.946	1.002	0.989	1.042
1520	0.991	0.973	1.001	0.995	1.020
1600	1.000	1.000	1.000	1.000	1.000
1760	1.015	1.053	0.998	1.009	0.966
1840	1.023	1.080	0.997	1.013	0.951
1920	1.029	1.106	0.997	1.016	0.937

**Table 14. Correction factors for variation in entering air temperature 4 tons GWSC048H**

Cooling Entering Air WB °F	Cooling Capacity	Cooling Input Watts	Sensible vs. Entering Dry Bulb Multipliers					Heating Entering Air DB °F	Heating Capacity	Heating Input Watts
			65.6	70.6	75.6	80.6	85.6			
49.4	0.723	1.007	0.954	1.034	1.102	*	*	53.0	0.989	0.823
56.3	0.837	1.007	0.820	0.959	1.068	*	*	58.0	0.993	0.882
60.3	0.903	1.005	0.672	0.859	1.004	1.120	*	63.0	0.997	0.940
63.2	0.951	1.003	0.531	0.757	0.932	1.071	1.186	68.0	1.000	1.000
66.2	1.000	1.000	-----	0.625	0.834	1.000	1.136	73.0	1.003	1.062
72.1	1.097	0.992	-----	-----	0.568	0.794	0.980	78.0	1.006	1.126
77.1	1.179	0.984	-----	-----	-----	-----	0.782	83.0	1.010	1.193

Note: \* = Sensible equals total capacity

**Table 15. Gross cooling capacities (MBh) 5 tons three phase GWSC060H**

EWT	GPM	Gross Mbtuh	Gross Sen Mbtuh	SHR	Power kW	Reject Mbtuh	LWT	Feet Head
45	9.80	74.80	58.60	0.78	2.25	82.50	61.80	6.00
45	12.00	75.10	58.80	0.78	2.16	82.50	58.80	8.50
45	13.50	75.20	58.90	0.78	2.11	82.40	57.20	10.50
45	15.00	75.30	59.00	0.78	2.08	82.40	56.00	12.60
45	15.80	75.40	59.10	0.78	2.06	82.40	55.40	13.80
45	16.50	75.40	59.10	0.78	2.05	82.40	55.00	14.90
45	18.00	75.50	59.10	0.78	2.03	82.40	54.20	17.40
55	9.80	72.90	57.80	0.79	2.59	81.70	71.70	5.60
55	12.00	73.10	58.00	0.79	2.49	81.60	68.60	7.90
55	13.50	73.20	58.10	0.79	2.45	81.60	67.10	9.70
55	15.00	73.40	58.20	0.79	2.42	81.60	65.90	11.70
55	15.80	73.40	58.20	0.79	2.40	81.60	65.30	12.80
55	16.50	73.40	58.20	0.79	2.39	81.50	64.90	13.80
55	18.00	73.50	58.30	0.79	2.36	81.60	64.10	16.10
68	9.80	69.10	56.30	0.81	3.06	79.50	84.20	5.10
68	12.00	69.30	56.40	0.81	2.97	79.40	81.20	7.30
68	13.50	69.50	56.60	0.81	2.92	79.50	79.80	9.00
68	15.00	69.60	56.70	0.81	2.88	79.40	78.60	10.80



## Gross Cooling Capacities

**Table 15. Gross cooling capacities (MBh) 5 tons three phase GWSC060H (continued)**

EWT	GPM	Gross Mbtuh	Gross Sen Mbtuh	SHR	Power kW	Reject Mbtuh	LWT	Feet Head
68	15.80	69.60	56.70	0.81	2.86	79.40	78.10	11.80
68	16.50	69.60	56.70	0.81	2.85	79.30	77.60	12.80
68	18.00	69.70	56.80	0.81	2.83	79.30	76.80	14.90
75	9.80	66.90	55.40	0.83	3.34	78.30	91.00	5.00
75	12.00	67.20	55.60	0.83	3.24	78.30	88.10	7.00
75	13.50	67.30	55.70	0.83	3.19	78.20	86.60	8.70
75	15.00	67.40	55.80	0.83	3.15	78.20	85.40	10.40
75	15.80	67.50	55.90	0.83	3.14	78.20	84.90	11.40
75	16.50	67.50	55.90	0.83	3.12	78.10	84.50	12.30
75	18.00	67.60	55.90	0.83	3.10	78.20	83.70	14.40
86	9.80	63.60	54.00	0.85	3.81	76.60	101.60	4.70
86	12.00	63.90	54.30	0.85	3.71	76.50	98.80	6.70
86	13.50	64.00	54.40	0.85	3.66	76.50	97.30	8.30
86	15.00	64.10	54.40	0.85	3.62	76.40	96.20	10.00
86	15.80	64.20	54.50	0.85	3.60	76.50	95.70	10.90
86	16.50	64.20	54.50	0.85	3.58	76.40	95.30	11.80
86	18.00	64.30	54.60	0.85	3.56	76.40	94.50	13.70
95	9.80	61.00	53.00	0.87	4.23	75.40	110.40	4.60
95	12.00	61.30	53.30	0.87	4.13	75.40	107.60	6.50
95	13.50	61.40	53.30	0.87	4.07	75.30	106.20	8.00
95	15.00	61.50	53.40	0.87	4.03	75.30	105.00	9.60
95	15.80	61.50	53.40	0.87	4.01	75.20	104.50	10.60
95	16.50	61.60	53.50	0.87	4.00	75.20	104.10	11.40
95	18.00	61.60	53.50	0.87	3.97	75.20	103.40	13.30
105	9.80	58.00	51.80	0.89	4.76	74.20	120.10	4.40
105	12.00	58.20	52.00	0.89	4.64	74.00	117.30	6.30
105	13.50	58.40	52.20	0.89	4.59	74.10	116.00	7.80
105	15.00	58.50	52.30	0.89	4.55	74.00	114.90	9.40
105	15.80	58.50	52.30	0.89	4.53	73.90	114.40	10.20
105	16.50	58.50	52.30	0.89	4.51	73.90	114.00	11.10
105	18.00	58.60	52.40	0.89	4.48	73.90	113.20	12.90
115	9.80	54.70	50.50	0.92	5.34	72.90	129.90	4.30
115	12.00	55.00	50.80	0.92	5.22	72.80	127.10	6.20
115	13.50	55.10	50.90	0.92	5.17	72.70	125.80	7.60
115	15.00	55.20	51.00	0.92	5.12	72.70	124.70	9.10
115	15.80	55.20	51.00	0.92	5.10	72.60	124.20	10.00
115	16.50	55.30	51.10	0.92	5.08	72.60	123.80	10.80
115	18.00	55.30	51.10	0.92	5.05	72.50	123.10	12.50

**Note:** Rated in accordance with ANSI/AHRI/ASHRAE/ISO13256-1. Certified conditions are 80.6F DB/66.2F WB EAT in cooling and 68F DB/59F WB EAT in heating. For conditions other than what is tabulated, multipliers must be used to correct performance. See performance correction tables for fan correction factors for CFM other than rated and the cooling correction factors for variations in entering air temperature. GPM 15.0; Minimum CFM 1600; Rated CFM 2000; Maximum CFM 2400.



**Table 16. Gross heating capacities (MBh) 5 tons three phase GWSC060H**

<b>EWT</b>	<b>GPM</b>	<b>Htg Cap Mbtuh</b>	<b>Absorb Mbtuh</b>	<b>Power kW</b>	<b>LWT</b>	<b>Feet Head</b>
25	13.50	35.70	24.60	3.24	21.40	12.90
25	15.00	35.70	24.60	3.25	21.70	15.60
25	15.80	35.80	24.70	3.25	21.90	17.10
25	16.50	36.00	24.90	3.25	22.00	18.50
25	18.00	36.80	25.70	3.26	22.10	21.70
32	9.80	37.10	25.90	3.29	26.70	6.80
32	12.00	38.60	27.30	3.31	27.50	9.60
32	13.50	39.00	27.70	3.32	27.90	11.90
32	15.00	39.20	27.90	3.33	28.30	14.30
32	15.80	39.40	28.00	3.33	28.50	15.70
32	16.50	39.70	28.30	3.33	28.60	16.90
32	18.00	40.70	29.30	3.34	28.70	19.80
45	9.80	47.10	35.30	3.47	37.80	6.00
45	12.00	48.90	37.00	3.50	38.80	8.50
45	13.50	49.30	37.30	3.51	39.50	10.50
45	15.00	49.60	37.60	3.52	40.00	12.60
45	15.80	49.90	37.90	3.53	40.20	13.80
45	16.50	50.20	38.10	3.53	40.40	14.90
45	18.00	51.20	39.10	3.54	40.70	17.40
55	9.80	57.70	45.30	3.64	45.80	5.60
55	12.00	59.50	47.00	3.67	47.20	7.90
55	13.50	59.90	47.30	3.69	48.00	9.70
55	15.00	60.30	47.70	3.70	48.60	11.70
55	15.80	60.50	47.90	3.70	48.90	12.80
55	16.50	60.80	48.10	3.71	49.20	13.80
55	18.00	61.80	49.10	3.72	49.50	16.10
68	9.80	71.20	58.00	3.86	56.20	5.10
68	12.00	73.00	59.70	3.90	58.10	7.30
68	13.50	73.40	60.00	3.92	59.10	9.00
68	15.00	73.70	60.30	3.93	60.00	10.80
68	15.80	74.00	60.60	3.93	60.30	11.80
68	16.50	74.20	60.80	3.94	60.60	12.80
68	18.00	75.20	61.70	3.95	61.10	14.90
75	9.80	77.80	64.20	3.97	61.90	5.00
75	12.00	79.60	65.90	4.01	64.00	7.00
75	13.50	80.10	66.40	4.03	65.20	8.70
75	15.00	80.40	66.60	4.04	66.10	10.40
75	15.80	80.60	66.80	4.05	66.50	11.40
75	16.50	80.80	67.00	4.05	66.90	12.30
75	18.00	81.80	67.90	4.06	67.50	14.40
86	9.80	87.20	73.10	4.13	71.10	4.70



## Gross Cooling Capacities

**Table 16. Gross heating capacities (MBh) 5 tons three phase GWSC060H (continued)**

EWT	GPM	Htg Cap Mbtuh	Absorb Mbtuh	Power kW	LWT	Feet Head
86	12.00	89.00	74.80	4.17	73.50	6.70
86	13.50	89.40	75.10	4.18	74.90	8.30
86	15.00	89.70	75.40	4.19	75.90	10.00
86	15.80	89.90	75.60	4.19	76.40	10.90
86	16.50	90.20	75.90	4.20	76.80	11.80
86	18.00	91.10	76.70	4.21	77.50	13.70

**Note:** Rated in accordance with ANSI/AHRI/ASHRAE/ISO13256-1. Certified conditions are 80.6F DB/66.2F WB EAT in cooling and 68F DB/59F WB EAT in heating. For conditions other than what is tabulated, multipliers must be used to correct performance. See performance correction tables for fan correction factors for CFM other than rated and the cooling correction factors for variations in entering air temperature. GPM 15.0; Minimum CFM 1600; Rated CFM 2000; Maximum CFM 2400.

**Table 17. Fan correction factors 5 tons GWSC060H**

Entering cfm	Cooling Capacity	Sensible Capacity	Cooling Input Watts	Heating Capacity	Heating Input Watts
1600	0.963	0.886	0.999	0.975	1.090
1700	0.974	0.915	0.999	0.983	1.063
1800	0.983	0.944	0.999	0.989	1.040
1900	0.992	0.972	1.000	0.995	1.019
2000	1.000	1.000	1.000	1.000	1.000
2200	1.014	1.055	1.001	1.009	0.968
2300	1.021	1.081	1.001	1.013	0.954
2400	1.026	1.108	1.001	1.016	0.942

**Table 18. Correction factors for variation in entering air temperature 5 tons GWSC060H**

Cooling Entering Air WB °F	Cooling Capacity	Cooling Input Watts	Sensible vs. Entering Dry Bulb Multipliers					Heating Entering Air DB °F	Heating Capacity	Heating Input Watts
			65.6	70.6	75.6	80.6	85.6			
49.4	0.733	0.997	0.937	1.000	1.045	*	*	53.0	0.987	0.835
56.3	0.843	0.997	0.817	0.952	1.046	*	*	58.0	0.991	0.889
60.3	0.906	0.998	0.668	0.859	0.996	1.096	*	63.0	0.996	0.943
63.2	0.952	0.999	0.516	0.755	0.931	1.060	1.159	68.0	1.000	1.000
66.2	1.000	1.000	-----	0.614	0.835	1.000	1.125	73.0	1.004	1.060
72.1	1.094	1.005	-----	-----	0.549	0.803	0.997	78.0	1.009	1.122
77.1	1.173	1.012	-----	-----	-----	-----	0.810	83.0	1.014	1.188

**Note:** \* = Sensible equals total capacity

**Table 19. Gross cooling capacities (MBh) 6 tons three phase GWSC072H**

EWT	GPM	Gross Mbtuh	Gross Sen Mbtuh	SHR	Power kW	Reject Mbtuh	LWT	Feet Head
45.00	11.70	93.20	68.10	0.73	3.23	104.20	62.80	4.70
45.00	14.40	93.50	68.30	0.73	3.16	104.30	59.50	6.90
45.00	16.20	93.70	68.50	0.73	3.13	104.40	57.90	8.50
45.00	18.00	93.80	68.50	0.73	3.10	104.40	56.60	10.20
45.00	18.90	93.80	68.50	0.73	3.09	104.40	56.00	11.10
45.00	19.80	93.90	68.60	0.73	3.08	104.40	55.50	12.00

**Table 19. Gross cooling capacities (MBh) 6 tons three phase GWSC072H (continued)**

EWT	GPM	Gross Mbtuh	Gross Sen Mbtuh	SHR	Power kW	Reject Mbtuh	LWT	Feet Head
45.00	21.60	94.00	68.70	0.73	3.07	104.50	54.70	13.90
55.00	11.70	90.60	67.40	0.74	3.57	102.80	72.60	4.30
55.00	14.40	90.90	67.60	0.74	3.47	102.70	69.30	6.40
55.00	16.20	91.10	67.70	0.74	3.42	102.80	67.70	7.90
55.00	18.00	91.20	67.80	0.74	3.38	102.70	66.40	9.50
55.00	18.90	91.30	67.90	0.74	3.37	102.80	65.90	10.40
55.00	19.80	91.30	67.90	0.74	3.36	102.70	65.40	11.30
55.00	21.60	91.40	67.90	0.74	3.33	102.80	64.50	13.10
68.00	11.70	86.20	64.20	0.74	4.08	100.10	85.10	3.90
68.00	14.40	86.50	64.40	0.74	3.95	100.00	81.90	5.90
68.00	16.20	86.70	64.50	0.74	3.90	100.00	80.30	7.30
68.00	18.00	86.80	64.60	0.74	3.85	99.90	79.10	8.80
68.00	18.90	86.90	64.70	0.74	3.83	100.00	78.60	9.60
68.00	19.80	86.90	64.70	0.74	3.82	99.90	78.10	10.50
68.00	21.60	87.00	64.80	0.74	3.79	99.90	77.30	12.20
75.00	11.70	83.60	62.30	0.75	4.39	98.60	91.90	3.80
75.00	14.40	84.00	62.60	0.75	4.27	98.60	88.70	5.60
75.00	16.20	84.10	62.70	0.75	4.21	98.40	87.10	7.00
75.00	18.00	84.20	62.80	0.75	4.16	98.40	85.90	8.50
75.00	18.90	84.30	62.80	0.74	4.14	98.40	85.40	9.30
75.00	19.80	84.30	62.80	0.74	4.12	98.40	84.90	10.10
75.00	21.60	84.40	62.90	0.75	4.09	98.30	84.10	11.80
86.00	11.70	79.50	59.80	0.75	4.96	96.40	102.50	3.60
86.00	14.40	79.90	60.10	0.75	4.82	96.40	99.40	5.30
86.00	16.20	80.00	60.20	0.75	4.76	96.20	97.90	6.60
86.00	18.00	80.20	60.30	0.75	4.71	96.30	96.70	8.00
86.00	18.90	80.20	60.30	0.75	4.69	96.20	96.20	8.80
86.00	19.80	80.30	60.40	0.75	4.67	96.20	95.70	9.60
86.00	21.60	80.30	60.40	0.75	4.63	96.10	94.90	11.20
95.00	11.70	76.20	58.20	0.76	5.47	94.90	111.20	3.50
95.00	14.40	76.50	58.40	0.76	5.33	94.70	108.20	5.20
95.00	16.20	76.70	58.60	0.76	5.27	94.70	106.70	6.40
95.00	18.00	76.80	58.70	0.76	5.21	94.60	105.50	7.70
95.00	18.90	76.90	58.70	0.76	5.19	94.60	105.00	8.50
95.00	19.80	76.90	58.70	0.76	5.17	94.50	104.50	9.20
95.00	21.60	77.00	58.80	0.76	5.14	94.50	103.80	10.80
105.00	11.70	72.40	56.60	0.78	6.09	93.20	120.90	3.50
105.00	14.40	72.70	56.90	0.78	5.95	93.00	117.90	5.10
105.00	16.20	72.90	57.00	0.78	5.88	93.00	116.50	6.20
105.00	18.00	73.00	57.10	0.78	5.83	92.90	115.30	7.50
105.00	18.90	73.00	57.10	0.78	5.80	92.80	114.80	8.20



## Gross Cooling Capacities

**Table 19. Gross cooling capacities (MBh) 6 tons three phase GWSC072H (continued)**

EWT	GPM	Gross Mbtuh	Gross Sen Mbtuh	SHR	Power kW	Reject Mbtuh	LWT	Feet Head
105.00	19.80	73.10	57.20	0.78	5.78	92.80	114.40	8.90
105.00	21.60	73.20	57.30	0.78	5.75	92.80	113.60	10.40
115.00	11.70	68.10	54.90	0.81	6.74	91.10	130.60	3.60
115.00	14.40	68.40	55.10	0.81	6.60	90.90	127.60	5.00
115.00	16.20	68.60	55.30	0.81	6.54	90.90	126.20	6.10
115.00	18.00	68.70	55.40	0.81	6.48	90.80	125.10	7.30
115.00	18.90	68.80	55.50	0.81	6.46	90.80	124.60	8.00
115.00	19.80	68.80	55.50	0.81	6.44	90.80	124.20	8.60
115.00	21.60	68.90	55.50	0.81	6.40	90.70	123.40	10.10

**Note:** Rated in accordance with ANSI/AHRI/ASHRAE/ISO13256-1. Certified conditions are 80.6F DB/66.2F WB EAT in cooling and 68F DB/59F WB EAT in heating. For conditions other than what is tabulated, multipliers must be used to correct performance. See performance correction tables for fan correction factors for CFM other than rated and the cooling correction factors for variations in entering air temperature. Rated GPM 18; Minimum CFM 1920; Rated CFM 2400; Maximum CFM 2880.

**Table 20. Gross heating capacities (MBh) 6 tons three phase GWSC072H**

EWT	GPM	Htg Cap Mbtuh	Absorb Mbtuh	Power kW	LWT	Feet Head
25.00	19.80	55.40	41.10	4.20	20.80	13.70
25.00	21.60	55.60	41.20	4.21	21.20	15.70
32.00	11.70	58.10	43.60	4.24	24.50	5.40
32.00	14.40	59.50	45.00	4.26	25.80	7.70
32.00	16.20	60.30	45.70	4.27	26.40	9.40
32.00	18.00	60.90	46.30	4.28	26.90	11.20
32.00	18.90	61.10	46.50	4.28	27.10	12.10
32.00	19.80	61.30	46.70	4.29	27.30	13.10
32.00	21.60	61.50	46.90	4.29	27.70	15.10
45.00	11.70	68.70	53.70	4.40	35.80	4.70
45.00	14.40	70.30	55.20	4.42	37.30	6.90
45.00	16.20	71.10	56.00	4.43	38.10	8.50
45.00	18.00	71.80	56.60	4.45	38.70	10.20
45.00	18.90	72.10	56.90	4.45	39.00	11.10
45.00	19.80	72.40	57.20	4.45	39.20	12.00
45.00	21.60	72.70	57.50	4.46	39.70	13.90
55.00	11.70	77.00	61.60	4.53	44.50	4.30
55.00	14.40	78.80	63.30	4.56	46.20	6.40
55.00	16.20	79.80	64.20	4.57	47.10	7.90
55.00	18.00	80.60	65.00	4.59	47.80	9.50
55.00	18.90	80.90	65.20	4.59	48.10	10.40
55.00	19.80	81.20	65.50	4.60	48.40	11.30
55.00	21.60	81.70	66.00	4.60	48.90	13.10
68.00	11.70	88.30	72.20	4.71	55.70	3.90
68.00	14.40	90.20	74.00	4.75	57.70	5.90
68.00	16.20	91.30	75.00	4.77	58.70	7.30
68.00	18.00	92.20	75.90	4.78	59.60	8.80

**Table 20. Gross heating capacities (MBh) 6 tons three phase GWSC072H (continued)**

EWT	GPM	Htg Cap Mbtuh	Absorb Mbtuh	Power kW	LWT	Feet Head
68.00	18.90	92.60	76.30	4.79	59.90	9.60
68.00	19.80	93.00	76.60	4.79	60.30	10.50
68.00	21.60	93.60	77.20	4.80	60.90	12.20
75.00	11.70	94.40	78.00	4.82	61.70	3.80
75.00	14.40	96.50	79.90	4.86	63.90	5.60
75.00	16.20	97.70	81.10	4.88	65.00	7.00
75.00	18.00	98.70	82.00	4.89	65.90	8.50
75.00	18.90	99.10	82.40	4.90	66.30	9.30
75.00	19.80	99.50	82.80	4.91	66.60	10.10
75.00	21.60	100.10	83.30	4.92	67.30	11.80
86.00	11.70	104.40	87.40	4.99	71.10	3.60
86.00	14.40	106.60	89.40	5.04	73.60	5.30
86.00	16.20	107.90	90.60	5.06	74.80	6.60
86.00	18.00	109.00	91.70	5.08	75.80	8.00
86.00	18.90	109.50	92.10	5.09	76.30	8.80
86.00	19.80	109.90	92.50	5.10	76.70	9.60
86.00	21.60	110.70	93.30	5.11	77.40	11.20

**Note:** Rated in accordance with ANSI/AHRI/ASHRAE/ISO13256-1. Certified conditions are 80.6F DB/66.2F WB EAT in cooling and 68F DB/59F WB EAT in heating. For conditions other than what is tabulated, multipliers must be used to correct performance. See performance correction tables for fan correction factors for CFM other than rated and the cooling correction factors for variations in entering air temperature. Rated GPM 18; Minimum CFM 1920; Rated CFM 2400; Maximum CFM 2880.

**Table 21. Fan correction factors 6 tons GWSC072H**

Entering cfm	Cooling Capacity	Sensible Capacity	Cooling Input Watts	Heating Capacity	Heating Input Watts
1920	0.960	0.916	1.000	0.976	1.089
2040	0.971	0.938	1.000	0.983	1.062
2160	0.982	0.959	1.000	0.990	1.039
2280	0.991	0.980	1.000	0.995	1.018
2400	1.000	1.000	1.000	1.000	1.000
2640	1.016	1.037	1.000	1.008	0.969
2760	1.023	1.053	1.000	1.012	0.955
2880	1.029	1.068	1.000	1.015	0.943

**Table 22. Correction factors for variation in entering air temperature 6 tons GWSC072H**

Cooling Entering Air WB °F	Cooling Capacity	Cooling Input Watts	Sensible vs. Entering Dry Bulb Multipliers					Heating Entering Air DB °F	Heating Capacity	Heating Input Watts
			65.6	70.6	75.6	80.6	85.6			
49.4	0.685	1.000	0.936	1.048	1.178	*	*	53.0	0.970	0.829
56.3	0.814	1.000	0.823	0.935	1.064	1.209	*	58.0	0.980	0.883
60.3	0.889	1.000	0.761	0.873	1.002	1.146	1.303	63.0	0.990	0.939
63.2	0.944	1.000	0.699	0.810	0.940	1.084	1.241	68.0	1.000	1.000
66.2	1.000	1.000	-----	0.726	0.856	1.000	1.157	73.0	1.009	1.065
72.1	1.111	1.001	-----	-----	0.643	0.787	0.944	78.0	1.019	1.135



## Gross Cooling Capacities

**Table 22. Correction factors for variation in entering air temperature 6 tons GWSC072H (continued)**

Cooling Entering Air WB °F	Cooling Capacity	Cooling Input Watts	Sensible vs. Entering Dry Bulb Multipliers					Heating Entering Air DB °F	Heating Capacity	Heating Input Watts
			65.6	70.6	75.6	80.6	85.6			
77.1	1.204	1.003	-----	-----	-----	-----	0.761	83.0	1.029	1.210

Note: \* = Sensible equals total capacity

**Table 23. Gross cooling capacities (MBh) 7.5 tons three phase GWSC092H**

EWT	GPM	Gross Mbtuh	Gross Sen Mbtuh	SHR	Power kW	Reject Mbtuh	LWT	Feet Head
45	14.60	108.00	86.30	0.80	3.91	121.30	61.60	6.70
45	18.00	108.30	86.50	0.80	3.81	121.30	58.50	9.60
45	20.30	108.50	86.70	0.80	3.76	121.30	57.00	11.90
45	22.50	108.60	86.70	0.80	3.73	121.30	55.80	14.30
45	23.60	108.60	86.70	0.80	3.71	121.30	55.30	15.50
45	24.80	108.70	86.80	0.80	3.70	121.30	54.80	16.90
45	27.00	108.80	86.90	0.80	3.68	121.30	54.00	19.60
55	14.60	104.90	85.00	0.81	4.38	119.80	71.40	6.30
55	18.00	105.20	85.20	0.81	4.26	119.70	68.30	9.10
55	20.30	105.40	85.40	0.81	4.20	119.70	66.80	11.20
55	22.50	105.50	85.50	0.81	4.16	119.70	65.60	13.40
55	23.60	105.50	85.50	0.81	4.14	119.60	65.10	14.60
55	24.80	105.60	85.60	0.81	4.12	119.70	64.70	15.90
55	27.00	105.70	85.60	0.81	4.09	119.70	63.90	18.40
68	14.60	101.50	83.50	0.82	4.99	118.50	84.20	5.90
68	18.00	101.90	83.90	0.82	4.85	118.40	81.20	8.50
68	20.30	102.00	84.00	0.82	4.78	118.30	79.70	10.50
68	22.50	102.10	84.00	0.82	4.73	118.20	78.50	12.60
68	23.60	102.20	84.10	0.82	4.71	118.30	78.00	13.70
68	24.80	102.20	84.10	0.82	4.69	118.20	77.50	14.90
68	27.00	102.30	84.20	0.82	4.66	118.20	76.80	17.30
75	14.60	99.20	82.70	0.83	5.37	117.50	91.10	5.70
75	18.00	99.50	82.90	0.83	5.22	117.30	88.00	8.30
75	20.30	99.70	83.10	0.83	5.15	117.30	86.60	10.20
75	22.50	99.80	83.20	0.83	5.10	117.20	85.40	12.20
75	23.60	99.80	83.20	0.83	5.08	117.10	84.90	13.30
75	24.80	99.90	83.30	0.83	5.05	117.10	84.40	14.50
75	27.00	100.00	83.30	0.83	5.02	117.10	83.70	16.80
86	14.60	94.70	80.90	0.85	6.06	115.40	101.80	5.50
86	18.00	95.10	81.30	0.85	5.90	115.20	98.80	8.00
86	20.30	95.20	81.30	0.85	5.83	115.10	97.30	9.80
86	22.50	95.30	81.40	0.85	5.77	115.00	96.20	11.80
86	23.60	95.40	81.50	0.85	5.74	115.00	95.70	12.80
86	24.80	95.40	81.50	0.85	5.72	114.90	95.30	14.00
86	27.00	95.50	81.60	0.85	5.68	114.90	94.50	16.20

**Table 23. Gross cooling capacities (MBh) 7.5 tons three phase GWSC092H (continued)**

EWT	GPM	Gross Mbtuh	Gross Sen Mbtuh	SHR	Power kW	Reject Mbtuh	LWT	Feet Head
95	14.60	90.60	79.30	0.88	6.71	113.50	110.50	5.40
95	18.00	90.90	79.50	0.87	6.54	113.20	107.60	7.80
95	20.30	91.10	79.70	0.87	6.46	113.10	106.10	9.60
95	22.50	91.20	79.80	0.87	6.40	113.00	105.00	11.50
95	23.60	91.20	79.80	0.87	6.38	113.00	104.60	12.50
95	24.80	91.30	79.90	0.88	6.35	113.00	104.10	13.60
95	27.00	91.40	80.00	0.88	6.31	112.90	103.40	15.80
105	14.60	85.80	77.30	0.90	7.50	111.40	120.30	5.30
105	18.00	86.10	77.60	0.90	7.33	111.10	117.30	7.60
105	20.30	86.30	77.80	0.90	7.25	111.00	115.90	9.40
105	22.50	86.40	77.90	0.90	7.19	110.90	114.90	11.20
105	23.60	86.40	77.90	0.90	7.16	110.80	114.40	12.20
105	24.80	86.50	78.00	0.90	7.14	110.80	113.90	13.30
105	27.00	86.60	78.10	0.90	7.09	110.80	113.20	15.40
115	14.60	81.00	75.40	0.93	8.38	109.60	130.00	5.20
115	18.00	81.30	75.70	0.93	8.20	109.30	127.10	7.40
115	20.30	81.50	75.90	0.93	8.12	109.20	125.80	9.20
115	22.50	81.60	75.90	0.93	8.05	109.10	124.70	11.00
115	23.60	81.60	75.90	0.93	8.02	109.00	124.20	11.90
115	24.80	81.70	76.00	0.93	8.00	109.00	123.80	13.00
115	27.00	81.80	76.10	0.93	7.95	108.90	123.10	15.10

**Note:** Rated in accordance with ANSI/AHRI/ASHRAE/ISO13256-1. Certified conditions are 80.6F DB/66.2F WB EAT in cooling and 68F DB/59F WB EAT in heating. For conditions other than what is tabulated, multipliers must be used to correct performance. See performance correction tables for fan correction factors for CFM other than rated and the cooling correction factors for variations in entering air temperature. Rated GPM 22.5; Minimum CFM 2400; Rated CFM 3000; Maximum CFM 3600.

**Table 24. Gross heating capacities (MBh) 7.5 tons three phase GWSC092H**

EWT	GPM	Htg Cap Mbtuh	Absorb Mbtuh	Power kW	LWT	Feet Head
25	23.60	64.90	47.80	5.02	20.90	18.00
25	24.80	65.10	48.00	5.02	21.10	19.70
25	27.00	65.30	48.20	5.03	21.40	22.90
32	14.60	69.70	52.30	5.11	24.80	7.40
32	18.00	71.00	53.50	5.14	26.10	10.60
32	20.30	71.70	54.10	5.16	26.70	13.10
32	22.50	72.30	54.70	5.17	27.10	15.70
32	23.60	72.50	54.90	5.17	27.30	17.10
32	24.80	72.70	55.00	5.18	27.60	18.60
32	27.00	73.10	55.40	5.18	27.90	21.60
45	14.60	83.40	65.00	5.41	36.10	6.70
45	18.00	85.30	66.70	5.45	37.60	9.60
45	20.30	86.30	67.60	5.47	38.30	11.90
45	22.50	87.10	68.40	5.49	38.90	14.30
45	23.60	87.40	68.70	5.49	39.20	15.50



## Gross Cooling Capacities

**Table 24. Gross heating capacities (MBh) 7.5 tons three phase GWSC092H (continued)**

EWT	GPM	Htg Cap Mbtuh	Absorb Mbtuh	Power kW	LWT	Feet Head
45	24.80	87.80	69.00	5.50	39.40	16.90
45	27.00	88.30	69.50	5.51	39.90	19.60
55	14.60	94.60	75.30	5.66	44.70	6.30
55	18.00	96.90	77.40	5.71	46.40	9.10
55	20.30	98.10	78.50	5.74	47.30	11.20
55	22.50	99.10	79.40	5.76	47.90	13.40
55	23.60	99.50	79.80	5.77	48.20	14.60
55	24.80	99.90	80.20	5.78	48.50	15.90
55	27.00	100.60	80.80	5.79	49.00	18.40
68	14.60	109.70	89.20	6.02	55.80	5.90
68	18.00	112.70	91.90	6.09	57.80	8.50
68	20.30	114.20	93.30	6.13	58.80	10.50
68	22.50	115.40	94.40	6.16	59.60	12.60
68	23.60	116.00	94.90	6.17	60.00	13.70
68	24.80	116.50	95.40	6.18	60.30	14.90
68	27.00	117.30	96.10	6.20	60.90	17.30
75	14.60	118.10	96.90	6.23	61.70	5.70
75	18.00	121.50	100.00	6.31	63.90	8.30
75	20.30	123.20	101.50	6.36	65.00	10.20
75	22.50	124.60	102.80	6.39	65.90	12.20
75	23.60	125.20	103.30	6.41	66.20	13.30
75	24.80	125.80	103.90	6.42	66.60	14.50
75	27.00	126.70	104.70	6.45	67.20	16.80
86	14.60	131.80	109.30	6.58	71.00	5.50
86	18.00	135.70	112.90	6.69	73.50	8.00
86	20.30	137.80	114.80	6.74	74.70	9.80
86	22.50	139.40	116.20	6.79	75.70	11.80
86	23.60	140.10	116.90	6.81	76.10	12.80
86	24.80	140.80	117.50	6.83	76.50	14.00
86	27.00	142.00	118.60	6.86	77.20	16.20

**Note:** Rated in accordance with ANSI/AHRI/ASHRAE/ISO13256-1. Certified conditions are 80.6F DB/66.2F WB EAT in cooling and 68F DB/59F WB EAT in heating. For conditions other than what is tabulated, multipliers must be used to correct performance. See performance correction tables for fan correction factors for CFM other than rated and the cooling correction factors for variations in entering air temperature. Rated GPM 22.5; Minimum CFM 2400; Rated CFM 3000; Maximum CFM 3600.

**Table 25. Fan correction factors 7.5 tons GWSC092H**

Entering cfm	Cooling Capacity	Sensible Capacity	Cooling Input Watts	Heating Capacity	Heating Input Watts
2400	0.959	0.881	0.996	0.977	1.084
2550	0.971	0.911	0.997	0.984	1.059
2700	0.981	0.941	0.998	0.990	1.037
2850	0.991	0.971	0.999	0.995	1.017
3000	1.000	1.000	1.000	1.000	1.000



**Table 25. Fan correction factors 7.5 tons GWSC092H (continued)**

3300	1.016	1.057	1.002	1.008	0.971
3450	1.023	1.085	1.002	1.012	0.958
3600	1.030	1.113	1.003	1.015	0.946

**Table 26. Correction factors for variation in entering air temperature 7.5 tons GWSC092H**

Cooling Entering Air WB °F	Cooling Capacity	Cooling Input Watts	Sensible vs. Entering Dry Bulb Multipliers					Heating Entering Air DB °F	Heating Capacity	Heating Input Watts
			65.6	70.6	75.6	80.6	85.6			
49.4	0.659	0.991	0.888	0.935	0.988	*	*	53.0	0.946	0.821
56.3	0.799	0.990	0.812	0.938	1.018	*	*	58.0	0.964	0.879
60.3	0.880	0.992	0.645	0.856	0.992	1.087	*	63.0	0.982	0.938
63.2	0.939	0.995	0.463	0.746	0.931	1.060	*	68.0	1.000	1.000
66.2	1.000	1.000	-----	0.587	0.830	1.000	1.125	73.0	1.018	1.064
72.1	1.120	1.012	-----	-----	0.526	0.787	0.981	78.0	1.036	1.132
77.1	1.221	1.026	-----	-----	-----	-----	0.778	83.0	1.055	1.203

**Note:** \* = Sensible equals total capacity

**Table 27. Gross cooling capacities (MBh) 10 tons three phase GWSC120E**

EWT	GPM	Gross Mbtuh	Gross Sen Mbtuh	SHR	Power kW	Reject Mbtuh	LWT	Feet Head
45	19.50	128.30	102.90	0.80	4.75	144.50	59.80	3.90
45	24.00	129.00	103.40	0.80	4.59	144.70	57.10	5.60
45	27.00	129.20	103.60	0.80	4.51	144.60	55.70	6.90
45	30.00	129.50	103.80	0.80	4.45	144.70	54.60	8.20
45	31.50	129.50	103.80	0.80	4.42	144.60	54.20	9.00
45	33.00	129.60	103.90	0.80	4.39	144.60	53.80	9.80
45	36.00	129.70	104.00	0.80	4.35	144.60	53.00	11.40
55	19.50	126.60	101.80	0.80	5.32	144.80	69.90	3.70
55	24.00	127.30	102.30	0.80	5.16	144.90	67.10	5.40
55	27.00	127.60	102.60	0.80	5.08	144.90	65.70	6.60
55	30.00	127.80	102.70	0.80	5.02	144.90	64.70	7.90
55	31.50	127.90	102.80	0.80	4.99	144.90	64.20	8.60
55	33.00	127.90	102.80	0.80	4.97	144.80	63.80	9.40
55	36.00	128.10	103.00	0.80	4.92	144.90	63.10	10.90
68	19.50	124.60	100.70	0.81	6.05	145.20	82.90	3.60
68	24.00	125.20	101.10	0.81	5.88	145.30	80.10	5.10
68	27.00	125.50	101.40	0.81	5.80	145.30	78.80	6.30
68	30.00	125.70	101.50	0.81	5.74	145.30	77.70	7.50
68	31.50	125.80	101.60	0.81	5.72	145.30	77.20	8.20
68	33.00	125.90	101.70	0.81	5.69	145.30	76.80	8.90
68	36.00	126.00	101.80	0.81	5.65	145.30	76.10	10.40
75	19.50	123.30	100.00	0.81	6.47	145.40	89.90	3.50
75	24.00	123.90	100.50	0.81	6.30	145.40	87.10	5.00
75	27.00	124.20	100.70	0.81	6.22	145.40	85.80	6.10
75	30.00	124.40	100.90	0.81	6.16	145.40	84.70	7.40



## Gross Cooling Capacities

**Table 27. Gross cooling capacities (MBh) 10 tons three phase GWSC120E (continued)**

EWT	GPM	Gross Mbtuh	Gross Sen Mbtuh	SHR	Power kW	Reject Mbtuh	LWT	Feet Head
75	31.50	124.50	101.00	0.81	6.13	145.40	84.20	8.00
75	33.00	124.60	101.00	0.81	6.11	145.40	83.80	8.70
75	36.00	124.70	101.10	0.81	6.07	145.40	83.10	10.10
86	19.50	119.90	98.50	0.82	7.20	144.50	100.80	3.30
86	24.00	120.60	99.10	0.82	7.04	144.60	98.10	4.80
86	27.00	120.90	99.30	0.82	6.96	144.60	96.70	5.90
86	30.00	121.10	99.50	0.82	6.89	144.60	95.60	7.10
86	31.50	121.10	99.50	0.82	6.87	144.50	95.20	7.70
86	33.00	121.20	99.50	0.82	6.84	144.50	94.80	8.40
86	36.00	121.40	99.70	0.82	6.80	144.60	94.00	9.80
95	19.50	115.50	96.70	0.84	7.88	142.40	109.60	3.20
95	24.00	116.20	97.30	0.84	7.72	142.50	106.90	4.70
95	27.00	116.50	97.50	0.84	7.64	142.60	105.60	5.70
95	30.00	116.70	97.70	0.84	7.57	142.50	104.50	6.90
95	31.50	116.70	97.70	0.84	7.55	142.50	104.00	7.50
95	33.00	116.80	97.80	0.84	7.52	142.50	103.60	8.20
95	36.00	117.00	98.00	0.84	7.48	142.50	102.90	9.50
105	19.50	108.80	94.10	0.86	8.73	138.60	119.20	3.20
105	24.00	109.40	94.60	0.86	8.56	138.60	116.60	4.50
105	27.00	109.70	94.90	0.87	8.48	138.60	115.30	5.60
105	30.00	109.90	95.00	0.86	8.42	138.60	114.20	6.70
105	31.50	110.00	95.10	0.86	8.39	138.60	113.80	7.30
105	33.00	110.00	95.10	0.86	8.37	138.60	113.40	7.90
105	36.00	110.20	95.30	0.86	8.33	138.60	112.70	9.20
115	19.50	100.90	91.00	0.90	9.65	133.80	128.70	3.10
115	24.00	101.50	91.50	0.90	9.48	133.90	126.20	4.40
115	27.00	101.80	91.80	0.90	9.40	133.90	124.90	5.40
115	30.00	102.00	92.00	0.90	9.34	133.90	123.90	6.50
115	31.50	102.10	92.10	0.90	9.32	133.90	123.50	7.10
115	33.00	102.20	92.10	0.90	9.29	133.90	123.10	7.70
115	36.00	102.30	92.20	0.90	9.25	133.90	122.40	9.00

**Note:** Rated in accordance with ANSI/AHRI/ASHRAE/ISO13256-1. Certified conditions are 80.6F DB/66.2F WB EAT in cooling and 68F DB/59F WB EAT in heating. For conditions other than what is tabulated, multipliers must be used to correct performance. See performance correction tables for fan correction factors for CFM other than rated and the cooling correction factors for variations in entering air temperature. Rated GPM 30; Minimum CFM 3200; Rated CFM 4000; Maximum CFM 4800.

**Table 28. Gross heating capacities (MBh) 10 tons three phase GWSC120H**

EWT	GPM	Htg Cap Mbtuh	Absorb Mbtuh	Power kW	LWT	Feet Head
25	31.50	83.10	61.80	6.24	21.10	9.80
25	33.00	83.40	62.10	6.25	21.20	10.60
25	36.00	83.90	62.50	6.27	21.50	12.40
32	19.50	88.60	67.10	6.31	25.10	4.10
32	24.00	90.50	68.70	6.38	26.30	5.90

**Table 28. Gross heating capacities (MBh) 10 tons three phase GWSC120H (continued)**

32	27.00	91.40	69.50	6.42	26.90	7.20
32	30.00	92.10	70.10	6.44	27.30	8.70
32	31.50	92.50	70.50	6.46	27.50	9.50
32	33.00	92.80	70.70	6.47	27.70	10.30
32	36.00	93.40	71.30	6.49	28.00	12.00
45	19.50	105.70	83.70	6.45	36.40	3.90
45	24.00	108.20	86.00	6.52	37.80	5.60
45	27.00	109.50	87.10	6.55	38.50	6.90
45	30.00	110.50	88.00	6.58	39.10	8.20
45	31.50	110.90	88.40	6.59	39.40	9.00
45	33.00	111.40	88.90	6.60	39.60	9.80
45	36.00	112.10	89.50	6.62	40.00	11.40
55	19.50	119.70	96.70	6.75	45.10	3.70
55	24.00	122.70	99.40	6.82	46.70	5.40
55	27.00	124.30	100.90	6.86	47.50	6.60
55	30.00	125.50	102.00	6.88	48.20	7.90
55	31.50	126.10	102.60	6.90	48.50	8.60
55	33.00	126.60	103.00	6.91	48.80	9.40
55	36.00	127.50	103.90	6.93	49.20	10.90
68	19.50	139.00	114.10	7.30	56.30	3.60
68	24.00	142.60	117.50	7.37	58.20	5.10
68	27.00	144.60	119.30	7.40	59.20	6.30
68	30.00	146.10	120.70	7.43	60.00	7.50
68	31.50	146.80	121.40	7.44	60.30	8.20
68	33.00	147.40	122.00	7.45	60.60	8.90
68	36.00	148.50	123.00	7.47	61.20	10.40
75	19.50	149.80	124.00	7.56	62.30	3.50
75	24.00	153.80	127.80	7.63	64.40	5.00
75	27.00	155.90	129.80	7.66	65.40	6.10
75	30.00	157.70	131.50	7.69	66.20	7.40
75	31.50	158.40	132.10	7.70	66.60	8.00
75	33.00	159.10	132.80	7.71	67.00	8.70
75	36.00	160.30	133.90	7.73	67.60	10.10
86	19.50	167.40	140.00	8.04	71.60	3.30
86	24.00	172.00	144.30	8.11	74.00	4.80
86	27.00	174.40	146.60	8.15	75.10	5.90
86	30.00	176.40	148.50	8.17	76.10	7.10
86	31.50	177.30	149.40	8.19	76.50	7.70
86	33.00	178.10	150.10	8.20	76.90	8.40



## Gross Cooling Capacities

**Table 28. Gross heating capacities (MBh) 10 tons three phase GWSC120H (continued)**

86	36.00	179.40	151.40	8.22	77.60	9.80
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**Note:** Rated in accordance with ANSI/AHRI/ASHRAE/ISO13256-1. Certified conditions are 80.6F DB/66.2F WB EAT in cooling and 68F DB/59F WB EAT in heating. For conditions other than what is tabulated, multipliers must be used to correct performance. See performance correction tables for fan correction factors for CFM other than rated and the heating correction factors for variation in entering air temperatures. Rated GPM 30; Minimum CFM 3200; Rated CFM 4000; Maximum CFM 4800.

**Table 29. Fan correction factors 10 tons GWSC120H**

Entering cfm	Cooling Capacity	Sensible Capacity	Cooling Input Watts	Heating Capacity	Heating Input Watts
3200	0.964	0.889	0.995	0.978	1.073
3400	0.974	0.918	0.997	0.984	1.051
3600	0.984	0.946	0.998	0.990	1.032
3800	0.992	0.973	0.999	0.996	1.015
4000	1.000	1.000	1.000	1.000	1.000
4400	1.014	1.052	1.002	1.007	0.974
4600	1.020	1.078	1.003	1.010	0.963
4800	1.026	1.103	1.004	1.013	0.952

**Table 30. Correction factors for variation in entering air temperature 10 tons GWSC120H**

Cooling Entering Air WB °F	Cooling Capacity	Cooling Input Watts	Sensible vs. Entering Dry Bulb Multipliers					Heating Entering Air DB °F	Heating Capacity	Heating Input Watts
			65.6	70.6	75.6	80.6	85.6			
49.4	0.820	0.982	0.925	0.986	1.080	*	*	53.0	0.950	0.840
56.3	0.894	0.990	0.812	0.954	1.053	1.129	*	58.0	0.971	0.893
60.3	0.937	0.992	0.640	0.854	1.004	1.116	*	63.0	0.987	0.946
63.2	0.968	0.995	0.464	0.737	0.930	1.074	*	68.0	1.000	1.000
66.2	1.000	1.000	-----	0.579	0.820	1.000	1.140	73.0	1.011	1.056
72.1	1.063	1.014	-----	-----	0.513	0.770	0.971	78.0	1.020	1.113
77.1	1.117	1.030	-----	-----	-----	-----	0.758	83.0	1.029	1.172

**Note:** \* = Sensible equals total capacity

**Table 31. Gross cooling capacities (MBh) 12.5 tons three phase GWS\*150E**

EWT	GPM	Gross Mbtuh	Sen Mbtuh	SHR	Comp Pwr kW	Reject Mbtuh	LWT	Feet Head
45	25.20	189.00	132.90	0.70	6.46	211.10	61.80	7.10
45	31.00	190.10	133.70	0.70	6.26	211.50	58.60	10.20
45	35.00	190.70	134.10	0.70	6.17	211.70	57.10	12.70
45	38.80	191.10	134.40	0.70	6.09	211.90	55.90	15.20
45	40.80	191.30	134.60	0.70	6.06	212.00	55.40	16.70
45	42.60	191.50	134.70	0.70	6.04	212.10	55.00	18.00
45	46.60	191.80	134.90	0.70	5.98	212.20	54.10	21.10
55	25.20	183.20	130.80	0.71	7.23	207.90	71.50	6.80
55	31.00	184.20	131.40	0.71	7.02	208.20	68.40	9.90
55	35.00	184.60	131.80	0.71	6.92	208.30	66.90	12.20
55	38.80	185.00	132.00	0.71	6.85	208.40	65.70	14.70
55	40.80	185.20	132.20	0.71	6.81	208.50	65.20	16.00
55	42.60	185.30	132.30	0.71	6.78	208.50	64.80	17.30
55	46.60	185.60	132.50	0.71	6.73	208.60	64.00	20.30

**Table 31. Gross cooling capacities (MBh) 12.5 tons three phase GWS\*150E (continued)**

<b>EWT</b>	<b>GPM</b>	<b>Gross Mbtuh</b>	<b>Sen Mbtuh</b>	<b>SHR</b>	<b>Comp Pwr kW</b>	<b>Reject Mbtuh</b>	<b>LWT</b>	<b>Feet Head</b>
68	25.20	175.10	127.90	0.73	8.35	203.60	84.20	6.50
68	31.00	176.00	128.50	0.73	8.12	203.70	81.10	9.40
68	35.00	176.50	128.80	0.73	8.01	203.80	79.60	11.70
68	38.80	176.80	129.10	0.73	7.93	203.80	78.50	14.00
68	40.80	176.90	129.20	0.73	7.89	203.80	78.00	15.30
68	42.60	177.00	129.20	0.73	7.86	203.80	77.60	16.50
68	46.60	177.30	129.40	0.73	7.80	203.90	76.80	19.40
75	25.20	170.50	126.20	0.74	9.01	201.20	91.00	6.40
75	31.00	171.40	126.90	0.74	8.77	201.30	88.00	9.20
75	35.00	171.80	127.20	0.74	8.65	201.30	86.50	11.40
75	38.80	172.10	127.40	0.74	8.56	201.40	85.40	13.70
75	40.80	172.20	127.50	0.74	8.52	201.30	84.90	15.00
75	42.60	172.40	127.60	0.74	8.49	201.40	84.50	16.10
75	46.60	172.60	127.80	0.74	8.43	201.40	83.60	18.90
86	25.20	162.80	123.50	0.76	10.16	197.50	101.70	6.20
86	31.00	163.60	124.20	0.76	9.89	197.40	98.70	8.90
86	35.00	164.10	124.50	0.76	9.77	197.40	97.30	11.00
86	38.80	164.40	124.70	0.76	9.67	197.40	96.20	13.20
86	40.80	164.50	124.80	0.76	9.63	197.30	95.70	14.40
86	42.60	164.60	124.90	0.76	9.60	197.30	95.30	15.60
86	46.60	164.80	125.00	0.76	9.53	197.30	94.50	18.30
95	25.20	156.10	121.30	0.78	11.20	194.30	110.40	6.00
95	31.00	156.90	121.90	0.78	10.93	194.20	107.50	8.70
95	35.00	157.30	122.20	0.78	10.80	194.10	106.10	10.70
95	38.80	157.50	122.40	0.78	10.70	194.10	105.00	12.90
95	40.80	157.70	122.50	0.78	10.66	194.10	104.50	14.10
95	42.60	157.80	122.60	0.78	10.63	194.00	104.10	15.20
95	46.60	158.00	122.80	0.78	10.56	194.00	103.30	17.80
105	25.20	147.90	118.60	0.80	12.44	190.40	120.10	5.80
105	31.00	148.70	119.20	0.80	12.16	190.20	117.30	8.40
105	35.00	149.10	119.50	0.80	12.03	190.20	115.90	10.40
105	38.80	149.40	119.80	0.80	11.93	190.10	114.80	12.50
105	40.80	149.50	119.80	0.80	11.88	190.00	114.30	13.70
105	42.60	149.60	120.00	0.80	11.84	190.10	113.90	14.80
105	46.60	149.80	120.10	0.80	11.77	190.00	113.20	17.30
115	25.20	138.90	115.60	0.83	13.80	186.00	129.80	5.70
115	31.00	139.70	116.30	0.83	13.52	185.90	127.00	8.20
115	35.00	140.10	116.70	0.83	13.39	185.80	125.60	10.20
115	38.80	140.40	116.90	0.83	13.28	185.80	124.60	12.20
115	40.80	140.60	117.00	0.83	13.23	185.70	124.10	13.30
115	42.60	140.70	117.10	0.83	13.20	185.70	123.70	14.40
115	46.60	140.90	117.30	0.83	13.12	185.70	123.00	16.80
120	25.20	133.60	113.70	0.85	14.52	183.20	134.50	5.60
120	31.00	134.50	114.40	0.85	14.24	183.10	131.80	8.10
120	35.00	135.00	114.90	0.85	14.10	183.10	130.50	10.00
120	38.80	135.20	115.10	0.85	14.00	183.00	129.40	12.00
120	40.80	135.50	115.30	0.85	13.95	183.20	129.00	13.20
120	42.60	135.40	115.20	0.85	13.91	182.90	128.60	14.20



## Gross Cooling Capacities

**Table 31. Gross cooling capacities (MBh) 12.5 tons three phase GWS\*150E (continued)**

EWT	GPM	Gross Mbtuh	Sen Mbtuh	SHR	Comp Pwr kW	Reject Mbtuh	LWT	Feet Head
120	46.60	135.80	115.50	0.85	13.83	183.00	127.90	16.60

**Notes:**

1. Rated in accordance with ANSI/AHRI/ASHRAE/ISO13256-1. Certified conditions are 80.6F DB/66.2F WB EAT in cooling and 68F DB/59F WB EAT in heating. For conditions other than what is tabulated, multipliers must be used to correct performance. See performance correction tables for fan correction factors for CFM other than rated and the cooling correction factors for variations in entering air temperature. GPM 38.8; Minimum CFM 4000; Rated CFM 4750; Maximum CFM 6000.
2. (\*) stands for both downflow and horizontal units.

**Table 32. Gross heating capacities (MBh) 12.5 tons three phase GWS\*150E**

EWT	GPM	Gross Mbtuh	Absorb Mbtuh	Comp Pwr kW	LWT	Feet Head
25	38.80	103.00	73.90	8.53	21.20	24.40
25	40.80	103.40	74.30	8.53	21.40	26.40
25	42.60	103.70	74.60	8.54	21.50	28.20
25	46.60	104.20	75.10	8.54	21.80	32.30
32	25.20	114.90	85.20	8.68	25.20	9.50
32	31.00	116.80	87.10	8.69	26.40	13.60
32	35.00	117.80	88.10	8.70	27.00	16.80
32	38.80	118.60	88.90	8.71	27.40	20.10
32	40.80	118.90	89.20	8.71	27.60	22.00
32	42.60	119.30	89.50	8.72	27.80	23.70
32	46.60	119.50	89.80	8.70	28.10	27.70
45	25.20	137.60	107.10	8.92	36.50	7.70
45	31.00	139.80	109.30	8.93	37.90	11.00
45	35.00	141.20	110.60	8.96	38.70	13.50
45	38.80	141.80	111.20	8.96	39.30	16.20
45	40.80	142.40	111.80	8.97	39.50	17.70
45	42.60	142.80	112.10	8.97	39.70	19.10
45	46.60	143.40	112.70	8.98	40.20	22.30
55	25.20	155.20	124.00	9.14	45.20	7.40
55	31.00	158.10	126.70	9.18	46.80	10.50
55	35.00	159.40	128.00	9.20	47.70	13.00
55	38.80	160.50	129.00	9.21	48.30	15.60
55	40.80	160.70	129.30	9.21	48.70	17.00
55	42.60	161.30	129.90	9.22	48.90	18.30
55	46.60	162.00	130.50	9.23	49.40	21.40
68	25.20	179.10	146.70	9.50	56.40	7.00
68	31.00	183.10	150.50	9.55	58.30	10.10
68	35.00	184.00	151.40	9.55	59.30	12.40
68	38.80	185.80	153.10	9.58	60.10	14.90
68	40.80	186.60	153.80	9.59	60.50	16.20
68	42.60	186.50	153.80	9.58	60.80	17.50
68	46.60	187.80	155.00	9.61	61.30	20.40
75	25.20	193.30	160.10	9.72	62.30	6.90
75	31.00	197.60	164.10	9.79	64.40	9.80
75	35.00	200.20	166.60	9.84	65.50	12.10
75	38.80	200.80	167.30	9.82	66.40	14.50
75	40.80	201.90	168.30	9.84	66.80	15.80
75	42.60	202.30	168.70	9.85	67.10	17.10
75	46.60	203.40	169.70	9.86	67.70	19.90
86	25.20	216.40	181.90	10.11	71.60	6.60

**Table 32. Gross heating capacities (MBh) 12.5 tons three phase GWS\*150E (continued)**

EWT	GPM	Gross Mbtuh	Absorb Mbtuh	Comp Pwr kW	LWT	Feet Head
86	31.00	220.50	185.80	10.16	74.00	9.50
86	35.00	223.30	188.40	10.21	75.20	11.70
86	38.80	224.70	189.70	10.23	76.20	14.00
86	40.80	225.70	190.70	10.24	76.70	15.30
86	42.60	226.30	191.30	10.26	77.00	16.50
86	46.60	227.30	192.20	10.27	77.70	19.20

**Notes:**

1. Rated in accordance with ANSI/AHRI/ASHRAE/ISO13256-1. Certified conditions are 80.6F DB/66.2F WB EAT in cooling and 68F DB/59F WB EAT in heating. For conditions other than what is tabulated, multipliers must be used to correct performance. See performance correction tables for fan correction factors for CFM other than rated and the cooling correction factors for variations in entering air temperature. GPM 38.8; Minimum CFM 4000; Rated CFM 4750; Maximum CFM 6000.
2. (\*) stands for both downflow and horizontal units.

**Table 33. Fan correction factors 12.5 tons GWS\*150E**

Entering CFM	Cooling Capacity	Sensible Capacity	Cooling Input Values	Heating Capacity	Heating Input Watts
4000	0.971	0.914	0.980	0.983	1.043
4138	0.977	0.929	0.983	0.984	1.031
4275	0.983	0.945	0.987	0.987	1.022
4500	0.991	0.971	0.993	0.995	1.010
4750	1.000	1.000	1.000	1.000	1.000
5000	1.008	1.029	1.008	1.007	0.993
5500	1.021	1.087	1.026	1.022	0.986
6000	1.029	1.145	1.045	1.028	0.984

**Table 34. Gross cooling capacities (MBh) 15 tons three phase GWS\*180E**

EWT	GPM	Gross Mbtuh	Sen Mbtuh	SHR	Comp Pwr kW	Reject Mbtuh	LWT	Feet Head
45	25.20	189.00	132.90	0.70	6.46	211.10	61.80	7.10
45	31.00	190.10	133.70	0.70	6.26	211.50	58.60	10.20
45	35.00	190.70	134.10	0.70	6.17	211.70	57.10	12.70
45	38.80	191.10	134.40	0.70	6.09	211.90	55.90	15.20
45	40.80	191.30	134.60	0.70	6.06	212.00	55.40	16.70
45	42.60	191.50	134.70	0.70	6.04	212.10	55.00	18.00
45	46.60	191.80	134.90	0.70	5.98	212.20	54.10	21.10
55	25.20	183.20	130.80	0.71	7.23	207.90	71.50	6.80
55	31.00	184.20	131.40	0.71	7.02	208.20	68.40	9.90
55	35.00	184.60	131.80	0.71	6.92	208.30	66.90	12.20
55	38.80	185.00	132.00	0.71	6.85	208.40	65.70	14.70
55	40.80	185.20	132.20	0.71	6.81	208.50	65.20	16.00
55	42.60	185.30	132.30	0.71	6.78	208.50	64.80	17.30
55	46.60	185.60	132.50	0.71	6.73	208.60	64.00	20.30
68	25.20	175.10	127.90	0.73	8.35	203.60	84.20	6.50
68	31.00	176.00	128.50	0.73	8.12	203.70	81.10	9.40
68	35.00	176.50	128.80	0.73	8.01	203.80	79.60	11.70
68	38.80	176.80	129.10	0.73	7.93	203.80	78.50	14.00
68	40.80	176.90	129.20	0.73	7.89	203.80	78.00	15.30
68	42.60	177.00	129.20	0.73	7.86	203.80	77.60	16.50
68	46.60	177.30	129.40	0.73	7.80	203.90	76.80	19.40
75	25.20	170.50	126.20	0.74	9.01	201.20	91.00	6.40
75	31.00	171.40	126.90	0.74	8.77	201.30	88.00	9.20



## Gross Cooling Capacities

**Table 34. Gross cooling capacities (MBh) 15 tons three phase GWS\*180E (continued)**

EWT	GPM	Gross Mbtuh	Sen Mbtuh	SHR	Comp Pwr kW	Reject Mbtuh	LWT	Feet Head
75	35.00	171.80	127.20	0.74	8.65	201.30	86.50	11.40
75	38.80	172.10	127.40	0.74	8.56	201.40	85.40	13.70
75	40.80	172.20	127.50	0.74	8.52	201.30	84.90	15.00
75	42.60	172.40	127.60	0.74	8.49	201.40	84.50	16.10
75	46.60	172.60	127.80	0.74	8.43	201.40	83.60	18.90
86	25.20	162.80	123.50	0.76	10.16	197.50	101.70	6.20
86	31.00	163.60	124.20	0.76	9.89	197.40	98.70	8.90
86	35.00	164.10	124.50	0.76	9.77	197.40	97.30	11.00
86	38.80	164.40	124.70	0.76	9.67	197.40	96.20	13.20
86	40.80	164.50	124.80	0.76	9.63	197.30	95.70	14.40
86	42.60	164.60	124.90	0.76	9.60	197.30	95.30	15.60
86	46.60	164.80	125.00	0.76	9.53	197.30	94.50	18.30
95	25.20	156.10	121.30	0.78	11.20	194.30	110.40	6.00
95	31.00	156.90	121.90	0.78	10.93	194.20	107.50	8.70
95	35.00	157.30	122.20	0.78	10.80	194.10	106.10	10.70
95	38.80	157.50	122.40	0.78	10.70	194.10	105.00	12.90
95	40.80	157.70	122.50	0.78	10.66	194.10	104.50	14.10
95	42.60	157.80	122.60	0.78	10.63	194.00	104.10	15.20
95	46.60	158.00	122.80	0.78	10.56	194.00	103.30	17.80
105	25.20	147.90	118.60	0.80	12.44	190.40	120.10	5.80
105	31.00	148.70	119.20	0.80	12.16	190.20	117.30	8.40
105	35.00	149.10	119.50	0.80	12.03	190.20	115.90	10.40
105	38.80	149.40	119.80	0.80	11.93	190.10	114.80	12.50
105	40.80	149.50	119.80	0.80	11.88	190.00	114.30	13.70
105	42.60	149.60	120.00	0.80	11.84	190.10	113.90	14.80
105	46.60	149.80	120.10	0.80	11.77	190.00	113.20	17.30
115	25.20	138.90	115.60	0.83	13.80	186.00	129.80	5.70
115	31.00	139.70	116.30	0.83	13.52	185.90	127.00	8.20
115	35.00	140.10	116.70	0.83	13.39	185.80	125.60	10.20
115	38.80	140.40	116.90	0.83	13.28	185.80	124.60	12.20
115	40.80	140.60	117.00	0.83	13.23	185.70	124.10	13.30
115	42.60	140.70	117.10	0.83	13.20	185.70	123.70	14.40
115	46.60	140.90	117.30	0.83	13.12	185.70	123.00	16.80
120	25.20	133.60	113.70	0.85	14.52	183.20	134.50	5.60
120	31.00	134.50	114.40	0.85	14.24	183.10	131.80	8.10
120	35.00	135.00	114.90	0.85	14.10	183.10	130.50	10.00
120	38.80	135.20	115.10	0.85	14.00	183.00	129.40	12.00
120	40.80	135.50	115.30	0.85	13.95	183.20	129.00	13.20
120	42.60	135.40	115.20	0.85	13.91	182.90	128.60	14.20
120	46.60	135.80	115.50	0.85	13.83	183.00	127.90	16.60

**Notes:**

1. Rated in accordance with ANSI/AHRI/ASHRAE/ISO13256-1. Certified conditions are 80.6F DB/66.2F WB EAT in cooling and 68F DB/59F WB EAT in heating. For conditions other than what is tabulated, multipliers must be used to correct performance. See performance correction tables for fan correction factors for CFM other than rated and the cooling correction factors for variations in entering air temperature. GPM 46.5; Minimum CFM 4800; Rated CFM 5700; Maximum CFM 7200.
2. (\*) stands for both downflow and horizontal units.



**Table 35. Gross heating capacities (MBh) 15 tons three phase GWS\*180E**

<b>EWT</b>	<b>GPM</b>	<b>Gross Mbtuh</b>	<b>Absorb Mbtuh</b>	<b>Comp Pwr kW</b>	<b>LWT</b>	<b>Feet Head</b>
25	41.80	116.10	84.00	9.40	21.00	25.90
25	46.50	116.70	84.60	9.41	21.40	30.60
25	48.80	117.00	84.80	9.42	21.50	32.90
25	51.20	117.30	85.10	9.42	21.70	35.50
25	55.80	117.70	85.50	9.43	21.90	40.80
32	30.20	125.60	92.90	9.57	25.80	12.60
32	37.20	126.70	93.90	9.59	27.00	18.10
32	41.80	127.30	94.50	9.60	27.50	22.20
32	46.50	128.00	95.20	9.62	27.90	26.70
32	48.80	128.10	95.30	9.62	28.10	29.10
32	51.20	128.10	95.30	9.62	28.30	31.60
32	55.80	129.00	96.20	9.64	28.60	36.70
45	30.20	146.90	112.80	9.99	37.50	10.10
45	37.20	147.40	113.30	10.00	38.90	14.60
45	41.80	147.90	113.70	10.01	39.60	17.80
45	46.50	148.50	114.30	10.03	40.10	21.50
45	48.80	148.70	114.40	10.04	40.30	23.40
45	51.20	148.20	114.00	10.03	40.50	25.40
45	55.80	148.40	114.10	10.03	40.90	29.50
55	30.20	162.20	126.90	10.34	46.60	9.80
55	37.20	162.30	127.00	10.35	48.20	14.00
55	41.80	163.60	128.20	10.38	48.90	17.10
55	46.50	164.00	128.50	10.41	49.50	20.60
55	48.80	164.50	128.90	10.42	49.70	22.40
55	51.20	163.00	127.60	10.38	50.00	24.40
55	55.80	163.00	127.60	10.38	50.40	28.30
68	30.20	181.70	144.70	10.83	58.40	9.30
68	37.20	183.70	146.50	10.89	60.10	13.40
68	41.80	182.30	145.20	10.88	61.10	16.30
68	46.50	182.30	145.10	10.89	61.80	19.70
68	48.80	182.20	145.10	10.89	62.10	21.40
68	51.20	182.10	144.90	10.89	62.30	23.30
68	55.80	182.00	144.80	10.89	62.80	27.00
75	30.20	192.50	154.50	11.13	64.80	9.10
75	37.20	192.80	154.70	11.17	66.70	13.00
75	41.80	192.70	154.50	11.18	67.60	16.00
75	46.50	192.20	154.00	11.18	68.40	19.20
75	48.80	192.10	153.90	11.18	68.70	20.90
75	51.20	192.20	154.00	11.19	69.00	22.70
75	55.80	191.50	153.30	11.19	69.50	26.40
86	30.20	208.50	168.80	11.63	74.80	8.80
86	37.20	208.30	168.40	11.67	76.90	12.60
86	41.80	208.60	168.60	11.70	77.90	15.40
86	46.50	206.20	166.40	11.67	78.80	18.50
86	48.80	205.50	165.60	11.67	79.20	20.10
86	51.20	205.60	165.80	11.67	79.50	22.00



## Gross Cooling Capacities

**Table 35. Gross heating capacities (MBh) 15 tons three phase GWS\*180E (continued)**

EWT	GPM	Gross Mbtuh	Absorb Mbtuh	Comp Pwr kW	LWT	Feet Head
86	55.80	204.60	164.80	11.66	80.10	25.60

**Notes:**

1. Rated in accordance with ANSI/AHRI/ASHRAE/ISO13256-1. Certified conditions are 80.6F DB/66.2F WB EAT in cooling and 68F DB/59F WB EAT in heating. For conditions other than what is tabulated, multipliers must be used to correct performance. See performance correction tables for fan correction factors for CFM other than rated and the cooling correction factors for variations in entering air temperature. GPM 46.5; Minimum CFM 4800; Rated CFM 5700; Maximum CFM 7200.
2. (\*) stands for both downflow and horizontal units.

**Table 36. Fan correction factors 15 tons GWS\*180E**

Entering CFM	Cooling Capacity	Sensible Capacity	Cooling Input Values	Heating Capacity	Heating Input Watts
4800	0.979	0.922	0.970	0.974	1.001
4965	0.984	0.937	0.974	0.979	1.000
5130	0.988	0.952	0.979	0.984	0.999
5400	0.994	0.976	0.989	0.994	0.999
5700	1.000	1.000	1.000	1.000	1.000
6000	1.005	1.025	1.011	1.008	1.004
6600	1.013	1.073	1.038	1.022	1.017
7200	1.018	1.118	1.070	1.035	1.037

**Table 37. Gross cooling capacities (MBh) 20 tons three phase GWS\*240E**

EWT	GPM	Gross Mbtuh	Sen Mbtuh	SHR	Comp Pwr kW	Reject Mbtuh	LWT	Feet Head
45	40.30	300.40	208.30	0.69	13.32	345.80	62.20	7.30
45	49.60	300.70	208.60	0.69	13.11	345.50	58.90	10.50
45	55.80	300.80	208.60	0.69	13.02	345.30	57.40	12.90
45	62.00	300.90	208.70	0.69	12.95	345.00	56.10	15.50
45	65.10	300.90	208.70	0.69	12.85	344.80	55.60	16.90
45	68.20	300.90	208.70	0.69	12.82	344.60	55.10	18.30
45	74.40	301.00	208.70	0.69	12.78	344.60	54.30	21.30
55	40.30	295.10	206.00	0.70	14.26	343.80	72.10	7.00
55	49.60	295.90	206.60	0.70	13.98	343.60	68.90	10.10
55	55.80	296.20	206.80	0.70	13.86	343.50	67.30	12.40
55	62.00	296.50	207.00	0.70	13.76	343.50	66.10	14.90
55	65.10	296.60	207.10	0.70	13.72	343.50	65.60	16.20
55	68.20	296.70	207.10	0.70	13.68	343.40	65.10	17.60
55	74.40	296.80	207.20	0.70	13.62	343.30	64.20	20.50
68	40.30	284.70	202.00	0.71	15.89	338.90	84.80	6.70
68	49.60	285.90	202.80	0.71	15.53	338.90	81.70	9.60
68	55.80	286.50	203.20	0.71	15.37	338.90	80.10	11.80
68	62.00	286.90	203.50	0.71	15.24	338.90	78.90	14.20
68	65.10	287.10	203.70	0.71	15.19	338.90	78.40	15.50
68	68.20	287.30	203.80	0.71	15.14	338.90	77.90	16.80
68	74.40	287.50	204.00	0.71	15.05	338.90	77.10	19.60
75	40.30	277.80	199.50	0.72	16.94	335.60	91.70	6.50
75	49.60	279.10	200.40	0.72	16.55	335.60	88.50	9.40
75	55.80	279.70	200.90	0.72	16.37	335.60	87.00	11.60
75	62.00	280.20	201.20	0.72	16.23	335.60	85.80	13.90
75	65.10	280.40	201.40	0.72	16.17	335.60	85.30	15.10
75	68.20	280.60	201.50	0.72	16.12	335.60	84.80	16.40
75	74.40	281.00	201.80	0.72	16.02	335.70	84.00	19.10

**Table 37. Gross cooling capacities (MBh) 20 tons three phase GWS\*240E (continued)**

EWT	GPM	Gross Mbtuh	Sen Mbtuh	SHR	Comp Pwr kW	Reject Mbtuh	LWT	Feet Head
86	40.30	265.30	194.90	0.73	18.85	329.60	102.40	6.30
86	49.60	266.70	196.00	0.73	18.43	329.60	99.30	9.10
86	55.80	267.50	196.60	0.73	18.23	329.70	97.80	11.20
86	62.00	268.00	196.90	0.73	18.07	329.70	96.60	13.40
86	65.10	268.30	197.20	0.73	18.01	329.80	96.10	14.60
86	68.20	268.40	197.30	0.73	17.95	329.70	95.70	15.80
86	74.40	268.80	197.60	0.73	17.85	329.70	94.90	18.50
95	40.30	254.00	191.10	0.75	20.58	324.20	111.10	5.80
95	49.60	255.50	192.20	0.75	20.13	324.20	108.10	8.40
95	55.80	256.20	192.70	0.75	19.92	324.20	106.60	10.30
95	62.00	256.70	193.10	0.75	19.75	324.10	105.50	12.40
95	65.10	257.00	193.30	0.75	19.68	324.20	105.00	13.60
95	68.20	257.20	193.50	0.75	19.61	324.20	104.50	14.70
95	74.40	257.60	193.80	0.75	19.50	324.20	103.70	17.20
105	40.30	240.50	186.50	0.78	22.71	318.00	120.80	5.60
105	49.60	242.00	187.70	0.78	22.25	317.90	117.80	8.20
105	55.80	242.70	188.20	0.78	22.03	317.90	116.40	10.00
105	62.00	243.30	188.70	0.78	21.85	317.80	115.30	12.10
105	65.10	243.50	188.90	0.78	21.77	317.80	114.80	13.20
105	68.20	243.70	189.00	0.78	21.71	317.80	114.30	14.30
105	74.40	244.10	189.30	0.78	21.59	317.80	113.50	16.70
115	40.30	226.00	181.90	0.80	25.01	311.40	130.50	5.50
115	49.60	227.50	183.10	0.80	24.53	311.20	127.50	7.90
115	55.80	228.20	183.70	0.80	24.30	311.10	126.20	9.80
115	62.00	228.70	184.10	0.80	24.11	311.00	125.00	11.80
115	65.10	228.90	184.30	0.80	24.04	311.00	124.60	12.80
115	68.20	229.10	184.40	0.80	23.97	310.90	124.10	13.90
115	74.40	229.50	184.70	0.80	23.85	310.90	123.40	16.20
120	40.30	218.20	179.40	0.82	26.19	307.60	135.30	5.40
120	49.60	219.70	180.70	0.82	25.77	307.60	132.40	7.90
120	55.80	220.40	181.30	0.82	25.54	307.60	131.00	9.70
120	62.00	220.90	181.70	0.82	25.36	307.50	129.90	11.60
120	65.10	221.20	181.90	0.82	25.28	307.50	129.40	12.70
120	68.20	221.40	182.10	0.82	25.21	307.40	129.00	13.80
120	74.40	221.70	182.40	0.82	25.09	307.40	128.30	16.00

**Notes:**

1. Rated in accordance with ANSI/AHRI/ASHRAE/ISO13256-1. Certified conditions are 80.6F DB/66.2F WB EAT in cooling and 68F DB/59F WB EAT in heating. For conditions other than what is tabulated, multipliers must be used to correct performance. See performance correction tables for fan correction factors for CFM other than rated and the cooling correction factors for variations in entering air temperature. GPM 62.0; Minimum CFM 6400; Rated CFM 7600; Maximum CFM 9600.
2. (\*) stands for both downflow and horizontal units.

**Table 38. Gross heating capacities (MBh) 20 tons three phase GWS\*240E**

EWT	GPM	Gross Mbtuh	Absorb Mbtuh	Comp Pwr kW	LWT	Feet Head
25	68.20	187.20	136.80	14.75	21.00	24.60
25	74.40	188.30	137.90	14.78	21.30	28.60
32	40.30	198.80	147.40	15.06	24.70	9.60
32	49.60	202.70	151.00	15.14	25.90	13.70
32	55.80	204.80	153.00	15.18	26.50	16.80
32	62.00	206.30	154.30	15.22	27.00	20.20



## Gross Cooling Capacities

**Table 38. Gross heating capacities (MBh) 20 tons three phase GWS\*240E (continued)**

EWT	GPM	Gross Mbtuh	Absorb Mbtuh	Comp Pwr kW	LWT	Feet Head
32	65.10	207.40	155.30	15.25	27.20	22.00
32	68.20	207.80	155.70	15.26	27.40	23.90
32	74.40	209.40	157.10	15.32	27.80	27.80
45	40.30	241.00	185.80	16.15	35.80	7.30
45	49.60	246.10	190.50	16.30	37.30	10.50
45	55.80	247.90	192.10	16.33	38.10	12.90
45	62.00	249.90	194.00	16.39	38.70	15.50
45	65.10	250.60	194.60	16.41	39.00	16.90
45	68.20	251.30	195.30	16.42	39.30	18.30
45	74.40	252.40	196.30	16.45	39.70	21.30
55	40.30	272.40	214.20	17.05	44.40	7.00
55	49.60	277.50	218.70	17.20	46.20	10.10
55	55.80	280.10	221.10	17.28	47.10	12.40
55	62.00	282.50	223.30	17.36	47.80	14.90
55	65.10	283.10	223.80	17.38	48.10	16.20
55	68.20	283.90	224.50	17.40	48.40	17.60
55	74.40	285.80	226.20	17.46	48.90	20.50
68	40.30	314.70	251.90	18.39	55.50	6.70
68	49.60	319.60	256.30	18.55	57.70	9.60
68	55.80	323.20	259.50	18.67	58.70	11.80
68	62.00	324.90	261.00	18.75	59.60	14.20
68	65.10	325.90	261.80	18.78	60.00	15.50
68	68.20	326.60	262.40	18.81	60.30	16.80
68	74.40	327.30	262.90	18.85	60.90	19.60
75	40.30	336.40	271.10	19.12	61.50	6.50
75	49.60	342.20	276.30	19.29	63.90	9.40
75	55.80	344.90	278.70	19.40	65.00	11.60
75	62.00	347.20	280.70	19.49	65.90	13.90
75	65.10	347.70	281.10	19.52	66.40	15.10
75	68.20	349.50	282.70	19.57	66.70	16.40
75	74.40	350.70	283.70	19.63	67.40	19.10
86	40.30	369.80	300.60	20.27	71.10	6.30
86	49.60	376.80	306.70	20.54	73.60	9.10
86	55.80	379.50	309.00	20.66	74.90	11.20
86	62.00	380.90	310.40	20.66	76.00	13.40
86	65.10	382.40	311.70	20.72	76.40	14.60
86	68.20	383.30	312.40	20.76	76.80	15.80
86	74.40	383.70	312.70	20.80	77.60	18.50

**Notes:**

1. Rated in accordance with ANSI/AHRI/ASHRAE/ISO13256-1. Certified conditions are 80.6F DB/66.2F WB EAT in cooling and 68F DB/59F WB EAT in heating. For conditions other than what is tabulated, multipliers must be used to correct performance. See performance correction tables for fan correction factors for CFM other than rated and the cooling correction factors for variations in entering air temperature. GPM 62.0; Minimum CFM 6400; Rated CFM 7600; Maximum CFM 9600.
2. (\*) stands for both downflow and horizontal units.

**Table 39. Fan correction factors 20 tons GWS\*240E**

Entering CFM	Cooling Capacity	Sensible Capacity	Cooling Input Values	Heating Capacity	Heating Input Watts
6400	0.969	0.915	0.996	0.978	1.061
6620	0.976	0.932	0.997	0.983	1.048

**Table 39. Fan correction factors 20 tons GWS\*240E (continued)**

Entering CFM	Cooling Capacity	Sensible Capacity	Cooling Input Values	Heating Capacity	Heating Input Watts
6840	0.982	0.947	0.998	0.991	1.038
7200	0.991	0.973	0.999	0.993	1.017
7600	1.000	1.000	1.000	1.000	1.000
8000	1.008	1.028	1.001	1.005	0.984
8800	1.024	1.085	1.004	1.016	0.956
9600	1.039	1.142	1.006	1.023	0.933

**Table 40. Correction factors for variation in entering air temperature 12.5 tons GWS\*150E**

Cooling Entering Air WB F	Cooling Capacity	Cooling Input Watts	Sensible vs Entering Dry Bulb Multipliers					Heating Entering Air DB F	Heating Capacity
			65.6	70.6	75.6	80.6	85.6		
49.4	0.936	1.001	1.026	1.094	1.163	*	*	53.0	1.048
56.3	0.937	1.000	0.812	1.042	1.164	*	*	58.0	1.033
60.3	0.937	1.002	0.620	0.844	1.072	*	*	63.0	1.017
63.2	0.958	1.000	0.475	0.701	0.925	1.157	*	68.0	1.000
66.2	1.000	1.000		0.549	0.772	1.000	1.235	73.0	0.986
72.1	1.096	0.997			0.468	0.704	0.923	78.0	0.968
77.1	1.178	0.994				0.425	0.654	83.0	0.952

**Table 41. Correction factors for variation in entering air temperature 15 tons GWS\*180E**

Cooling Entering Air WB F	Cooling Capacity	Cooling Input Watts	Sensible vs Entering Dry Bulb Multipliers					Heating Entering Air DB F	Heating Capacity
			65.6	70.6	75.6	80.6	85.6		
49.4	0.939	0.992	1.031	1.096	1.161	*	*	53.0	1.083
56.3	0.940	0.993	0.816	1.026	1.163	*	*	58.0	1.058
60.3	0.942	0.994	0.618	0.844	1.062	*	*	63.0	1.030
63.2	0.962	0.997	0.470	0.699	0.926	1.138	*	68.0	1.000
66.2	1.000	1.000		0.544	0.772	1.000	1.209	73.0	0.972
72.1	1.086	1.008			0.461	0.689	0.919	78.0	0.942
77.1	1.159	1.017				0.419	0.647	83.0	0.911

**Table 42. Correction factors for variation in entering air temperature 20 tons GWS\*240E**

Cooling Entering Air WB F	Cooling Capacity	Cooling Input Watts	Sensible vs Entering Dry Bulb Multipliers					Heating Entering Air DB F	Heating Capacity
			65.6	70.6	75.6	80.6	85.6		
49.4	0.931	0.993	1.061	1.129	1.198	*	*	53.0	1.053
56.3	0.932	0.993	0.822	1.049	1.199	*	*	58.0	1.036
60.3	0.935	0.993	0.619	0.847	1.078	*	*	63.0	1.016
63.2	0.961	0.995	0.471	0.701	0.929	1.158	*	68.0	1.000
66.2	1.000	1.000		0.542	0.769	1.000	1.232	73.0	0.981
72.1	1.088	1.010			0.453	0.683	0.912	78.0	0.963
77.1	1.166	1.023				0.405	0.635	83.0	0.945



# Evaporator Fan Performance

**Table 43. Multispeed direct drive evaporator fan performance (standard motor) 3 to 5 tons - no electric heat  
GWSC036/048/060H3,4,W**

Tons	Unit Model Number	cfm	External Static Pressure (in./water) & Motor Power (Bhp)														
			Speed Set 1			Speed Set 2			Speed Set 3			Speed Set 4			Speed Set 5		
			ESP	rpm	Bhp	ESP	rpm	Bhp	ESP	rpm	Bhp	ESP	rpm	Bhp	ESP	rpm	Bhp
3	GWSC036-H3,4,W Downflow Airflow	960	0.502	738	0.20	0.767	850	0.29	0.987	943	0.38	1.190	1029	0.47	-	-	-
		1020	0.419	717	0.19	0.683	829	0.28	0.904	923	0.37	1.107	1009	0.46	-	-	-
		1080	0.335	696	0.19	0.600	808	0.28	0.820	902	0.36	1.023	988	0.45	-	-	-
		1140	0.252	675	0.18	0.516	787	0.27	0.737	881	0.35	0.940	967	0.44	-	-	-
		1200	0.168	654	0.18	0.433	766	0.26	0.653	860	0.34	0.856	946	0.43	1.174	1080	0.58
		1260	0.084	633	0.17	0.349	746	0.25	0.570	839	0.34	0.773	925	0.42	1.090	1060	0.57
		1320	0.001	612.5	0.16	0.266	725	0.25	0.486	818	0.33	0.689	904	0.41	1.006	1039	0.56
		1380	-	-	-	0.182	704	0.24	0.403	797	0.32	0.605	883	0.4	0.923	1018	0.55
		1440	-	-	-	0.098	683	0.23	0.319	776	0.31	0.522	862	0.39	0.839	997	0.54
3	GWSC036-H3,4,W Horizontal Airflow	960	0.457	703	0.19	0.718	815	0.28	0.936	908	0.36	1.136	994	0.45	-	-	-
		1020	0.379	682	0.18	0.640	794	0.27	0.858	886	0.35	1.058	973	0.44	-	-	-
		1080	0.301	661	0.18	0.562	772	0.26	0.780	864	0.35	0.980	951	0.43	-	-	-
		1140	0.224	639	0.17	0.485	751	0.26	0.702	842	0.34	0.902	930	0.42	-	-	-
		1200	0.146	618	0.17	0.407	729	0.25	0.624	820	0.33	0.824	908	0.41	1.138	1042	0.56
		1260	0.068	596	0.16	0.329	708	0.24	0.546	798	0.32	0.746	887	0.4	1.060	1021	0.55
		1320	-	-	-	0.251	687	0.23	0.468	776	0.31	0.668	865	0.39	0.982	1000	0.54
		1380	-	-	-	0.173	665	0.23	0.390	754	0.30	0.591	844	0.38	0.904	978	0.53
		1440	-	-	-	0.095	644	0.22	0.312	731	0.29	0.513	823	0.37	0.826	957	0.52
4	GWSC048-H3,4,W Downflow Airflow	1280	0.720	918	0.38	0.960	1010	0.49	1.140	1077	0.58	-	-	-	-	-	-
		1360	0.570	885	0.37	0.820	977	0.47	1.000	1045	0.56	-	-	-	-	-	-
		1440	0.420	852	0.35	0.670	945	0.46	0.850	1012	0.54	-	-	-	-	-	-
		1520	0.270	819	0.34	0.520	912	0.44	0.700	979	0.52	1.130	1139	0.75	-	-	-
		1600	0.120	787	0.33	0.370	879	0.43	0.550	946	0.51	0.980	1106	0.72	1.190	1186	0.85
		1680	-	-	-	0.220	847	0.41	0.400	914	0.49	0.830	1073	0.7	1.050	1153	0.82
		1760	-	-	-	0.070	814	0.4	0.250	881	0.47	0.680	1040	0.68	0.900	1120	0.80
		1840	-	-	-	-	-	-	0.110	848	0.45	0.530	1008	0.66	0.750	1088	0.78
		1920	-	-	-	-	-	-	-	-	-	0.390	975	0.64	0.600	1055	0.75
4	GWSC048-H3,4,W Horizontal Airflow	1280	0.680	881	0.37	0.900	972	0.47	1.060	1038	0.56	-	-	-	-	-	-
		1360	0.560	849	0.35	0.780	940	0.46	0.940	1006	0.54	-	-	-	-	-	-
		1440	0.440	817	0.34	0.660	908	0.44	0.820	974	0.52	-	-	-	-	-	-
		1520	0.330	785	0.33	0.550	876	0.43	0.710	942	0.50	1.090	1099	0.72	-	-	-
		1600	0.210	754	0.31	0.430	845	0.41	0.590	911	0.49	0.970	1067	0.7	1.160	1146	0.82
		1680	0.090	722	0.30	0.310	813	0.39	0.470	879	0.47	0.850	1036	0.68	1.040	1114	0.80
		1760	-	-	-	0.190	781	0.38	0.350	847	0.45	0.730	1004	0.66	0.920	1082	0.77
		1840	-	-	-	0.070	749	0.36	0.230	815	0.44	0.610	972	0.64	0.800	1051	0.75
		1920	-	-	-	-	-	-	0.120	784	0.42	0.500	941	0.62	0.690	1019	0.73

## Evaporator Fan Performance

**Table 43. Multispeed direct drive evaporator fan performance (standard motor) 3 to 5 tons - no electric heat GWSC036/048/060H3,4,W (continued)**

Tons	Unit Model Number	cfm	External Static Pressure (in./water) & Motor Power (Bhp)														
			Speed Set 1			Speed Set 2			Speed Set 3			Speed Set 4			Speed Set 5		
			ESP	rpm	Bhp	ESP	rpm	Bhp	ESP	rpm	Bhp	ESP	rpm	Bhp	ESP	rpm	Bhp
5	GWSC060-H3,4,W Downflow Airflow	1600	0.870	830	0.46	1.000	909	0.53	1.200	996	0.64	-	-	-	-	-	-
		1700	0.730	795	0.44	0.860	873	0.51	1.050	960	0.62	-	-	-	-	-	-
		1800	0.590	759	0.42	0.720	837	0.49	0.910	924	0.59	1.120	1011	0.71	-	-	-
		1900	0.440	723	0.40	0.570	802	0.47	0.770	889	0.57	0.970	975	0.68	-	-	-
		2000	0.300	687	0.38	0.430	766	0.45	0.620	853	0.55	0.830	940	0.66	1.200	1086	0.88
		2100	0.160	651	0.36	0.290	730	0.43	0.480	817	0.52	0.690	904	0.63	1.050	1050	0.85
		2200	0.010	616	0.34	0.140	694	0.41	0.340	781	0.50	0.540	868	0.61	0.910	1014	0.82
		2300	-	-	-	0.000	658	0.39	0.190	745	0.48	0.400	832	0.58	0.770	979	0.79
		2400	-	-	-	-	-	-	0.050	710	0.46	0.260	796	0.56	0.620	943	0.76
5	GWSC060-H3,4,W Horizontal Airflow	1600	0.740	778	0.32	0.840	846	0.41	0.970	919	0.49	1.120	992	0.65	-	-	-
		1700	0.620	742	0.31	0.710	809	0.39	0.850	883	0.47	0.990	956	0.63	-	-	-
		1800	0.490	706	0.29	0.580	773	0.38	0.720	846	0.45	0.860	920	0.6	1.120	1042	0.84
		1900	0.360	669	0.28	0.450	737	0.36	0.590	810	0.43	0.740	883	0.58	0.990	1006	0.81
		2000	0.230	633	0.26	0.320	700	0.34	0.460	774	0.41	0.610	847	0.55	0.870	970	0.78
		2100	0.100	596	0.25	0.200	664	0.32	0.330	737	0.39	0.480	810	0.53	0.740	933	0.75
		2200	-	-	-	0.070	628	0.3	0.210	701	0.38	0.350	774	0.51	0.610	897	0.72
		2300	-	-	-	-	-	-	0.080	665	0.36	0.220	738	0.48	0.480	861	0.69
		2400	-	-	-	-	-	-	-	-	-	0.100	701	0.46	0.350	824	0.66

**Notes:**

1. For 036 models, fan motor heat (MBh) = 2.72 x Fan Bhp + 0.16. For 048 & 060 models, fan motor heat (MBh) = 2.87 x Fan Bhp + 0.15.
2. Factory supplied motors, in commercial equipment, are definite purpose motors, specifically designed and tested to operate reliably and continuously at all cataloged conditions. Using the full horsepower range of our fan motors as shown in our tabular data will not result in nuisance tripping or premature motor failure. Our product's warranty will not be affected.
3. For electric heat applications minimum airflow is set to 320 cfm/ton, unless specified otherwise, values found in electric heat temp rise table.
4. Data includes pressure drop due to wet coil and filters.



## Evaporator Fan Performance

**Table 44. Multispeed direct drive evaporator fan performance (oversized motor) 3 to 5 tons - no electric heat  
GWSC036/048/060H3,4,W**

Tons	Unit Model Number	cfm	External Static Pressure (in./water) & Motor Power (Bhp)														
			Speed Set 1			Speed Set 2			Speed Set 3			Speed Set 4			Speed Set 5		
			ESP	rpm	Bhp	ESP	rpm	Bhp	ESP	rpm	Bhp	ESP	rpm	Bhp	ESP	rpm	Bhp
3	GWSC036-H3,4,W Downflow Airflow	960	1.15	963	0.44	-	-	-	-	-	-	-	-	-	-	-	-
		1020	1.06	942	0.43	-	-	-	-	-	-	-	-	-	-	-	-
		1080	0.97	921	0.42	1.51	1157	0.69	-	-	-	-	-	-	-	-	-
		1140	0.88	900	0.41	1.42	1133	0.67	-	-	-	-	-	-	-	-	-
		1200	0.79	879	0.40	1.33	1109	0.66	1.45	1155	0.73	-	-	-	-	-	-
		1260	0.70	859	0.39	1.24	1086	0.65	1.36	1131	0.71	-	-	-	-	-	-
		1320	0.61	838	0.38	1.15	1062	0.63	1.28	1107	0.70	1.49	1184	0.81	-	-	-
		1380	0.52	817	0.37	1.06	1038	0.62	1.19	1084	0.68	1.40	1160	0.79	1.51	1201	0.86
		1440	0.43	796	0.36	0.97	1015	0.60	1.10	1060	0.67	1.31	1136	0.78	1.42	1177	0.84
3	GWSC036-H3,4,W Horizontal Airflow	960	1.14	1111	0.50	1.50	1164	0.69	-	-	-	-	-	-	-	-	
		1020	1.06	1088	0.49	1.43	1141	0.68	-	-	-	-	-	-	-	-	
		1080	0.99	1065	0.48	1.35	1118	0.67	1.44	1131	0.71	-	-	-	-	-	
		1140	0.91	1042	0.47	1.28	1095	0.65	1.36	1108	0.70	1.50	1128	0.77	-	-	
		1200	0.84	1019	0.46	1.20	1072	0.64	1.29	1085	0.68	1.43	1105	0.76	1.50	1117	0.80
		1260	0.76	996	0.45	1.13	1049	0.62	1.21	1062	0.67	1.35	1082	0.74	1.43	1093	0.78
		1320	0.69	973	0.44	1.05	1026	0.61	1.14	1038	0.65	1.28	1059	0.72	1.35	1070	0.76
		1380	0.61	950	0.43	0.98	1003	0.60	1.06	1015	0.64	1.20	1036	0.71	1.28	1047	0.75
		1440	0.54	927	0.42	0.90	980	0.58	0.99	992	0.62	1.13	1013	0.69	1.20	1024	0.73
4	GWSC048-H3,4,W Downflow Airflow	1280	1.12	1016	0.58	1.50	1159	0.78	-	-	-	-	-	-	-	-	
		1360	1.00	988	0.56	1.39	1131	0.76	-	-	-	-	-	-	-	-	
		1440	0.88	961	0.55	1.27	1104	0.74	-	-	-	-	-	-	-	-	
		1520	0.77	933	0.53	1.15	1076	0.73	-	-	-	-	-	-	-	-	
		1600	0.65	905	0.52	1.04	1048	0.71	1.50	1218	0.97	-	-	-	-	-	
		1680	0.54	877	0.50	0.92	1020	0.69	1.38	1190	0.95	-	-	-	-	-	
		1760	0.42	850	0.49	0.81	993	0.67	1.26	1162	0.93	-	-	-	-	-	
		1840	0.30	822	0.47	0.69	965	0.65	1.15	1134	0.90	1.50	1266	1.13	-	-	
		1920	0.19	794	0.45	0.57	937	0.63	1.03	1107	0.88	1.39	1238	1.10	1.50	1279	1.18
4	GWSC048-H3,4,W Horizontal Airflow	1280	1.04	1077	0.62	1.30	1121	0.76	-	-	-	-	-	-	-	-	
		1360	0.94	1047	0.60	1.20	1091	0.74	-	-	-	-	-	-	-	-	
		1440	0.84	1016	0.58	1.10	1061	0.72	1.41	1287	1.03	-	-	-	-	-	
		1520	0.74	986	0.56	1.00	1030	0.70	1.31	1257	1.00	-	-	-	-	-	
		1600	0.64	956	0.55	0.90	1000	0.67	1.21	1226	0.98	1.45	1340	1.20	-	-	
		1680	0.54	925	0.53	0.80	970	0.65	1.11	1196	0.95	1.35	1310	1.17	1.43	1346	1.24
		1760	0.44	895	0.51	0.70	939	0.63	1.01	1166	0.93	1.25	1280	1.14	1.33	1315	1.21
		1840	0.34	865	0.49	0.60	909	0.61	0.91	1135	0.91	1.15	1249	1.11	1.23	1285	1.18
		1920	0.24	834	0.48	0.50	879	0.59	0.81	1105	0.88	1.05	1219	1.09	1.13	1255	1.16



**Table 44. Multispeed direct drive evaporator fan performance (oversized motor) 3 to 5 tons - no electric heat GWSC036/048/060H3,4,W (continued)**

Tons	Unit Model Number	cfm	External Static Pressure (in./water) & Motor Power (Bhp)														
			Speed Set 1			Speed Set 2			Speed Set 3			Speed Set 4			Speed Set 5		
			ESP	rpm	Bhp	ESP	rpm	Bhp	ESP	rpm	Bhp	ESP	rpm	Bhp	ESP	rpm	Bhp
5	GWSC060-H3,4,W Downflow Airflow	1600	1.23	905	0.52	1.50	1048	0.71	-	-	-	-	-	-	-	-	-
		1700	1.08	870	0.50	1.35	1014	0.68	-	-	-	-	-	-	-	-	-
		1800	0.94	836	0.48	1.21	979	0.66	-	-	-	-	-	-	-	-	-
		1900	0.79	801	0.46	1.06	944	0.64	1.50	1113	0.89	-	-	-	-	-	-
		2000	0.65	766	0.44	0.92	909	0.61	1.35	1079	0.86	1.50	1210	1.08	-	-	-
		2100	0.50	732	0.42	0.77	875	0.59	1.21	1044	0.83	1.36	1176	1.05	-	-	-
		2200	0.36	697	0.40	0.63	840	0.57	1.06	1009	0.80	1.21	1141	1.02	1.50	1182	0.84
		2300	0.21	662	0.38	0.48	805	0.54	0.92	975	0.78	1.07	1106	0.99	1.36	1147	1.06
		2400	0.07	628	0.36	0.34	771	0.52	0.77	940	0.75	0.92	1072	0.96	1.21	1113	1.03
5	GWSC060-H3,4,W Horizontal Airflow	1600	1.03	1075	0.61	1.21	1119	0.75	1.51	1316	1.05	-	-	-	-	-	-
		1700	0.91	1037	0.59	1.09	1081	0.73	1.38	1278	1.02	1.49	1350	1.20	-	-	-
		1800	0.78	999	0.57	0.96	1043	0.70	1.26	1240	0.99	1.36	1312	1.17	-	-	-
		1900	0.66	961	0.55	0.84	1005	0.68	1.13	1202	0.96	1.24	1274	1.14	1.43	1347	1.24
		2000	0.53	923	0.53	0.71	967	0.65	1.01	1164	0.93	1.11	1236	1.10	1.31	1309	1.21
		2100	0.41	885	0.51	0.59	929	0.63	0.88	1126	0.90	0.99	1198	1.07	1.18	1271	1.17
		2200	0.28	847	0.48	0.46	891	0.60	0.76	1088	0.87	0.86	1160	1.04	1.06	1233	1.14
		2300	0.16	809	0.46	0.34	853	0.58	0.63	1050	0.84	0.74	1122	1.00	0.93	1195	1.10
		2400	0.03	771	0.44	0.21	816	0.55	0.51	1013	0.81	0.61	1084	0.97	0.81	1157	1.07

**Notes:**

1. For 036 models, fan motor heat (MBh) = 2.72 x Fan Bhp + 0.16. For 048 & 060 models, fan motor heat (MBh) = 2.87 x Fan Bhp + 0.15.
2. Factory supplied motors, in commercial equipment, are definite purpose motors, specifically designed and tested to operate reliably and continuously at all cataloged conditions. Using the full horsepower range of our fan motors as shown in our tabular data will not result in nuisance tripping or premature motor failure. Our product's warranty will not be affected.
3. For electric heat applications minimum airflow is set to 320 cfm/ton, unless specified otherwise, values found in electric heat temp rise table.
4. Data includes pressure drop due to wet coil and filters.

**Table 45. Belt drive evaporator fan performance - 6 tons standard efficiency - GWSC072H3,H4,HW downflow airflow**

External Static Pressure (Inches of Water Gauge)																					
		0.10"	0.20"	0.30"	0.40"	0.50"	0.60"	0.70"	0.80"	0.90"	1.00"										
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
1-hp Standard Motor & Field Supplied Low Static Drive <sup>(a)</sup>											1-hp Standard Motor & Drive										
1920	-	-	581	0.28	636	0.34	685	0.39	732	0.45	775	0.50	815	0.55	854	0.60	892	0.66	927	0.71	
2160	-	-	626	0.37	677	0.43	725	0.49	769	0.55	810	0.61	849	0.67	887	0.73	922	0.79	956	0.84	
2400	620	0.42	672	0.49	720	0.55	766	0.61	807	0.68	847	0.75	885	0.81	921	0.88	956	0.95	989	1.01	
2640	672	0.55	719	0.62	765	0.69	808	0.76	848	0.83	886	0.90	923	0.98	957	1.05	991	1.12	1024	1.20	
2880	725	0.70	768	0.77	811	0.85	852	0.92	890	1.00	927	1.08	962	1.16	995	1.24	1028	1.32	1059	1.40	
External Static Pressure (Inches of Water Gauge)																					
		1.10"	1.20"	1.30"	1.40"	1.50"	1.60"	1.70"	1.80"	1.90"	2.00"										
RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1-hp Standard Motor & Drive											1-hp Standard Motor and Field Supplied High Static Drive or (2-hp Oversized Motor and Drive)										
962	0.77	995	0.83	1026	0.89	1057	0.95	1087	1.01	1115	1.07	1143	1.13	1171	1.19	1196	1.24	1222	1.30		
990	0.91	1023	0.97	1054	1.04	1085	1.11	1114	1.17	1142	1.24	1170	1.30	1197	1.37	1222	1.43	1249	1.50		



## Evaporator Fan Performance

**Table 45. Belt drive evaporator fan performance - 6 tons standard efficiency - GWSC072H3,H4,HW downflow airflow (continued)**

External Static Pressure (Inches of Water Gauge)																					
1.10"		1.20"		1.30"		1.40"		1.50"		1.60"		1.70"		1.80"		1.90"		2.00"			
RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP		
<b>1-hp Standard Motor &amp; Drive</b>						<b>1-hp Standard Motor and Field Supplied High Static Drive or (2-hp Oversized Motor and Drive)</b>															
1022	1.07	1051	1.13	1082	1.20	1112	1.28	1141	1.35	1170	1.42	1198	1.50	1224	1.57	1249	1.64	1276	1.72		
1055	1.27	1085	1.34	1114	1.41	1142	1.47	1169	1.54	1198	1.62	1226	1.70	1252	1.78	1278	1.86	1304	1.95		
1089	1.48	1119	1.56	1149	1.64	1176	1.72	1203	1.79	1229	1.87	1255	1.94	1280	2.01	1306	2.10	1331	2.19		

**Notes:**

- For standard evaporator fan speed (rpm), reference the standard motor and sheave/fan speed applicable table in the fan performance section.
- Data includes pressure drop due to wet coils and filters.
- To determine static pressure drop due to other options/accessories, refer to the applicable table in the fan performance section.
- 1-hp fan motor heat (MBh) = 2.829 x fan bhp + .4024. 2-hp fan motor heat (MBh) = 3.000 x fan bhp + .5000.
- Factory supplied motors, in commercial equipment, are definite purpose motors, specifically designed and tested to operate reliably and continuously at all cataloged conditions. Using the full horsepower range of our fan motors as shown in our tabulated data will not result in nuisance tripping or premature motor failure. Our product's warranty will not be affected.

(a) Field supplied fan sheave AK79 and belt AX38 required.

**Table 46. Belt drive evaporator fan performance - 6 tons standard efficiency - WSC072H3,H4,HW horizontal airflow**

External Static Pressure (Inches of Water Gauge)																					
0.10"		0.20"		0.30"		0.40"		0.50"		0.60"		0.70"		0.80"		0.90"		1.00"			
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
<b>1-hp Standard Motor &amp; Field Supplied Low Static Drive (a)</b>											<b>1-hp Standard Motor &amp; Drive</b>										
1920	581	0.31	627	0.36	679	0.43	731	0.49	781	0.56	829	0.64	873	0.71	916	0.79	956	0.87	997	0.96	
2160	631	0.42	679	0.48	728	0.56	773	0.62	820	0.70	865	0.78	907	0.85	948	0.94	987	1.02	1025	1.11	
2400	690	0.56	735	0.63	778	0.70	821	0.78	862	0.86	904	0.94	944	1.03	983	1.11	1021	1.21	1058	1.30	
2640	749	0.73	791	0.81	830	0.87	871	0.97	909	1.05	946	1.13	984	1.22	1022	1.32	1058	1.42	1093	1.51	
2880	809	0.92	849	1.02	886	1.09	922	1.17	959	1.29	993	1.37	1027	1.46	1062	1.56	1097	1.66	1131	1.77	

**External Static Pressure (Inches of Water Gauge)**

1.10"		1.20"		1.30"		1.40"		1.50"		1.60"		1.70"		1.80"		1.90"		2.00"	
RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
<b>1-hp Standard Motor &amp; Drive</b>						<b>2-hp Oversized Motor &amp; Drive</b>													
1034	1.05	1070	1.14	1105	1.24	1139	1.33	1171	1.42	1204	1.52	1234	1.62	1264	1.71	1292	1.81	1320	1.91
1062	1.21	1098	1.30	1133	1.41	1166	1.51	1199	1.61	1229	1.71	1261	1.82	1290	1.93	1318	2.03	1346	2.14
1093	1.40	1128	1.50	1161	1.60	1194	1.70	1227	1.81	1258	1.93	1288	2.04	1316	2.15	1346	2.27	—	—
1127	1.62	1161	1.72	1193	1.82	1225	1.93	1255	2.04	1287	2.16	1315	2.27	1345	—	—	—	—	—
1163	1.87	1196	1.98	1227	2.09	1257	2.20	—	—	—	—	—	—	—	—	—	—	—	—

**Notes:**

- For standard evaporator fan speed (rpm), reference the standard motor and sheave/fan speed applicable table in the fan performance section.
- Data includes pressure drop due to wet coils and filters.
- To determine static pressure drop due to other options/accessories, refer to the applicable table in the fan performance section.
- 1-hp fan motor heat (MBh) = 2.829 x fan bhp + .4024. 2-hp fan motor heat (MBh) = 3.000 x fan bhp + .5000.
- Factory supplied motors, in commercial equipment, are definite purpose motors, specifically designed and tested to operate reliably and continuously at all cataloged conditions. Using the full horsepower range of our fan motors as shown in our tabulated data will not result in nuisance tripping or premature motor failure. Our product's warranty will not be affected.

(a) Field supplied fan sheave AK79 and belt AX38 required.

## Evaporator Fan Performance

**Table 47. Direct drive evaporator fan performance - 7.5 tons standard efficiency Title 24 single zone VAV - GWSC092H3,H4,HW downflow airflow**

External Static Pressure (Inches of Water Gauge)																					
		0.10"		0.20"		0.30"		0.40"		0.50"		0.60"		0.70"		0.80"		0.90"		1.00"	
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
2400	713	0.21	763	0.26	807	0.32	851	0.39	892	0.45	924	0.50	957	0.56	991	0.62	1024	0.68	1054	0.74	
2700	792	0.28	834	0.34	880	0.41	914	0.47	955	0.54	992	0.62	1023	0.68	1051	0.74	1081	0.81	1112	0.88	
3000	871	0.36	908	0.43	949	0.51	987	0.58	1018	0.65	1054	0.73	1090	0.81	1120	0.89	1145	0.96	1171	1.02	
3300	950	0.47	985	0.54	1020	0.62	1058	0.71	1090	0.79	1118	0.86	1151	0.95	1184	1.04	1214	1.13	1240	1.21	
3600	1030	0.60	1062	0.67	1094	0.76	1128	0.84	1162	0.94	1191	1.03	1216	1.10	1245	1.20	1276	1.30	1305	1.40	

External Static Pressure (Inches of Water Gauge)																					
		1.10"		1.20"		1.30"		1.40"		1.50"		1.60"		1.70"		1.80"		1.90"		2.00"	
RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1084	0.79	1113	0.85	1141	0.90	1168	0.95	1194	1.00	1218	1.05	1243	1.10	1267	1.14	1290	1.19	1314	1.23		
1140	0.94	1169	1.01	1195	1.07	1222	1.13	1248	1.20	1273	1.25	1296	1.31	1321	1.37	1343	1.43	1366	1.48		
1198	1.10	1225	1.18	1252	1.25	1278	1.32	1303	1.40	1328	1.47	1351	1.54	1375	1.61	1398	1.67	1419	1.74		
1262	1.28	1285	1.35	1309	1.43	1335	1.52	1360	1.60	1384	1.69	1407	1.77	1429	1.84	1452	1.92	1475	2.00		
1331	1.49	1355	1.58	1375	1.65	1396	1.74	1418	1.82	1441	1.91	1464	2.01	1487	2.10	1509	2.19	1530	2.27		

**Notes:**

1. For standard evaporator fan speed (rpm), reference the standard motor and sheave/fan speed applicable table in the fan performance section.
2. Data includes pressure drop due to wet coils and filters.
3. To determine static pressure drop due to other options/accessories, refer to the applicable table in the fan performance section.
4. Direct drive fan motor heat (MBh) = 2.7912 x fan bhp + 0.1388
5. Factory supplied motors, in commercial equipment, are definite purpose motors, specifically designed and tested to operate reliably and continuously at all cataloged conditions. Using the full horsepower range of our fan motors as shown in our tabulated data will not result in nuisance tripping or premature motor failure. Our product's warranty will not be affected.

**Table 48. Direct drive evaporator fan performance - 7.5 tons standard efficiency Title 24 single zone VAV - GWSC092H3,H4,HW horizontal airflow**

External Static Pressure (Inches of Water Gauge)																					
		0.10"		0.20"		0.30"		0.40"		0.50"		0.60"		0.70"		0.80"		0.90"		1.00"	
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
2400	720	0.21	769	0.27	817	0.33	856	0.39	894	0.44	929	0.50	964	0.56	997	0.62	1028	0.69	1060	0.75	
2700	800	0.29	841	0.34	888	0.42	927	0.48	962	0.55	995	0.61	1027	0.67	1058	0.74	1088	0.81	1118	0.88	
3000	880	0.38	917	0.44	956	0.51	999	0.59	1032	0.67	1063	0.74	1094	0.81	1123	0.88	1151	0.95	1178	1.02	
3300	961	0.49	994	0.55	1028	0.63	1067	0.72	1104	0.80	1133	0.88	1162	0.96	1190	1.04	1218	1.12	1243	1.19	
3600	1042	0.62	1073	0.69	1104	0.77	1136	0.85	1173	0.95	1205	1.05	1233	1.13	1259	1.22	1285	1.30	1310	1.39	

External Static Pressure (Inches of Water Gauge)																					
		1.10"		1.20"		1.30"		1.40"		1.50"		1.60"		1.70"		1.80"		1.90"		2.00"	
RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1090	0.82	1119	0.89	1147	0.96	1174	1.03	1200	1.10	1226	1.18	1251	1.25	1276	1.33	1299	1.41	1323	1.49		
1147	0.95	1175	1.02	1202	1.10	1228	1.17	1254	1.25	1279	1.33	1304	1.41	1327	1.49	1350	1.57	1374	1.66		
1206	1.10	1233	1.18	1259	1.26	1285	1.34	1309	1.42	1333	1.50	1359	1.59	1381	1.67	1405	1.76	1427	1.85		
1269	1.27	1294	1.35	1320	1.44	1344	1.52	1367	1.61	1391	1.70	1414	1.78	1438	1.88	1460	1.97	1482	2.06		



## Evaporator Fan Performance

**Table 48. Direct drive evaporator fan performance - 7.5 tons standard efficiency Title 24 single zone VAV - GWSC092H3,H4,HW horizontal airflow (continued)**

External Static Pressure (Inches of Water Gauge)																					
1.10"		1.20"		1.30"		1.40"		1.50"		1.60"		1.70"		1.80"		1.90"		2.00"			
RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP		
1335	1.48	1359	1.56	1382	1.64	1405	1.73	1428	1.82	1451	1.91	1473	2.01	1496	2.10	1518	2.20	1538	2.29		

**Notes:**

1. For standard evaporator fan speed (rpm), reference the standard motor and sheave/fan speed applicable table in the fan performance section.
2. Data includes pressure drop due to wet coils and filters.
3. To determine static pressure drop due to other options/accessories, refer to the applicable table in the fan performance section.
4. Direct drive fan motor heat (MBh) = 2.8623 x fan bhp + 0.1504
5. Factory supplied motors, in commercial equipment, are definite purpose motors, specifically designed and tested to operate reliably and continuously at all cataloged conditions. Using the full horsepower range of our fan motors as shown in our tabulated data will not result in nuisance tripping or premature motor failure. Our product's warranty will not be affected.

**Table 49. Direct drive evaporator fan performance - 10 tons standard efficiency - WSC120H3,H4,HW downflow airflow**

External Static Pressure (Inches of Water Gauge)																					
0.10"		0.20"		0.30"		0.40"		0.50"		0.60"		0.70"		0.80"		0.90"		1.00"			
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
3200	942	0.47	978	0.54	1017	0.63	1053	0.71	1082	0.78	1116	0.87	1150	0.96	1181	1.04	1207	1.12	1231	1.19	
3600	1051	0.65	1083	0.73	1116	0.81	1152	0.91	1183	1.00	1209	1.08	1237	1.17	1268	1.27	1298	1.38	1325	1.47	
4000	1161	0.87	1190	0.96	1219	1.05	1249	1.15	1282	1.26	1310	1.36	1334	1.45	1357	1.54	1385	1.65	1412	1.76	
4400	1272	1.13	1298	1.23	1324	1.33	1351	1.44	1379	1.54	1409	1.67	1435	1.79	1457	1.88	1478	1.98	1501	2.08	
4800	1383	1.45	1407	1.56	1431	1.66	1455	1.78	1480	1.89	1506	2.01	1532	2.14	1558	2.28	1579	2.39	1599	2.49	

External Static Pressure (Inches of Water Gauge)																					
1.10"		1.20"		1.30"		1.40"		1.50"		1.60"		1.70"		1.80"		1.90"		2.00"			
RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP		
1254	1.26	1282	1.35	1307	1.43	1332	1.51	1357	1.59	1381	1.66	1404	1.74	1427	1.82	1449	1.89	1471	1.96		
1350	1.56	1372	1.64	1392	1.72	1412	1.80	1437	1.90	1460	1.99	1483	2.08	1504	2.17	1526	2.26	1548	2.35		
1440	1.88	1464	1.98	1488	2.08	1508	2.18	1527	2.26	1545	2.35	1564	2.44	1586	2.55	1606	2.65	1627	2.75		
1526	2.20	1552	2.33	1576	2.46	1600	2.58	1621	2.69	1642	2.80	1660	2.90	-	-	-	-	-	-		
1618	2.60	1639	2.71	1663	2.85	-	-	-	-	-	-	-	-	-	-	-	-	-	-		

**Notes:**

1. For standard evaporator fan speed (rpm), reference the standard motor and sheave/fan speed applicable table in the fan performance section.
2. Data includes pressure drop due to wet coils and filters.
3. To determine static pressure drop due to other options/accessories, refer to the applicable table in the fan performance section.
4. Direct drive fan motor heat (MBh) = 2.8623 x fan bhp + 0.1504
5. Factory supplied motors, in commercial equipment, are definite purpose motors, specifically designed and tested to operate reliably and continuously at all cataloged conditions. Using the full horsepower range of our fan motors as shown in our tabulated data will not result in nuisance tripping or premature motor failure. Our product's warranty will not be affected.

**Table 50. Direct drive evaporator fan performance - 10 tons standard efficiency - WSC120H3,H4,HW horizontal airflow**

External Static Pressure (Inches of Water Gauge)																					
0.10"		0.20"		0.30"		0.40"		0.50"		0.60"		0.70"		0.80"		0.90"		1.00"			
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
3200	953	0.48	988	0.55	1027	0.64	1067	0.73	1098	0.80	1128	0.88	1157	0.96	1186	1.03	1213	1.11	1239	1.19	
3600	1064	0.67	1095	0.75	1126	0.83	1163	0.93	1198	1.03	1226	1.11	1253	1.20	1280	1.29	1306	1.37	1331	1.46	
4000	1175	0.90	1203	0.98	1231	1.07	1260	1.17	1294	1.28	1327	1.39	1353	1.49	1377	1.58	1401	1.68	1425	1.78	
4400	1288	1.18	1313	1.27	1338	1.36	1364	1.46	1392	1.57	1422	1.70	1452	1.82	1477	1.93	1500	2.04	1522	2.14	
4800	1400	1.51	1423	1.61	1446	1.71	1470	1.82	1494	1.93	1519	2.05	1547	2.18	1575	2.32	1600	2.45	1622	2.56	

## Evaporator Fan Performance

**Table 50. Direct drive evaporator fan performance - 10 tons standard efficiency - WSC120H3,H4,HW horizontal airflow (continued)**

External Static Pressure (Inches of Water Gauge)																			
1.10"		1.20"		1.30"		1.40"		1.50"		1.60"		1.70"		1.80"		1.90"		2.00"	
RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1265	1.27	1291	1.35	1316	1.43	1342	1.52	1365	1.60	1389	1.69	1412	1.78	1435	1.87	1458	1.96	1479	2.05
1355	1.54	1378	1.63	1401	1.72	1425	1.81	1447	1.90	1471	2.00	1492	2.09	1515	2.19	1536	2.28	1557	2.38
1448	1.87	1471	1.97	1494	2.07	1515	2.16	1536	2.26	1557	2.36	1578	2.46	1598	2.56	1619	2.66	1640	2.77
1543	2.24	1565	2.35	1586	2.46	1607	2.56	1628	2.67	1647	2.77	1667	2.88	1686	2.98	-	-	-	-
1642	2.68	1662	2.79	1682	2.91	1701	3.02	-	-	-	-	-	-	-	-	-	-	-	-

**Notes:**

- For standard evaporator fan speed (rpm), reference the standard motor and sheave/fan speed applicable table in the fan performance section.
- Data includes pressure drop due to wet coils and filters.
- To determine static pressure drop due to other options/accessories, refer to the applicable table in the fan performance section.
- Direct drive fan motor heat (MBh) = 2.8623 x fan bhp + 0.1504
- Factory supplied motors, in commercial equipment, are definite purpose motors, specifically designed and tested to operate reliably and continuously at all cataloged conditions. Using the full horsepower range of our fan motors as shown in our tabulated data will not result in nuisance tripping or premature motor failure. Our product's warranty will not be affected.

**Table 51. Evaporator fan performance 12.5 tons GWS\*150E downflow or horizontal**

External Static Pressure (Inches of Water Gauge)																				
0.10"		0.20"		0.30"		0.40"		0.50"		0.60"		0.70"		0.80"		0.90"		1.00"		
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
<b>3HP Standard Motor &amp; Low Static Drive Accessory</b>										<b>3HP Standard Motor &amp; Drive</b>										
4000	—	—	382	0.56	420	0.66	459	0.79	496	0.91	531	1.05	564	1.19	595	1.34	625	1.50	654	1.67
4500	—	—	410	0.73	446	0.85	479	0.97	514	1.11	548	1.26	578	1.40	610	1.56	639	1.72	666	1.89
5000	400	0.80	440	0.95	473	1.07	504	1.20	534	1.34	566	1.50	597	1.66	625	1.81	653	1.98	681	2.16
5500	431	1.03	470	1.19	502	1.34	531	1.48	559	1.62	586	1.77	615	1.95	643	2.12	670	2.30	695	2.47
6000	463	1.30	500	1.48	531	1.65	559	1.80	585	1.95	611	2.11	636	2.28	662	2.46	689	2.66	714	2.85
										<b>3HP Standard Motor &amp; High Static Drive Accessory</b>										
External Static Pressure (Inches of Water Gauge)																				
1.10"		1.20"		1.30"		1.40"		1.50"		1.60"		1.70"		1.80"		1.90"		2.00"		
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
<b>3HP Standard Motor &amp; High Static Drive Accessory</b>										<b>5HP Oversized Motor &amp; Drive</b>										
4000	682	1.83	708	1.99	734	2.16	758	2.32	782	2.49	804	2.66	826	2.83	847	3.01	867	3.19	886	3.38
4500	693	2.07	719	2.25	745	2.44	769	2.62	793	2.80	815	2.99	838	3.17	859	3.36	880	3.55	900	3.74
5000	707	2.34	732	2.53	757	2.72	780	2.92	804	3.13	826	3.33	848	3.54	870	3.74	891	3.95	911	4.15
5500	721	2.66	747	2.86	771	3.05	794	3.26	816	3.46	838	3.68	860	3.90	881	4.13	902	4.36	922	4.58
6000	738	3.04	760	3.22	784	3.43	808	3.65	831	3.86	852	4.08	873	4.30	893	4.53	913	4.77	933	5.01

**Notes:**

- Fan motor heat (MBH) = 3.15 x Fan BHP.
- Data includes pressure drop due to wet coils and filters.
- No accessories or options are included in pressure drop data.
- Refer to Static Pressure Drop table to determine add'l static pressure drop due to other options/accessories.
- Factory supplied motors, in commercial equipment, are definite purpose motors, specifically designed and tested to operate reliably and continuously at all cataloged conditions. Using the full horsepower range of our fan motors as shown in our tabulated data will not result in nuisance tripping or premature motor failure. Our product's warranty will not be affected.

**Table 52. Evaporator fan performance 15 tons GWS\*180E downflow or horizontal**

External Static Pressure (Inches of Water Gauge)																				
0.10"		0.20"		0.30"		0.40"		0.50"		0.60"		0.70"		0.80"		0.90"		1.00"		
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
<b>3HP Std Motor &amp; Low Static Drive Accessory</b>										<b>3HP Standard Motor Drive</b>										
4800	397	0.75	435	0.88	469	1.00	501	1.13	533	1.28	566	1.43	596	1.59	625	1.74	655	1.92	682	2.09
5400	435	1.02	473	1.18	504	1.32	533	1.46	562	1.60	590	1.76	620	1.94	648	2.11	674	2.28	700	2.46
6000	475	1.36	510	1.53	541	1.70	568	1.85	594	2.01	620	2.17	645	2.34	672	2.53	698	2.73	723	2.92
6600	514	1.76	549	1.96	578	2.15	604	2.33	629	2.49	653	2.66	676	2.84	699	3.02	722	3.23	747	3.44
7200	555	2.25	588	2.46	616	2.68	641	2.89	665	3.06	687	3.24	709	3.43	730	3.62	751	3.82	772	4.02
										<b>5HP Oversized Motor &amp; Field Supplied Fan Sheave (a)</b>										



## Evaporator Fan Performance

Table 52. Evaporator fan performance 15 tons GWS\*180E downflow or horizontal (continued)

		External Static Pressure (Inches of Water Gauge)																				
		1.10"		1.20"		1.30"		1.40"		1.50"		1.60"		1.70"		1.80"		1.90"		2.00"		
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
<b>3HP Standard Motor &amp; High Static Drive Accessory</b>											<b>5HP Oversized Motor &amp; Drive</b>											
4800	708	2.27	734	2.46	758	2.66	782	2.86	806	3.06	829	3.25	850	3.45	872	3.65	893	3.85	913	4.04		
5400	727	2.65	752	2.85	776	3.05	799	3.25	821	3.47	843	3.69	865	3.91	886	4.13	907	4.36	927	4.58		
6000	747	3.11	770	3.30	794	3.51	817	3.73	839	3.95	861	4.17	881	4.40	902	4.63	922	4.87	942	5.12		
6600	770	3.66	793	3.87	815	4.08	835	4.28	857	4.51	879	4.74	900	4.98	—	—	—	—	—	—		
7200	794	4.25	817	4.49	839	4.73	860	4.96	—	—	—	—	—	—	—	—	—	—	—	—		

**Notes:**

1. Fan motor heat (MBH) = 3.15 x Fan BHP.
2. Data includes pressure drop due to wet coils and filters.
3. No accessories or options are included in pressure drop data.
4. Refer to Static Pressure Drop table to determine add'l static pressure drop due to other options/accessories.
5. Factory supplied motors, in commercial equipment, are definite purpose motors, specifically designed and tested to operate reliably and continuously at all cataloged conditions. Using the full horsepower range of our fan motors as shown in our tabulated data will not result in nuisance tripping or premature motor failure. Our product's warranty will not be affected.

(a) 5-hp Oversized Motor & Field Supplied Fan Sheave BK160 x 1 3/16 with BX75 (DF) or BX90 (HZ) Belt Required.

## Evaporator Fan Performance

**Table 53. Evaporator fan performance 20 tons GWS\*240E downflow or horizontal**

External Static Pressure (Inches of Water Gauge)																					
		0.10"		0.20"		0.30"		0.40"		0.50"		0.60"		0.70"		0.80"		0.90"		1.00"	
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
5HP Standard Motor Drive & Low Static Drive Accessory											5HP Standard Motor Drive										
4800	—	—	—	—	507	1.72	535	1.88	560	2.07	584	2.27	607	2.46	631	2.66	654	2.86	677	3.07	
5400	—	—	519	2.10	549	2.30	576	2.48	600	2.67	623	2.88	644	3.10	665	3.32	686	3.54	707	3.76	
6000	531	2.50	563	2.77	592	3.00	617	3.21	641	3.41	663	3.62	684	3.86	704	4.10	723	4.34	742	4.58	
6600	578	3.26	607	3.56	634	3.83	659	4.08	683	4.31	704	4.54	724	4.77	744	5.01	762	5.27	779	5.54	
7200	626	4.19	653	4.51	679	4.81	703	5.10	725	5.36	746	5.62	765	5.85	784	6.11	802	6.36	819	6.64	
External Static Pressure (Inches of Water Gauge)																					
		1.10"		1.20"		1.30"		1.40"		1.50"		1.60"		1.70"		1.80"		1.90"		2.00"	
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
5HP Standard Motor Drive											7.5HP Oversized Motor & Drive										
4800	699	3.30	721	3.52	742	3.75	762	3.98	780	4.20	798	4.42	815	4.66	832	4.89	849	5.12	866	5.36	
5400	727	3.98	748	4.22	768	4.46	789	4.71	808	4.97	827	5.22	845	5.48	861	5.73	878	5.98	893	6.24	
6000	760	4.82	779	5.07	798	5.32	816	5.57	834	5.83	853	6.11	871	6.38	889	6.67	906	6.95	923	7.23	
6600	797	5.81	814	6.07	831	6.34	848	6.60	865	6.88	882	7.15	898	7.42	—	—	—	—	—	—	
7200	836	6.93	852	7.22	868	7.51	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
<b>7.5HP Oversized Motor &amp; Fld Supp Motor Sheave<sup>(a)</sup></b>																					

**Notes:**

1. Fan motor heat (MBH) = 3.15 x Fan BHP.
2. Data includes pressure drop due to wet coils and filters.
3. No accessories or options are included in pressure drop data.
4. Refer to Static Pressure Drop table to determine add'l static pressure drop due to other options/accessories.
5. Factory supplied motors, in commercial equipment, are definite purpose motors, specifically designed and tested to operate reliably and continuously at all cataloged conditions. Using the full horsepower range of our fan motors as shown in our tabulated data will not result in nuisance tripping or premature motor failure. Our product's warranty will not be affected.

<sup>(a)</sup> 7.5-hp Oversized Motor & Field Supplied Motor Sheave 1VP50 x 1 1/8 Required.



# Unit Fan Performance

**Table 54. Standard motor & sheave/fan speed (rpm)**

Tons	Unit Model Number	6 Turns Open	5 Turns Open	4 Turns Open	3 Turns Open	2 Turns Open	1 Turns Open	Closed
6	GWSC072H3,4,W	N/A	805	865	925	985	1045	1105
12.5	GWS*150E3,4,W	500	537	574	611	648	685	N/A
15	GWS*180E3,4,W	500	537	574	611	648	685	N/A
20	GWS*240E3,4,W	605	650	695	739	784	829	N/A

**Note:** Factory set at 3 turns open.

**Table 55. Standard motor & low static fan drive/fan speed (rpm)**

Tons	Unit Model Number	6 Turns Open	5 Turns Open	4 Turns Open	3 Turns Open	2 Turns Open	1 Turns Open	Closed
6	GWSC072H3,4,W	N/A	581	626	671	716	761	805
12.5	GWS*150E3,4,W	379	407	435	463	491	519	N/A
15	GWS*180E3,4,W	379	407	435	463	491	519	N/A
20	GWS*240E3,4,W	506	544	581	619	656	694	N/A

**Note:** Factory set at 3 turns open.

**Table 56. Standard motor & high static drive fan speed (rpm)**

Tons	Unit Model Number	6 Turns Open	5 Turns Open	4 Turns Open	3 Turns Open	2 Turns Open	1 Turns Open	Closed
12.5	GWS*150E3,4,W	685	722	759	796	833	870	N/A
15	GWS*180E3,4,W	685	722	759	796	833	870	N/A

**Note:** Factory set at 3 turns open.

**Table 57. Oversized motor & drive/fan speed (rpm)**

Tons	Unit Model Number	6 Turns Open	5 Turns Open	4 Turns Open	3 Turns Open	2 Turns Open	1 Turns Open	Closed
6	GWSC072H3,4,W	N/A	1110	1183	1256	1329	1402	1475
12.5	GWS*150E3,4,W	695	747	798	850	901	953	N/A
15	GWS*180E3,4,W	695	747	798	850	901	953	N/A
20	GWS*240E3,4,W	694	739	784	829	874	919	N/A

**Note:** Factory set at 3 turns open.

**Table 58. Static pressure drop through accessories (inches water column) 3 to 10 tons**

Tons	Unit Model Number	cfm	Standard Filters	2" MERV 8 Filter	2" MERV 13 Filter	Economizer with OA/RA Dampers					
						100% OA	100% RA	100% OA	100% RA	100% OA	100% RA
						Downflow		Low Leak		Horizontal	
3	GWSC036H	960	0.02	0.03	0.03	0.05	0.01	0.11	0.04	0.05	0.01
3	GWSC036H	1200	0.03	0.05	0.04	0.07	0.02	0.17	0.07	0.07	0.01
3	GWSC036H	1440	0.03	0.06	0.04	0.10	0.03	0.23	0.09	0.10	0.01
4	GWSC048H	1280	0.03	0.06	0.04	0.10	0.03	0.23	0.09	0.09	0.01
4	GWSC048H	1600	0.04	0.07	0.07	0.13	0.04	0.13	0.08	0.13	0.02
4	GWSC048H	1920	0.06	0.10	0.08	0.17	0.06	0.20	0.09	0.17	0.02
5	GWSC060H	1600	0.03	0.06	0.05	0.09	0.01	0.14	0.08	0.05	0.01
5	GWSC060H	2000	0.05	0.08	0.07	0.11	0.01	0.22	0.10	0.07	0.02
5	GWSC060H	2400	0.07	0.10	0.10	0.12	0.03	0.31	0.11	0.09	0.03
6	GWSC072H	1920	0.04	0.07	0.1	0.1	0.01	0.2	0.09	0.06	0.02
6	GWSC072H	2400	0.06	0.09	0.13	0.11	0.02	0.31	0.11	0.08	0.02
6	GWSC072H	2880	0.09	0.12	0.15	0.13	0.04	0.46	0.19	0.1	0.04
7.5	GWSC092H	2400	0.04	0.06	0.12	0.11	0.02	0.2	0.09	0.08	0.02



**Table 58. Static pressure drop through accessories (inches water column) 3 to 10 tons (continued)**

Tons	Unit Model Number	cfm	Standard Filters	2" MERV 8 Filter	2" MERV 13 Filter	Economizer with OA/RA Dampers							
						100% OA		100% RA		100% OA		100% RA	
						Downflow		Low Leak		Horizontal			
7.5	GWSC092H	3000	0.06	0.09	0.13	0.14	0.05	0.31	0.11	0.12	0.05		
7.5	GWSC092H	3600	0.09	0.13	0.15	0.21	0.07	0.46	0.19	0.25	0.08		
10	GWSC120H	3200	0.07	0.1	0.14	0.17	0.05	0.42	0.18	0.14	0.05		
10	GWSC120H	4000	0.11	0.15	0.16	0.26	0.07	0.63	0.21	0.3	0.08		
10	GWSC120H	4800	0.16	0.2	0.18	0.34	0.09	0.91	0.34	0.35	0.1		
Tons	Unit Model Number	cfm	Electric Heater Accessory (kW)										
			5-6	9-18	22-36	54							
3	GWSC036H	960	0.01	0.02	0.02	—							
3	GWSC036H	1200	0.02	0.03	0.03	—							
3	GWSC036H	1440	0.03	0.04	0.04	—							
4	GWSC048H	1280	0.02	0.03	0.03	—							
4	GWSC048H	1600	0.04	0.05	0.05	—							
4	GWSC048H	1920	0.05	0.06	0.08	—							
5	GWSC060H	1600	0.01	0.01	0.02	—							
5	GWSC060H	2000	0.02	0.01	0.03	—							
5	GWSC060H	2400	0.03	0.02	0.04	—							
6	GWSC072H	1920	—	0.01	0.02	—							
6	GWSC072H	2400	—	0.02	0.03	—							
6	GWSC072H	2880	—	0.03	0.05	—							
7.5	GWSC092H	2400	—	0.02	0.02	—							
7.5	GWSC092H	3000	—	0.03	0.03	—							
7.5	GWSC092H	3600	—	0.04	0.05	—							
10	GWSC120H	3200	—	0.02	0.03	0.05							
10	GWSC120H	4000	—	0.02	0.03	0.05							
10	GWSC120H	4800	—	0.03	0.04	0.06							

**Notes:**

1. Low Leak - Downflow only.
2. Tested with standard filters. Difference in pressure drop should be considered when utilizing optional 2" MERV 8 and MERV 13 filters.
3. Electric heaters restricted on applications below 320 cfm/ton.
4. OA = Outside Air and RA = Return Air.
5. Nominal kW ratings at 240, 480, 600 volts.

**Table 59. Static pressure drop through accessories (inches water column) 12.5 to 20 tons**

Tons	Unit Model Number	cfm	Standard Filters	2" MERV 8 Filter	2" MERV 13 Filter	Standard Economizer with OA/RA Dampers		Low Leak Economizer with OA/RA Dampers	
						100% OA	100% RA	100% OA	100% RA
12.5	GWSH150E	4000	0.02	0.04	0.08	0.20	0.02	0.25	0.04
12.5	GWSH150E	5000	0.03	0.05	0.11	0.26	0.03	0.39	0.07
12.5	GWSH150E	6000	0.05	0.07	0.14	0.35	0.04	0.57	0.10
12.5	GWSD150E	4000	0.02	0.04	0.08	0.20	0.02	0.16	0.10
12.5	GWSD150E	5000	0.03	0.05	0.11	0.26	0.03	0.24	0.16
12.5	GWSD150E	6000	0.05	0.07	0.14	0.35	0.04	0.33	0.24
15	GWSH180E	4800	0.03	0.05	0.10	0.24	0.03	0.36	0.06
15	GWSH180E	6000	0.05	0.07	0.14	0.35	0.04	0.57	0.10
15	GWSH180E	7200	0.07	0.09	0.17	0.42	0.05	0.81	0.14
15	GWSD180E	4800	0.03	0.05	0.10	0.24	0.03	0.22	0.15
15	GWSD180E	6000	0.05	0.07	0.14	0.35	0.04	0.33	0.24
15	GWSD180E	7200	0.07	0.09	0.17	0.42	0.05	0.45	0.35



## Unit Fan Performance

**Table 59. Static pressure drop through accessories (inches water column) 12.5 to 20 tons (continued)**

Tons	Unit Model Number	cfm	Standard Filters	2" MERV 8 Filter	2" MERV 13 Filter	Standard Economizer with OA/RA Dampers		Low Leak Economizer with OA/RA Dampers	
<b>100%</b>	<b>100% RA</b>	<b>100%</b>	<b>100% RA</b>						
20	GWSH240E	6400	0.04	0.01	0.11	0.22	0.04	0.64	0.11
20	GWSH240E	8000	0.06	0.09	0.14	0.31	0.05	1.00	0.17
20	GWSH240E	9600	0.09	0.12	0.18	0.44	0.07	1.44	0.24
20	GWSD240E	6400	0.05	0.08	0.12	0.22	0.04	0.37	0.27
20	GWSD240E	8000	0.08	0.10	0.15	0.31	0.05	0.54	0.43
20	GWSD240E	9600	0.11	0.14	0.19	0.44	0.07	0.75	0.62

Tons	Unit Model Number	cfm	Electric Heater Accessory (kW)				
			5-12	14-23	36	54	72
12.5	GWSH150E	4000	—	0.03	0.03	0.04	—
12.5	GWSH150E	5000	—	0.04	0.05	0.06	—
12.5	GWSH150E	6000	—	0.06	0.07	0.09	—
12.5	GWSD150E	4000	—	0.03	0.03	0.04	—
12.5	GWSD150E	5000	—	0.04	0.05	0.06	—
12.5	GWSD150E	6000	—	0.06	0.07	0.09	—
15	GWSH180E	4800	—	0.04	0.04	0.05	—
15	GWSH180E	6000	—	0.06	0.07	0.08	—
15	GWSH180E	7200	—	0.09	0.10	0.12	—
15	GWSD180E	4800	—	0.04	0.04	0.05	—
15	GWSD180E	6000	—	0.06	0.07	0.08	—
15	GWSD180E	7200	—	0.09	0.10	0.12	—
20	GWSH240E	6400	—	—	0.06	0.08	0.09
20	GWSH240E	8000	—	—	0.10	0.12	0.14
20	GWSH240E	9600	—	—	0.14	0.17	0.20
20	GWSD240E	6400	—	—	0.06	0.08	0.09
20	GWSD240E	8000	—	—	0.10	0.12	0.14
20	GWSD240E	9600	—	—	0.14	0.17	0.20

**Notes:**

1. Nominal kW ratings at 240, 480, 600 volts.
2. Tested with standard filters. Difference in pressure drop should be considered when utilizing optional 2" MERV 8 and MERV 13 filters.
3. OA = Outside Air and RA = Return Air.



# Heating Performance

**Table 60. Auxiliary electric heat capacity 3 to 10 tons**

Tons	Unit Model Number	Total (a)		No. of Stages	Stage 1		Stage 2	
		kw Input (b)	MBh Output		kw Input	MBh Output	kw Input	MBh Output
3	GWSC036H3,4,W	6.0	20.48	1	6.0	20.48	—	—
3	GWSC036H3,4,W	12.0	40.97	2	6.0	20.48	6.0	20.48
3	GWSC036H3,4,W	17.4	59.40	2	8.7	29.7	8.7	29.70
4	GWSC048H3,4,W	6.0	20.48	1	6.0	20.48	—	—
4	GWSC048H3,4,W	12.0	40.97	2	6.0	20.48	6.0	20.48
4	GWSC048H3,4,W	17.4	59.40	2	8.7	29.7	8.7	29.70
5	GWSC060H3,4,W	6.0	20.48	1	6.0	20.48	—	—
5	GWSC060H3,4,W	12.0	40.97	2	6.0	20.48	6.0	20.48
5	GWSC060H3,4,W	17.4	59.40	2	8.7	29.7	8.7	29.70
5	GWSC060H3,4,W	23.0	78.52	2	8.7	29.7	14.3	48.82
6	WSC072H3,4	9.0	30.73	1	9.0	30.73	—	—
6	WSC072H3,4,W	18.0	61.45	1	18.0	61.45	—	—
6	WSC072H3,4,W	27.0	92.18	2	18.0	61.45	9.0	30.73
6	WSC072H3,4,W	36.0	122.90	2	18.0	61.45	18.0	61.45
7.5	WSC092H3,4	9.0	30.73	1	9.0	30.73	—	—
7.5	WSC092H3,4,W	18.0	61.45	1	18.0	61.45	—	—
7.5	WSC092H3,4,W	27.0	92.18	2	18.0	61.45	9.0	30.73
7.5	WSC092H3,4,W	36.0	122.90	2	18.0	61.45	18.0	61.45
10	WSC120H3,4,W	18.0	61.45	1	18.0	61.45	—	—
10	WSC120H3,4,W	27.0	92.18	2	18.0	61.45	9.0	30.73
10	WSC120H3,4,W	36.0	122.90	2	18.0	61.45	18.0	61.45
10	WSC120H3,4,W	54.0	184.36	2	36.0	122.9	18.0	61.45

(a) Heaters are rated at 240V,380V,480V and 600V. For other than rated voltage, CAP= (voltage/rated voltage)<sup>2</sup> x rated cap.

(b) All input/output does not include indoor fan power or heat.

**Table 61. Auxiliary electric heat capacity 12.5 to 20 tons**

Tons	Unit Model Number	Total(a)		No. of Stages	Stage 1		Stage 2	
		kw Input(b)	MBh Output		kw Input	MBh Output	kw Input	MBh Output
12.5, 15	GWS*150E3, E4, EW GWS*180E3, E4, EW	18	61	1	18	61	-	-
12.5, 15	GWS*150E3, E4, EW GWS*180E3, E4, EW	36	123	2	18	61	18	61
12.5, 15	GWS*150E3, E4, EW GWS*180E3, E4, EW	54	184	2	36	123	18	61
20	GWS* 240E3, E4, EW	36	123	2	18	61	18	61
20	GWS* 240E3, E4, EW	54	184	2	36	123	18	61
20	GWS* 240E3, E4, EW	72	246	2	36	123	36	123

(a) Heaters are rated at 240V,380V,480V and 600V. For other than rated voltage, CAP= (voltage/rated voltage)<sup>2</sup> x rated cap.

(b) All input/output does not include indoor fan power or heat.

**Table 62. Electric heater voltage correction factors (applicable to auxiliary heat capacity)**

Nominal Voltage	Distribution Voltage	Capacity Multiplier
240	208	0.75
240	230	0.92



## Heating Performance

**Table 62. Electric heater voltage correction factors (applicable to auxiliary heat capacity) (continued)**

Nominal Voltage	Distribution Voltage	Capacity Multiplier
240	240	1.00
480	440	0.84
480	460	0.92
480	480	1.00
600	540	0.81
600	575	0.92
600	600	1.00

**Table 63. Air temperature rise across electric heaters (°F) 3 to 5 tons**

kW	Stages	3 Tons <sup>(a)</sup> 1200 cfm	4 Tons 1600 cfm	5 Tons <sup>(b)</sup> 2000 cfm
		Three Phase GWSC036H3,4,W	Three Phase GWSC048H3,4,W	Three Phase GWSC060H3,4,W
6.00	1	18.5	10.5	11.4
12.00	2	36.2	22.3	21.5
17.40	2	48.2	33.0	30.0
17.60	2	—	—	—
23.00	2	—	—	38.8

**Notes:**

- For minimum design airflow, see airflow performance table for each unit.
- To calculate temp rise at different airflow, use the following formula: Temp. rise across electric heater = kWx3414/1.08xCFM.

<sup>(a)</sup> The minimum allowable airflow for a 3 ton with a 17.4 kW heater is 1080 cfm.

<sup>(b)</sup> The minimum allowable airflow for a 5 ton unit with a 23.0 kW heater is 1900 cfm.

**Table 64. Air temperature rise across electric heaters (°F) 6 to 10 tons**

kW	Stages	6 Tons <sup>(a)</sup> 2000 cfm	7.5 Tons 3000 cfm	10 Tons <sup>(b)</sup> 4000 cfm
		Three Phase WSC072H3,4,W	Three Phase WSC092H3,4,W	Three Phase WSC120H3,4,W
9.00	1	14.2	9.5	—
18.00	1	28.5	19.0	14.2
27.00	2	42.7	28.5	21.3
36.00	2	56.9	37.9	28.5
54.00	2	—	—	42.7

**Notes:**

- For minimum design airflow, see airflow performance table for each unit.
- To calculate temp rise at different airflow, use the following formula: Temp. rise across electric heater = kWx3414/1.08xCFM.

<sup>(a)</sup> Minimum allowable airflow with a 36 kW heater for the WSC072H is 2400 cfm in the horizontal duct configuration.

<sup>(b)</sup> Minimum allowable airflow with a 54 kW heater for the WSC120H is 4000 cfm.

**Table 65. Air temperature rise across electric heaters (°F) 12.5 to 20 tons**

kW	Stages	12.5 Tons 5000 cfm	15 Tons 6000 cfm	20 Tons 8000 cfm
		Three Phase GWS*150E	Three Phase GWS*180E	Three Phase GWS*240E
9.00	1	-	-	-
17.30	1	-	-	-
18.00	1	11.4	9.5	-
27.00	2	-	-	-
36.00	2	23.0	19.0	14.2
54.00	2	34.1	28.4	21.3
72.00	2	-	-	28.5

**Table 66. Electric heater temperature rise correction factors**

% Variation From Nominal CF	-20	-15	-10	-5	0	+5	+10	+15	+20
Temperature Rise Multiplier	1.25	1.17	1.11	1.05	1.00	0.95	0.91	0.87	0.83

**Table 67. Water volume**

Unit Size	Water Side Volume Cubic In.	Water Side Volume Cubic In.	Water Side Volume Gallons
GWSC036H	105	0.061	0.455
GWSC048H	171	0.099	0.740
GWSC060H	251	0.145	1.084
GWSC072H	343	0.199	1.485
GWSC092H	342	0.198	1.482
GWSC120H	686	0.397	2.971
GWS*150E	508	0.294	2.199
GWS*180E	508	0.294	2.199
GWS*240E	779	0.451	3.372

**Note:** (\*) stands for both downflow and horizontal units

**Table 68. Antifreeze correction factors**

Methanol (concentration by volume)						
Item	0%	10%	20%	30%	40%	50%
Cooling Capacity	1.000	0.998	0.997	0.995	0.993	0.992
Heating Capacity	1.000	0.995	0.990	0.985	0.979	0.974
Pressure Drop	1.000	1.023	1.057	1.091	1.122	1.160
Ethylene Glycol (concentration by volume)						
Item	0.000	0.100	0.200	0.300	0.400	0.500
Cooling Capacity	1.000	0.996	0.991	0.987	0.983	0.979
Heating Capacity	1.000	0.993	0.985	0.977	0.969	0.961
Pressure Drop	1.000	1.024	1.068	1.124	1.188	1.263
Propylene Glycol (concentration by volume)						
Item	0.000	0.100	0.200	0.300	0.400	0.500
Cooling Capacity	1.000	0.993	0.987	0.980	0.974	0.968
Heating Capacity	1.000	0.986	0.973	0.960	0.948	0.935
Pressure Drop	1.000	1.040	1.098	1.174	1.273	1.405
Brine (NaCl) (concentration by volume)						
Item	0.000	0.100	0.200	0.300	0.400	0.500
Cooling Capacity	1.000	0.994	0.987	0.979	0.971	0.963
Heating Capacity	1.000	0.993	0.987	0.982	0.978	0.976
Pressure Drop	1.000	1.154	1.325	1.497	1.669	1.841

## Examples

### Example 1 (Ethylene Glycol):

The antifreeze solution is 20% by volume of Ethylene Glycol. Determine the corrected cooling capacity and waterside pressure drop for a GEHE018 when the EWT is 86°F and the GPM is 4.2.

From the catalog data, the cooling capacity at these conditions with 100% water is 17.6 Mbtuh, and the waterside pressure drop is 6.4 feet of head. At 20% Ethylene Glycol, the correction factor for cool capacity is 0.991 and the pressure drop is 1.068.

The corrected cooling capacity (Mbtuh) = 17.6 \* 0.991 = 17.4. The corrected water side pressure drop (Ft. head) = 6.4 \* 1.068 = 6.8.

### Example 2 (Propylene Glycol):

The antifreeze solution is 30% by volume of Propylene Glycol. Determine the corrected heating capacity and waterside pressure drop for a GEHE042 when the EWT is 45°F and the GPM is 9.8.

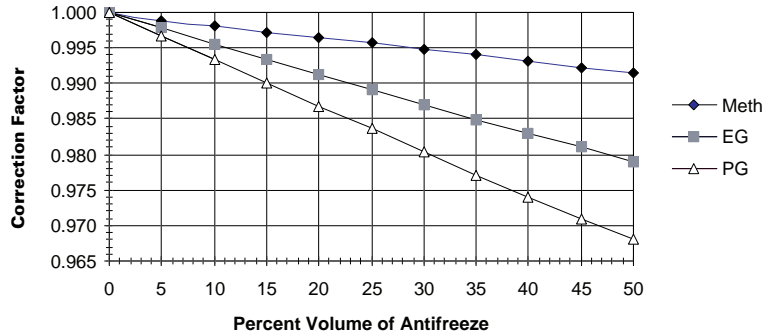


## Heating Performance

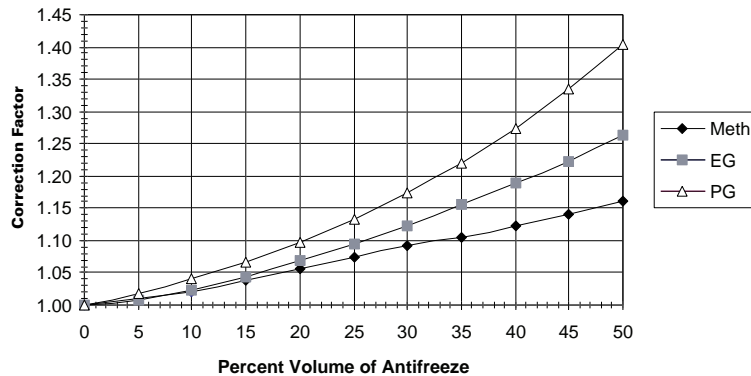
From the catalog data, the heating capacity at these conditions with 100% water is 40.7 Mbtuh, and the waterside pressure drop is 16.6 feet of head. At 30% Propylene Glycol, the correction factor for heat capacity is 0.960 and the pressure drop is 1.174.

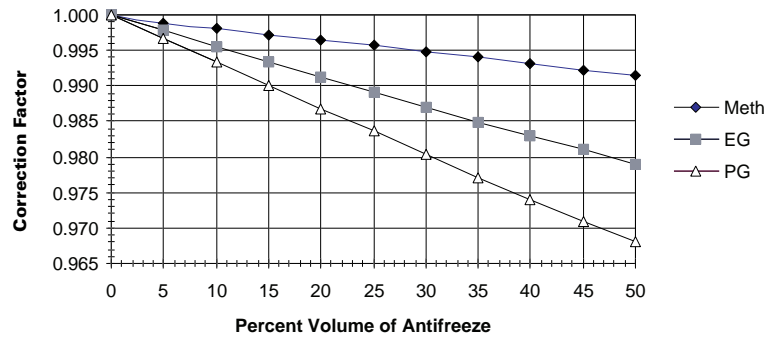
The corrected heating capacity (Mbtuh) =  $40.7 * 0.960 = 39.1$ . The corrected water side pressure drop (Ft. head) =  $16.6 * 1.174 = 19.5$ .

**Figure 5. Cooling capacity correction factor**



**Figure 6. Heating capacity correction factor**



**Figure 7. Water pressure drop correction factor**




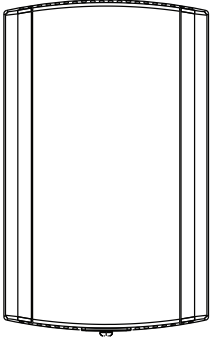
# Controls

## ReliaTel™

Zone sensors are the building occupant's comfort control devices. The following zone sensor options are available for units with ReliaTel™ control.

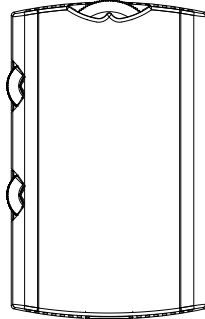
**Note:** Zone sensor required for units configured for single zone VAV indoor fan control to enable single zone VAV functionality.

### Remote Sensor



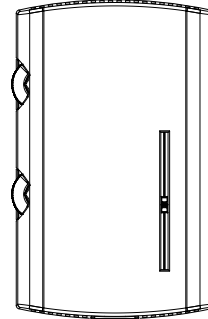
Sensor(s) available for all zone sensors to provide remote sensing capabilities.

### Manual Changeover



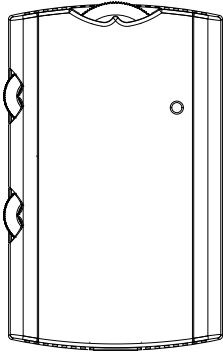
Heat, Cool or Off System Switch. Fan Auto or Off Switch. One temperature setpoint lever.

### Manual/Automatic Changeover



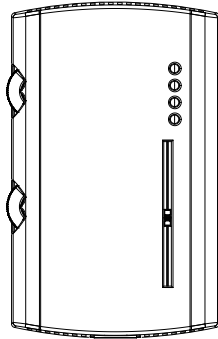
Auto, Heat, Cool or Off System Switch. Fan Auto or Off Switch. Two temperature setpoint levers.

### Manual/Automatic Changeover – Status Indicator



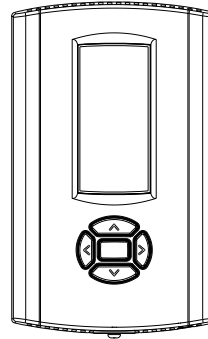
Auto, Heat, Cool or Off System Switch. Fan Auto or Off Switch. Two temperature setpoint levers. Includes a status indicator.

### Manual/Automatic Changeover – LED Status



Auto, Heat, Cool or Off System Switch. Fan Auto or Off Switch. Two temperature setpoint levers. Status Indication LED lights, System On, Heat, Cool, or Service.

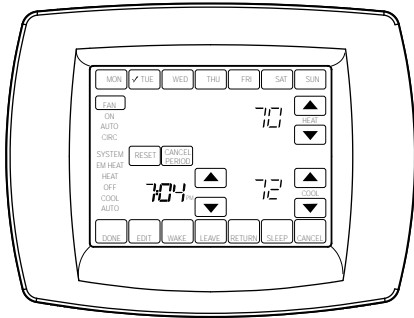
### Programmable Night Setback



Auto or manual changeover with seven-day programming. Keyboard selection of Heat, Cool, Fan, Auto, or On. All programmable sensors have System On, Heat, Cool, Service LED/indicators as standard. Night Setback Sensors have one (1) Occupied, one (1) Unoccupied, and one (1) Override program per day.



### Touchscreen Programmable Thermostat (2H/2C)



Two Heat, Two Cool programmable thermostat with touch screen digital display. Menu-driven programming. Effortless set-up. Program each day separately with no need to copy multiple days. All programming can be done on one screen. Easy to read and use. Large, clear backlit digital display.

*Not compatible with VAV units.*

## Dual Thermistor Remote Zone Sensor

Space Remote Sensor which can be mounted on the wall to report/control from a remote location in the space.

## Room Remote Sensor

Space remote sensor which can be mounted on the wall to report/control from a remote location in the space.



# Electrical Data

**Table 69. Unit wiring**

Tons	Model #	Unit Operating Voltage Range	Standard Indoor Fan Motor		Oversize Indoor Fan Motor	
			MCA	MOP	MCA	MOP
3	GWSC036H3	187-253	25/25	35/35	29/29	40/40
	GWSC036H4	414-506	10	15	14	15
	GWSC036HW	518-633	10	15	11	15
4	GWSC048H3	187-253	26/26	35/35	28/28	40/40
	GWSC048H4	414-506	11	15	13	15
	GWSC048HW	518-633	11	15	12	15
5	GWSC060H3	187-253	30/30	45/45	32/32	45/45
	GWSC060H4	414-506	14	20	15	20
	GWSC060HW	518-633	11	15	12	15
6	GWSC072H3	187-253	32/32	50/50	35/35	50/50
	GWSC072H4	414-506	15	25	17	25
	GWSC072HW	518-633	12	15	13	15
7.5	GWSC092H3	187-253	40/40	60/60	-	-
	GWSC092H4	414-506	19	25	-	-
	GWSC092HW	518-633	19	25	-	-
10	GWSC120H3	187-253	50/50	80/80	-	-
	GWSC120H4	414-506	22	35	-	-
	GWSC120HW	518-633	21	30	-	-
12.5	GWS*150E3	187-253	61	80	68	80
	GWS*150E4	414-506	29	35	32	40
	GWS*150EW	518-633	22	25	24	30
15	GWS*180E3	187-253	67	90	73	90
	GWS*180E4	414-506	33	45	36	45
	GWS*180EW	518-633	28	35	30	35
20	GWS*240E3	187-253	105	125	113	150
	GWS*240E4	414-506	47	60	50	60
	GWS*240EW	518-633	41	50	44	50

**Table 70. Unit wiring with electric heat (single point connection)**

Tons	Used With	Heater Model Number	Heater kW Rating	Control Stages	Standard Indoor Fan Motor		High Static Evap Motor	
					MCA	MOP	MCA	MOP
<b>208/230 Volts Three Phase</b>								
3	GWSC036H3	BAYHTRE306*	4.5/6.0	1	41/43	50/50	44/47	50/50
		BAYHTRE312*	9.0/12.0	2	56/61	60/70	60/65	60/70
		BAYHTRY318*	13.1/17.4	2	70/77	70/80	74/81	80/90
4	GWSC048H3	BAYHTRE306*	4.5/6.0	1	41/44	50/50	44/46	50/50
		BAYHTRE312*	9.0/12.0	2	57/62	60/70	59/64	60/70
		BAYHTRY318*	13.1/17.4	2	71/78	80/80	74/80	80/80
5	GWSC060H3	BAYHTRX306*	4.5/6.0	1	46/48	50/60	47/50	60/60
		BAYHTRX312*	9.0/12.0	2	61/66	70/70	63/68	70/70
		BAYHTRY318*	13.1/17.4	2	75/82	80/90	77/84	80/90
		BAYHTRY318*	17.3/23.0	2	90/99	90/100	92/101	100/110

**Table 70. Unit wiring with electric heat (single point connection) (continued)**

Tons	Used With	Heater Model Number	Heater kW Rating	Control Stages	Standard Indoor Fan Motor		High Static Evap Motor	
					MCA	MOP	MCA	MOP
6	GWSC072H3	BAYHTRW309*	6.8/9.0	1	56/59	70/70	58/62	70/70
		BAYHTRW318*	13.5/18.0	1	79/86	90/90	82/89	90/100
		BAYHTRSW27*	20.3/27.0	2	102/113	110/125	105/116	110/125
		BAYHTRW336*	27.0/36.0	2	126/140	150/150	128/143	150/150
7.5	GWSC092H3	BAYHTRA309*	6.8/9.0	1	54/68	70/80	-	-
		BAYHTRA318*	13.5/18.0	1	87/95	100/100	-	-
		BAYHTRA327*	20.3/27.0	2	111/122	125/125	-	-
		BAYHTRA336*	27.0/36.0	2	134/149	150/150	-	-
10	GWSC120H3	BAYHTRA318*	13.5/18.0	1	97/104	110/125	-	-
		BAYHTRA327*	20.3/27.0	2	121/132	125/150	-	-
		BAYHTRA336*	27.0/36.0	2	144/159	150/175	-	-
		BAYHTRA354*	40.6/54.0	2	191/180	200/200	-	-
12.5	GWS*150E3	AYDHTRK318/AYHHTRM318	13.5/18.0	1	108/116	110/125	114/122	125/125
		AYDHTRK336/AYHHTRM336	27.0/36.0	2	155/170	175/175	161/176	175/200
		AYDHTRK354/AYHHTRM354	40.5/54.0	2	202/191	225/200	208/197	225/200
15	GWS*180E3	YDHTRK318/AYHHTRM318	13.5/18.0	1	114/121	125/125	120/128	125/150
		AYDHTRK336/AYHHTRM336	27.0/36.0	2	161/176	175/200	167/182	175/200
		AYDHTRK354/AYHHTRM354	40.5/54.0	2	208/197	225/200	214/203	225/225
20	GWS*240E3	AYDHTRL336/AYHHTRN336	27.0/36.0	2	199/213	200/225	206/221	225/225
		AYDHTRL354/AYHHTRN354	40.5/54.0	2	246/235	250/250	253/243	300/250
		AYDHTRK372/AYHHTRN372	54.0/72.0	2	255/278	300/300	263/286	300/300
<b>460 Volts Three Phase</b>								
3	GWSC036H4	BAYHTRE406*	6	1	19	20	23	25
		BAYHTRE412*	12	2	28	30	32	35
		BAYHTRY418*	17	2	37	40	40	40
4	GWSC048H4	BAYHTRE406*	6	1	20	20	22	25
		BAYHTRE412*	12	2	29	30	31	35
		BAYHTRY418*	17	2	37	40	39	40
5	GWSC060H4	BAYHTRX406*	6	1	23	25	24	25
		BAYHTRX412*	12	2	32	35	33	35
		BAYHTRY418*	17	2	40	40	41	45
6	GWSC072H4	BAYHTRY418*	23	2	49	50	50	50
		BAYHTRW409*	9	1	29	35	30	35
		BAYHTRW418*	18	1	42	45	44	45
7.5	GWSC092H4	BAYHTRW427*	27	2	56	60	57	60
		BAYHTRW436*	36	2	69	70	71	80
		BAYHTRA409*	9	1	32	40	-	-
		BAYHTRA418*	18	1	46	50	-	-
10	GWSC120H4	BAYHTRA427*	27	2	59	60	-	-
		BAYHTRA436*	36	2	73	80	-	-
		BAYHTRA418*	18	1	49	50	-	-
		BAYHTRA427*	27	2	63	70	-	-
12.5	GWS*150E4	BAYHTRA436*	36	2	76	80	-	-
		BAYHTRA454*	54	2	87	100	-	-
		AYDHTRK418/AYHHTRM418	18	1	56	60	32	40
		AYDHTRK436/AYHHTRP436	36	2	83	90	59	60
		AYDHTRK454/AYHHTRM454	54	2	94	100	86	90



**Electrical Data**

**Table 70. Unit wiring with electric heat (single point connection) (continued)**

Tons	Used With	Heater Model Number	Heater kW Rating	Control Stages	Standard Indoor Fan Motor		High Static Evap Motor	
					MCA	MOP	MCA	MOP
15	GWS*180E4	AYDHTRK418/AYHHTRM418	18	1	61	70	63	70
		AYDHTRK436/AYHHTRM436	36	2	88	90	90	90
		AYDHTRK454/AYHHTRM454	54	2	98	110	101	110
20	GWS*240E4	AYDHTRL436/AYHHTRN436	36	2	101	110	105	110
		AYDHTRL454/AYHHTRN454	54	2	112	125	115	125
		AYDHTRK472/AYHHTRN472	72	2	134	150	137	150
<b>575 Volts Three Phase</b>								
3	GWSC036HW	BAYHTREW06*	6	1	18	20	18	20
		BAYHTREW12*	12	2	25	25	26	30
		BAYHTRYW18*	17	2	32	35	32	35
4	GWSC048HW	BAYHTREW06*	6	1	18	20	19	20
		BAYHTREW12*	12	2	25	25	26	30
		BAYHTRYW18*	17	2	32	35	33	35
5	GWSC060HW	BAYHTRXW06*	6	1	19	20	19	20
		BAYHTRXW12*	12	2	26	30	27	30
		BAYHTRYW18*	17	2	32	35	33	35
		BAYHTRYW23*	23	2	39	40	40	40
6	WSC072HW	BAYHTRSW18*	18	1	33	35	34	35
		BAYHTRSW27*	27	2	44	45	45	45
		BAYHTRSW36*	36	2	55	60	56	60
7.5	WSC092HW	BAYHTRAW18*	18	1	41	45	-	-
		BAYHTRAW27*	27	2	51	60	-	-
		BAYHTRAW36*	36	2	62	70	-	-
10	WSC120HW	BAYHTRAW18*	18	1	43	45	-	-
		BAYHTRAW36*	36	2	65	70	-	-
		BAYHTRAW54*	54	2	73	80	-	-
12.5	GWS*150EW	AYDHTRKW18/AYHHTRMW18	18	1	44	45	46	50
		AYDHTRKW36/AYHHTRPW36	36	2	65	70	68	70
		AYDHTRKW54/AYHHTRMW54	54	2	74	80	76	80
15	GWS*180EW	AYDHTRKW18/AYHHTRMW18	18	1	49	50	51	60
		AYDHTRKW36/AYHHTRMW36	36	2	71	80	73	80
		AYDHTRKW54/AYHHTRMW54	54	2	80	80	82	90
20	GWS*240EW	AYDHTRLW36/AYHHTRNW36	36	2	84	90	87	90
		AYDHTRLW54/AYHHTRNW54	54	2	93	100	96	110
		AYDHTRKW72/AYHHTRNW72	72	2	111	125	113	125

**Notes:**

1. Values do not include power exhaust accessory.
2. \*Indicates both downflow and horizontal units.

**Table 71. Electrical characteristics - power exhaust accessory**

Tons	Accessory Operating Voltage	Phase	HP	RPM	Amps FLA	LRA
12.5, 15, 20	208-230	1	3/4	1040	6.6	13.5
	460	1	3/4	1040	3.2	8.4
	575	1	3/4	1040	2.1	5.2

**Table 72. Electrical characteristics – indoor fan motors**

Tons	Model #	Standard Indoor Fan Motor						Oversized Indoor Fan Motor					
		No.	Volts	Phase	HP	Amps		No.	Volts	Phase	HP	Amps	
						FLA	LRA					FLA	LRA
3	GWSC036H3	1	208-230	1	0.75	5.7	—	1	208-230	1	1.5	9.4	—
	GWSC036H4	1	460	1	0.75	1.7	—	1	460	1	1.5	4.8	—
	GWSC036HW	1	575	1	0.75	5.7	—	1	575	1	1.5	9.4	—
4	GWSC048H3	1	208-230	1	1	6.9	—	1	208-230	1	1.5	9.4	—
	GWSC048H4	1	460	1	1	2.5	—	1	460	1	1.5	4.8	—
	GWSC048HW	1	575	1	1	6.9	—	1	575	1	1.5	9.4	—
5	GWSC060H3	1	208-230	1	1	7.6	—	1	208-230	1	1.5	9.4	—
	GWSC060H4	1	460	1	1	4	—	1	460	1	1.5	4.8	—
	GWSC060HW	1	575	1	1	7.6	—	1	575	1	1.5	9.4	—
6	GWSC072H3	1	208-230	3	1	3.4	24.5	1	208-230	3	2	6.3	48.0
	GWSC072H4	1	460	3	1	1.6	12.3	1	460	3	2	3.1	24.0
	GWSC072HW	1	575	3	1	1.7	11.3	1	575	3	2	2.5	16.8
7.5	GWSC092H3	1	208-230	3	2.75	7.3	—	—	—	—	—	—	—
	GWSC092H4	1	460	3	2.75	3.6	—	—	—	—	—	—	—
	GWSC092HW	1	575	3	2.75	7.5	—	—	—	—	—	—	—
10	GWSC120H3	1	208-230	3	2.75	7.3	—	—	—	—	—	—	—
	GWSC120H4	1	460	3	2.75	3.6	—	—	—	—	—	—	—
	GWSC120HW	1	575	3	2.75	7.5	—	—	—	—	—	—	—
12.5	GWS*150E3	1	208-230	3	3	10.6	81	1	208-230	3	5.0	16.7	109.8
	GWS*150E4	1	460	3	3	4.8	40.5	1	460	3	5.0	7.6	54.9
	GWS*150EW	1	575	3	3	3.9	31	1	575	3	5.0	6.1	41.6
15	GWS*180E3	1	208-230	3	3	10.6	81	1	208-230	3	5.0	16.7	109.8
	GWS*180E4	1	460	3	3	4.8	40.5	1	460	3	5.0	7.6	54.9
	GWS*180EW	1	575	3	3	3.9	31	1	575	3	5.0	6.1	41.6
20	GWS*240E3	1	208-230	3	5	16.7	109.8	1	208-230	3	7.5	24.2	120.4
	GWS*240E4	1	460	3	5	7.6	54.9	1	460	3	7.5	11.0	74.0
	GWS*240EW	1	575	3	5	6.1	41.6	1	575	3	7.5	9.0	60.0

**Table 73. Electrical characteristics - compressor motor**

Tons	Model #	No.	Compressor Motors					
			Volts	Phase	HP <sup>(a)</sup>	RPM	Amps <sup>(b)</sup>	
							RLA	LRA
3	GWSC036H3	1	208-230	3	3.2	3500	15	88
	GWSC036H4	1	460	3	3.2	3500	6.6	44
	GWSC036HW	1	575	3	3.2	3500	5.5	34
4	GWSC048H3	1	208-230	3	3.8	3500	14.5	98
	GWSC048H4	1	460	3	3.8	3500	6.3	55
	GWSC048HW	1	575	3	3.8	3500	6	41
5	GWSC060H3	1	208-230	3	4.7	3500	17.5	110
	GWSC060H4	1	460	3	4.7	3500	7.9	52
	GWSC060HW	1	575	3	4.7	3500	6.3	39



## Electrical Data

**Table 73. Electrical characteristics - compressor motor (continued)**

Tons	Model #	No.	Compressor Motors					
			Volts	Phase	HP <sup>(a)</sup>	RPM	Amps <sup>(b)</sup>	
							RLA	LRA
6	GWSC072H3	1	208-230	3	5.9	3500	22.4	149
	GWSC072H4	1	460	3	5.9	3500	10.6	75
	GWSC072HW	1	575	3	5.9	3500	7.7	54
7.5	GWSC092H3	1	208-230	3	8.6	3500	26.09	164
	GWSC092H4	1	460	3	8.6	3500	11.67	94
	GWSC092HW	1	575	3	8.6	3500	8.72	65
10	GWSC120H3	1	208-230	3	10.5	3500	34	240
	GWSC120H4	1	460	3	10.5	3500	14.42	130
	GWSC120HW	1	575	3	10.5	3500	10.77	84
12.5	GWS*150E3	2	208-230	3	5.6	3450	22.4	149
	GWS*150E4	2	460	3	5.6	3450	10.6	75
	GWS*150EW	2	575	3	5.6	3450	7.9/7.7	54
15	GWS*180E3	2	208-230	3	6.9	3450	25	164
	GWS*180E4	2	460	3	6.9	3450	12.5/12.2	100
	GWS*180EW	2	575	3	6.9	3450	10.3/10.1	78
20	GWS*240E3	2	208-230	3	10.4	3450	39.1	267
	GWS*240E4	2	460	3	10.4	3450	17.3	142
	GWS*240EW	2	575	3	10.4	3450	15.4	103

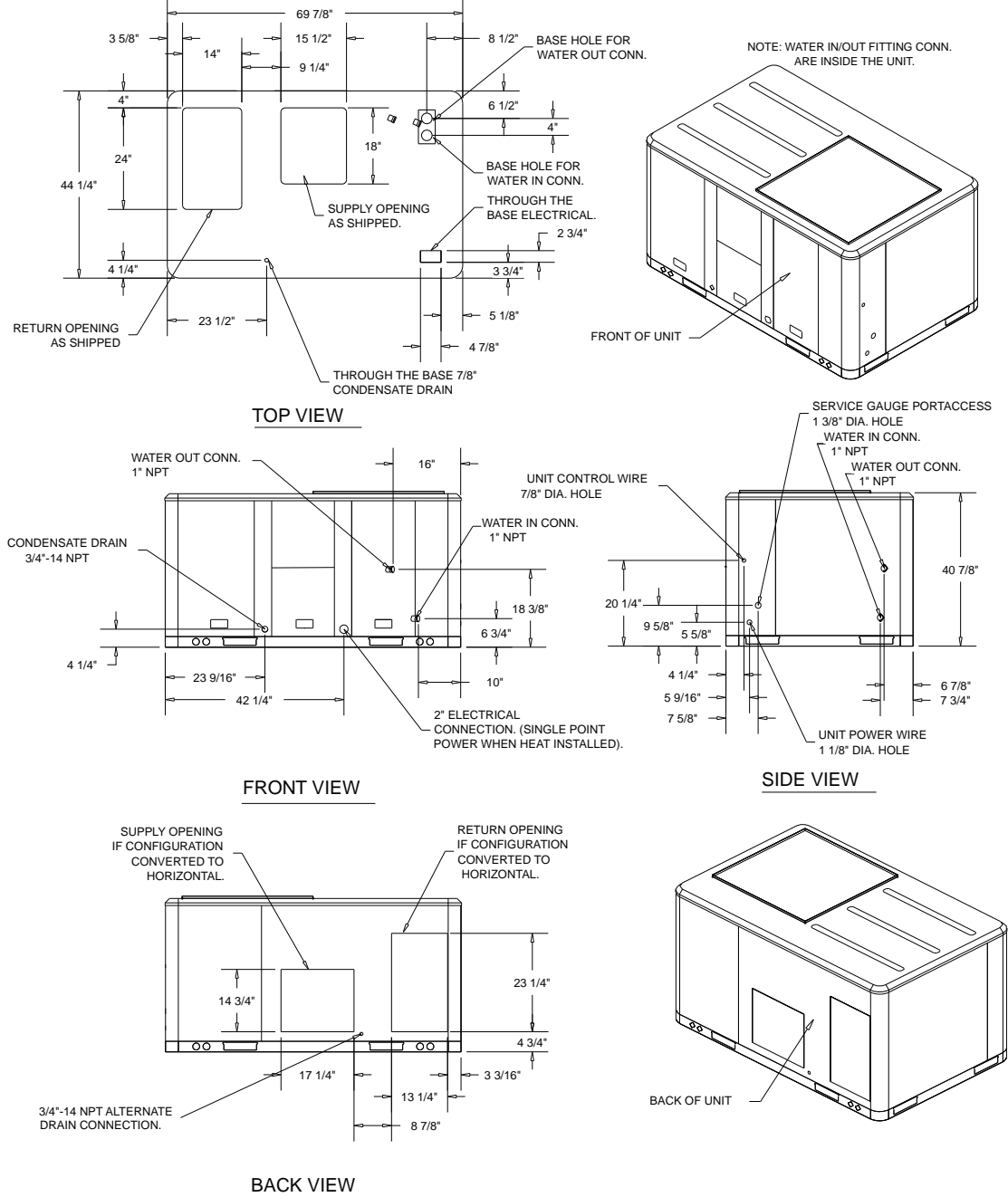
<sup>(a)</sup> HP for each compressor.

<sup>(b)</sup> Amp draw for each compressor; multiply value by number of compressors to determine total amps.

# Dimensional Data

**Figure 8. WSHP rooftop - 3 tons**

**Note:** 2" electrical connection: single point power when heat installed (W\*C)



**Figure 9. WSHP rooftop - 4 tons**

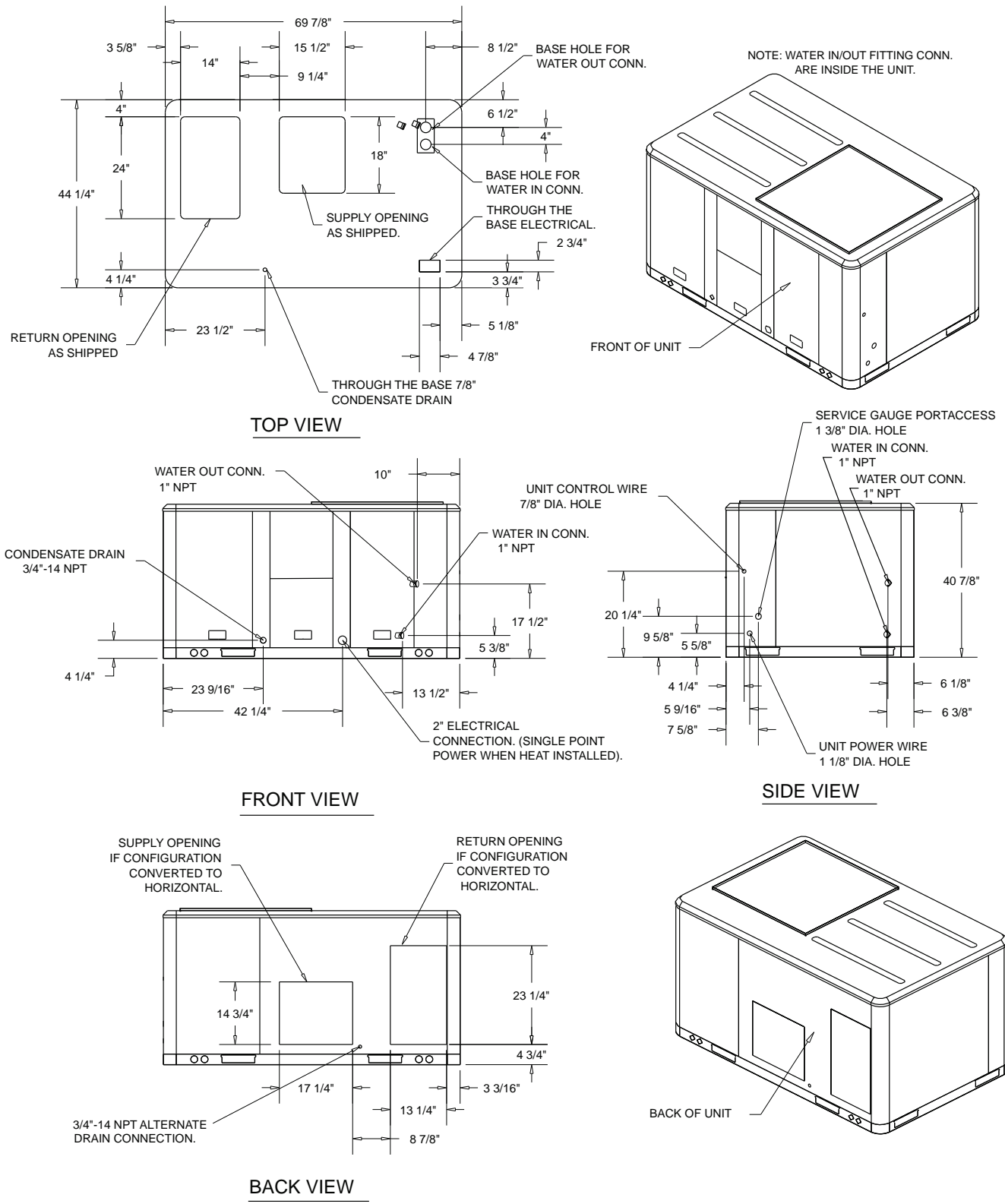




Figure 10. WSHP rooftop - 3 to 4 tons - unit clearance and roof opening

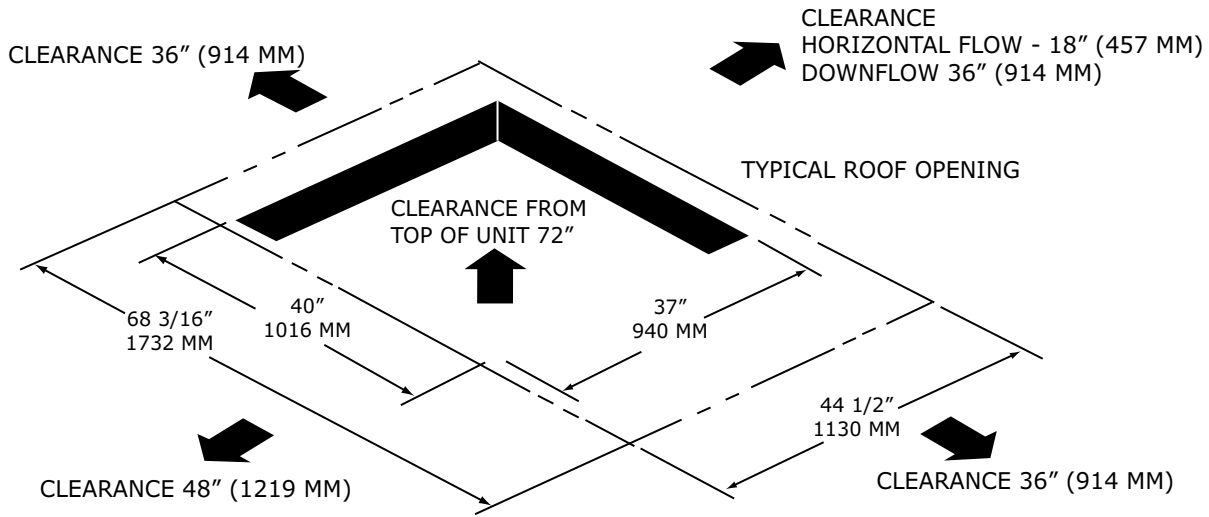
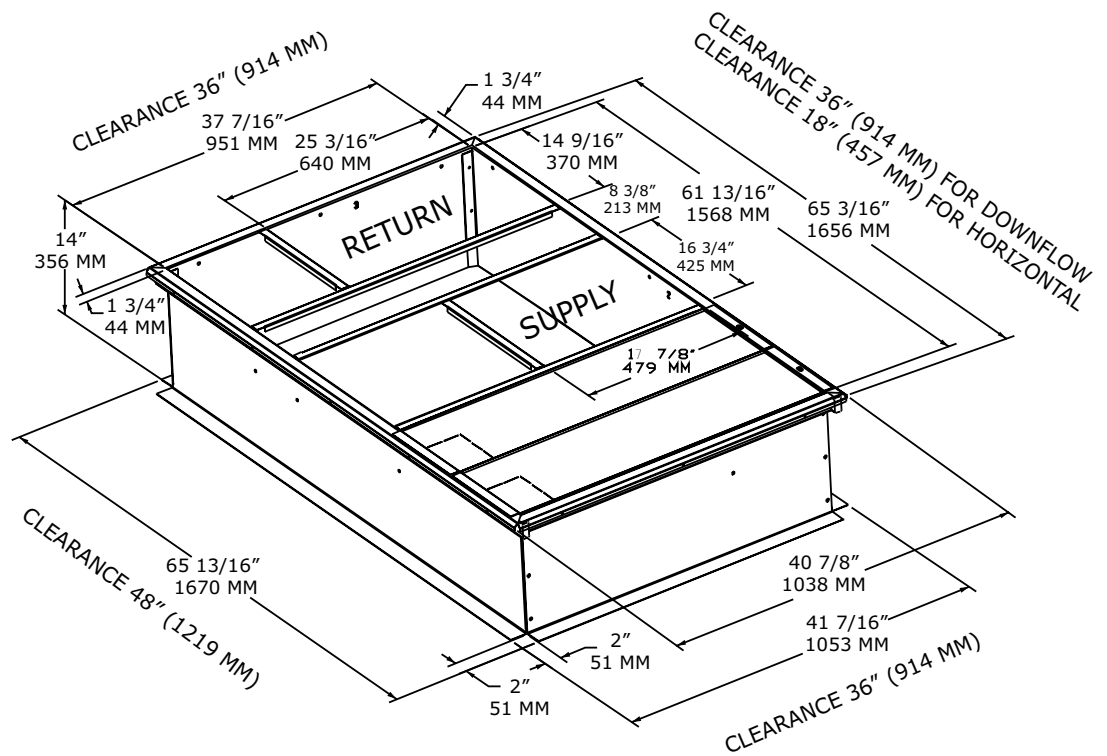
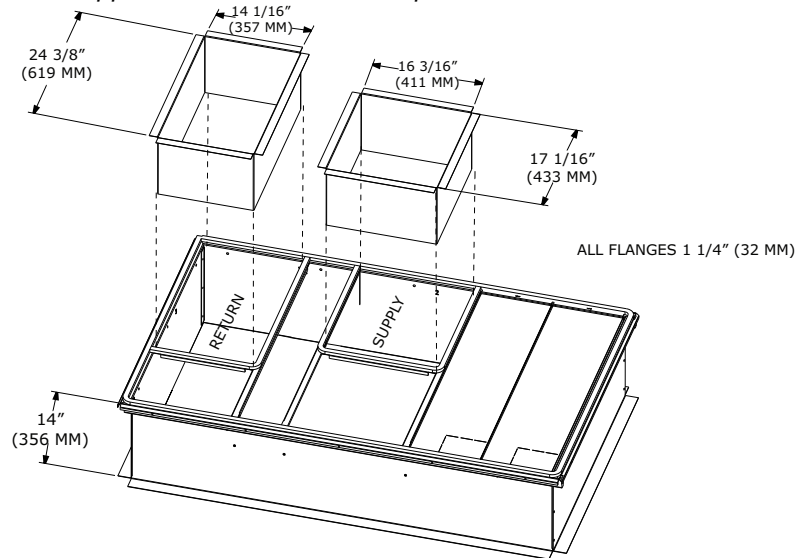


Figure 11. WSHP rooftop - 3 to 4 tons - roof curb

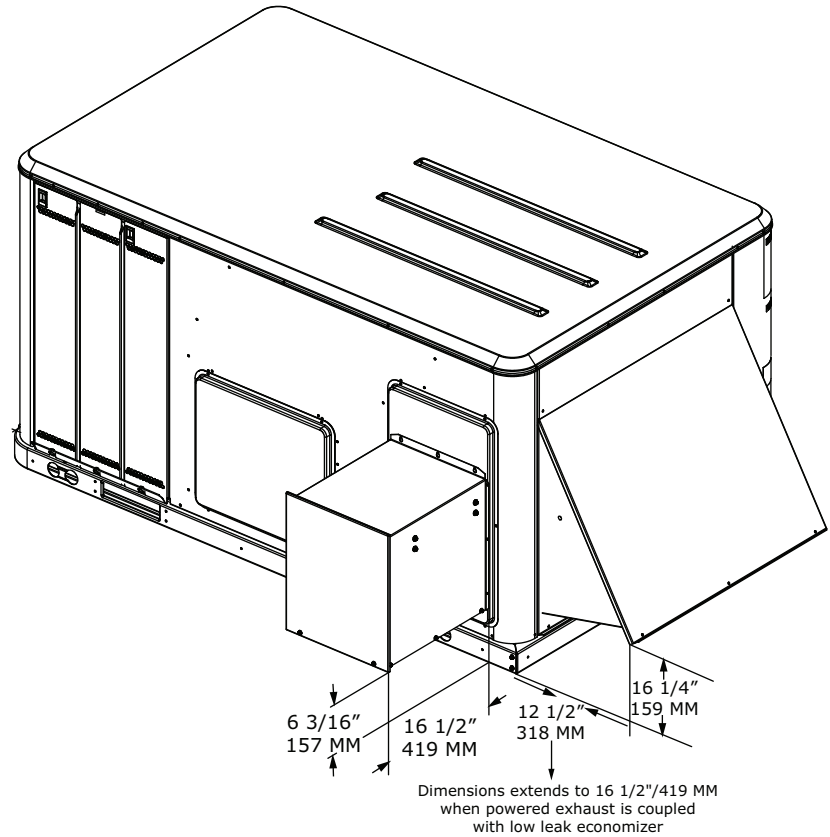


**Figure 12. WSHP rooftop - 3 to 4 tons - downflow duct connections - field fabricated**

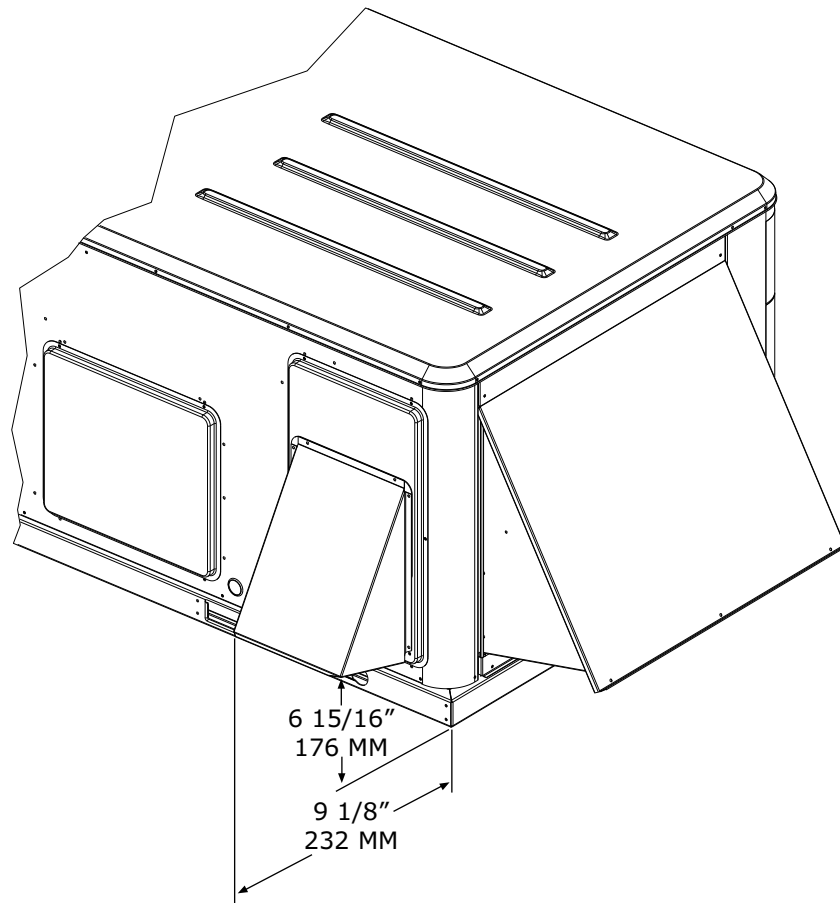
**Note:** Reference tabular information for duct clearance to combustible materials in the application consideration chapter.

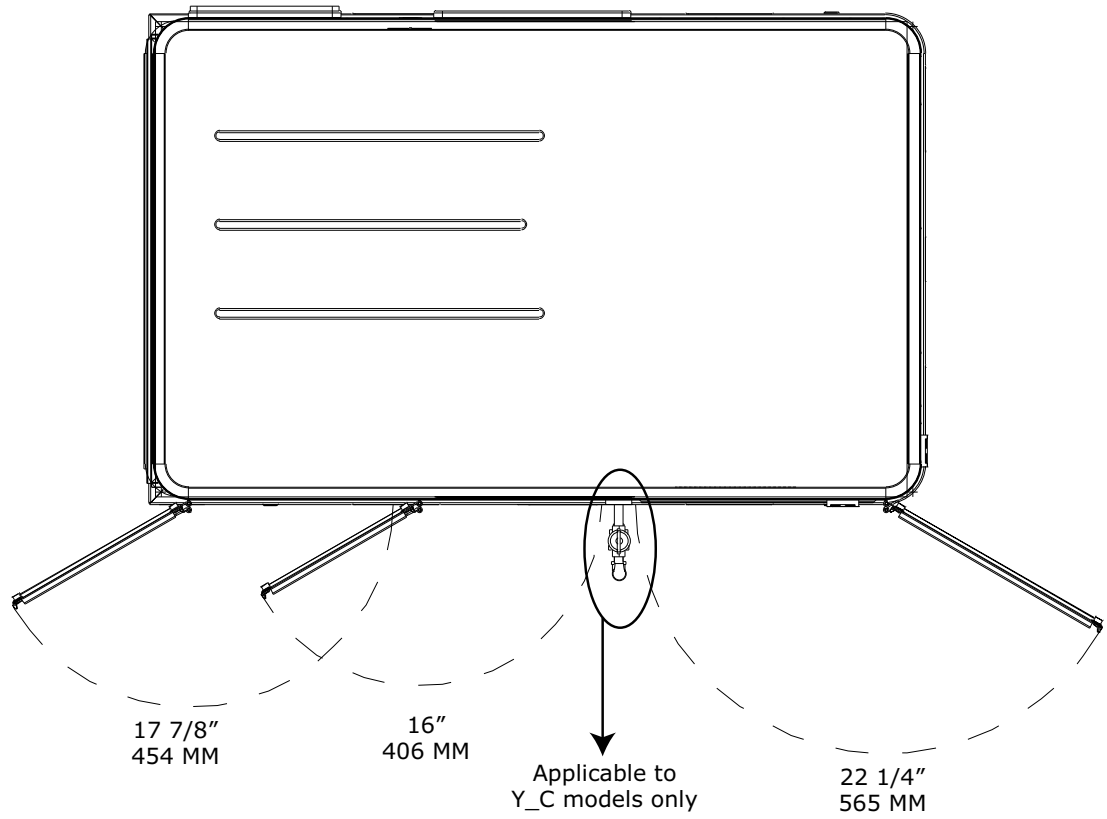


**Figure 13. WSHP rooftop - 3 to 4 tons - economizer, manual or motorized fresh air damper; power exhaust**



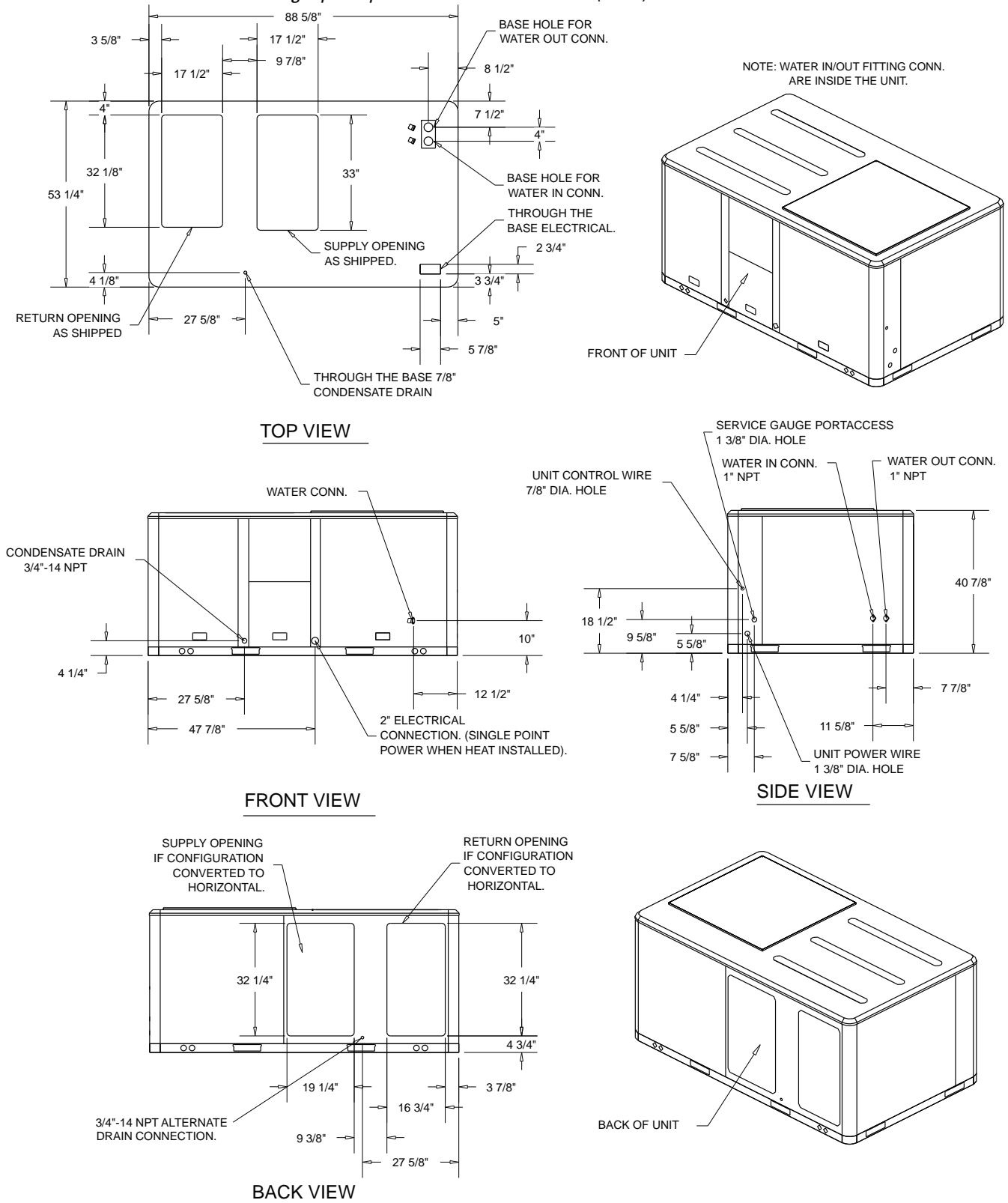
**Figure 14. WSHP rooftop – 3 to 4 tons - economizer & barometric relief damper hood**



**Figure 15. WSHP rooftop - 3 to 4 tons - swing diameter for hinged door(s) option**

**Figure 16. WSHP rooftop - 5 tons standard efficiency**

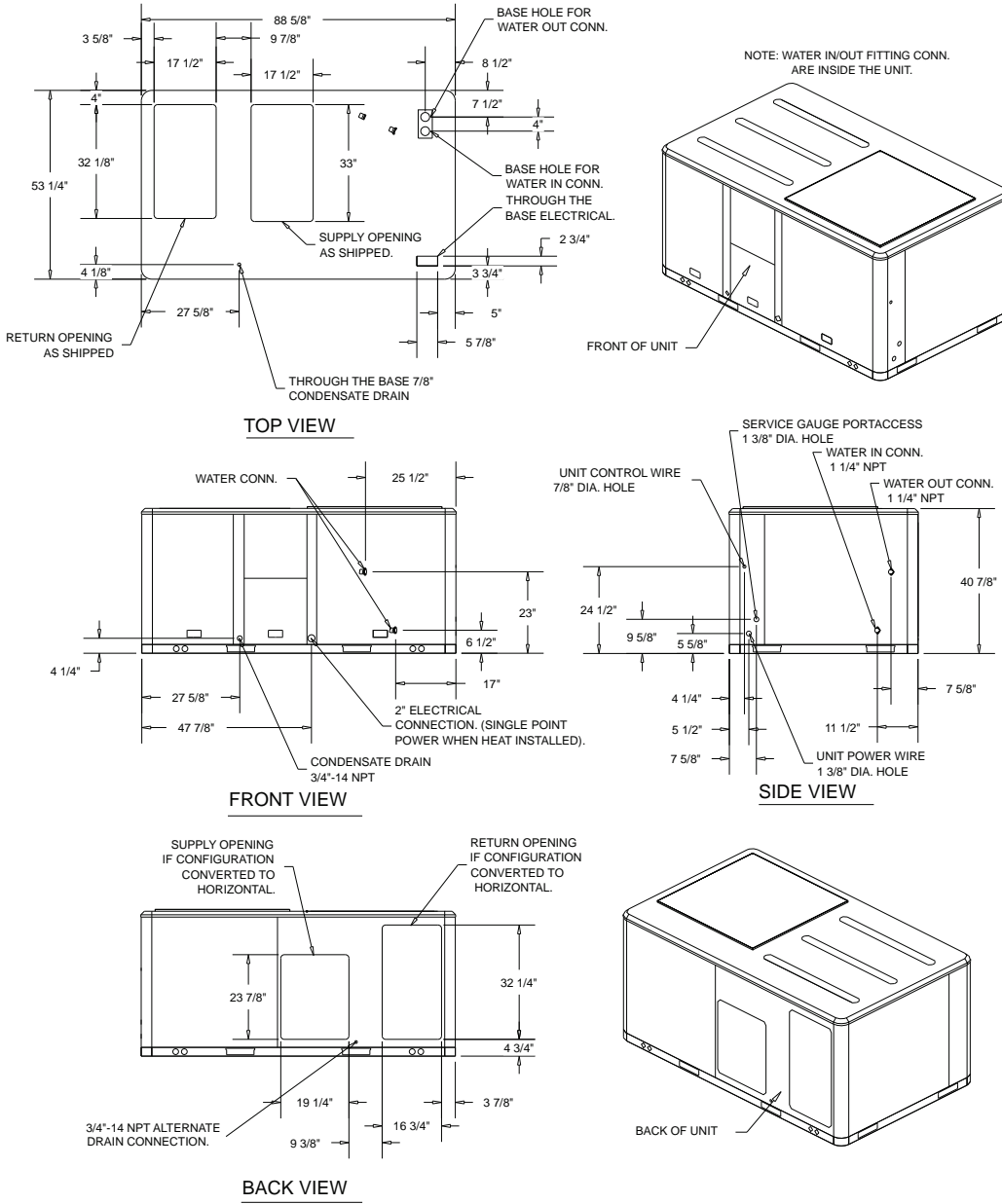
**Note: 2" electrical connection: single point power when heat installed (W\*C)**



# Dimensional Data

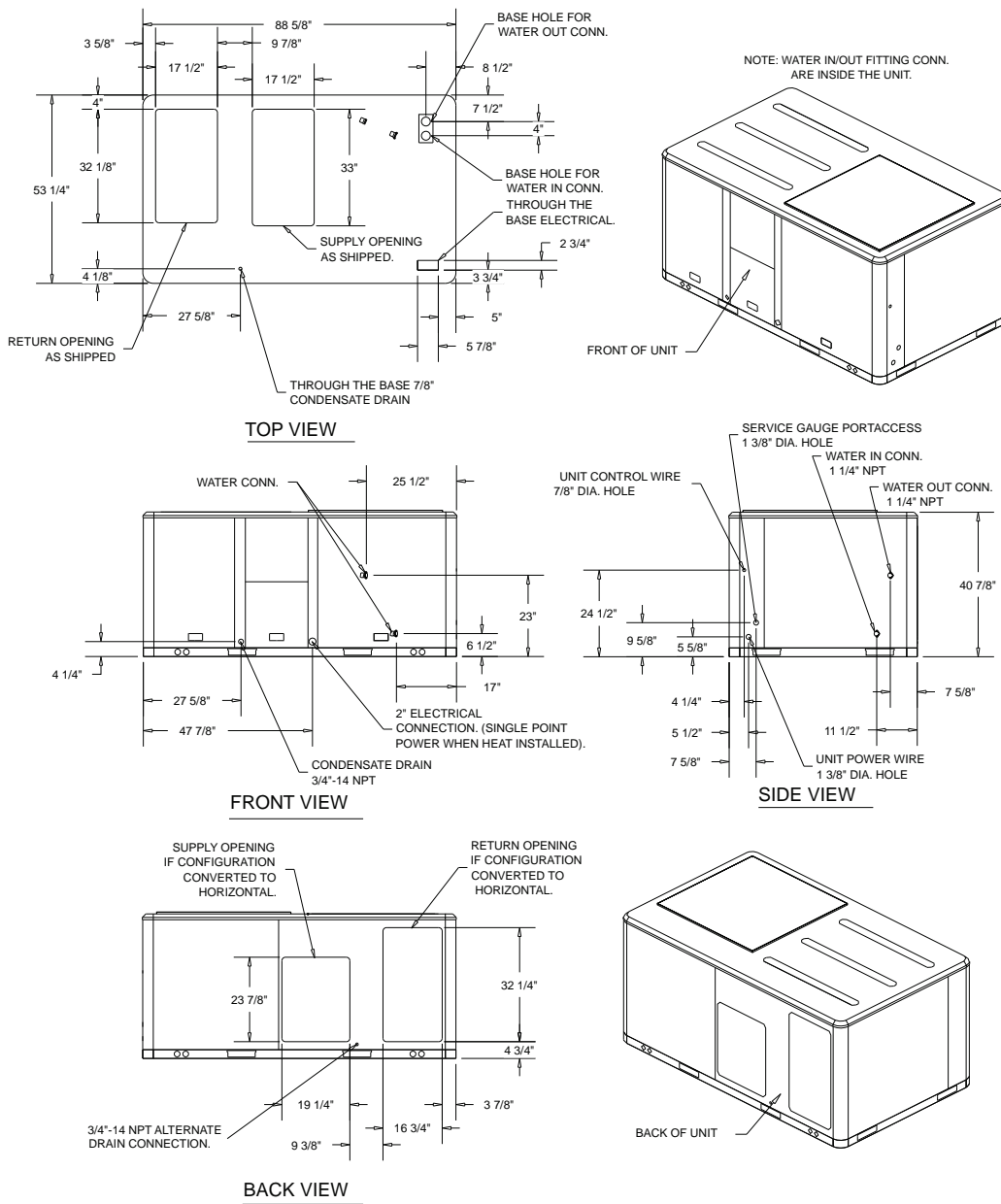
**Figure 17. WSHP rooftop - 6 tons standard efficiency**

*Note: 2" electrical connections: single point power when electric heat installed.*



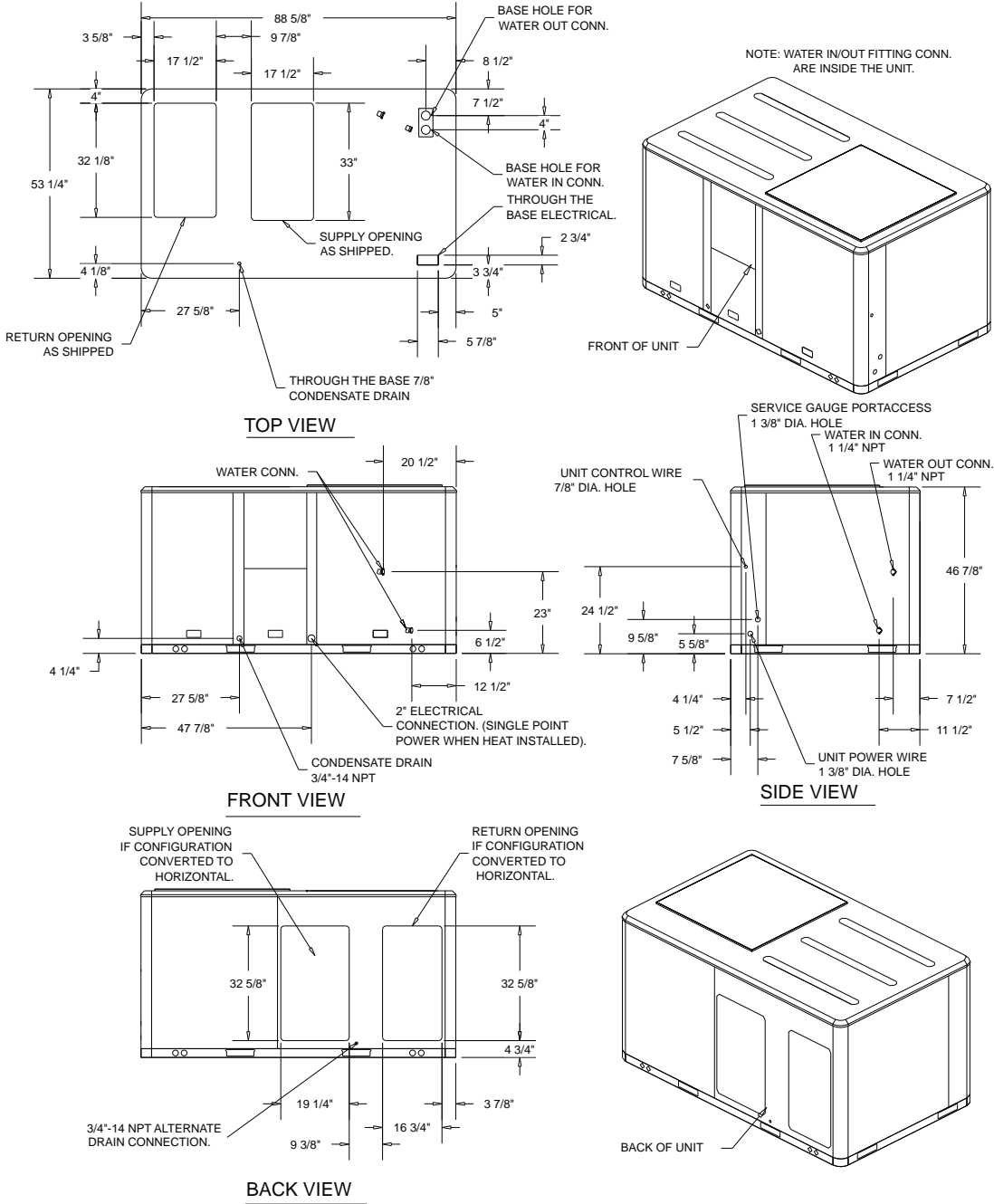
**Figure 18. WSHP rooftop - 7.5 tons standard efficiency**

*Note: 2" electrical connections: single point power when electric heat installed.*



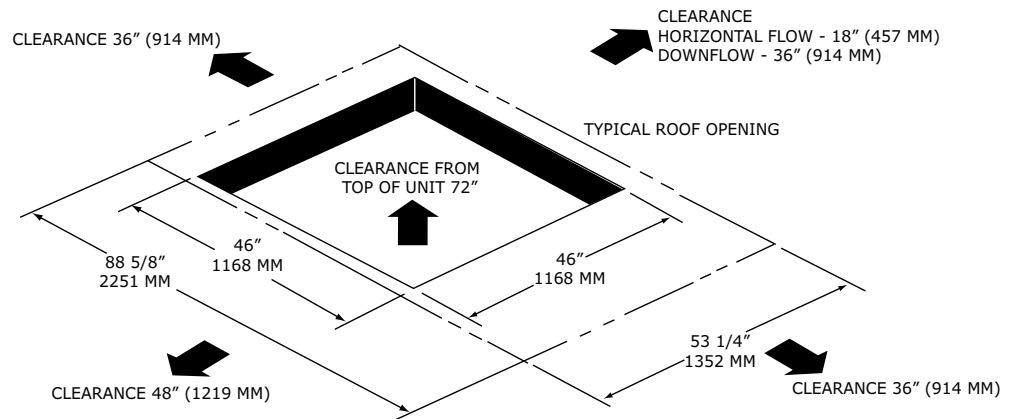
**Figure 19. WSHP rooftop - 10 tons standard efficiency**

*Note: 2" electrical connections: single point power when electric heat installed.*

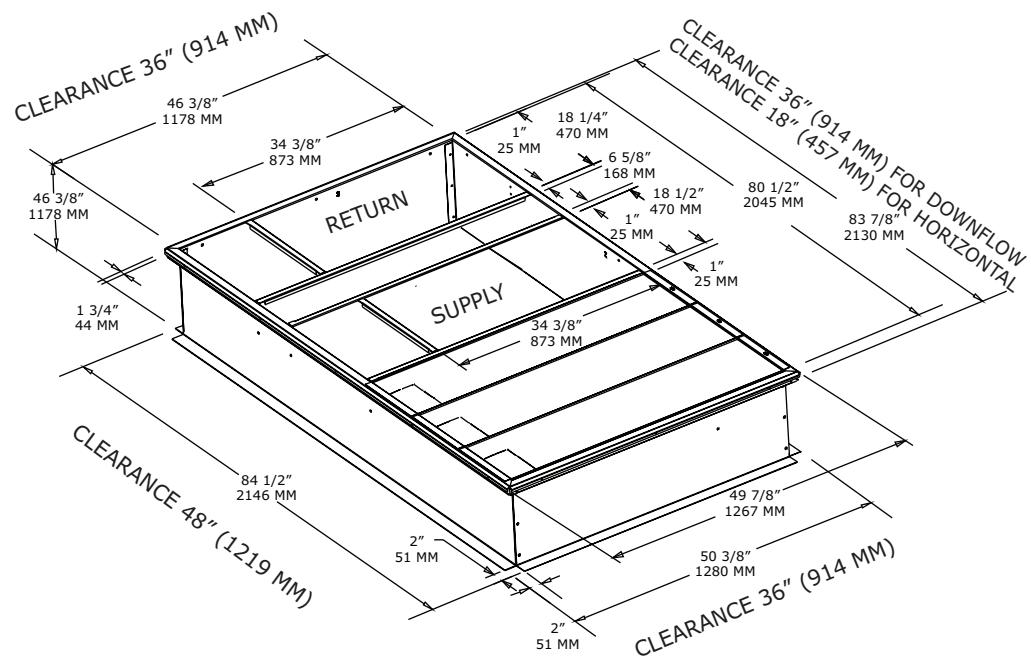




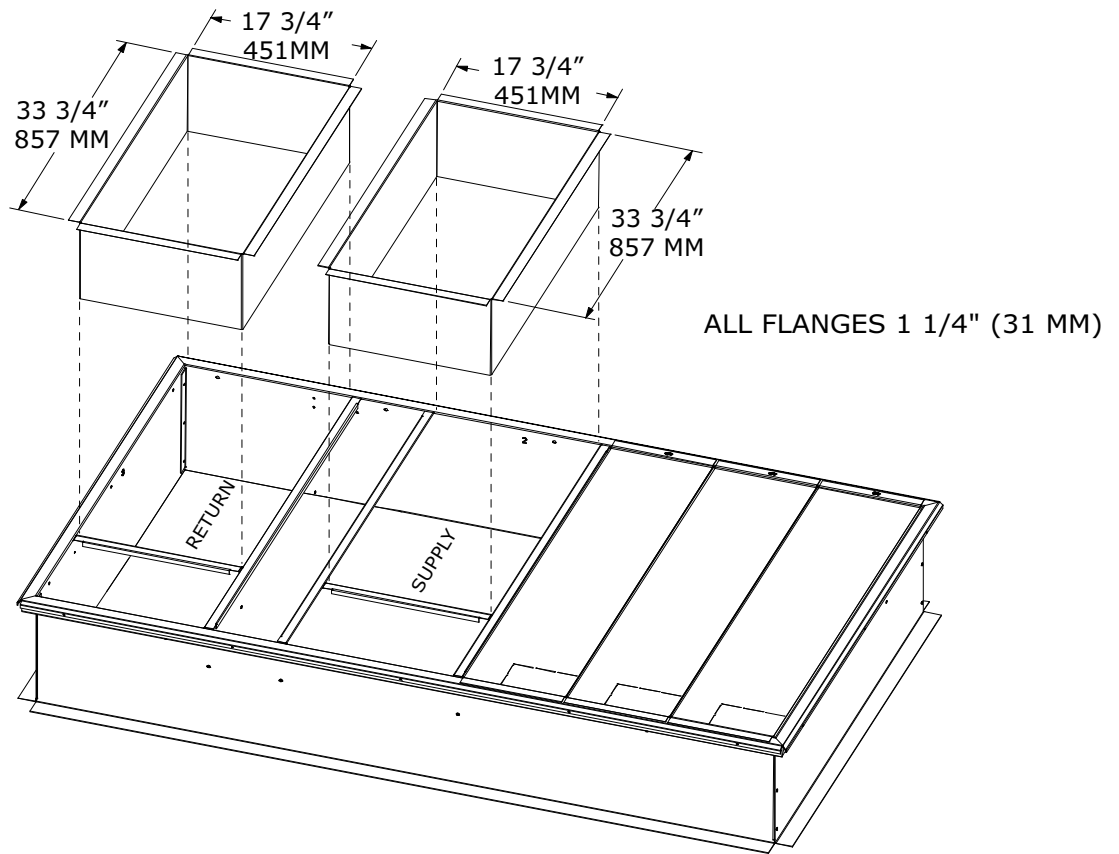
**Figure 20. Heat pumps - 5 to 10 tons standard efficiency - unit clearance and roof opening**



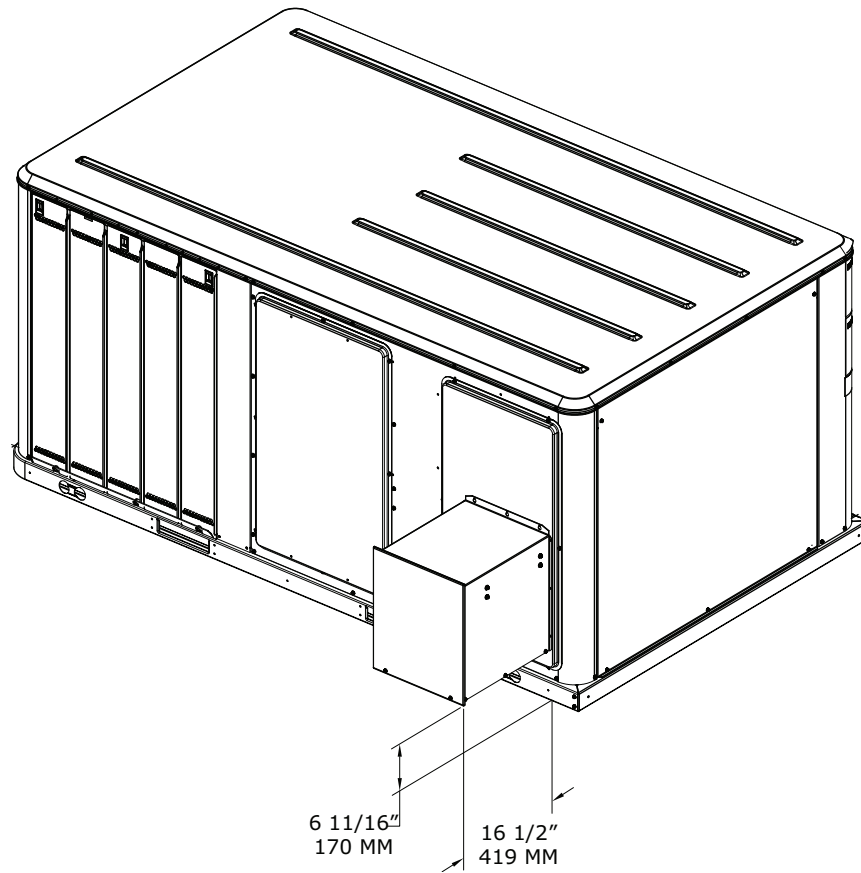
**Figure 21. Heat pumps - 5 to 10 tons standard efficiency - roof curb**



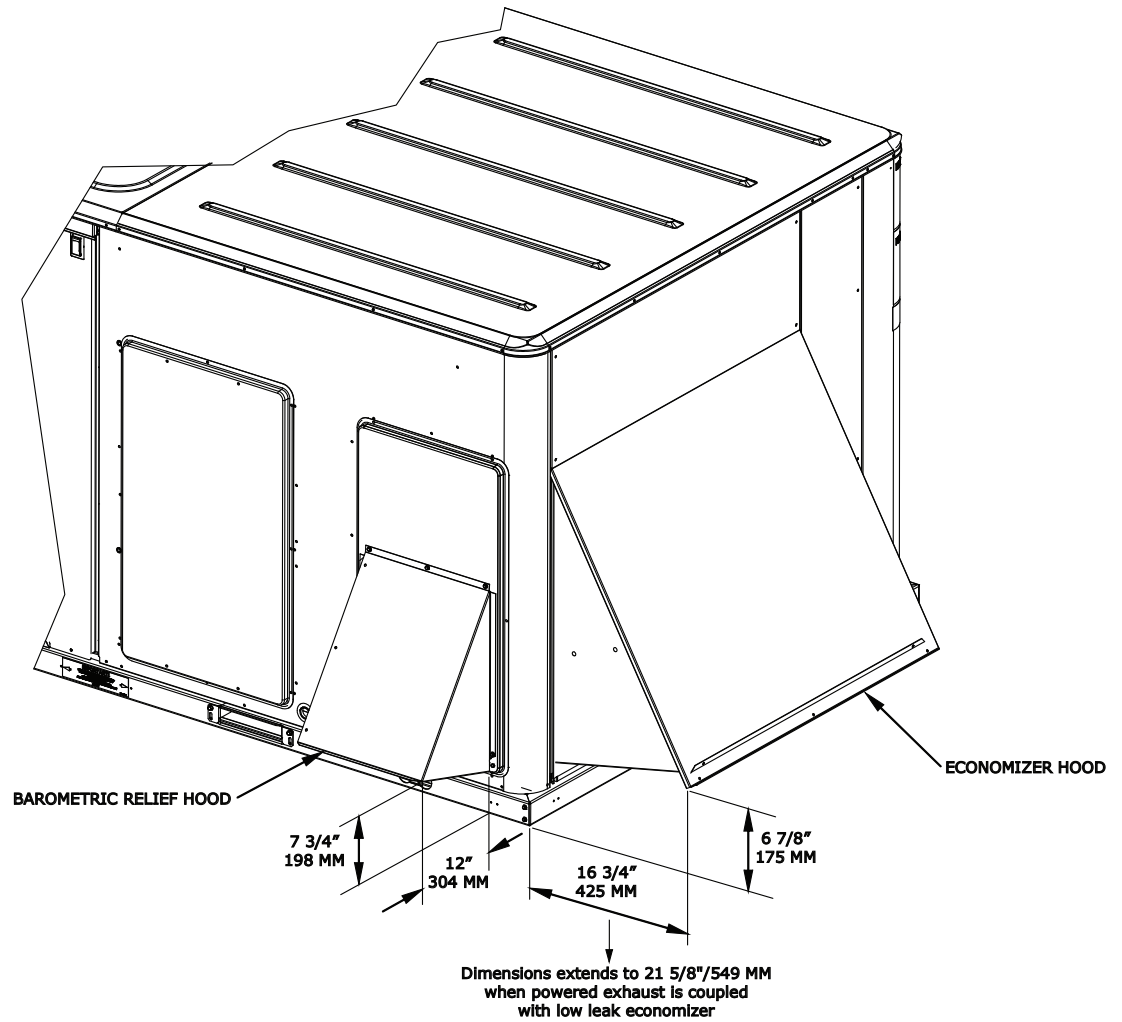
**Figure 22. Heat pumps - 5 to 10 tons standard efficiency - downflow duct connections field fabricated**



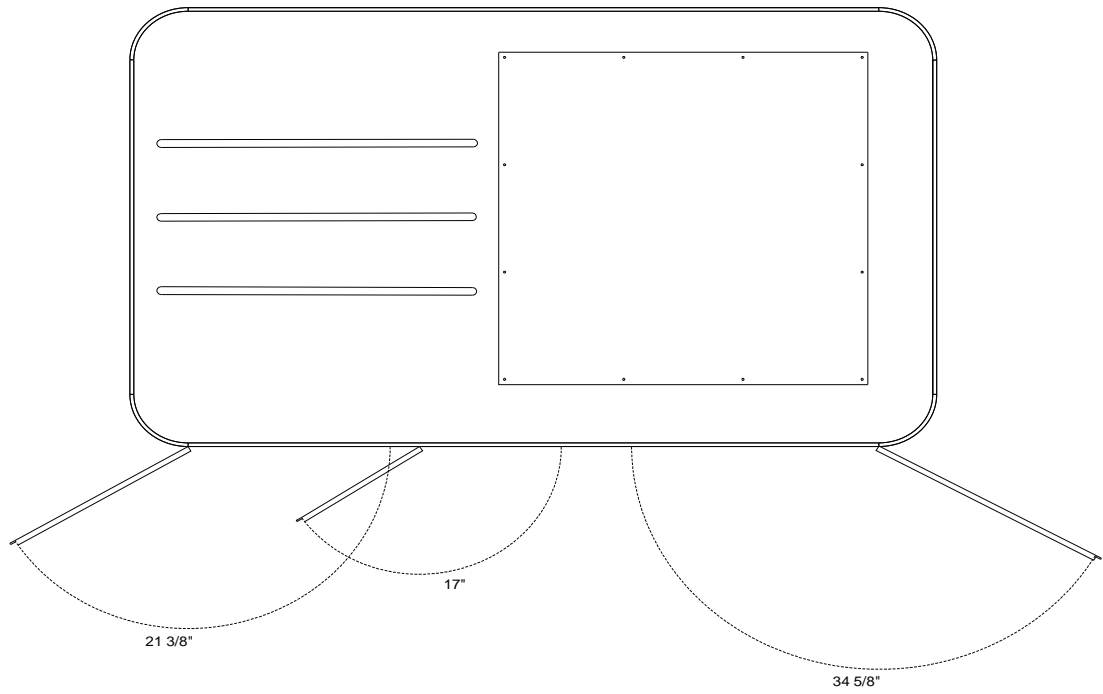
**Figure 23. Heat pumps - 5 to 10 tons standard efficiency - power exhaust**



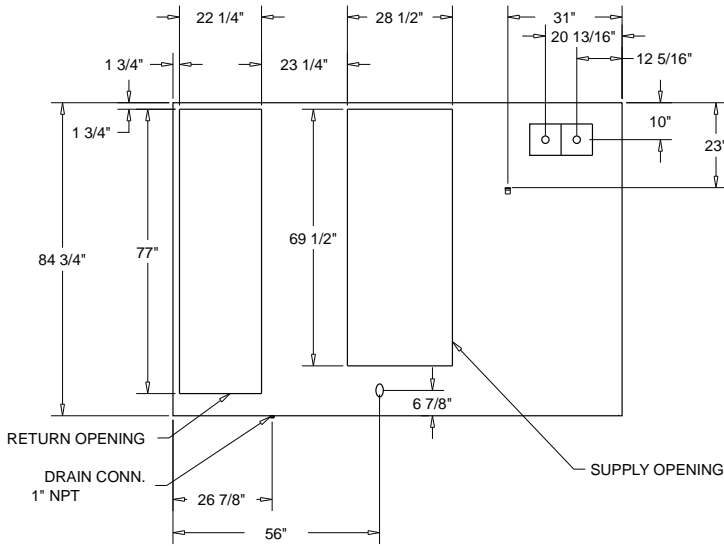
**Figure 24. Heat pumps - 5 to 10 tons standard efficiency - economizer, manual or motorized fresh air damper**



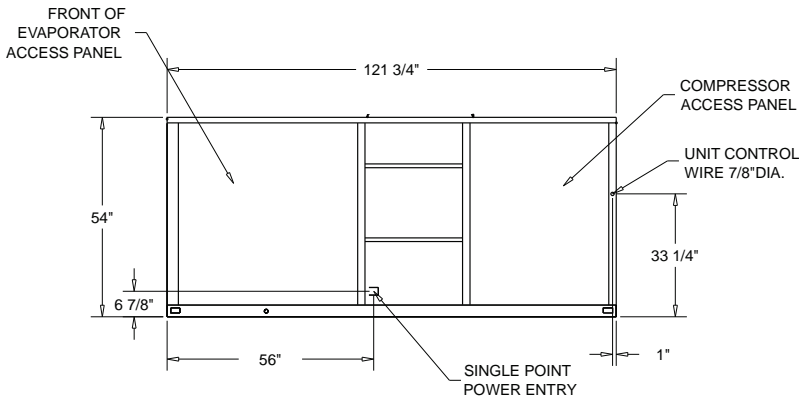
**Figure 25. WSHP rooftop models - 5 to 10 tons standard efficiency - swing diameter for hinged door(s) option**



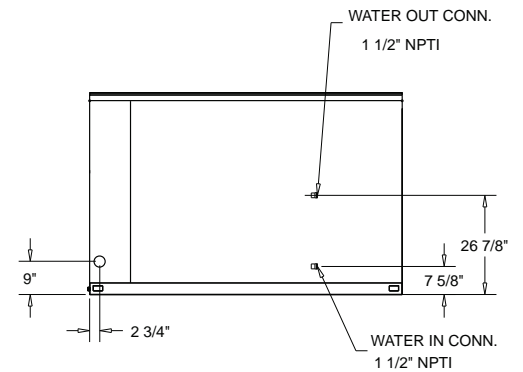
**Figure 26. WSHP rooftop models - 12.5 to 15 tons**



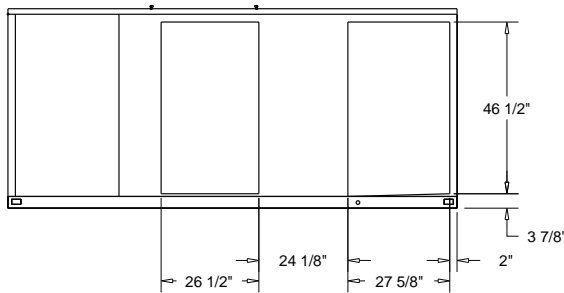
**BOTTOM VIEW  
(SHOWN FROM TOP)**



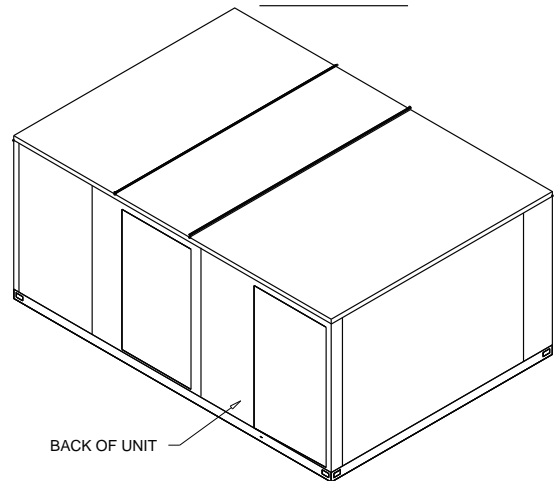
**FRONT VIEW**



**SIDE VIEW**

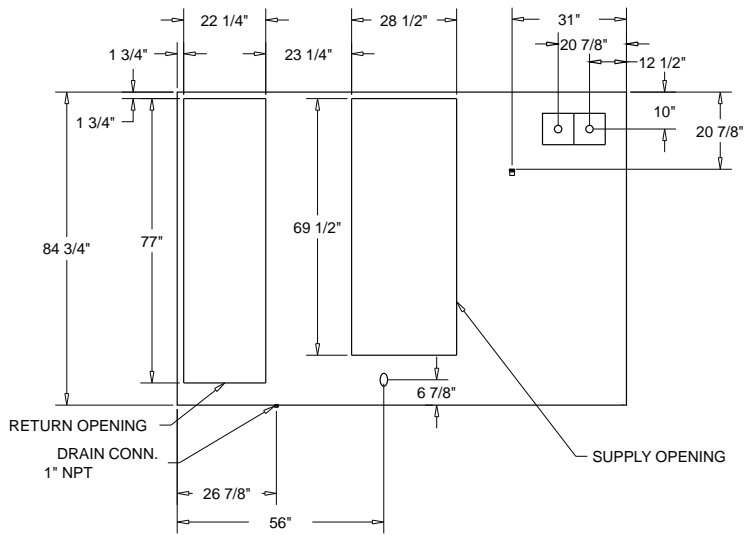


**BACK VIEW**

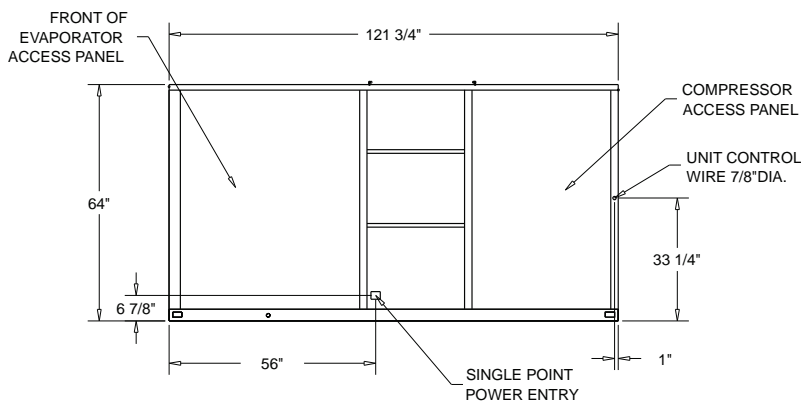


**BACK OF UNIT**

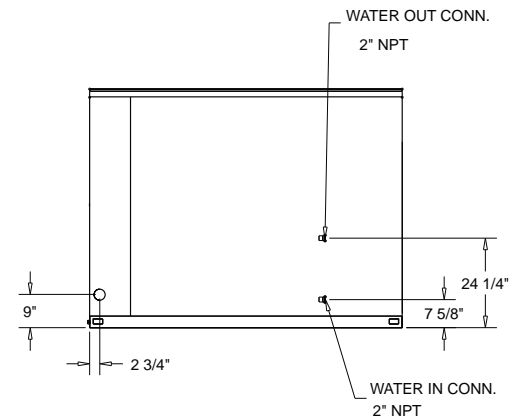
Figure 27. WSHP rooftop models - 20 tons



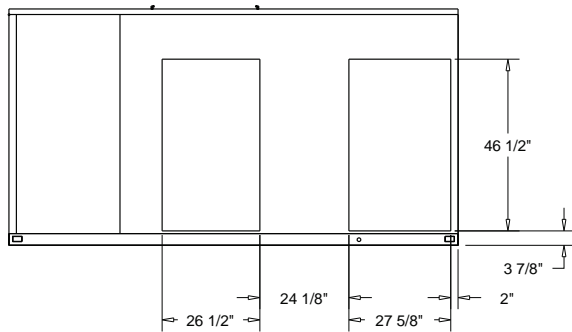
**BOTTOM VIEW**  
(SHOWN FROM TOP)



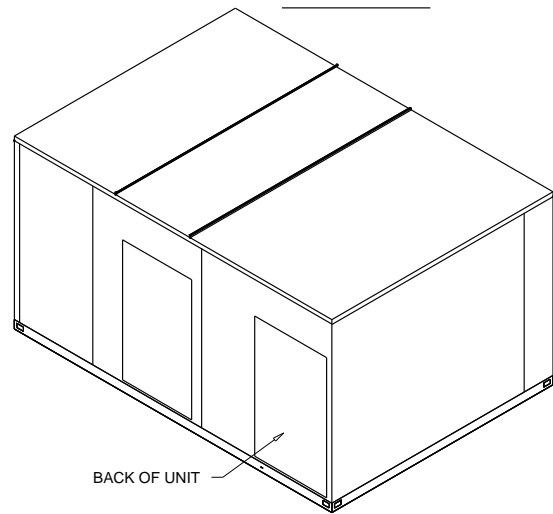
**FRONT VIEW**



**SIDE VIEW**

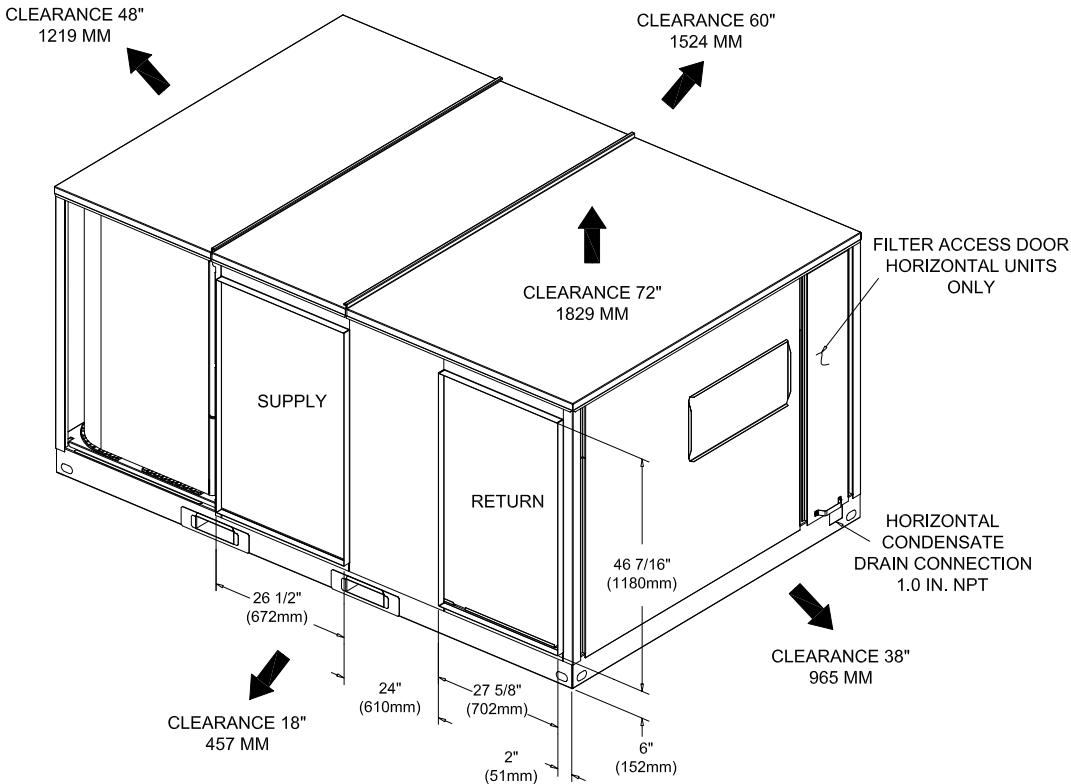


**BACK VIEW**



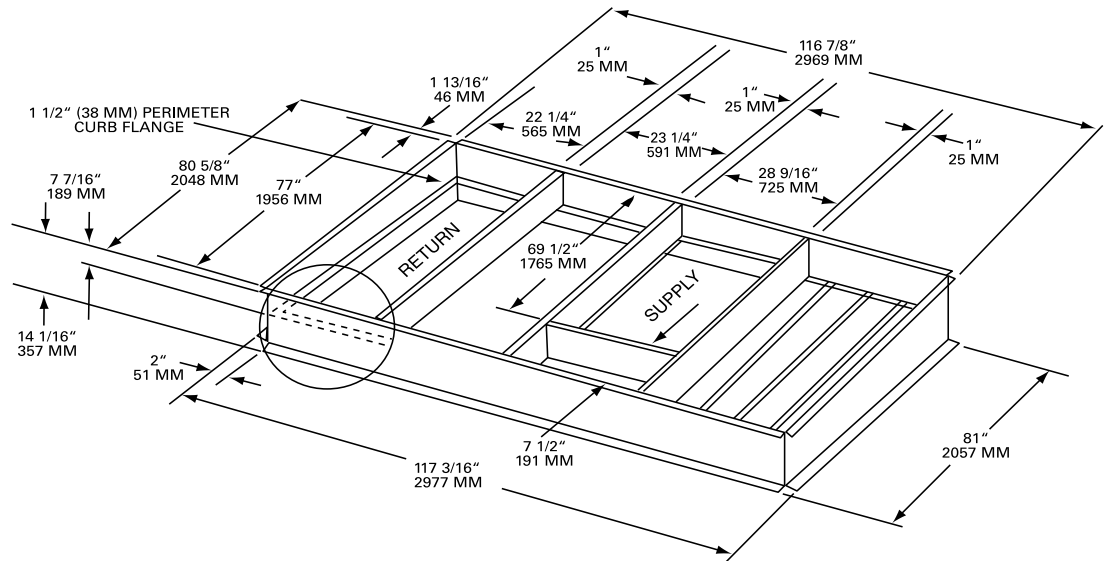
## Dimensional Data

**Figure 28. WSHP rooftop models - 12.5 to 20 tons**



\* All dimensions are in inches/millimeters.

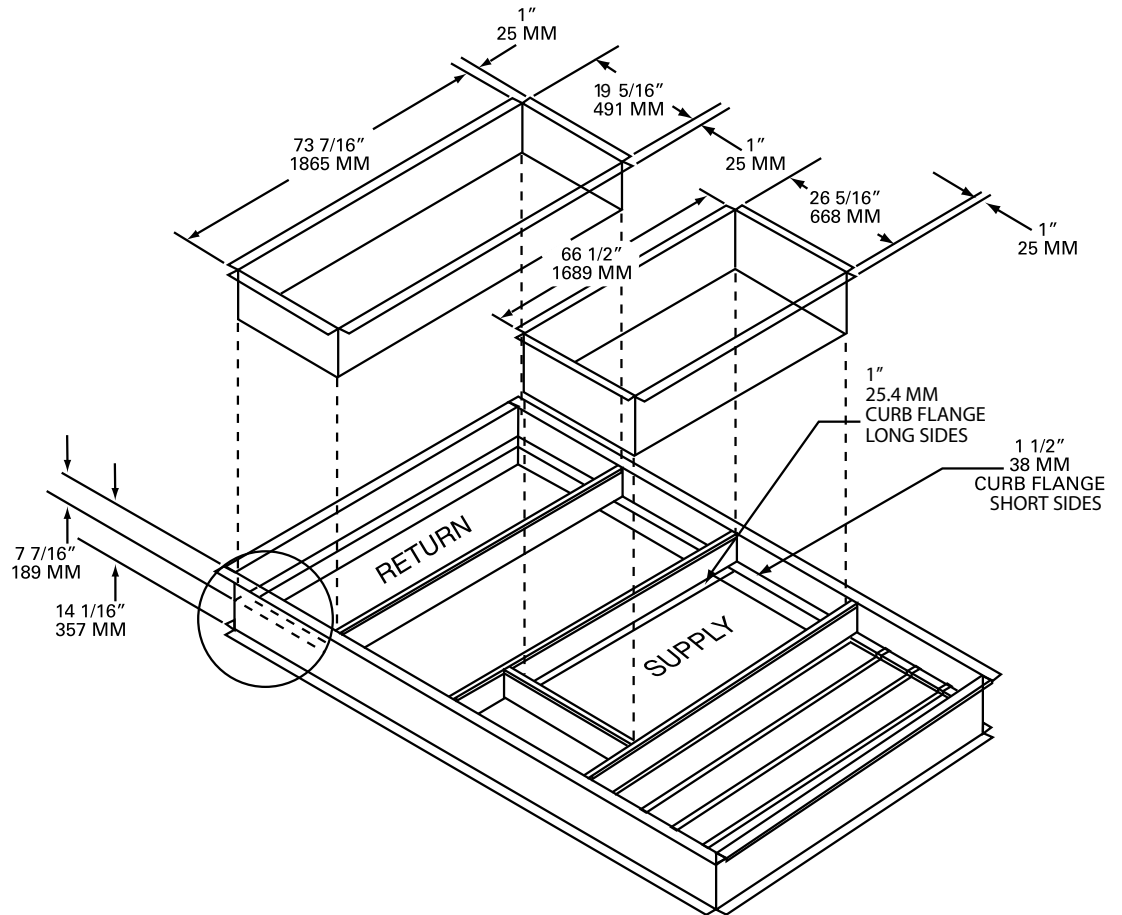
**Figure 29. WSHP rooftop models - 12.5 to 20 tons**



\* All dimensions are in inches/millimeters.



Figure 30. WSHP rooftop models - 12.5 to 20 tons

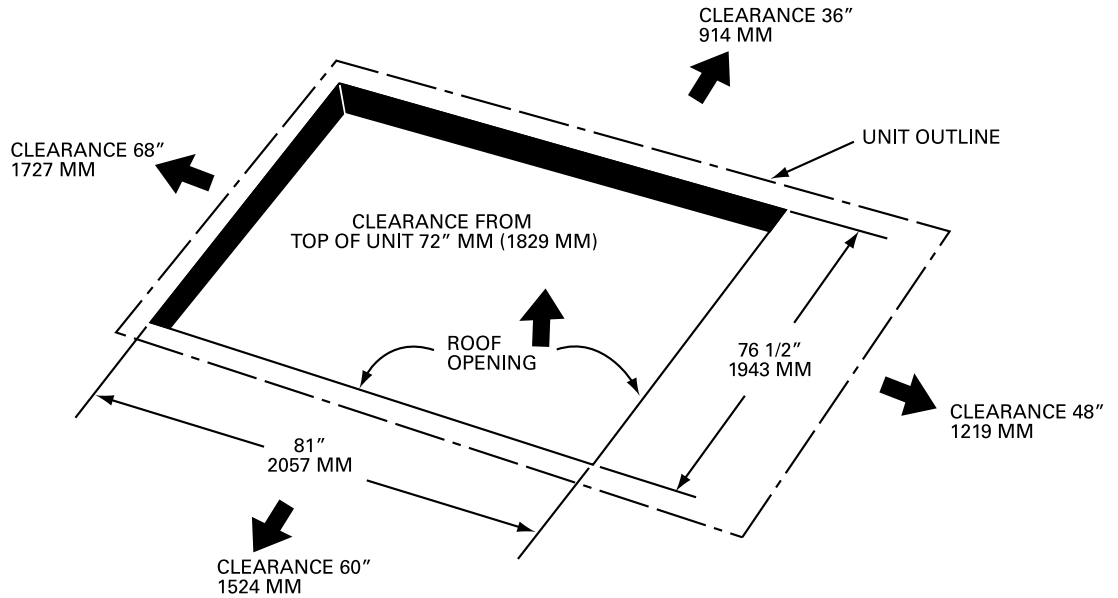


\*Duct flanges mount 7-7/16" down inside the curb on the 1-1/2" curb flanges.

Roofcurb is intended for downflow use only.

\*All dimensions are in inches/millimeters.

Figure 31. WSHP rooftop models - 12.5 to 20 tons



\* All dimensions are in inches/millimeters.

Figure 32. Downflow & horizontal condensate locations

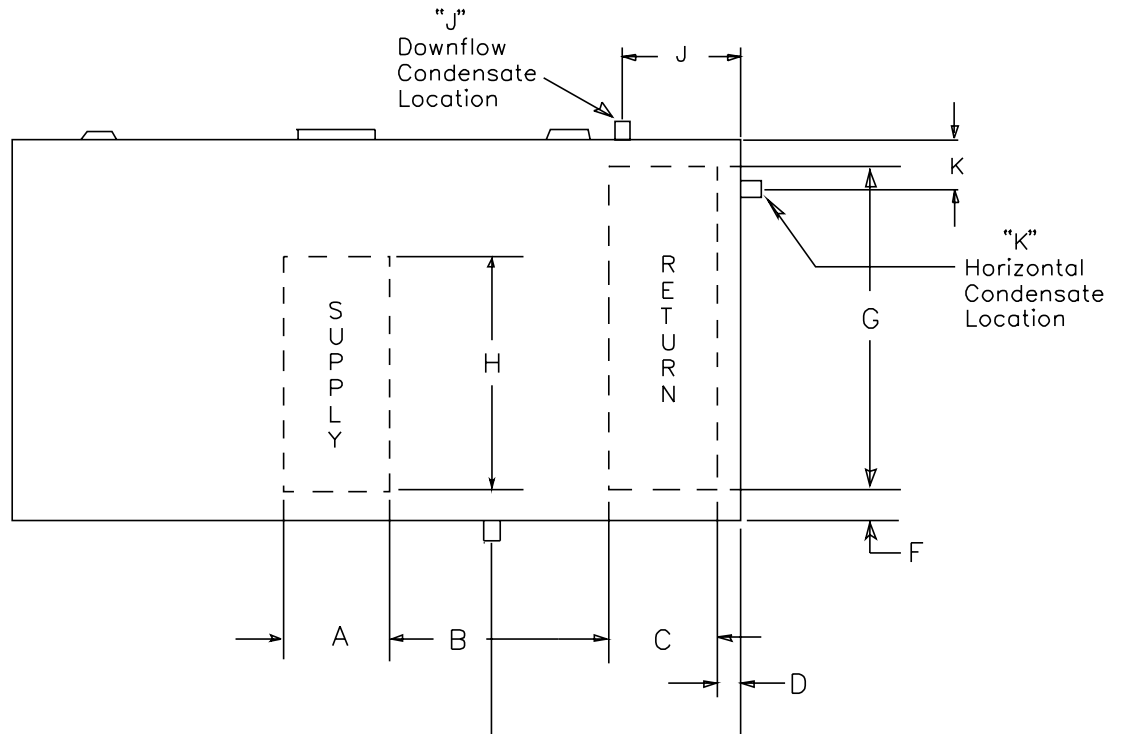


Table 74. WSHP rooftop models

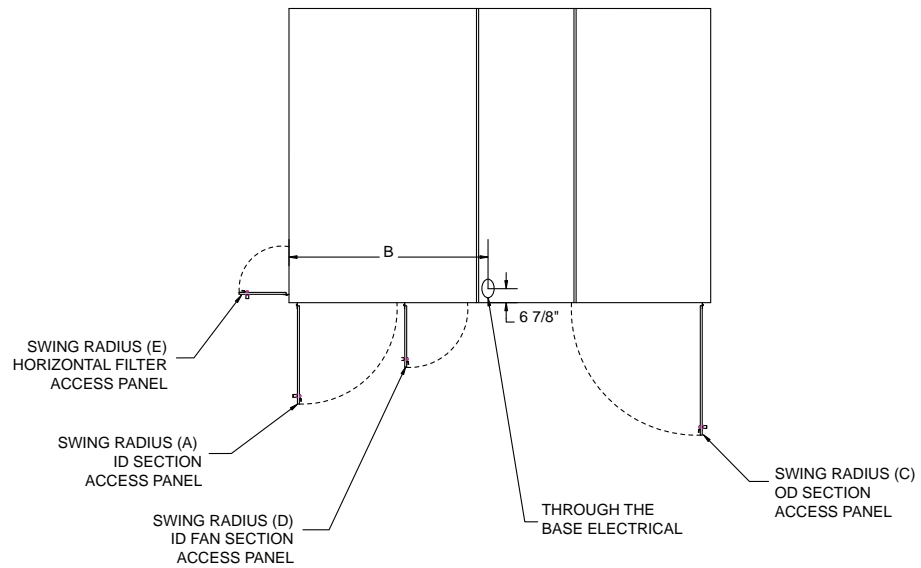
Tons	Downflow Only							Condensate		
	A	B	C	D	F	G	H	Drain Size	Drain Location	
									Downflow	Horizontal
J	K									
12.5, 15, 20	26.4375	28.75	19.9375	4.25	4.25	76.3125	68.6875	1 NPT	26.75	5.375

**Table 75. Swing clearances**

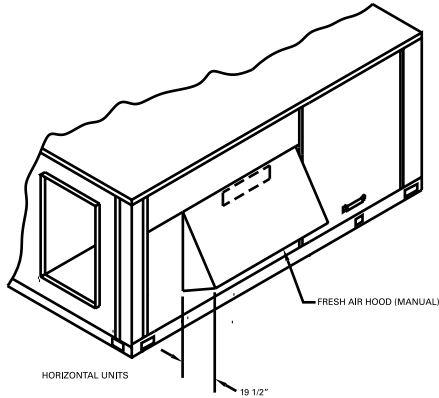
Unit Model #	A	B	C	D	E
GWSD 150-240	29.5	56	38.5	18.5	N/A
GWSH 150-240	29.5	N/A	38.5	18.5	14

**Note:** All dimensions are in inches.

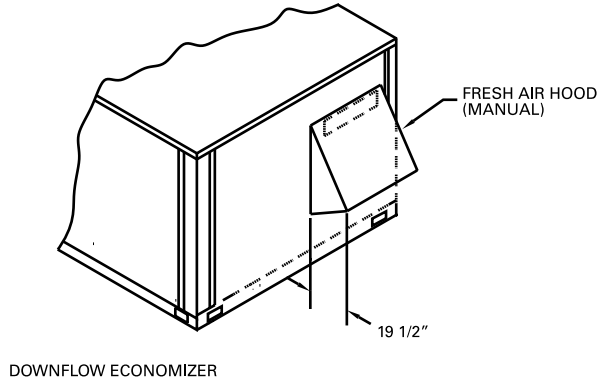
TOP VIEW SHOWING THROUGH THE BASE  
ELECTRICAL UTILITY LOCATIONS AND ACCESS PANEL SWING CLEARANCES.



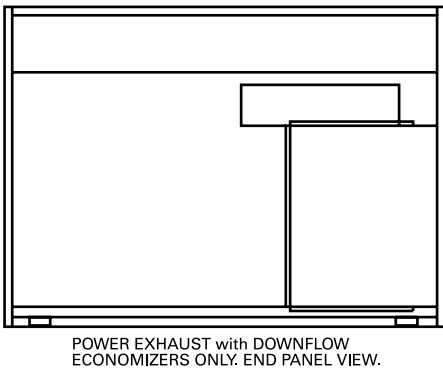
**Figure 33. Fresh air hood (horizontal units)**



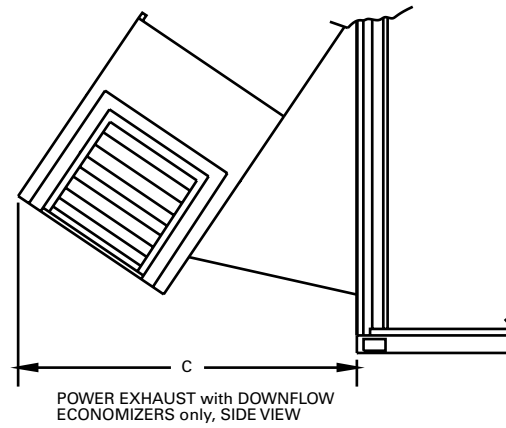
**Figure 34. Fresh air hood (downflow units)**



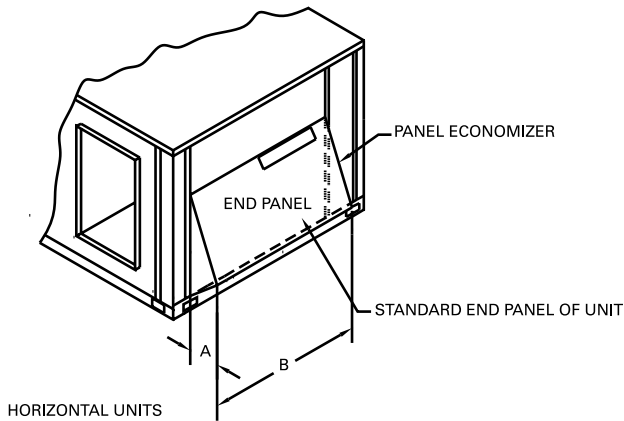
**Figure 35. Power exhaust - downflow economizers**



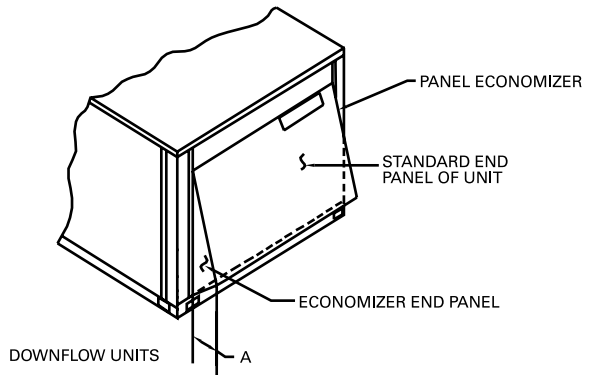
**Figure 36. Power exhaust - downflow economizers - side view**



**Figure 37. Economizer - horizontal units**



**Figure 38. Economizer - downflow units**



**Note:** When applying economizer to horizontal units, connected ductwork must be run full size to allow proper operation of economizer damper.

Model #	A	B <sup>(a)</sup>	C <sup>(b)</sup>
GWS* 150-240	19.50	64.75	39.00

(a) Horizontal dimension only. Downflow economizer is width of end panel.  
 (b) Power exhaust is applied on downflow economizer only.

# Weights

**Table 76. Accessory net weights (lbs)**

Tons	Model #	Economizer			Outside Air Damper		Power Exhaust	Roof Curb	Oversized Motor Adder	High Static Drive
		Standard		Low Leak	Manual	Motorized				
		Net	Ship	Net						
3, 4	GWSC036-048H	26	-	68	16	20	40	61	8	-
5	GWSC060H	36	-	93	26	30	80	78	8	-
6	GWSCC072	36	-	93	26	30	80	78	8	-
7.5, 10	GWSCC092-120H	36	-	93	26	30	80	78	-	-
12.5, 15, 20	GWSD150-240E	80	265	250	32	75	95	235	5	10
	GWSH150-240E	65	210	220	32	75	-	-	5	15

**Notes:**

1. Net weight should be added to unit weight when ordering factory installed economizer or oversize motor.
2. Power Exhaust is Downflow only.

**Table 77. Electric heater weights**

Tons	Model #	Electric Heaters			
		5-18 kW 240/480V	23-36 kW 240/480V	54 kW 240/480V	72 kW 240/480V
3, 4	GWSC036H, 048H	15	----	----	----
5	GWSC060H	30	30	----	----
6	GWSC072H	30	30	----	----
7.5	GWSC092H	44	44	----	----
10	GWSC120H	44	44	44	----
12.5, 15, 20	GWS*150E, 180E, 240E	28/22	33/27	40/32	43/34

**Notes:**

1. For 600V heaters net weights are same as 480V heaters.
2. To estimate shipping weight add 5 lbs to net weight.

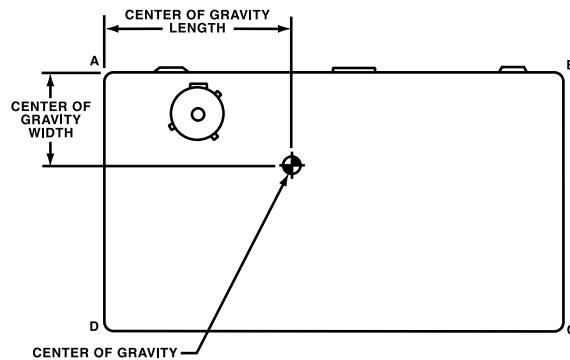
**Table 78. Variable frequency drive weights**

Motor Size	GWSD150-240E	GWSH150-240E
3 <sup>(a)</sup> & 5 HP	32	34
7.5 HP <sup>(b)</sup>	63	65

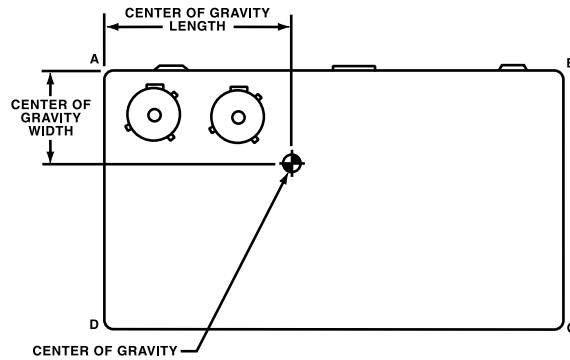
<sup>(a)</sup> 3 HP motors not applicable to GWS\*240E units.

<sup>(b)</sup> GWS\*240E units only.

**Figure 39. Center of Gravity 3 to 10 tons**



**Figure 40. Center of Gravity 12.5 to 20 tons**



**Table 79. Maximum unit & corner weights (lbs) and center of gravity dimensions (in.)**

Tons	Model #	Max Weights <sup>(a)</sup>		Corner Weights <sup>(b)</sup>				Center of Gravity	
		Ship	Net	A	B	C	D	Length	Width
3	GWSC036H	612	507	144	122	110	130	32	21
4	GWSC048H	645	540	165	131	108	136	31	20
5	GWSC060H	777	682	228	177	114	163	38	22
6	GWSC072H	835	740	235	196	140	168	40	22
7.5	GWSC092H	894	796	252	204	163	177	41	23
10	GWSC120H	948	850	303	170	218	159	40	24
12.5	GWS*150E	2455	2024	647	524	385	468	55	35
15	GWS*180E	2459	2028	648	525	386	469	55	35
20	GWS*240E	2641	2198	717	575	403	502	54	35

<sup>(a)</sup> Weights are approximate.

<sup>(b)</sup> Corner weights are given for information only.

**Table 80. Factory installed options (FIOPS) net weights (lbs)**

Accessory	Weight	Unit Model No.
High Efficiency Motors <sup>(a)</sup>	49	GWS*150E-180E standard size motor
	36	GWS*240E standard size motor
		GWS*150E-180E oversized motor
		GWS*240E oversized size motor
Hinged Doors	11	GWSC036H-048H
	12	GWSC060H-120H
	27	GWS*150E-240E
Powered Convenience Outlet	38	GWSC036H-048H
	38	GWSC060H-120H
	38	GWS*150E-240E
Through the Base Electrical	8	GWSC036H-048H
	13	GWSC060H-120H
	23	GWS*150E-240E
Unit Mounted Circuit Breaker	5	All GWS* units except those with 54&72 kW heaters & 208/230V
	10	All GWS* units with 54&72 kW heaters & 208/230V
Unit Mounted Disconnect	5	All GWS* units except those with 54&72 kW heaters & 208/230V
	10	All GWS* units with 54&72 kW heaters & 208/230V
Smoke Detectors (Supply/Return)	5	All GWS* units

**Notes:**

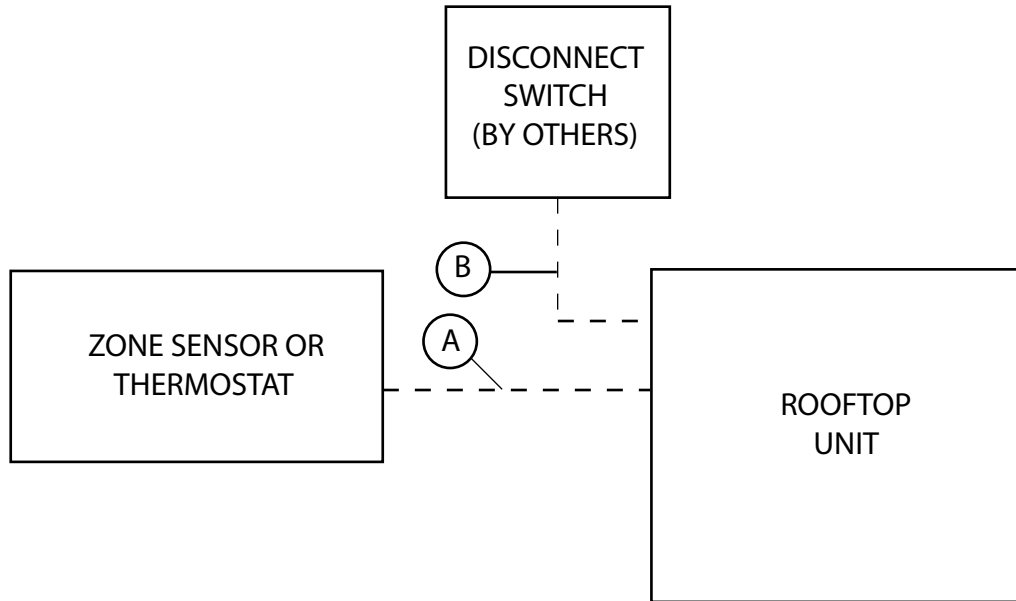
- Weights for FIOP accessories not listed are < 5 lbs.
- Net weight should be added to unit weight when ordering factory installed accessories.
- See accessory net weights table for standard factory installed economizer and oversized motors.
- \* Indicates both downflow and horizontal units.

<sup>(a)</sup> Standard factory installed motors are already included in unit net and shipping weights. Values shown for high efficiency motors are in addition to the standard motor weight.



# Jobsite Connections

	<b>Zone Sensors</b>	<b>Typical Number of Wires</b>
A	Manual Changeover	4
	Manual/Auto Changeover	5
	Manual/Auto Changeover with Status Indication LED's	10
	Programmable Night Setback with Status Indication LED's	7
	<b>Thermostats</b>	
A	24V, Heat Pump with Electric Heat	7
	<b>Typical Water Source Heat Pump Wiring</b>	
B	3 Power Wires + 1 Ground Wire (three phase)	



**Notes:**

- For specific wiring information, see the installation instructions.
- All wiring except power wires is low voltage.
- All customer-supplied wiring should be copper and must conform to NEC or CEC and local electrical codes.
- Wiring shown dotted is to be furnished and installed by the customer.
- Zone sensors are required for units configured for Single Zone VAV indoor fan system control in order to enable Single Zone VAV functionality.



# Mechanical Specifications

## General

- Dedicated downflow or horizontal airflow on 12.5 to 20 ton models
- The 3 to 10 ton units shall be convertible airflow
- Operating entering water temperature range between 45°F and 120°F in cooling as standard from the factory for all units
- Factory assembled, internally wired, fully charged with R-410A, and 100% run tested to check cooling operation, fan and blower rotation and control sequence, before leaving the factory
- ETL and CETL listed and labeled, classified in accordance to UL 1995/C 22.2, 236-05 4<sup>th</sup> Edition
- Colored and numbered wiring internal to the unit for simplified identification
- Units 135,000 BTUH and below are certified to ANSI/AHRI/ASHRAE/ISO 13256-1.
- Units greater than 135,000 BTUH are outside the scope of the program and are rated in accordance with ANSI/AHRI/ASHRAE/ISO 13256-1.
- All units come standard with a 5-year compressor warranty.

## Casing

- Zinc coated, heavy gauge, galvanized steel
- Weather-resistant baked enamel finish on phosphatized exterior surfaces
- Meets ASTM B117, 500 hour salt spray test
- Removable single side maintenance access panels
- Lifting handles in maintenance access panels (can be removed and reinstalled by removing no more than three fasteners while providing a water and air tight seal)
- Exposed vertical panels and top covers in the indoor air section insulated with a 1/2 inch, 1 pound density foil-faced, fire-retardant permanent, odorless glass fiber material
- Base of the downflow unit insulated with 1/2 inch, 1 pound density foil-faced, closed-cell material for 12.5 to 20 ton units
- The base of the unit shall be insulated with 1/8 inch, foil-faced, closed-cell insulation for 3 to 10 ton units
- Base pan shall have no penetrations within the perimeter of the curb other than the raised 1 1/8 inch high downflow supply/return openings to provide an added water integrity precaution, if the condensate drain backs up.
- Unit base provisions for forklift and/or crane lifting on three sides of unit

## Unit Top

- One piece construction of top cover or where seams exist, double hemmed and gasket sealed to prevent water leakage

## Filters

- Standard throwaway filters
- Optional 2-inch MERV 8 and MERV 13 filters

## Compressors

- External high pressure cutout on all models
- Standard low pressure switches
- All units have direct-drive, hermetic, scroll type compressors with centrifugal type oil pumps
- Suction gas-cooled motor with voltage utilization range of plus or minus 10 percent of unit nameplate voltage



- Internal overloads standard with scroll compressors
- Crankcase heaters standard on all scroll compressors

### **Refrigerant Circuits**

- Thermostatic expansion devices, service pressure ports, and refrigerant line filter driers factory-installed standard
- Area provided for replacement suction line driers

### **Evaporator Coils**

- Internally finned, 5/16" copper tubes mechanically bonded to a configured aluminum plate fin
- Coils factory tested to ensure pressure integrity
- Coils leak tested at a minimum of 450 psig
- Assembled unit leak tested to 240 psig with a refrigerant and nitrogen mixture
- Dual-compressor units have intermingled evaporator coils
- Standard sloped condensate drain pans

### **Indoor Fan**

- Direct drive, FC centrifugal fans on 3 to 5 ton units
- Belt-driven, FC centrifugal fans with adjustable motor sheaves on 6 ton and 12.5 to 20 ton units
- Units with standard motors have adjustable idler-arm assembly for quick-adjustment of fan belts and motor sheaves on 12.5 to 20 ton units
- Direct drive plenum fan design – 7.5 and 10 ton units
- Motors thermally protected.
- Oversized motors available for high-static application
- Indoor fan motors meet the U.S. Energy Policy Act of 1992 (EPACT)

### **Controls**

- Units factory-wired with necessary controls and contractor pressure lugs or terminal block for power wiring
- External location available for mounting a fused disconnect device
- ReliaTel™ controls for all 24-volt control functions
- Resident control algorithms shall make all heating, cooling, and/or ventilating decisions in response to electronic signals from sensors measuring indoor and outdoor temperatures
- Control algorithm maintains accurate temperature control, minimizes drift from set point, and provides better building comfort
- Anti-short cycle timing and time delay between compressors provide a higher level of machine protection

### **Discharge Line Thermostat**

- Bi-metal element discharge line thermostat as standard from the factory on the discharge line of each system
- Provides extra protection to compressors against high discharge temperatures in case of loss of charge, extremely high ambient and other conditions which could drive the discharge temperature higher
- Wired in series with high pressure control
- Bi-metal disc in the thermostat switches to the off position when discharge temperature rises above the protection limit, opening the 24 VAC circuit
- Bi-metal disc closes the contactor circuit when the temperature in the discharge line cools down, providing power to the compressor



## Mechanical Specifications

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- ReliaTel™ control must be manually reset when the thermostat opens the fourth time to resume operation on that stage

### Phase Monitor

- 3-phase power equipped with phase monitoring protection as standard
- Protect motors and compressors against problems caused by phase loss, phase imbalance and phase reversal indication
- Operating input voltage range of 190-600 VAC
- LED indicators for ON and FAULT
- No field adjustments and the module will automatically reset from a fault condition

### Variable Frequency Drive - 12.5 to 20 ton units

- Factory installed and tested to provide supply fan motor speed modulation
- VFDs on the supply fan, as compared to inlet guide vanes or discharge dampers, are quieter, more efficient, and are eligible for utility rebates
- Designed to allow bypass, if required
- Bypass control provides full nominal airflow in the event of drive failure

## Factory Installed Options

### Condensate Overflow Switch

- If a clogged condensate drain line is preventing proper condensate removal from the unit this option will shut the unit down

### High Efficiency Motors - 12.5 to 20 tons

- Available on select models with efficiency ratings from 86.5 up to 91.0

### High Short Circuit Current Rating - 15 to 20 tons

- Electrical subsystem withstands fault currents up to 65kA (208/230, 460 VAC) or 25kA (575 VAC) compliant with UL 1995 and NEC 440.4 (B)
- Compressor circuits and the indoor fans have dedicated overcurrent protection
- Three-phase motors protected by Class J time delay fuses
- Single-phase motors protected by Class CC time delay fuses
- Din rail mounted contactors

### Hinged Access Doors

- Sheet metal hinges available on the Filter, Evaporator, ID Fan and Compressor/Control Access Doors

### Horizontal Side Access with Circuit Breaker - 12.5 to 20 tons

- Thermal magnetic, molded case, HACR Circuit Breaker with provisions for through the base electrical connections
- Water tight circuit breaker enclosure with access through a swinging door
- Factory wiring from the switch to the unit high voltage terminal block
- Circuit breaker overcurrent protection, sized per NEC and UL guidelines and recognized by UL/CSA

### Horizontal Side Access with Disconnect Switch - 12.5 to 20 tons

- Three-pole, molded case, disconnect switch with provisions for through the base electrical connections

- Water tight disconnect switch enclosure with access through a swinging door
- Factory wiring from the switch to the unit high voltage terminal block
- UL/CSA agency recognized

**Note:** *The disconnect switch will be sized per NEC and UL guidelines but will not be used in place of unit overcurrent protection. This option is available on all models.*

### **Human Interface**

- 5 inch color touchscreen display that conforms to FCC Part 15 Class B with an Ingress Protection Rating of IP24
- Display text shall be readable by a person with 20/20 vision at a distance of 3 feet and 60° angle at lighting levels ranging from 100 lux - 25,000 lux
- Display shall operate at temperatures of -40° C to 70° C
- Firmware and unit configurations shall be able to be restored via a USB storage device

### **Multi-Speed Indoor Fan System - 7.5 to 20 tons**

- Designed for use in applications meeting the minimum requirement of CA Title 24
- Changes the speed of the fan to 67% of full airflow based off of compressor stage

### **Powered or Unpowered Convenience Outlet**

- Powered or unpowered GFCI, 120V/15amp, 2 plug, convenience outlet
- When convenience outlet is powered, a service receptacle disconnect will be available
- Convenience outlet is powered from the line side of the disconnect or circuit breaker, and therefore will not be affected by the position of the disconnect or circuit breaker
- Available to order when through-the-base electrical with disconnect switch or circuit breaker option is ordered

### **Single Zone VAV - 7.5 to 20 tons**

- Combines Trane application, control and system integration knowledge to exactly match fan speed with cooling and heating loads, regardless of the operating condition

### **Stainless Steel Drain Pan**

- Corrosion and oxidation resistance
  - Reversible and constructed of 304 stainless steel
- Note:** *Stainless steel drain pan reversible only on 3 to 10 ton models.*

### **Supply, Return and Plenum Air Smoke Detector**

- All unit operation will shut down if smoke is detected
- Reset manual at unit
- Requires minimum allowable airflow when used on certain models (See the Installation, Operation, and Maintenance (IOM) manual for the models affected and the minimum allowable airflow required )
- Available on all downflow models
- Supply and/or return smoke detectors may not be used with plenum smoke detector

### **Through the Base Electrical with Circuit Breaker**

- Thermal magnetic, molded case, HACR circuit breaker with provisions for through-the-base electrical connections
- Circuit breaker installed within unit in water tight enclosure
- Access through a swinging door
- Wiring provided from the switch to the unit high voltage terminal block



## Mechanical Specifications

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- Circuit breaker will provide overcurrent protection, sized per NEC and cULus guidelines, and agency recognized by UL/CSA

### Through the Base Electrical with Disconnect Switch

- 3-pole, molded case, disconnect switch with provisions for through-the-base electrical connections
- Disconnect switch installed within unit in a water tight enclosure
- Access through a swinging door
- Wiring provided from the switch to the unit high voltage terminal block
- Switch UL/CSA agency recognized

*Note: The disconnect switch will be sized per NEC and UL guidelines but will not be used in place of unit overcurrent protection. This option is available on all models.*

### Through the Base Utilities Access

- Electrical service entrance allows electrical access for both control and main power connections inside the curb and through the base of downflow units, and through the front of horizontal units
- Allows for field installation of liquid-tight conduit and an external field-installed disconnect switch

### Tracer® Air-Fi® Wireless

- Factory installed and pre-wired
- Communicated using standard BACnet® open protocol

### Two-Inch Pleated Filters

- Two inch pleated MERV 8 or MERV 13 filters with filter removal tool

## Factory or Field Installed Options

### Bacnet® Communications Interface

- Allows the unit to communicate directly with a generic open protocol BACnet MS/TP Network Building Automation System Controls

### Barometric Relief

- Provides a pressure operated damper for the purpose of space pressure equalization and be gravity closing to prohibit entrance of outside air during the equipment “off” cycle

### Clogged Filter/Fan Failure Switch

- A dedicated differential pressure switch to achieve active fan failure indication and/or clogged filter indication.
- These indications will be registered with either a zone sensor with status indication lights or an Integrated Comfort™ System

### Differential Pressure Switches

- Individual fan failure and dirty filter indication
- Fan failure switch disables all unit functions and “flash” the Service LED on the zone sensor
- Dirty filter switch will light the Service LED on the zone sensor and will allow continued unit operation

### Discharge Air Sensing Kit

- True discharge air sensing in heating modules

- Readable through Tracer® or Tracker™

### **Economizer - Standard, Downflow**

- Fully modulating 0-100% motor and dampers, barometric relief, minimum position setting, preset linkage, wiring harness with plug, fixed dry bulb and spring return actuator
- Barometric relief damper comes standard with the downflow economizer
- Provides a pressure operated damper that shall be gravity closing and shall prohibit entrance of outside air during the equipment "off" cycle
- Solid state enthalpy and differential enthalpy control shall be field-installed

### **Economizer - Low Leak, Downflow**

- Meets low leak requirements for ASHRAE 90.1, IECC, and CA Title 24 standards (3 cfm/ft<sup>2</sup>@1" wg exterior air, 4 cfm/ft<sup>2</sup>@1" wg return air)
- Allows 100% outdoor air supply from 0-100% modulating dampers
- Standard with barometric relief
- Can be paired with powered exhaust for additional building pressure relief
- Available on downflow units only
- Three control options, dry bulb and reference or comparative enthalpy (optional)

### **Electric Heaters**

- Electric heat modules are available for installation within the basic unit
- Elements are constructed of heavy-duty nickel chromium elements internally delta connected for 240 volt, connected for 480 and 600 volt
- Staging is achieved through ReliaTel™
- Each heater package has automatically reset high limit control operating through heating element contactors
- All heaters are individually fused from the factory, where required, and shall meet all NEC and CEC requirements when properly installed
- Power assemblies provide single-point connection
- Electric heat modules shall be cULus listed.
- If ordering the Through the Base Electrical option with an Electric Heater, the heater must be factory installed

### **Frostat™**

- Utilized as a safety device
- Opens when temperatures on the evaporator coil fall below 10°F.
- Temperatures will need to rise to 50°F before closing
- Utilized in low airflow air applications

### **Indoor Fan Motor Shaft Grounding Ring - 12.5 to 20 tons**

- Used on all VFD driven motors to provide a conductive discharge path away from the motor bearings to ground
- Maintenance free circumferential ring of conductive micro fibers that discharges voltages to ground

### **LonTalk® Communications Interface**

- Allows the unit to communicate as a Tracer® LCI-V device or directly with generic LonTalk Network Building Automation System Controls



## Mechanical Specifications

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### Oversized Motors

- Available for high static applications

### Reference or Comparative Enthalpy

- Used to measure and communicate outdoor humidity.
- The unit receives and uses this information to provide improved comfort cooling while using the economizer
- Comparative Enthalpy measures and communicates humidity for both outdoor and return air conditions and return air temperature
- The unit receives and uses this information to maximize use of economizer cooling, and to provide maximum occupant comfort control
- Reference or Comparative Enthalpy option is available when a factory or field installed Downflow Economizer is ordered
- Available on all downflow models

### Trane Communication Interface

- Interfaces ReliaTel™ controlled units with the Trane Integrated Comfort™ Systems

### Field Installed Options

#### CO<sub>2</sub> Sensor

- Ability to monitor the concentration (parts per million, ppm) of CO<sub>2</sub> (Carbon Dioxide) in the air
- As CO<sub>2</sub> concentration changes, outside air damper modulates to meet the current ventilation needs of the zone

#### Digital Display Zone Sensor

- Digital LCD (Liquid Crystal Display) zone sensor has the look and functionality of standard zone sensors
- Digital display of set point adjustment and space temperature in °F (Fahrenheit) or °C (Celsius)
- Includes FAN and SYSTEM buttons (supports the service functions of the standard sensor)
- E-squared memory stores last programmed set points
- Requires 24 VAC (Volts AC)
- Should be utilized with ReliaTel™ controls

#### Economizer - Standard, Horizontal

- Contains the same features as the downflow economizer with the exception of barometric relief

#### Economizer - Low Leak, Downflow & Horizontal

*Note: Low leak economizer option is not available for 3 to 10 ton units used in horizontal applications.*

- Meets low leak requirements for ASHRAE 90.1, IECC, and CA Title 24 standards (3 cfm/ft<sup>2</sup>@1" wg exterior air, 4 cfm/ft<sup>2</sup>@1" wg return air)
- Allows 100% outdoor air supply from 0-100% modulating dampers and is standard with barometric relief
- Can be paired with powered exhaust for additional building pressure relief

### **High Static Drive**

- High static drive shall allow the standard motor on the 12.5 and 15 ton units to operate with improved external static capabilities

### **Manual Outside Air Damper**

- Provides up to 25% outside air

### **Motorized Outside Air Dampers**

- Provides up to 50% outside air
- Once set, outdoor air dampers shall open to set position when indoor fan starts
- Closes to the full closed position when indoor fan shuts down

### **Powered Exhaust**

- Provides exhaust of return air, when using an economizer, to maintain better building pressurization

### **Roof Curb - Downflow**

- Designed to mate with the downflow unit and provide support and a water tight installation when installed properly
- Allows field-fabricated rectangular supply/return ductwork to be connected directly to the curb
- Complies with NRCA requirements
- Shipped knocked down for field assembly and includes wood nailer strips

### **Remote Potentiometer**

- Adjusts the minimum position setting of the economizer

### **Ventilation Override Accessory**

- With the Ventilation Override Accessory installed, the unit can be set to transition up to three different pre-programmed sequences for Smoke Purge, Pressurization, and Exhaust
- Transition occurs when a binary input on the RTOM is closed (shorted)
- Typically be a hard wired relay output from a smoke detector or fire control panel

### **Zone Sensors**

- Interfaces with Axiom™ rooftop units
- Available in either manual, automatic, programmable with night setback
- System malfunction lights or remote sensor options

**Note:** *Zone sensors are required for units configured for Single Zone VAV indoor fan system control to enable Single Zone VAV functionality.*



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