



# Product Catalog

## Packaged Rooftop Air Conditioners Precedent™ — Heat Pump 3 to 10Tons — 60 Hz





# Introduction

## Packaged Heat Pumps

Trane® customers demand products that provide exceptional reliability, meet stringent performance requirements, and are competitively priced.

Precedent™ 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 Precedent™ Products are built to meet your needs.

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 Micro—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.

With its sleek, compact cabinet, Precedent™ continues to provide the highest standards in quality and reliability, comfort, ease of service, and the performance of Trane® light commercial products.

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## Revision History

- Updated catalog to include new 14/16 SEER heat pumps, WSC\*\*\*H, W/DHC\*\*\*H



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# Features and Benefits

## Standard Features

- 5-year Limited Compressor Warranty
- 5-year Limited Heat Exchanger Warranty
- 1-year Limited Parts Warranty
- Anti-Short Cycle Timer (Standard with ReliaTel™)
- Colored and Numbered Wiring
- Convertible Airflow
- Crankcase Heaters
- Direct Drive Variable Speed Motors
- Easy Access Low Voltage Terminal Board (LTB)
- ReliaTel™ Microprocessor Controls
- Filters are Standard on all Units
- Foil-Faced and Edge Captured Insulation
- High Pressure Control
- IAQ Dual Sloped, Plastic, Removable, Reversible Drain Pan
- Liquid Line Refrigerant Drier
- Low Ambient Cooling to 0°F
- Low Pressure Control
- Multispeed Direct Drive Motors on Select Models
- Operating Charge of R-410A
- Patent-Pending Hybrid Condenser Coil for easy cleaning
- Phase Loss Protection
- Phase Monitor
- Phase Reversal Protection
- Phase Balance Protection
- Plenum Fan on Select Models
- Provisions for Through-the-Base Condensate Drain Connections
- Quick Access Panels
- Single Point Power
- Single Side Service
- Standardized Components
- Thermal Expansion Valve
- Touch Safe Control Box
- Trane® built Scroll Compressors

## Variety of Options<sup>1</sup>

### Factory Installed Options

- Auxiliary Gas Heat (High Efficiency Models Only)
- Air-Fi™ Wireless Communication Interface

- Black Epoxy Pre-Coated Coils
- CO<sub>2</sub> Sensor (Wiring Only)
- Condensate Overflow Switch
- Fault Detection & Diagnostics (FDD); Meets CA Title 24 Requirements
- Hinged Access Doors
- Human Interface - 5 inch Color Touchscreen
- Multi-Speed Indoor Fan System
- Powered or Unpowered Convenience Outlet
- Single Zone Variable Air Volume (SZVAV)
- Stainless Steel Drain Pan
- Supply, Return or Plenum Air Smoke Detector
- Through-the-Base Electrical Access
- Through-the-Base Electrical with Circuit Breaker
- Through-the-Base Electrical with Disconnect Switch
- 2" MERV 8 Filters or 2" MERV 13 Filters with Filter Removal Tool

### **Factory or Field Installed Options**

- Barometric Relief
- Clogged Filter/Fan Failure Switch
- Discharge Air Temperature Sensing Kit
- Economizer: Standard and Low Leak
- Electric Heaters
- Froststat™
- Hail Guards
- High Static Motor
- LonTalk® Communications Interface (LCI)
- BACnet® Communications Interface (BCI)
- Reference or Comparative Enthalpy
- Trane® Communications Interface (TCI)

### **Field Installed Options**

- CO<sub>2</sub> Sensor Only Kit / CO<sub>2</sub> Sensor and Wiring Kit
- Dual Thermistor Remote Zone Sensor
- Economizer: Low Leak
- High Altitude Kit
- Manual Outside Air Damper
- Motorized Outside Air Dampers
- Powered Exhaust
- Quick Adapt Curbs
- Quick Start Kit

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<sup>1</sup> Refer to Model Number Description for option availability.

## Features and Benefits

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- Remote Potentiometer
- Roof Curb
- Thermostat
- Ventilation Override Accessory
- Zone Sensor

### Other Benefits

- Cabinet design ensures water integrity
- Ease of Service, Installation and Maintenance
- Mixed model build enables “fastest in the industry” ship cycle times
- Outstanding Airflow Distribution
- ReliaTel™ Controls
- Unmatched Product Support is one of our finest assets. Trane® Sales Representatives are a Support Group that can assist you with:
  - Product
  - Application
  - Service
  - Training
  - Special Applications
  - Specifications
  - Computer Programs and much more

### Standard Features

#### Anti-Short Cycle Timer (Standard with ReliaTel™)

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

Precedent™ contains 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 (available on 10 ton units only).

Multi stage compressors provide optimal performance during light load conditions.

#### Condenser Coil



Precedent™ boasts a patent-pending 1+1+1 condenser coil, permanently gapped for easy cleaning.

### 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. For a complete list of ReliaTel™ offerings, refer to the “Other Benefits” section within the Features and Benefits section of this catalog.

### 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.

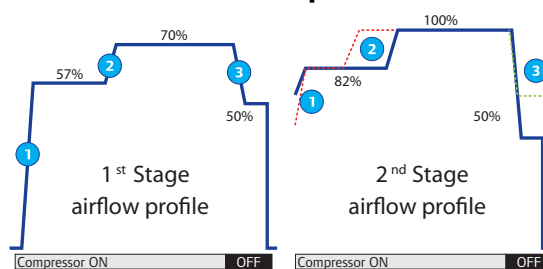
### Cooling

Standard or High Efficiency cooling available.

### Crankcase Heaters

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

### Direct Drive Variable Speed Motors



Direct drive motor shall be variable speed with constant airflow settings. Motor will be ECM (Electronically Commutated Motor) as standard pre-programmed with enhanced airflow capabilities.

**Note:** Available on indoor motors for high efficiency 3 to 5 ton units only.

### Dual Fuel

In heating mode, the unit control operates the heat pump in 1st stage heating. If the call for heat is not satisfied, heat pump 2nd stage is activated. If ambient is below lockout set point, the controller will activate auxiliary gas heat 1st stage, and heat pump operation will be terminated. A continued call for heat will cause the controller to activate auxiliary gas heat 2nd stage.

The indoor fan will continue to run and will switch to 100% during transition from heat pump to gas heat. If the controller initiates gas heat as the first heat source during a call for heat in constant volume, the blower is delayed 45 seconds to allow heat up of the gas heat exchanger.

If continuous fan operation is available and selected from the thermostat, the controller automatically adjusts fan speed for heat pump and gas heat operation.

During defrost mode, the controller will activate auxiliary gas heat to maintain comfort.

## Features and Benefits

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### **IAQ Dual Sloped, Plastic, Removable, Reversible Drain Pans**



Every Precedent™ unit has a plastic, removable, dual-sloped drain pan that's easy to clean and reversible to allow installation of drain trap on either side of the unit.

### **Easy Access Low Voltage Terminal Board**

Precedent's™ 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 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 Ambient Cooling**

All Precedent™ microprocessor units have cooling capabilities down to 0°F as standard.

### **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 Monitoring Protection**

Precedent™ units with 3-phase power are equipped with phase monitoring protection as standard. These devices protect motors and compressors against problems caused by phase loss, phase imbalance and phase reversal indication.

### **Plenum Fan**

The following unit shall be equipped with a direct drive plenum fan design (WSC120E). Plenum fan design shall include a backward-curved fan wheel along with an external rotor direct drive variable speed indoor motor. All plenum fan designs will have a variable speed adjustment potentiometer located in the control box.

### **Quick-Access Panels**

Remove two screws for access to the standardized internal components and wiring.

### **Single Point Power**

A single electrical connection powers the unit.

### **Standardized Components**

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

### **Thermal Expansion Valve**

This feature is standard on all units.



### Through-the-Base Condensate

Every unit includes provisions for through-the-base condensate drain connections. This allows the drain to be connected through the roof curb instead of a roof penetration.

### Touch Safe Control Box

On 3 to 5 ton modes, low voltage and high voltage components are separated within the control box. High voltage components are located behind a door to provide an additional layer of safety.

## Variety of Options

### Factory Installed Options<sup>1</sup>

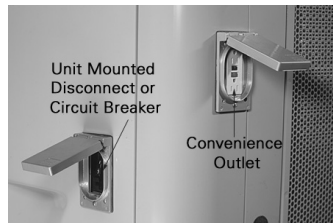
#### Trane® Air-Fi™ Wireless

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.

#### Black Epoxy Pre-Coated Coils

The pre-coated coils are an economical option for protection in mildly corrosive environments.

#### Circuit Breaker (Required with Through-the-Base Electrical)



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

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

Factory-installed CO<sub>2</sub> sensor wiring saves time and ensures proper unit connections for the field installed CO<sub>2</sub> sensor kits.

#### 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 unit.

#### Disconnect Switch (Available with Through-the-Base Electrical)

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

Codes require a method of assured unit shutdown for servicing. Field-installed disconnects sometimes interfere with service access. Factory installation of unit disconnects reduces costs, assures proper mounting and provides the opportunity to upgrade to unit circuit breaker protection.

#### Fault Detection & Diagnostics (FDD)

This offering meets the mandatory requirement of CA Title 24 of fully configurable diagnostics allowing fault history and reading fault codes at the unit. This option provides detection of the

<sup>1</sup> Refer to Model Number Description for option availability.

## Features and Benefits

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following faults: Air temperature sensor failure/fault and notification of acceptable economizer mode. The FDD system shall be certified by the Energy Commission as meeting the requirements.

### High Efficiency Filtration

Precedent™ 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 Static Motor

Oversized motor for applications where higher external static pressure capability is required. Direct drive constant torque motors on 3 to 5 ton standard efficiency. Direct drive constant CFM motors on 3 to 5 ton high efficiency. Belt drive on 6 to 7.5 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.

3 to 5 ton units with this option include a compressor isolation panel to ease commissioning and servicing of units.

### Human Interface - 5 Inch Color Touchscreen

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.



- 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 67% of full airflow based off of compressor stages.

### Multiple-Zone VAV Control

A multiple-zone VAV (MZVAV) system consists of a packaged rooftop unit that serves several individually controlled zones. Each zone is equipped with a VAV terminal unit that varies the

quantity of air delivered to maintain the desired temperature in that zone. The rooftop unit controller varies the speed of the indoor fan to maintain the static pressure in the supply ductwork at a setpoint, ensuring that all zones receive the necessary quantity of air. In addition, cooling capacity is cycled to maintain the supply air temperature at the desired setpoint.

For decades, Trane has been an industry leader in rooftop VAV systems. Now multiple-zone VAV control is available in high efficiency packaged heat pumps.

### 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.

**Note:** Not available on 10 ton, 575V units.

### Single Zone Variable Air Volume (SZVAV) – One Zone Variable Air Volume Mode

Single zone variable air volume is designed for use in single zone applications like gymnasiums, auditoriums, manufacturing facilities, retail box stores, and any large open spaces, where there is a lot of diversity in the load profile. SZVAV is an ideal replacement to “yesterday’s” constant volume (CV) systems, by reducing 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/exceed ASHRAE 90.1- 2010, 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 like TRACE is recommended to evaluate performance improvements for your application.*

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

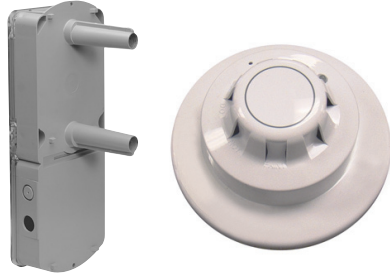
### Stainless Steel Drain Pan

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>).

## Features and Benefits

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



With this option installed, if smoke is detected, all unit operation will be shut down. Reset will be manual at the unit. In order for the supply air smoke detector or return air smoke detector to properly sense smoke in the supply air stream or the return air stream, the air velocity entering the smoke detector unit must be between 500 - 4000 feet per minute. Equipment covered in this manual will develop an airflow velocity that falls within these limits over the entire airflow range specified in the evaporator fan performance table. Supply and/or return smoke detectors may not be used with the plenum smoke detector.

**Note:** *Plenum smoke detectors have no auxiliary contacts for external connections.*

### Through-the-Base Electrical Utility 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. Option will allow for field installation of liquid-tight conduit and an external field installed disconnect switch.

Factory provided through-the-base openings simplify wiring and piping. Because these utility openings frequently minimize the number of roof penetrations, the integrity of roofing materials is enhanced.

### Through-the-Base Gas Access



Factory provided through-the-base openings simplify wiring and piping. Because these utility openings frequently minimize the number of roof penetrations, the integrity of roofing materials is enhanced.

### Factory or Field Installed Options<sup>1</sup>

#### 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.

These sensors allow a zone sensor service light to indicate a dirty filter or a fan that's not working. The field installation charges for these valuable feedback devices often eliminate them from consideration. Factory installation can make such features a good investment.

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<sup>1</sup> Refer to Model Number Description for option availability.

### **Discharge Air Temperature Sensing Kit**

Provides true discharge air temperature sensing in heating models. The kit is functional only with the ReliaTel™ options module.

### **Economizer (Standard)**

This accessory shall be available with or without barometric relief. The assembly includes fully modulating 0-100 percent motor and dampers, minimum position setting, preset linkage, wiring harness with plug, spring return actuator and fixed dry bulb control. The barometric relief shall provide a pressure operated damper that shall be gravity closing and shall prohibit entrance of outside air during the equipment "off" cycle. Optional solid state or differential enthalpy control shall be available for either factory or field installation. The economizer arrives in the shipping position and shall be moved to the operating position by the installing contractor.

### **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.

### **Fresh Air Options – Dampers and Economizer**

0 - 25% manual or 0 - 50% motorized outside air hoods are available.

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. Factory-installed economizers save time and ensure proper installation.

Due to varying supply fan speed 0-50% motorized damper is not available with multi-speed or SZVAV applications.

The economizers come with three control options — dry bulb is standard, enthalpy and differential enthalpy are optional.

### **Frostat™**

This capillary bulb embedded in the face of the evaporator coil 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.

### **Hail Guards**

Hail protection quality coil guards shall be either factory or field-installed for condenser coil protection. This option protects the condenser coil from vandalism and/or hail damage.

### **Low Leak Economizer**

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. It can be paired with powered exhaust for additional building pressure relief. This option can be paired with or without Fault Detection & Diagnostics (FDD) to meet current mandatory CA Title 24 requirements. Available on downflow units only.

### **Reference or Comparative Enthalpy**

Measures and communicates humidity while maximizing comfort control.

## Features and Benefits

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### Field Installed Options<sup>1</sup>

#### CO<sub>2</sub> Sensing Kits

Two field installed kits are offered: CO<sub>2</sub> sensor and wiring or CO<sub>2</sub> sensor only. The CO<sub>2</sub> sensor only kit should be ordered with factory installed CO<sub>2</sub> sensor wiring. Factory installed CO<sub>2</sub> sensor wiring saves set-up time and ensures proper unit connections for the CO<sub>2</sub> sensor.

The CO<sub>2</sub> sensor has the ability to monitor space occupancy levels within the building by measuring the parts per million of CO<sub>2</sub> (Carbon Dioxide) in the air. As the CO<sub>2</sub> levels increase, the outside air damper modulates to meet the CO<sub>2</sub> space ventilation requirements.

#### Low Leak Economizer

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. It can be paired with powered exhaust for additional building pressure relief. Available on downflow units only.

#### Quick Adapt Curbs

Enables easy conversion of existing Voyager™ 3 to 10 ton units to Precedent™ units on replacement jobs.

#### Roof Curbs

Available for downflow units. Only three roof curbs for the entire line simplifies curb selection.

#### 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.

## Other Benefits

#### Airflow Distribution

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

#### Cabinet Integrity



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

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<sup>1</sup> Refer to Model Number Description for option availability.

### Easy to Install, Service and Maintain

Because today's owners are very cost-conscious when it comes to service and maintenance, the Precedent™ unit was designed with direct input from service contractors. This valuable information helped to design a product that would get the service person off the job quicker and save the owner money. Precedent™ 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.

### Flexibility

Precedent™ offers ultimate flexibility. Units are built to order in our standard "shortest in the industry" ship cycle time.

### ReliaTel™ Controls

ReliaTel™ controls provide unit control for heating, cooling and ventilating utilizing input from sensors that measure outdoor and indoor temperature.

#### ***ReliaTel™ Control Logic Enhances Quality and Reliability***

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

Precedent™ units with ReliaTel™ reduces the number of components required to operate the unit, thereby reducing possibilities for component failure.

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

ReliaTel™ eliminates the need for field installed anti-shortcycle timer and time delay relays. ReliaTel™ controls provide these functions as an integral part of the unit. The contractor no longer has to purchase these controls as options and pay to install them.

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 Precedent™ 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.

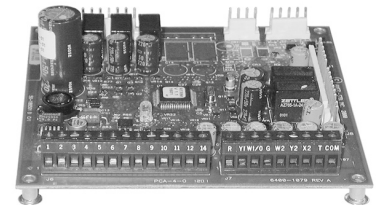
As long as the unit has power and the "system on" LED is lit, ReliaTel™ is operational. The light indicates that the controls are functioning properly.

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).

#### ***Other ReliaTel™ 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.





## Features and Benefits

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Intelligent fallback is a benefit to the building occupant. If a component fails, the unit will continue to operate at predetermined temperature setpoint.

Intelligent anticipation is a standard ReliaTel™ feature. It functions continuously as ReliaTel™ and zone sensor(s) work together in harmony to provide much tighter comfort control.

The same ReliaTel™ board fits all heat pump models. This provides standardization of parts for contractors. Less money is tied up in inventory with ReliaTel™.

### **Unit Cabinet**

The compact cabinet with rounded corners takes up less room and is less costly to ship. The beveled and ribbed top is not only aesthetically pleasing, it is designed to prevent water from pooling.

## **Rigorous Testing**

All of Precedent's™ designs were rigorously rain tested at the factory to ensure 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. The evaporator and condenser coils are leak tested at 600 psig. The assembled unit is leak tested to 465 psig.

All parts are inspected at the point of final assembly. Sub-standard parts are identified and rejected immediately.

Every unit receives a 100% unit run test before leaving the production line to make sure it lives up to rigorous Trane® requirements.





# Application Considerations

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

## Auxiliary Gas Heating Operation

The heat exchanger is manufactured with aluminized steel. To prevent condensation within the heat exchanger, do not exceed 50% outside air or a minimum mixed air temperature of 40°F.

## Barometric Relief

This product line offers an optional barometric relief damper for use in conjunction with economizer option. 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.

**Note:** *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.*

## Black Epoxy Coil

The coils are manufactured with a thermoset, vinyl coating that is bonded to the aluminum fin stock prior to the fin stamping process. These coils are an economical option for protection in mildly corrosive environments.

**Note:** *Not to be used where seacoast applications exist.*

## Clearance Requirements

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

Model Number	Clearance required from duct to combustible surfaces (inches)
WSC036H	0
WSC048H	0
WSC060H	0
WSC072E	1
WSC090E	1
WSC120E	1
WHC036H	0
WHC048H	0
WHC060H	0

## Condensate Trap

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

## Low Ambient Cooling

The Precedent™ line features, with ReliaTel™ microprocessor controls, low ambient cooling down to 0°F. The following features or options need to be included/considered when low ambient applications are required: continuous fan operation, crankcase heaters, thermal expansion valves, frostat.

Contact a local Trane® representative for more assistance with low ambient cooling applications.



## Application Considerations

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### **Optional Stainless Steel Heat Exchanger**

The optional stainless steel heat exchanger is manufactured with 409 stainless steel. To prevent corrosion and prolong heat exchanger reliability, the minimum mixed air temperature allowed across the heat exchanger is 20°F.

The stainless steel heat exchanger option is an excellent option that compliments the dehumidification package. Whenever high outside air or outside applications exist, these options should be utilized.

### **Unit Pitch**

The unit has a reversible sloped condensate drain pans. The unit must be installed level. Any unit slope must be toward the side of unit where condensate drain is connected.



# Selection Procedure

## Cooling Capacity

### Step 1.

Calculate the building's total and sensible cooling loads at design conditions. Use the Trane® calculation methods or any other standard accepted method.

Factors used in unit selection:

- Total Cooling Load: 71 MBh
- Sensible Cooling Load: 450 MBh
- Airflow: 2400 cfm
- Electrical Characteristics: 460/60/3
- Summer Design Conditions: Entering
- Evaporator Coil: 80 DB, 67 WB Outdoor Ambient: 95
- External Static Pressure: 0.47 in. wg
- Downflow Configuration
- Economizer

### Step 2.

As a starting point, a rough determination must be made of the size of the unit. The final selection will be made after examining the performance at the given conditions. Divide the total cooling load by nominal BTUH per ton (12 MBh per ton); then round up to the nearest unit size.

$$71 \text{ MBh} / 12 \text{ MBh} = \text{approx. } 6 \text{ tons}$$

### Step 3.

Table 8, p. 32 shows that a WSC072E4 has a **gross** cooling capacity of 78.01 MBh and 56.74 MBh sensible capacity at 2400 cfm and 95 DB outdoor ambient with 80 DB, 67 WB air entering the evaporator.

### To Find Capacity at Intermediate Conditions not in the table.

When the design conditions are between two numbers that are in the capacity table, interpolation is required to approximate the capacity.

**Note:** *Extrapolation outside of the table conditions is not recommended.*

### Step 4.

In order to select the correct unit which meets the building's requirements, the fan motor heat must be deducted from the gross cooling capacity. The amount of heat that the fan motor generates is dependent on the effort by the motor - cfm and static pressure. To determine the total unit static pressure:

External Static Duct System	0.47 wg
Economizer from Table 38, p. 57 (100% Outside Air)	0.11 wg
Electric Heater Size 9 kW from Table 51, p. 67 (reference "Heating Capacity" section on this page for determination of heater size)	0.02 wg
Total Static Pressure	0.60 wg

With 2400 cfm and 0.60 wg, Table 19, p. 43 shows 0.75 bhp for this unit. Note below the table gives a formula to calculate Fan Motor Heat,

$$2.829 \times \text{bhp} + 0.4024 = \text{MBh}$$

$$2.829 \times 0.75 + 0.4024 = 2.98 \text{ MBh}$$

Now subtract the fan motor heat from the gross cooling capacity of the unit:

**Net** Total Cooling Capacity  
= 78.0 MBh - 2.98 = 75.02 MBh

**Net** Sensible Cooling Capacity  
= 56.74 MBh - 2.98 = 53.76 MBh

## Selection Procedure

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### Step 5.

Compare results to original load requirements. If the performance will not meet the required total or sensible cooling load, try a selection at the next higher size unit.

## Heating Capacity

### Step 1.

Calculate the building heating load using the Trane® calculation form or other standard accepted method.

### Step 2.

Size the equipment using [Table 42, p. 61](#) to match the heating loads at design conditions.

Total heating load of 65 MBh

Outdoor Ambient (Winter): 17 DB

Indoor Return Temperature: 70 DB

Airflow: 2000 cfm

Use the integrated portion of [Table 42, p. 61](#) for the WSC072E to determine capacity at winter design conditions. The mechanical heating portion of the heat pump will provide 40.5 MBh.

### Step 3.

Because 40.5 is less than the building's required heating capacity at winter design conditions, a supplementary heater must be selected.

$$65 \text{ MBh} - 40.5 \text{ MBh} = 19.5 \text{ MBh}$$

The auxiliary electric heat capacities are listed in [Table 51, p. 67](#). From the table, a 9 kW heater will deliver 30.73 MBh at 480 volts. In order to determine capacity at 460 volts, the heater voltage correction factor from [Table 53, p. 68](#) must be used. Therefore,  $30.73 \text{ MBh} \times .918$  (voltage correction factor) = 28.2 MBh. A 9 kW heater should be selected.

## Air Delivery Selection

External static pressure drop through the air distribution system has been calculated to be 0.60 inches of water. Enter [Table 38, p. 57](#) for a WSC072E4 at 2400 cfm and 0.60 static pressure. The belt drive motor will give the desired airflow at a rated bhp of 0.75 and 847 rpm.



# Model Number Descriptions

## Digit 1 - Unit Type

- W Packaged Heat Pump<sup>2</sup>
- D Dual Fuel Heat Pump<sup>2</sup>

## Digit 2 - Efficiency

- S Standard Efficiency
- H High Efficiency

## Digit 3 - Airflow

- C Convertible

## Digit 4,5,6 - Nominal Gross Cooling Capacity (MBh)

- 036 3Ton
- 048 4Ton
- 060 5Ton
- 072 6Ton
- 090 7.5Ton, Single Compressor
- 120 10Ton

## Digit 7 - Major Design Sequence

## Digit 8 - Voltage Selection

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

## Digit 9 - Unit Controls

- R ReliaTel™ Microprocessor

## Digit 10 - Heating Capacity

**Note:** Applicable to Digit 1,W models only.

- 0 No Electric Heat
- B 6 kW
- C 9 kW
- E 12 kW
- G 18 kW
- J 23 kW
- K 27 kW
- N 36 kW
- P 54 kW

**Note:** Applicable to Digit 1,D models only

- L Low Heat
- M Medium Heat
- H High Heat
- X Low Heat, Stainless Steel Heat Exchanger
- Y Medium Heat, Stainless Steel Heat Exchanger
- Z High Heat, Stainless Steel Heat Exchanger

## Digit 11 - Minor Design Sequence

- A First Sequence

## Digit 12,13 - Service Sequence

\*\* Factory Assigned

## Digit 14 - Fresh Air Selection

- 0 No Fresh Air
- A Manual Outside Air Damper 0-50%<sup>1</sup>
- B Motorized Outside Air Damper 0-50%<sup>10</sup>
- C Economizer, Dry Bulb 0-100% without Barometric Relief<sup>4</sup>
- D Economizer, Dry Bulb 0-100%

- with Barometric Relief<sup>4</sup>
- E Economizer, Reference Enthalpy 0-100% without Barometric Relief<sup>4</sup>
- F Economizer, Reference Enthalpy 0-100% with Barometric Relief<sup>4</sup>
- G Economizer, Comparative Enthalpy 0-100% without Barometric Relief<sup>4</sup>
- H Economizer, Comparative Enthalpy 0-100% with Barometric Relief<sup>4</sup>
- K Low Leak Economizer with Barometric Relief
- M Low Leak Economizer with Reference Enthalpy with Barometric Relief
- P Low Leak Economizer with Comparative Enthalpy with Barometric Relief

## Digit 15 - Supply Fan/Drive Type/Motor

- 0 Standard Drive<sup>3</sup>
- 1 Oversized Motor<sup>3</sup>
- 2 Optional Belt Drive Motor
- 6 Single Zone Variable Air Volume (SZVAV)<sup>14</sup>
- 7 Multi-Speed Indoor Fan<sup>12</sup>
- 8 Single Zone Variable Air Volume (SZVAV) w/Oversized Motor<sup>14</sup>
- E Multi-Zone Variable Air Volume (MZVAV)<sup>14</sup>
- F Multi-Zone Variable Air Volume (MZVAV) w/Oversized Motor<sup>14</sup>

## Digit 16 - Hinged Service Access/ Filters

- 0 Standard Panels/Standard Filters
- A Hinged Access Panels/Standard Filters
- B Standard Panels/2" MERV 8 Filters
- C Hinged Access Panels/2" MERV 8 Filters
- D Standard Panels/2" MERV 13 Filters
- E Hinged Access Panels/2" MERV 13 Filters

## Digit 17 - Condenser Coil Protection

- 0 Standard Coil
- 1 Standard Coil with Hail Guard
- 2 Black Epoxy Pre-Coated Condenser Coil
- 3 Black Epoxy Pre-Coated Condenser Coil with Hail Guard

## Digit 18 - Through-the-Base Provisions

- 0 No Through-the-Base Provisions
- A Through-the-Base Electric<sup>5</sup>
- B Through-the-Base Gas Piping<sup>17</sup>
- C Through-the-Base Electric and Gas Piping<sup>17</sup>

## Digit 19 - Disconnect/Circuit Breaker (three-phase only)

- 0 No Disconnect/No Circuit Breaker
- 1 Unit Mounted Non-Fused Disconnect<sup>5</sup>
- 2 Unit Mounted Circuit Breaker<sup>5</sup>

## Digit 20 - Convenience Outlet

- 0 No Convenience Outlet
- A Unpowered Convenience Outlet
- B Powered Convenience Outlet (three-phase only)<sup>6</sup>

## Digit 21 - Communications Options

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

## Digit 22 - Refrigeration System Option

- 0 Standard Refrigeration System<sup>7</sup>

## Digit 23 - Refrigeration Controls

- 0 No Refrigeration Control<sup>2</sup>
- 1 Frostat™<sup>11</sup>
- 2 Crankcase Heater<sup>16</sup>
- 3 Frostat and Crankcase Heater<sup>11,16</sup>

## Digit 24 - Smoke Detector

- 0 No Smoke Detector
- A Return Air Smoke Detector<sup>8</sup>
- B Supply Air Smoke Detector
- C Supply and Return Air Smoke Detectors<sup>8</sup>
- D Plenum Smoke Detector

## Digit 25 - System Monitoring Controls

- 0 No Monitoring Control
- 1 Clogged Filter Switch
- 2 Fan Failure Switch
- 3 Discharge Air Sensing Tube
- 4 Clogged Filter Switch and Fan Fail Switch
- 5 Clogged Filter Switch and Discharge Air Sensing Tube
- 6 Fan Fail Switch and Discharge Air Sensing Tube
- 7 Clogged Filter and Fan Fail Switches and Discharge Air Sensing Tube
- 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



## Model Number Descriptions

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- 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 26 - System Monitoring Controls

- 0 No Monitoring Controls
- A Demand Control Ventilation (CO<sub>2</sub>)<sup>13</sup>
- B Low Leak Economizer with FDD (Fault Detection & Diagnostics)
- C FDD (Fault Detection & Diagnostics) with DCV (Demand Control Ventilation)

### Digit 27 - Unit Hardware Enhancements

- 0 No Enhancements
- 1 Stainless Steel Drain Pan

### Digit 31 - Advanced Unit Controls

- 0 Standard Unit Controls
- 1 Human Interface

## Model Number Notes

1. Manual outside air damper will ship factory supplied within the unit, but must be field installed.
2. High pressure control is standard on all units.
3. Multi-stage, direct drive standard on 3 to 5 ton models. Belt drive standard on 6 to 7.5 ton models. Variable speed direct drive standard on 10 ton models.
4. 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.
5. Through-the-base electric required when ordering disconnect/circuit breaker options.
6. Requires use of disconnect or circuit breaker.
7. Standard metering devices are TXVs.
8. The return air smoke detector may not fit up or work properly on the Precedent™ units when used in conjunction with 3rd 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.
9. Requires hinged access panels.
10. Motorized outside air damper is not available on Multi-Speed or SZVAV (Single Zone Variable Air Volume) or MZVAV (Multi Zone Variable Air Volume) products.
11. Froststat™ standard on multi-speed and SZVAV (single zone variable air volume) products.
12. Multi-speed indoor fan only available on 10 ton products.
13. Demand control ventilation option includes wiring only. The CO<sub>2</sub> sensor is a field-installed only option.
14. SZVAV/MZVAV available only on 3 to 5 tons high efficiency and 10 ton standard efficiency unit.
15. Must be used with BACnet® open protocol.
16. Crankcase heater is standard on all 3 to 5 ton heat pumps.
17. Includes gas piping and shutoff (field assembly required).



# General Data

**Table 1. General data - 3 to 5 tons - standard efficiency**

	<b>3 Tons</b>	<b>4 Tons</b>	<b>5 Tons</b>
	<b>WSC036H3,4,W</b>	<b>WSC048H3,4,W</b>	<b>WSC060H3,4,W</b>
<b>Cooling Performance<sup>(a)</sup></b>			
Gross Cooling Capacity	39,500	50,000	61,000
EER/SEER <sup>(b)</sup>	3,4 = 12.1/14.3 W = 12.0/14.3	3,4 = 12.3/14.3 W = 12.2/14.3	3,4 = 12.3/14.3 W = 12.2/14.3
Nominal cfm/AHRI Rated cfm	1,200/1,200	1,600/1,600	2,000/2,000
AHRI Net Cooling Capacity	39,000	49,000	60,000
System Power (kW)	3.22	3.98	4.88
<b>Heating Performance<sup>(c)</sup></b>			
High Temp. Btuh Rating	36,000	47,500	59,000
System Power kW/COP	3.01/3.50	3.98/3.50	4.94/3.50
Low Temp. Btuh Rating	20,600	26,000	35,000
System Power kW/COP	2.74/2.20	3.31/2.30	4.46/2.30
HSPF (Btu/Watts-hr)	8.00	8.20	8.20
<b>Compressor</b>			
Number/Type	1/Scroll	1/Scroll	1/Scroll
<b>Sound</b>			
Outdoor Sound Rating (dB) <sup>(d)</sup>	79	80	87
<b>Outdoor Coil</b>			
Type	Lanced	Lanced	Lanced
Tube Size (in.)	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	Thermal Expansion Valve	Thermal Expansion Valve	Thermal Expansion Valve
<b>Indoor Coil</b>			
Type	Lanced	Lanced	Lanced
Tube Size (in.)	0.3125	0.3125	0.3125
Face Area (sq. ft.)	8.74	8.74	9.27
Rows/FPI	3/16	3/16	3/16
Refrigerant Control	Thermal Expansion Valve	Thermal Expansion Valve	Thermal Expansion Valve
Drain Connection Number/Size (in.)	1¾ NPT	1¾ NPT	1¾ NPT
<b>Outdoor Fan</b>			
Type	Propeller	Propeller	Propeller
Number Used/Diameter (in.)	1/22	1/22	1/26
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1
cfm	3,600	4,050	5,130
Motor hp	0.25	0.33	0.40
Motor rpm	1,100	1,100	1,100
<b>Indoor Fan</b>			
Type (Standard)	FC Centrifugal	FC Centrifugal	FC Centrifugal
Number Used/Diameter (in.)/Width (in.)	1/11x11	1/11x11	1/11x11
Drive Type/No. Speeds/rpm	Direct/5 <sup>(e)</sup>	Direct/5 <sup>(e)</sup>	Direct/5 <sup>(e)</sup>
Motor hp (standard/oversized)	0.75/1.5	1.0/1.5	1.0/1.5



## General Data

**Table 1. General data - 3 to 5 tons - standard efficiency (continued)**

	<b>3 Tons</b>	<b>4 Tons</b>	<b>5 Tons</b>
	<b>WSC036H3,4,W</b>	<b>WSC048H3,4,W</b>	<b>WSC060H3,4,W</b>
Motor Frame Size (standard/oversized)	48/48	48/48	48/48
<b>Filters<sup>(f)</sup></b>			
Type Furnished	Throwaway	Throwaway	Throwaway
Number Size Recommended	(2) 20x35x2	(2) 20x35x2	(4) 16x25x2
<b>Refrigerant Charge<sup>(g)</sup></b>			
Pounds of R-410A	7.7	9.3	11.5

- (a) Cooling performance is rated at 95°F ambient, 80°F entering dry bulb, 67°F entering wet bulb. Gross capacity does not include the effect of fan motor heat. AHRI capacity is net and includes the effect of fan motor heat. Units are suitable for operation to ±20% of nominal cfm. Units are certified in accordance with the Unitary Air-Conditioner Equipment certification program, which is based on AHRI Standard 210/240.
- (b) EER and/or SEER are rated at AHRI conditions and in accordance with DOE test procedures.
- (c) Heating performance is rated at 47°F ambient with 43°F wet bulb, 70°F entering dry bulb, 60°F entering wet bulb. High Temp. Btuh Rating includes the effect of fan motor heat. Units are suitable for operation to ±20% of nominal cfm. Units are certified in accordance with the Unitary Air-Conditioner Equipment certification program, which is based on AHRI Standard 210/240.
- (d) Outdoor Sound Rating shown is tested in accordance with AHRI Standard 270. For additional information reference the outdoor sound power level data in the performance section.
- (e) For multispeed direct drive rpm values, reference the direct drive, evaporator fan performance table.
- (f) Optional 2" MERV 8 and MERV 13 filters also available.
- (g) Refrigerant charge is an approximate value. For a more precise value, see unit nameplate and service instructions.

**Table 2. General data - 6 to 10 tons - standard efficiency**

	<b>6 Tons</b>	<b>7.5 Tons</b>	<b>10 Tons</b>
	<b>WSC072E3,4,W</b>	<b>WSC090E3,4,W</b>	<b>WSC120E3,4,W</b>
<b>Cooling Performance<sup>(a)</sup></b>			
Gross Cooling Capacity	78,000	94,000	126,000
EER <sup>(b)</sup>	11.4	11.1	11.2
Nominal cfm/AHRI Rated cfm	2,400/2,100	3,000/2,625	4,000/3,200
AHRI Net Cooling Capacity	75,000	89,000	118,000
IEER <sup>(c)</sup>	13.0	12.2	13.1
System Power (kW)	6.58	8.02	10.54
<b>Heating Performance<sup>(d)</sup></b>			
High Temp. Btuh Rating	71,000	86,000	111,000
System Power kW/COP	5.95/3.50	7.41/3.40	9.04/3.60
Low Temp. Btuh Rating	39,000	48,000	69,000
System Power kW/COP	5.2/2.30	6.39/2.30	8.43/2.40
HSPF (Btu/Watts-hr)	—	—	—
<b>Compressor</b>			
Number/Type	1/Scroll	1/Scroll	2/Scroll
<b>Sound</b>			
Outdoor Sound Rating (dB) <sup>(e)</sup>	89	89	87
<b>Outdoor Coil - Type</b>	Lanced	Lanced	Lanced
Configuration	Full Face	Full Face	Intertwined
Tube Size (in.)	0.3125	0.3125	0.3125
Face Area (sq. ft.)	17.00	19.83	25.56
Rows/FPI	3/16	3/16	3/16
Refrigerant Control	Thermal Expansion Valve	Thermal Expansion Valve	Thermal Expansion Valve
<b>Indoor Coil - Type</b>	Lanced	Lanced	Lanced
Configuration	Full Face	Full Face	Intertwined



**Table 2. General data - 6 to 10 tons - standard efficiency (continued)**

	<b>6 Tons</b>	<b>7.5 Tons</b>	<b>10 Tons</b>
	<b>WSC072E3,4,W</b>	<b>WSC090E3,4,W</b>	<b>WSC120E3,4,W</b>
Tube Size (in.)	0.3125	0.3125	0.3125
Face Area (sq. ft.)	9.89	12.36	16.65
Rows/FPI	4/16	3/16	4/16
Refrigerant Control	Orifice	Orifice	Orifice
Drain Connection Number/Size (in.)	1 3/4 NPT	1 3/4 NPT	1 3/4 NPT
<b>Outdoor Fan - Type</b>	Propeller	Propeller	Propeller
Number Used/Diameter (in.)	1/26	1/26	1/30
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1
cfm	5,800	6,200	6,900
Motor hp	0.70	0.75	0.75
Motor rpm	1,100	1,100	1,100
<b>Indoor Fan - Type</b>	FC Centrifugal	FC Centrifugal	BC Plenum
Number Used/Diameter (in.)/Width (in.)	1/12x12	1/15 x 15	1/21.0315x6.14
Drive Type/No. Speeds/rpm	Belt/Variable/1,750	Belt/Variable/1,750	Direct/Variable <sup>(f)</sup>
Motor hp (Standard/Oversized)	1.0/2.0	1.0/3.0	2.75/—
Motor Frame Size (Standard/Oversized)	56/56	56/56	—/—
<b>Filters<sup>(g)</sup> - Type Furnished</b>	Throwaway	Throwaway	Throwaway
Number Size Recommended	(4) 16x25x2	(4) 20x25x2	(3) 20x25x2 (2) 20x30x2
<b>Refrigerant Charge<sup>(h)</sup></b>			
Pounds of R-410A	12.00	13.80	9.75/9.31

- (a) Cooling performance is rated at 95°F ambient, 80°F entering dry bulb, 67°F entering wet bulb. Gross capacity does not include the effect of fan motor heat. AHRI capacity is net and includes the effect of fan motor heat. Units are suitable for operation to ±20% of nominal cfm. Units are certified in accordance with the Unitary Air-Conditioner Equipment certification program, which is based on AHRI Standard 340/360.
- (b) EER and/or SEER are rated at AHRI conditions and in accordance with DOE test procedures.
- (c) Integrated Efficiency Ratio (IEER) is rated in accordance with AHRI Standard 340/360. The IEER rating requires that the unit efficiency be determined at 100%, 75%, 50% and 25% load (net capacity) at the specified in AHRI Standard.
- (d) Heating performance is rated at 47°F ambient with 43°F wet bulb, 70°F entering dry bulb, 60°F entering wet bulb. High Temp. Btuh Rating includes the effect of fan motor heat. Units are suitable for operation to ±20% of nominal cfm. Units are certified in accordance with the Unitary Air-Conditioner Equipment certification program, which is based on AHRI Standard 340/360.
- (e) Outdoor Sound Rating shown is tested in accordance with AHRI Standard 270. For additional information reference the outdoor sound power level data in the performance section.
- (f) For multispeed direct drive rpm values, reference the direct drive, evaporator fan performance table.
- (g) Optional 2" MERV 8 and MERV 13 filters also available.
- (h) Refrigerant charge is an approximate value. For a more precise value, see unit nameplate and service instructions.

**Table 3. General data - 3 to 5 tons - high efficiency**

	<b>3 Tons</b>	<b>4 Tons</b>	<b>5 Tons</b>
	<b>WHC036H3,4,W</b>	<b>WHC048H3,4,W</b>	<b>WHC060H3,4,W</b>
<b>Cooling Performance<sup>(a)</sup></b>			
Gross Cooling Capacity-High Stage	40,500	48,750	61,000
EER/SEER <sup>(b)</sup>	3=12.9/15.8 4,W=12.8/15.7	13.0/16.5	3=13.0/16.4 4,W=12.9/16.2
Nominal cfm-High Stage/AHRI Rated cfm	1,200/1,200	1,600/1,680	2,000/2,000
Nominal cfm-Low Stage/AHRI Rated cfm	840	1,120	1,400
AHRI Net Cooling Capacity-High Stage	40,000	48,000	60,000
System Power-High Stage (kW)	3.10	3.69	4.62
<b>Heating Performance<sup>(c)</sup></b>			
High Temp. Btuh Rating-High Stage	38,000	44,000	57,000



## General Data

**Table 3. General data - 3 to 5 tons - high efficiency (continued)**

	<b>3 Tons</b>	<b>4 Tons</b>	<b>5 Tons</b>
	<b>WHC036H3,4,W</b>	<b>WHC048H3,4,W</b>	<b>WHC060H3,4,W</b>
System Power kW/COP-High Stage	3.09/3.60	3.58/3.60	4.64/3.60
Low Temp. Btuh Rating-High Stage	22,000	24,000	34,400
System Power kW/COP-High Stage	2.80/2.30	3.06/2.30	4.38/2.30
HSPF (Btu/Watts-hr)	8.30	8.80	9.00
<b>Compressor</b>			
Number/Type	1/Scroll (2-stage)	1/Scroll (2-stage)	1/Scroll (2-stage)
<b>Sound</b>			
Outdoor Sound Rating (dB) <sup>(d)</sup>	81	87	87
<b>Outdoor Coil</b>			
Type	Lanced	Lanced	Lanced
Tube Size (in.)	0.3125	0.3125	0.3125
Face Area (sq. ft.)	12.33	17.00	17.00
Rows/FPI	3/16	3/16	3/16
Refrigerant Control	Thermal Expansion Valve	Thermal Expansion Valve	Thermal Expansion Valve
<b>Indoor Coil</b>			
Type	Lanced	Lanced	Lanced
Tube Size (in.)	0.3125	0.3125	0.3125
Face Area (sq. ft.)	8.74	9.27	9.27
Rows/FPI	3/16	3/16	3/16
Refrigerant Control	Thermal Expansion Valve	Thermal Expansion Valve	Thermal Expansion Valve
Drain Connection Number/Size (in.)	1¾ NPT	1¾ NPT	1¾ NPT
<b>Outdoor Fan</b>			
Type	Propeller	Propeller	Propeller
Number Used/Diameter (in.)	1/22	1/26	1/26
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1
cfm	3,600	5,130	5,130
Motor hp	0.25	0.40	0.40
Motor rpm	1,100	1,100	1,100
<b>Indoor Fan</b>			
Type (Standard)	FC Centrifugal	FC Centrifugal	FC Centrifugal
Number Used/Diameter (in.)/Width (in.)	1/11x11	1/11x11	1/11x11
Drive Type/No. Speeds/rpm	Direct/Variable	Direct/Variable	Direct/Variable
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<sup>(e)</sup></b>			
Type Furnished	Throwaway	Throwaway	Throwaway
Number Size Recommended	(2) 20x35x2	(4) 16x25x2	(4) 16x25x2
<b>Refrigerant Charge<sup>(f)</sup></b>			
Pounds of R-410A	9.2	10.8	10.8

(a) Cooling performance is rated at 95°F ambient, 80°F entering dry bulb, 67°F entering wet bulb. Gross capacity does not include the effect of fan motor heat. AHRI capacity is net and includes the effect of fan motor heat. Units are suitable for operation to ±20% of nominal cfm. Units are certified in accordance with the Unitary Air-Conditioner Equipment certification program, which is based on AHRI Standard 210/240.

(b) EER and/or SEER are rated at ARI conditions and in accordance with DOE test procedures.

(c) Heating performance is rated at 47°F ambient with 43°F wet bulb, 70°F entering dry bulb, 60°F entering wet bulb. High Temp. Btuh Rating includes the effect of fan motor heat. Units are suitable for operation to ±20% of nominal cfm. Units are certified in accordance with the Unitary Air-Conditioner Equipment certification program, which is based on AHRI Standard 210/240.

- (d) Outdoor Sound Rating shown is tested in accordance with AHRI Standard 270. For additional information reference the outdoor sound power level data in the performance section.  
 (e) Optional 2" MERV 8 and MERV 13 filters also available.  
 (f) Refrigerant charge is an approximate value. For a more precise value, see unit nameplate and service instructions.

**Table 4. General data - 3 to 5 tons - dual fuel efficiency**

	<b>3 Tons</b>	<b>4 Tons</b>	<b>5 Tons</b>
	<b>DHC036H3,4,W</b>	<b>DHC048H3,4,W</b>	<b>DHC060H3,4,W</b>
<b>Cooling Performance<sup>(a)</sup></b>			
Gross Cooling Capacity-High Stage	40,500	48,750	61,000
EER/SEER <sup>(b)</sup>	3=12.8/15.7 4,W=12.8/15.6	13.0/16.5	3=12.8/16.2 4,W=12.8/16.0
Nominal cfm-High Stage/AHRI Rated cfm	1,200/1,200	1,600/1,680	2,000/2,000
Nominal cfm-Low Stage/AHRI Rated cfm	840	1,120	1,400
AHRI Net Cooling Capacity-High Stage	40,000	48,000	60,000
System Power-High Stage (kW)	3.13	3.69	4.69
<b>Heating Performance<sup>(c)</sup></b>			
High Temp. Btuh Rating-High Stage	38,000	44,000	57,000
System Power kW/COP-High Stage	3.09/3.60	3.58/3.60	4.64/3.60
Low Temp. Btuh Rating-High Stage	22,000	24,000	34,400
System Power kW/COP-High Stage	2.80/2.30	3.06/2.30	4.38/2.30
HSPF (Btu/Watts-hr)	8.30	8.80	8.90
<b>Compressor</b>			
Number/Type	1/Scroll (2-stage)	1/Scroll (2-stage)	1/Scroll (2-stage)
<b>Sound</b>			
Outdoor Sound Rating (dB) <sup>(d)</sup>	81	87	87
<b>Outdoor Coil</b>			
Type	Lanced	Lanced	Lanced
Tube Size (in.)	0.3125	0.3125	0.3125
Face Area (sq. ft.)	12.33	17.00	17.00
Rows/FPI	3/16	3/16	3/16
Refrigerant Control	Thermal Expansion Valve	Thermal Expansion Valve	Thermal Expansion Valve
<b>Indoor Coil</b>			
Type	Lanced	Lanced	Lanced
Tube Size (in.)	0.3125	0.3125	0.3125
Face Area (sq. ft.)	8.74	9.27	9.27
Rows/FPI	3/16	3/16	3/16
Refrigerant Control	Thermal Expansion Valve	Thermal Expansion Valve	Thermal Expansion Valve
Drain Connection Number/Size (in.)	1 $\frac{3}{4}$ NPT	1 $\frac{3}{4}$ NPT	1 $\frac{3}{4}$ NPT
<b>Outdoor Fan</b>			
Type	Propeller	Propeller	Propeller
Number Used/Diameter (in.)	1/22	1/26	1/26
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1
cfm	3,600	5,130	5,130
Motor hp	0.25	0.40	0.40
Motor rpm	1,100	1,100	1,100
<b>Indoor Fan</b>			
Type (Standard)	FC Centrifugal	FC Centrifugal	FC Centrifugal



## General Data

**Table 4. General data - 3 to 5 tons - dual fuel efficiency (continued)**

	<b>3 Tons</b>	<b>4 Tons</b>	<b>5 Tons</b>
	<b>DHC036H3,4,W</b>	<b>DHC048H3,4,W</b>	<b>DHC060H3,4,W</b>
Number Used/Diameter (in.)/Width (in.)	1/11x11	1/11x11	1/11x11
Drive Type/No. Speeds/rpm	Direct/Variable	Direct/Variable	Direct/Variable
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<sup>(e)</sup></b>			
Type Furnished	Throwaway	Throwaway	Throwaway
Number Size Recommended	(2) 20x35x2	(4) 16x25x2	(4) 16x25x2
<b>Refrigerant Charge<sup>(f)</sup></b>			
Pounds of R-410A	9.2	10.8	10.8
<b>Gas Heating Performance (Dual Fuel Only)<sup>(g)</sup></b>			
<b>Gas Heating Input (2nd stage/1st stage)</b>			
Low Heat Input (Btu)	60,000/42,000	60,000/42,000	60,000/42,000
Mid Heat Input (Btu)	80,000/56,000	100,000/70,000	100,000/72,000
High Heat Input (Btu)	100,000/70,000	130,000/91,000	150,000/105,000
<b>Gas Heating Output (2nd stage/1st stage)</b>			
Low Heat Output (Btu)	48,600/34,020	48,600/34,020	48,600/34,020
Mid Heat Output (Btu)	64,800/45,360	81,000/56,700	81,000/58,320
High Heat Output (Btu)	81,000/56,700	105,300/73,710	121,500/85,050
<b>Steady State Efficiency %</b>	81%	81%	81%
<b>No. Burners</b>			
Low Heat Output (Btu)	2	2	2
Mid Heat Output (Btu)	2	3	3
High Heat Output (Btu)	3	3	4
<b>No. Stages</b>			
Low Heat Input (Btu)	2	2	2
Mid Heat Input (Btu)	2	2	2
High Heat Input (Btu)	2	2	2
<b>Gas Supply Line Pressure</b>			
Natural (minimum/maximum)	4.5/14.0	4.5/14.0	4.5/14.0
LP (minimum/maximum)	N/A	N/A	N/A
<b>Gas Connection Pipe Size (in.)</b>			
Low Heat	1/2	1/2	1/2
Mid Heat	1/2	1/2	1/2
High Heat	1/2	3/4	3/4

(a) Cooling performance is rated at 95°F ambient, 80°F entering dry bulb, 67°F entering wet bulb. Gross capacity does not include the effect of fan motor heat. AHRI capacity is net and includes the effect of fan motor heat. Units are suitable for operation to ±20% of nominal cfm. Units are certified in accordance with the Unitary Air-Conditioner Equipment certification program, which is based on AHRI Standard 210/240.

(b) EER and/or SEER are rated at ARI conditions and in accordance with DOE test procedures.

(c) Heating performance is rated at 47°F ambient with 43°F wet bulb, 70°F entering dry bulb, 60°F entering wet bulb. High Temp. Btuh Rating includes the effect of fan motor heat. Units are suitable for operation to ±20% of nominal cfm. Units are certified in accordance with the Unitary Air-Conditioner Equipment certification program, which is based on AHRI Standard 210/240.

(d) Outdoor Sound Rating shown is tested in accordance with AHRI Standard 270. For additional information reference the outdoor sound power level data in the performance section.

(e) Optional 2" MERV 8 and MERV 13 filters also available.

(f) Refrigerant charge is an approximate value. For a more precise value, see unit nameplate and service instructions.

(g) Heating performance limit settings and rating data were established and approved under laboratory test conditions using American National Standards Institute standards. Ratings shown are for elevations up to 2000 feet. For elevations above 2000 feet, ratings should be reduced at the rate of 4% for each 1000 feet above sea level. Applicable to Dual Fuel units only.



# Gross Cooling Capacities

Table 5. Gross cooling capacities 3 tons standard efficiency - three phase WSC036H3.4,W

cfm	Ent DB (°F)	Ambient Temperature 85						Ambient Temperature 95						Ambient Temperature 105					
		Entering Wet Bulb						Entering Wet Bulb						Entering Wet Bulb					
		61		67		73		61		67		73		61		67		73	
		MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC
960	75	36.0	28.2	40.5	22.2	45.2	15.9	33.6	26.8	37.8	20.9	42.3	14.7	31.0	25.4	35.1	19.5	39.3	13.3
960	80	36.0	33.2	40.6	27.3	45.3	21.1	33.6	31.7	38.0	26.0	42.4	19.8	31.1	30.3	35.2	24.7	39.4	18.5
960	85	36.2	36.2	40.7	32.4	45.4	26.3	34.1	34.1	38.0	31.1	42.5	25.0	32.1	32.1	35.3	29.7	39.5	23.6
960	90	38.2	38.2	40.7	37.4	45.5	31.4	36.2	36.2	38.1	36.1	42.6	30.1	34.1	34.1	35.4	34.6	39.6	28.8
1080	75	36.8	30.0	41.4	23.3	46.1	16.2	34.3	28.6	38.6	21.9	43.0	14.9	31.6	27.2	35.7	20.5	39.8	13.5
1080	80	36.9	35.5	41.5	29.0	46.2	22.0	34.4	34.1	38.7	27.7	43.1	20.7	31.8	31.8	35.8	26.3	40.0	19.4
1080	85	37.8	37.8	41.6	34.8	46.3	27.8	35.7	35.7	38.8	33.4	43.3	26.5	33.5	33.5	35.9	32.0	40.1	25.1
1080	90	40.1	40.1	41.7	40.3	46.4	33.6	38.0	38.0	39.0	38.9	43.4	32.3	35.7	35.7	36.2	36.2	40.2	30.9
1200	75	37.5	31.9	42.1	24.3	46.8	16.5	34.8	30.4	39.2	22.9	43.6	15.1	32.1	28.8	36.1	21.5	40.3	13.7
1200	80	37.7	37.7	42.2	30.7	46.9	23.0	35.1	35.1	39.3	29.3	43.7	21.6	32.5	32.5	36.3	27.9	40.4	20.2
1200	85	39.4	39.4	42.3	37.1	47.0	29.4	37.1	37.1	39.5	35.7	43.9	28.0	34.8	34.8	36.5	34.3	40.6	26.6
1200	90	41.8	41.8	42.6	42.6	47.1	35.8	39.5	39.5	39.8	39.8	44.0	34.4	37.1	37.1	37.1	37.1	40.7	33.0
1320	75	38.1	33.7	42.7	25.4	47.3	16.8	35.3	32.2	39.6	23.9	44.0	15.4	32.4	30.4	36.5	22.5	40.6	13.9
1320	80	38.5	38.5	42.8	32.4	47.4	23.9	35.9	35.9	39.8	31.0	44.1	22.5	33.5	33.5	36.7	29.5	40.8	21.0
1320	85	40.8	40.8	43.0	39.4	47.6	30.9	38.4	38.4	40.0	37.7	44.3	29.5	35.9	35.9	36.9	36.2	40.9	28.1
1320	90	43.3	43.3	43.5	43.5	47.7	38.0	40.8	40.8	40.9	40.9	44.5	36.6	38.2	38.2	38.3	38.3	41.1	35.1
1440	75	38.6	35.5	43.1	26.4	47.8	17.0	35.7	33.7	40.0	24.9	44.3	15.6	32.8	32.1	36.8	23.4	40.8	14.1
1440	80	39.3	39.3	43.3	34.1	47.9	24.7	36.9	36.9	40.2	32.6	44.5	23.3	34.4	34.4	37.0	31.1	41.0	21.8
1440	85	42.0	42.0	43.5	41.5	48.1	32.5	39.5	39.5	40.5	40.0	44.7	31.0	36.8	36.8	37.4	37.4	41.2	29.6
1440	90	44.5	44.5	44.6	44.6	48.2	40.1	41.9	41.9	42.0	42.0	44.9	38.7	39.2	39.2	39.3	39.3	41.4	37.3

cfm	Ent DB (°F)	Ambient Temperature 115						Ambient Temperature 125					
		Entering Wet Bulb						Entering Wet Bulb					
		61		67		73		61		67		73	
		MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC
960	75	28.4	24.0	32.2	18.2	36.1	12.0	25.7	22.6	29.3	16.8	32.8	10.6
960	80	28.5	28.5	32.4	23.3	36.2	17.2	25.8	25.8	29.4	21.9	33.0	15.8
960	85	29.9	29.9	32.4	28.4	36.4	22.3	27.7	27.7	29.5	26.9	33.1	20.9
960	90	31.9	31.9	32.6	32.6	36.5	27.4	29.6	29.6	29.7	29.7	33.2	26.0
1080	75	28.8	25.8	32.7	19.1	36.6	12.2	26.0	24.1	29.6	17.7	33.1	10.8
1080	80	29.2	29.2	32.9	24.9	36.7	18.0	26.8	26.8	29.7	23.4	33.3	16.6
1080	85	31.2	31.2	33.0	30.6	36.8	23.8	28.8	28.8	29.9	28.9	33.4	22.3
1080	90	33.3	33.3	33.4	33.4	37.0	29.5	30.8	30.8	30.9	30.9	33.6	28.1
1200	75	29.2	27.2	33.0	20.1	36.9	12.3	26.3	25.7	29.8	18.6	33.3	10.9
1200	80	30.2	30.2	33.2	26.5	37.0	18.8	27.7	27.7	30.0	25.0	33.5	17.3
1200	85	32.3	32.3	33.4	32.5	37.2	25.2	29.8	29.8	30.3	30.3	33.6	23.7
1200	90	34.5	34.5	34.6	34.6	37.3	31.6	31.8	31.8	31.9	31.9	33.8	30.1
1320	75	29.5	28.9	33.3	21.0	37.1	12.5	26.5	26.5	29.9	19.5	33.4	11.0
1320	80	31.0	31.0	33.5	28.0	37.3	19.6	28.4	28.4	30.1	26.5	33.6	18.1
1320	85	33.3	33.3	33.8	33.8	37.4	26.6	30.5	30.5	30.6	30.6	33.8	25.1
1320	90	35.5	35.5	35.6	35.6	37.6	33.7	32.7	32.7	32.7	32.7	34.0	31.8
1440	75	29.8	29.8	33.5	21.9	37.2	12.6	26.8	26.8	30.0	20.4	33.4	11.1
1440	80	31.7	31.7	33.7	29.6	37.4	20.4	28.9	28.9	30.2	27.7	33.7	18.8
1440	85	34.1	34.1	34.2	34.2	37.6	28.1	31.2	31.2	31.2	31.2	33.9	26.5
1440	90	36.4	36.4	36.4	36.4	37.9	35.4	33.3	33.3	33.4	33.4	34.2	33.8

**Notes:**

1. All capacities shown are gross and have not considered indoor fan heat. To obtain **NET** cooling capacity subtract indoor fan heat. For indoor fan heat formula, refer to appropriate airflow table notes.
2. MBh = Total Gross Capacity
3. SHC = Sensible Heat Capacity



## Gross Cooling Capacities

**Table 6. Gross cooling capacities 4 tons standard efficiency - three phase WSC048H3,4,W**

cfm	Ent DB (°F)	Ambient Temperature 85						Ambient Temperature 95						Ambient Temperature 105					
		Entering Wet Bulb						Entering Wet Bulb						Entering Wet Bulb					
		61		67		73		61		67		73		61		67		73	
		MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC
1280	75	45.5	36.5	50.8	28.3	56.4	19.8	42.8	35.0	47.9	26.8	53.1	18.3	40.0	33.5	44.8	25.3	49.7	16.8
1280	80	45.9	43.3	51.0	35.2	56.6	26.8	43.3	41.7	48.1	33.7	53.3	25.3	40.6	40.2	45.0	32.2	49.9	23.8
1280	85	47.4	47.4	51.2	42.1	56.7	33.7	45.1	45.1	48.3	40.6	53.5	32.2	42.7	42.7	45.3	39.1	50.1	30.7
1280	90	50.1	50.1	51.7	48.8	56.9	40.6	47.8	47.8	48.9	47.3	53.7	39.1	45.3	45.3	45.9	45.7	50.4	37.6
1440	75	46.6	39.1	51.8	29.8	57.4	20.2	43.8	37.6	48.7	28.3	54.0	18.7	40.9	36.0	45.5	26.7	50.4	17.2
1440	80	47.3	46.7	52.0	37.5	57.5	28.0	44.6	44.6	49.0	36.0	54.2	26.5	41.8	41.8	45.8	34.5	50.7	25.0
1440	85	49.5	49.5	52.4	45.3	57.7	35.8	47.1	47.1	49.4	43.8	54.4	34.3	44.5	44.5	46.3	42.3	50.9	32.8
1440	90	52.4	52.4	53.2	52.9	58.0	43.6	49.9	49.9	50.3	50.3	54.7	42.1	47.2	47.2	47.3	47.3	51.2	40.5
1600	75	47.5	41.6	52.6	31.2	58.1	20.6	44.6	40.1	49.4	29.7	54.7	19.0	41.6	38.1	46.1	28.1	51.0	17.5
1600	80	48.5	48.5	52.9	39.8	58.3	29.2	45.8	45.8	49.8	38.3	54.9	27.7	43.2	43.2	46.5	36.7	51.3	26.2
1600	85	51.4	51.4	53.4	48.5	58.5	37.9	48.8	48.8	50.3	46.7	55.1	36.4	46.0	46.0	47.1	45.0	51.5	34.8
1600	90	54.4	54.4	54.6	54.6	58.9	46.6	51.7	51.7	51.8	51.8	55.6	45.1	48.9	48.9	49.0	49.0	52.0	43.5
1720	75	48.3	44.1	53.2	32.6	58.8	20.9	45.4	42.2	50.0	31.0	55.2	19.4	42.3	40.4	46.6	29.4	51.4	17.8
1720	80	49.8	49.8	53.6	42.1	59.0	30.5	47.2	47.2	50.4	40.6	55.5	28.9	44.4	44.4	47.0	39.0	51.7	27.3
1720	85	53.0	53.0	54.4	51.4	59.3	40.0	50.2	50.2	51.3	49.7	55.8	38.4	47.4	47.4	48.0	48.0	52.1	36.9
1720	90	56.1	56.1	56.2	56.2	59.8	49.6	53.3	53.3	53.4	53.4	56.3	48.0	50.3	50.3	50.4	50.4	52.7	46.4
1920	75	49.0	46.2	53.7	34.0	59.3	21.3	46.1	44.5	50.4	32.4	55.6	19.7	42.9	42.8	46.9	30.8	51.8	18.1
1920	80	51.1	51.1	54.3	44.4	59.5	31.7	48.4	48.4	51.0	42.8	55.9	30.1	45.5	45.5	47.5	41.2	52.1	28.5
1920	85	54.4	54.4	55.3	54.4	59.9	42.1	51.5	51.5	52.1	52.1	56.3	40.5	48.5	48.5	48.7	48.7	52.5	38.9
1920	90	57.6	57.6	57.7	57.7	60.5	52.5	54.7	54.7	54.8	54.8	57.0	51.0	51.5	51.5	51.6	51.6	53.2	48.9
cfm	Ent DB (°F)	Ambient Temperature 115						Ambient Temperature 125											
		Entering Wet Bulb						Entering Wet Bulb											
		61		67		73		61		67		73							
		MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC						
1280	75	37.0	31.9	41.5	23.7	46.1	15.4	33.9	30.2	38.0	22.0	42.2	13.6						
1280	80	37.8	37.8	41.7	30.6	46.4	22.2	34.9	34.9	38.2	28.9	42.5	20.6						
1280	85	40.1	40.1	42.1	37.5	46.6	29.1	37.3	37.3	38.6	35.5	42.7	27.5						
1280	90	42.6	42.6	42.9	42.9	46.8	36.0	39.7	39.7	39.8	39.8	43.0	34.4						
1440	75	37.8	34.0	42.1	25.1	46.7	15.6	34.5	32.3	38.5	23.4	42.7	13.9						
1440	80	39.1	39.1	42.4	32.8	47.0	23.4	36.2	36.2	38.8	31.1	43.0	21.7						
1440	85	41.7	41.7	42.9	40.3	47.2	31.2	38.7	38.7	39.4	38.5	43.2	29.5						
1440	90	44.4	44.4	44.5	44.5	47.6	39.0	41.3	41.3	41.3	41.3	43.6	37.3						
1600	75	38.5	36.4	42.6	26.4	47.2	15.9	35.2	34.5	38.9	24.7	43.0	14.2						
1600	80	40.4	40.4	43.0	35.1	47.5	24.5	37.3	37.3	39.3	33.3	43.4	22.8						
1600	85	43.1	43.1	43.8	43.3	47.7	33.2	39.9	39.9	40.2	40.2	43.7	31.5						
1600	90	45.9	45.9	45.9	45.9	48.2	41.9	42.6	42.6	42.6	42.6	44.2	40.2						
1720	75	39.1	38.7	43.0	27.8	47.5	16.2	35.7	35.7	39.2	26.0	43.3	14.4						
1720	80	41.4	41.4	43.5	37.3	47.8	25.7	38.2	38.2	39.7	35.1	43.6	24.0						
1720	85	44.3	44.3	44.5	44.5	48.2	35.2	41.0	41.0	41.0	41.0	44.0	33.5						
1720	90	47.1	47.1	47.2	47.2	48.8	44.8	43.6	43.6	43.7	43.7	44.7	42.4						
1920	75	39.7	39.7	43.3	29.1	47.8	16.4	36.2	36.2	39.4	27.3	43.5	14.7						
1920	80	42.4	42.4	43.9	39.0	48.1	26.8	39.0	39.0	40.1	37.1	43.8	25.1						
1920	85	45.3	45.3	45.4	45.4	48.6	37.3	41.8	41.8	41.9	41.9	44.3	35.5						
1920	90	48.2	48.2	48.3	48.3	49.4	47.1	44.5	44.5	44.6	44.6	45.2	45.2						

**Notes:**

1. All capacities shown are gross and have not considered indoor fan heat. To obtain **NET** cooling capacity subtract indoor fan heat. For indoor fan heat formula, refer to appropriate airflow table notes.
2. MBh = Total Gross Capacity
3. SHC = Sensible Heat Capacity

## Gross Cooling Capacities

**Table 7. Gross cooling capacities 5 tons standard efficiency - three phase WSC060H3.4,W**

cfm	Ent DB (°F)	Ambient Temperature 85						Ambient Temperature 95						Ambient Temperature 105					
		Entering Wet Bulb						Entering Wet Bulb						Entering Wet Bulb					
		61		67		73		61		67		73		61		67		73	
		MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC
1600	75	56.3	46.5	63.0	35.9	70.1	24.9	52.8	44.7	59.1	34.1	65.7	23.1	49.0	42.7	54.9	32.2	61.2	21.2
1600	80	56.6	55.4	63.1	44.8	70.2	33.9	53.1	53.1	59.2	43.0	65.9	32.1	49.4	49.4	55.1	41.1	61.3	30.2
1600	85	58.0	58.0	63.3	53.7	70.3	42.9	55.0	55.0	59.4	51.9	66.0	41.1	51.9	51.9	55.3	50.0	61.5	39.2
1600	90	61.3	61.3	63.5	62.6	70.4	51.8	58.3	58.3	59.8	59.8	66.2	50.0	55.0	55.0	55.8	55.8	61.7	48.1
1800	75	57.5	49.7	64.2	37.8	71.3	25.4	53.7	47.8	60.0	35.9	66.7	23.5	49.8	45.8	55.7	33.9	61.9	21.6
1800	80	58.0	58.0	64.3	47.8	71.4	35.5	54.4	54.4	60.2	45.9	66.9	33.7	50.6	50.6	55.9	43.9	62.1	31.7
1800	85	60.5	60.5	64.5	57.8	71.5	45.6	57.3	57.3	60.5	55.9	67.1	43.8	53.9	53.9	56.2	54.0	62.3	41.8
1800	90	64.0	64.0	65.1	65.1	71.7	55.6	60.7	60.7	61.3	61.3	67.3	53.8	57.2	57.2	57.2	57.2	62.5	51.9
2000	75	58.4	52.9	65.1	39.6	72.2	25.9	54.5	50.9	60.8	37.6	67.5	24.0	50.5	48.6	56.3	35.6	62.5	22.0
2000	80	59.3	59.3	65.3	50.7	72.4	37.1	55.6	55.6	61.0	48.8	67.7	35.2	52.2	52.2	56.5	46.7	62.7	33.2
2000	85	62.6	62.6	65.6	61.8	72.5	48.3	59.2	59.2	61.4	59.9	67.9	46.4	55.6	55.6	57.0	57.0	62.9	44.4
2000	90	66.3	66.3	66.6	66.6	72.7	59.5	62.8	62.8	62.8	62.8	68.1	57.6	59.0	59.0	59.1	59.1	63.2	55.6
2200	75	59.2	56.0	65.9	41.4	73.0	26.3	55.2	54.0	61.4	39.3	68.1	24.3	51.0	51.0	56.7	37.3	63.0	22.3
2200	80	60.6	60.6	66.1	53.6	73.2	38.7	57.2	57.2	61.7	51.6	68.3	36.7	53.5	53.5	57.0	49.5	63.2	34.7
2200	85	64.5	64.5	66.5	65.9	73.4	51.0	60.9	60.9	62.3	62.3	68.6	49.0	57.1	57.1	57.8	57.8	63.4	47.0
2200	90	68.3	68.3	68.2	68.2	73.6	63.3	64.6	64.6	64.7	64.7	68.8	61.3	60.6	60.6	60.7	60.7	63.8	59.3
2400	75	59.9	59.2	66.5	43.1	73.7	26.8	55.8	55.8	61.9	41.1	68.6	24.7	51.5	51.5	57.1	38.9	63.4	22.6
2400	80	62.2	62.2	66.8	56.5	73.9	40.3	58.5	58.5	62.2	54.5	68.8	38.2	54.6	54.6	57.4	52.3	63.6	36.1
2400	85	66.2	66.2	67.4	67.4	74.1	53.7	62.4	62.4	63.1	63.1	69.1	51.7	58.3	58.3	58.5	58.5	63.8	49.6
2400	90	70.1	70.1	70.2	70.2	74.3	67.1	66.2	66.2	66.3	66.3	69.5	65.1	62.0	62.0	62.1	62.1	64.3	63.1
cfm	Ent DB (°F)	Ambient Temperature 115						Ambient Temperature 125											
		Entering Wet Bulb						Entering Wet Bulb											
		61		67		73		61		67		73							
		MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC						
1600	75	45.0	40.7	50.5	30.2	56.3	19.3	40.8	38.7	45.8	28.1	51.1	17.2						
1600	80	45.6	45.6	50.7	39.1	56.5	28.3	41.9	41.9	46.0	37.0	51.3	26.2						
1600	85	48.5	48.5	51.0	48.0	56.7	37.3	44.8	44.8	46.3	46.0	51.5	35.2						
1600	90	51.5	51.5	51.7	51.7	56.8	46.2	47.7	47.7	47.8	47.8	51.7	44.2						
1800	75	45.6	43.8	51.1	31.8	56.9	19.6	41.2	41.2	46.2	29.7	51.5	17.5						
1800	80	47.1	47.1	51.3	41.9	57.1	29.7	43.3	43.3	46.4	39.8	51.7	27.6						
1800	85	50.3	50.3	51.7	51.7	57.3	39.8	46.3	46.3	47.0	47.0	51.9	37.7						
1800	90	53.4	53.4	53.5	53.5	57.5	49.9	49.3	49.3	49.4	49.4	52.2	47.8						
2000	75	46.1	46.1	51.5	33.5	57.3	19.9	41.7	41.7	46.5	31.3	51.7	17.7						
2000	80	48.4	48.4	51.8	44.7	57.5	31.2	44.4	44.4	46.7	42.5	51.9	29.0						
2000	85	51.7	51.7	52.5	52.5	57.7	42.4	47.5	47.5	47.7	47.7	52.2	40.2						
2000	90	55.0	55.0	55.1	55.1	58.0	53.6	50.7	50.7	50.7	50.7	52.6	51.4						
2200	75	46.7	46.7	51.8	35.1	57.6	20.2	42.1	42.1	46.6	32.9	51.8	18.0						
2200	80	49.5	49.5	52.1	47.4	57.8	32.6	45.3	45.3	47.0	45.2	52.1	30.4						
2200	85	53.0	53.0	53.2	53.2	58.1	44.9	48.5	48.5	48.6	48.6	52.3	42.7						
2200	90	56.4	56.4	56.5	56.5	58.5	57.3	51.8	51.8	51.8	51.8	52.9	52.9						
2400	75	47.1	47.1	52.0	36.7	57.8	20.5	42.5	42.5	46.7	34.5	51.9	18.2						
2400	80	50.5	50.5	52.4	50.2	58.1	34.0	46.0	46.0	47.2	47.2	52.2	31.7						
2400	85	54.0	54.0	53.9	53.9	58.3	47.4	49.4	49.4	49.4	49.4	52.4	45.2						
2400	90	57.5	57.5	57.6	57.6	59.0	59.0	52.7	52.7	52.7	52.7	53.3	53.3						

**Notes:**

1. All capacities shown are gross and have not considered indoor fan heat. To obtain **NET** cooling capacity subtract indoor fan heat. For indoor fan heat formula, refer to appropriate airflow table notes.
2. MBh = Total Gross Capacity
3. SHC = Sensible Heat Capacity



## Gross Cooling Capacities

**Table 8. Gross cooling capacities 6 tons standard efficiency - three phase WSC072E3,4,W**

cfm	Ent DB (°F)	Ambient Temperature 85						Ambient Temperature 95						Ambient Temperature 105					
		Entering Wet Bulb						Entering Wet Bulb						Entering Wet Bulb					
		61		67		73		61		67		73		61		67		73	
		MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC
1920	75	73.8	58.3	77.6	43.5	82.0	21.8	69.5	55.2	73.4	41.4	78.1	20.5	64.2	51.5	68.4	38.5	73.3	18.6
1920	80	75.9	67.3	78.9	55.7	82.6	37.0	71.7	64.4	75.0	53.6	78.9	35.8	66.6	60.7	70.1	50.8	74.3	33.9
1920	85	78.4	74.4	80.7	65.8	83.6	50.1	74.4	71.5	76.9	63.7	80.1	49.0	69.5	67.9	72.3	61.0	75.7	47.1
1920	90	81.4	79.4	82.9	73.8	85.2	61.2	77.6	76.6	79.4	71.8	81.9	60.1	72.9	72.9	74.9	69.2	77.6	58.4
2160	75	75.6	60.0	79.0	44.8	83.0	22.6	71.4	57.1	75.0	42.8	79.2	21.4	66.3	53.5	70.1	40.0	74.6	19.6
2160	80	77.8	69.4	80.4	57.2	83.7	38.0	73.8	66.5	76.6	55.2	80.2	36.9	68.9	63.0	72.0	52.6	75.7	35.1
2160	85	80.5	76.7	82.4	67.6	84.9	51.4	76.6	73.9	78.8	65.6	81.6	50.3	71.9	70.5	74.3	63.0	77.3	48.6
2160	90	83.6	82.0	84.8	75.9	86.6	62.8	80.0	79.2	81.4	74.0	83.4	61.8	75.4	75.4	77.1	71.5	79.4	60.1
2400	75	77.1	61.7	80.0	46.0	83.6	23.3	73.0	58.9	76.2	44.0	80.0	22.2	68.1	55.4	71.5	41.4	75.6	20.5
2400	80	79.4	71.3	81.6	58.6	84.5	39.0	75.5	68.6	78.0	56.7	81.1	37.9	70.8	65.2	73.5	54.2	76.8	36.3
2400	85	82.2	78.9	83.7	69.2	85.9	52.6	78.6	76.2	80.3	67.4	82.7	51.6	74.0	72.9	75.9	64.9	78.6	50.0
2400	90	85.5	84.4	86.3	77.8	87.7	64.2	82.0	81.8	83.0	76.0	84.7	63.3	77.6	77.6	78.9	73.6	80.8	61.8
2640	75	78.2	63.3	80.7	47.1	83.9	23.8	74.3	60.6	77.1	45.2	80.5	22.8	69.5	57.2	72.5	42.7	76.2	21.2
2640	80	80.7	73.1	82.5	59.9	85.0	39.8	77.0	70.5	79.0	58.2	81.7	38.8	72.4	67.2	74.7	55.7	77.6	37.3
2640	85	83.6	81.0	84.7	70.8	86.5	53.6	80.1	78.4	81.4	69.1	83.4	52.8	75.7	75.1	77.3	66.7	79.5	51.3
2640	90	87.1	86.7	87.4	79.6	88.4	65.5	83.7	83.7	84.3	78.0	85.6	64.7	79.5	79.5	80.3	75.7	81.8	63.3
2880	75	79.0	64.7	81.1	48.0	83.9	24.3	75.3	62.1	77.6	46.2	80.7	23.4	70.6	58.8	73.2	43.8	76.5	21.9
2880	80	81.6	74.8	83.0	61.1	85.1	40.4	78.1	72.3	79.7	59.5	82.0	39.6	73.6	69.1	75.5	57.1	78.0	38.2
2880	85	84.7	82.9	85.4	72.2	86.8	54.6	81.4	80.4	82.3	70.6	83.9	53.8	77.1	77.1	78.3	68.4	80.1	52.5
2880	90	88.3	88.3	88.3	81.3	88.9	66.7	85.1	85.1	85.3	79.8	86.2	66.0	81.1	81.1	81.5	77.6	82.6	64.7
cfm	Ent DB (°F)	Ambient Temperature 115						Ambient Temperature 125											
		Entering Wet Bulb						Entering Wet Bulb											
		61		67		73		61		67		73							
		MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC						
1920	75	58.0	47.2	62.5	35.1	67.6	16.0	51.0	42.2	55.7	31.0	61.0	12.8						
1920	80	60.6	56.5	64.4	47.4	68.8	31.4	53.8	51.6	57.7	43.4	62.4	28.2						
1920	85	63.7	63.7	66.7	57.7	70.4	44.7	57.1	57.1	60.3	53.8	64.2	41.6						
1920	90	67.3	67.3	69.6	66.0	72.5	56.0	62.7	62.7	63.3	62.1	66.5	53.0						
2160	75	60.3	49.3	64.3	36.7	69.1	17.1	53.4	44.4	57.7	32.7	62.6	14.0						
2160	80	63.0	58.9	66.4	49.3	70.4	32.7	56.3	54.1	59.9	45.4	64.1	29.7						
2160	85	66.3	66.3	68.9	59.8	72.1	46.3	59.7	59.7	62.6	56.0	66.1	43.3						
2160	90	70.0	70.0	71.9	68.3	74.4	57.8	65.1	65.1	65.7	64.6	68.5	54.9						
2400	75	62.2	51.3	65.9	38.2	70.2	18.1	55.4	46.5	59.3	34.3	63.9	15.1						
2400	80	65.1	61.1	68.0	51.0	71.6	34.0	58.5	56.4	61.7	47.2	65.5	31.0						
2400	85	68.5	68.5	70.7	61.8	73.5	47.8	62.1	62.1	64.5	58.1	67.6	44.9						
2400	90	72.4	72.4	73.8	70.6	75.9	59.6	67.2	67.2	67.9	66.9	70.2	56.8						
2640	75	63.8	53.2	67.0	39.6	71.0	19.0	57.2	48.5	60.7	35.8	64.8	16.0						
2640	80	66.9	63.2	69.4	52.7	72.5	35.1	60.4	58.7	63.2	48.9	66.6	32.2						
2640	85	70.4	70.4	72.2	63.7	74.6	49.2	64.2	64.2	66.2	60.1	68.9	46.4						
2640	90	74.4	74.4	75.4	72.7	77.2	61.2	68.9	68.9	69.6	69.2	71.6	58.5						
2880	75	65.1	54.9	67.9	40.8	71.4	19.7	58.6	50.4	61.7	37.1	65.4	16.9						
2880	80	68.3	65.3	70.4	54.2	73.2	36.1	62.0	60.8	64.4	50.6	67.4	33.4						
2880	85	71.9	71.9	73.3	65.5	75.4	50.4	65.9	65.9	67.5	61.9	69.8	47.8						
2880	90	76.0	76.0	76.7	74.8	78.0	62.7	71.1	71.1	71.1	71.1	72.6	60.2						

**Notes:**

1. All capacities shown are gross and have not considered indoor fan heat. To obtain **NET** cooling capacity subtract indoor fan heat. For indoor fan heat formula, refer to appropriate airflow table notes.
2. MBh = Total Gross Capacity
3. SHC = Sensible Heat Capacity



## Gross Cooling Capacities

**Table 9. Gross cooling capacities 7.5 tons standard efficiency - three phase WSC090E3,4,W**

cfm	Ent DB (°F)	Ambient Temperature 85						Ambient Temperature 95						Ambient Temperature 105					
		Entering Wet Bulb						Entering Wet Bulb						Entering Wet Bulb					
		61		67		73		61		67		73		61		67		73	
		MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC
2400	75	88.4	71.1	93.1	52.4	98.6	24.7	83.1	67.2	88.1	49.7	94.0	23.1	76.4	62.3	81.8	45.9	88.1	20.4
2400	80	91.1	82.4	94.8	67.6	99.4	43.9	86.1	78.8	90.2	65.2	95.2	42.6	79.8	74.2	84.2	61.7	89.6	40.2
2400	85	94.2	90.9	97.1	80.1	100.8	60.3	89.6	87.6	92.8	77.9	96.9	59.2	83.7	83.3	87.2	74.7	91.6	57.1
2400	90	98.0	96.5	99.9	89.6	102.6	73.8	93.7	93.6	96.0	87.8	99.1	73.0	88.1	88.1	90.7	84.8	94.2	71.2
2700	75	90.7	73.2	94.8	54.1	99.8	25.9	85.7	69.6	90.2	51.6	95.5	24.5	79.4	64.8	84.2	47.9	89.9	22.0
2700	80	93.5	84.8	96.6	69.5	100.7	45.3	88.8	81.4	92.3	67.3	96.7	44.2	82.8	77.0	86.7	63.9	91.5	42.0
2700	85	96.7	93.5	99.0	82.2	102.1	61.9	92.4	90.4	95.0	80.2	98.5	61.0	86.8	86.2	89.8	77.2	93.6	59.1
2700	90	100.6	99.4	101.9	92.0	104.1	75.6	96.6	96.6	98.3	90.3	100.9	75.1	91.3	91.3	93.4	87.5	96.3	73.4
3000	75	92.6	75.3	96.1	55.7	100.5	27.0	87.9	71.8	91.8	53.3	96.5	25.8	81.9	67.3	86.1	49.9	91.2	23.4
3000	80	95.4	87.1	98.0	71.3	101.4	46.6	91.1	83.9	94.0	69.3	97.8	45.7	85.4	79.6	88.7	66.1	92.9	43.6
3000	85	98.8	96.0	100.4	84.2	103.0	63.4	94.8	93.1	96.8	82.4	99.7	62.8	89.5	89.1	91.8	79.5	95.1	61.0
3000	90	102.7	102.1	103.4	94.2	105.0	77.4	99.0	99.0	100.1	92.7	102.1	77.0	94.1	94.1	95.5	90.1	97.9	75.5
3300	75	93.9	77.3	96.9	57.1	100.7	28.0	89.6	74.0	92.9	55.0	97.0	26.9	83.9	69.6	87.5	51.7	92.1	24.8
3300	80	96.8	89.3	98.8	73.0	101.7	47.8	92.8	86.3	95.2	71.2	98.4	47.1	87.5	82.2	90.2	68.2	93.8	45.2
3300	85	100.3	98.4	101.4	86.1	103.3	64.8	96.6	95.7	98.1	84.5	100.4	64.4	91.7	91.7	93.5	81.8	96.1	62.8
3300	90	104.3	104.3	104.5	96.4	105.5	79.0	101.0	101.0	101.5	95.1	102.9	78.8	96.4	96.4	97.2	92.6	99.0	77.5
3600	75	94.8	79.1	97.2	58.5	100.4	28.9	90.8	76.0	93.5	56.5	97.1	28.0	85.4	71.8	88.5	53.4	92.4	26.0
3600	80	97.8	91.3	99.2	74.6	101.6	48.9	94.1	88.5	95.9	72.9	98.6	48.3	89.1	84.6	91.3	70.1	94.3	46.6
3600	85	101.4	100.7	101.9	87.9	103.3	66.2	98.0	98.0	98.9	86.5	100.6	65.9	93.4	93.4	94.6	84.0	96.7	64.4
3600	90	105.5	105.5	105.0	98.4	105.5	80.6	102.5	102.5	102.4	97.3	103.2	80.5	98.2	98.2	98.5	95.0	99.6	79.4
cfm	Ent DB (°F)	Ambient Temperature 115						Ambient Temperature 125											
		Entering Wet Bulb						Entering Wet Bulb											
		61		67		73		61		67		73							
		MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC						
2400	75	68.4	56.2	74.2	40.9	80.8	16.6	59.1	49.1	65.2	34.9	72.2	11.7						
2400	80	72.1	68.4	77.0	57.0	82.7	36.6	63.2	61.5	68.3	51.3	74.4	32.0						
2400	85	76.4	76.4	80.3	70.3	85.1	53.8	67.8	67.8	72.0	64.8	77.1	49.4						
2400	90	81.2	81.2	84.1	80.7	88.0	68.2	75.5	75.5	76.2	75.5	80.4	64.1						
2700	75	71.7	59.0	76.9	43.2	82.9	18.3	62.7	52.0	68.2	37.3	74.6	13.6						
2700	80	75.5	71.4	79.7	59.5	84.9	38.6	66.8	64.7	71.4	53.9	76.9	34.1						
2700	85	79.8	79.8	83.1	73.0	87.4	56.0	71.5	71.5	75.2	67.7	79.8	51.8						
2700	90	84.7	84.7	87.1	83.6	90.4	70.6	78.7	78.7	79.5	78.6	83.2	66.7						
3000	75	74.5	61.6	79.1	45.3	84.6	20.0	65.8	54.8	70.8	39.6	76.6	15.4						
3000	80	78.4	74.2	82.1	61.8	86.6	40.4	70.1	67.7	74.1	56.4	79.0	36.1						
3000	85	82.8	82.8	85.6	75.5	89.2	58.1	74.8	74.8	77.9	70.4	81.9	54.1						
3000	90	87.8	87.8	89.6	86.4	92.3	72.9	81.5	81.5	82.3	81.6	85.4	69.1						
3300	75	76.8	64.1	80.8	47.3	85.7	21.5	68.5	57.5	72.8	41.8	78.1	17.1						
3300	80	80.8	76.9	83.9	64.1	87.9	42.2	72.8	70.6	76.2	58.8	80.6	38.1						
3300	85	85.3	85.3	87.5	78.0	90.5	60.0	77.7	77.7	80.2	73.0	83.6	56.2						
3300	90	90.4	90.4	91.6	89.1	93.7	75.1	83.8	83.8	84.7	84.4	87.1	71.5						
3600	75	78.7	66.5	82.1	49.2	86.4	22.9	70.6	60.0	74.4	43.9	79.1	18.7						
3600	80	82.8	79.6	85.3	66.2	88.6	43.8	75.1	73.4	77.9	61.1	81.7	39.9						
3600	85	87.4	87.4	88.9	80.3	91.4	61.9	80.0	80.0	81.9	75.6	84.8	58.3						
3600	90	92.2	92.2	93.2	91.7	94.7	77.2	86.5	86.5	86.5	86.5	88.4	73.8						

**Note:**

1. All capacities shown are gross and have not considered indoor fan heat. To obtain **NET** cooling capacity subtract indoor fan heat. For indoor fan heat formula, refer to appropriate airflow table notes.
2. MBh = Total Gross Capacity
3. SHC = Sensible Heat Capacity



# Gross Cooling Capacities

**Table 10. Gross cooling capacities 10 tons standard efficiency - three phase WSC120E3,4,W**

cfm	Ent DB (°F)	Ambient Temperature 85						Ambient Temperature 95						Ambient Temperature 105					
		Entering Wet Bulb						Entering Wet Bulb						Entering Wet Bulb					
		61		67		73		61		67		73		61		67		73	
		MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC
3200	75	117.3	95.4	124.8	73.0	133.6	38.6	110.1	90.3	117.9	69.5	127.0	36.7	101.7	84.2	109.7	65.0	119.1	33.9
3200	80	120.9	110.2	126.8	92.8	134.1	63.4	113.9	105.1	120.2	89.3	127.8	61.5	105.7	99.1	112.3	84.8	120.2	58.6
3200	85	125.4	121.7	129.8	109.2	135.6	84.8	118.7	116.5	123.5	105.7	129.6	82.9	110.8	110.5	115.8	101.2	122.3	80.0
3200	90	130.9	129.7	133.8	122.2	138.1	102.8	124.5	124.5	127.7	118.7	132.3	100.8	116.8	116.8	120.4	114.2	125.3	98.0
3600	75	120.9	98.7	127.6	75.2	135.6	39.7	113.9	93.8	120.8	71.9	129.2	38.0	105.6	88.0	112.9	67.6	121.5	35.4
3600	80	124.7	114.0	129.9	95.4	136.4	64.9	118.0	109.1	123.4	92.1	130.3	63.2	110.0	103.2	115.7	87.9	122.9	60.6
3600	85	129.5	125.9	133.2	112.3	138.2	86.8	123.1	121.0	127.0	109.0	132.4	85.1	115.3	115.1	119.6	104.7	125.2	82.4
3600	90	135.3	134.4	137.5	125.8	141.0	105.3	129.1	129.1	131.6	122.4	135.4	103.5	121.6	121.6	124.4	118.2	128.6	100.8
4000	75	123.8	101.7	129.6	77.1	136.9	40.5	116.9	97.0	123.1	74.0	130.7	39.0	108.8	91.4	115.3	69.9	123.2	36.5
4000	80	127.9	117.4	132.3	97.8	138.0	66.2	121.3	112.7	126.0	94.7	132.1	64.7	113.5	107.1	118.5	90.6	124.8	62.2
4000	85	133.0	129.8	135.9	115.1	140.1	88.5	126.7	125.1	129.9	112.0	134.4	87.0	119.1	119.1	122.6	107.9	127.5	84.5
4000	90	139.1	138.8	140.4	129.1	143.2	107.4	133.0	133.0	134.7	125.9	137.8	105.9	125.8	125.8	127.7	121.8	131.1	103.4
4400	75	125.9	104.4	131.0	78.6	137.5	40.9	119.3	99.9	124.7	75.7	131.4	39.6	111.4	94.5	117.0	71.9	124.1	37.4
4400	80	130.3	120.6	133.9	99.8	138.9	67.1	124.0	116.1	127.8	96.9	133.1	65.8	116.3	110.6	120.5	93.1	126.1	63.5
4400	85	135.7	133.4	137.8	117.6	141.3	89.9	129.6	128.9	132.0	114.7	135.8	88.5	122.3	122.3	124.9	110.8	129.0	86.3
4400	90	142.1	142.1	142.7	132.0	144.7	109.2	136.3	136.3	137.2	129.1	139.4	107.9	129.2	129.2	130.4	125.2	132.9	105.6
4800	75	127.4	106.8	131.7	79.9	137.4	41.1	120.9	102.5	125.5	77.2	131.5	40.0	113.2	97.2	118.1	73.6	124.4	38.0
4800	80	132.1	123.4	134.9	101.5	139.1	67.7	125.9	119.1	129.0	98.8	133.5	66.6	118.4	113.9	121.8	95.2	126.6	64.6
4800	85	137.8	136.7	139.1	119.8	141.8	90.9	131.8	131.8	133.4	117.1	136.4	89.8	124.7	124.7	126.6	113.4	129.9	87.8
4800	90	144.4	144.4	144.2	134.7	145.4	110.8	138.8	138.8	138.9	131.9	140.4	109.6	131.9	131.9	132.3	128.3	134.1	107.6
cfm	Ent DB (°F)	Ambient Temperature 115						Ambient Temperature 125											
		Entering Wet Bulb						Entering Wet Bulb											
		61		67		73		61		67		73							
		MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC						
3200	75	91.9	77.3	100.3	59.6	110.0	30.1	80.9	69.4	89.6	53.3	99.6	25.4						
3200	80	96.3	92.1	103.1	79.4	111.4	54.8	85.6	84.2	92.7	73.1	101.2	50.1						
3200	85	101.6	101.6	106.9	95.8	113.7	76.2	91.1	91.1	96.8	89.5	103.8	71.4						
3200	90	107.9	107.9	111.7	108.8	117.0	94.1	101.9	101.9	101.9	101.9	107.4	89.4						
3600	75	96.1	81.2	103.6	62.5	112.6	31.8	85.2	73.5	93.1	56.4	102.4	27.3						
3600	80	100.7	96.4	106.8	82.7	114.2	57.0	90.2	88.7	96.5	76.6	104.3	52.5						
3600	85	106.3	106.3	110.9	99.5	116.8	78.8	96.0	96.0	100.9	93.4	107.2	74.3						
3600	90	112.9	112.9	116.0	113.0	120.4	97.2	106.3	106.3	106.3	106.3	111.0	92.7						
4000	75	99.5	84.8	106.2	64.9	114.4	33.2	88.8	77.3	95.9	59.1	104.4	28.9						
4000	80	104.4	100.5	109.7	85.6	116.4	58.8	94.1	93.0	99.6	79.7	106.6	54.5						
4000	85	110.3	110.3	114.1	102.9	119.3	81.1	100.2	100.2	104.3	97.0	109.8	76.8						
4000	90	117.2	117.2	119.5	116.8	123.2	100.0	110.0	110.0	110.0	110.0	114.0	95.6						
4400	75	102.2	88.1	108.2	67.1	115.6	34.2	91.7	80.8	98.0	61.4	105.7	30.1						
4400	80	107.4	104.3	111.9	88.3	117.8	60.4	97.2	97.0	102.0	82.6	108.2	56.2						
4400	85	113.6	113.6	116.6	106.0	121.0	83.1	103.7	103.7	107.0	100.3	111.7	79.0						
4400	90	121.1	121.1	122.3	120.4	125.2	102.4	113.0	113.0	113.0	113.0	116.2	98.3						
4800	75	104.2	91.1	109.4	69.0	116.0	35.0	93.9	84.0	99.4	63.5	106.3	31.1						
4800	80	109.7	107.7	113.4	90.6	118.5	61.6	99.7	99.7	103.7	85.1	109.1	57.7						
4800	85	116.2	116.2	118.4	108.8	122.0	84.8	106.5	106.5	109.0	103.3	112.9	80.8						
4800	90	123.1	123.1	124.4	123.7	126.5	104.6	115.2	115.2	115.2	115.2	117.7	100.6						

**Notes:**

- All capacities shown are gross and have not considered indoor fan heat. To obtain **NET** cooling capacity subtract indoor fan heat. For indoor fan heat formula, refer to appropriate airflow table notes.
- MBh = Total Gross Capacity
- SHC = Sensible Heat Capacity

## Gross Cooling Capacities

**Table 11. Gross cooling capacities 3 tons - high stage - three phase W/DHC036H3,4,W**

cfm	Ent DB (°F)	Ambient Temperature 85						Ambient Temperature 95						Ambient Temperature 105					
		Entering Wet Bulb						Entering Wet Bulb						Entering Wet Bulb					
		61		67		73		61		67		73		61		67		73	
		MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC
960	75	36.7	28.6	41.4	22.7	46.5	16.5	34.3	27.3	38.8	21.4	43.6	15.2	31.9	26.0	36.1	20.1	40.6	13.9
960	80	36.7	33.7	41.5	27.8	46.6	21.7	34.3	32.4	38.9	26.5	43.7	20.4	31.9	30.8	36.2	25.2	40.7	19.1
960	85	36.7	36.7	41.6	32.9	46.6	26.8	34.6	34.6	39.0	31.7	43.8	25.6	32.6	32.6	36.3	30.3	40.8	24.3
960	90	38.6	38.6	41.6	38.0	46.7	32.0	36.7	36.7	39.1	36.7	43.9	30.7	34.7	34.7	36.3	35.1	40.9	29.4
1080	75	37.6	30.5	42.4	23.8	47.5	16.8	35.1	29.2	39.6	22.5	44.4	15.5	32.5	27.8	36.7	21.1	41.2	14.2
1080	80	37.6	36.2	42.5	29.6	47.6	22.6	35.2	34.6	39.8	28.2	44.5	21.3	32.6	32.6	36.9	26.9	41.4	20.0
1080	85	38.3	38.3	42.6	35.3	47.6	28.4	36.3	36.3	39.9	34.0	44.7	27.1	34.1	34.1	37.0	32.6	41.5	25.8
1080	90	40.6	40.6	42.6	40.8	47.7	34.2	38.5	38.5	39.9	39.4	44.8	32.9	36.3	36.3	37.2	37.2	41.7	31.6
1200	75	38.3	32.4	43.1	24.9	48.2	17.1	35.7	31.0	40.3	23.5	45.1	15.8	33.1	29.6	37.7	22.1	41.7	14.4
1200	80	38.5	38.4	43.3	31.3	48.4	23.6	35.9	35.9	40.4	29.9	45.2	22.2	33.3	33.3	37.4	28.5	41.9	20.8
1200	85	39.9	39.9	43.4	37.7	48.5	30.0	37.7	37.7	40.6	36.3	45.4	28.7	35.5	35.5	37.6	34.9	42.1	27.3
1200	90	42.3	42.3	43.5	43.5	48.6	36.5	40.1	40.1	40.8	40.8	45.5	35.1	37.8	37.8	37.9	37.9	42.2	33.7
1320	75	38.9	34.2	43.8	25.9	48.9	17.4	36.2	32.8	40.8	24.5	45.6	16.0	33.4	31.3	37.7	23.1	42.1	14.6
1320	80	39.2	39.2	43.9	33.0	49.0	24.5	36.6	36.6	41.0	31.6	45.7	23.1	34.2	34.2	37.9	30.1	42.3	21.7
1320	85	41.3	41.3	44.1	40.0	49.2	31.6	39.0	39.0	41.1	38.6	45.9	30.2	36.6	36.6	38.0	36.8	42.5	28.8
1320	90	43.9	43.9	44.4	44.4	49.3	38.7	41.5	41.5	41.6	41.6	46.1	37.3	39.0	39.0	39.1	39.1	42.7	35.9
1440	75	39.5	36.0	44.3	27.0	49.4	17.6	36.6	34.5	41.2	25.5	46.0	16.2	33.7	32.7	38.0	24.0	42.4	14.8
1440	80	40.0	40.0	44.5	34.7	49.6	25.4	37.6	37.6	41.4	33.2	46.2	24.0	35.1	35.1	38.2	31.8	42.6	22.5
1440	85	42.6	42.6	44.7	42.4	49.7	33.2	40.2	40.2	41.6	40.5	46.4	31.7	37.6	37.6	38.5	38.5	42.9	30.3
1440	90	45.3	45.3	45.3	45.3	49.9	40.9	42.8	42.8	42.9	42.9	46.6	39.5	40.1	40.1	40.2	40.2	43.0	38.0
cfm	Ent DB (°F)	Ambient Temperature 115						Ambient Temperature 125											
		Entering Wet Bulb						Entering Wet Bulb											
		61		67		73		61		67		73							
		MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC						
960	75	29.3	24.6	33.2	18.7	37.4	12.6	26.5	23.2	30.2	17.3	33.9	11.2						
960	80	29.3	29.3	33.4	23.9	37.5	17.8	26.5	26.5	30.3	22.4	34.1	16.4						
960	85	30.5	30.5	33.4	29.0	37.6	22.9	28.2	28.2	30.4	27.5	34.2	21.5						
960	90	32.5	32.5	33.5	33.5	37.8	28.1	30.2	30.2	30.5	30.5	34.4	26.7						
1080	75	29.7	26.4	33.7	19.7	37.9	12.8	26.8	24.6	30.5	18.2	34.3	11.3						
1080	80	29.9	29.9	33.9	25.5	38.0	18.6	27.4	27.4	30.7	24.0	34.5	17.2						
1080	85	31.9	31.9	34.0	31.2	38.2	24.4	29.4	29.4	30.8	29.4	34.6	23.0						
1080	90	34.0	34.0	34.1	34.1	38.3	30.2	31.5	31.5	31.5	31.5	34.8	28.7						
1200	75	30.1	27.8	34.1	20.7	38.2	12.9	27.1	26.2	30.8	19.2	34.5	11.5						
1200	80	30.8	30.8	34.3	27.1	38.4	19.4	28.3	28.3	31.0	25.6	34.7	17.9						
1200	85	33.0	33.0	34.4	33.1	38.6	25.9	30.4	30.4	31.2	31.2	34.9	24.4						
1200	90	35.3	35.3	35.3	35.3	38.8	32.3	32.6	32.6	32.6	32.6	35.1	30.8						
1320	75	30.4	29.4	34.4	21.6	38.5	13.1	27.3	27.3	31.0	20.1	34.7	11.6						
1320	80	31.7	31.7	34.6	28.7	38.7	20.2	29.0	29.0	31.2	27.1	34.9	18.7						
1320	85	34.0	34.0	34.9	34.9	38.9	27.3	31.2	31.2	31.5	31.5	35.1	25.8						
1320	90	36.4	36.4	36.4	36.4	39.1	34.4	33.5	33.5	33.5	33.5	35.3	32.4						
1440	75	30.7	30.7	34.6	22.5	38.7	13.3	27.5	27.5	31.1	20.9	34.8	11.7						
1440	80	32.5	32.5	34.8	30.2	38.9	21.0	29.7	29.7	31.3	28.2	35.0	19.5						
1440	85	34.9	34.9	35.3	35.3	39.2	28.8	32.0	32.0	31.9	31.9	35.2	27.2						
1440	90	37.3	37.3	37.4	37.4	39.4	36.5	34.2	34.2	34.3	34.3	35.5	34.4						

**Notes:**

1. All capacities shown are gross and have not considered indoor fan heat. To obtain **NET** cooling capacity subtract indoor fan heat. For indoor fan heat formula, refer to appropriate airflow table notes.
2. MBh = Total Gross Capacity
3. SHC = Sensible Heat Capacity



## Gross Cooling Capacities

**Table 12. Gross cooling capacities 3 tons - low stage - three phase W/DHC036H3,4,W**

cfm	Ent DB (°F)	Ambient Temperature						Ambient Temperature					
		85						95					
		Entering Wet Bulb						Entering Wet Bulb					
		61		67		73		61		67		73	
MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC
600	75	26.0	19.5	29.6	15.8	33.5	11.9	24.3	18.5	27.7	14.8	31.5	10.9
600	80	26.1	22.7	29.7	19.1	33.6	15.3	24.4	21.7	27.8	18.1	31.5	14.3
600	85	26.3	25.8	29.7	22.4	33.6	18.6	25.0	24.0	27.8	21.4	31.6	17.6
600	90	26.6	26.6	29.8	25.6	33.6	21.9	25.3	25.3	27.9	24.7	31.6	20.9
720	75	27.3	21.6	30.9	17.0	34.9	12.3	25.0	20.5	28.8	16.0	32.6	11.3
720	80	27.4	25.3	31.0	21.0	35.0	16.3	25.2	24.2	28.9	20.0	32.7	15.3
720	85	27.4	27.4	31.0	25.0	35.0	20.3	25.8	25.8	28.9	23.9	32.8	19.3
720	90	29.1	29.1	31.1	28.7	35.1	24.3	27.5	27.5	29.0	27.7	32.9	23.3
840	75	28.1	23.5	31.9	18.2	35.9	12.7	26.0	22.4	29.6	17.1	33.4	11.6
840	80	28.1	27.9	32.0	22.8	36.0	17.3	26.0	26.0	29.7	21.8	33.5	16.3
840	85	29.2	29.2	32.0	27.4	36.0	22.0	27.6	27.6	29.8	26.4	33.6	21.0
840	90	31.1	31.1	32.0	31.8	36.1	26.7	29.4	29.4	29.8	29.8	33.7	25.6
960	75	28.7	25.4	32.6	19.3	36.6	13.0	26.5	24.1	30.2	18.2	34.0	11.9
960	80	28.9	28.9	32.7	24.6	36.7	18.3	27.0	27.0	30.4	23.5	34.1	17.2
960	85	30.8	30.8	32.7	29.7	36.8	23.7	29.0	29.0	30.4	28.6	34.3	22.6
960	90	32.8	32.8	33.0	33.0	36.9	29.0	31.0	31.0	31.0	31.0	34.4	27.9

**Notes:**

1. All capacities shown are gross and have not considered indoor fan heat. To obtain **NET** cooling capacity subtract indoor fan heat. For indoor fan heat formula, refer to appropriate airflow table notes.
2. MBh = Total Gross Capacity
3. SHC = Sensible Heat Capacity

## Gross Cooling Capacities

**Table 13. Gross cooling capacities 4 tons - high stage - three phase W/DHC048H3,4,W**

cfm	Ent DB (°F)	Ambient Temperature 85						Ambient Temperature 95						Ambient Temperature 105					
		Entering Wet Bulb						Entering Wet Bulb						Entering Wet Bulb					
		61		67		73		61		67		73		61		67		73	
		MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC
1280	75	45.0	37.2	50.3	28.7	55.8	19.9	42.1	35.7	47.0	27.2	52.2	18.4	38.9	34.1	43.6	25.6	48.3	16.8
1280	80	45.2	43.9	50.5	35.9	56.0	27.2	42.3	42.3	47.3	34.4	52.4	25.6	39.3	39.3	43.9	32.8	48.6	24.1
1280	85	46.3	46.3	50.7	43.1	56.2	34.4	43.9	43.9	47.5	41.6	52.7	32.9	41.3	41.3	44.1	40.0	48.9	31.3
1280	90	49.1	49.1	50.9	49.6	56.4	41.6	46.6	46.6	47.8	47.8	53.0	40.1	43.9	43.9	44.5	44.5	49.2	38.5
1440	75	45.9	39.8	51.2	30.2	56.7	20.3	42.8	38.2	47.8	28.7	52.9	18.7	39.5	36.6	44.2	27.0	48.8	17.1
1440	80	46.3	46.3	51.5	38.3	57.0	28.4	43.3	43.3	48.1	36.7	53.2	26.9	40.2	40.2	44.5	35.1	49.3	25.3
1440	85	48.4	48.4	51.7	46.4	57.2	36.6	45.8	45.8	48.3	44.2	53.5	35.0	43.0	43.0	44.8	42.5	49.6	33.4
1440	90	51.3	51.3	52.1	52.1	57.5	44.7	48.6	48.6	48.9	48.9	53.8	43.1	45.7	45.7	45.7	45.7	49.8	41.5
1600	75	46.7	42.4	52.0	31.7	57.4	20.6	43.4	40.7	48.4	30.1	53.4	19.0	40.1	38.1	44.7	28.4	49.3	17.4
1600	80	47.3	47.3	52.3	40.7	57.7	29.7	44.4	44.4	48.8	39.1	53.9	28.1	41.5	41.5	45.0	37.4	49.7	26.5
1600	85	50.2	50.2	52.5	49.0	58.0	38.7	47.4	47.4	49.1	47.3	54.2	37.2	44.4	44.4	45.4	45.4	50.1	35.5
1600	90	53.2	53.2	53.3	53.3	58.3	47.7	50.3	50.3	50.4	50.4	54.5	46.2	47.2	47.2	47.2	47.2	50.4	44.5
1760	75	47.3	44.9	52.6	33.1	57.9	21.0	44.0	42.4	48.9	31.5	53.9	19.4	40.5	40.5	45.1	29.8	49.6	17.7
1760	80	48.6	48.6	52.9	43.0	58.4	31.0	45.7	45.7	49.3	41.4	54.4	29.4	42.6	42.6	45.4	39.6	50.1	27.7
1760	85	51.7	51.7	53.3	52.1	58.7	40.9	48.7	48.7	49.8	49.8	54.7	39.3	45.5	45.5	46.0	46.0	50.5	37.6
1760	90	54.9	54.8	54.9	54.9	59.0	50.8	51.8	51.8	51.8	51.8	55.1	49.2	48.4	48.4	48.5	48.5	50.8	46.5
1920	75	47.9	46.6	53.1	34.6	58.4	21.3	44.5	44.5	49.3	32.9	54.2	19.7	40.9	40.9	45.3	31.1	49.8	17.9
1920	80	49.8	49.8	53.5	45.3	58.9	32.2	46.8	46.8	49.7	43.6	54.8	30.6	43.6	43.6	45.7	40.9	50.4	28.8
1920	85	53.1	53.1	54.0	54.0	59.3	43.1	49.9	49.9	50.4	50.4	55.2	41.4	46.6	46.6	46.6	46.6	50.8	39.7
1920	90	56.3	56.3	56.4	56.4	59.6	53.8	53.0	53.0	53.1	53.1	55.5	51.2	49.5	49.5	49.6	49.6	51.2	49.3
cfm	Ent DB (°F)	Ambient Temperature 115						Ambient Temperature 125											
		Entering Wet Bulb						Entering Wet Bulb											
		61		67		73		61		67		73							
		MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC						
1280	75	35.6	31.9	40.0	24.0	44.2	15.2	32.1	30.1	36.1	22.3	39.9	13.5						
1280	80	36.1	36.1	40.3	31.2	44.6	22.5	33.2	33.2	36.4	29.5	40.3	20.8						
1280	85	38.5	38.5	40.5	37.7	44.9	29.7	35.5	35.5	36.7	35.9	40.6	28.0						
1280	90	41.0	41.0	41.0	41.0	45.2	36.9	37.8	37.8	37.9	37.9	40.9	35.2						
1440	75	36.1	34.2	40.4	25.3	44.6	15.4	32.5	32.3	36.4	23.6	40.1	13.7						
1440	80	37.4	37.4	40.8	33.4	45.1	23.6	34.2	34.2	36.7	31.7	40.6	21.9						
1440	85	40.0	40.0	41.1	40.7	45.4	31.8	36.7	36.7	37.2	37.2	40.9	30.0						
1440	90	42.5	42.5	42.6	42.6	45.7	39.9	39.1	39.1	39.2	39.2	41.2	37.2						
1600	75	36.6	36.4	40.8	26.7	44.9	15.7	32.9	32.9	36.6	24.9	40.2	13.9						
1600	80	38.4	38.4	41.1	35.7	45.4	24.8	35.1	35.1	36.9	32.9	40.8	23.0						
1600	85	41.1	41.1	41.6	41.6	45.8	33.8	37.6	37.6	37.7	37.7	41.1	32.0						
1600	90	43.8	43.8	43.9	43.9	46.1	41.9	40.1	40.1	40.2	40.2	41.5	39.9						
1760	75	36.9	36.9	41.0	28.0	45.1	15.9	33.2	33.2	36.7	26.1	40.3	14.1						
1760	80	39.4	39.4	41.3	36.9	45.7	25.9	35.8	35.8	37.1	34.9	40.9	24.1						
1760	85	42.1	42.1	42.2	42.2	46.0	35.9	38.4	38.4	38.5	38.5	41.2	34.0						
1760	90	44.9	44.9	44.9	44.9	46.4	44.6	41.0	41.0	41.0	41.0	41.7	41.7						
1920	75	37.3	37.3	41.1	29.3	45.2	16.1	33.7	33.7	36.7	27.4	40.3	14.3						
1920	80	40.1	40.1	41.6	39.0	45.8	27.1	36.4	36.4	37.2	36.8	40.9	25.2						
1920	85	43.0	43.0	43.0	43.0	46.2	37.9	39.0	39.0	39.1	39.1	41.3	34.8						
1920	90	45.8	45.8	45.8	45.8	46.7	46.7	41.6	41.6	41.7	41.7	42.0	42.0						

**Notes:**

1. All capacities shown are gross and have not considered indoor fan heat. To obtain **NET** cooling capacity subtract indoor fan heat. For indoor fan heat formula, refer to appropriate airflow table notes.
2. MBh = Total Gross Capacity
3. SHC = Sensible Heat Capacity



## Gross Cooling Capacities

**Table 14. Gross cooling capacities 4 tons - low stage - three phase W/DHC048H3,4,W**

cfm	Ent DB (°F)	Ambient Temperature						Ambient Temperature					
		85						95					
		Entering Wet Bulb						Entering Wet Bulb					
		61		67		73		61		67		73	
MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC
800	75	30.3	23.9	34.3	18.9	38.5	13.6	30.3	23.9	34.3	18.9	38.5	13.6
800	80	30.3	28.0	34.5	23.3	38.7	18.1	30.3	28.0	34.5	23.3	38.7	18.1
800	85	30.3	30.3	34.6	27.7	38.9	22.5	30.3	30.3	34.6	27.7	38.9	22.5
800	90	32.3	32.3	34.6	31.8	39.0	27.0	32.3	32.3	34.6	31.8	39.0	27.0
960	75	31.4	26.5	35.5	20.4	39.7	14.0	31.4	26.5	35.5	20.4	39.7	14.0
960	80	31.5	31.4	35.7	25.7	39.9	19.4	31.5	31.4	35.7	25.7	39.9	19.4
960	85	32.8	32.8	35.8	31.0	40.1	24.8	32.8	32.8	35.8	31.0	40.1	24.8
960	90	34.9	34.9	35.9	35.9	40.3	30.1	34.9	34.9	35.9	35.9	40.3	30.1
1120	75	32.2	28.6	36.3	21.8	40.4	14.4	32.2	28.6	36.3	21.8	40.4	14.4
1120	80	32.5	32.5	36.6	28.1	40.8	20.7	32.5	32.5	36.6	28.1	40.8	20.7
1120	85	34.8	34.8	36.8	33.8	41.1	26.9	34.8	34.8	36.8	33.8	41.1	26.9
1120	90	37.1	37.1	37.1	37.1	41.3	33.2	37.1	37.1	37.1	37.1	41.3	33.2
1280	75	32.9	31.0	37.0	23.3	41.0	14.7	32.9	31.0	37.0	23.3	41.0	14.7
1280	80	34.0	34.0	37.3	30.4	41.5	21.9	34.0	34.0	37.3	30.4	41.5	21.9
1280	85	36.4	36.4	37.5	36.9	41.8	29.1	36.4	36.4	37.5	36.9	41.8	29.1
1280	90	38.9	38.9	38.9	38.9	42.0	36.2	38.9	38.9	38.9	38.9	42.0	36.2

**Notes:**

1. All capacities shown are gross and have not considered indoor fan heat. To obtain **NET** cooling capacity subtract indoor fan heat. For indoor fan heat formula, refer to appropriate airflow table notes.
2. MBh = Total Gross Capacity
3. SHC = Sensible Heat Capacity

Table 15. Gross cooling capacities 5 tons - high stage - three phase W/DHC060H3,4,W

cfm	Ent DB (°F)	Ambient Temperature 85						Ambient Temperature 95						Ambient Temperature 105					
		Entering Wet Bulb						Entering Wet Bulb						Entering Wet Bulb					
		61		67		73		61		67		73		61		67		73	
		MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC
1600	75	56.2	46.7	62.8	36.0	69.9	25.0	52.7	44.9	59.0	34.2	65.6	23.2	49.1	43.0	54.9	32.3	61.0	21.3
1600	80	56.6	55.2	63.1	45.0	70.1	34.0	53.2	53.2	59.2	43.2	65.8	32.3	49.7	49.7	55.2	41.4	61.3	30.4
1600	85	58.5	58.5	63.2	54.0	70.3	43.1	55.6	55.6	59.5	52.2	66.0	41.3	52.5	52.5	55.4	50.4	61.5	39.5
1600	90	61.9	61.9	63.7	62.5	70.4	52.1	58.9	58.9	60.0	60.0	66.3	50.3	55.7	55.7	56.2	56.2	61.8	48.5
1800	75	57.3	49.9	64.0	37.9	71.1	25.5	53.7	48.1	60.0	36.0	66.6	23.6	49.9	46.2	55.7	34.1	61.8	21.7
1800	80	58.1	58.1	64.3	48.0	71.3	35.7	54.6	54.6	60.2	46.2	66.8	33.8	51.0	51.0	56.0	44.2	62.1	31.9
1800	85	61.0	61.0	64.5	58.1	71.5	45.8	57.9	57.9	60.6	56.3	67.1	44.0	54.5	54.5	56.4	53.8	62.3	42.1
1800	90	64.6	64.6	65.3	65.3	71.7	56.0	61.4	61.4	61.6	61.6	67.3	54.2	57.9	57.9	58.0	58.0	62.6	52.3
2000	75	58.3	53.1	64.9	39.7	72.0	25.9	54.5	51.2	60.7	37.8	67.3	24.0	50.6	48.4	56.3	35.8	62.3	22.0
2000	80	59.5	59.5	65.2	51.0	72.3	37.3	56.2	56.2	61.0	49.1	67.6	35.4	52.7	52.7	56.6	47.1	62.7	33.4
2000	85	63.2	63.2	65.7	62.2	72.5	48.6	59.8	59.8	61.6	59.7	67.9	46.7	56.2	56.2	57.3	57.3	63.0	44.7
2000	90	67.0	67.0	67.0	67.0	72.8	59.8	63.5	63.5	63.6	63.6	68.2	58.0	59.7	59.7	59.8	59.8	63.4	56.0
2200	75	59.2	56.3	65.7	41.5	72.8	26.4	55.3	53.7	61.4	39.6	67.9	24.4	51.2	51.2	56.8	37.5	62.8	22.4
2200	80	61.2	61.2	66.0	53.9	73.1	38.9	57.7	57.7	61.7	52.0	68.3	36.9	54.0	54.0	57.1	50.0	63.2	34.9
2200	85	65.1	65.1	66.7	65.6	73.4	51.3	61.5	61.5	62.5	62.5	68.6	49.4	57.7	57.7	58.1	58.1	63.5	47.4
2200	90	69.0	69.0	69.1	69.1	73.7	63.7	65.3	65.3	65.4	65.4	69.0	61.8	61.3	61.4	61.4	61.4	64.0	59.8
2400	75	59.9	58.8	66.4	43.3	73.4	26.8	56.0	56.0	61.9	41.3	68.4	24.8	51.8	51.8	57.1	39.2	63.1	22.7
2400	80	62.7	62.7	66.7	56.8	73.8	40.4	59.1	59.1	62.3	54.8	68.8	38.4	55.2	55.2	57.6	52.8	63.6	36.4
2400	85	66.7	66.7	67.7	67.7	74.1	54.0	63.0	63.0	63.4	63.4	69.1	52.0	58.9	58.9	59.0	59.0	63.9	50.0
2400	90	70.8	70.8	70.9	70.9	74.5	67.5	66.9	66.9	67.0	67.0	69.7	65.6	62.7	62.7	62.8	62.8	64.5	62.6
cfm	Ent DB (°F)	Ambient Temperature 115						Ambient Temperature 125											
		Entering Wet Bulb						Entering Wet Bulb											
		61		67		73		61		67		73							
		MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC						
1600	75	45.2	41.1	50.6	30.4	56.2	19.4	41.1	38.5	46.0	28.4	51.0	17.4						
1600	80	46.0	46.0	50.9	39.4	56.5	28.5	42.6	42.6	46.3	37.4	51.3	26.5						
1600	85	49.1	49.1	51.2	48.5	56.8	37.5	45.5	45.5	46.7	45.8	51.6	35.5						
1600	90	52.2	52.2	52.3	52.3	57.0	46.6	48.4	48.4	48.5	48.5	51.9	44.6						
1800	75	45.8	43.6	51.2	32.1	56.7	19.7	41.6	41.4	46.4	30.0	51.4	17.6						
1800	80	47.7	47.7	51.5	42.3	57.1	30.0	43.9	43.9	46.7	40.2	51.7	27.9						
1800	85	50.9	50.9	52.0	51.7	57.4	40.1	47.0	47.0	47.4	47.4	52.1	38.1						
1800	90	54.1	54.1	54.2	54.2	57.7	50.3	50.0	50.0	50.1	50.1	52.4	48.3						
2000	75	46.5	46.5	51.6	33.8	57.1	20.0	42.1	42.1	46.7	31.7	51.6	17.9						
2000	80	49.0	49.0	52.0	45.1	57.5	31.4	45.0	45.0	47.1	43.0	52.0	29.3						
2000	85	52.4	52.4	52.8	52.8	57.9	42.7	48.2	48.2	48.2	48.2	52.3	40.6						
2000	90	55.7	55.7	55.8	55.8	58.3	54.0	51.3	51.3	51.4	51.4	52.8	51.0						
2200	75	47.0	47.0	52.0	35.5	57.4	20.3	42.6	42.6	46.8	33.3	51.7	18.2						
2200	80	50.2	50.2	52.4	47.9	57.9	32.9	45.9	45.9	47.3	44.8	52.2	30.7						
2200	85	53.6	53.6	53.6	53.6	58.2	45.3	49.2	49.2	49.2	49.2	52.5	43.2						
2200	90	57.1	57.1	57.1	57.1	58.8	56.8	52.4	52.4	52.4	52.4	53.3	53.3						
2400	75	47.5	47.5	52.2	37.1	57.6	20.6	43.3	43.3	46.9	34.9	51.8	18.4						
2400	80	51.1	51.1	52.7	49.7	58.1	34.3	46.7	46.7	47.6	47.3	52.3	32.1						
2400	85	54.7	54.7	54.7	54.7	58.5	47.9	50.0	50.0	50.1	50.1	52.7	45.7						
2400	90	58.2	58.2	58.3	58.3	59.3	59.3	53.3	53.3	53.3	53.3	53.6	53.6						

Notes:

1. All capacities shown are gross and have not considered indoor fan heat. To obtain **NET** cooling capacity subtract indoor fan heat. For indoor fan heat formula, refer to appropriate airflow table notes.
2. MBh = Total Gross Capacity
3. SHC = Sensible Heat Capacity



## Gross Cooling Capacities

**Table 16. Gross cooling capacities 5 tons - low stage - three phase W/DHC060H3,4,W**

cfm	Ent DB (°F)	Ambient Temperature						Ambient Temperature					
		85						95					
		Entering Wet Bulb						Entering Wet Bulb					
		61		67		73		61		67		73	
MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC	MBh	SHC
1000	75	37.3	29.7	42.3	23.4	47.8	16.9	34.8	28.4	39.6	22.1	44.7	15.6
1000	80	37.3	35.2	42.4	29.0	47.9	22.5	34.8	33.6	39.7	27.7	44.8	21.1
1000	85	37.3	37.3	42.6	34.5	48.0	28.0	35.3	35.3	39.9	33.2	45.0	26.7
1000	90	39.6	39.6	42.5	39.9	48.1	33.6	37.6	37.6	39.9	38.6	45.1	32.3
1200	75	38.7	33.0	43.8	25.4	49.3	17.4	36.0	31.6	40.8	23.9	46.0	16.0
1200	80	38.8	38.8	44.0	32.0	49.4	24.2	36.1	36.1	41.0	30.6	46.1	22.7
1200	85	40.3	40.3	44.1	38.6	49.6	30.8	38.1	38.1	41.2	37.2	46.3	29.4
1200	90	42.9	42.9	44.2	44.2	49.7	37.5	40.6	40.6	41.4	41.4	46.5	36.1
1400	75	39.6	36.2	44.8	27.2	50.4	17.9	36.7	34.7	41.7	25.7	46.8	16.5
1400	80	40.1	40.1	45.1	35.0	50.6	25.8	37.6	37.6	41.9	33.5	47.1	24.3
1400	85	42.7	42.7	45.2	42.7	50.8	33.6	40.3	40.3	42.1	40.8	47.3	32.1
1400	90	45.5	45.5	45.8	45.8	51.0	41.4	43.0	43.0	43.1	43.1	47.5	39.9
1600	75	40.4	39.3	45.6	29.0	51.2	18.4	37.4	37.2	42.3	27.5	47.4	16.9
1600	80	41.8	41.8	45.9	37.9	51.4	27.4	39.2	39.2	42.6	36.3	47.7	25.8
1600	85	44.8	44.8	46.2	46.2	51.7	36.3	42.1	42.1	43.0	43.0	48.0	34.7
1600	90	47.8	47.8	47.9	47.9	51.9	45.2	45.0	45.0	45.1	45.1	48.3	43.6

**Notes:**

1. All capacities shown are gross and have not considered indoor fan heat. To obtain **NET** cooling capacity subtract indoor fan heat. For indoor fan heat formula, refer to appropriate airflow table notes.
2. MBh = Total Gross Capacity
3. SHC = Sensible Heat Capacity





# Evaporator Fan Performance

Table 17. Multispeed direct drive evaporator fan performance (standard motor) 3 to 5 tons - no electric heat  
WSC036/048/060H3,4,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	WSC036H3,4,W Downflow Airflow	1020	0.502	738	0.20	0.767	850	0.29	0.987	943	0.38	1.190	1029	0.47	-	-	-
		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	0.40	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	WSC036H3,4,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	0.40	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	WSC048H3,4,W Downflow Airflow	1280	0.72	918	0.38	0.96	1010	0.49	1.14	1077	0.58	-	-	-	-	-	-
		1360	0.57	885	0.37	0.82	977	0.47	1.00	1045	0.56	-	-	-	-	-	-
		1440	0.42	852	0.35	0.67	945	0.46	0.85	1012	0.54	-	-	-	-	-	-
		1520	0.27	819	0.34	0.52	912	0.44	0.70	979	0.52	1.13	1139	0.75	-	-	-
		1600	0.12	787	0.33	0.37	879	0.43	0.55	946	0.51	0.98	1106	0.72	1.19	1186	0.85
		1680	-	-	-	0.22	847	0.41	0.40	914	0.49	0.83	1073	0.70	1.05	1153	0.82
		1760	-	-	-	0.07	814	0.40	0.25	881	0.47	0.68	1040	0.68	0.90	1120	0.80
1840	-	-	-	-	-	-	0.11	848	0.45	0.53	1008	0.66	0.75	1088	0.78		
1920	-	-	-	-	-	-	-	-	-	0.39	975	0.64	0.60	1055	0.75		
4	WSC048H3,4,W Horizontal Airflow	1280	0.68	881	0.37	0.90	972	0.47	1.06	1038	0.56	-	-	-	-	-	-
		1360	0.56	849	0.35	0.78	940	0.46	0.94	1006	0.54	-	-	-	-	-	-
		1440	0.44	817	0.34	0.66	908	0.44	0.82	974	0.52	-	-	-	-	-	-
		1520	0.33	785	0.33	0.55	876	0.43	0.71	942	0.50	1.09	1099	0.72	-	-	-
		1600	0.21	754	0.31	0.43	845	0.41	0.59	911	0.49	0.97	1067	0.70	1.16	1146	0.82
		1680	0.09	722	0.30	0.31	813	0.39	0.47	879	0.47	0.85	1036	0.68	1.04	1114	0.80
		1760	-	-	-	0.19	781	0.38	0.35	847	0.45	0.73	1004	0.66	0.92	1082	0.77
1840	-	-	-	0.07	749	0.36	0.23	815	0.44	0.61	972	0.64	0.80	1051	0.75		
1920	-	-	-	-	-	-	0.12	784	0.42	0.50	941	0.62	0.69	1019	0.73		
5	WSC060H3,4,W Downflow Airflow	1600	0.87	830	0.46	1.00	909	0.53	1.20	996	0.64	-	-	-	-	-	-
		1700	0.73	795	0.44	0.86	873	0.51	1.05	960	0.62	-	-	-	-	-	-
		1800	0.59	759	0.42	0.72	837	0.49	0.91	924	0.59	1.12	1011	0.71	-	-	-
		1900	0.44	723	0.40	0.57	802	0.47	0.77	889	0.57	0.97	975	0.68	-	-	-
		2000	0.30	687	0.38	0.43	766	0.45	0.62	853	0.55	0.83	940	0.66	1.20	1086	0.88
		2100	0.16	651	0.36	0.29	730	0.43	0.48	817	0.52	0.69	904	0.63	1.05	1050	0.85
		2200	0.01	616	0.34	0.14	694	0.41	0.34	781	0.50	0.54	868	0.61	0.91	1014	0.82
2300	-	-	-	0.00	658	0.39	0.19	745	0.48	0.40	832	0.58	0.77	979	0.79		
2400	-	-	-	-	-	-	0.05	710	0.46	0.26	796	0.56	0.62	943	0.76		
5	WSC060H3,4,W Horizontal Airflow	1600	0.74	778	0.32	0.84	846	0.41	0.97	919	0.49	1.12	992	0.65	-	-	-
		1700	0.62	742	0.31	0.71	809	0.39	0.85	883	0.47	0.99	956	0.63	-	-	-
		1800	0.49	706	0.29	0.58	773	0.38	0.72	846	0.45	0.86	920	0.60	1.12	1042	0.84
		1900	0.36	669	0.28	0.45	737	0.36	0.59	810	0.43	0.74	883	0.58	0.99	1006	0.81
		2000	0.23	633	0.26	0.32	700	0.34	0.46	774	0.41	0.61	847	0.55	0.87	970	0.78
		2100	0.10	596	0.25	0.20	664	0.32	0.33	737	0.39	0.48	810	0.53	0.74	933	0.75
		2200	-	-	-	0.07	628	0.30	0.21	701	0.38	0.35	774	0.51	0.61	897	0.72
2300	-	-	-	-	-	-	0.08	665	0.36	0.22	738	0.48	0.48	861	0.69		
2400	-	-	-	-	-	-	-	-	-	0.10	701	0.46	0.35	824	0.66		

- 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.
- 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.
- For electric heat applications minimum airflow is set to 320 cfm/ton, unless specified otherwise, values found in electric heat temp rise table.
- Data includes pressure drop due to wet coil and filters.



## Evaporator Fan Performance

**Table 18. Multispeed direct drive evaporator fan performance (oversized motor) 3 to 5 tons - no electric heat  
WSC036/048/060H3,4,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	WSC036H3,4,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	WSC036H3,4,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	WSC048H3,4,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	WSC048H3,4,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	-	-	
5	WSC060H3,4,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	WSC060H3,4,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	-	-	

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 19. Belt drive evaporator fan performance - 6 tons standard efficiency - WSC072E3,E4,EW downflow airflow**

External Static Pressure (Inches of Water)																					
		.10"		.20"		.30"		.40"		.50"		.60"		.70"		.80"		.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<sup>(a)</sup></b>											<b>1-hp Standard Motor &amp; Drive</b>										
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	
<b>External Static Pressure (Inches of Water)</b>																					
		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>1-hp Standard Motor &amp; Drive</b>						<b>1-hp Standard Motor &amp; Field Supplied High Static Drive or (2-hp Oversized Motor &amp; Drive)</b>															
1920	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	
2160	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	
2400	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	
2640	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	
2880	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	
<b>2-hp Oversized Motor &amp; Drive</b>																					

**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 standard filters and wet coils.
3. To determine static pressure drop due to other options/accessories, refer to the applicable table in the fan performance section.
4. 1-hp fan motor heat (MBh) = 2.829 x fan bhp + .4024. 2-hp fan motor heat (MBh) = 3.000 x fan bhp + .5000.
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 tabular 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 20. Belt drive evaporator fan performance - 6 tons standard efficiency - WSC072E3,E4,EW horizontal airflow**

External Static Pressure (Inches of Water)																						
		.10"		.20"		.30"		.40"		.50"		.60"		.70"		.80"		.90"		1.00"		
cfm	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 & Field Supplied Low Static Drive <sup>(a)</sup>											1-hp Standard Motor & Drive											
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		
											2-hp Oversized Motor & Drive											
External Static Pressure (Inches of Water)																						
		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
1-hp Standard Motor & Drive											2-hp Oversized Motor & Drive											
1920	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		
2160	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		
2400	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	—	—		
2640	1127	1.62	1161	1.72	1193	1.82	1225	1.93	1255	2.04	1287	2.16	1315	2.27	1345	—	—	—	—	—		
2880	1163	1.87	1196	1.98	1227	2.09	1257	2.20	—	—	—	—	—	—	—	—	—	—	—	—		

**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 standard filters and wet coils.
3. To determine static pressure drop due to other options/accessories, refer to the applicable table in the fan performance section.
4. 1-hp fan motor heat (MBh) = 2.829 x fan bhp + .4024. 2-hp fan motor heat (MBh) = 3.000 x fan bhp + .5000.
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 tabular 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 21. Belt drive evaporator fan performance - 7.5 tons standard efficiency - WSC090E3,E4,EW downflow airflow**

External Static Pressure (Inches of Water)																						
		.10"		.20"		.30"		.40"		.50"		.60"		.70"		.80"		.90"		1.00"		
cfm	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
<b>1-hp Standard Motor &amp; Low Static Drive Accessory Kit<sup>(a)</sup></b>														<b>1-hp Standard Motor &amp; Drive</b>								
2400	421	0.22	472	0.31	518	0.38	562	0.46	606	0.54	649	0.63	690	0.72	728	0.81	763	0.90	798	0.99		
2700	461	0.28	508	0.38	551	0.48	590	0.56	629	0.65	667	0.74	708	0.84	745	0.94	781	1.04	815	1.14		
3000	501	0.35	545	0.47	586	0.58	623	0.68	658	0.78	693	0.88	727	0.97	763	1.08	799	1.19	832	1.30		
3300	542	0.44	583	0.58	621	0.70	657	0.82	690	0.93	723	1.03	755	1.14	786	1.24	817	1.35	851	1.48		
3600	584	0.54	623	0.70	658	0.84	692	0.97	724	1.09	755	1.21	784	1.32	814	1.44	842	1.55	871	1.67		
														<b>3-hp Oversized Motor &amp; Drive</b>								
External Static Pressure (Inches of Water)																						
		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>1-hp Standard Motor &amp; Drive</b>											<b>3-hp Oversized Motor &amp; Drive</b>											
2400	830	1.09	860	1.17	890	1.27	918	1.36	945	1.45	971	1.55	997	1.64	1022	1.74	1047	1.83	1071	1.93		
2700	846	1.24	876	1.34	907	1.45	936	1.55	963	1.65	989	1.76	1014	1.86	1039	1.97	1063	2.07	1087	2.18		
3000	865	1.42	895	1.53	923	1.64	952	1.75	980	1.87	1006	1.98	1031	2.09	1056	2.21	1081	2.32	1104	2.44		
3300	882	1.60	912	1.72	942	1.85	969	1.96	998	2.09	1024	2.22	1049	2.34	1073	2.46	1098	2.59	1121	2.71		
3600	901	1.80	931	1.93	960	2.06	988	2.19	1015	2.33	1041	2.47	1067	2.60	1092	2.74	1116	2.87	1140	3.01		
											<b>3-hp Oversized Motor &amp; Drive &amp; Field Supplied High Static Drive<sup>(b)</sup></b>											

**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 standard filters and wet coils.
3. To determine static pressure drop due to other options/accessories, refer to the applicable table in the fan performance section.
4. 1-hp fan motor heat (MBh) = 2.829 x fan bhp + .4024. 2-hp fan motor heat (MBh) = 3.000 x fan bhp + .5000.
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 tabular data will not result in nuisance tripping or premature motor failure. Our product's warranty will not be affected.

(a) BAYLSDR009AA

(b) Field supplied fan sheave AK59 and belt AX35 required.



## Evaporator Fan Performance

**Table 22. Belt drive evaporator fan performance - 7.5 tons standard efficiency - WSC090E3,E4,EW horizontal airflow**

External Static Pressure (Inches of Water)																						
		.10"		.20"		.30"		.40"		.50"		.60"		.70"		.80"		.90"		1.00"		
cfm	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
<b>1-hp Standard Motor &amp; Low Static Drive Accessory Kit<sup>(a)</sup></b>																						
2400	484	0.32	531	0.40	587	0.51	642	0.62	688	0.72	728	0.82	762	0.92	794	1.01	825	1.11	853	1.20		
2700	533	0.44	574	0.52	620	0.63	671	0.75	719	0.87	762	0.99	799	1.11	832	1.22	862	1.32	890	1.43		
3000	582	0.58	621	0.67	659	0.78	702	0.90	748	1.04	792	1.17	832	1.31	867	1.44	898	1.56	927	1.68		
3300	632	0.74	669	0.85	703	0.96	739	1.08	779	1.22	821	1.37	861	1.52	898	1.67	932	1.82	963	1.96		
3600	683	0.94	718	1.07	749	1.18	780	1.30	815	1.44	852	1.59	890	1.75	928	1.92	963	2.09	995	2.25		
<b>3-hp Oversized Motor &amp; Drive</b>																						
External Static Pressure (Inches of Water)																						
		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>1-hp Standard Motor &amp; Drive</b>											<b>3-hp Oversized Motor &amp; Drive</b>											
2400	881	1.30	907	1.39	932	1.49	957	1.59	981	1.69	1004	1.78	1026	1.88	1048	1.98	1070	2.08	1090	2.18		
2700	917	1.53	943	1.64	969	1.75	993	1.86	1016	1.96	1039	2.07	1061	2.18	1083	2.29	1104	2.40	1125	2.52		
3000	954	1.80	980	1.92	1005	2.04	1030	2.16	1052	2.27	1075	2.39	1097	2.51	1118	2.63	1139	2.75	1159	2.87		
3300	991	2.09	1018	2.23	1043	2.36	1067	2.49	1090	2.62	1112	2.75	1133	2.87	1154	3.01	1175	3.13	1195	3.27		
3600	1026	2.41	1054	2.56	1080	2.71	1103	2.85	1127	2.99	1149	3.14	1170	3.27	1191	3.41	—	—	—	—		
<b>3-hp Oversized Motor &amp; Drive &amp; Field Supplied High Static Drive<sup>(b)</sup></b>																						

**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 standard filters and wet coils.
3. To determine static pressure drop due to other options/accessories, refer to the applicable table in the fan performance section.
4. 1-hp fan motor heat (MBh) = 2.829 x fan bhp + .4024. 2-hp fan motor heat (MBh) = 3.000 x fan bhp + .5000.
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 tabular data will not result in nuisance tripping or premature motor failure. Our product's warranty will not be affected.

(a) BAYLSDR009AA

(b) Field supplied fan sheave AK59 and belt AX35 required.

## Evaporator Fan Performance

**Table 23. Direct drive evaporator fan performance - 10 tons standard efficiency - WSC120E3,E4,EW downflow airflow**

External Static Pressure (Inches of Water)																						
		.10"		.20"		.30"		.40"		.50"		.60"		.70"		.80"		.90"		1.00"		
cfm	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
3200	892	0.39	929	0.47	964	0.54	998	0.62	1031	0.70	1064	0.78	1095	0.86	1124	0.94	1153	1.02	1181	1.10		
3600	994	0.54	1028	0.63	1060	0.71	1090	0.79	1120	0.87	1151	0.97	1180	1.06	1209	1.15	1236	1.24	1262	1.33		
4000	1096	0.72	1128	0.81	1158	0.91	1186	1.00	1213	1.09	1240	1.18	1267	1.28	1294	1.38	1321	1.49	1346	1.59		
4400	1199	0.93	1230	1.04	1257	1.14	1284	1.24	1309	1.34	1333	1.44	1358	1.54	1383	1.65	1407	1.77	1432	1.88		
4800	1302	1.19	1332	1.30	1357	1.42	1382	1.53	1406	1.64	1429	1.75	1451	1.85	1474	1.97	1496	2.08	1519	2.20		
External Static Pressure (Inches of Water)																						
		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
3200	1208	1.19	1234	1.27	1260	1.35	1285	1.44	1308	1.52	1333	1.61	1355	1.70	1377	1.79	1399	1.88	1420	1.97		
3600	1287	1.42	1312	1.51	1337	1.60	1361	1.69	1384	1.79	1407	1.88	1429	1.97	1451	2.07	1472	2.17	1493	2.27		
4000	1371	1.69	1395	1.79	1417	1.89	1440	1.99	1462	2.09	1484	2.19	1506	2.29	1527	2.40	1548	2.50	1569	2.61		
4400	1455	1.99	1479	2.10	1501	2.21	1523	2.33	1544	2.43	1564	2.54	1584	2.65	-	-	-	-	-	-		
4800	1542	2.33	1564	2.45	1586	2.58	1607	2.70	-	-	-	-	-	-	-	-	-	-	-	-		

**Notes:**

1. For direct drive evaporator fan speed (rpm), refer to the applicable table in the fan performance section.
2. Data includes pressure drop due to standard filters and wet coils.
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 tabular data will not result in nuisance tripping or premature motor failure. Our product's warranty will not be affected.



## Evaporator Fan Performance

**Table 24. Direct drive evaporator fan performance - 10 tons standard efficiency - WSC120E3,E4,EW horizontal airflow**

External Static Pressure (Inches of Water)																						
		.10"		.20"		.30"		.40"		.50"		.60"		.70"		.80"		.90"		1.00"		
cfm	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
3200	828	0.32	908	0.45	977	0.59	1038	0.73	1095	0.88	1150	1.04	1202	1.20	1250	1.37	1297	1.54	1340	1.71		
3600	909	0.42	987	0.57	1052	0.72	1111	0.87	1164	1.03	1216	1.20	1265	1.37	1313	1.55	1359	1.73	1401	1.92		
4000	992	0.53	1066	0.70	1128	0.86	1185	1.04	1238	1.21	1286	1.38	1331	1.56	1377	1.75	1421	1.95	1464	2.15		
4400	1075	0.67	1146	0.86	1207	1.04	1261	1.22	1311	1.41	1359	1.60	1404	1.79	1445	1.99	1487	2.19	1528	2.40		
4800	1158	0.83	1227	1.03	1286	1.24	1338	1.43	1387	1.63	1432	1.84	1476	2.05	1518	2.25	1557	2.47	1595	2.69		
External Static Pressure (Inches of Water)																						
		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
3200	1381	1.89	1421	2.07	1461	2.27	1499	2.46	1535	2.66	-	-	-	-	-	-	-	-	-	-	-	-
3600	1442	2.11	1482	2.31	1520	2.50	1557	2.71	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4000	1505	2.35	1544	2.56	1582	2.77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4400	1568	2.62	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

**Notes:**

1. For direct drive evaporator fan speed (rpm), refer to the applicable table in the fan performance section.
2. Data includes pressure drop due to standard filters and wet coils.
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 tabular data will not result in nuisance tripping or premature motor failure. Our product's warranty will not be affected.



## Evaporator Fan Performance

**Table 25. Direct drive evaporator fan performance - 3 tons high efficiency - W/DHC036H3,H4,HW downflow airflow**

External Static Pressure (Inches of Water)																						
		.10"		.20"		.30"		.40"		.50"		.60"		.70"		.80"		.90"		1.00"		
cfm	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
<b>Standard Static Motor</b>																						
960	539	0.11	585	0.15	632	0.18	679	0.22	725	0.26	772	0.29	819	0.33	865	0.37	912	0.41	927	0.44		
1080	566	0.16	613	0.20	659	0.24	706	0.27	753	0.31	800	0.35	846	0.38	893	0.42	940	0.46	948	0.49		
1200	594	0.21	640	0.25	687	0.29	734	0.32	780	0.36	827	0.40	874	0.43	920	0.47	930	0.51	968	0.54		
1320	621	0.26	668	0.30	714	0.34	761	0.37	808	0.41	854	0.45	901	0.49	948	0.52	950	0.56	988	0.60		
1440	648	0.31	695	0.35	742	0.39	789	0.43	835	0.46	882	0.50	929	0.54	932	0.57	971	0.61	1009	0.65		
<b>High Static Motor Option<sup>(a)</sup></b>																						
External Static Pressure (Inches of Water)																						
		1.10"		1.20"		1.30"		1.40"		1.50"												
cfm	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp										
<b>High Static Motor Option<sup>(a)</sup></b>																						
960	965	0.48	1004	0.52	1042	0.55	1080	0.59	1118	0.63												
1080	986	0.53	1024	0.57	1062	0.60	1100	0.64	1139	0.67												
1200	1006	0.58	1044	0.62	1083	0.66	1121	0.70	1159	0.74												
1320	1027	0.63	1065	0.67	1103	0.70	1141	0.73	1179	0.76												
1440	1047	0.68	1085	0.70	1123	0.74	1162	0.77	1200	0.80												

**Notes:**

1. For constant cfm direct drive fan, refer to the voltage vs. cfm table in the fan performance section.
2. Data includes pressure drop due to standard filters and wet coils.
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) = 2.9245 x fan bhp + 0.055
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 tabular data will not result in nuisance tripping or premature motor failure. Our product's warranty will not be affected.

(a) High Static Motor Option not available on DHC models.



## Evaporator Fan Performance

**Table 26. Direct drive evaporator fan performance - 3 tons high efficiency - W/DHC036H3,H4,HW horizontal airflow**

External Static Pressure (Inches of Water)																						
		.10"		.20"		.30"		.40"		.50"		.60"		.70"		.80"		.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>Standard Static Motor</b>																						
960	-	-	515	0.15	565	0.18	614	0.22	663	0.26	713	0.29	762	0.33	812	0.37	861	0.41	921	0.44		
1080	-	-	541	0.20	590	0.24	640	0.27	689	0.31	738	0.35	788	0.38	837	0.42	887	0.46	940	0.49		
1200	517	0.21	566	0.25	616	0.29	665	0.32	715	0.36	764	0.40	813	0.43	863	0.47	921	0.51	959	0.54		
1320	543	0.26	592	0.30	641	0.34	691	0.37	740	0.41	790	0.45	839	0.49	888	0.52	940	0.56	978	0.60		
1440	568	0.31	618	0.35	667	0.39	716	0.43	766	0.46	815	0.50	865	0.54	922	0.57	960	0.61	997	0.65		
<b>High Static Motor Option<sup>(a)</sup></b>																						
External Static Pressure (Inches of Water)																						
		1.10"		1.20"		1.30"		1.40"		1.50"												
cfm	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp										
<b>High Static Motor Option<sup>(a)</sup></b>																						
960	958	0.48	995	0.52	1033	0.55	1070	0.59	1108	0.63												
1080	977	0.53	1015	0.57	1052	0.60	1089	0.64	1127	0.67												
1200	996	0.58	1034	0.62	1071	0.66	1108	0.70	1146	0.74												
1320	1015	0.63	1053	0.67	1090	0.70	1127	0.73	1165	0.76												
1440	1034	0.68	1072	0.70	1109	0.74	1147	0.77	1184	0.80												

**Notes:**

1. For constant cfm direct drive fan, refer to the voltage vs. cfm table in the fan performance section.
2. Data includes pressure drop due to standard filters and wet coils.
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) = 2.9245 x fan bhp + 0.055
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 tabular data will not result in nuisance tripping or premature motor failure. Our product's warranty will not be affected.

(a) High Static Motor Option not available on DHC models.

## Evaporator Fan Performance

**Table 27. Direct drive evaporator fan performance - 4 tons high efficiency - W/DHC048H3,H4,HW downflow airflow**

External Static Pressure (Inches of Water)																						
		.10"		.20"		.30"		.40"		.50"		.60"		.70"		.80"		.90"		1.00"		
cfm	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
<b>Standard Static Motor</b>																						
1280	541	0.07	585	0.12	628	0.18	672	0.23	715	0.28	759	0.33	802	0.39	846	0.44	889	0.49	905	0.55		
1440	564	0.15	608	0.2	651	0.25	695	0.3	738	0.36	782	0.41	825	0.46	869	0.51	912	0.57	925	0.62		
1600	587	0.22	631	0.27	674	0.33	718	0.38	761	0.43	805	0.48	848	0.54	892	0.59	901	0.64	945	0.70		
1760	610	0.3	654	0.35	697	0.4	741	0.45	784	0.51	828	0.56	871	0.61	915	0.66	921	0.72	965	0.77		
1920	634	0.37	677	0.42	721	0.48	764	0.53	808	0.58	851	0.63	895	0.69	898	0.74	941	0.79	985	0.85		
<b>High Static Motor Option<sup>(a)</sup></b>																						
External Static Pressure (Inches of Water)																						
		1.10"		1.20"		1.30"		1.40"		1.50"												
cfm	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp										
<b>High Static Motor Option<sup>(a)</sup></b>																						
1280	949	0.60	992	0.65	1036	0.70	1079	0.76	1123	0.81												
1440	969	0.67	1012	0.73	1056	0.78	1099	0.83	1143	0.88												
1600	989	0.75	1032	0.80	1076	0.85	1119	0.91	1163	0.96												
1760	1009	0.82	1052	0.88	1096	0.93	1139	0.98	1183	1.03												
1920	1029	0.90	1072	0.95	1116	1.00	1159	1.06	1203	1.11												

**Notes:**

1. For constant cfm direct drive fan, refer to the voltage vs. cfm table in the fan performance section.
2. Data includes pressure drop due to standard filters and wet coils.
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) = 2.9245 x fan bhp + 0.055
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 tabular data will not result in nuisance tripping or premature motor failure. Our product's warranty will not be affected.

(a) High Static Motor Option not available on DHC models.



## Evaporator Fan Performance

**Table 28. Direct drive evaporator fan performance - 4 tons high efficiency - W/DHC048H3,H4,HW horizontal airflow**

External Static Pressure (Inches of Water)																						
		.10"		.20"		.30"		.40"		.50"		.60"		.70"		.80"		.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>Standard Static Motor</b>																						
1280	591	0.07	632	0.12	674	0.18	715	0.23	756	0.28	798	0.33	839	0.39	880	0.44	922	0.49	968	0.55		
1440	621	0.15	663	0.2	704	0.25	745	0.3	787	0.36	828	0.41	869	0.46	911	0.51	952	0.57	1005	0.62		
1600	652	0.22	693	0.27	734	0.33	776	0.38	817	0.43	858	0.48	900	0.54	941	0.59	1008	0.64	1041	0.70		
1760	682	0.3	723	0.35	765	0.4	806	0.45	847	0.51	889	0.56	930	0.61	971	0.66	1045	0.72	1078	0.77		
1920	712	0.37	754	0.42	795	0.48	836	0.53	878	0.58	919	0.63	960	0.69	1048	0.74	1082	0.79	1115	0.85		
<b>High Static Motor Option<sup>(a)</sup></b>																						
External Static Pressure (Inches of Water)																						
		1.10"		1.20"		1.30"		1.40"		1.50"												
cfm	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp										
<b>High Static Motor Option<sup>(a)</sup></b>																						
1280	1001	0.60	1034	0.65	1067	0.70	1101	0.76	1134	0.81												
1440	1038	0.67	1071	0.73	1104	0.78	1137	0.83	1170	0.88												
1600	1075	0.75	1108	0.80	1141	0.85	1174	0.91	1207	0.96												
1760	1111	0.82	1144	0.88	1177	0.93	1210	0.98	1244	1.03												
1920	1148	0.90	1181	0.95	1214	1.00	1247	1.06	1280	1.11												

**Notes:**

1. For constant cfm direct drive fan, refer to the voltage vs. cfm table in the fan performance section.
2. Data includes pressure drop due to standard filters and wet coils.
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) = 2.9245 x fan bhp +0.055
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 tabular data will not result in nuisance tripping or premature motor failure. Our product's warranty will not be affected.

(a) High Static Motor Option not available on DHC models.

## Evaporator Fan Performance

**Table 29. Direct drive evaporator fan performance - 5 tons high efficiency - W/DHC060H3,H4,HW downflow airflow**

External Static Pressure (Inches of Water)																						
		.10"		.20"		.30"		.40"		.50"		.60"		.70"		.80"		.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>Standard Static Motor</b>																						
1600	618	0.13	656	0.18	693	0.23	731	0.28	769	0.33	806	0.38	844	0.43	881	0.48	919	0.53	932	0.58		
1800	651	0.24	689	0.29	727	0.34	764	0.39	802	0.44	839	0.49	877	0.54	915	0.59	957	0.64	961	0.69		
2000	685	0.35	722	0.4	760	0.45	798	0.5	835	0.55	873	0.6	910	0.65	948	0.7	952	0.75	991	0.80		
2200	718	0.46	756	0.51	793	0.56	831	0.61	869	0.66	906	0.71	944	0.76	981	0.81	981	0.86	1021	0.91		
2400	752	0.57	789	0.62	827	0.67	864	0.72	902	0.77	940	0.82	977	0.87	971	0.92	1011	0.97	1050	1.02		
<b>High Static Motor Option<sup>(a)</sup></b>																						
External Static Pressure (Inches of Water)																						
		1.10"		1.20"		1.30"		1.40"		1.50"												
cfm	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp										
<b>High Static Motor Option<sup>(a)</sup></b>																						
1600	971	0.63	1011	0.68	1050	0.73	1089	0.79	1129	0.84												
1800	1001	0.74	1040	0.79	1080	0.84	1119	0.89	1158	0.92												
2000	1030	0.85	1070	0.90	1109	0.95	1149	0.99	1188	1.02												
2200	1060	0.96	1099	1.01	1139	1.04	1178	1.06	1218	1.09												
2400	1090	1.05	1129	1.07	1168	1.10	1208	1.13	1247	1.16												

**Notes:**

1. For constant cfm direct drive fan, refer to the voltage vs. cfm table in the fan performance section.
2. Data includes pressure drop due to standard filters and wet coils.
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) = 2.9245 x fan bhp +0.055
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 tabular data will not result in nuisance tripping or premature motor failure. Our product's warranty will not be affected.

(a) High Static Motor Option not available on DHC models.



## Evaporator Fan Performance

**Table 30. Direct drive evaporator fan performance - 5 tons high efficiency - W/DHC060H3,H4,HW horizontal airflow**

External Static Pressure (Inches of Water)																						
		.10"		.20"		.30"		.40"		.50"		.60"		.70"		.80"		.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>Standard Static Motor</b>																						
1600	680	0.14	717	0.19	753	0.25	790	0.31	827	0.36	864	0.42	901	0.47	937	0.48	974	0.53	1047	0.58		
1800	716	0.27	753	0.32	789	0.38	826	0.44	863	0.49	900	0.55	937	0.61	973	0.59	1010	0.64	1084	0.69		
2000	752	0.4	789	0.46	825	0.51	862	0.57	899	0.63	936	0.68	973	0.74	1009	0.7	1084	0.75	1120	0.80		
2200	788	0.53	825	0.59	861	0.65	898	0.7	935	0.76	972	0.82	1009	0.87	1045	0.81	1121	0.86	1156	0.91		
2400	824	0.67	861	0.72	897	0.78	934	0.84	971	0.89	1008	0.95	1045	1.01	1121	0.92	1157	0.97	1193	1.02		
<b>High Static Motor Option<sup>(a)</sup></b>																						
External Static Pressure (Inches of Water)																						
		1.10"		1.20"		1.30"		1.40"		1.50"												
cfm	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp										
<b>High Static Motor Option<sup>(a)</sup></b>																						
1600	1083	0.63	1119	0.68	1155	0.73	1191	0.79	1227	0.84												
1800	1120	0.74	1155	0.79	1191	0.84	1227	0.89	1263	0.92												
2000	1156	0.85	1192	0.90	1228	0.95	1264	0.99	1300	1.02												
2200	1192	0.96	1228	1.01	1264	1.04	1300	1.06	1336	1.09												
2400	1229	1.05	1265	1.07	1301	1.10	1336	1.13	1372	1.16												

**Notes:**

1. For constant cfm direct drive fan, refer to the voltage vs. cfm table in the fan performance section.
2. Data includes pressure drop due to standard filters and wet coils.
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) = 2.9245 x fan bhp +0.055
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 tabular data will not result in nuisance tripping or premature motor failure. Our product's warranty will not be affected.

(a) High Static Motor Option not available on DHC models.



# Fan Performance

**Table 31. Standard motor & sheave/fan speed (rpm)**

Tons	Unit Model Number	Fan Sheave	6 Turns Open	5 Turns Open	4 Turns Open	3 Turns Open	2 Turns Open	1 Turn Open	Closed
6	WSC072E	AK59x1"	N/A	805	865	925	985	1045	1105
7.5	WSC090E	AK64x1"	N/A	695	751	807	863	919	975

Note: Factory set at 3 turns open.

**Table 32. Standard motor & low static drive accessory sheave/fan speed (rpm)**

Tons	Unit Model Number	Fan Sheave	6 Turns Open	5 Turns Open	4 Turns Open	3 Turns Open	2 Turns Open	1 Turn Open	Closed
6	WSC072E	AK79x1"	N/A	581	626	671	716	761	805
7.5	WSC090E	AK79x1"	N/A	581	626	671	716	761	805
7.5	WSC090E	AK99x1"	N/A	462	497	533	569	604	640

Note: Factory set at 3 turns open.

**Table 33. Oversized motor & drive sheave/fan speed (rpm)**

Tons	Unit Model Number	Fan Sheave	6 Turns Open	5 Turns Open	4 Turns Open	3 Turns Open	2 Turns Open	1 Turn Open	Closed
6	WSC072E	AK44x1"	N/A	1110	1183	1256	1329	1402	1475
7.5	WSC090E	AK64x1"	N/A	835	891	946	1002	1057	1113

Note: Factory set at 3 turns open.

**Table 34. Oversized motor & high static drive sheave/fan speed (rpm)**

Tons	Unit Model Number	6 Turns Open	5 Turns Open	4 Turns Open	3 Turns Open	2 Turns Open	1 Turn Open	Closed
7.5	WSC090E	N/A	908	968	1029	1090	1150	1211

Note: Factory set at 3 turns open.

**Table 35. Direct drive plenum fan settings (rpm vs. voltage)**

Potentiometer Voltage	Motor RPM
1	N/A
1.25	N/A
1.5	N/A
1.75	N/A
2	N/A
2.25	325
2.5	402
2.75	465
3	544
3.25	630
3.5	716
3.75	775
4	845
4.25	912
4.5	976



## Fan Performance

**Table 35. Direct drive plenum fan settings (rpm vs. voltage) (continued)**

Potentiometer Voltage	Motor RPM
4.75	1044
5	1115
5.25	1203
5.5	1253
5.75	1312
6	1368
6.25	1425
6.5	1475
6.75	1533
7	1581
7.25	1615
7.5	1615

**Table 36. Voltage vs. CFM table**

PWM% Value	Potentiometer Voltage (Vdc)	CFM/Ton
70	<0.1	320
75	0.7	347
80	1.25	373
85	1.65	400
90	1.95	427
95	2.17	453
100	>2.4	480

Note: Applicable to W/DHC036-060H models

**Table 37. Outdoor sound power level - dB (ref. 10 - 12 W)**

Tons	Unit Model Number	Octave Center Frequency								Overall dBA
		63	125	250	500	1000	2000	4000	8000	
3	WSC036H	84	81	80	79	76	74	69	63	81
4	WSC048H	81	85	81	81	77	72	69	65	82
5	WSC060H	90	90	84	85	83	78	73	68	87
6	WSC072E	91	95	90	87	84	79	75	68	89
7.5	WSC090E	94	89	87	85	84	78	75	69	88
10	WSC120E	89	87	91	85	80	77	73	66	87
3	W/DHC036H	84	81	80	79	76	74	69	63	81
4	W/DHC048H	90	90	84	85	83	78	73	68	87
5	W/DHC060H	90	90	84	85	83	78	73	68	87

Note: Tests follow ARI270-95.



**Table 38. Static pressure drop through accessories (inches water column) - 3 to 10 tons**

Tons	Unit Model Number	cfm	Standard Filters(a)	2" MERV 8 Filter	2" MERV 13 Filter	Economizer with OA/RA Dampers(b)						Electric Heater Accessory (kW)(c), (d)					
						100% OA		100% RA		100% OA		100% RA		5-6	9-18	23-36	54
						Downflow	Low Leak(e)	Downflow	Low Leak(e)	Horizontal	RA						
3	WSC036H	960	0.02	0.03	0.03	0.05	0.01	0.11	0.04	0.05	0.01	0.01	0.02	0.02	0.02	—	
3	WSC036H	1200	0.03	0.05	0.04	0.07	0.02	0.17	0.07	0.07	0.01	0.02	0.03	0.03	0.03	—	
3	WSC036H	1440	0.03	0.06	0.04	0.10	0.03	0.23	0.09	0.10	0.01	0.03	0.04	0.04	0.04	—	
4	WSC048H	1280	0.03	0.06	0.04	0.10	0.03	0.23	0.09	0.09	0.01	0.02	0.03	0.03	0.03	—	
4	WSC048H	1600	0.04	0.07	0.07	0.13	0.04	0.13	0.08	0.13	0.02	0.04	0.05	0.05	0.05	—	
4	WSC048H	1920	0.06	0.10	0.08	0.17	0.06	0.20	0.09	0.17	0.02	0.05	0.06	0.06	0.08	—	
5	WSC060H	1600	0.03	0.06	0.05	0.09	0.01	0.14	0.08	0.05	0.01	0.01	0.01	0.01	0.02	—	
5	WSC060H	2000	0.05	0.08	0.07	0.11	0.01	0.22	0.10	0.07	0.02	0.02	0.01	0.03	0.03	—	
5	WSC060H	2400	0.07	0.10	0.10	0.12	0.03	0.31	0.11	0.09	0.03	0.03	0.02	0.04	0.04	—	
6	WSC072E	1920	0.04	0.07	0.10	0.10	0.01	0.20	0.09	0.06	0.02	—	0.01	0.02	0.02	—	
6	WSC072E	2400	0.06	0.09	0.13	0.11	0.02	0.31	0.11	0.08	0.02	—	0.02	0.03	0.03	—	
6	WSC072E	2880	0.09	0.12	0.15	0.13	0.04	0.46	0.19	0.10	0.04	—	0.03	0.05	0.05	—	
7.5	WSC090E	2400	0.04	0.06	0.12	0.11	0.02	0.20	0.09	0.08	0.02	—	0.02	0.02	0.02	—	
7.5	WSC090E	3000	0.06	0.09	0.13	0.14	0.05	0.31	0.11	0.12	0.05	—	0.03	0.03	0.03	—	
7.5	WSC090E	3600	0.09	0.13	0.15	0.21	0.07	0.46	0.19	0.25	0.08	—	0.04	0.05	0.05	—	
10	WSC120E	3200	0.07	0.10	0.14	0.17	0.05	0.42	0.18	0.14	0.05	—	0.02	0.03	0.03	0.05	
10	WSC120E	4000	0.11	0.15	0.16	0.26	0.07	0.63	0.21	0.30	0.08	—	0.02	0.03	0.03	0.05	
10	WSC120E	4800	0.16	0.20	0.18	0.34	0.09	0.91	0.34	0.35	0.10	—	0.03	0.04	0.04	0.06	
3	D/WHC036H	960	0.02	0.03	0.03	0.05	0.01	0.11	0.04	0.05	0.01	0.01	0.02	0.02	0.02	—	
3	D/WHC036H	1200	0.03	0.05	0.04	0.07	0.02	0.17	0.07	0.07	0.01	0.02	0.03	0.03	0.03	—	
3	D/WHC036H	1440	0.03	0.06	0.04	0.10	0.03	0.23	0.09	0.10	0.01	0.03	0.04	0.04	0.04	—	
4	D/WHC048H	1280	0.03	0.06	0.04	0.10	0.03	0.23	0.09	0.09	0.01	0.02	0.03	0.03	0.03	—	
4	D/WHC048H	1600	0.04	0.07	0.07	0.13	0.04	0.13	0.08	0.13	0.02	0.04	0.05	0.05	0.05	—	
4	D/WHC048H	1920	0.06	0.10	0.08	0.17	0.06	0.20	0.09	0.17	0.02	0.05	0.06	0.06	0.08	—	
5	D/WHC060H	1600	0.03	0.06	0.05	0.09	0.01	0.14	0.08	0.05	0.01	0.01	0.01	0.01	0.02	—	
5	D/WHC060H	2000	0.05	0.08	0.07	0.11	0.01	0.22	0.10	0.07	0.02	0.02	0.01	0.03	0.03	—	
5	D/WHC060H	2400	0.07	0.10	0.10	0.12	0.03	0.31	0.11	0.09	0.03	0.03	0.02	0.04	0.04	—	

(a) Tested with standard filters. Difference in pressure drop should be considered when utilizing optional 2" MERV 8 and MERV 13 filters.

(b) OA = Outside Air and RA = Return Air.

(c) Nominal kW ratings at 240, 480, 600 volts.

(d) Electric heaters restricted on applications below 320 cfm/ton.

(e) Low Leak - Downflow only.



# Heating Performance Data

**Table 39. 3 tons three phase heating capacities (net) WSC036H3,4,W at 1200 cfm**

Outdoor Temp. °F	Integrated Heating Capacity (Btuh/1000) at Indicated Indoor Dry Bulb Temp <sup>(a)</sup>				Total Power in Kilowatts at Indicated Indoor Dry Bulb Temp			
	60	70	75	80	60	70	75	80
-8	12.7	12.1	11.7	11.4	2.4	2.6	2.8	2.9
-3	14.5	13.8	13.5	13.1	2.4	2.7	2.8	3.0
2	16.5	15.7	15.3	15.0	2.5	2.7	2.9	3.0
7	18.5	17.7	17.3	16.9	2.5	2.8	2.9	3.1
12	20.7	19.8	19.4	18.9	2.5	2.8	3.0	3.1
17	22.9	22.0	21.5	21.1	2.6	2.9	3.0	3.1
22	25.3	24.3	23.8	23.3	2.6	2.9	3.0	3.2
27	27.6	26.6	26.0	25.5	2.7	2.9	3.1	3.2
32	30.1	28.9	28.3	27.8	2.7	3.0	3.1	3.3
37	32.5	31.3	30.7	30.1	2.7	3.0	3.2	3.3
42	35.0	33.7	33.0	32.4	2.8	3.0	3.2	3.3
47	37.4	36.0	35.3	34.6	2.8	3.1	3.2	3.4
52	39.8	38.3	37.5	36.8	2.8	3.1	3.3	3.4
57	42.1	40.5	39.7	38.8	2.9	3.1	3.3	3.4
62	44.2	42.5	41.6	40.7	2.9	3.2	3.3	3.5
67	45.9	43.9	43.1	42.1	2.9	3.2	3.3	3.5
72	47.4	45.1	46.1	42.4	2.9	3.2	3.4	3.5

**Note:** Net heating capacity and power input includes indoor fan heat at AHRI esp. To obtain net heating at other conditions, subtract fan heat at this condition and add fan heat at new condition.

(a) Integrated heating capacities and powers include the effects of defrost in the frost region. All heating capacities and power (kw) are at 70% OD relative humidity and demand defrost cycle.

**Table 40. 4 tons three phase heating capacities (net) WSC048H3,4,W at 1600 cfm**

Outdoor Temp.°F	Integrated Heating Capacity (Btuh/1000) at Indicated Indoor Dry Bulb Temp <sup>(a)</sup>				Total Power in Kilowatts at Indicated Indoor Dry Bulb Temp			
	60	70	75	80	60	70	75	80
-8	15.8	15.4	15.0	14.6	3.2	3.4	3.6	3.8
-3	18.6	17.8	17.4	17.0	3.1	3.4	3.6	3.8
2	21.2	20.4	20.0	19.6	3.2	3.5	3.7	3.9
7	23.8	23.0	22.4	22.4	3.2	3.6	3.8	4.0
12	26.6	25.8	25.3	24.9	3.3	3.6	3.8	4.0
17	29.4	28.6	28.1	27.7	3.3	3.7	3.9	4.1
22	32.4	31.5	31.0	30.5	3.4	3.7	3.9	4.1
27	35.4	34.4	33.9	33.4	3.4	3.8	4.0	4.2
32	38.5	37.5	36.9	36.4	3.5	3.8	4.0	4.2
37	41.6	40.5	40.0	39.4	3.5	3.9	4.1	4.3
42	44.8	43.7	43.1	42.5	3.5	3.9	4.1	4.4
47	48.1	46.8	46.2	45.6	3.6	4.0	4.2	4.4
52	51.3	50.0	49.3	48.7	3.7	4.0	4.2	4.5
57	54.6	53.1	52.4	51.7	3.7	4.1	4.3	4.5
62	58.0	56.3	55.6	54.6	3.8	4.2	4.4	4.6
67	61.4	59.6	58.7	57.8	3.8	4.2	4.4	4.6
72	64.6	62.0	61.6	60.6	3.9	4.2	4.4	4.7

**Note:** Net heating capacity and power input includes indoor fan heat at AHRI esp. To obtain net heating at other conditions, subtract fan heat at this condition and add fan heat at new condition.

(a) Integrated heating capacities and powers include the effects of defrost in the frost region. All heating capacities and power (kw) are at 70% OD relative humidity and demand defrost cycle.



## Heating Performance Data

**Table 41. 5 tons three phase heating capacities (net) WSC060H3,4,W at 2000 cfm**

Outdoor Temp. °F	Integrated Heating Capacity (Btuh/1000) at Indicated Indoor Dry Bulb Temp <sup>(a)</sup>				Total Power in Kilowatts at Indicated Indoor Dry Bulb Temp			
	60	70	75	80	60	70	75	80
-8	18.2	17.2	16.8	16.3	3.7	4.1	4.3	4.5
-3	21.6	20.5	20.0	19.6	3.8	4.2	4.4	4.6
2	25.0	24.0	23.5	23.0	3.8	4.2	4.5	4.7
7	28.6	27.5	26.9	26.2	3.9	4.3	4.6	4.8
12	32.4	31.2	30.6	30.1	4.0	4.4	4.6	4.9
17	36.2	35.0	34.4	33.8	4.0	4.5	4.7	5.0
22	40.1	38.8	38.2	37.6	4.1	4.6	4.8	5.1
27	44.1	42.7	42.1	41.4	4.2	4.6	4.9	5.1
32	47.9	46.7	46.0	45.3	4.2	4.7	4.9	5.2
37	52.0	50.4	50.0	49.2	4.3	4.8	5.0	5.3
42	56.1	54.4	54.0	53.2	4.4	4.8	5.1	5.4
47	60.5	59.0	57.8	56.9	4.5	4.9	5.2	5.5
52	64.8	62.9	62.0	61.1	4.6	5.0	5.3	5.6
57	69.2	67.2	66.2	65.2	4.6	5.1	5.4	5.6
62	73.5	71.3	70.2	69.2	4.7	5.2	5.5	5.7
67	77.7	75.3	74.2	73.0	4.8	5.3	5.6	5.8
72	81.6	79.1	77.9	76.6	4.9	5.4	5.7	5.9

**Note:** Net heating capacity and power input includes indoor fan heat at AHRI esp. To obtain net heating at other conditions, subtract fan heat at this condition and add fan heat at new condition.

(a) Integrated heating capacities and powers include the effects of defrost in the frost region. All heating capacities and power (kw) are at 70% OD relative humidity and demand defrost cycle.

**Table 42. 6 tons three phase heating capacities (net) WSC072E3,E4,EW at 2400 cfm**

Outdoor Temp. °F	Instantaneous Heating Capacity (Btuh/1000) at Indicated Indoor Dry Bulb Temp				Integrated Heating Capacity (Btuh/1000) at Indicated Indoor Dry Bulb Temp <sup>(a)</sup>				Total Power in Kilowatts at Indicated Indoor Dry Bulb Temp			
	60	70	75	80	60	70	75	80	60	70	75	80
-8	26.78	25.22	24.45	23.67	23.70	22.34	21.66	20.98	4.71	5.05	5.25	5.46
-3	30.60	29.05	28.27	27.50	27.04	25.68	25.01	24.33	4.73	5.08	5.28	5.49
2	34.34	32.77	31.99	31.20	30.30	28.93	28.25	27.56	4.76	5.11	5.32	5.53
7	38.10	36.49	35.68	34.88	33.59	32.18	31.48	30.78	4.79	5.15	5.35	5.57
12	41.97	40.29	39.46	38.62	36.97	35.50	34.77	34.04	4.82	5.19	5.40	5.62
17	46.01	44.24	43.36	42.48	40.50	38.95	38.19	37.42	4.86	5.23	5.44	5.66
22	50.24	48.37	47.43	46.49	42.68	41.10	40.31	39.53	4.95	5.33	5.55	5.78
27	54.67	52.66	51.66	50.66	46.41	44.72	43.88	43.03	4.99	5.38	5.60	5.83
32	59.26	57.11	56.03	54.96	50.27	48.46	47.56	46.65	5.04	5.43	5.65	5.89
37	63.79	61.53	60.40	59.28	54.09	52.19	51.24	50.29	5.09	5.49	5.71	5.95
42	68.63	66.22	65.01	63.81	58.16	56.13	55.12	54.10	5.14	5.55	5.77	6.01
47	73.59	71.01	69.72	68.43	73.59	71.01	69.72	68.43	5.50	5.95	6.19	6.45
52	78.63	75.87	74.50	73.12	78.63	75.87	74.50	73.12	5.57	6.02	6.26	6.53
57	83.74	80.80	79.33	77.86	83.74	80.80	79.33	77.86	5.64	6.09	6.34	6.60
62	88.90	85.77	84.21	82.65	88.90	85.77	84.21	82.65	5.71	6.17	6.42	6.69
67	94.10	90.79	89.14	87.49	94.10	90.79	89.14	87.49	5.79	6.25	6.51	6.78
72	99.35	95.86	94.12	92.38	99.35	95.86	94.12	92.38	5.87	6.34	6.60	6.87

**Note:** Net heating capacity and power input includes indoor fan heat at AHRI esp. To obtain net heating at other conditions, subtract fan heat at this condition and add fan heat at new condition.

(a) Integrated heating capacities and powers include the effects of defrost in the frost region. All heating capacities and power (kw) are at 70% OD relative humidity and demand defrost cycle.



## Heating Performance Data

**Table 43. 7.5 tons three phase heating capacities (net) WSC090E3,E4,EW at 3000 cfm**

Outdoor Temp. °F	Instantaneous Heating Capacity (Btuh/1000) at Indicated Indoor Dry Bulb Temp				Integrated Heating Capacity (Btuh/1000) at Indicated Indoor Dry Bulb Temp <sup>(a)</sup>				Total Power in Kilowatts at Indicated Indoor Dry Bulb Temp			
	60	70	75	80	60	70	75	80	60	70	75	80
-8	34.45	33.07	32.37	31.66	30.53	29.31	28.69	28.06	5.63	6.13	6.40	6.69
-3	38.73	37.28	36.55	35.82	34.33	33.05	32.40	31.75	5.72	6.23	6.50	6.79
2	43.02	41.50	40.73	39.96	38.13	36.78	36.10	35.42	5.81	6.32	6.60	6.89
7	47.39	45.78	44.97	44.15	42.00	40.58	39.86	39.13	5.89	6.41	6.70	6.99
12	51.90	50.19	49.32	48.46	46.00	44.48	43.72	42.95	5.98	6.50	6.79	7.09
17	56.59	54.76	53.84	52.91	50.15	48.53	47.72	46.89	6.06	6.59	6.88	7.19
22	61.47	59.51	58.53	57.54	44.00	42.60	41.89	41.18	6.07	6.61	6.90	7.21
27	66.56	64.46	63.41	62.35	47.65	46.14	45.39	44.63	6.16	6.70	7.00	7.30
32	71.85	69.60	68.47	67.33	51.43	49.82	49.01	48.19	6.26	6.80	7.09	7.40
37	77.24	74.87	73.67	72.47	55.29	53.59	52.73	51.87	6.35	6.90	7.20	7.51
42	82.88	80.35	79.08	77.80	59.33	57.51	56.60	55.69	6.46	7.01	7.30	7.62
47	88.69	85.99	84.64	83.28	88.69	85.99	84.64	83.28	6.84	7.41	7.72	8.05
52	94.65	91.79	90.35	88.90	94.65	91.79	90.35	88.90	6.96	7.54	7.85	8.18
57	100.75	97.72	96.19	94.67	100.75	97.72	96.19	94.67	7.09	7.67	7.99	8.32
62	106.98	103.78	102.17	100.56	106.98	103.78	102.17	100.56	7.24	7.82	8.13	8.46
67	113.36	109.98	108.29	106.59	113.36	109.98	108.29	106.59	7.39	7.97	8.28	8.61
72	119.87	116.33	114.55	112.76	119.87	116.33	114.55	112.76	7.54	8.13	8.44	8.77

**Note:** Net heating capacity and power input includes indoor fan heat at AHRI esp. To obtain net heating at other conditions, subtract fan heat at this condition and add fan heat at new condition.

(a) Integrated heating capacities and powers include the effects of defrost in the frost region. All heating capacities and power (kw) are at 70% OD relative humidity and demand defrost cycle.

## Heating Performance Data

**Table 44. 10 tons three phase heating capacities (net) WSC120E3,E4,EW at 4000 cfm**

Outdoor Temp °F	Instantaneous Heating Capacity (Btuh/1000) at Indicated Indoor Dry Bulb Temp				Integrated Heating Capacity (Btuh/1000) at Indicated Indoor Dry Bulb Temp <sup>(a)</sup>				Total Power in Kilowatts at Indicated Indoor Dry Bulb Temp			
	60	70	75	80	60	70	75	80	60	70	75	80
-8	39.45	38.16	37.46	36.71	39.45	38.16	37.46	36.71	6.88	7.65	8.07	8.51
-3	45.27	43.99	43.29	42.54	45.27	43.99	43.29	42.54	7.01	7.79	8.22	8.66
2	51.22	49.90	49.18	48.41	51.22	49.90	49.18	48.41	7.13	7.93	8.36	8.80
7	57.33	55.94	55.17	54.37	57.33	55.94	55.17	54.37	7.25	8.06	8.49	8.94
12	63.67	62.15	61.33	60.46	63.67	62.15	61.33	60.46	7.37	8.18	8.61	9.07
17	70.24	68.56	67.66	66.71	70.24	68.56	67.66	66.71	7.48	8.30	8.74	9.19
22	77.07	75.18	74.18	73.13	77.07	75.18	74.18	73.13	7.59	8.42	8.87	9.31
27	84.14	82.02	80.89	79.73	84.14	82.02	80.89	79.73	7.69	8.53	8.99	9.43
32	91.43	89.04	87.78	86.48	91.43	89.04	87.78	86.48	7.78	8.63	9.10	9.54
37	98.71	96.13	94.78	93.38	98.71	96.13	94.78	93.38	7.86	8.71	9.18	9.64
42	106.35	103.49	101.99	100.45	106.35	103.49	101.99	100.45	7.93	8.79	9.26	9.71
47	114.18	111.01	109.36	107.67	114.18	111.01	109.36	107.67	8.00	8.86	9.33	9.78
52	122.16	118.67	116.87	115.02	122.16	118.67	116.87	115.02	8.06	8.92	9.39	9.84
57	130.29	126.47	124.50	122.49	130.29	126.47	124.50	122.49	8.12	8.98	9.45	9.90
62	138.54	134.40	132.26	130.09	138.54	134.40	132.26	130.09	8.17	9.03	9.50	9.95
67	146.92	142.45	140.15	137.81	146.92	142.45	140.15	137.81	8.22	9.08	9.55	10.00
72	155.42	150.62	148.16	145.65	155.42	150.62	148.16	145.65	8.27	9.13	9.60	10.05

**Note:** Net heating capacity and power input includes indoor fan heat at AHRI esp. To obtain net heating at other conditions, subtract fan heat at this condition and add fan heat at new condition.

(a) Integrated heating capacities and powers include the effects of defrost in the frost region. All heating capacities and power (kw) are at 70% OD relative humidity and demand defrost cycle.



## Heating Performance Data

**Table 45. 3 tons three phase high stage heating capacities (net) W/DHC036H3,H4,HW at 1200 cfm**

Outdoor Temp °F	Instantaneous Heating Capacity (Btuh/1000) at Indicated Indoor Dry Bulb Temp				Total Power in Kilowatts at Indicated Indoor Dry Bulb Temp			
	60	70	75	80	60	70	75	80
-8	10.3	9.4	9.0	8.6	2.2	2.5	2.6	2.8
-3	12.5	11.7	11.2	10.8	2.3	2.6	2.7	2.8
2	14.9	14.0	13.6	13.1	2.4	2.6	2.8	2.9
7	17.3	16.5	16.0	15.6	2.4	2.7	2.8	3.0
12	19.9	19.0	18.5	18.0	2.5	2.8	2.9	3.0
17	22.4	21.5	21.0	20.6	2.5	2.8	2.9	3.1
22	25.1	24.1	23.6	23.1	2.6	2.9	3.0	3.2
27	27.8	26.8	26.3	25.7	2.6	2.9	3.1	3.2
32	30.7	29.6	29.0	28.4	2.7	3.0	3.1	3.3
37	33.5	32.4	31.8	31.2	2.7	3.0	3.2	3.3
42	36.4	35.2	34.6	33.9	2.8	3.1	3.2	3.4
47	39.4	38.2	37.4	36.7	2.8	3.1	3.3	3.4
52	42.4	41.0	40.3	39.6	2.9	3.2	3.3	3.5
57	45.5	44.0	43.2	42.4	2.9	3.2	3.4	3.5
62	48.6	46.9	46.1	45.3	3.0	3.3	3.4	3.6
67	51.6	49.8	48.9	48.0	3.0	3.3	3.5	3.6
72	54.4	52.6	50.6	50.4	3.1	3.4	3.5	3.7

**Note:** Net heating capacity and power input includes indoor fan heat at AHRI esp. To obtain net heating at other conditions, subtract fan heat at this condition and add fan heat at new condition.

**Table 46. 3 tons three phase low stage heating capacities (net) W/DHC036H3,H4,HW at 840 cfm**

Outdoor Temp °F	Instantaneous Heating Capacity (Btuh/1000) at Indicated Indoor Dry Bulb Temp				Total Power in Kilowatts at Indicated Indoor Dry Bulb Temp			
	60	70	75	80	60	70	75	80
22	16.6	15.6	15.0	14.4	2.1	2.3	2.4	2.6
27	18.8	17.7	17.1	16.5	2.1	2.3	2.5	2.6
32	21.0	19.8	19.2	18.6	2.1	2.4	2.5	2.6
37	23.1	22.0	21.4	20.7	2.1	2.4	2.5	2.6
42	25.3	24.1	23.5	22.9	2.2	2.4	2.5	2.7
47	27.4	26.3	25.6	25.0	2.2	2.4	2.6	2.7
52	29.5	28.3	27.7	27.1	2.2	2.4	2.6	2.7
57	31.7	30.4	29.8	29.1	2.2	2.5	2.6	2.7
62	33.7	32.3	31.6	30.9	2.2	2.5	2.6	2.7
67	35.6	34.2	33.4	32.7	2.2	2.5	2.6	2.8
72	37.4	35.8	35.0	34.2	2.2	2.5	2.6	2.8

**Note:** Net heating capacity and power input includes indoor fan heat at AHRI esp. To obtain net heating at other conditions, subtract fan heat at this condition and add fan heat at new condition.



## Heating Performance Data

**Table 47. 4 tons three phase high stage heating capacities (net) W/DHC048H3,H4,HW at 1600 cfm**

Outdoor Temp °F	Instantaneous Heating Capacity (Btuh/1000) at Indicated Indoor Dry Bulb Temp				Total Power in Kilowatts at Indicated Indoor Dry Bulb Temp			
	60	70	75	80	60	70	75	80
-8	10.51	9.90	9.68	9.22	2.76	3.02	3.17	3.33
-3	13.12	12.67	12.22	11.86	2.80	3.07	3.22	3.38
2	16.15	15.40	15.02	14.62	2.83	3.11	3.27	3.43
7	19.14	18.13	17.84	17.43	2.88	3.17	3.32	3.49
12	22.20	21.29	20.77	20.32	2.92	3.21	3.37	3.54
17	25.33	24.33	23.84	23.36	2.97	3.26	3.42	3.60
22	28.53	27.46	26.93	26.41	3.01	3.31	3.48	3.65
27	31.78	30.64	30.07	29.52	3.06	3.36	3.53	3.71
32	35.07	33.86	32.99	32.66	3.10	3.42	3.59	3.77
37	38.20	37.08	36.40	35.83	3.16	3.47	3.64	3.82
42	41.69	40.34	39.40	39.03	3.20	3.52	3.70	3.88
47	45.01	43.78	42.92	42.02	3.26	3.59	3.75	3.95
52	48.53	46.91	46.12	45.33	3.32	3.64	3.82	4.01
57	51.57	49.99	49.21	48.44	3.35	3.68	3.86	4.05
62	54.71	53.06	52.23	51.41	3.40	3.73	3.91	4.10
67	57.72	56.57	56.30	54.20	3.44	3.80	3.99	4.15
72	61.43	59.39	57.64	57.02	3.51	3.84	4.02	4.25

**Note:** Net heating capacity and power input includes indoor fan heat at AHRI esp. To obtain net heating at other conditions, subtract fan heat at this condition and add fan heat at new condition.

**Table 48. 4 tons three phase low stage heating capacities (net) W/DHC048H3,H4,HW at 1120 cfm**

Outdoor Temp °F	Instantaneous Heating Capacity (Btuh/1000) at Indicated Indoor Dry Bulb Temp				Total Power in Kilowatts at Indicated Indoor Dry Bulb Temp			
	60	70	75	80	60	70	75	80
22	18.20	17.05	16.45	15.82	2.24	2.51	2.65	2.80
27	20.73	19.57	18.97	18.34	2.26	2.53	2.68	2.83
32	23.30	22.13	21.52	20.90	2.27	2.55	2.70	2.85
37	25.90	24.72	24.10	23.47	2.28	2.57	2.72	2.88
42	28.53	27.32	26.69	26.05	2.30	2.58	2.74	2.90
47	31.14	29.89	29.25	28.60	2.31	2.60	2.76	2.92
52	33.70	32.40	31.75	31.08	2.32	2.61	2.77	2.93
57	36.18	34.82	34.14	33.45	2.32	2.62	2.78	2.94
62	38.27	37.12	36.40	35.68	2.33	2.62	2.78	2.94
67	40.75	39.20	38.42	37.67	2.31	2.60	2.76	2.93
72	42.51	41.00	40.18	39.36	2.29	2.58	2.73	2.90

**Note:** Net heating capacity and power input includes indoor fan heat at AHRI esp. To obtain net heating at other conditions, subtract fan heat at this condition and add fan heat at new condition.



## Heating Performance Data

**Table 49. 5 tons three phase high stage heating capacities (net) W/DHC060H3,H4,HW at 2000 cfm**

Outdoor Temp °F	Instantaneous Heating Capacity (Btuh/1000) at Indicated Indoor Dry Bulb Temp				Total Power in Kilowatts at Indicated Indoor Dry Bulb Temp			
	60	70	75	80	60	70	75	80
-8	17.63	16.83	16.42	15.98	3.37	3.69	3.88	4.07
-3	20.85	20.00	19.56	19.13	3.43	3.76	3.95	4.15
2	24.19	23.28	22.81	22.35	3.48	3.83	4.02	4.22
7	27.58	26.40	26.76	25.81	3.54	3.89	4.08	4.29
12	31.23	30.17	29.65	29.12	3.59	3.95	4.14	4.36
17	34.92	33.79	33.21	32.65	3.64	4.01	4.20	4.42
22	38.71	37.50	36.88	36.28	3.70	4.06	4.26	4.48
27	42.59	41.29	40.64	39.99	3.75	4.12	4.32	4.54
32	46.54	44.87	44.47	43.78	3.80	4.18	4.38	4.60
37	50.28	48.78	48.32	47.60	3.86	4.24	4.44	4.66
42	54.34	52.70	52.26	51.50	3.92	4.30	4.51	4.73
47	58.65	57.22	56.00	55.12	3.99	4.38	4.59	4.81
52	63.03	61.12	60.17	59.22	4.06	4.45	4.66	4.89
57	67.39	65.36	64.33	63.19	4.14	4.53	4.74	4.95
62	71.78	69.55	68.44	66.99	4.22	4.61	4.83	5.03
67	76.09	73.66	72.45	71.27	4.31	4.70	4.92	5.14
72	80.14	77.61	75.30	74.75	4.40	4.80	4.99	5.28

**Note:** Net heating capacity and power input includes indoor fan heat at AHRI esp. To obtain net heating at other conditions, subtract fan heat at this condition and add fan heat at new condition.

**Table 50. 5 tons three phase low stage heating capacities (net) W/DHC060H3,H4,HW at 1400 cfm**

Outdoor Temp °F	Instantaneous Heating Capacity (Btuh/1000) at Indicated Indoor Dry Bulb Temp				Total Power in Kilowatts at Indicated Indoor Dry Bulb Temp			
	60	70	75	80	60	70	75	80
22	24.25	23.31	22.79	22.25	2.88	3.21	3.39	3.57
27	27.16	26.16	25.62	25.06	2.90	3.23	3.41	3.60
32	30.12	29.06	28.49	27.91	2.91	3.24	3.43	3.62
37	33.10	31.97	31.38	30.77	2.92	3.26	3.44	3.64
42	36.14	34.94	34.31	33.67	2.94	3.28	3.46	3.65
47	39.17	37.89	37.23	36.55	2.95	3.29	3.48	3.67
52	41.92	40.47	40.09	39.14	2.97	3.31	3.49	3.68
57	45.15	43.67	42.93	42.17	2.97	3.31	3.49	3.68
62	48.11	46.42	45.57	44.87	2.98	3.32	3.50	3.68
67	51.09	49.26	48.34	47.41	2.97	3.30	3.48	3.67
72	53.97	51.92	50.93	49.92	2.95	3.28	3.46	3.64

**Note:** Net heating capacity and power input includes indoor fan heat at AHRI esp. To obtain net heating at other conditions, subtract fan heat at this condition and add fan heat at new condition.

## Heating Performance Data

**Table 51. Auxiliary electric heat capacity (a)**

Tons	Unit Model Number	Total <sup>(b)</sup>		No. of Stages	Stage 1		Stage 2	
		kW Input <sup>(c)</sup>	MBh Output		kW Input	MBh Output	kW Input	MBh Output
3	W*C036H3,4,W	6.00	20.48	1	6.00	20.48	—	—
3	W*C036H3,4,W	12.00	40.97	2	6.00	20.48	6.00	20.48
3	W*C036H3,4,W	17.40	59.40	2	8.70	29.70	8.70	29.70
4	W*C048H3,4,W	6.00	20.48	1	6.00	20.48	—	—
4	W*C048H3,4,W	12.00	40.97	2	6.00	20.48	6.00	20.48
4	W*C048H3,4,W	17.40	59.40	2	8.70	29.70	8.70	29.70
5	W*C060H3,4,W	6.00	20.48	1	6.00	20.48	—	—
5	W*C060H3,4,W	12.00	40.97	2	6.00	20.48	6.00	20.48
5	W*C060H3,4,W	17.40	59.40	2	8.70	29.70	8.70	29.70
5	W*C060H3,4,W	23.00	78.52	2	8.70	29.70	14.30	48.82
6	WSC072E3,4	9	30.73	1	9	30.73	—	—
6	WSC072E3,4,W	18	61.45	1	18	61.45	—	—
6	WSC072E3,4,W	27	92.18	2	18	61.45	9	30.73
6	WSC072E3,4,W	36	122.9	2	18	61.45	18	61.45
7.5	WSC090E3,4	9	30.73	1	9	30.73	—	—
7.5	WSC090E3,4,W	18	61.45	1	18	61.45	—	—
7.5	WSC090E3,4,W	27	92.18	2	18	61.45	9	30.73
7.5	WSC090E3,4,W	36	122.9	2	18	61.45	18	61.45
10	WSC120E3,4,W	18	61.45	1	18	61.45	—	—
10	WSC120E3,4	27	92.18	2	18	61.45	9	30.73
10	WSC120E3,4,W	36	122.9	2	18	61.45	18	61.45
10	WSC120E3,4,W	54	184.36	2	36	122.9	18	61.45

(a) 600V is not available on high efficiency units.

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

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

**Table 52. Auxiliary gas fired heating capacities - high efficiency**

Tons	Unit Model Number	Heating Input MBh <sup>(a)</sup>	Heating Output MBh	Air Temp Rise, °F
3	DHC036H(3,4,W)*(L,X)	60/42	48.6/34	20-50
3	DHC036H(3,4,W)*(M,Y)	80/56	64.8/45.3	35-65
3	DHC036H(3,4,W)*(H,Z)	100/70	81/56.7	45-75
4	DHC048H(3,4,W)*(L,X)	60/42	48.6/34	15-45
4	DHC048H(3,4,W)*(M,Y)	100/70	81/56.7	30-60
4	DHC048H(3,4,W)*(H,Z)	130/91	105.3/73.7	45-75
5	DHC060H(3,4,W)*(L,X)	60/42	48.6/34	10-40
5	DHC060H(3,4,W)*(M,Y)	100/70	81/56.7	25-55
5	DHC060H(3,4,W)*(H,Z)	150/105	121.5/85	40-70

**Note:** Ratings shown are for elevations up to 2,000 ft. For higher elevations, reduce ratings at a rate of 4% per 1,000 ft. elevation.

(a) For two stage heaters (input or output), second stage is total heating capacity (Second Stage/First Stage).



## Heating Performance Data

**Table 53. Electric heater voltage correction factors (applicable to auxiliary heat capacity)**

Nominal Voltage	Distribution Voltage	Capacity Multiplier
240	208	0.751
240	230	0.918
240	240	1.000
480	440	0.840
480	460	0.918
480	480	1.000
600	540	0.810
600	575	0.918
600	600	1.000

**Table 54. 3 to 5 tons air temperature rise across electric heaters (°F)**

kW	Stages	3 Tons <sup>(a)</sup> 1200 cfm	4 Tons 1600 cfm	5 Tons <sup>(b)</sup> 2000 cfm
		Three Phase W*C036H3,4,W	Three Phase W*C048H3,4,W	Three Phase W*C060H3,4,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	—	—	—
23.0	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 =  $kW \times 3414 / 1.08 \times CFM$ .

(a) The minimum allowable airflow for a 3 ton with a 17.4 kW heater is 1080 cfm.  
 (b) The minimum allowable airflow for a 5 ton unit with a 23.0 kW heater is 1900 cfm.

**Table 55. 6 to 10 tons air temperature rise across electric heaters (°F)**

kW	Stages	6 Tons 2000 cfm <sup>(a)</sup>	7.5 Tons 3000 cfm	10 Tons 4000 cfm <sup>(b)</sup>
		WSC072E3,E4,EW	WSC092E3,4,W	WSC120E3,4,W
9.0	1	14.2	9.5	—
18.0	1	28.5	19.0	14.2
27.0	2	42.7	28.5	21.3
36.0	2	56.9	37.9	28.5
54.0	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 =  $kW \times 3414 / 1.08 \times CFM$ .

(a) Minimum allowable airflow with a 36 kW heater for the WSC072E is 2400 cfm in the horizontal duct configuration.  
 (b) Minimum allowable airflow with a 54 kW heater for the WSC120E is 4000 cfm.



# 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.

## Economizer Controls

The standard equipment offering is a fixed dry bulb changeover control. In addition, there are two optional controls, enthalpy and differential enthalpy control.

### Enthalpy Control

Replaces the dry bulb control with a wet bulb changeover controller which has a fully adjustable setpoint. Enthalpy control offers a higher level of comfort control, along with energy savings potential, than the standard dry bulb control. This is due to the additional wet bulb sensing capability.

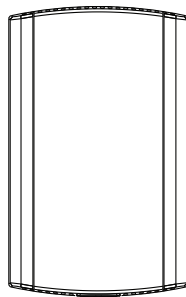
### Differential Enthalpy

Differential enthalpy replaces the standard dry bulb control with two enthalpy sensors that compare total heat content of the indoor air and outdoor air to determine the most efficient air source. This control option offers the highest level of comfort control, plus energy efficiency, available.

### Remote Potentiometer

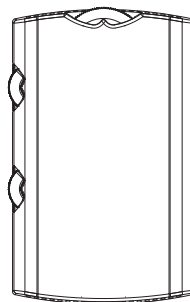
Minimum position setting of economizer can be remotely adjusted with this accessory.

#### Remote Sensor



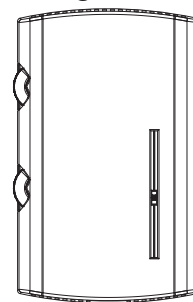
Sensor(s) available for all zone sensors to provide remote sensing capabilities.

#### Manual Changeover



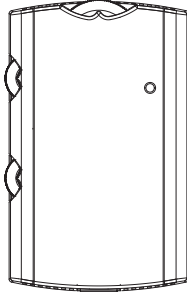
Heat, Cool or Off System Switch. Fan Auto or Off Switch. One temperature setpoint lever.

#### Manual/Automatic Changeover



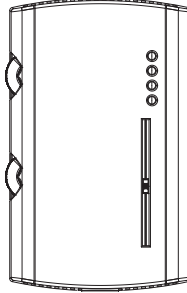
Auto, Heat, Cool or Off System Switch. Fan Auto or Off Switch. Two temperature setpoint levers.

**Manual/Automatic  
Changeover - Status  
Indicator**



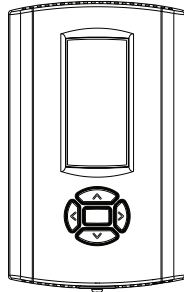
Auto, Heat, Cool or Off System Switch. Fan Auto or Off Switch. Two temperature setpoint levers. Includes a status indicator.

**Manual/Automatic  
Changeover**



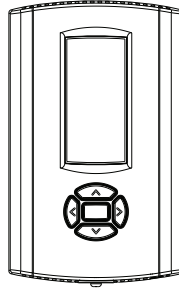
Auto, Heat, Cool or Off System Switch. Fan Auto or Off Switch. Two temperature setpoint levers. Status Indication LED lights, System On, Heat, Cool, or Service.

**Digital Display  
Programmable  
Thermostat (1H/1C)**



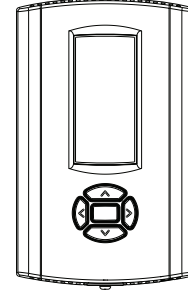
One heat/One Cool Auto changeover digital display thermostat.

**Digital Display  
Thermostat (3H/2C)**



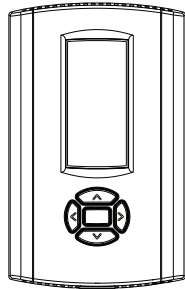
Three Heat, Two Cool Auto changeover digital display thermostat.

**Digital Display  
Programmable  
Thermostat (3H/2C)**



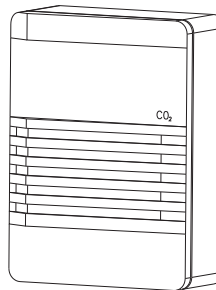
Three Heat/Two Cool Auto changeover digital display thermostat. 7-day programmable stat with night setback is available.

### Programmable Night Setback



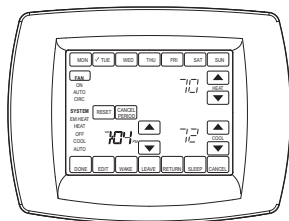
Auto or manual changeover with seven-day programming. Keyboard selection of Heat, Cool, Fan, Auto, or On. All programmable sensors have System On, Heat, Cool, Service LED/indicators as standard. Night Setback Sensors have one (1) Occupied, one (1) Unoccupied, and one (1) Override program per day.

### CO<sub>2</sub> Sensing



The CO<sub>2</sub> sensor shall have the ability to monitor space occupancy levels within the building by measuring the parts per million of CO<sub>2</sub> (Carbon Dioxide) in the air. As the CO<sub>2</sub> levels increase, the outside air damper modulates to meet the CO<sub>2</sub> space ventilation requirements. The CO<sub>2</sub> accessory shall be available as field installed.

### 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.

### Digital Display Programmable Thermostat with Built-In Relative Humidity Sensing (3H/2C)



Three Heat, Two Cool digital display thermostat with built-in humidity control and display. This thermostat combines both humidity and dry bulb into one. Fully programmable with night setback.

## Differential Pressure Switches

This factory or field-installed option allows individual fan failure and dirty filter indication. The fan failure switch will disable all unit functions and “flash” the Service LED on the zone sensor. The dirty filter switch will light the Service LED on the zone sensor and will allow continued unit operation.

## RA Remote Sensor

Return air remote sensor which can be mounted in the return air duct to report return air temperature.

## Room Remote Sensor

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

## Communication Interfaces

### BACnet® Communication Interface

This option shall be provided to allow the unit to communicate directly with a generic open protocol BACnet® MS/TP Network Building Automation System Controls.

### 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. The factory installed Air-Fi™ wireless communication allows customers to benefit from reduced installed/labor cost. This factory installed solution comes pre-wired and tested.

### Trane® Communication Interface (TCI)

This factory or field-installed micro-processor interface allows the unit to communicate to Trane's® Integrated Comfort™ system.

### LonTalk® Communications Interface - Factory or Field Installed

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





# Electrical Data

**Table 56. Unit wiring - standard efficiency**

Tons	Unit Model Number	Voltage Range	Standard Indoor Fan Motor <sup>(a)</sup>		Oversized Indoor Fan Motor	
			MCA	Max Fuse Size or Max Circuit Breaker	MCA	Max Fuse Size or Max Circuit Breaker
3	WSC036H3	187-253	26	40	30	40
3	WSC036H4	414-506	11	15	14	20
3	WSC036HW	517-633	11	15	11	15
4	WSC048H3	187-253	27	40	29	40
4	WSC048H4	414-506	12	15	14	15
4	WSC048HW	517-633	12	15	12	15
5	WSC060E3	187-253	31	45	33	50
5	WSC060E4	414-506	15	20	16	20
5	WSC060EW	517-633	13	15	13	15
6	WSC072E3	187-253	36.3	50	37.6	60
6	WSC072E4	414-506	17.6	25	18.2	25
6	WSC072EW	517-633	12.4	20	13.3	20
7.5	WSC090E3	187-253	38.4	60	44.2	60
7.5	WSC090E4	414-506	19.0	30	21.9	30
7.5	WSC090EW	517-633	14.5	20	16.5	25
10	WSC120E3	187-253	51.9	60	—	—
10	WSC120E4	414-506	26.1	35	—	—
10	WSC120EW	517-633	21.1	25	—	—

(a) The standard motor for 3-phase models (3 to 5 and 10 ton) is a multispeed, direct drive motor. The standard motor for 3-phase (6 to 7.5 tons) is a belt drive motor.

**Table 57. Unit wiring - high efficiency**

Tons	Unit Model Number	Voltage Range	Standard Indoor Fan Motor <sup>(a)</sup>		Oversized Indoor Fan Motor	
			MCA	Max Fuse Size or Max Circuit Breaker	MCA	Max Fuse Size or Max Circuit Breaker
3	W/DHC036E3	187-253	27	40	24	35
3	W/DHC036E4	414-506	13	15	11	15
3	W/DHC036EW	517-633	11	15	—	—
4	W/DHC048E3	187-253	29	40	24	35
4	W/DHC048E4	414-506	14	15	11	15
4	W/DHC048EW	517-633	10	15	—	—
5	W/DHC060E3	187-253	32	45	27	40
5	W/DHC060E4	414-506	15	20	12	15
5	W/DHC060EW	517-633	12	15	—	—

(a) The standard motor for 3-phase models (3 to 5 and 10 ton) is a multispeed, direct drive motor. The standard motor for 3-phase (6 to 7.5 tons) is a belt drive motor.



## Electrical Data

**Table 58. Unit wiring with electric heat (single point connection) - standard efficiency**

Tons	Unit Model Number	Heater Model Number	Heater kW Rating <sup>(a)</sup>	Control Stages	Standard Indoor Motor		Oversized Indoor Motor	
					MCA	Max Fuse Size or Max Circuit Breaker	MCA	Max Fuse Size or Max Circuit Breaker
<b>208/230 Volts Three Phase</b>								
3	WSC036H3	BAYHTRE306*	4.5/6.0	1	42/44	50/50	45/48	50/50
3	WSC036H3	BAYHTRE312*	9.0/12.0	2	57/62	60/70	61/66	70/70
3	WSC036H3	BAYHTRY318*	13.1/17.4	2	71/78	80/80	75/82	80/90
4	WSC048H3	BAYHTRE306*	4.5/6.0	1	43/45	50/50	45/47	50/50
4	WSC048H3	BAYHTRE312*	9.0/12.0	2	58/63	60/70	61/66	70/70
4	WSC048H3	BAYHTRY318*	13.1/17.4	2	72/79	80/80	75/82	80/90
5	WSC060H3	BAYHTRX306*	4.5/6.0	1	47/50	60/60	49/51	60/60
5	WSC060H3	BAYHTRX312*	9.0/12.0	2	63/68	70/70	65/69	70/70
5	WSC060H3	BAYHTRY318*	13.1/17.4	2	77/84	80/90	79/86	80/90
5	WSC060H3	BAYHTRY318*	17.3/23.0	2	91/101	100/110	93/102	100/110
6	WSC072E3	BAYHTRW309*	6.8/9.0	1	59.8/63.4	70/80	61.1/64.7	70/80
6	WSC072E3	BAYHTRW318*	13.5/18.0	1	83.2/90.4	90/100	84.5/91.7	90/100
6	WSC072E3	BAYHTRW327*	20.3/27.0	2	106.7/117.6	110/125	108.0/118.9	110/125
6	WSC072E3	BAYHTRW336*	27.0/36.0	2	130.2/144.6	150/150	131.5/145.9	150/150
7.5	WSC090E3	BAYHTRU309*	6.8/9.0	1	61.9/65.5	80/80	67.7/71.3	80/90
7.5	WSC090E3	BAYHTRU318*	13.5/18.0	1	85.2/92.5	100/100	91.0/98.3	100/100
7.5	WSC090E3	BAYHTRU327*	20.3/27.0	2	108.7/119.6	110/125	114.5/125.4	125/150
7½	WSC090E3	BAYHTRU336*	27.0/36.0	2	132.2/146.6	150/150	138.0/152.4	150/175
10	WSC120E3	BAYHTRB318*	13.5/18.0	1	98.8/106.1	100/110	—/—	—/—
10	WSC120E3	BAYHTRB327*	20.3/27.0	2	122.3/133.2	125/150	—/—	—/—
10	WSC120E3	BAYHTRB336*	27.0/36.0	2	145.8/160.2	150/175	—/—	—/—
10	WSC120E3	BAYHTRB354*	40.6/54.0	2	192.7/181.8	200/200	—/—	—/—
<b>460 Volts Three Phase</b>								
3	WSC036H4	BAYHTRE406*	6.0	1	20	20.0	23	25
3	WSC036H4	BAYHTRE412*	12.0	2	29	30.0	32	35
3	WSC036H4	BAYHTRY418*	17.4	2	37	40.0	40	40
4	WSC048H4	BAYHTRE406*	6.0	1	21	25.0	23	25
4	WSC048H4	BAYHTRE412*	12.0	2	30	30.0	32	35
4	WSC048H4	BAYHTRY418*	17.4	2	38	40.0	40	40
5	WSC060H4	BAYHTRX406*	6.0	1	24	25.0	25	30
5	WSC060H4	BAYHTRX412*	12.0	2	33	35.0	34	35
5	WSC060H4	BAYHTRY418*	17.4	2	41	45.0	42	45
5	WSC060H4	BAYHTRY418*	23.0	2	50	50.0	51	60
6	WSC072E4	BAYHTRW409*	9.0	1	33.8	40	34.4	40
6	WSC072E4	BAYHTRW418*	18.0	1	47.4	50	48.0	50
6	WSC072E4	BAYHTRW427*	27.0	2	60.9	70	61.5	70
6	WSC072E4	BAYHTRW436*	36.0	2	74.4	80	75.0	80
7.5	WSC090E4	BAYHTRU409*	9.0	1	32.5	40	35.4	40
7.5	WSC090E4	BAYHTRU418*	18.0	1	46.1	50	49.0	50
7.5	WSC090E4	BAYHTRU427*	27.0	2	59.6	60	62.5	70

**Table 58. Unit wiring with electric heat (single point connection) - standard efficiency (continued)**

Tons	Unit Model Number	Heater Model Number	Heater kW Rating <sup>(a)</sup>	Control Stages	Standard Indoor Motor		Oversized Indoor Motor	
					MCA	Max Fuse Size or Max Circuit Breaker	MCA	Max Fuse Size or Max Circuit Breaker
<b>460 Volts Three Phase</b>								
7.5	WSC090E4	BAYHTRU436*	36.0	2	73.1	80	76.0	80
10	WSC120E4	BAYHTRB418*	18.0	1	53.2	60	—	—
10	WSC120E4	BAYHTRB427*	27.0	2	66.7	70	—	—
10	WSC120E4	BAYHTRB436*	36.0	2	80.2	90	—	—
10	WSC120E4	BAYHTRB454*	54.0	2	91.1	100	—	—
<b>575 Volts Three Phase</b>								
3	WSC036HW	BAYHTREW06*	6.0	1	19	20	19	20
3	WSC036HW	BAYHTREW12*	12.0	2	26	30	26	30
3	WSC036HW	BAYHTRYW18*	17.4	2	32	35	32	35
4	WSC048HW	BAYHTREW06*	6.0	1	19	20	19	20
4	WSC048HW	BAYHTREW12*	12.0	2	26	30	26	30
4	WSC048HW	BAYHTRYW18*	17.4	2	33	35	33	35
5	WSC060HW	BAYHTRXW06*	6.0	1	20	20	20	20
5	WSC060HW	BAYHTRXW12*	12.0	2	27	30	27	30
5	WSC060HW	BAYHTRYW18*	17.4	2	33	35	33	35
5	WSC060HW	BAYHTRYW23*	23.0	2	40	40	40	40
6	WSC072EW	BAYHTRWW18*	18.0	1	34.0	35	34.9	35
6	WSC072EW	BAYHTRWW27*	27.0	2	44.9	45	45.8	50
6	WSC072EW	BAYHTRWW36*	36.0	2	55.6	60	56.5	60
7.5	WSC090EW	BAYHTRUW18*	18.0	1	36.1	40	38.1	40
7.5	WSC090EW	BAYHTRUW27*	27.0	2	47.0	50	49.0	50
7.5	WSC090EW	BAYHTRUW36*	36.0	2	57.7	60	59.7	60
10	WSC120EW	BAYHTRBW18*	18.0	1	42.7	45	—	—
10	WSC120EW	BAYHTRBW36*	36.0	2	64.4	70	—	—
10	WSC120EW	BAYHTRBW54*	54.0	2	73.1	80	—	—

(a) The standard motor for the 1-phase models is a multispeed, direct drive motor. The standard motor for 3-phase models (3 to 5 and 10 ton) is a multispeed, direct drive motor. The standard motor for 3-phase (6 to 7.5 tons) is a belt drive motor.



## Electrical Data

**Table 59. Unit wiring with electric heat (single point connection) - high efficiency**

Tons	Unit Model Number	Heater Model Number	Heater kW Rating <sup>(a)</sup>	Control Stages	Standard Indoor Motor		Oversized Indoor Motor	
					MCA	Max Fuse Size or Max Circuit Breaker	MCA	Max Fuse Size or Max Circuit Breaker
<b>208/230 Volts Three Phase</b>								
3	WHC036E3	BAYHTRE306*	4.5/6.0	1	42/45	50/50	39/42	45/50
3	WHC036E3	BAYHTRE312*	9.0/12.0	2	58/63	60/70	55/60	60/60
3	WHC036E3	BAYHTRY317*	13.1/17.4	2	72/79	80/80	69/76	70/80
4	WHC048E3	BAYHTRX306*	4.5/6.0	1	45/47	50/50	39/42	45/50
4	WHC048E3	BAYHTRX312*	9.0/12.0	2	60/65	60/70	55/60	60/60
4	WHC048E3	BAYHTRY318*	13.1/17.4	2	74/81	80/90	69/76	70/80
5	WHC060E3	BAYHTRX306*	4.5/6.0	1	48/50	60/60	43/45	50/50
5	WHC060E3	BAYHTRX312*	9.0/12.0	2	63/68	70/70	58/63	60/70
5	WHC060E3	BAYHTRY318*	13.1/17.4	2	77/84	80/90	72/79	80/80
5	WHC060E3	BAYHTRY323*	17.3/23.0	2	92/101	100/110	87/96	90/100
<b>460 Volts Three Phase</b>								
3	WHC036E4	BAYHTRE406*	6.0	1	22	25	20	20
3	WHC036E4	BAYHTRE412*	12.0	2	31	35	29	30
3	WHC036E4	BAYHTRY417*	17.4	2	39	40	37	40
4	WHC048E4	BAYHTRX406*	6.0	1	23	25	20	20
4	WHC048E4	BAYHTRX412*	12.0	2	32	35	29	30
4	WHC048E4	BAYHTRY418*	17.4	2	40	40	37	40
5	WHC060E4	BAYHTRX406*	6.0	1	24	25	21	25
5	WHC060E4	BAYHTRX412*	12.0	2	33	35	30	30
5	WHC060E4	BAYHTRY418*	17.4	2	41	45	38	40
5	WHC060E4	BAYHTRY423*	23.0	2	49	50	47	50
<b>575 Volts Three Phase</b>								
3	WHC036EW	BAYHTREW06*	6.0	1	18	20	—	—
3	WHC036EW	BAYHTREW12*	12.0	2	25	25	—	—
3	WHC036EW	BAYHTRYW17*	17.4	2	32	35	—	—
4	WHC048EW	BAYHTRXW06*	6.0	1	18	20	—	—
4	WHC048EW	BAYHTRXW12*	12.0	2	25	25	—	—
4	WHC048EW	BAYHTRYW18*	17.4	2	31	35	—	—
5	WHC060EW	BAYHTRXW06*	6.0	1	19	20	—	—
5	WHC060EW	BAYHTRXW12*	12.0	2	26	30	—	—
5	WHC060EW	BAYHTRYW18*	17.4	2	32	35	—	—
5	WHC060EW	BAYHTRYW23*	23.0	2	39	40	—	—

(a) The standard motor for the 1-phase models is a multispeed, direct drive motor. The standard motor for 3-phase models (3 to 5 and 10 ton) is a multispeed, direct drive motor. The standard motor for 3-phase (6 to 7.5 tons) is a belt drive motor.

**Table 60. Electrical characteristics - compressor motor and condenser motor - 60 cycle - standard efficiency**

Tons	Unit Model Number	No.	Compressor Motors						Condenser Fan Motors					
			Volts	Phase	hp <sup>(a)</sup>	rpm	Amps <sup>(b)</sup>		No.	Volts	Phase	hp	Amps <sup>(b)</sup>	
							RLA	LRA					FLA	LRA
3	WSC036H3	1	208-230	3	3.2	3500	15	88	1	208-230	3	0.25	1.1	3.6
3	WSC036H4	1	460	3	3.2	3500	6.6	44	1	460	3	0.25	0.55	1.8
3	WSC036HW	1	575	3	3.2	3500	5.5	34	1	575	3	0.25	0.45	1.4
4	WSC048H3	1	208-230	3	3.8	3500	14.5	98	1	208-230	3	0.33	1.4	4.6
4	WSC048H4	1	460	3	3.8	3500	6.3	55	1	460	3	0.33	0.7	2.3
4	WSC048HW	1	575	3	3.8	3500	6	41	1	575	3	0.33	0.55	1.8
5	WSC060H3	1	208-230	3	4.7	3500	17.5	110	1	208-230	3	0.40	1.5	5.6
5	WSC060H4	1	460	3	4.7	3500	7.9	52	1	460	3	0.40	1.8	2.8
5	WSC060HW	1	575	3	4.7	3500	6.3	39	1	575	3	0.40	0.65	2.3
6	WSC072E3	1	208-230	3	5.9	3500	22.4	149.0	1	208-230	1	0.70	3.3	9.5
6	WSC072E4	1	460	3	5.9	3500	10.6	100.0	1	460	1	0.70	1.8	5.5
6	WSC072EW	1	575	3	5.9	3500	7.7	54.0	1	575	1	0.70	1.3	3.2
7.5	WSC090E3	1	208-230	3	7.3	3500	25.0	164.0	1	208-230	1	0.75	3.5	9.3
7.5	WSC090E4	1	460	3	7.3	3500	12.2	100.0	1	460	1	0.75	2.0	6.2
7.5	WSC090EW	1	575	3	7.3	3500	9.0	78.0	1	575	1	0.75	1.8	5.4
10	WSC120E3	1	208-230	3	4.7/4.7	3500/3500	18.1/18.1	137.0/137.0	1	208-230	3	0.75	2.7	9.8
10	WSC120E4	1	460	3	4.7/4.7	3500/3500	9.0/9.0	62.0/62.0	1	460	3	0.75	1.5	4.8
10	WSC120EW <sup>(c)</sup>	1	575	3	4.7/4.7	3500/3500	6.8/6.8	50.0/50.0	1	460	3	0.75	1.5	4.8

(a) hp for each compressor.  
 (b) Amp draw for each motor; multiply value by number of motors to determine total amps.  
 (c) WSC120EW utilize 460 volt condenser fan motors

**Table 61. Electrical characteristics - compressor motor - 60 cycle - high efficiency**

Tons	Unit Model Number	No.	Voltage	Phase	hp <sup>(a)</sup>	Compressor Rated		
						LRA	RLA	MCC
3	W/DHC036E3	1	208-230	3	3.9	88.0	14.2	22.1
3	W/DHC036E4	1	460	3	3.8	44.0	6.2	9.7
3	W/DHC036EW	1	575	3	3.8	30.0	5.1	7.9
4	W/DHC048E3	1	208-230	3	4.3	83.1	14.0	21.9
4	W/DHC048E4	1	460	3	4.3	41.0	6.4	10.0
4	W/DHC048EW	1	575	3	4.3	33.0	4.6	7.1
5	W/DHC060E3	1	208-230	3	5.3	110.0	16.5	25.8
5	W/DHC060E4	1	460	3	5.3	52.0	7.2	11.3
5	W/DHC060EW	1	575	3	5.3	38.9	5.5	8.6

(a) hp for each compressor.



## Electrical Data

**Table 62. Electrical characteristics - condenser fan motor - 60 cycle - high efficiency**

Tons	Unit Model Number	Motor Voltage	Motor Hz	Motor Phase	Condenser Rated		
					LRA	FLA	Bhp
3	W/DHC036E3	208-230	60	3	3.6	1.10	0.25
3	W/DHC036E4	460	60	3	1.8	0.55	0.25
3	W/DHC036EW	575	60	3	1.4	0.45	0.25
4	W/DHC048E3	208-230	60	3	5.6	1.50	0.40
4	W/DHC048E4	460	60	3	2.8	0.80	0.40
4	W/DHC048EW	575	60	3	2.3	0.65	0.40
5	W/DHC060E3	208-230	60	3	5.6	1.50	0.40
5	W/DHC060E4	460	60	3	2.8	0.80	0.40
5	W/DHC060EW	575	60	3	2.3	0.65	0.40

**Note:** Precedent™ unit nameplate FLA and catalog FLA may be different than actual condenser motor nameplate FLA for two reasons:  
 If multiple vendors for approved motor size are used, the highest FLA is used.  
 Actual condenser motor FLA may be determined through unit temperature and pressure testing.

**Table 63. Electrical characteristics - standard evaporator fan motor - 60 cycle - direct or belt drive standard efficiency**

Tons	Unit Model Number	Direct or Belt Drive	No.	Volts	Phase	hp	Amps	
							FLA	LRA
3	WSC036H3	Direct Drive	1	208-230	1	0.75	5.7	—
3	WSC036H4	Direct Drive	1	460	1	0.75	1.7	—
3	WSC036HW	Direct Drive	1	575	1	0.75	5.7	—
4	WSC048H3	Direct Drive	1	208-230	1	1.0	6.9	—
4	WSC048H4	Direct Drive	1	460	1	1.0	2.5	—
4	WSC048HW	Direct Drive	1	575	1	1.0	6.9	—
5	WSC060H3	Direct Drive	1	208-230	1	1.0	7.6	—
5	WSC060H4	Direct Drive	1	460	1	1.0	4.0	—
5	WSC060HW	Direct Drive	1	575	1	1.0	7.6	—
6	WSC072E3	Belt Drive	1	208-230	3	1.0	4.0-5.0	24.5
6	WSC072E4	Belt Drive	1	460	3	1.0	2.5	12.3
6	WSC072EW	Belt Drive	1	575	3	1.0	1.5	11.3
7.5	WSC090E3	Belt Drive	1	208-230	3	1.0	3.6-3.5	12.5
7.5	WSC090E4	Belt Drive	1	460	3	1.0	1.7	12.5
7.5	WSC090EW	Belt Drive	1	575	3	1.0	1.4	10.0
10	WSC120E3	Direct Drive	1	208-230	3	3.8	8.5-8.5	—
10	WSC120E4	Direct Drive	1	460	3	3.6	4.3	—
10	WSC120EW <sup>(a)</sup>	Direct Drive	1	460	3	3.6	4.3	—

**Note:** WSC(036,048,060)HW utilize 230V evaporator motors.

(a) WSC120EW utilize 460V evaporator motors.

**Table 64. Electrical characteristics - standard evaporator fan motor - 60 cycle - high efficiency**

Tons	Unit Model Number	Motor Voltage	Motor Hz	Phase	No.	Motor Rating		
						FLA	LRA	HP
3	W/DHC036H3	208-230	60	1	1	7.3	—	0.75
3	W/DHC036H4	460 <sup>(a)</sup>	60	1	1	4.3	—	0.75
3	W/DHC036HW	575 <sup>(b)</sup>	60	1	1	3.5	—	0.75
4	W/DHC048H3	208-230	60	1	1	9.4	—	1.00
4	W/DHC048H4	460 <sup>(a)</sup>	60	1	1	4.3	—	1.00
4	W/DHC048HW	575 <sup>(b)</sup>	60	1	1	3.5	—	1.00
5	W/DHC060H3	208-230	60	1	1	9.4	—	1.00
5	W/DHC060H4	460 <sup>(a)</sup>	60	1	1	4.3	—	1.00
5	W/DHC060HW	575 <sup>(b)</sup>	60	1	1	3.5	—	1.00

**Note:** Precedent™ unit nameplate FLA and catalog FLA may be different than actual evaporator motor nameplate FLA for two reasons:  
 If multiple vendors for approved motor size are used, the highest FLA is used.  
 Actual evaporator motor FLA may be determined through unit temperature and pressure testing.

- (a) Precedent 460V rated units utilize a high efficiency 230V evaporator fan motor powered through 480/240V transformer. Fan voltage/FLA rated at transformer input.  
 (b) Precedent 575V rated units utilize a high efficiency 230V evaporator fan motor powered through 575/240V transformer. Fan voltage/FLA rated at transformer input.

**Table 65. Electrical characteristics - oversized evaporator fan motor - 60 cycle - belt drive - standard efficiency**

Tons	Unit Model Number	Direct or Belt Drive	No.	Volts	Phase	hp	Amps	
							FLA	LRA
3	WSC036H3	Direct Drive	1	208-230	1	1.5	9.4	—
3	WSC036H4	Direct Drive	1	460	1	1.5	4.8	—
3	WSC036HW	Direct Drive	1	575	1	1.5	9.4	—
4	WSC048H3	Direct Drive	1	208-230	1	1.5	9.4	—
4	WSC048H4	Direct Drive	1	460	1	1.5	4.8	—
4	WSC048HW	Direct Drive	1	575	1	1.5	9.4	—
5	WSC060H3	Direct Drive	1	208-230	1	1.5	9.4	—
5	WSC060H4	Direct Drive	1	460	1	1.5	4.8	—
5	WSC060HW	Direct Drive	1	575	1	1.5	9.4	—
6	WSC072E3	Belt Drive	1	208-230	3	2.0	6.3-6.2	48.0
6	WSC072E4	Belt Drive	1	460	3	2.0	3.1	24.0
6	WSC072EW	Belt Drive	1	575	3	2.0	2.4	16.8
7.5	WSC090E3	Belt Drive	1	208-230	3	3.0	9.4-9.2	52.4
7.5	WSC090E4	Belt Drive	1	460	3	3.0	4.6	26.3
7.5	WSC090EW	Belt Drive	1	575	3	3.0	3.4	29.4
10	WSC120E3	—	—	—	—	—	—	—
10	WSC120E4	—	—	—	—	—	—	—
10	WSC120EW	—	—	—	—	—	—	—

**Note:** WSC(036,048,060)HW utilize 230V evaporator motors.



## Electrical Data

**Table 66. Electrical characteristics - oversized evaporator fan motor - 60 cycle - high efficiency**

Tons	Unit Model Number	Motor Voltage	Motor Hz	Phase	No.	Motor Rating		
						FLA	LRA	HP
3	W/DHC036H3	208-230	60	3	1	4.3	—	1.50
3	W/DHC036H4	460	60	3	1	1.9	—	1.50
4	W/DHC048H3	208-230	60	3	1	4.3	—	1.50
4	W/DHC048H4	460	60	3	1	1.9	—	1.50
5	W/DHC060H3	208-230	60	3	1	4.3	—	1.50
5	W/DHC060H4	460	60	3	1	1.9	—	1.50

**Notes:** Precedent oversized evaporator available only on 230V and 460V.

**Notes:** Precedent™ unit nameplate FLA and catalog FLA may be different than actual evaporator motor nameplate FLA for two reasons:  
 If multiple vendors for approved motor size are used, the highest FLA is used.  
 Actual evaporator motor FLA may be determined through unit temperature and pressure testing.

**Table 67. Electrical characteristics - inducer motor**

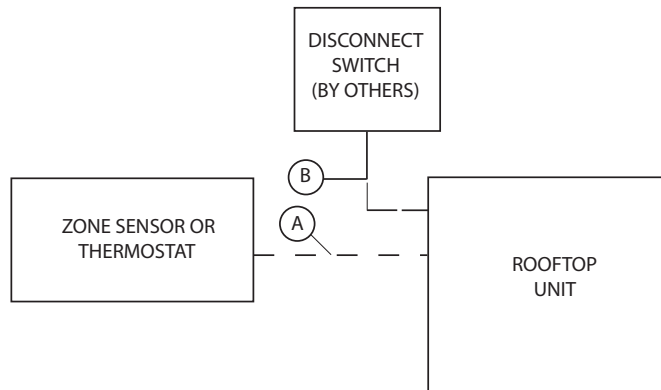
Unit Model Number	Stages	hp	rpm	volts	phase	LRA
DHC(036-060)H(3,4,W)*(L,X,M,Y,H,Z)	2	1/50	3200/3500	208-230	1	0.68



# Jobsite Connections

**Table 68. Typical Number of Wires**

<b>Zone Sensors</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	3 Wires, 24V, Cooling only	
	4 Wires, 24V, with Electric Heat	
B	3 Power Wires + 1 Ground Wire (3-phase)	
	2 Power Wires + 1 Ground Wire (1-phase)	

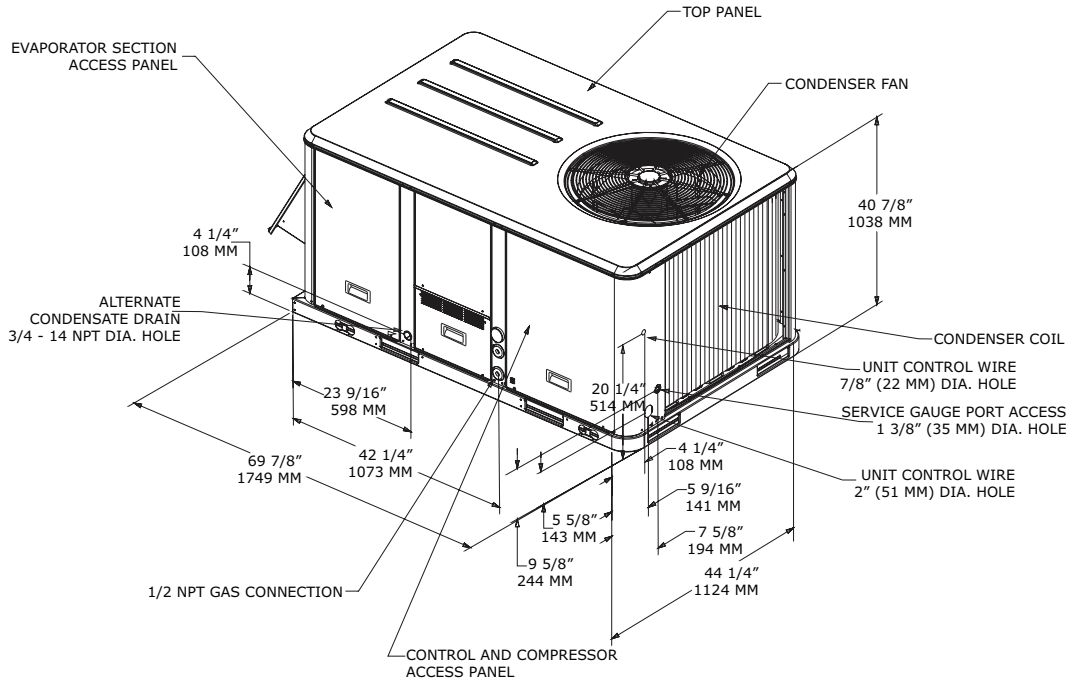


For specific wiring information, see the installation instructions.  
 All wiring except power wire is low voltage.  
 All customer supplied wiring to be copper and must conform to applicable electrical codes (such as NEC or CEC) and local electric codes. Wiring shown dotted is to be furnished and installed by the customer.

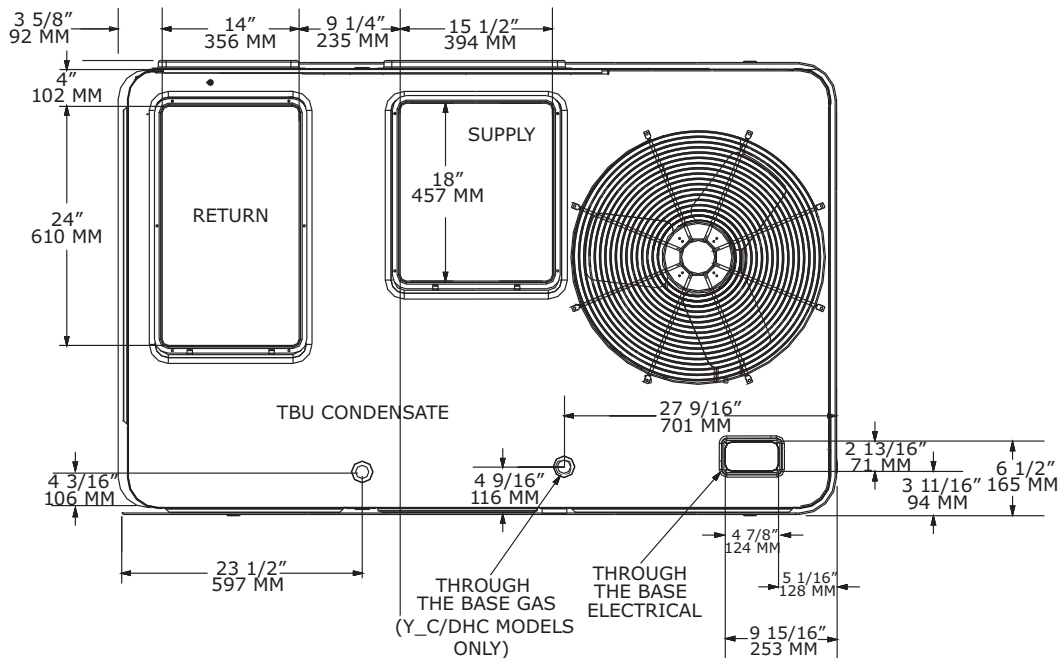
# Dimensional Data

**Figure 1. Heat pump - 3 to 4 tons standard efficiency, 3 ton high efficiency**

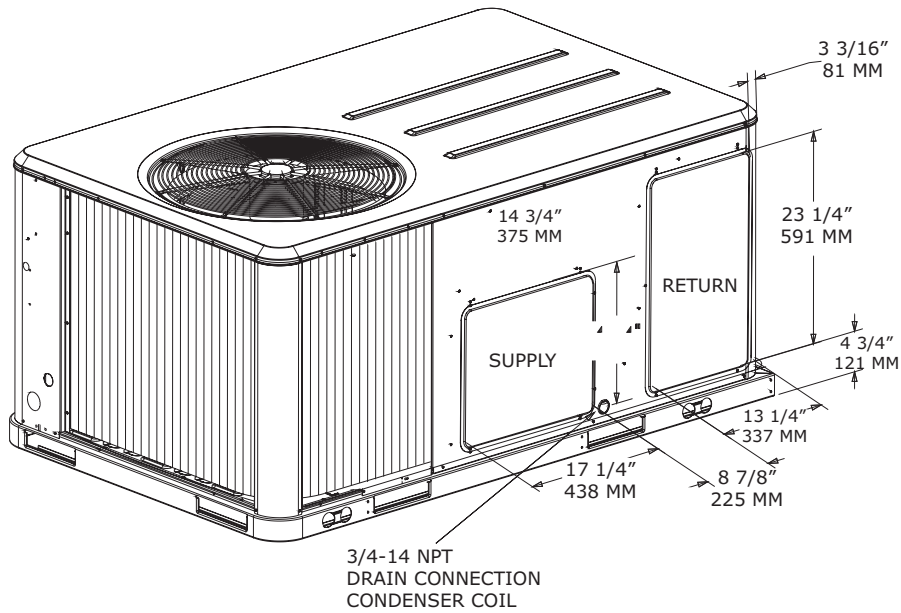
**Note:** 2" electrical connection: single point power when heat installed (W\*C)



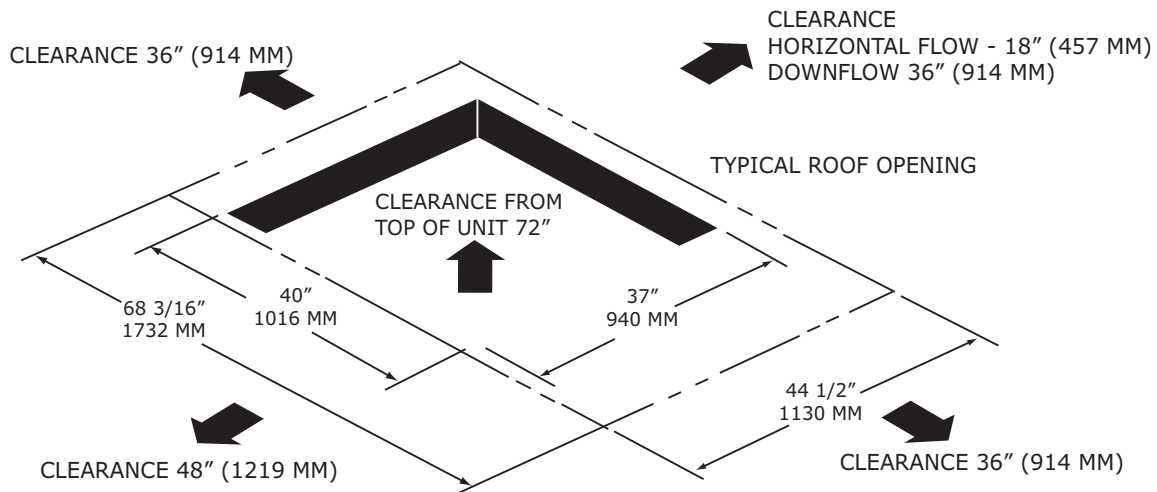
**Figure 2. Heat pump - 3 to 4 tons standard efficiency, 3 ton high efficiency - downflow airflow supply/return - through-the-base utilities**



**Figure 3. Heat pump - 3 to 4 tons standard efficiency, 3 ton high efficiency - horizontal airflow supply/return**

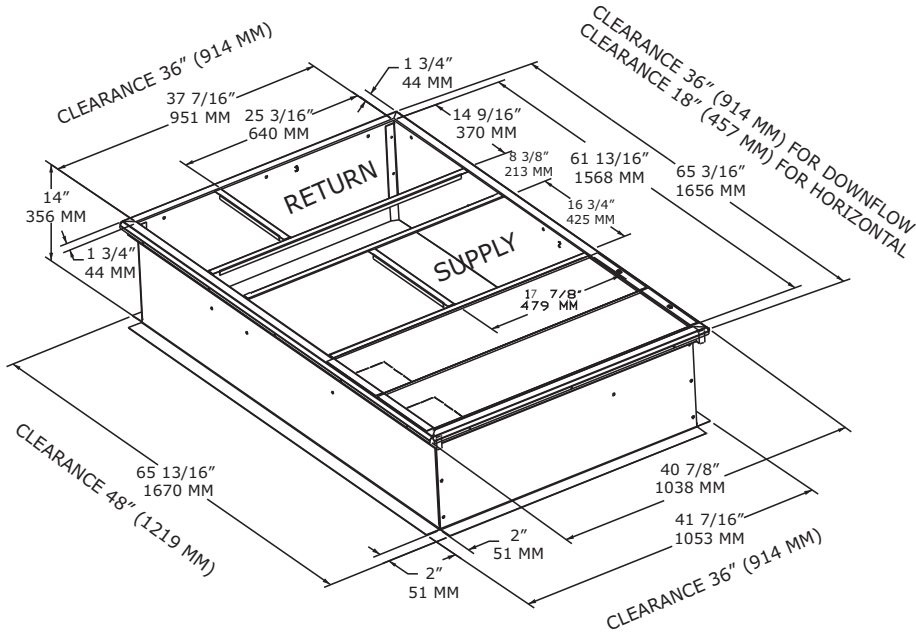


**Figure 4. Heat pump - 3 to 4 tons standard efficiency, 3 ton high efficiency - unit clearance and roof opening**



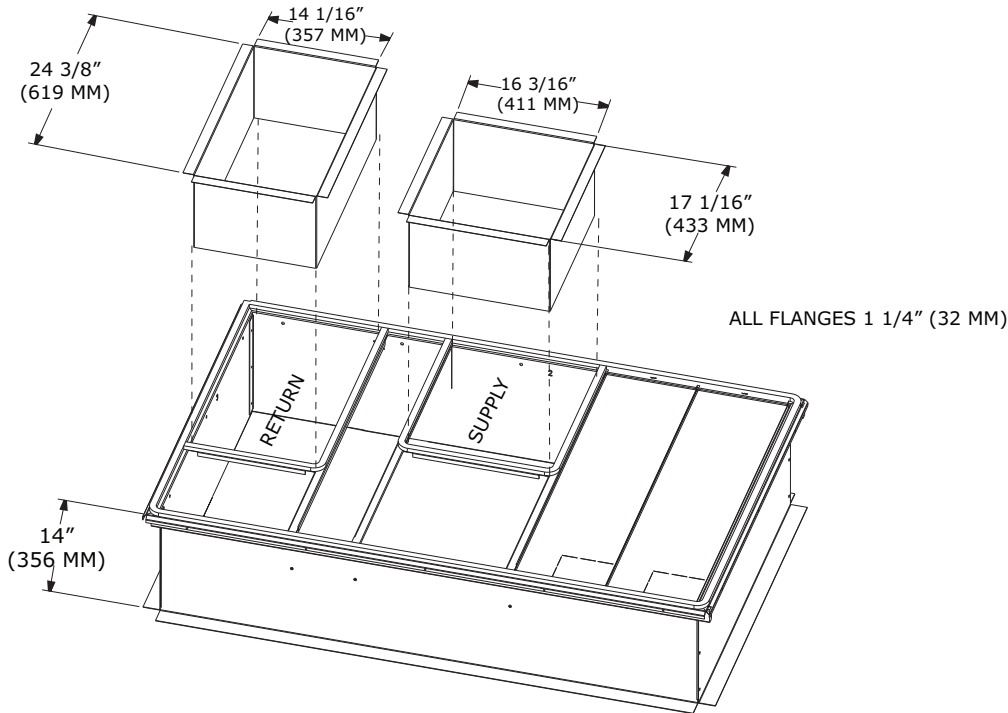
## Dimensional Data

**Figure 5. Heat pump - 3 to 4 tons standard efficiency, 3 ton high efficiency - roof curb**

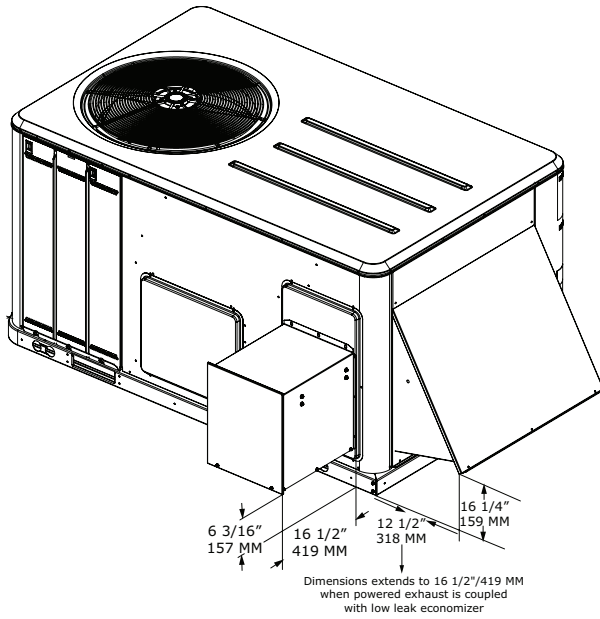


**Figure 6. Heat pump - 3 to 4 tons standard efficiency, 3 ton high efficiency - downflow duct connections - field fabricated**

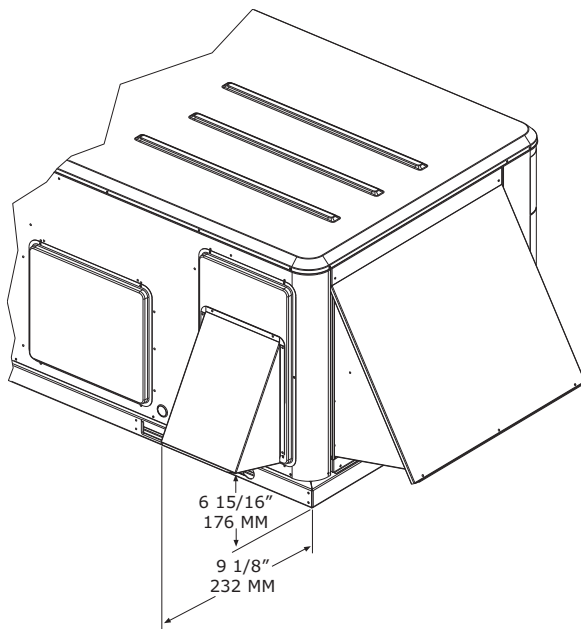
**Note:** Reference tabular information for duct clearance to combustible materials in the application consideration chapter.



**Figure 7. Heat pump - 3 to 4 tons standard efficiency, 3 ton high efficiency - economizer, manual or motorized fresh air damper; power exhaust**

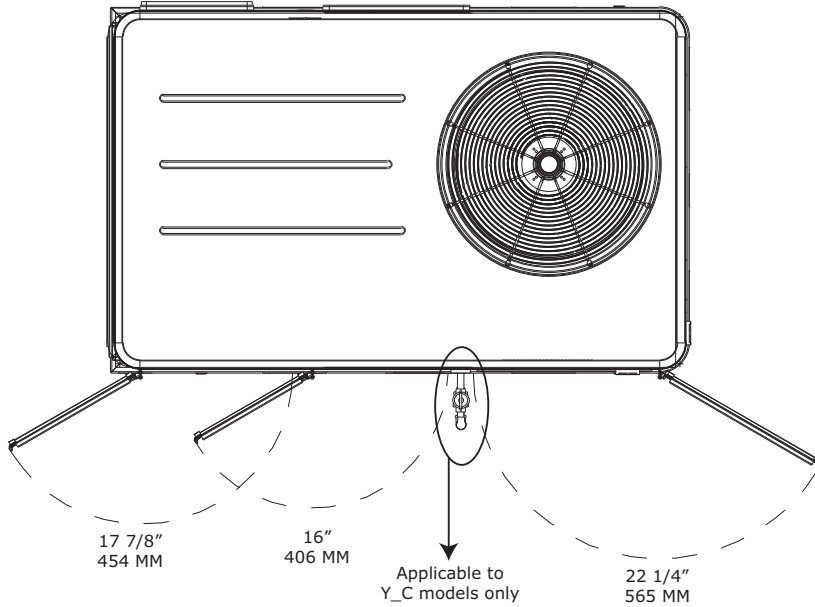


**Figure 8. Heat pump 3 to 4 tons standard efficiency, 3 ton high efficiency - economizer & barometric relief damper hood**



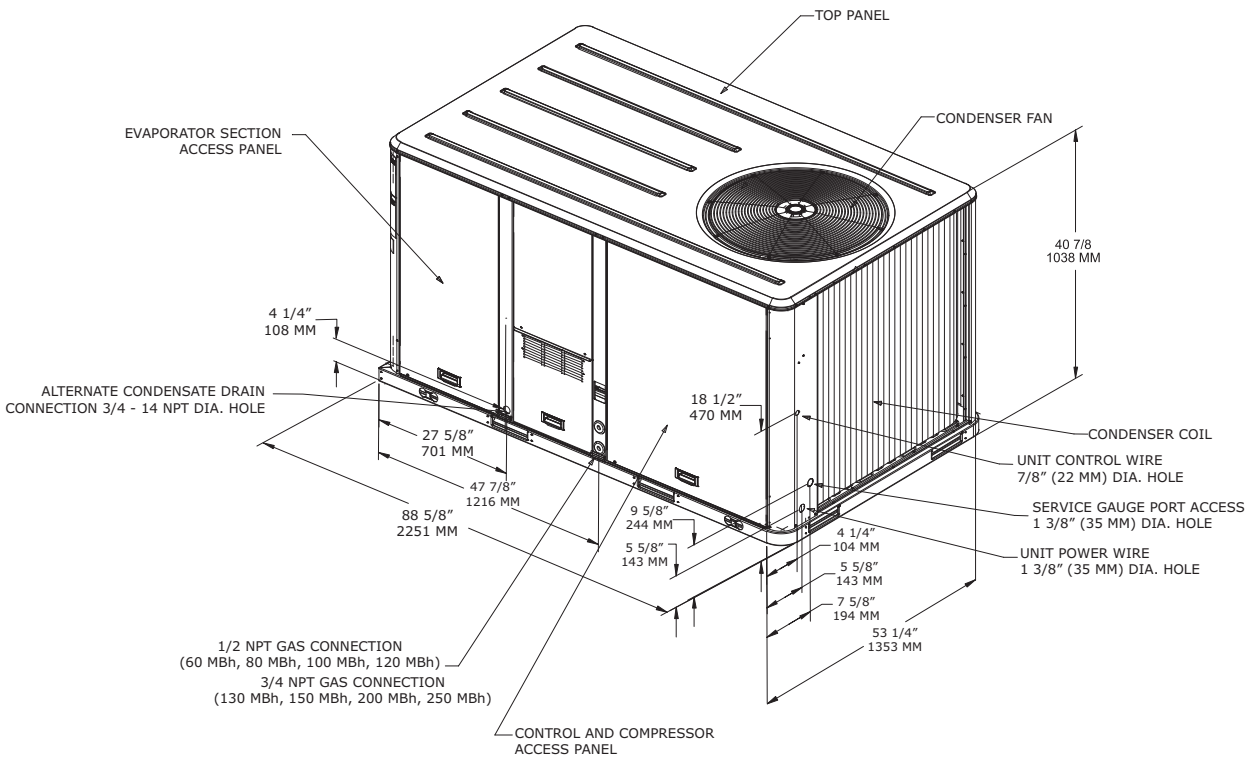
## Dimensional Data

**Figure 9. Heat pump - 3 to 4 tons standard efficiency, 3 ton high efficiency - swing diameter for hinged door(s) option**

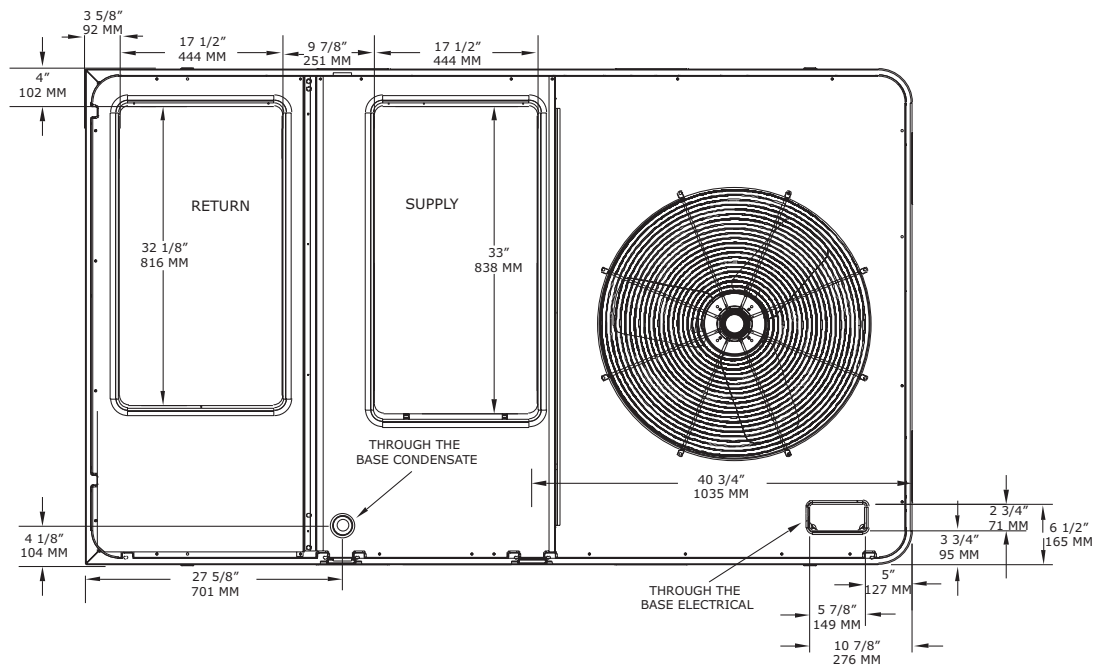


**Figure 10. Heat pump - 5 to 6 tons standard efficiency, 4 to 5 tons high efficiency**

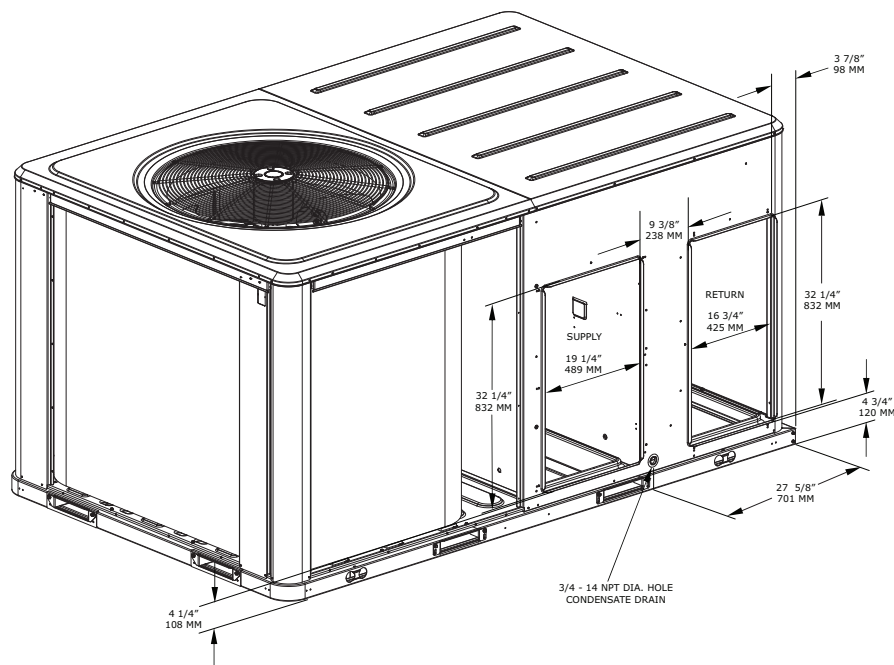
Note: 2" electrical connection: single point power when heat installed (W\*C)



**Figure 11. Heat pumps - 5 to 6 tons standard efficiency, 4 to 5 tons high efficiency - downflow airflow supply/return - through-the-base utilities**



**Figure 12. Heat pumps - 5 to 10 tons standard efficiency, 4 to 5 tons high efficiency - horizontal airflow supply and return**



## Dimensional Data

Figure 13. Heat pumps - 5 to 7.5 tons standard efficiency, 4 to 5 tons high efficiency - unit clearance and roof opening

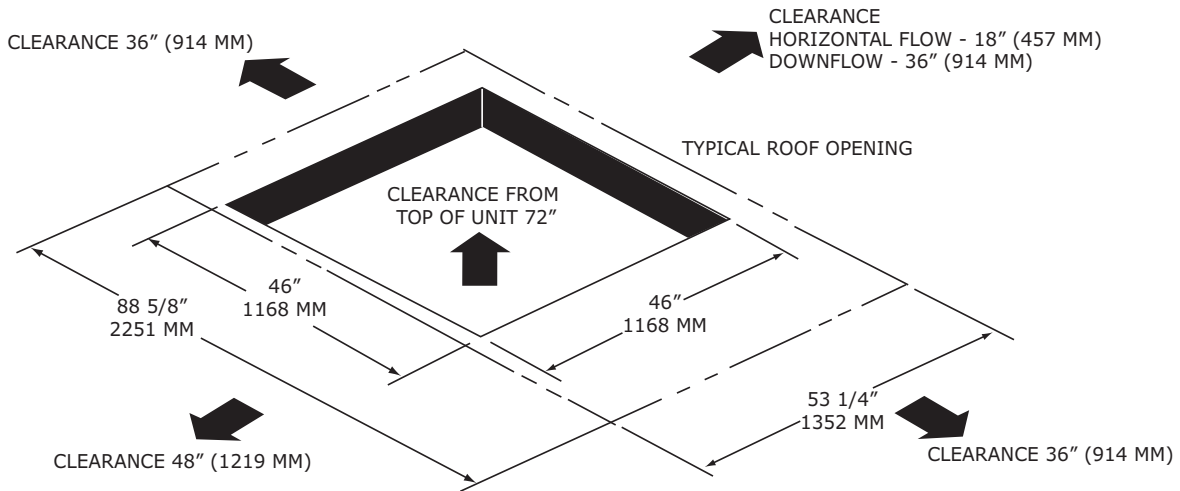
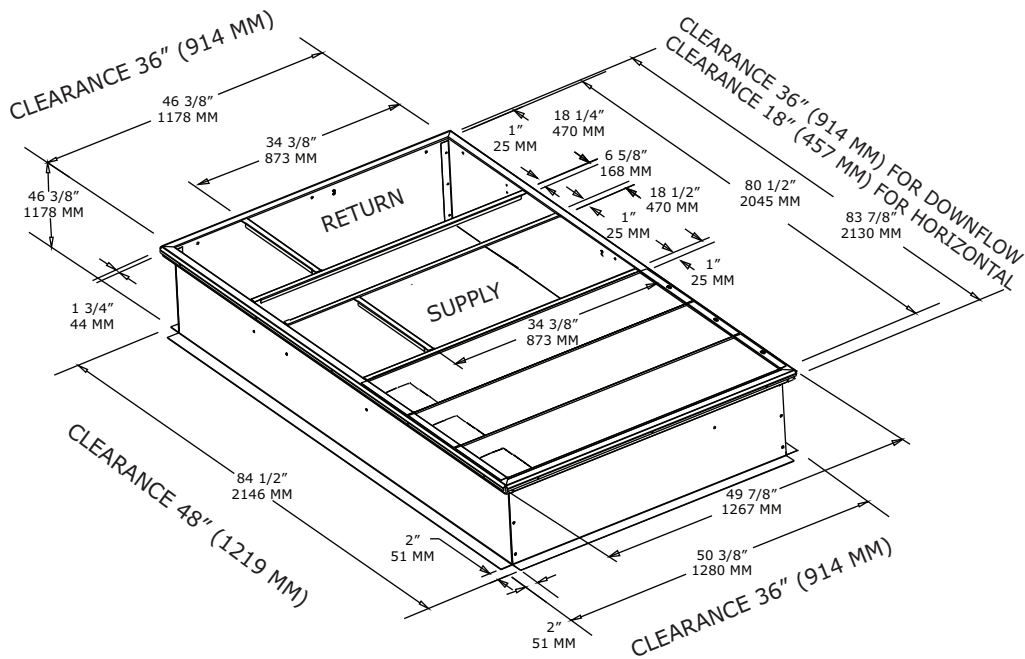


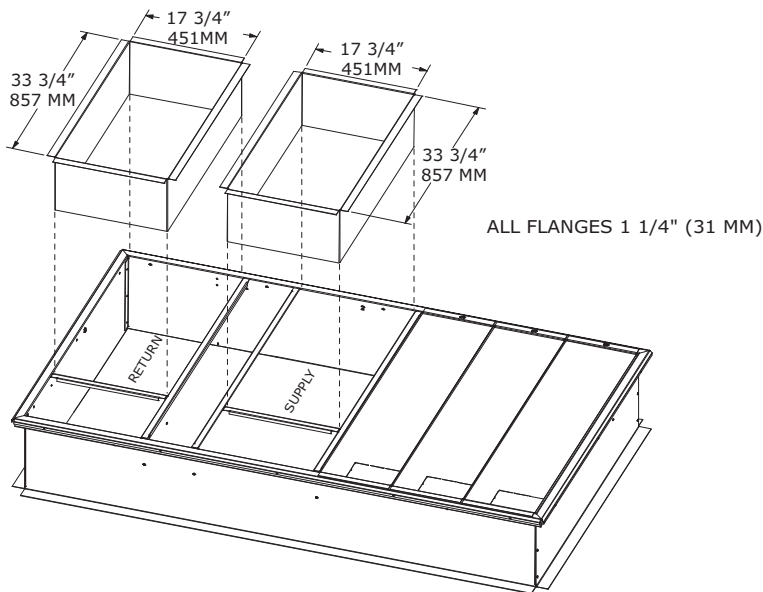
Figure 14. Heat pumps - 5 to 7.5 tons standard efficiency, 4 to 5 tons high efficiency - roof curb





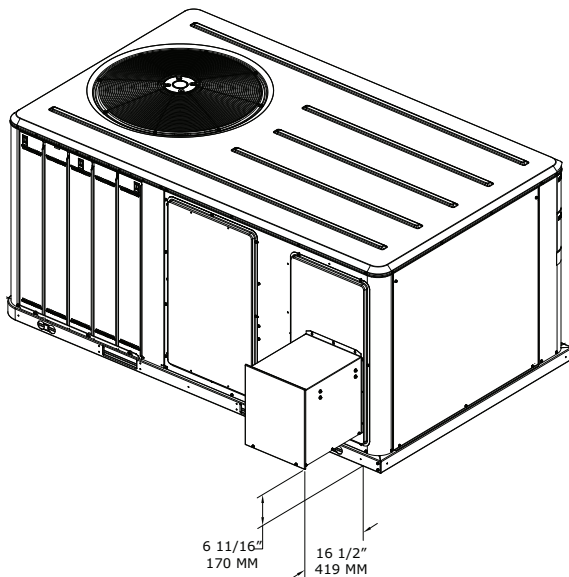
**Figure 15. Heat pumps - 5 to 10 tons standard efficiency, 4 to 5 tons high efficiency - downflow duct connections field fabricated**

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



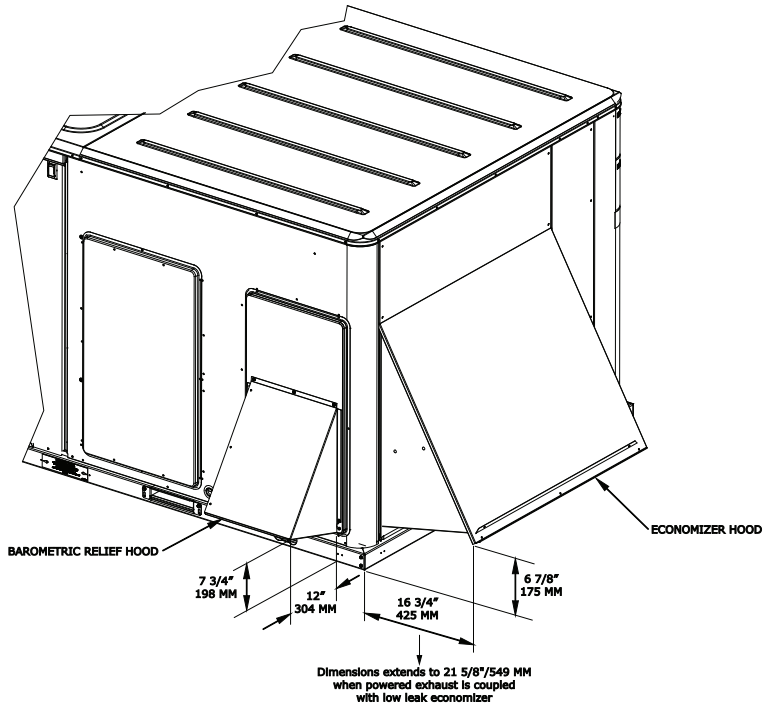
**Figure 16. Heat pumps - 5 to 7.5 tons standard efficiency, 4 to 5 tons high efficiency - power exhaust**

**Note:** Reference tabular information

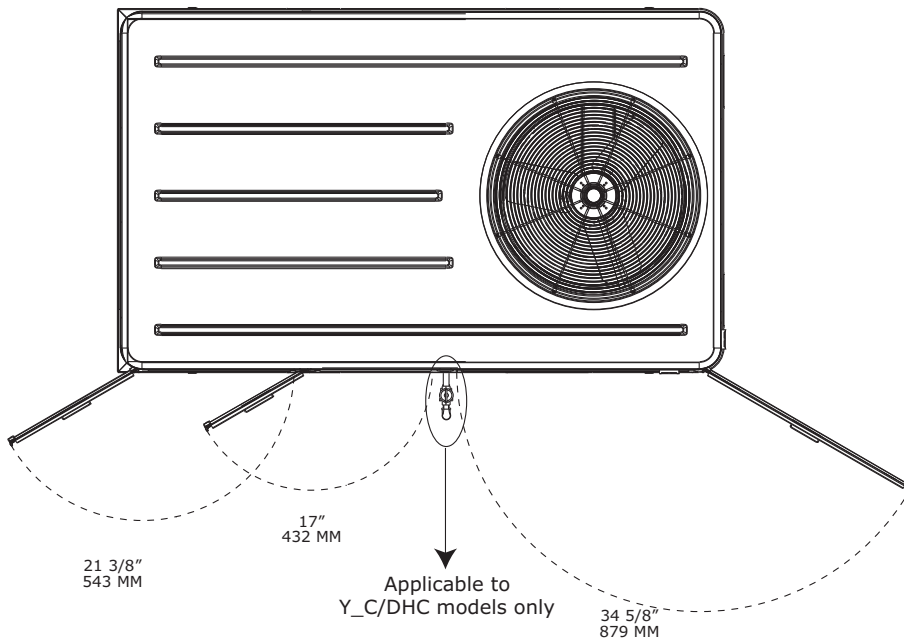


## Dimensional Data

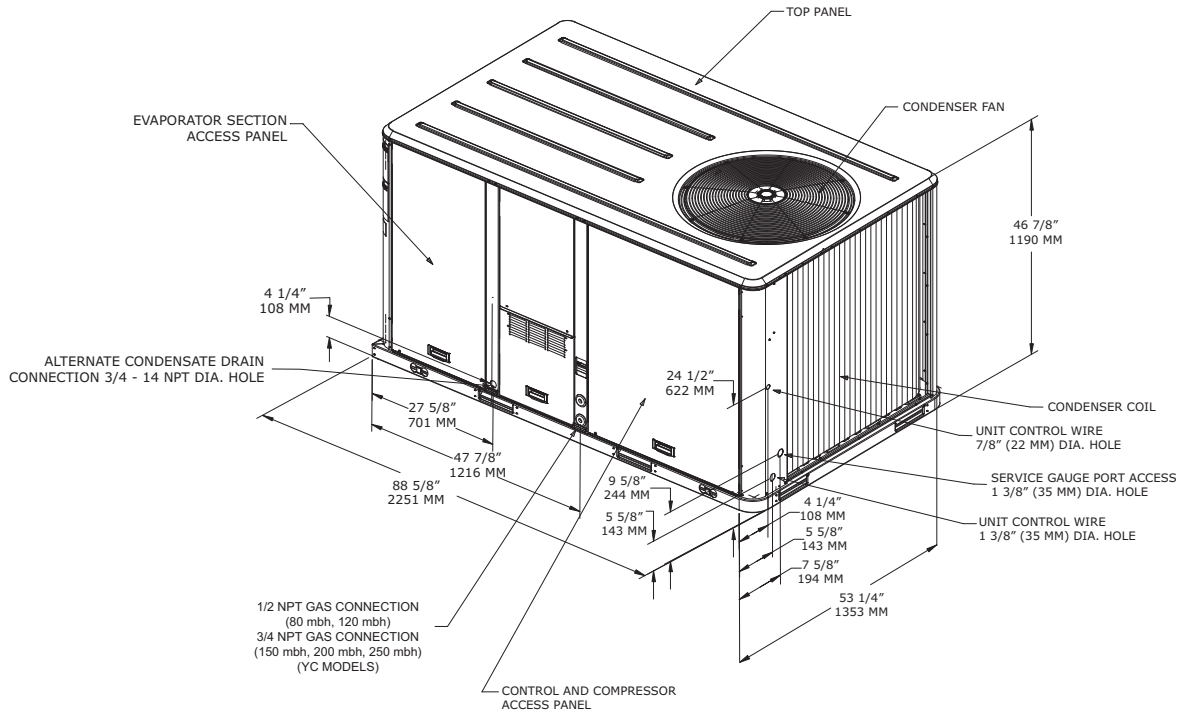
**Figure 17. Heat pumps - 5 to 10 tons standard efficiency, 4 to 5 tons high efficiency - economizer, manual or motorized fresh air damper**



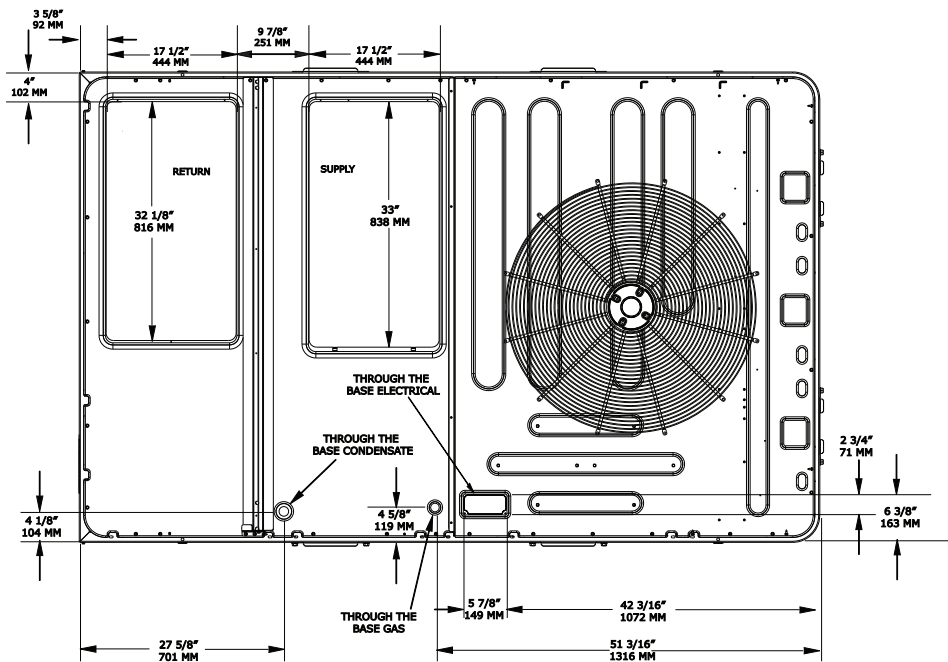
**Figure 18. Heat pumps - 5 to 10 tons standard efficiency, 4 to 5 tons high efficiency - swing diameter for hinged door(s) option**



**Figure 19. Heat pump - 7.5 tons standard efficiency**



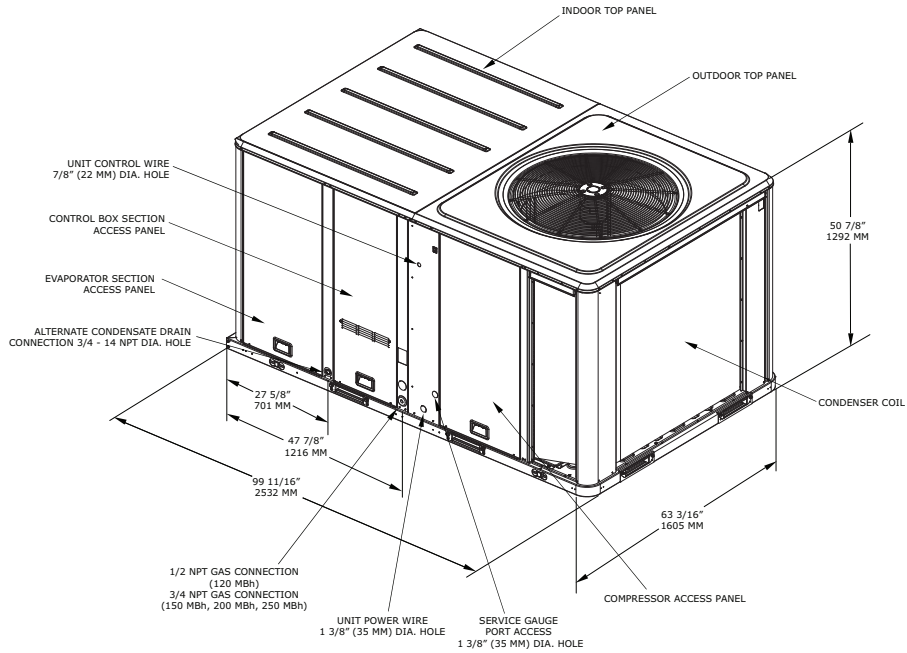
**Figure 20. Heat pump - 7.5 to 10 tons standard efficiency - downflow airflow supply/return through-the-base utilities**



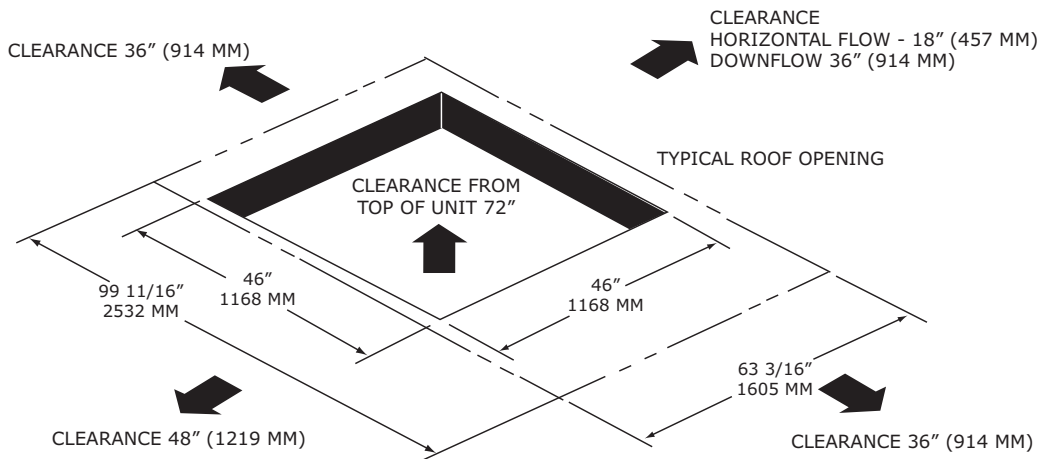
## Dimensional Data

**Figure 21. Heat pump - 10 tons standard efficiency**

**Note:** 2" Electrical Connection: Single Point Power When Heat Installed (WSC Models only.)

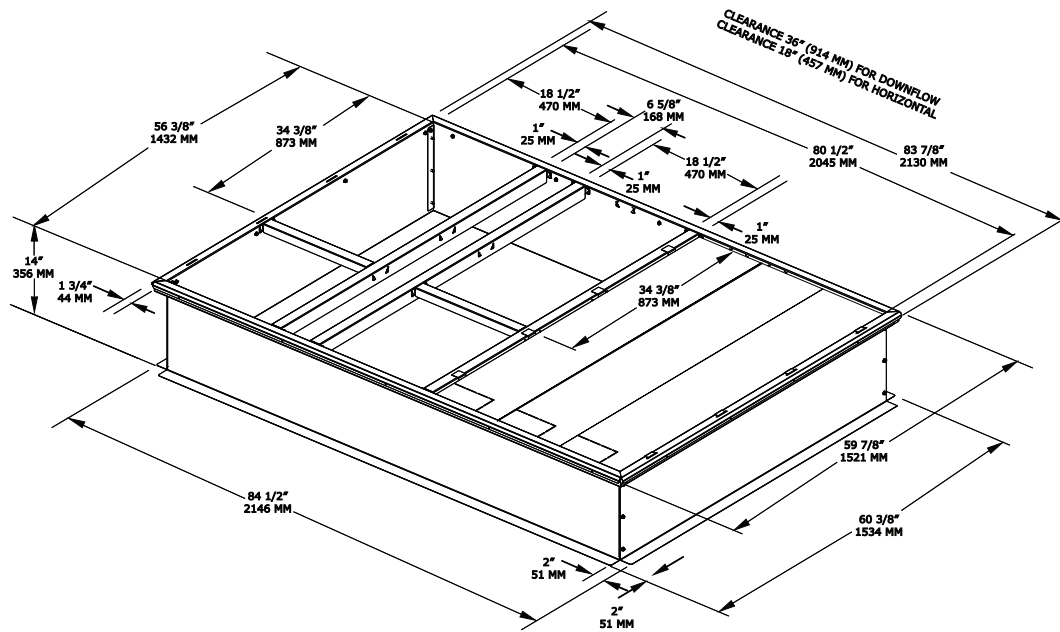


**Figure 22. Heat pump - 10 tons standard efficiency - unit clearance and roof opening**



**Figure 23. Heat pump - 10 tons standard efficiency - roof curb**

Note: 2" Electrical Connection: Single Point Power When Heat Installed (WSC Models only.)



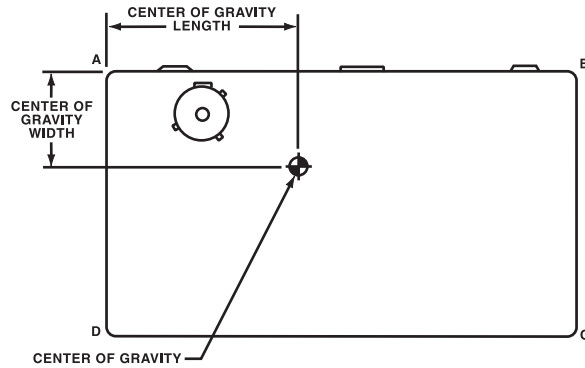
# Weights

**Table 69. Maximum unit & corner weights (lbs) and center of gravity dimensions (in.)**

Tons	Unit Model No.	Maximum Model Weights <sup>(a)</sup>		Corner Weights <sup>(b)</sup>				Center of Gravity (in.)	
		Shipping	Net	A	B	C	D	Length	Width
3	WSC036H	612	507	144	122	110	130	32	21
4	WSC048H	645	540	165	131	108	136	31	20
5	WSC060H	777	682	228	177	114	163	38	22
6	WSC072E	835	740	235	196	140	168	40	22
7.5	WSC090E	902	804	255	217	153	180	41	22
10	WSC120E	1388	1199	342	328	259	270	49	28
3	WHC036H	619	514	142	120	111	142	31	22
4	WHC048H	768	673	222	175	114	162	38	22
5	WHC060H	773	678	225	176	114	162	38	22
3	DHC036H	658	553	145	137	125	145	33	22
4	DHC048H	845	750	234	192	146	178	40	23
5	DHC060H	849	754	235	193	147	179	40	23

(a) Weights are approximate.

(b) Corner weights are given for information only.



**Table 70. Factory installed options (fiops)/accessory net weights (lbs)<sup>(a),(b)</sup>**

<b>Accessory</b>	<b>WSC036H-048H, D/WHC036H Net Weight 3 to 4 Tons</b>	<b>WSC060H, D/WHC048-060H Net Weight 4 to 5 Tons</b>	<b>WSC072E-090E Net Weight 6 to 7.5 Tons</b>	<b>WSC120E Net Weight 10 Tons</b>
460V/575V IDM Transformer <sup>(c)</sup>	29	29	—	—
Barometric Relief	7	10	10	10
Coil Guards	12	20	20	30
Economizer	26	36	36	36
Electric Heaters <sup>(d)</sup>	15	30	30	40
Hinged Doors	11	12	12	12
Low Leak Economizer	68	93	93	93
Manual Outside Air Damper	16	26	26	26
Motorized Outside Air Damper	20	30	30	30
Oversized Motor	8	8	8	—
Powered Convenience Outlet	38	38	38	50
Powered Exhaust	40	80	80	80
Roof Curb	61	78	78	89
Smoke Detector, Supply	5	5	5	5
Smoke Detector, Return	7	7	7	7
Stainless Steel Heat Exchanger <sup>(e)</sup>	4	5	—	—
Through-the-Base Electrical	8	13	8	13
Through-the-Base Gas <sup>(e)</sup>	5	5	—	—
Unit Mounted Circuit Breaker	5	5	5	5
Unit Mounted Disconnect	5	5	5	5

(a) Weights for options not listed are <5 lbs.

(b) Net weight should be added to unit weight when ordering factory-installed accessories.

(c) Applicable to D/WHC 460/575V units.

(d) Applicable to heat pump units only (W\*C).

(e) Applicable to dual fuel units only (D\*C).



# Mechanical Specifications

## General

Packaged rooftop units cooling, heating capacities, and efficiencies are AHRI Certified within scope of AHRI Standard 210-240 for 3 to 5 Ton units or 340-360 (I-P) or 6 to 10 ton units and ANSIZ21.47 and 10 CFR Part 431 pertaining to Commercial Warm Air Furnaces (all gas heating units). The units shall be convertible airflow. The operating range shall be between 115°F and 0°F in cooling as standard from the factory for units with microprocessor controls. All units shall be factory assembled, internally wired, fully charged with R-410A, and 100 percent run tested to check cooling operation, fan and blower rotation, and control sequence before leaving the factory. Wiring internal to the unit shall be colored and numbered for simplified identification. Units shall be cULus listed and labeled, classified in accordance for Central Cooling Air Conditioners.

## Casing

Unit casing shall be constructed of zinc coated, heavy gauge, galvanized steel. Exterior surfaces shall be cleaned, phosphatized, and finished with a weather-resistant baked enamel finish. Unit's surface shall be tested 500 hours in a salt spray test in compliance with ASTM B117. Cabinet construction shall allow for all maintenance on one side of the unit. Service panels shall have lifting handles and be removed and reinstalled by removing two fasteners while providing a water and air tight seal. All exposed vertical panels and top covers in the indoor air section shall be insulated with a cleanable foil-faced, fire-retardant permanent, odorless glass fiber material. The base of the unit shall be insulated with 1/8 inch, foil-faced, closed-cell insulation. All insulation edges shall be either captured or sealed. The unit's 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. The base of the unit shall have provisions for forklift and crane lifting, with forklift capabilities on three sides of the unit.

## Compressors

All units shall have direct-drive, hermetic, scroll type compressors with centrifugal type oil pumps. Motor shall be suction gas-cooled and shall have a voltage utilization range of plus or minus 10 percent of unit nameplate voltage. Internal overloads shall be provided with the scroll compressors.

Dual compressors are outstanding for humidity control, light load cooling conditions and system back-up applications.

## Crankcase Heaters

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

## Controls

Unit shall be completely factory-wired with necessary controls and contactor pressure lugs or terminal block for power wiring. Unit shall provide an external location for mounting a fused disconnect device.

Microprocessor controls shall be standard.

Microprocessor controls provide for all 24V control functions. The resident control algorithms shall make all heating, cooling, and/or ventilating decisions in response to electronic signals from sensors measuring indoor and outdoor temperatures. The control algorithm maintains accurate temperature control, minimizes drift from set point, and provides better building comfort. A centralized microprocessor shall provide anti-short cycle timing and time delay between compressors to provide a higher level of machine protection.

Units shall have single point power entry as standard.



### Evaporator and Condenser Coils

Internally finned, 5/16" copper tubes mechanically bonded to a configured aluminum plate fin shall be standard. Coils shall be leak tested at the factory to ensure the pressure integrity. The evaporator coil and condenser coil shall be leak tested to 600 psig. The assembled unit shall be leak tested to 465 psig. The condenser coil shall have a patent pending 1+1+1 hybrid coil designed with slight gaps for ease of cleaning. A plastic, dual-sloped, removable and reversible condensate drain pan with through-the-base condensate drain is standard.

### Filters

Throwaway filters shall be standard on all units. Optional 2-inch MERV 8 and MERV 13 filters shall also be available.

### High Pressure Control

All units include High Pressure Cutout as standard.

### Indoor Fan

All 6 to 7.5 ton units (standard efficiency) shall have belt drive motors with an adjustable idler-arm assembly for quick-adjustment to fan belts and motor sheaves. All high efficiency and 10 ton standard efficiency shall have variable speed direct drive motors. All motors shall be thermally protected. All indoor fan motors meet the U.S. Energy Policy Act of 1992 (EPACT).

### Outdoor Fans

The outdoor fan shall be direct-drive, statically balanced, draw-through in the vertical discharge position. The fan motor shall be permanently lubricated and shall have built-in thermal overload protection.

### Phase Monitoring Protection

Precedent™ units with 3-phase power are equipped with phase monitoring protection as standard. These devices protect motors and compressors against problems caused by phase loss, phase imbalance and phase reversal indication.

### Plenum Fan

The following unit shall be equipped with a direct drive plenum fan design (WSC120E). Plenum fan design shall include a backward-curved fan wheel along with an external rotor direct drive variable speed indoor motor. All plenum fan designs will have a variable speed adjustment potentiometer located in the control box.

### Refrigerant Circuits

Each refrigerant circuit offer thermal expansion valve as standard. Service pressure ports, and refrigerant line filter driers are factory-installed as standard. An area shall be provided for replacement suction line driers.

### Unit Top

The top cover shall be one piece construction or where seams exist, it shall be double-hemmed and gasket-sealed. The ribbed top adds extra strength and prevents water from pooling on unit top.

## Factory Installed Options

### Black Epoxy Pre-Coated Coils

The black epoxy coils have a thermoset vinyl coating that is bonded to the aluminum fin stock prior to the fin-stamping process. The pre-coated coils are an economical option for protection in mildly corrosive environments.

## Mechanical Specifications

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

Factory-installed CO<sub>2</sub> sensor wiring saves time and ensures proper unit connections for the field installed CO<sub>2</sub> sensor kits.

### Condensate Overflow Switch

This option shall shut the unit down in the event that a clogged condensate drain line prevents proper condensate removal from the unit.

### Fault Detection & Diagnostics (FDD)

This offering meets the mandatory requirement of CA Title 24 of fully configurable diagnostics allowing fault history and reading fault codes at the unit. This option provides detection of the following faults: Air temperature sensor failure/fault and notification of acceptable economizer mode. The FDD system shall be certified by the Energy Commission as meeting the requirements.

### Gas Heating Section

**Note:** *Applicable to Dual Fuel units.*

The heating section has a progressive tubular heat exchanger design using stainless steel burners and corrosion resistant steel throughout. An induced draft combustion blower is used to pull the combustion products through the firing tubes. The heater uses a direct spark ignition (DSI) system, on initial call for heat, the combustion blower purges the heat exchanger for 20 seconds before ignition. After three unsuccessful ignition attempts, the entire heating system will be locked out until manually reset at the thermostat/zone sensor.

### Hinged Access Doors

Sheet metal hinges are available on the Filter/Evaporator, Supply Fan/Heat, and the Compressor/Control Access Doors. 3 to 5 ton units shall have a compressor isolation panel included in this option to ease commissioning and servicing of units.

### High Static Motor

Oversized motor for applications where higher external static pressure capability is required. 3 to 5 ton standard efficiency units shall offer direct drive constant torque motors. 3 to 5 ton high efficiency shall offer direct drive constant CFM motors. 6 to 7.5 ton standard efficiency units shall offer belt drive motors.

### Human Interface

The Human Interface shall have a 5 inch color touchscreen display that conforms to FCC Part 15 Class B with an Ingress Protection Rating of IP24. The 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. Also, the 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.

### Multiple-Zone VAV Control

Multiple-zone VAV control shall vary the speed of the indoor fan to maintain the duct static pressure at a setpoint. In cooling mode, the compressors shall be cycled (or economizer modulated) to maintain the supply air temperature (SAT) at the desired setpoint. In heating mode, the indoor fan shall operate at maximum speed whenever the heater operating. VAV units cannot be controlled by a thermostat.

### Powered or Unpowered Convenience Outlet

This is a GFCI, 120V/15amp, 2 plug, convenience outlet, either powered or unpowered. When the convenience outlet is powered, a service receptacle disconnect will be available. The 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. This option can only be ordered when

the Through-the-Base Electrical with either the Disconnect Switch or Circuit Breaker option is ordered.

### **Single Zone VAV – One Zone Variable Air Volume Mode**

Single-zone VAV shall vary the indoor fan speed as the zone cooling or heating load changes, while cooling or heating capacity is cycled to maintain the supply air temperature at setpoint. The indoor fan shall operate at maximum speed whenever the heater is operating.

**Note:** SZVAV requires the use of a zone temperature sensor. If a unit is configured for SZVAV, but is connected to a conventional thermostat, the unit will revert to multiple-speed (two-speed) indoor fan control.

### **Multi-Speed Indoor Fan System**

The multiple-speed (two-speed) indoor fan control option shall automatically switch operation of the indoor fan between high speed and low speed, based on the number of compressors or compressor stage operating. The indoor fan shall operate at high speed whenever the gas or electric heater is operating.

### **Stainless Steel Drain Pan**

This option provides excellent corrosion and oxidation resistance. The drain pan shall be reversible and constructed of 304 stainless steel.

### **Stainless Steel Heat Exchanger**

The optional stainless steel heat exchanger is constructed of 409 stainless steel. It is resistant to corrosion and oxidation and easy to clean. The high strength to weight ratio allows for high ventilation rates with gas units. It is an excellent option to compliment the dehumidification option as a high outside air ventilation unit. With this option, a 10-year stainless steel heat exchanger warranty is standard.

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

With this option, if smoke is detected, all unit operation will be shut down. Reset will be manual at the unit. In order for the supply air smoke detector or return air smoke detector to properly sense smoke in the supply air stream or the return air stream, the air velocity entering the smoke detector unit must be between 500 - 4000 feet per minute. Equipment covered in this manual will develop an airflow velocity that falls within these limits over the entire airflow range specified in the evaporator fan performance table. Supply and/or Return Smoke Detectors may not be used with the Plenum Smoke Detector.

### **Thermal Expansion Valve**

Thermal Expansion Valve is standard for all models.

### **Through-the-Base Electrical 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. Option will allow for field installation of liquid-tight conduit and an external field-installed disconnect switch.

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

This option is a thermal magnetic, molded case, HACR Circuit Breaker with provisions for through-the-base electrical connections. The circuit breaker will be installed in a water tight enclosure in the unit with access through a swinging door. Wiring will be provided from the switch to the unit high voltage terminal block. The circuit breaker will provide overcurrent protection, be sized per NEC and cULus guidelines, and be agency recognized by cULus.

## Mechanical Specifications

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### Through-the-Base Electrical with Disconnect Switch

This 3-pole, molded case, disconnect switch with provisions for through-the-base electrical connections are available. The disconnect switch will be installed in the unit in a water tight enclosure with access through a swinging door. Wiring will be provided from the switch to the unit high voltage terminal block. The switch will be cULus agency recognized.

**Note:** *The disconnect switch will be sized per NEC and cULus guidelines but will not be used in place of unit overcurrent protection.*

### Through-the-Base Gas Piping

The unit includes a standard through-the-base gas provision. This option has all piping necessary including black steel pipe segments, manual gas shut-off valve, elbows, and union. The manual shutoff valve includes a 1/8" NPT pressure tap. This assembly will require minor field labor to install (dual fuel only).

### Trane® Air-Fi™ Wireless

Trane® Air-Fi™ wireless communication shall be factory installed and pre-wired. Air-Fi must also be Zigbee® Building Automation certified and the system communicates using standard BACnet® open protocol.

### Two-Inch Filters

Two-inch MERV 8 and MERV 13 media filters shall be available on all models. When ordered, units come equipped with a filter removal tool.

## Factory or Field Installed Options

### Clogged Filter/Fan Failure Switch

A dedicated differential pressure switch is available to achieve active fan failure indication and/or clogged filter indication. These indications will be registered with a zone sensor with status indication lights. This option is available for microprocessor controlled units.

### Differential Pressure Switches

These sensors allow individual fan failure and dirty filter indication for microprocessor controlled units. The fan failure switch will disable all unit functions and "flash" the Service LED on the zone sensor. The dirty filter switch will light the Service LED on the zone sensor and will allow continued unit operation.

### Discharge Air Temperature Sensing

This option provides true discharge air temperature sensing in heating models. This option is available for microprocessor controlled units.

### Economizer (Standard)

This accessory shall be available with or without barometric relief. The assembly includes fully modulating 0-100 percent motor and dampers, minimum position setting, preset linkage, wiring harness with plug, spring return actuator and fixed dry bulb control. The barometric relief shall provide a pressure operated damper that shall be gravity closing and shall prohibit entrance of outside air during the equipment "off" cycle. Optional solid state or differential enthalpy control shall be available for either factory or field installation. The economizer arrives in the shipping position and shall be moved to the operating position by the installing contractor.

### Electric Heaters

Electric heat modules shall be available for installation within basic unit. Electric heater elements shall be constructed of heavy-duty nickel chromium elements internally delta connected for 240 volt, wye connected for 480 and 600 V. Staging shall be achieved through ReliaTel™. Each heater

package shall have automatically reset high limit control operating through heating element contactors. All heaters shall be individually fused from the factory, where required, and shall meet all NEC and CEC requirements when properly installed. Power assemblies shall provide single-point connection. Electric heat modules shall be cULus listed.

### **Frostat™**

This option is to be utilized as a safety device. The Frostat™ opens when temperatures on the evaporator coil fall below 10°F. The temperature will need to rise to 50°F before closing. This option should be utilized in low airflow or high outside air applications (cooling only).

### **Hail Guards**

Hail protection quality coil guards are available for condenser coil protection.

### **LonTalk® Communication Interface**

This option shall be provided to allow the unit to communicate as a Tracer® LCI-R device or directly with generic LonTalk® Network Building Automation System Controls.

### **Low Leak Economizer**

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. It can be paired with powered exhaust for additional building pressure relief. This option can be paired with or without Fault Detection & Diagnostics (FDD) to meet current mandatory CA Title 24 requirements. Available on downflow units only.

### **BACnet® Communication Interface**

This option shall be provided to allow the unit to communicate directly with a generic open protocol BACnet® MS/TP Network Building Automation System Controls.

### **Reference or Comparative Enthalpy**

Reference Enthalpy is 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 shall be available when a factory or field installed Downflow Economizer is ordered. This option is available on all downflow models.

### **Trane® Communication Interface**

This option shall be provided to interface ReliaTel™ controlled units with the Trane® Integrated Comfort™ systems.

## **Field Installed Options**

### **CO<sub>2</sub> Sensing**

The CO<sub>2</sub> sensor shall have the ability to monitor space occupancy levels within the building by measuring the parts per million of CO<sub>2</sub> (Carbon Dioxide) in the air. As the CO<sub>2</sub> levels increase, the outside air damper modulates to meet the CO<sub>2</sub> space ventilation requirements.

Two field installed kits are offered: CO<sub>2</sub> sensor and wiring or CO<sub>2</sub> sensor only. The CO<sub>2</sub> sensor only kit should be ordered with factory installed CO<sub>2</sub> Sensor wiring. Factory installed CO<sub>2</sub> sensor wiring saves set-up time and ensures proper unit connections for the CO<sub>2</sub> sensor.

## Mechanical Specifications

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### **Low Leak Economizer**

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. It can be paired with powered exhaust for additional building pressure relief. Available on downflow units only.

### **Manual Outside Air Damper**

This rain hood and screen shall provide up to 50 percent outside air.

### **Motorized Outside Air Damper**

Manually set outdoor air dampers shall provide up to 50 percent outside air. Once set, outdoor air dampers shall open to set position when indoor fan starts. The damper shall close to the full closed position when indoor fan shuts down.

### **Powered Exhaust**

The powered exhaust, available for 6-10 ton units, shall provide exhaust of return air, when using an economizer, to maintain better building pressurization.

### **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) Un-occupied, and one (1) Override program per day.

### **Remote Potentiometer**

The minimum position setting of the economizer shall be adjusted with this accessory.

### **Roof Curb**

The roof curb shall be designed to mate with the unit's downflow supply and return and provide support and a water tight installation when installed properly. The roof curb design shall allow field-fabricated rectangular supply/return ductwork to be connected directly to the curb. Curb shall be shipped knocked down for field assembly and shall include wood nailer strips.

### **Thermostat**

Two stage heating and cooling operation or one stage heating and cooling shall be available in either manual or automatic changeover. Automatic programmable electronic with night set back shall also be available.

### **Ventilation Override Accessory**

With the Ventilation Override Accessory installed, the unit can be set to transition 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 accessory shall be available as field installed.

### **Zone Sensor**

This control shall be provided to interface with the Micro equipped units and shall be available in either manual, automatic programmable with night setback, with system malfunction lights, or remote sensor options.





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