



# Product Catalog

## Water Source Heat Pump Axiom™ High Efficiency Rooftop – GER 3-25 Tons – 60 Hz

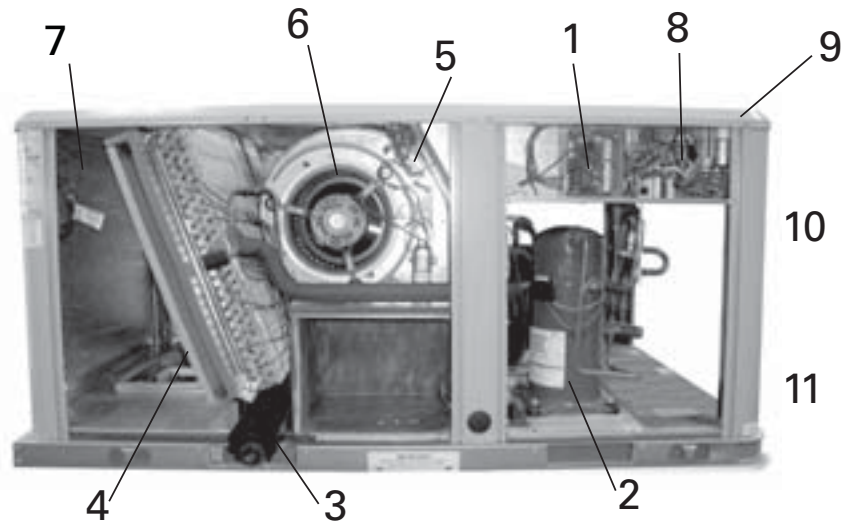




## Introduction

If a rooftop water-source heat pump is in your building's future, Trane has the right product and flexible design to fit your needs. We've taken the quality of the Trane's Precedent™ and Voyager II™ rooftop units, and added water-cooled capabilities into the product configuration, to deliver the Axiom water-source comfort system. Product features for the 3 through 10 ton equipment includes:

1. ReliaTel™ standalone controls and Tracer™ or LonTalk™ communication interface
2. Trane built compressor
3. Removable, dual sloped, non-corrosive drain pan
4. Two-inch filter arrangement
5. Standard static, high static, and belt-driven motor configurations
6. Foil-faced insulation installed throughout air-side of unit
7. Motor speed-tap changeability (3-5T, single phase only)
8. Single point power connection
9. Field convertible units for sizes 3-10T (horizontal/down flow configuration)
10. Single platform design
11. Single-size roof curb



### Revision Summary

#### ***WSHP-PRC021-EN (01 Aug 2013)***

Corrected dimension drawings. Added corner weight and center of gravity information.

#### ***WSHP-PRC021-EN (09 May 2013)***

Updated performance data. Corrections to dimension drawings.

### Trademarks

Axiom, Precedent, ReliaTel, TOPSS, Tracer, Voyager II, Trane, and the Trane logo are trademarks or registered trademarks of Trane in the United States and other countries. Trane is a business of Ingersoll Rand. All trademarks referenced in this document are the trademarks of their respective owners.

LonTalk is a registered trademark of Echelon Corporation.

# Table of Contents

Introduction .....	2
Features and Benefits .....	4
Application Considerations .....	9
Selection Procedure .....	10
Model Number Descriptions .....	12
General Data .....	13
Performance Data .....	16
Operating Pressures in Cooling/Heating .....	16
Electrical Data .....	79
Dimensional Data .....	86
Weights and Center of Gravity .....	104
Accessories .....	105
System balancing hose kit .....	105
Thermostat/Sensor Location .....	105
Zone Sensors .....	106
Wiring .....	107
Mechanical Specifications .....	119



## Features and Benefits

### Barometric Relief (Option)

The Axiom rooftop line offers an optional barometric relief damper for use in conjunction with the economizer option. This accessory consists of gravity dampers which open because of increased pressure. As the building air pressure increases, the pressure in the unit's return air section also increases, forcing the dampers open and relieving the conditioned space.

**Note:** *The effectiveness of the barometric relief damper during economizing operation is system related. Pressure drop of the return-air system should be considered to control building pressurization.*



### Belt-Drive Motor (Option)

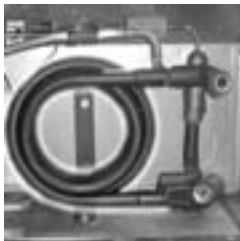
With the easy-adjust idler arm, an option available on 12.5- 25 ton units, the belt and sheaves on the belt driven units can be quickly adjusted without moving the mounted fan motor. The result is a major savings in time and money.

### Blower Motors

Belt and direct drive motor selections are available in both standard and oversized configurations to meet a wide airflow range.

### Clogged Filter/Fan Fail Switches

These sensors allow an Integrated Comfort™ System (ICS) or a zone sensor's service light to indicate a dirty filter or a fan that is not working. The high field installation costs of these devices often eliminate them from consideration. By factory installing these features to the rooftop unit, these sensors are cost effective and a good investment.



### Co-axial Water-to-Refrigerant Coil

The internal heat exchanging water coil is a copper or cupro-nickel tube-within-a-tube design. The inner tube of the coil is deeply fluted to enhance heat transfer, and to minimize fouling and scaling.

### Colored and Numbered Wiring

The unit wiring is both numbered and color-coded to save time and money when tracing wires or diagnosing the unit.

### Communication Interface

The direct digital control module may be factory or field installed. This module, when applied with ReliaTel, easily interfaces with Trane's Integrated Comfort System

Trane's micro processing controller provides unit control for heating, cooling and ventilation utilizing input from sensors that measure outdoor and indoor temperature.



### Compressors

The Axiom rooftop contains the best compressor technology available to achieve the highest possible performance. Our compressor line includes reciprocating and scrolls.

### Controls by Trane

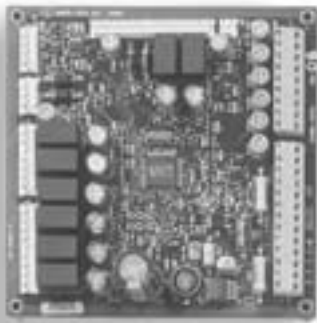
Several years ago, Trane was the first to introduce microprocessor controls into the light commercial market. With this control board, a broad range of applications may be explored. This range includes setups such as a standalone unit to sensor design, to a complete building control system provided through an ICS design.

***Why Trane Controls?***

Trane ICS controls are factory tested and commissioned to provide comfort, efficiency, and reliability, as well as, single-source warranty and service. With Trane's integrated controls, the installed costs are lower because the equipment has turn-key factory controls and every component has been specifically designed to optimize the units performance. When the Axiom rooftop with Trane controls arrives to the jobsite, it is completely ready for quick installation and operation.

***MicroControls***

The unit microprocessor improves quality and reliability through the use of time-tested microprocessor controls and logic.



Features for the micro processing controls include:

- Provides heating, cooling, and ventilating by utilizing input from sensors that measure outdoor and indoor temperature.
- 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.
- Reduces the number of components required to operate the unit, thereby reducing possibilities for component failure.
- Eliminates the need for field-installed components with its built-in anti-short-cycle timer, time delay relay and minimum "on time" controls. These controls are factory tested to assure proper operation.
- Requires no special tools to run the rooftop unit through its paces during testing. 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. 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 LED is lit, the microprocessor is operational. The light indicates that the processor is functioning properly.
- Expanded diagnostic capabilities when teamed with Trane's Integrated Comfort Systems to become part of a full building management system through Tracer Summit.
- As an energy benefit, the microprocessor based controls soften electrical spikes by staging on blower fans, compressors and heaters.
- The intelligent fallback or adaptive control is a benefit to the building occupant. If a component goes astray, the unit will continue to operate at predetermined temperature set points.
- Functioning constantly, the microprocessor and zone sensors work together in harmony to provide tight comfort control.



## Features and Benefits

---

### Convertible Units (3 - 10 Ton)

The units ship in a downflow configuration, but may be easily converted to a horizontal supply by simply moving two panels.

### Condenser Thermostat

A bi-metal element thermostat is installed standard on the water out as a standard option of each system. This standard option gives extra protection against water freeze due to extreme outside low temperatures.

### Discharge Line Thermostat

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

### Drain Pans

The unit drain pans are of non-corrosive material. They are dual-sloped, and removable for ease of cleaning. The drain pans are reversible to allow a drain trap installation on either side of the unit.

### Duct Flanges

The units come complete with horizontal duct flanges to save additional time and money to the field contractor during installation.



### Easy Access Low Voltage Terminal Strip

The low voltage terminal strip is external to the electrical control cabinet. It is extremely easy to locate and attach the thermostat wire.

The wiring of the low voltage connections to the unit and the zone sensors is as simple as matching 1-1, 2-2, and 3-3, which ultimately makes it easier for the installer to wire.



### Easy Access Panels

Easy access panels reduce the number of possible water entry points. By removing only two screws, entry to the standardized internal components and wiring is possible. All panels are sealed to prevent water from entering the duct work.

### Foil-Faced Insulation

All panels in the air-side section of the unit contain cleanable, foil-faced insulation. All edges are either captured or sealed to ensure fibers do not get into the airstream.

### Hinged Access Doors

The hinged access option permits easy access to the filter, fan/air-to-refrigerant coil, and compressor/control section. This option reduces the potential roof damage that may occur from fallen screws or access panels. It also provides additional security to the panel during a high wind situation.



### Quality and Reliability

All Axiom rooftop designs were rigorously rain tested at the factory to help 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 air-to-refrigerant coil is leak tested at 470 psig and pressure tested to 470 psig.

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

With verification of total unit performance, our customers can be assured that each unit shipped will run properly. All equipment is run tested to meet the industry standards developed by AHRI to insure that global quality standards are met.



### Reversing Valve

A system reversing valve (4-way valve) is included with all heat pump units. The valve is piped to be energized in the cooling mode to allow space heating if valve failure were to occur.

Units with the cooling only option will not receive a reversing valve.

### Roof Curb

Only one roof curb (both horizontal and down flow discharge) for the 3 through 5-ton or 6 through 10-ton rooftop line simplifies the roof curb selection. Curb selection for the 12 1/2 through 25-ton equipment is made through only three roof curb combinations.

### Safety Devices

All units are equipped with high and low pressure cutout to prevent compressor damage, and water coil freezing.

The low pressure switch prevents compressor operation under low charge, excessive loss of charge situations, and under low temperature operation. The high pressure switch prevents compressor operation during high or excessive discharge pressures.

The following options round-out the complete line of options.

- 0 to 50% manual or motorized outside air
- Electric Heaters
- Supply and/or return smoke detectors
- Discharge air sensor
- Factory built roof curb
- Wide array of zone sensors and thermostats

### Single Point Power

A single electrical connection to the contactor powers the unit when unit contains the electric heat option.

### Standardized Components

Components are placed in the same location on all rooftop units to provide a repetitious look and feel to installation and maintenance personnel.

### 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 requiring a separate roof penetration.

## Features and Benefits

---



### Thermal Expansion Valve (TXV)

All Trane water-source rooftops systems include a thermal expansion valve. This valve allows the unit to operate under a large range of entering fluid temperature from 25° F to 110° F, and entering air temperatures from 40° F to 90° F. This wide temperature range allows the unit to run without a water regulating device through precise metering of refrigeration flow to achieve desired heating or cooling. This precise metering by the TXV increases the efficiency of the unit.



### Through the Base Electrical Utility Access

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

### Unit Base

For additional water integrity, the unit contains a raised 1 1/8-inch lip around the unit's down flow supply and return to prevent water from blowing into the ductwork.



### Unit Cabinet

The compact cabinet of the 3 through 10-ton equipment contains rounded corners to take up less room. All units incorporate a one-piece top design to ensure superior water integrity. All access panels are tightly sealed to prevent water from entering the duct work.



### Unit Mounted Disconnect or Circuit Breaker

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

### Water Connection

The water-in/water-out connections to the co-axial coil are located in the refrigerant section of the rooftop. These threaded and accessible connections provide a quick installation to a hose



# Application Considerations

## Flexibility

The rooftop water-source heat pump system is versatile for installation in boiler/cooling tower applications, as well as ground-source (geothermal) applications. The system design may employ either a central pumping design, or a distributed pumping design.

A central pumping design involves a single pump design, usually located within a basement or mechanical room to fulfill pumping requirements for the entire building system. An auxiliary pump is typically applied to lessen the likelihood of system downtime if the main pump malfunctions.

A distributed pumping system contains a single pump module connected directly to the unit supply and return. This module is field installed and piped to the unit. This design requires individual pump modules specifically sized for each water-source heat pump.

## Building Automation

As part of a building automation system, the mechanical HVAC system may be optimized to lower energy consumption. By running only the mechanical devices that are required to support the building load at a given time of day or night means true savings for the building owner.

Maintenance and serviceability faults through the unit sensing devices are easily defined and cured with an automated system.

The factory shipped DDC controls means turn-key installation and start-up.

## Performance

Application of this product should be within the cataloged airflow and unit performance. The Trane Official Product Selection System (TOPSS™) will aid in the selection process for a set of given conditions. If this program has not been made available, ask a local Trane sales engineer to supply the desired selections or provide a copy of the program.

## Condensate

The rooftop unit contains a draw-thru configuration. A negative pressure condensate trap must be field provided prior to start-up for the unit to drain properly. See the installation manual for negative pressure trapping.

Because the units have a reversible sloped condensate drain pan, the unit must be installed level. Any unit slope must be toward the side of the unit where the condensate drain is located.

## Hose Kits

A flexible stainless steel hose kit is used to connect the supply and return lines to the water-inlet/outlet.



# Selection Procedure

## Selection Program

All WSHP products should be selected through the Trane Official Product Selection System, TOPSS™.

If this program has not been made available, ask a local Trane sales engineer to supply the desired selection or a copy of the program.

## Required Fields

The first step in the selection is to determine either:

- Total cooling capacity
- Sensible capacity
- Heating capacity

**Note:** *The maximum allowable water pressure drop and selection ranges can also be identified.*

The TOPSS screen for the product is color coded to help identify field requirements. Fields shadowed in red identify what is required to run a TOPSS calculation. The selection folder is divided into five fields to allow ease of input for the selection process. These fields include:

- Fan information
- Cooling input information
- Heating input information
- Hose kit information
- All fields information

## New Rating

The performance standard AHRI/ASHRAE/ISO 13256-1 became effective Jan. 1, 2000. It replaces AHRI standards 320, 325 and 330. This new standard has three major categories which include: Water Loop (AHRI 320), Ground Water (AHRI 325), and Ground Loop (AHRI 330).

The differences in ISO 13256-1 and the old AHRI ratings include:

- Cooling efficiency measurement is a watt per watt measurement similar to the widely used COP measurement
- Entering water reflects the centigrade temperature scale at 68° F (20° C)
- Entering air reflects the centigrade temperature scale at 80.6° F (27° C) dry bulb and 66.2° F (19° C) wet bulb.
- Pump power correction factors are added onto the existing power consumption
- Fan power is corrected to zero external static pressure

The rooftop water-source heat pump performance is rated in accordance to the AHRI/ISO 13256-1 standard. This new standard has three major categories: Water Loop (AHRI 320), Ground Water (AHRI 325), Ground Loop (AHRI 330). Although these standards are similar there are some differences.

The cooling efficiency is measured in EER but includes a Watt-per-Watt unit of measure similar to the traditional COP measurement.

The entering water temperature has changed to reflect the centigrade temperature scale. For instance the water loop heating test is performed with 68°F (20°C) water instead of 70°F. The cooling tests are performed with 80.6°F (27°C) dry bulb and 66.2°F (19°C) wet bulb entering air instead of the traditional 80°F dry bulb, and 67°F wet bulb entering air temperatures. This data (80.6/66.2) may be converted to 80/67 by using the entering air correction table.

A pump power correction has been added onto the existing power consumption. Within each model, only one water flow rate is specified for each performance category, and pumping watts are calculated utilizing the pump power correction formula:  $(\text{gpm} \times 0.0631) \times \text{press drop} \times 2990 / 300$ .

**Note:** *GPM relates to water flow, and press drop relates to the drop through the unit heat exchanger at rated water flow in feet of head. The fan power is corrected to zero external static pressure. The nominal airflow is rated at a specific external static pressure. This effectively reduces the power consumption of the unit, and increases cooling capacity but decreases heating capacity. These watts are significant enough in most cases to increase EER and COP over AHRI 320, 325, and 330 ratings.*

### **Cooling Dominated Applications**

If humidity levels are moderate to high in a cooling dominated application, the heat pump should be selected to meet or exceed the calculated sensible load. Also, the unit's sensible capacity should be no more than 115% of the total cooling load (sensible + latent), unless the calculated latent load is less than the latent capacity of the unit.

The sensible-to-total cooling ratio can be adjusted with airflow. If the airflow is lowered, the unit latent capacity will increase. When less air is pulled across the DX coil, more moisture will condense from the air.

### **Heating Dominated Applications**

Unit sizing in heating dominated applications is based upon humidity levels for the climate, and goals for operating cost and installation costs.

If humidity levels are moderate, the heat pump should be selected with the heating capacity equal to 125% of the cooling load.

If humidity levels are low in the application and low operating cost is important, the heat pump and ground loop should be sized for 90% to 100% of the heating load.

If humidity levels are low and lower initial cost is important, then the heat pump and ground loop should be sized for 70% to 85% of the heating load, with the remaining load to be treated with electric resistance heat.

Installation cost will be reduced in this approach because of the smaller heat pump selection and less loop materials.

In general, the system will not use enough electric heat to offset the higher installation costs associated with a fully sized or oversized system.

Finally, a unit sized for the entire heating load in a heating dominated application will be oversized in cooling. Comfort is reduced from increased room humidity caused by short-run times. Short cycling will also shorten the life expectancy of the equipment and increase power consumption and operating cost.

Many rebate incentives require the heat pump and ground loop to be sized for the entire heating load. Check with you local utility for their requirements.



# Model Number Descriptions

G E R E 060 1 1 A 0 1 1 0 D 0 T 0 A 6 0 0 1 1 0 A 0 B 0 0 0 0 0 0 0  
 1 2 3 4 5,6,7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30-36

## Digits 1-3 – Unit Configuration

GER= High Efficiency Rooftop

## Digit 4 – Development Sequence

E

## Digits 5-7 – Nominal Size (MBH)

- 036 = 3 Ton
- 048 = 4 Ton
- 060 = 5 Ton
- 072 = 6 Ton
- 090 = 7 1/2 Ton
- 120 = 10 Ton
- 150 = 12 1/2 Ton
- 180 = 15 Ton
- 240 = 20 Ton
- 300 = 25 Ton

## Digit 8 – Voltage (Volts/Hz/Phase)

- 1 = 208/60/1
- 2 = 230/60/1
- 3 = 208/60/3
- 4 = 460/60/3
- 5 = 575/60/3
- 8 = 230/60/3

## Digit 9 – Heat Exchanger

- 1 = Copper Water Coil
- 2 = Cupro-nickel Water Coil

## Digit 10 – Design Sequence

Most Up-to-Date Design

## Digit 11 – Refrigeration Circuit

- 0 = Heating and Cooling Circuit
- A = Cooling ONLY Circuit

## Digit 12 – Blower Configuration

- 1 = Standard Blower
- 2 = Oversized Blower Motor

## Digit 13 – Freeze Protection

- A = 20 Degree Freezestat B/T
- B = 30 Degree Freezestat B/T

## Digit 14 – Open Digit

- 0 = Standard Design
- S = Design Special

## Digit 15 – Supply-Air Arrangement

- D = Down-Flow Supply-Air Arrangement (convertible for 3 - 10 Ton)
- H = Horizontal Supply-Air Arrangement (12 1/2 - 25 Ton option)

## DIGIT 16 – Return-Air Arrangement

- 0 = Standard Return-Air Arrangement

## Digit 17 – Control Types

- R = ReliaTel™ Standalone Controls
- T = Tracer™ Communication Interface
- L = LonTalk™ Communication Interface

## Digit 18 – T'stat/Sensor Location

- 0 = Wall Mounted Location
- A = Wall Mounted Sensor with Unit Mounted Return-Air Smoke Detector
- B = Wall Mounted Sensor with Unit Mounted Supply-Air Smoke Detector
- C = Wall Mounted Sensor with Unit Mounted Return-Air/Supply-Air Smoke Detectors

## Digit 19 – Fault Sensors

- 0 = No Fault Sensor
- A = Clogged Filter Switch
- B = Fan Failure Switch
- C = Discharge Air Sensing Tube
- D = Clogged Filter Switch and Fan Fail Switch
- E = Clogged Filter Switch and Discharge Air Sensing Tube
- F = Fan Fail Switch and Discharge Air Sensing Tube
- G = Clogged Filter Switch, Fan Fail Switch and DA Sensing Tube

## Digit 20 – Temperature Sensor

- 7 = High Pressure Control/Frostat/Crankcase Heater

## Digit 21 – Night Setback

- 0 = No Night Setback Relay
- N = Night Setback Relay

**Note:** Option N is used for the Micro Standalone Controller ONLY.

## Digit 22 – Electric Heat Option

- 0 = No Electric Heat
- A = 5 kW (1-Phase)
- B = 6 kW (3-Phase)
- C = 9 kW (3-Phase)
- D = 10 kW (1-Phase)
- E = 12 kW (3-Phase)
- F = 14 kW (1-Phase)
- G = 18 kW (1 and 3-Phase)
- J = 23 kW (3-Phase)
- K = 27 kW (3-Phase)
- N = 36 kW (3-Phase)
- P = 54 kW (3-Phase)

## Digit 23 – Unit Mounted Disconnect

- 0 = No Unit Mounted Disconnect
- 1 = Non-Fused Disconnect
- 2 = Circuit Breaker

## Digit 24 – Filter Type

- 2 = 2" Throwaway Filter
- 4 = 2" MERV 8 Filter
- 5 = 2" MERV 13 Filter

## Digit 25 – Acoustic Arrangement

- 0 = Sound Attenuation Package

## Digit 26 – Factory Configuration

- 0 = Standard Factory Configuration
- A = Hinged Access Panels

## Digit 27 – Paint Color

- 0 = No Paint Selection Available

## Digit 28 – Outside Air Option

- 0 = No Outside Air
- A = Manual Outside Air Damper 0-25%
- B = Motorized Outside Air Damper 0-50%
- C = Economizer, Dry Bulb 0-100% without Barometric Relief
- D = Economizer, Dry Bulb 0-100% with Barometric Relief
- E = Economizer, Reference Enthalpy 0-100% without Barometric Relief
- F = Economizer, Reference Enthalpy 0-100% with Barometric Relief
- G = Economizer, Comparative Enthalpy 0-100% without Barometric Relief
- H = Economizer, Comparative Enthalpy 0-100% with Barometric Relief

## Digit 29 – Piping Arrangement

- 0 = Standard Piping Configuration

## Digits 30-36 – Does Not Apply To The Rooftop Product

000000= Digit 30-36 Does NOT Apply to the Rooftop Products

**Note:** Through-the-base electric is a standard feature on the water-source rooftop unit.



# General Data

**Table 1. General data - 3-4 tons**

	3 Tons		4 Tons	
	GER036E1	GER036E3,4,W	GER048E1	GER048E3,4,W
<b>Unit Size</b>				
Length of Cabinet	69 7/8"	69 7/8"	69 7/8"	69 7/8"
Width of Cabinet	44 1/4"	44 1/4"	44 1/4"	44 1/4"
Height	36 1/4"	36 1/4"	36 1/4"	36 1/4"
Net Weight (lb)	487	487	538	538
<b>Compressor</b>				
Number/Type	1/Scroll	1/Scroll	1/Scroll	1/Scroll
<b>Sound</b>				
Outdoor Sound Rating (dB)	81	80	82	82
<b>Air to Refrigerant Coil - Type</b>	Lanced	Lanced	Lanced	Lanced
Tube Size (in.)	0.3125	0.3125	0.3125	0.3125
Face Area (sq. ft.)	6.68	6.68	7.71	7.71
Rows/FPI	3/16	3/16	4/16	4/16
Refrigerant Control	Thermal Expansion Valve	Thermal Expansion Valve	Thermal Expansion Valve	Thermal Expansion Valve
Drain Connection Number/Size (in.)	3/4 NPT	3/4 NPT	3/4 NPT	3/4 NPT
<b>Water Connection (size inches)</b>	1"	1"	1"	1"
<b>Direct Drive Fan - Type</b>	FC Centrifugal	FC Centrifugal	FC Centrifugal	FC Centrifugal
Number Used/Diameter (in.)/Width (in.)	1/11x11	1/11x11	1/11x11	1/11x11
Drive Type/Number Speeds	Direct/5	Belt/Variable	Direct/5	Belt/Variable
Motor hp	0.75	1.0	1.0	1.0
Motor Frame Size	48	56	48	56
<b>Filters - Type Furnished</b>	Throwaway	Throwaway	Throwaway	Throwaway
Number Size Recommended	(2) 20x30x1	(2) 20x30x1	(2) 20x30x1	(2) 20x30x1

**Table 2. General data - 5 tons**

	5 Tons	
	GER060E1	GER060E3,4,W
<b>Unit Size</b>		
Length of Cabinet	88 5/8"	88 5/8"
Width of Cabinet	53 1/4"	53 1/4"
Height	40 7/8"	40 7/8"
Net Weight (lb)	678	678
<b>Compressor</b>		
Number/Type	1/Scroll	1/Scroll
<b>Sound</b>		
Outdoor Sound Rating (dB)	87	87
<b>Indoor Coil - Type</b>	Lanced	Lanced
Tube Size (in.)	0.3125	0.3125
Face Area (sq. ft.)	9.27	9.27
Rows/FPI	3/16	3/16
Refrigerant Control	Thermal Expansion Valve	Thermal Expansion Valve
Drain Connection Number/Size (in.)	1 3/4 NPT	1 3/4 NPT
<b>Water Connection (size inches)</b>	1"	1"
<b>Indoor Fan - Type (Standard)</b>	FC Centrifugal	FC Centrifugal
Number Used/Diameter (in.)/Width (in.)	1/11x11	1/11x11
Drive Type/Number Speeds	Direct/5	Belt/Variable
Motor hp	1.00	1.00
Motor Frame Size	48	56
<b>Filters - Type Furnished</b>	Throwaway	Throwaway
Number Size Recommended	(4) 16x25x2	(4) 16x25x2



## General Data

**Table 3. General data - 6-10 tons**

	<b>6 Tons</b>	<b>7½ Tons</b>	<b>10 Tons</b>
	<b>GER072E3,4,W</b>	<b>GER090E3,4,W</b>	<b>GER120E3,4,W</b>
<b>Unit Size</b>			
Length of Cabinet	88 5/8"	88 5/8"	99 3/4"
Width of Cabinet	53 1/4"	53 1/4"	63 1/4"
Height	40 7/8"	46 7/8"	50 7/8"
Net Weight (lb)	700	794	941
<b>Compressor</b>			
Number/Type	1/Scroll	1/Scroll	2/Scroll
<b>Sound</b>			
Outdoor Sound Rating (dB)	89	89	87
<b>Indoor 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.)	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>Water Connection (size inches)</b>	1"	1 1/4"	1 1/2"
<b>Indoor Fan - Type</b>	FC Centrifugal	FC Centrifugal	BC Plenum
Number Used/Diameter (in.)/Width (in.)	1/12x12	1/15 x 15	1/19.7 x 15
Drive Type/Number Speeds	Belt/Variable	Belt/Variable	Direct/Variable
Motor hp (Standard/Oversized)	1.0/2.0	1.0/2.0	3.75/—
Motor Frame Size (Standard/Oversized)	56/56	56/56	—/—
<b>Filters - Type Furnished</b>	Throwaway	Throwaway	Throwaway
Number Size Recommended	(4) 16x25x2	(4) 20x25x2	(3) 20x25x2 (2) 20x30x2

**Table 4. General data — 12½ - 20 tons**

	<b>12½ Tons</b>	<b>15 Tons</b>	<b>20 Tons</b>
	<b>Downflow &amp; Horizontal Units</b>	<b>Downflow &amp; Horizontal Units</b>	<b>Downflow &amp; Horizontal Units</b>
	<b>GER150E3,E4,EW</b>	<b>GER180E3,E4,EW</b>	<b>GER240E3,E4,EW</b>
<b>Unit Size</b>			
Length of Cabinet	122 5/16"	122 5/16"	122 5/16"
Width of Cabinet	84 3/4"	84 3/4"	84 3/4"
Height	54"	54"	64"
Net Weight (lb)	1800	1848	2008
<b>Compressor</b>			
Number/Type	2 / Scrolls	2 / Scrolls	2 / Scrolls
AHRI Sound Rating (BELS)	9.2	9.2	9.4
<b>Indoor Coil — Type</b>	Hi-Performance	Hi-Performance	Hi-Performance
Tube Size (in.) ID	0.3125	0.3125	0.3125
Face Area (sq. ft.)	26.00	26.00	31.42
Rows/FPI	3 / 15	4 / 15	4 / 15
Refrigerant Control	Expansion Valve	Expansion Valve	Expansion Valve
Drain Connection Number/Size (in.)	1/1.00 NPT	1/1.00 NPT	1/1.00 NPT
<b>Water Connection (size inches)</b>	1 1/2"	1 1/2"	2"
Indoor Fan - Type	FC Centrifugal	FC Centrifugal	FC Centrifugal

**Table 4. General data — 12½ - 20 tons (continued)**

	<b>12½ Tons Downflow &amp; Horizontal Units</b>	<b>15 Tons Downflow &amp; Horizontal Units</b>	<b>20 Tons Downflow &amp; Horizontal Units</b>
	<b>GER150E3,E4,EW</b>	<b>GER180E3,E4,EW</b>	<b>GER240E3,E4,EW</b>
Number Used/Diameter (in.)	1 / 18x18	1 / 18x18	1 / 18x18
Drive Type/No. Speeds	Belt / 1	Belt / 1	Belt / 1
Number Motors	1	1	1
Motor HP (Standard/Oversized)	3.0 / 5.0	3.0 / 5.0	5.0 / 7.5
Motor RPM (Standard/Oversized)	1740 / 3,450	1740 / 3,450	3450 / 3,470
Motor Frame Size (Standard/Oversized)	145T / 145T	145T / 145T	145T / 184T
Filters - Type Furnished	Throwaway	Throwaway	Throwaway
Number Size Recommended	(4)20x20x2 (4)20x25x2	(4)20x20x2 (4)20x25x2	(8)20x20x2 (4)20x16x2
Downflow	(8)20x25x2	(8)20x25x2	(12)20x20x2
Horizontal			

**Table 5. General data — 25 ton standard efficiency**

	<b>25 Tons Downflow &amp; Horizontal Units</b>
	<b>GER300E3,4,W,K</b>
<b>Unit Size</b>	
Length of Cabinet	121 3/4"
Width of Cabinet	84 3/4"
Height	54"
Net Weight (lb)	1906
<b>Compressor</b>	
Number/Type	2 / Scrolls
<b>Sound</b>	
Outdoor Sound Rating (BELS)	9.4
<b>Indoor Coil</b>	
Type	Hi-Performance
Tube Size (in.) ID	0.3125
Face Area (sq. ft.)	26.00
Rows/FPI	4 / 15
Refrigerant Control	Short Orifice
Drain Connection Number/Size (in.)	1/1.00 NPT
<b>Water Connection (size inches)</b>	2"
<b>Indoor Fan</b>	
Type	FC Centrifugal
Number Used/Diameter (in.)	1 / 18x18
Drive Type/No. Speeds	Belt / 1
Number Motors	1
Motor HP (Standard/Oversized)	7.5 / N/A
Motor RPM (Standard/Oversized)	3,470/N/A
Motor Frame Size (Standard/Oversized)	184T/N/A
<b>Filters</b>	
Type Furnished	Throwaway
Number Size Recommended	(4)20x20x2 (4)20x25x2
Downflow	(8)20x25x2
Horizontal	



# Performance Data

**Table 6. AHRI rating**

Unit Size	Rated Water Flow (GPM)	Rated Airflow (SCFM)	Cooling Capacity				Heating Capacity				Cooling Capacity				Heating Capacity			
			WLHP (BTUH)	EER P	WLHP (BTUH)	COP	GLHP (BTUH)	EER P	GLHP (BTUH)	COP	WLHP (BTUH)	EER P	GLHP (BTUH)	COP				
GER036	3	8.4	1140	38200	14.6	41400	4.5	43800	23.9	36100	4.2	40000	17.6	29800	3.6			
GER048	4	11.2	1520	51500	15.8	52700	4.7	58000	24.3	45500	4.3	53500	18.4	37900	3.6			
GER060	5	14.0	1900	60900	14.6	69500	4.7	69200	22.4	59200	4.2	63500	16.9	47900	3.6			
GER072	6	18.6	2280	75500	13.7	85200	4.3	83800	19.6	71100	4.0	78500	15.6	57700	3.4			
GER090	7.5	23.3	2850	86600	13.0	105400	4.4	95500	18.0	86500	4.0	90600	14.6	70200	3.5			
GER120	10	31.0	3800	133100	15.9	143200	4.9	153700	24.9	116900	4.2	140200	18.5	85800	3.3			
GER150	12.5	38.8	4750	160300	15.9	181500	5.1	178700	22.7	150800	4.5	166800	18.0	118800	3.7			
GER180	15	46.5	5700	184400	14.2	201000	4.6	204200	19.7	162900	4.0	192500	15.9	123200	3.2			
GER240	20	62.0	7600	261600	13.2	313100	4.4	290500	17.7	265900	4.0	273500	14.8	210000	3.5			
GER300	25	77.5	9500	290100	13.1			313100	16.6			299500	14.3					

## Operating Pressures in Cooling/Heating

There are many variables (airflow, air temperatures) in an air conditioning system that will affect operating refrigerant pressures and temperatures. The charts below shows approximate conditions and is based on air flow at the rated SCFM, entering air at 80.6°F(DB), 66.2°F(WB) in cooling, 68°F(DB) in heating. (+)Heating data with 35°F EWT is based on the use of an anti-freeze solution having a freezing point 20°F lower than the minimum expected entering temperature.

**Table 7. GER036 operating pressures in cooling/heating**

Model	Operating Data											
	Entering Water Temp °F	Water Flow GPM	Cooling				Heating					
			Suction Pressure PSIG	Discharge Pressure PSIG	Water Temp Rise °F	Air Temp Drop DB °F	Suction Pressure PSIG	Discharge Pressure PSIG	Water Temp Drop °F	Air Temp Rise DB °F		
GER036	35	6.7	—	—	—	—	82-94	278-353	6-8	20-29		
	35	8.4	—	—	—	—	84-97	279-356	5-6	20-30		
	45	6.7	132-152	184-234	14-18	24-30	96-111	292-372	7-9	23-33		
	45	8.4	132-152	177-225	11-14	25-30	99-114	295-375	6-7	24-33		
	55	6.7	134-154	212-270	14-17	24-29	112-129	307-391	8-11	26-36		
	55	8.4	134-154	205-260	11-14	24-29	115-133	311-396	7-9	27-37		
	68	6.7	136-156	253-322	13-17	23-29	135-155	329-419	10-12	30-41		
	68	8.4	136-156	245-312	11-14	23-29	140-161	334-424	8-10	31-41		
	75	6.7	137-158	277-353	13-17	23-28	149-171	342-435	11-14	32-43		
	75	8.4	137-157	269-342	11-13	23-28	154-177	346-441	9-11	33-44		
	86	6.7	139-160	319-405	13-17	22-28	173-199	362-461	12-15	36-47		
	86	8.4	139-160	310-394	10-13	22-28	179-206	367-468	10-12	37-48		
	95	6.7	141-162	356-452	13-16	22-27	—	—	—	—		
	95	8.4	141-162	346-441	10-13	22-27	—	—	—	—		



**Table 8. GER048 operating pressures in cooling/heating**

Operating Data										
Model	Entering Water Temp °F	Water Flow GPM	Cooling				Heating			
			Suction Pressure PSIG	Discharge Pressure PSIG	Water Temp Rise °F	Air Temp Drop DB °F	Suction Pressure PSIG	Discharge Pressure PSIG	Water Temp Drop °F	Air Temp Rise DB °F
GER048	35	9.0	—	—	—	—	82-94	267-339	6-7	18-27
	35	11.2	—	—	—	—	83-96	268-341	5-6	19-28
	45	9.0	135-155	183-233	13-17	23-29	96-111	278-354	6-8	21-30
	45	11.2	135-155	177-225	10-13	23-29	98-113	280-356	5-7	21-31
	55	9.0	136-157	212-270	13-16	23-29	112-129	291-370	7-9	23-33
	55	11.2	136-157	205-260	10-13	23-29	115-133	293-373	6-8	24-34
	68	9.0	138-159	253-323	13-16	22-28	136-157	309-393	9-11	27-37
	68	11.2	138-159	246-313	10-13	23-28	140-161	312-398	7-9	28-38
	75	9.0	140-161	278-354	13-16	22-28	150-173	320-407	10-12	29-39
	75	11.2	139-160	270-344	10-13	22-28	155-179	324-412	8-10	30-40
	86	9.0	142-163	321-408	12-16	21-27	175-202	338-430	11-14	32-43
	86	11.2	142-163	312-397	10-13	22-27	181-208	342-435	9-11	33-44
	95	9.0	144-165	359-456	12-16	21-27	—	—	—	—
	95	11.2	143-165	350-445	10-12	21-27	—	—	—	—

**Table 9. GER060 operating pressures in cooling/heating**

Operating Data										
Model	Entering Water Temp °F	Water Flow GPM	Cooling				Heating			
			Suction Pressure PSIG	Discharge Pressure PSIG	Water Temp Rise °F	Air Temp Drop DB °F	Suction Pressure PSIG	Discharge Pressure PSIG	Water Temp Drop °F	Air Temp Rise DB °F
GER060	35	11.2	—	—	—	—	86-99	277-352	6-7	18-27
	35	14.0	—	—	—	—	88-101	279-355	5-6	18-27
	45	11.2	132-152	189-241	13-16	23-28	101-116	292-372	7-8	21-30
	45	14.0	132-151	182-232	10-13	23-28	103-119	294-374	5-7	21-31
	55	11.2	134-154	217-277	13-16	22-28	117-135	308-392	8-10	24-34
	55	14.0	134-154	210-267	10-13	22-28	120-138	311-396	6-8	24-34
	68	11.2	137-157	259-330	12-16	22-27	141-162	332-423	9-12	28-38
	68	14.0	136-157	251-320	10-12	22-27	145-167	335-427	8-10	29-39
	75	11.2	138-159	284-361	12-15	21-27	155-179	347-441	10-13	30-41
	75	14.0	138-159	276-351	10-12	21-27	160-184	349-445	8-11	31-41
	86	11.2	141-162	326-415	12-15	21-26	180-207	371-472	12-15	34-45
	86	14.0	140-161	318-405	9-12	21-26	186-214	376-479	9-12	35-46
	95	11.2	143-164	364-463	12-15	20-26	—	—	—	—
	95	14.0	142-164	355-452	9-12	20-26	—	—	—	—



## Performance Data

**Table 10. GER072 operating pressures in cooling/heating**

Operating Data										
Model	Entering Water Temp °F	Water Flow GPM	Cooling				Heating			
			Suction Pressure PSIG	Discharge Pressure PSIG	Water Temp Rise °F	Air Temp Drop DB °F	Suction Pressure PSIG	Discharge Pressure PSIG	Water Temp Drop °F	Air Temp Rise DB °F
GER072	35	—	—	—	—	—	75-87	265-337	5-7	20-29
	35	—	—	—	—	—	77-89	266-339	4-5	20-29
	45	14.9	118-136	180-229	12-16	23-29	87-100	275-349	6-8	23-32
	45	18.6	118-136	174-221	10-13	23-29	89-103	276-352	5-6	23-33
	55	14.9	120-138	209-266	12-15	23-28	104-119	289-368	7-9	26-36
	55	18.6	120-138	202-257	10-12	23-28	107-123	291-370	6-7	27-37
	68	14.9	124-142	247-314	12-15	22-28	119-137	310-394	8-10	30-40
	68	18.6	123-142	239-304	10-12	23-28	123-142	312-397	7-8	30-41
	75	14.9	125-144	271-345	12-15	22-28	133-153	320-408	9-11	32-43
	75	18.6	125-143	264-336	9-12	22-28	138-159	324-412	7-9	33-43
	86	14.9	128-147	312-398	12-15	22-27	158-182	339-431	10-12	36-47
	86	18.6	128-147	304-387	9-12	22-27	163-188	342-435	8-10	37-48
	95	14.9	130-149	350-445	11-14	21-27	—	—	—	—
	95	18.6	130-149	342-435	9-12	21-27	—	—	—	—

**Table 11. GER090 operating pressures in cooling/heating**

Operating Data										
Model	Entering Water Temp °F	Water Flow GPM	Cooling				Heating			
			Suction Pressure PSIG	Discharge Pressure PSIG	Water Temp Rise °F	Air Temp Drop DB °F	Suction Pressure PSIG	Discharge Pressure PSIG	Water Temp Drop °F	Air Temp Rise DB °F
GER090	35	—	—	—	—	—	71-81	263-335	5-6	19-28
	35	—	—	—	—	—	72-83	264-336	4-5	19-28
	45	18.6	109-126	178-226	11-14	20-25	81-93	276-352	6-7	21-31
	45	23.3	109-126	172-219	9-11	20-25	83-95	278-353	5-6	22-31
	55	18.6	110-127	207-264	11-14	19-25	97-112	290-369	7-8	24-34
	55	23.3	110-127	201-255	9-11	19-25	100-114	291-371	5-7	25-35
	68	18.6	114-132	246-313	11-14	19-25	116-133	312-398	8-10	29-39
	68	23.3	113-130	239-305	9-11	19-25	119-137	315-400	6-8	29-39
	75	18.6	114-132	271-345	11-14	19-25	130-149	324-412	8-11	31-42
	75	23.3	114-131	264-337	9-11	19-25	134-154	326-415	7-9	32-42
	86	18.6	116-133	315-401	10-13	18-24	154-177	343-437	9-12	35-46
	86	23.3	115-133	308-391	8-11	18-24	158-182	347-441	8-10	36-46
	95	18.6	118-136	355-451	10-13	18-24	—	—	—	—
	95	23.3	118-135	347-441	8-10	18-24	—	—	—	—

**Table 12. GER120 operating pressures in cooling/heating**

Operating Data										
Model	Entering Water Temp °F	Water Flow GPM	Cooling				Heating			
			Suction Pressure PSIG	Discharge Pressure PSIG	Water Temp Rise °F	Air Temp Drop DB °F	Suction Pressure PSIG	Discharge Pressure PSIG	Water Temp Drop °F	Air Temp Rise DB °F
GER120	35	—	—	—	—	—	74-85	256-326	5-6	17-26
	35	—	—	—	—	—	76-87	257-327	4-5	17-26
	45	24.8	124-143	175-223	12-16	25-30	83-95	267-340	6-7	21-31
	45	31.0	124-143	168-214	10-13	25-30	85-97	269-343	5-6	22-31
	55	24.8	126-145	204-259	12-16	24-30	99-113	281-358	7-9	25-34
	55	31.0	126-144	196-250	10-12	25-30	101-117	284-361	6-7	25-35
	68	24.8	128-147	245-312	12-15	24-29	122-141	302-384	8-10	29-39
	68	31.0	128-147	238-303	10-12	24-29	126-145	304-387	7-8	30-40
	75	24.8	129-149	270-344	12-15	23-29	137-157	312-398	9-11	31-42
	75	31.0	129-148	262-334	9-12	23-29	141-162	316-402	7-9	32-43
	86	24.8	131-151	313-398	12-15	23-28	162-186	330-421	10-13	35-46
	86	31.0	131-151	305-388	9-12	23-28	167-193	333-424	8-10	36-47
	95	24.8	133-153	351-447	11-15	22-28	—	—	—	—
	95	31.0	133-153	343-436	9-12	22-28	—	—	—	—

**Table 13. GER150 operating pressures in cooling/heating**

Operating Data										
Model	Entering Water Temp °F	Water Flow GPM	Cooling				Heating			
			Suction Pressure PSIG	Discharge Pressure PSIG	Water Temp Rise °F	Air Temp Drop DB °F	Suction Pressure PSIG	Discharge Pressure PSIG	Water Temp Drop °F	Air Temp Rise DB °F
GER150	35	31.0	—	—	—	—	85-98	271-344	11-13	18-27
	35	38.8	—	—	—	—	86-100	272-346	9-11	19-28
	45	31.0	134-154	192-244	24-31	23-29	100-115	284-362	12-16	21-30
	45	38.8	134-154	185-236	19-24	23-29	102-117	285-363	10-13	21-31
	55	31.0	135-156	220-280	24-30	23-28	116-134	299-381	14-18	24-34
	55	38.8	135-156	213-271	19-24	23-28	119-137	301-383	12-15	24-34
	68	31.0	138-158	261-333	23-29	22-28	140-161	321-408	17-22	28-38
	68	38.8	137-158	254-323	18-24	22-28	144-166	323-411	14-18	28-39
	75	31.0	139-160	286-364	23-29	22-27	155-178	334-425	19-24	30-41
	75	38.8	139-160	278-354	18-23	22-27	159-183	336-428	15-19	31-41
	86	31.0	141-162	329-419	22-29	21-27	180-207	355-452	21-27	34-45
	86	38.8	141-162	321-408	18-23	21-27	185-213	359-457	17-22	34-45
	95	31.0	143-164	367-467	22-28	21-26	—	—	—	—
	95	38.8	143-164	359-456	18-22	21-26	—	—	—	—



## Performance Data

**Table 14. GER180 operating pressures in cooling/heating**

Operating Data										
Model GEH/GEV	Entering Water Temp °F	Water Flow GPM	Cooling				Heating			
			Suction Pressure PSIG	Discharge Pressure PSIG	Water Temp Rise °F	Air Temp Drop DB °F	Suction Pressure PSIG	Discharge Pressure PSIG	Water Temp Drop °F	Air Temp Rise DB °F
GER180	35	37.2	—	—	—	—	80-92	251-319	5-6	17-26
	35	46.5	—	—	—	—	82-94	251-320	4-5	17-26
	45	37.2	134-155	187-238	11-14	22-27	95-109	259-329	5-7	18-28
	45	46.5	134-154	181-231	9-11	22-27	97-111	260-331	4-6	19-28
	55	37.2	135-156	217-276	11-14	22-27	111-128	268-341	6-8	21-30
	55	46.5	135-156	210-267	9-11	22-27	113-130	270-343	5-6	21-30
	68	37.2	137-158	260-330	11-14	21-27	135-155	282-359	7-9	23-33
	68	46.5	137-157	252-321	9-11	21-27	138-159	282-359	5-7	23-33
	75	37.2	138-159	285-363	11-14	21-26	149-172	288-367	7-9	25-34
	75	46.5	138-159	278-354	9-11	21-27	153-177	289-368	6-7	25-34
	86	37.2	140-161	329-419	11-14	20-26	175-201	299-381	8-10	27-37
	86	46.5	140-161	321-409	9-11	20-26	180-207	300-381	6-8	26-36
	95	37.2	141-163	368-469	11-13	20-26	—	—	—	—
	95	46.5	141-163	360-459	8-11	20-26	—	—	—	—

**Table 15. GER240 operating pressures in cooling/heating**

Operating Data										
Model	Entering Water Temp F	Water Flow GPM	Cooling				Heating			
			Suction Pressure PSIG	Discharge Pressure PSIG	Water Temp Rise F	Air Temp Drop DB F	Suction Pressure PSIG	Discharge Pressure PSIG	Water Temp Drop F	Air Temp Rise DB F
GER240	35	—	—	—	—	—	67-77	268-341	6-7	21-31
	35	—	—	—	—	—	68-79	269-343	5-6	22-31
	45	49.6	112-129	178-227	12-16	23-28	81-93	283-361	7-9	25-35
	45	62.0	112-129	172-218	10-12	23-28	83-95	285-362	6-7	26-35
	55	49.6	112-129	207-264	12-16	22-28	96-110	299-380	8-10	29-39
	55	62.0	112-129	200-255	10-12	22-28	99-114	301-384	6-8	29-40
	68	49.6	114-131	250-318	12-15	22-28	119-137	321-409	9-12	34-44
	68	62.0	114-131	242-308	10-12	22-28	123-142	324-412	7-9	34-45
	75	49.6	115-132	275-350	12-15	22-27	133-153	334-425	10-12	36-47
	75	62.0	115-132	267-340	10-12	22-27	138-158	337-429	8-10	37-48
	86	49.6	117-134	318-405	12-15	21-27	158-181	354-451	11-14	40-52
	86	62.0	117-134	310-395	9-12	21-27	164-188	356-454	9-11	41-52
	95	49.6	119-136	357-454	12-15	21-26	—	—	—	—
	95	62.0	118-136	348-443	9-12	21-26	—	—	—	—

Table 16. GER300 operating pressures in cooling/heating

Operating Data										
Model	Entering Water Temp °F	Water Flow GPM	Cooling				Heating			
			Suction Pressure PSIG	Discharge Pressure PSIG	Water Temp Rise °F	Air Temp Drop DB °F	Suction Pressure PSIG	Discharge Pressure PSIG	Water Temp Drop °F	Air Temp Rise DB °F
GER300	35	—	—	—	—	—	—	—	—	—
	35	—	—	—	—	—	—	—	—	—
	46	62.0	115-132	182-231	11-13	19-25	—	—	—	—
	46	77.5	113-130	177-225	8-11	19-24	—	—	—	—
	55	62.0	118-136	208-265	11-14	20-26	—	—	—	—
	55	77.5	117-134	203-258	8-11	20-25	—	—	—	—
	68	62.0	123-142	248-316	11-13	20-26	—	—	—	—
	68	77.5	122-140	243-309	8-11	20-26	—	—	—	—
	75	62.0	126-145	272-346	11-13	20-26	—	—	—	—
	75	77.5	125-144	266-339	8-11	20-26	—	—	—	—
	86	62.0	131-150	312-397	10-13	20-26	—	—	—	—
	86	77.5	129-148	306-389	8-11	20-26	—	—	—	—
	95	62.0	133-154	348-442	10-13	20-26	—	—	—	—
	95	77.5	133-153	341-435	8-10	20-26	—	—	—	—

**GER036 Cooling Performance**

Table 17. GER036 cooling performance

EWT	GPM	Gross Mbtuh	Sen Mbtuh	SHR	Comp Pwr kW	Reject Mbtuh	LWT	Feet Head
45	5.5	46.9	32.8	0.70	1.58	52.3	64.0	2.7
	6.7	47.3	33.1	0.70	1.51	52.5	60.7	3.8
	7.6	47.6	33.3	0.70	1.48	52.7	58.9	4.8
	8.4	47.8	33.4	0.70	1.45	52.7	57.6	5.7
	8.8	47.8	33.4	0.70	1.44	52.7	57.0	6.2
	9.2	47.9	33.5	0.70	1.43	52.8	56.5	6.7
	10.1	48.0	33.5	0.70	1.41	52.8	55.5	7.9
55	5.5	45.5	32.3	0.71	1.81	51.7	73.8	2.6
	6.7	45.9	32.5	0.71	1.74	51.8	70.5	3.7
	7.6	46.3	32.8	0.71	1.71	52.1	68.7	4.6
	8.4	46.4	32.8	0.71	1.68	52.1	67.4	5.5
	8.8	46.3	32.8	0.71	1.67	52.0	66.8	6.0
	9.2	46.4	32.9	0.71	1.66	52.1	66.3	6.5
	10.1	46.6	33.0	0.71	1.64	52.2	65.3	7.6
68	5.5	43.5	31.5	0.72	2.13	50.7	86.5	2.5
	6.7	43.9	31.8	0.72	2.06	50.9	83.2	3.5
	7.6	44.1	32.0	0.72	2.02	51.0	81.4	4.4
	8.4	44.3	32.1	0.72	2.00	51.1	80.2	5.2
	8.8	44.4	32.1	0.72	1.99	51.1	79.6	5.7
	9.2	44.4	32.2	0.72	1.98	51.2	79.1	6.2
	10.1	44.6	32.2	0.72	1.96	51.2	78.1	7.3



## Performance Data

**Table 17. GER036 cooling performance (continued)**

EWT	GPM	Gross Mbtuh	Sen Mbtuh	SHR	Comp Pwr kW	Reject Mbtuh	LWT	Feet Head
75	5.5	42.3	31.0	0.73	2.32	50.2	93.3	2.4
	6.7	42.7	31.3	0.73	2.24	50.4	90.0	3.4
	7.6	42.9	31.5	0.73	2.21	50.5	88.3	4.3
	8.4	43.1	31.6	0.73	2.18	50.5	87.0	5.1
	8.8	43.2	31.7	0.73	2.17	50.6	86.5	5.6
	9.2	43.2	31.7	0.73	2.16	50.6	86.0	6.0
	10.1	43.4	31.8	0.73	2.14	50.6	85.0	7.1
86	5.5	40.3	30.2	0.75	2.64	49.3	103.9	2.3
	6.7	40.7	30.6	0.75	2.56	49.4	100.8	3.3
	7.6	40.9	30.7	0.75	2.52	49.5	99.0	4.1
	8.4	41.1	30.9	0.75	2.50	49.6	97.8	4.9
	8.8	41.1	30.9	0.75	2.48	49.6	97.3	5.4
	9.2	41.2	30.9	0.75	2.47	49.6	96.8	5.8
	10.1	41.3	31.0	0.75	2.45	49.7	95.8	6.9
95	5.5	38.5	29.6	0.77	2.94	48.5	112.6	2.3
	6.7	38.9	29.9	0.77	2.86	48.6	109.5	3.2
	7.6	39.1	30.1	0.77	2.82	48.7	107.8	4.0
	8.4	39.3	30.2	0.77	2.79	48.8	106.6	4.8
	8.8	39.3	30.2	0.77	2.78	48.8	106.1	5.2
	9.2	39.4	30.3	0.77	2.76	48.8	105.6	5.7
	10.1	39.5	30.4	0.77	2.74	48.9	104.7	6.7
105	5.5	36.3	28.8	0.79	3.30	47.6	122.3	2.2
	6.7	36.7	29.1	0.79	3.22	47.7	119.2	3.1
	7.6	37.0	29.3	0.79	3.18	47.9	117.6	3.9
	8.4	37.1	29.4	0.79	3.14	47.8	116.4	4.7
	8.8	37.2	29.5	0.79	3.13	47.8	115.9	5.1
	9.2	37.2	29.5	0.79	3.12	47.8	115.4	5.5
	10.1	37.4	29.6	0.79	3.09	47.9	114.5	6.5
115	5.5	34.0	27.9	0.82	3.71	46.6	131.9	2.2
	6.7	34.4	28.2	0.82	3.62	46.7	128.9	3.1
	7.6	34.6	28.4	0.82	3.57	46.8	127.3	3.8
	8.4	34.7	28.5	0.82	3.54	46.8	126.1	4.6
	8.8	34.8	28.6	0.82	3.52	46.8	125.6	5.0
	9.2	34.9	28.6	0.82	3.51	46.8	125.2	5.4
	10.1	35.0	28.7	0.82	3.49	46.9	124.3	6.3
120	5.5	32.7	27.5	0.84	3.93	46.1	136.8	2.1
	6.7	33.1	27.8	0.84	3.84	46.2	133.8	3.0
	7.6	33.3	28.0	0.84	3.79	46.3	132.2	3.8
	8.4	33.5	28.1	0.84	3.76	46.3	131.0	4.5
	8.8	33.6	28.2	0.84	3.75	46.3	130.5	4.9
	9.2	33.6	28.2	0.84	3.73	46.4	130.1	5.3
	10.1	33.7	28.3	0.84	3.70	46.3	129.2	6.2

**Note:** Cooling performance data is tabulated at 80.6°F DB / 66.2°F WB at the rated CFM. For conditions other than what is tabulated, multipliers must be used to correct performance. See [Table 19, p. 24](#) for Fan Correction Factors for CFM other than rated and the Cooling Correction Factors for variations in entering air temperatures. Rated GPM 8.4; Minimum CFM 960; Rated CFM 1140; Maximum CFM 1440.

**GER036 Heating Performance**
**Table 18. GER036 heating performance**

<b>EWT</b>	<b>GPM</b>	<b>Gross Mbtuh</b>	<b>Absorb Mbtuh</b>	<b>Comp Pwr kW</b>	<b>LWT</b>	<b>Feet Head</b>
25	5.5	26.1	18.0	2.36	18.4	4.2
	6.7	26.7	18.6	2.37	19.5	5.9
	7.6	27.0	18.9	2.38	20.0	7.3
	8.4	27.2	19.1	2.38	20.5	8.7
	8.8	27.4	19.2	2.38	20.6	9.4
	9.2	27.4	19.2	2.39	20.8	10.2
	10.1	27.6	19.4	2.39	21.2	12.0
32	5.5	28.9	20.7	2.40	24.5	4.0
	6.7	29.6	21.4	2.41	25.6	5.7
	7.6	30.0	21.7	2.42	26.3	7.1
	8.4	30.2	21.9	2.42	26.8	8.4
	8.8	30.4	22.1	2.42	27.0	9.1
	9.2	30.4	22.1	2.42	27.2	9.9
	10.1	30.7	22.4	2.43	27.6	11.6
45	5.5	34.9	26.5	2.48	35.4	3.3
	6.7	35.8	27.3	2.50	36.9	4.6
	7.6	36.2	27.6	2.50	37.7	5.7
	8.4	36.5	28.0	2.51	38.3	6.8
	8.8	36.6	28.0	2.51	38.6	7.3
	9.2	36.8	28.2	2.51	38.9	7.9
	10.1	37.0	28.5	2.51	39.4	9.3
55	5.5	39.3	30.7	2.54	43.8	3.1
	6.7	40.2	31.5	2.55	45.6	4.4
	7.6	40.8	32.1	2.56	46.6	5.5
	8.4	41.2	32.5	2.57	47.3	6.5
	8.8	41.4	32.6	2.57	47.6	7.1
	9.2	41.5	32.7	2.58	47.9	7.6
	10.1	41.9	33.1	2.58	48.5	9.0
68	5.5	45.5	36.5	2.64	54.7	3.0
	6.7	46.4	37.3	2.65	56.9	4.2
	7.6	47.0	37.9	2.66	58.0	5.2
	8.4	47.5	38.4	2.67	58.9	6.2
	8.8	47.7	38.6	2.67	59.2	6.7
	9.2	47.8	38.7	2.67	59.6	7.3
	10.1	48.2	39.1	2.68	60.3	8.6
75	5.5	48.5	39.3	2.68	60.7	2.9
	6.7	49.7	40.5	2.70	62.9	4.1
	7.6	50.4	41.2	2.71	64.2	5.1
	8.4	50.9	41.6	2.72	65.1	6.1
	8.8	51.1	41.8	2.73	65.5	6.6
	9.2	51.3	42.0	2.73	65.9	7.1
	10.1	51.7	42.4	2.74	66.6	8.4



## Performance Data

**Table 18. GER036 heating performance (continued)**

EWT	GPM	Gross Mbtuh	Absorb Mbtuh	Comp Pwr kW	LWT	Feet Head
86	5.5	53.6	44.2	2.77	69.9	2.8
	6.7	55.0	45.5	2.79	72.4	4.0
	7.6	55.7	46.2	2.80	73.8	4.9
	8.4	56.3	46.7	2.81	74.9	5.9
	8.8	56.7	47.0	2.82	75.3	6.4
	9.2	57.0	47.3	2.82	75.7	6.9
	10.1	57.2	47.6	2.82	76.6	8.1

**Note:** Heating performance data is tabulated at 68.0°F DB at the rated CFM. For conditions other than what is tabulated, multipliers must be used to correct performance. See Table 19, p. 24 for Fan Correction Factors for CFM other than rated and the Heating Correction Factors for variations in entering air temperatures. Rated GPM 8.4; Minimum CFM 960; Rated CFM 1140; Maximum CFM 1440.

**Table 19. GER036 fan correction factors**

Entering CFM	Cooling Capacity	Sensible Capacity	Cooling Input Watts	Heating Capacity	Heating Input Watts
960	0.966	0.910	1.002	0.980	1.072
993	0.973	0.924	1.002	0.985	1.057
1026	0.979	0.941	1.001	0.989	1.044
1080	0.990	0.969	1.001	0.998	1.025
1140	1.000	1.000	1.000	1.000	1.000
1200	1.009	1.031	0.999	1.005	0.982
1320	1.024	1.091	0.997	1.014	0.951
1440	1.038	1.153	0.996	1.023	0.926

## GER048 Cooling Performance

**Table 20. GER048 cooling performance**

EWT	GPM	Gross Mbtuh	Sen Mbtuh	SHR	Comp Pwr kW	Reject Mbtuh	LWT	Feet Head
45	7.3	60.4	43.0	0.71	1.86	66.7	63.3	1.5
	9.0	60.7	43.2	0.71	1.77	66.7	59.8	2.1
	10.1	60.8	43.3	0.71	1.73	66.7	58.2	2.6
	11.2	60.9	43.4	0.71	1.69	66.7	56.9	3.1
	11.8	61.0	43.4	0.71	1.68	66.7	56.3	3.4
	12.3	61.0	43.4	0.71	1.67	66.7	55.9	3.7
	13.4	61.1	43.5	0.71	1.64	66.8	55.0	4.3
55	7.3	58.7	42.3	0.72	2.16	66.1	73.1	1.4
	9.0	59.1	42.5	0.72	2.07	66.1	69.7	2.0
	10.1	59.2	42.7	0.72	2.03	66.1	68.1	2.5
	11.2	59.4	42.8	0.72	1.99	66.2	66.8	3.0
	11.8	59.4	42.8	0.72	1.98	66.2	66.2	3.3
	12.3	59.5	42.8	0.72	1.97	66.2	65.8	3.6
	13.4	59.6	42.9	0.72	1.95	66.2	64.9	4.1



**Table 20. GER048 cooling performance (continued)**

<b>EWT</b>	<b>GPM</b>	<b>Gross Mbtuh</b>	<b>Sen Mbtuh</b>	<b>SHR</b>	<b>Comp Pwr kW</b>	<b>Reject Mbtuh</b>	<b>LWT</b>	<b>Feet Head</b>
68	7.3	56.3	41.4	0.74	2.56	65.0	85.8	1.3
	9.0	56.6	41.7	0.74	2.47	65.1	82.5	2.0
	10.1	56.8	41.8	0.74	2.43	65.1	80.9	2.4
	11.2	57.0	41.9	0.74	2.40	65.1	79.6	2.9
	11.8	57.0	41.9	0.74	2.38	65.2	79.0	3.2
	12.3	57.1	42.0	0.74	2.37	65.2	78.6	3.4
	13.4	57.1	42.0	0.74	2.35	65.1	77.7	4.0
75	7.3	54.9	40.9	0.75	2.79	64.4	92.6	1.3
	9.0	55.2	41.1	0.75	2.70	64.4	89.3	1.9
	10.1	55.4	41.3	0.75	2.66	64.4	87.8	2.3
	11.2	55.5	41.4	0.75	2.62	64.5	86.5	2.8
	11.8	55.6	41.4	0.75	2.61	64.5	85.9	3.1
	12.3	55.6	41.4	0.75	2.60	64.5	85.5	3.3
	13.4	55.7	41.5	0.75	2.57	64.5	84.6	3.9
86	7.3	52.4	40.0	0.76	3.19	63.3	103.3	1.3
	9.0	52.7	40.2	0.76	3.09	63.3	100.1	1.8
	10.1	52.9	40.4	0.76	3.04	63.3	98.5	2.3
	11.2	53.0	40.5	0.76	3.01	63.3	97.3	2.7
	11.8	53.1	40.5	0.76	2.99	63.3	96.7	3.0
	12.3	53.1	40.5	0.76	2.98	63.3	96.3	3.2
	13.4	53.2	40.6	0.76	2.96	63.3	95.4	3.7
95	7.3	50.2	39.2	0.78	3.56	62.4	112.1	1.2
	9.0	50.6	39.5	0.78	3.46	62.4	108.9	1.8
	10.1	50.6	39.5	0.78	3.40	62.3	107.3	2.2
	11.2	50.8	39.7	0.78	3.37	62.3	106.1	2.6
	11.8	50.9	39.7	0.78	3.36	62.3	105.6	2.9
	12.3	50.9	39.8	0.78	3.34	62.3	105.1	3.1
	13.4	51.0	39.8	0.78	3.32	62.4	104.3	3.6
105	7.3	47.6	38.3	0.80	4.02	61.3	121.8	1.2
	9.0	47.9	38.5	0.80	3.90	61.2	118.6	1.7
	10.1	48.1	38.7	0.80	3.85	61.2	117.1	2.1
	11.2	48.2	38.8	0.80	3.81	61.2	115.9	2.6
	11.8	48.3	38.8	0.80	3.80	61.2	115.4	2.8
	12.3	48.3	38.9	0.80	3.78	61.2	115.0	3.0
	13.4	48.4	38.9	0.80	3.75	61.2	114.1	3.5
115	7.3	44.8	37.3	0.83	4.54	60.2	131.5	1.2
	9.0	45.1	37.6	0.83	4.42	60.1	128.4	1.7
	10.1	45.2	37.7	0.83	4.36	60.1	126.9	2.1
	11.2	45.3	37.8	0.83	4.32	60.1	125.7	2.5
	11.8	45.4	37.9	0.83	4.31	60.1	125.2	2.7
	12.3	45.4	37.9	0.83	4.29	60.1	124.8	3.0
	13.4	45.5	38.0	0.83	4.25	60.0	124.0	3.4



## Performance Data

**Table 20. GER048 cooling performance (continued)**

<b>EWT</b>	<b>GPM</b>	<b>Gross Mbtuh</b>	<b>Sen Mbtuh</b>	<b>SHR</b>	<b>Comp Pwr kW</b>	<b>Reject Mbtuh</b>	<b>LWT</b>	<b>Feet Head</b>
120	7.3	43.2	36.8	0.85	4.82	59.6	136.3	1.2
	9.0	43.5	37.1	0.85	4.70	59.6	133.2	1.7
	10.1	43.7	37.3	0.85	4.64	59.5	131.8	2.1
	11.2	43.8	37.3	0.85	4.60	59.5	130.6	2.5
	11.8	43.9	37.4	0.85	4.58	59.5	130.1	2.7
	12.3	43.9	37.4	0.85	4.56	59.5	129.7	2.9
	13.4	44.0	37.5	0.85	4.53	59.4	128.9	3.4

**Note:** Cooling performance data is tabulated at 80.6°F DB / 66.2°F WB at the rated CFM. For conditions other than what is tabulated, multipliers must be used to correct performance. See Table 22, p. 27 for Fan Correction Factors for CFM other than rated and the Cooling Correction Factors for variations in entering air temperatures. Rated GPM 11.2; Minimum CFM 1280; Rated CFM 1520; Maximum CFM 1920.

## GER048 Heating Performance

**Table 21. GER048 heating performance**

<b>EWT</b>	<b>GPM</b>	<b>Gross Mbtuh</b>	<b>Absorb Mbtuh</b>	<b>Comp Pwr kW</b>	<b>LWT</b>	<b>Feet Head</b>
25	7.3	32.1	22.8	2.72	18.8	4.7
	9.0	32.8	23.4	2.73	19.8	6.8
	10.1	33.1	23.8	2.74	20.3	8.3
	11.2	33.4	24.0	2.74	20.7	10.0
	11.8	33.5	24.1	2.74	20.9	10.9
	12.3	33.6	24.2	2.74	21.1	11.7
	13.4	33.8	24.4	2.75	21.4	13.6
32	7.3	35.1	25.7	2.75	25.0	4.6
	9.0	35.9	26.5	2.76	26.1	6.6
	10.1	36.3	26.9	2.76	26.7	8.1
	11.2	36.6	27.2	2.77	27.1	9.7
	11.8	36.7	27.3	2.77	27.4	10.6
	12.3	36.9	27.4	2.77	27.5	11.4
	13.4	37.1	27.6	2.77	27.9	13.2
45	7.3	41.9	32.2	2.83	36.2	3.7
	9.0	42.8	33.1	2.84	37.6	5.3
	10.1	43.2	33.5	2.84	38.4	6.5
	11.2	43.5	33.8	2.84	39.0	7.8
	11.8	43.7	34.0	2.85	39.2	8.5
	12.3	43.8	34.1	2.85	39.5	9.2
	13.4	44.3	34.5	2.86	39.8	10.6
55	7.3	47.0	37.1	2.88	44.8	3.6
	9.0	47.8	38.0	2.90	46.6	5.1
	10.1	48.4	38.4	2.91	47.4	6.3
	11.2	48.8	38.9	2.91	48.1	7.5
	11.8	49.2	39.2	2.92	48.3	8.2
	12.3	49.4	39.4	2.92	48.6	8.8
	13.4	49.7	39.7	2.93	49.1	10.2

**Table 21. GER048 heating performance (continued)**

<b>EWT</b>	<b>GPM</b>	<b>Gross Mbtuh</b>	<b>Absorb Mbtuh</b>	<b>Comp Pwr kW</b>	<b>LWT</b>	<b>Feet Head</b>
68	7.3	53.6	43.4	2.98	56.1	3.4
	9.0	54.8	44.6	3.00	58.1	4.9
	10.1	55.6	45.3	3.01	59.0	6.0
	11.2	56.2	45.9	3.02	59.8	7.1
	11.8	56.5	46.1	3.03	60.2	7.8
	12.3	56.7	46.3	3.03	60.5	8.4
	13.4	57.0	46.6	3.04	61.0	9.7
75	7.3	57.4	47.0	3.04	62.1	3.3
	9.0	59.1	48.6	3.07	64.2	4.8
	10.1	59.8	49.2	3.08	65.2	5.8
	11.2	60.4	49.8	3.09	66.1	7.0
	11.8	60.6	50.0	3.10	66.5	7.6
	12.3	60.8	50.3	3.10	66.8	8.2
	13.4	61.3	50.6	3.11	67.4	9.5
86	7.3	63.8	53.0	3.16	71.5	3.2
	9.0	65.3	54.5	3.18	73.9	4.6
	10.1	66.2	55.3	3.19	75.1	5.6
	11.2	66.8	55.9	3.21	76.0	6.7
	11.8	67.1	56.2	3.21	76.5	7.4
	12.3	67.4	56.4	3.22	76.8	7.9
	13.4	67.8	56.8	3.22	77.5	9.2

**Note:** Heating performance data is tabulated at 68.0°F DB at the rated CFM. For conditions other than what is tabulated, multipliers must be used to correct performance. See [Table 22, p. 27](#) for Fan Correction Factors for CFM other than rated and the Heating Correction Factors for variations in entering air temperatures. Rated GPM 11.2; Minimum CFM 1280; Rated CFM 1520; Maximum CFM 1920.

**Table 22. GER048 fan correction factors**

<b>Entering CFM</b>	<b>Cooling Capacity</b>	<b>Sensible Capacity</b>	<b>Cooling Input Watts</b>	<b>Heating Capacity</b>	<b>Heating Input Watts</b>
1280	0.966	0.902	1.002	0.977	1.058
1324	0.973	0.922	1.002	0.982	1.046
1368	0.980	0.941	1.001	0.986	1.034
1440	0.990	0.968	1.001	0.992	1.017
1520	1.000	1.000	1.000	1.000	1.000
1600	1.009	1.030	0.999	1.005	0.984
1760	1.027	1.095	0.999	1.022	0.960
1920	1.041	1.160	0.998	1.026	0.937



## Performance Data

### GER060 Cooling Performance

Table 23. GER060 cooling performance

EWT	GPM	Gross Mbtuh	Sen Mbtuh	SHR	Comp Pwr kW	Reject Mbtuh	LWT	Feet Head
45	9.1	72.6	51.6	0.71	2.29	80.4	62.7	6.0
	11.2	73.1	52.0	0.71	2.18	80.5	59.4	8.7
	12.6	73.3	52.1	0.71	2.12	80.5	57.8	10.8
	14.0	73.5	52.3	0.71	2.08	80.6	56.5	13.0
	14.7	73.5	52.3	0.71	2.06	80.6	56.0	14.2
	15.4	73.6	52.4	0.71	2.04	80.6	55.5	15.4
	16.8	73.7	52.4	0.71	2.01	80.6	54.6	17.9
55	9.1	70.3	51.0	0.73	2.70	79.5	72.5	5.8
	11.2	70.8	51.3	0.73	2.59	79.6	69.2	8.4
	12.6	71.0	51.5	0.73	2.53	79.6	67.6	10.4
	14.0	71.2	51.6	0.73	2.49	79.7	66.4	12.5
	14.7	71.3	51.7	0.73	2.47	79.7	65.8	13.6
	15.4	71.3	51.7	0.73	2.46	79.7	65.4	14.8
	16.8	71.5	51.8	0.73	2.43	79.8	64.5	17.3
68	9.1	66.8	49.8	0.75	3.23	77.8	85.1	5.6
	11.2	67.3	50.2	0.75	3.12	77.9	81.9	8.0
	12.6	67.5	50.4	0.75	3.07	78.0	80.4	9.9
	14.0	67.7	50.5	0.75	3.02	78.0	79.1	11.9
	14.7	67.8	50.6	0.75	3.01	78.1	78.6	13.0
	15.4	67.9	50.6	0.75	2.99	78.1	78.1	14.1
	16.8	68.0	50.7	0.75	2.96	78.1	77.3	16.5
75	9.1	64.7	49.1	0.76	3.53	76.8	91.9	5.4
	11.2	65.3	49.5	0.76	3.42	76.9	88.7	7.9
	12.6	65.5	49.7	0.76	3.37	77.0	87.2	9.7
	14.0	65.7	49.8	0.76	3.32	77.0	86.0	11.7
	14.7	65.8	49.9	0.76	3.31	77.0	85.5	12.7
	15.4	65.8	50.0	0.76	3.29	77.1	85.0	13.8
	16.8	66.0	50.0	0.76	3.26	77.1	84.2	16.1
86	9.1	61.3	47.9	0.78	4.04	75.1	102.5	5.3
	11.2	61.8	48.3	0.78	3.93	75.2	99.4	7.6
	12.6	62.0	48.5	0.78	3.87	75.2	97.9	9.4
	14.0	62.2	48.7	0.78	3.83	75.3	96.8	11.3
	14.7	62.3	48.7	0.78	3.81	75.3	96.2	12.3
	15.4	62.4	48.8	0.78	3.79	75.3	95.8	13.3
	16.8	62.5	48.9	0.78	3.76	75.3	95.0	15.5
95	9.1	58.2	46.9	0.81	4.51	73.6	111.2	5.1
	11.2	58.7	47.3	0.81	4.39	73.7	108.2	7.4
	12.6	58.9	47.4	0.81	4.33	73.7	106.7	9.1
	14.0	59.1	47.6	0.81	4.29	73.8	105.5	11.0
	14.7	59.2	47.7	0.81	4.27	73.8	105.0	12.0
	15.4	59.3	47.7	0.81	4.25	73.8	104.6	13.0
	16.8	59.4	47.8	0.81	4.22	73.8	103.8	15.1

**Table 23. GER060 cooling performance (continued)**

EWT	GPM	Gross Mbtuh	Sen Mbtuh	SHR	Comp Pwr kW	Reject Mbtuh	LWT	Feet Head
105	9.1	54.6	45.7	0.84	5.06	71.9	120.8	5.0
	11.2	55.1	46.1	0.84	4.94	71.9	117.8	7.2
	12.6	55.3	46.3	0.84	4.88	71.9	116.4	8.9
	14.0	55.5	46.5	0.84	4.83	72.0	115.3	10.7
	14.7	55.6	46.5	0.84	4.81	72.0	114.8	11.6
	15.4	55.6	46.6	0.84	4.79	72.0	114.3	12.6
	16.8	55.7	46.7	0.84	4.76	72.0	113.6	14.7
115	9.1	50.8	44.6	0.88	5.68	70.1	130.4	4.9
	11.2	51.2	45.0	0.88	5.55	70.2	127.5	7.0
	12.6	51.5	45.3	0.88	5.49	70.2	126.1	8.6
	14.0	51.6	45.4	0.88	5.44	70.2	125.0	10.4
	14.7	51.7	45.5	0.88	5.42	70.2	124.6	11.3
	15.4	51.8	45.5	0.88	5.40	70.2	124.1	12.3
	16.8	51.9	45.6	0.88	5.37	70.2	123.4	14.3
120	9.1	48.7	44.1	0.91	6.01	69.2	135.2	4.8
	11.2	49.2	44.5	0.91	5.88	69.2	132.4	6.9
	12.6	49.4	44.7	0.91	5.82	69.3	131.0	8.5
	14.0	49.6	44.9	0.91	5.77	69.3	129.9	10.3
	14.7	49.6	44.9	0.91	5.75	69.2	129.4	11.2
	15.4	49.7	45.0	0.91	5.73	69.3	129.0	12.1
	16.8	49.8	45.1	0.91	5.70	69.3	128.2	14.2

**Note:** Cooling performance data is tabulated at 80.6°F DB / 66.2°F WB at the rated CFM. For conditions other than what is tabulated, multipliers must be used to correct performance. See Table 25, p. 31 for Fan Correction Factors for CFM other than rated and the Cooling Correction Factors for variations in entering air temperatures. Rated GPM 14.0; Minimum CFM 1600; Rated CFM 1900; Maximum CFM 2400.

## GER060 Heating Performance

**Table 24. GER060 heating performance**

EWT	GPM	Gross Mbtuh	Absorb Mbtuh	Comp Pwr kW	LWT	Feet Head
25	9.1	39.8	28.2	3.39	18.8	8.7
	11.2	40.3	28.7	3.39	19.9	12.5
	12.6	40.8	29.2	3.40	20.4	15.3
	14.0	41.3	29.6	3.41	20.8	18.4
	14.7	41.3	29.7	3.41	21.0	20.1
	15.4	41.5	29.9	3.41	21.1	21.8
	16.8	41.5	29.9	3.41	21.4	25.3
32	9.1	44.1	32.3	3.45	24.9	8.5
	11.2	45.1	33.3	3.46	26.1	12.1
	12.6	45.4	33.6	3.46	26.7	14.9
	14.0	45.7	33.9	3.47	27.2	17.9
	14.7	46.0	34.1	3.47	27.4	19.5
	15.4	46.0	34.2	3.48	27.6	21.1
	16.8	46.3	34.4	3.47	27.9	24.6



## Performance Data

**Table 24. GER060 heating performance (continued)**

EWT	GPM	Gross Mbtuh	Absorb Mbtuh	Comp Pwr kW	LWT	Feet Head
45	9.1	53.6	41.3	3.61	35.9	6.8
	11.2	54.6	42.3	3.62	37.5	9.8
	12.6	55.1	42.7	3.63	38.2	12.0
	14.0	55.6	43.2	3.63	38.8	14.4
	14.7	55.8	43.3	3.64	39.1	15.7
	15.4	55.9	43.5	3.64	39.3	17.0
	16.8	56.2	43.8	3.64	39.8	19.8
55	9.1	61.0	48.2	3.75	44.4	6.6
	11.2	62.1	49.3	3.76	46.2	9.4
	12.6	62.9	50.0	3.78	47.1	11.5
	14.0	63.5	50.5	3.79	47.8	13.8
	14.7	63.7	50.7	3.79	48.1	15.1
	15.4	63.8	50.9	3.80	48.4	16.3
	16.8	63.9	50.9	3.79	48.9	19.0
68	9.1	70.9	57.4	3.96	55.4	6.3
	11.2	72.4	58.8	3.99	57.5	9.0
	12.6	73.2	59.6	4.00	58.5	11.0
	14.0	73.9	60.2	4.02	59.4	13.2
	14.7	74.1	60.4	4.02	59.8	14.4
	15.4	74.4	60.6	4.03	60.1	15.6
	16.8	74.7	61.0	4.03	60.7	18.1
75	9.1	76.5	62.5	4.09	61.3	6.1
	11.2	78.4	64.3	4.14	63.5	8.8
	12.6	79.3	65.1	4.15	64.7	10.7
	14.0	79.9	65.7	4.17	65.6	12.9
	14.7	80.2	66.0	4.16	66.0	14.0
	15.4	80.5	66.3	4.17	66.4	15.2
	16.8	80.9	66.7	4.18	67.1	17.7
86	9.1	86.2	71.4	4.33	70.3	5.9
	11.2	88.4	73.4	4.39	72.9	8.5
	12.6	89.5	74.4	4.42	74.2	10.4
	14.0	90.4	75.2	4.44	75.3	12.5
	14.7	90.7	75.5	4.45	75.7	13.5
	15.4	91.0	75.8	4.46	76.2	14.7
	16.8	91.6	76.3	4.47	76.9	17.1

**Note:** Heating performance data is tabulated at 68.0°F DB at the rated CFM. For conditions other than what is tabulated, multipliers must be used to correct performance. See [Table 25, p. 31](#) for Fan Correction Factors for CFM other than rated and the Heating Correction Factors for variations in entering air temperatures. Rated GPM 14.0; Minimum CFM 1600; Rated CFM 1900; Maximum CFM 2400.

**Table 25. GER060 fan correction factors**

Entering CFM	Cooling Capacity	Sensible Capacity	Cooling Input Watts	Heating Capacity	Heating Input Watts
1600	0.966	0.901	1.000	0.981	1.064
1655	0.973	0.919	1.000	0.986	1.052
1710	0.979	0.937	1.000	0.989	1.040
1800	0.989	0.966	1.000	0.994	1.018
1900	1.000	1.000	1.000	1.000	1.000
2000	1.009	1.032	1.000	1.004	0.982
2200	1.026	1.099	0.999	1.014	0.956
2400	1.043	1.169	1.000	1.022	0.933

**GER072 Cooling Performance**
**Table 26. GER072 cooling performance**

EWT	GPM	Gross Mbtuh	Sen Mbtuh	SHR	Comp Pwr kW	Reject Mbtuh	LWT	Feet Head
45	12.1	91.9	63.5	0.69	3.49	103.9	62.2	6.9
	14.9	92.4	63.8	0.69	3.38	103.9	59.0	9.9
	16.7	92.5	63.9	0.69	3.33	103.9	57.4	12.2
	18.6	92.7	64.0	0.69	3.29	103.9	56.2	14.6
	19.5	92.8	64.1	0.69	3.27	103.9	55.6	15.9
	20.5	92.8	64.1	0.69	3.26	103.9	55.2	17.3
	22.3	92.9	64.2	0.69	3.23	103.9	54.3	20.1
55	12.1	88.9	62.2	0.70	3.90	102.2	71.9	6.6
	14.9	89.2	62.5	0.70	3.79	102.1	68.7	9.5
	16.7	89.4	62.6	0.70	3.73	102.1	67.2	11.7
	18.6	89.5	62.7	0.70	3.69	102.1	66.0	14.1
	19.5	89.5	62.7	0.70	3.67	102.1	65.5	15.3
	20.5	89.6	62.7	0.70	3.65	102.0	65.0	16.6
	22.3	89.7	62.8	0.70	3.63	102.0	64.1	19.4
68	12.1	85.3	61.9	0.73	4.44	100.5	84.6	6.2
	14.9	85.7	62.2	0.73	4.31	100.4	81.5	9.0
	16.7	85.9	62.3	0.73	4.26	100.4	80.0	11.0
	18.6	86.0	62.4	0.73	4.21	100.4	78.8	13.3
	19.5	86.1	62.5	0.73	4.19	100.4	78.3	14.5
	20.5	86.1	62.5	0.73	4.17	100.4	77.8	15.7
	22.3	86.3	62.6	0.73	4.14	100.4	77.0	18.3
75	12.1	83.0	61.0	0.74	4.79	99.4	91.4	6.1
	14.9	83.4	61.3	0.74	4.66	99.3	88.4	8.8
	16.7	83.6	61.5	0.74	4.60	99.3	86.9	10.8
	18.6	83.7	61.6	0.74	4.55	99.3	85.7	13.0
	19.5	83.8	61.6	0.74	4.53	99.2	85.2	14.1
	20.5	83.8	61.6	0.74	4.51	99.2	84.7	15.3
	22.3	83.9	61.7	0.74	4.48	99.2	83.9	17.9



## Performance Data

**Table 26. GER072 cooling performance (continued)**

<b>EWT</b>	<b>GPM</b>	<b>Gross Mbtuh</b>	<b>Sen Mbtuh</b>	<b>SHR</b>	<b>Comp Pwr kW</b>	<b>Reject Mbtuh</b>	<b>LWT</b>	<b>Feet Head</b>
86	12.1	78.9	60.1	0.76	5.41	97.4	102.1	5.9
	14.9	79.3	60.4	0.76	5.27	97.3	99.1	8.5
	16.7	79.5	60.6	0.76	5.21	97.3	97.6	10.4
	18.6	79.7	60.7	0.76	5.15	97.3	96.5	12.5
	19.5	79.8	60.7	0.76	5.13	97.3	96.0	13.6
	20.5	79.8	60.8	0.76	5.11	97.2	95.5	14.8
	22.3	79.9	60.8	0.76	5.08	97.2	94.7	17.2
95	12.1	75.4	58.9	0.78	5.96	95.8	110.8	5.4
	14.9	75.8	59.2	0.78	5.82	95.7	107.9	7.8
	16.7	76.0	59.3	0.78	5.75	95.7	106.4	9.6
	18.6	76.1	59.3	0.78	5.70	95.5	105.3	11.6
	19.5	76.1	59.4	0.78	5.68	95.5	104.8	12.6
	20.5	76.2	59.5	0.78	5.66	95.5	104.3	13.7
	22.3	76.3	59.5	0.78	5.62	95.5	103.6	16.0
105	12.1	71.5	57.5	0.80	6.62	94.1	120.6	5.3
	14.9	71.9	57.8	0.80	6.47	94.0	117.6	7.6
	16.7	72.1	58.0	0.80	6.40	94.0	116.2	9.3
	18.6	72.3	58.1	0.80	6.35	93.9	115.1	11.2
	19.5	72.3	58.1	0.80	6.32	93.9	114.6	12.3
	20.5	72.4	58.2	0.80	6.30	93.9	114.2	13.3
	22.3	72.5	58.3	0.80	6.26	93.9	113.4	15.5
115	12.1	67.1	56.0	0.83	7.34	92.2	130.2	5.1
	14.9	67.6	56.4	0.83	7.19	92.1	127.4	7.4
	16.7	67.8	56.6	0.83	7.12	92.1	126.0	9.1
	18.6	67.9	56.7	0.83	7.06	92.0	124.9	11.0
	19.5	68.0	56.7	0.83	7.03	91.9	124.4	11.9
	20.5	68.1	56.8	0.83	7.01	92.0	124.0	13.0
	22.3	68.2	56.9	0.83	6.98	92.0	123.2	15.1
120	12.1	64.8	55.3	0.85	7.72	91.1	135.1	5.1
	14.9	65.3	55.7	0.85	7.57	91.1	132.2	7.3
	16.7	65.5	55.9	0.85	7.50	91.1	130.9	9.0
	18.6	65.6	56.0	0.85	7.44	91.0	129.8	10.8
	19.5	65.7	56.1	0.85	7.42	91.0	129.3	11.8
	20.5	65.7	56.1	0.85	7.40	91.0	128.9	12.8
	22.3	65.8	56.2	0.85	7.36	91.0	128.1	14.9

**Note:** Cooling performance data is tabulated at 80.6°F DB / 66.2°F WB at the rated CFM. For conditions other than what is tabulated, multipliers must be used to correct performance. See [Table 28, p. 34](#) for Fan Correction Factors for CFM other than rated and the Cooling Correction Factors for variations in entering air temperatures. Rated GPM 18.6; Minimum CFM 1920; Rated CFM 2280; Maximum CFM 2880.



**GER072 Heating Performance**
**Table 27. GER072 heating performance**

<b>EWT</b>	<b>GPM</b>	<b>Gross Mbtuh</b>	<b>Absorb Mbtuh</b>	<b>Comp Pwr kW</b>	<b>LWT</b>	<b>Feet Head</b>
25	12.1	51.0	36.5	4.25	19.0	10.6
	14.9	51.9	37.3	4.27	20.0	14.4
	16.7	52.3	37.7	4.28	20.5	17.3
	18.6	52.5	37.9	4.29	20.9	20.2
	19.5	52.6	38.0	4.29	21.1	21.8
	20.5	52.7	38.0	4.30	21.3	23.4
	22.3	52.7	38.1	4.30	21.6	26.9
32	12.1	56.0	41.3	4.32	25.2	9.3
	14.9	57.0	42.2	4.33	26.3	13.3
	16.7	57.4	42.6	4.33	26.9	16.3
	18.6	57.7	42.8	4.34	27.4	19.6
	19.5	57.8	43.0	4.34	27.6	21.4
	20.5	57.9	43.1	4.34	27.8	23.2
	22.3	58.2	43.4	4.35	28.1	27.0
45	12.1	66.9	51.2	4.61	36.5	6.9
	14.9	68.0	52.2	4.62	38.0	9.9
	16.7	68.7	52.9	4.63	38.7	12.2
	18.6	69.1	53.3	4.64	39.3	14.6
	19.5	69.3	53.4	4.64	39.5	15.9
	20.5	69.4	53.6	4.64	39.8	17.3
	22.3	69.7	53.9	4.64	40.2	20.1
55	12.1	75.7	59.5	4.75	45.2	6.6
	14.9	76.7	60.5	4.76	46.9	9.5
	16.7	77.4	61.1	4.77	47.7	11.7
	18.6	77.8	61.5	4.77	48.4	14.1
	19.5	78.0	61.7	4.77	48.7	15.3
	20.5	78.3	62.0	4.78	48.9	16.6
	22.3	78.6	62.3	4.78	49.4	19.4
68	12.1	84.0	66.4	5.18	57.0	6.2
	14.9	86.2	68.3	5.22	58.8	9.0
	16.7	86.9	69.1	5.23	59.7	11.0
	18.6	87.6	69.8	5.23	60.5	13.3
	19.5	88.1	70.3	5.24	60.8	14.5
	20.5	88.5	70.6	5.25	61.1	15.7
	22.3	88.9	70.9	5.25	61.6	18.3
75	12.1	90.4	72.4	5.28	63.0	6.1
	14.9	92.1	74.0	5.31	65.1	8.8
	16.7	93.2	75.0	5.32	66.0	10.8
	18.6	94.0	75.8	5.34	66.9	13.0
	19.5	94.3	76.1	5.34	67.2	14.1
	20.5	94.7	76.4	5.35	67.5	15.3
	22.3	95.2	76.9	5.36	68.1	17.9



## Performance Data

**Table 27. GER072 heating performance (continued)**

EWT	GPM	Gross Mbtuh	Absorb Mbtuh	Comp Pwr kW	LWT	Feet Head
86	12.1	99.7	81.1	5.45	72.6	5.9
	14.9	101.7	83.0	5.48	74.8	8.5
	16.7	102.7	84.0	5.50	76.0	10.4
	18.6	103.5	84.7	5.51	76.9	12.5
	19.5	103.8	85.0	5.52	77.3	13.6
	20.5	104.1	85.3	5.53	77.7	14.8
	22.3	104.7	85.8	5.54	78.3	17.2

**Note:** Heating performance data is tabulated at 68.0°F DB at the rated CFM. For conditions other than what is tabulated, multipliers must be used to correct performance. See Table 28, p. 34 for Fan Correction Factors for CFM other than rated and the Heating Correction Factors for variations in entering air temperatures. Rated GPM 18.6; Minimum CFM 1920; Rated CFM 2280; Maximum CFM 2880.

**Table 28. GER072 fan correction factors**

Entering CFM	Cooling Capacity	Sensible Capacity	Cooling Input Watts	Heating Capacity	Heating Input Watts
1920	0.968	0.910	1.002	0.985	1.067
1986	0.975	0.926	1.001	0.988	1.053
2052	0.981	0.942	1.001	0.989	1.040
2160	0.990	0.969	1.000	0.998	1.023
2280	1.000	1.000	1.000	1.000	1.000
2400	1.010	1.031	0.999	1.004	0.983
2622	1.023	1.086	0.998	1.011	0.956
2880	1.040	1.156	0.997	1.019	0.932

## GER090 Cooling Performance

**Table 29. GER090 cooling performance**

EWT	GPM	Gross Mbtuh	Sen Mbtuh	SHR	Comp Pwr kW	Reject Mbtuh	LWT	Feet Head
45	15.1	101.5	68.9	0.68	4.37	116.5	60.4	5.6
	18.6	101.7	69.0	0.68	4.26	116.2	57.5	8.1
	21.0	101.8	69.0	0.68	4.20	116.1	56.1	9.9
	23.3	101.9	69.1	0.68	4.16	116.1	55.0	11.9
	24.5	101.9	69.1	0.68	4.14	116.0	54.5	13.0
	25.6	101.9	69.1	0.68	4.12	116.0	54.0	14.1
	28.0	101.9	69.1	0.68	4.09	115.9	53.3	16.5
55	15.1	99.1	67.9	0.68	4.87	115.7	70.3	5.4
	18.6	99.3	68.0	0.68	4.75	115.5	67.4	7.8
	21.0	99.4	68.0	0.68	4.69	115.4	66.0	9.6
	23.3	99.5	68.1	0.68	4.64	115.3	64.9	11.5
	24.5	99.5	68.1	0.68	4.63	115.3	64.4	12.5
	25.6	99.5	68.1	0.68	4.61	115.2	64.0	13.6
	28.0	99.6	68.2	0.68	4.58	115.2	63.2	15.8

**Table 29. GER090 cooling performance (continued)**

<b>EWT</b>	<b>GPM</b>	<b>Gross Mbtuh</b>	<b>Sen Mbtuh</b>	<b>SHR</b>	<b>Comp Pwr kW</b>	<b>Reject Mbtuh</b>	<b>LWT</b>	<b>Feet Head</b>
68	15.1	95.8	67.6	0.71	5.44	114.4	83.1	5.2
	18.6	97.1	68.5	0.71	5.31	115.2	80.4	7.4
	21.0	96.2	67.9	0.71	5.25	114.2	78.9	9.1
	23.3	96.3	68.0	0.71	5.20	114.1	77.8	11.0
	24.5	96.4	68.0	0.71	5.18	114.1	77.3	12.0
	25.6	96.4	68.1	0.71	5.16	114.0	76.9	13.0
	28.0	96.5	68.1	0.71	5.13	114.0	76.2	15.1
75	15.1	93.6	66.8	0.71	5.85	113.5	90.0	5.0
	18.6	93.9	67.0	0.71	5.71	113.4	87.2	7.2
	21.0	94.1	67.2	0.71	5.65	113.3	85.8	8.9
	23.3	94.2	67.2	0.71	5.60	113.3	84.7	10.7
	24.5	94.2	67.2	0.71	5.58	113.2	84.3	11.7
	25.6	94.2	67.3	0.71	5.56	113.2	83.8	12.7
	28.0	94.3	67.3	0.71	5.52	113.1	83.1	14.7
86	15.1	88.7	64.6	0.73	6.44	110.7	100.6	4.9
	18.6	89.0	64.8	0.73	6.30	110.5	97.9	7.1
	21.0	89.1	64.9	0.73	6.23	110.3	96.5	8.7
	23.3	89.2	65.0	0.73	6.18	110.3	95.5	10.5
	24.5	89.2	65.0	0.73	6.15	110.2	95.0	11.4
	25.6	89.3	65.0	0.73	6.13	110.2	94.6	12.3
	28.0	89.3	65.1	0.73	6.10	110.1	93.9	14.4
95	15.1	85.4	63.5	0.74	7.10	109.6	109.5	4.6
	18.6	85.6	63.7	0.74	6.94	109.3	106.7	6.7
	21.0	85.8	63.8	0.74	6.87	109.2	105.4	8.3
	23.3	85.9	63.9	0.74	6.81	109.1	104.4	9.9
	24.5	85.9	63.9	0.74	6.78	109.1	103.9	10.8
	25.6	86.0	63.9	0.74	6.76	109.0	103.5	11.8
	28.0	86.0	64.0	0.74	6.72	109.0	102.8	13.7
105	15.1	81.4	62.2	0.76	7.93	108.4	119.3	4.5
	18.6	81.6	62.4	0.76	7.76	108.1	116.6	6.5
	21.0	81.8	62.5	0.76	7.67	108.0	115.3	8.0
	23.3	81.9	62.6	0.76	7.61	107.8	114.3	9.7
	24.5	82.0	62.7	0.76	7.58	107.9	113.8	10.5
	25.6	82.0	62.7	0.76	7.55	107.8	113.4	11.4
	28.0	82.1	62.7	0.76	7.52	107.8	112.7	13.3
115	15.1	77.0	60.7	0.79	8.84	107.2	129.2	4.4
	18.6	77.3	61.0	0.79	8.68	107.0	126.5	6.4
	21.0	77.5	61.1	0.79	8.60	106.8	125.2	7.8
	23.3	77.5	61.2	0.79	8.53	106.7	124.2	9.4
	24.5	77.6	61.2	0.79	8.50	106.6	123.7	10.3
	25.6	77.6	61.2	0.79	8.47	106.6	123.3	11.1
	28.0	77.7	61.3	0.79	8.43	106.5	122.6	13.0



## Performance Data

**Table 29. GER090 cooling performance (continued)**

EWT	GPM	Gross Mbtuh	Sen Mbtuh	SHR	Comp Pwr kW	Reject Mbtuh	LWT	Feet Head
120	15.1	74.7	60.0	0.80	9.36	106.6	134.1	4.4
	18.6	75.0	60.2	0.80	9.19	106.3	131.4	6.3
	21.0	75.1	60.4	0.80	9.10	106.2	130.1	7.7
	23.3	75.2	60.5	0.80	9.03	106.1	129.1	9.3
	24.5	75.3	60.5	0.80	9.00	106.0	128.7	10.1
	25.6	75.3	60.5	0.80	8.98	105.9	128.3	11.0
	28.0	75.4	60.6	0.80	8.93	105.8	127.6	12.8

**Note:** Cooling performance data is tabulated at 80.6°F DB / 66.2°F WB at the rated CFM. For conditions other than what is tabulated, multipliers must be used to correct performance. See Table 31, p. 37 for Fan Correction Factors for CFM other than rated and the Cooling Correction Factors for variations in entering air temperatures. Rated GPM 23.3; Minimum CFM 2400; Rated CFM 2850; Maximum CFM 3600.

## GER090 Heating Performance

**Table 30. GER090 heating performance**

EWT	GPM	Gross Mbtuh	Absorb Mbtuh	Comp Pwr kW	LWT	Feet Head
25	15.1	60.7	43.3	5.10	19.3	7.1
	18.6	61.8	44.3	5.12	20.2	10.2
	21.0	62.2	44.7	5.14	20.7	12.5
	23.3	62.6	45.0	5.15	21.1	15.1
	24.5	62.8	45.2	5.15	21.3	16.4
	25.6	62.9	45.3	5.15	21.5	17.8
	28.0	63.2	45.6	5.16	21.7	20.7
	32	15.1	66.4	48.6	5.24	25.6
18.6		67.9	49.9	5.28	26.6	9.9
21.0		68.2	50.2	5.29	27.2	12.2
23.3		68.5	50.5	5.29	27.7	14.6
24.5		68.8	50.7	5.30	27.9	15.9
25.6		68.9	50.9	5.30	28.0	17.2
28.0		69.3	51.2	5.31	28.3	20.1
45		15.1	79.0	60.1	5.54	37.1
	18.6	80.3	61.3	5.57	38.4	8.1
	21.0	80.8	61.8	5.58	39.1	9.9
	23.3	81.3	62.2	5.59	39.7	11.9
	24.5	81.5	62.4	5.59	39.9	13.0
	25.6	81.7	62.6	5.60	40.1	14.1
	28.0	82.0	62.9	5.61	40.5	16.5
	55	15.1	88.6	68.9	5.78	45.9
18.6		90.1	70.2	5.81	47.5	7.8
21.0		90.7	70.9	5.83	48.2	9.6
23.3		91.3	71.4	5.84	48.9	11.5
24.5		91.5	71.6	5.85	49.1	12.5
25.6		91.7	71.7	5.85	49.4	13.6
28.0		92.4	72.3	5.87	49.8	15.8

**Table 30. GER090 heating performance (continued)**

<b>EWT</b>	<b>GPM</b>	<b>Gross Mbtuh</b>	<b>Absorb Mbtuh</b>	<b>Comp Pwr kW</b>	<b>LWT</b>	<b>Feet Head</b>
68	15.1	101.9	80.2	6.38	57.4	5.2
	18.6	104.1	82.1	6.44	59.2	7.4
	21.0	105.0	82.9	6.47	60.1	9.1
	23.3	105.7	83.5	6.49	60.8	11.0
	24.5	106.0	83.9	6.50	61.1	12.0
	25.6	106.2	84.0	6.50	61.4	13.0
	28.0	106.7	84.5	6.52	62.0	15.1
75	15.1	109.7	87.2	6.61	63.5	5.0
	18.6	111.7	89.0	6.65	65.4	7.2
	21.0	112.6	89.8	6.68	66.4	8.9
	23.3	113.4	90.5	6.70	67.2	10.7
	24.5	113.8	90.9	6.71	67.6	11.7
	25.6	114.1	91.1	6.72	67.9	12.7
	28.0	114.6	91.6	6.74	68.4	14.7
86	15.1	121.6	97.8	6.96	73.1	4.9
	18.6	124.1	100.1	7.04	75.3	7.1
	21.0	125.2	101.0	7.08	76.4	8.7
	23.3	126.3	102.1	7.10	77.2	10.5
	24.5	126.7	102.4	7.11	77.6	11.4
	25.6	127.1	102.8	7.12	78.0	12.3
	28.0	127.8	103.4	7.14	78.6	14.4

**Note:** Heating performance data is tabulated at 68.0°F DB at the rated CFM. For conditions other than what is tabulated, multipliers must be used to correct performance. See [Table 31, p. 37](#) for Fan Correction Factors for CFM other than rated and the Heating Correction Factors for variations in entering air temperatures. Rated GPM 23.3; Minimum CFM 2400; Rated CFM 2850; Maximum CFM 3600.

**Table 31. GER090 fan correction factors**

<b>Entering CFM</b>	<b>Cooling Capacity</b>	<b>Sensible Capacity</b>	<b>Cooling Input Watts</b>	<b>Heating Capacity</b>	<b>Heating Input Watts</b>
2400	0.970	0.921	0.999	0.986	1.059
2482.5	0.976	0.936	0.999	0.988	1.046
2565	0.982	0.949	0.999	0.991	1.034
2700	0.991	0.973	1.000	0.994	1.016
2850	1.000	1.000	1.000	1.000	1.000
3000	1.009	1.027	1.001	1.005	0.986
3300	1.025	1.081	1.002	1.006	0.955
3600	1.038	1.129	1.003	1.012	0.935



## Performance Data

### GER120 Cooling Performance

Table 32. GER120 cooling performance

EWT	GPM	Gross Mbtuh	Sen Mbtuh	SHR	Comp Pwr kW	Reject Mbtuh	LWT	Feet Head
45	20.2	158.9	112.6	0.71	4.54	174.4	62.3	7.4
	24.8	160.2	113.4	0.71	4.31	174.9	59.1	10.7
	27.9	160.7	113.8	0.71	4.19	175.0	57.5	13.1
	31.0	161.0	114.0	0.71	4.10	175.0	56.3	15.8
	32.6	161.1	114.1	0.71	4.06	174.9	55.7	17.2
	34.1	161.4	114.3	0.71	4.03	175.1	55.3	18.6
	37.2	161.7	114.5	0.71	3.97	175.2	54.4	21.7
55	20.2	153.8	110.4	0.72	5.38	172.2	72.1	7.1
	24.8	154.9	111.2	0.72	5.16	172.5	68.9	10.3
	27.9	155.5	111.6	0.72	5.02	172.6	67.4	12.6
	31.0	155.8	111.9	0.72	4.94	172.7	66.1	15.2
	32.6	156.0	112.0	0.72	4.90	172.8	65.6	16.5
	34.1	156.2	112.1	0.72	4.87	172.8	65.1	17.9
	37.2	156.5	112.3	0.72	4.81	172.9	64.3	20.9
68	20.2	146.7	107.6	0.73	6.46	168.7	84.7	6.8
	24.8	147.7	108.4	0.73	6.24	169.0	81.6	9.8
	27.9	148.2	108.7	0.73	6.13	169.1	80.1	12.0
	31.0	148.6	109.0	0.73	6.05	169.2	78.9	14.5
	32.6	148.7	109.1	0.73	6.01	169.2	78.4	15.8
	34.1	148.9	109.2	0.73	5.98	169.3	77.9	17.1
	37.2	149.1	109.4	0.73	5.92	169.3	77.1	19.9
75	20.2	142.6	106.0	0.74	7.08	166.7	91.5	6.6
	24.8	143.6	106.8	0.74	6.85	167.0	88.5	9.6
	27.9	144.0	107.1	0.74	6.74	167.1	87.0	11.8
	31.0	144.4	107.4	0.74	6.66	167.1	85.8	14.1
	32.6	144.6	107.5	0.74	6.62	167.2	85.3	15.4
	34.1	144.7	107.6	0.74	6.59	167.2	84.8	16.7
	37.2	145.0	107.8	0.74	6.53	167.2	84.0	19.5
86	20.2	135.7	103.5	0.76	8.12	163.4	102.2	6.4
	24.8	136.7	104.2	0.76	7.88	163.6	99.2	9.2
	27.9	137.2	104.6	0.76	7.77	163.7	97.7	11.3
	31.0	137.5	104.8	0.76	7.68	163.7	96.6	13.6
	32.6	137.7	105.0	0.76	7.64	163.8	96.1	14.9
	34.1	137.7	105.0	0.76	7.61	163.7	95.6	16.1
	37.2	138.2	105.4	0.76	7.55	164.0	94.8	18.8
95	20.2	129.7	101.1	0.78	9.06	160.7	110.9	6.0
	24.8	130.7	101.8	0.78	8.82	160.8	108.0	8.7
	27.9	131.1	102.2	0.78	8.71	160.8	106.5	10.7
	31.0	131.5	102.5	0.78	8.62	160.9	105.4	12.8
	32.6	131.6	102.6	0.78	8.58	160.9	104.9	14.0
	34.1	131.8	102.7	0.78	8.55	160.9	104.4	15.2
	37.2	132.0	102.9	0.78	8.49	161.0	103.7	17.7

**Table 32. GER120 cooling performance (continued)**

<b>EWT</b>	<b>GPM</b>	<b>Gross Mbtuh</b>	<b>Sen Mbtuh</b>	<b>SHR</b>	<b>Comp Pwr kW</b>	<b>Reject Mbtuh</b>	<b>LWT</b>	<b>Feet Head</b>
105	20.2	122.5	98.5	0.80	10.16	157.2	120.6	5.8
	24.8	123.5	99.3	0.80	9.91	157.3	117.7	8.4
	27.9	123.8	99.6	0.80	9.80	157.3	116.3	10.4
	31.0	124.4	100.0	0.80	9.71	157.5	115.2	12.5
	32.6	124.5	100.1	0.80	9.68	157.5	114.7	13.6
	34.1	124.6	100.2	0.80	9.64	157.5	114.2	14.8
	37.2	124.9	100.4	0.80	9.57	157.5	113.5	17.2
115	20.2	114.7	95.7	0.83	11.39	153.6	130.2	5.7
	24.8	115.7	96.5	0.83	11.13	153.7	127.4	8.2
	27.9	116.1	96.9	0.83	11.01	153.7	126.0	10.1
	31.0	116.5	97.2	0.83	10.92	153.8	124.9	12.2
	32.6	116.6	97.3	0.83	10.88	153.7	124.4	13.3
	34.1	116.8	97.4	0.83	10.82	153.7	124.0	14.4
	37.2	117.0	97.6	0.83	10.77	153.8	123.3	16.8
120	20.2	110.6	94.3	0.85	12.04	151.7	135.1	5.6
	24.8	111.6	95.2	0.85	11.79	151.8	132.2	8.1
	27.9	112.0	95.5	0.85	11.67	151.8	130.9	10.0
	31.0	112.3	95.8	0.85	11.57	151.8	129.8	12.0
	32.6	112.5	96.0	0.85	11.53	151.9	129.3	13.1
	34.1	112.7	96.1	0.85	11.49	151.9	128.9	14.2
	37.2	112.9	96.3	0.85	11.43	151.9	128.2	16.6

**Note:** Cooling performance data is tabulated at 80.6°F DB / 66.2°F WB at the rated CFM. For conditions other than what is tabulated, multipliers must be used to correct performance. See [Table 34, p. 41](#) for Fan Correction Factors for CFM other than rated and the Cooling Correction Factors for variations in entering air temperatures. Rated GPM 31.0; Minimum CFM 3200; Rated CFM 3800; Maximum CFM 4800.

## GER120 Heating Performance

**Table 33. GER120 heating performance**

<b>EWT</b>	<b>GPM</b>	<b>Gross Mbtuh</b>	<b>Absorb Mbtuh</b>	<b>Comp Pwr kW</b>	<b>LWT</b>	<b>Feet Head</b>
25	20.2	69.0	47.6	6.28	20.3	13.9
	24.8	69.2	47.6	6.32	21.2	19.0
	27.9	69.5	47.8	6.34	21.6	23.0
	31.0	69.8	48.1	6.36	21.9	26.6
	32.6	70.0	48.2	6.36	22.0	28.4
	34.1	70.1	48.4	6.37	22.2	30.1
	37.2	70.4	48.6	6.39	22.4	33.3
32	20.1	81.8	59.5	6.56	26.1	10.3
	24.8	82.9	60.5	6.57	27.1	14.8
	27.9	83.6	61.2	6.58	27.6	18.2
	31.0	84.1	61.6	6.59	28.0	21.9
	32.5	84.5	61.9	6.60	28.2	23.8
	34.1	84.5	62.0	6.59	28.4	25.8
	37.2	85.1	62.6	6.61	28.6	28.4



## Performance Data

**Table 33. GER120 heating performance (continued)**

EWT	GPM	Gross Mbtuh	Absorb Mbtuh	Comp Pwr kW	LWT	Feet Head
45	20.1	104.3	80.6	6.95	37.0	7.4
	24.8	106.3	82.5	6.98	38.3	10.7
	27.9	107.5	83.6	7.00	39.0	13.1
	31.0	108.4	84.5	7.01	39.6	15.8
	32.5	108.8	84.8	7.02	39.8	17.2
	34.1	109.1	85.1	7.02	40.0	18.6
	37.2	109.7	85.7	7.03	40.4	21.7
55	20.1	118.4	93.8	7.18	45.7	7.1
	24.8	120.6	96.0	7.22	47.3	10.3
	27.9	121.9	97.2	7.25	48.0	12.6
	31.0	123.4	98.5	7.28	48.6	15.2
	32.5	123.5	98.6	7.28	48.9	16.5
	34.1	124.1	99.2	7.29	49.2	17.9
	37.2	124.6	99.7	7.30	49.6	20.9
68	20.1	136.7	111.0	7.53	57.0	6.8
	24.8	140.4	114.4	7.60	58.8	9.8
	27.9	141.6	115.6	7.62	59.7	12.0
	31.0	142.9	116.7	7.65	60.5	14.5
	32.5	143.3	117.2	7.66	60.8	15.8
	34.1	143.8	117.7	7.67	61.1	17.1
	37.2	144.7	118.4	7.69	61.6	19.9
75	20.1	147.4	121.0	7.75	63.0	6.6
	24.8	150.7	124.0	7.82	65.0	9.6
	27.9	152.9	126.0	7.88	66.0	11.8
	31.0	153.5	126.5	7.89	66.8	14.1
	32.5	153.9	126.9	7.91	67.2	15.4
	34.1	154.4	127.4	7.92	67.5	16.7
	37.2	155.3	128.2	7.94	68.1	19.5
86	20.1	163.4	135.6	8.14	72.5	6.4
	24.8	166.8	138.8	8.20	74.8	9.2
	27.9	168.0	139.9	8.23	76.0	11.3
	31.0	169.1	140.9	8.25	76.9	13.6
	32.5	169.6	141.3	8.27	77.3	14.9
	34.1	170.0	141.7	8.28	77.7	16.1
	37.2	170.8	142.5	8.30	78.3	18.8

**Note:** Heating performance data is tabulated at 68.0°F DB at the rated CFM. For conditions other than what is tabulated, multipliers must be used to correct performance. See [Table 34, p. 41](#) for Fan Correction Factors for CFM other than rated and the Heating Correction Factors for variations in entering air temperatures. Rated GPM 31.0; Minimum CFM 3200; Rated CFM 3800; Maximum CFM 4800.



**Table 34. GER120 fan correction factors**

Entering CFM	Cooling Capacity	Sensible Capacity	Cooling Input Watts	Heating Capacity	Heating Input Watts
3200	0.967	0.906	1.000	0.983	1.076
3310	0.973	0.924	1.000	0.986	1.060
3420	0.980	0.940	1.000	0.989	1.043
3600	0.990	0.968	1.000	0.992	1.020
3800	1.000	1.000	1.000	1.000	1.000
4000	1.009	1.029	1.001	1.002	0.980
4400	1.024	1.088	0.999	1.015	0.950
4800	1.039	1.152	0.999	1.019	0.922

**GER150 Cooling Performance**
**Table 35. GER150 cooling performance**

EWT	GPM	Gross Mbtuh	Sen Mbtuh	SHR	Comp Pwr kW	Reject Mbtuh	LWT	Feet Head
45	25.2	189.0	132.9	0.70	6.46	211.1	61.8	7.1
45	31.0	190.1	133.7	0.70	6.26	211.5	58.6	10.2
45	35.0	190.7	134.1	0.70	6.17	211.7	57.1	12.7
45	38.8	191.1	134.4	0.70	6.09	211.9	55.9	15.2
45	40.8	191.3	134.6	0.70	6.06	212.0	55.4	16.7
45	42.6	191.5	134.7	0.70	6.04	212.1	55.0	18.0
45	46.6	191.8	134.9	0.70	5.98	212.2	54.1	21.1
55	25.2	183.2	130.8	0.71	7.23	207.9	71.5	6.8
55	31.0	184.2	131.4	0.71	7.02	208.2	68.4	9.9
55	35.0	184.6	131.8	0.71	6.92	208.3	66.9	12.2
55	38.8	185.0	132.0	0.71	6.85	208.4	65.7	14.7
55	40.8	185.2	132.2	0.71	6.81	208.5	65.2	16.0
55	42.6	185.3	132.3	0.71	6.78	208.5	64.8	17.3
55	46.6	185.6	132.5	0.71	6.73	208.6	64.0	20.3
68	25.2	175.1	127.9	0.73	8.35	203.6	84.2	6.5
68	31.0	176.0	128.5	0.73	8.12	203.7	81.1	9.4
68	35.0	176.5	128.8	0.73	8.01	203.8	79.6	11.7
68	38.8	176.8	129.1	0.73	7.93	203.8	78.5	14.0
68	40.8	176.9	129.2	0.73	7.89	203.8	78.0	15.3
68	42.6	177.0	129.2	0.73	7.86	203.8	77.6	16.5
68	46.6	177.3	129.4	0.73	7.80	203.9	76.8	19.4
75	25.2	170.5	126.2	0.74	9.01	201.2	91.0	6.4
75	31.0	171.4	126.9	0.74	8.77	201.3	88.0	9.2
75	35.0	171.8	127.2	0.74	8.65	201.3	86.5	11.4
75	38.8	172.1	127.4	0.74	8.56	201.4	85.4	13.7
75	40.8	172.2	127.5	0.74	8.52	201.3	84.9	15.0
75	42.6	172.4	127.6	0.74	8.49	201.4	84.5	16.1
75	46.6	172.6	127.8	0.74	8.43	201.4	83.6	18.9
86	25.2	162.8	123.5	0.76	10.16	197.5	101.7	6.2



## Performance Data

**Table 35. GER150 cooling performance (continued)**

EWT	GPM	Gross Mbtuh	Sen Mbtuh	SHR	Comp Pwr kW	Reject Mbtuh	LWT	Feet Head
86	31.0	163.6	124.2	0.76	9.89	197.4	98.7	8.9
86	35.0	164.1	124.5	0.76	9.77	197.4	97.3	11.0
86	38.8	164.4	124.7	0.76	9.67	197.4	96.2	13.2
86	40.8	164.5	124.8	0.76	9.63	197.3	95.7	14.4
86	42.6	164.6	124.9	0.76	9.60	197.3	95.3	15.6
86	46.6	164.8	125.0	0.76	9.53	197.3	94.5	18.3
95	25.2	156.1	121.3	0.78	11.20	194.3	110.4	6.0
95	31.0	156.9	121.9	0.78	10.93	194.2	107.5	8.7
95	35.0	157.3	122.2	0.78	10.80	194.1	106.1	10.7
95	38.8	157.5	122.4	0.78	10.70	194.1	105.0	12.9
95	40.8	157.7	122.5	0.78	10.66	194.1	104.5	14.1
95	42.6	157.8	122.6	0.78	10.63	194.0	104.1	15.2
95	46.6	158.0	122.8	0.78	10.56	194.0	103.3	17.8
105	25.2	147.9	118.6	0.80	12.44	190.4	120.1	5.8
105	31.0	148.7	119.2	0.80	12.16	190.2	117.3	8.4
105	35.0	149.1	119.5	0.80	12.03	190.2	115.9	10.4
105	38.8	149.4	119.8	0.80	11.93	190.1	114.8	12.5
105	40.8	149.5	119.8	0.80	11.88	190.0	114.3	13.7
105	42.6	149.6	120.0	0.80	11.84	190.1	113.9	14.8
105	46.6	149.8	120.1	0.80	11.77	190.0	113.2	17.3
115	25.2	138.9	115.6	0.83	13.80	186.0	129.8	5.7
115	31.0	139.7	116.3	0.83	13.52	185.9	127.0	8.2
115	35.0	140.1	116.7	0.83	13.39	185.8	125.6	10.2
115	38.8	140.4	116.9	0.83	13.28	185.8	124.6	12.2
115	40.8	140.6	117.0	0.83	13.23	185.7	124.1	13.3
115	42.6	140.7	117.1	0.83	13.20	185.7	123.7	14.4
115	46.6	140.9	117.3	0.83	13.12	185.7	123.0	16.8
120	25.2	133.6	113.7	0.85	14.52	183.2	134.5	5.6
120	31.0	134.5	114.4	0.85	14.24	183.1	131.8	8.1
120	35.0	135.0	114.9	0.85	14.10	183.1	130.5	10.0
120	38.8	135.2	115.1	0.85	14.00	183.0	129.4	12.0
120	40.8	135.5	115.3	0.85	13.95	183.2	129.0	13.2
120	42.6	135.4	115.2	0.85	13.91	182.9	128.6	14.2
120	46.6	135.8	115.5	0.85	13.83	183.0	127.9	16.6

**Note:** Cooling performance data is tabulated at 80.6°F DB / 66.2°F WB at the rated CFM. For conditions other than what is tabulated, multipliers must be used to correct performance. See [Table 37, p. 44](#) for Fan Correction Factors for CFM other than rated and the Cooling Correction Factors for variations in entering air temperatures. Rated GPM 38.8; Minimum CFM 4000; Rated CFM 4750; Maximum CFM 6000.

**GER150 Heating Performance**
**Table 36. GER150 heating performance**

<b>EWT</b>	<b>GPM</b>	<b>Gross Mbtuh</b>	<b>Absorb Mbtuh</b>	<b>Comp Pwr kW</b>	<b>LWT</b>	<b>Feet Head</b>
25	25.2	99.2	70.2	8.51	19.4	12.8
	31.0	101.2	72.2	8.52	20.3	17.2
	35.0	102.3	73.2	8.53	20.8	20.8
	38.8	103.0	73.9	8.53	21.2	24.4
	40.8	103.4	74.3	8.53	21.4	26.4
	42.6	103.7	74.6	8.54	21.5	28.2
	46.6	104.2	75.1	8.54	21.8	32.3
32	25.2	114.9	85.2	8.68	25.2	9.5
	31.0	116.8	87.1	8.69	26.4	13.6
	35.0	117.8	88.1	8.70	27.0	16.8
	38.8	118.6	88.9	8.71	27.4	20.1
	40.8	118.9	89.2	8.71	27.6	22.0
	42.6	119.3	89.5	8.72	27.8	23.7
	46.6	119.5	89.8	8.70	28.1	27.7
45	25.2	137.6	107.1	8.92	36.5	7.7
	31.0	139.8	109.3	8.93	37.9	11.0
	35.0	141.2	110.6	8.96	38.7	13.5
	38.8	141.8	111.2	8.96	39.3	16.2
	40.8	142.4	111.8	8.97	39.5	17.7
	42.6	142.8	112.1	8.97	39.7	19.1
	46.6	143.4	112.7	8.98	40.2	22.3
55	25.2	155.2	124.0	9.14	45.2	7.4
	31.0	158.1	126.7	9.18	46.8	10.5
	35.0	159.4	128.0	9.20	47.7	13.0
	38.8	160.5	129.0	9.21	48.3	15.6
	40.8	160.7	129.3	9.21	48.7	17.0
	42.6	161.3	129.9	9.22	48.9	18.3
	46.6	162.0	130.5	9.23	49.4	21.4
68	25.2	179.1	146.7	9.50	56.4	7.0
	31.0	183.1	150.5	9.55	58.3	10.1
	35.0	184.0	151.4	9.55	59.3	12.4
	38.8	185.8	153.1	9.58	60.1	14.9
	40.8	186.6	153.8	9.59	60.5	16.2
	42.6	186.5	153.8	9.58	60.8	17.5
	46.6	187.8	155.0	9.61	61.3	20.4
75	25.2	193.3	160.1	9.72	62.3	6.9
	31.0	197.6	164.1	9.79	64.4	9.8
	35.0	200.2	166.6	9.84	65.5	12.1
	38.8	200.8	167.3	9.82	66.4	14.5
	40.8	201.9	168.3	9.84	66.8	15.8
	42.6	202.3	168.7	9.85	67.1	17.1
	46.6	203.4	169.7	9.86	67.7	19.9

## Performance Data

**Table 36. GER150 heating performance (continued)**

EWT	GPM	Gross Mbtuh	Absorb Mbtuh	Comp Pwr kW	LWT	Feet Head
86	25.2	216.4	181.9	10.11	71.6	6.6
	31.0	220.5	185.8	10.16	74.0	9.5
	35.0	223.3	188.4	10.21	75.2	11.7
	38.8	224.7	189.7	10.23	76.2	14.0
	40.8	225.7	190.7	10.24	76.7	15.3
	42.6	226.3	191.3	10.26	77.0	16.5
	46.6	227.3	192.2	10.27	77.7	19.2

**Note:** Heating performance data is tabulated at 68.0°F DB at the rated CFM. For conditions other than what is tabulated, multipliers must be used to correct performance. See Table 37, p. 44 for Fan Correction Factors for CFM other than rated and the Heating Correction Factors for variations in entering air temperatures. Rated GPM 38.8; Minimum CFM 4000; Rated CFM 4750; Maximum CFM 6000.

**Table 37. GER150 fan correction factors**

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

## GER180 Cooling Performance

**Table 38. GER180 cooling performance**

EWT	GPM	Gross Mbtuh	Sen Mbtuh	SHR	Comp Pwr kW	Reject Mbtuh	LWT	Feet Head
45	30.2	210.0	150.6	0.72	8.03	237.4	60.7	9.4
	37.2	210.9	151.2	0.72	7.81	237.5	57.8	13.6
	41.8	211.3	151.5	0.72	7.70	237.6	56.4	16.7
	46.5	211.7	151.8	0.72	7.62	237.7	55.2	20.2
	48.8	211.8	151.9	0.72	7.58	237.7	54.7	22.0
	51.2	211.9	152.0	0.72	7.55	237.6	54.3	23.9
	55.8	212.2	152.2	0.72	7.49	237.7	53.5	27.9
55	30.2	205.3	148.9	0.73	8.97	235.9	70.6	9.0
	37.2	206.3	149.6	0.73	8.74	236.2	67.7	13.1
	41.8	206.8	149.9	0.73	8.64	236.2	66.3	16.1
	46.5	207.2	150.2	0.73	8.53	236.3	65.2	19.4
	48.8	207.3	150.3	0.73	8.50	236.3	64.7	21.1
	51.2	207.5	150.4	0.73	8.46	236.3	64.2	23.0
	55.8	207.7	150.6	0.73	8.41	236.4	63.5	26.8

**Table 38. GER180 cooling performance (continued)**

<b>EWT</b>	<b>GPM</b>	<b>Gross Mbtuh</b>	<b>Sen Mbtuh</b>	<b>SHR</b>	<b>Comp Pwr kW</b>	<b>Reject Mbtuh</b>	<b>LWT</b>	<b>Feet Head</b>
68	30.2	197.8	146.0	0.74	10.24	232.7	83.4	8.6
	37.2	198.8	146.8	0.74	10.00	232.9	80.5	12.5
	41.8	199.3	147.1	0.74	9.89	233.0	79.1	15.3
	46.5	199.7	147.4	0.74	9.80	233.1	78.0	18.5
	48.8	199.9	147.5	0.74	9.76	233.2	77.6	20.2
	51.2	200.0	147.7	0.74	9.72	233.2	77.1	22.0
	55.8	200.3	147.8	0.74	9.66	233.2	76.4	25.6
	75	30.2	191.7	143.8	0.75	11.24	230.1	90.2
37.2		192.7	144.6	0.75	10.98	230.2	87.4	12.1
41.8		193.2	145.0	0.75	10.86	230.3	86.0	14.9
46.5		193.7	145.3	0.75	10.76	230.4	84.9	18.0
48.8		193.8	145.4	0.75	10.72	230.4	84.4	19.6
51.2		194.0	145.6	0.75	10.68	230.4	84.0	21.3
55.8		194.2	145.8	0.75	10.62	230.5	83.3	24.8
86		30.2	185.0	141.5	0.76	12.37	227.2	101.0
	37.2	186.1	142.3	0.76	12.08	227.3	98.2	11.8
	41.8	186.6	142.7	0.76	11.95	227.4	96.9	14.5
	46.5	187.0	143.0	0.76	11.85	227.4	95.8	17.5
	48.8	187.2	143.2	0.76	11.81	227.5	95.3	19.0
	51.2	187.3	143.3	0.76	11.75	227.4	94.9	20.7
	55.8	187.6	143.5	0.76	11.68	227.4	94.2	24.1
	95	30.2	177.6	138.6	0.78	13.60	224.0	109.8
37.2		178.7	139.4	0.78	13.30	224.1	107.0	11.5
41.8		179.3	139.9	0.78	13.17	224.3	105.7	14.1
46.5		179.7	140.2	0.78	13.05	224.2	104.6	17.0
48.8		179.9	140.3	0.78	13.01	224.3	104.2	18.5
51.2		180.0	140.4	0.78	12.96	224.2	103.8	20.2
55.8		180.3	140.6	0.78	12.89	224.3	103.0	23.5
105		30.2	168.5	135.2	0.80	15.14	220.2	119.6
	37.2	169.6	136.1	0.80	14.83	220.2	116.8	11.2
	41.8	170.1	136.5	0.80	14.67	220.2	115.5	13.7
	46.5	170.5	136.8	0.80	14.55	220.2	114.5	16.5
	48.8	170.7	137.0	0.80	14.50	220.2	114.0	18.0
	51.2	170.8	137.1	0.80	14.45	220.2	113.6	19.6
	55.8	171.1	137.3	0.80	14.37	220.2	112.9	22.8
	115	30.2	158.5	131.3	0.83	16.86	216.0	129.3
37.2		159.6	132.2	0.83	16.53	216.0	126.6	10.9
41.8		160.1	132.6	0.83	16.37	216.0	125.3	13.4
46.5		160.6	133.1	0.83	16.26	216.1	124.3	16.1
48.8		160.7	133.1	0.83	16.19	215.9	123.8	17.5
51.2		160.8	133.2	0.83	16.14	215.9	123.4	19.1
55.8		161.1	133.5	0.83	16.06	215.9	122.7	22.2



## Performance Data

**Table 38. GER180 cooling performance (continued)**

EWT	GPM	Gross Mbtuh	Sen Mbtuh	SHR	Comp Pwr kW	Reject Mbtuh	LWT	Feet Head
120	30.2	153.0	129.3	0.85	17.76	213.6	134.1	7.4
	37.2	154.1	130.3	0.85	17.44	213.7	131.5	10.7
	41.8	154.7	130.8	0.85	17.28	213.6	130.2	13.2
	46.5	155.1	131.1	0.85	17.15	213.6	129.2	15.9
	48.8	155.3	131.3	0.85	17.10	213.6	128.8	17.3
	51.2	155.4	131.4	0.85	17.05	213.6	128.3	18.9
	55.8	155.7	131.6	0.85	16.98	213.6	127.7	21.9

**Note:** Cooling performance data is tabulated at 80.6°F DB / 66.2°F WB at the rated CFM. For conditions other than what is tabulated, multipliers must be used to correct performance. See Table 40, p. 47 for Fan Correction Factors for CFM other than rated and the Cooling Correction Factors for variations in entering air temperatures. Rated GPM 46.5; Minimum CFM 4800; Rated CFM 5700; Maximum CFM 7200.

## GER180 Heating Performance

**Table 39. GER180 heating performance**

EWT	GPM	Gross Mbtuh	Absorb Mbtuh	Comp Pwr kW	LWT	Feet Head
25	30.2	114.9	82.9	9.38	19.5	15.8
	37.2	115.5	83.5	9.38	20.5	21.7
	41.8	116.1	84.0	9.40	21.0	25.9
	46.5	116.7	84.6	9.41	21.4	30.6
	48.8	117.0	84.8	9.42	21.5	32.9
	51.2	117.3	85.1	9.42	21.7	35.5
	55.8	117.7	85.5	9.43	21.9	40.8
	32	30.2	125.6	92.9	9.57	25.8
37.2		126.7	93.9	9.59	27.0	18.1
41.8		127.3	94.5	9.60	27.5	22.2
46.5		128.0	95.2	9.62	27.9	26.7
48.8		128.1	95.3	9.62	28.1	29.1
51.2		128.1	95.3	9.62	28.3	31.6
55.8		129.0	96.2	9.64	28.6	36.7
45		30.2	146.9	112.8	9.99	37.5
	37.2	147.4	113.3	10.00	38.9	14.6
	41.8	147.9	113.7	10.01	39.6	17.8
	46.5	148.5	114.3	10.03	40.1	21.5
	48.8	148.7	114.4	10.04	40.3	23.4
	51.2	148.2	114.0	10.03	40.5	25.4
	55.8	148.4	114.1	10.03	40.9	29.5
	55	30.2	162.2	126.9	10.34	46.6
37.2		162.3	127.0	10.35	48.2	14.0
41.8		163.6	128.2	10.38	48.9	17.1
46.5		164.0	128.5	10.41	49.5	20.6
48.8		164.5	128.9	10.42	49.7	22.4
51.2		163.0	127.6	10.38	50.0	24.4
55.8		163.0	127.6	10.38	50.4	28.3

**Table 39. GER180 heating performance (continued)**

<b>EWT</b>	<b>GPM</b>	<b>Gross Mbtuh</b>	<b>Absorb Mbtuh</b>	<b>Comp Pwr kW</b>	<b>LWT</b>	<b>Feet Head</b>
68	30.2	181.7	144.7	10.83	58.4	9.3
	37.2	183.7	146.5	10.89	60.1	13.4
	41.8	182.3	145.2	10.88	61.1	16.3
	46.5	182.3	145.1	10.89	61.8	19.7
	48.8	182.2	145.1	10.89	62.1	21.4
	51.2	182.1	144.9	10.89	62.3	23.3
	55.8	182.0	144.8	10.89	62.8	27.0
75	30.2	192.5	154.5	11.13	64.8	9.1
	37.2	192.8	154.7	11.17	66.7	13.0
	41.8	192.7	154.5	11.18	67.6	16.0
	46.5	192.2	154.0	11.18	68.4	19.2
	48.8	192.1	153.9	11.18	68.7	20.9
	51.2	192.2	154.0	11.19	69.0	22.7
	55.8	191.5	153.3	11.19	69.5	26.4
86	30.2	208.5	168.8	11.63	74.8	8.8
	37.2	208.3	168.4	11.67	76.9	12.6
	41.8	208.6	168.6	11.70	77.9	15.4
	46.5	206.2	166.4	11.67	78.8	18.5
	48.8	205.5	165.6	11.67	79.2	20.1
	51.2	205.6	165.8	11.67	79.5	22.0
	55.8	204.6	164.8	11.66	80.1	25.6

**Note:** Heating performance data is tabulated at 68.0°F DB at the rated CFM. For conditions other than what is tabulated, multipliers must be used to correct performance. See [Table 40, p. 47](#) for Fan Correction Factors for CFM other than rated and the Heating Correction Factors for variations in entering air temperatures. Rated GPM 46.5; Minimum CFM 4800; Rated CFM 5700; Maximum CFM 7200.

**Table 40. GER180 fan correction factors**

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



## Performance Data

### GER240 Cooling Performance

Table 41. GER240 cooling performance

EWT	GPM	Gross Mbtuh	Sen Mbtuh	SHR	Comp Pwr kW	Reject Mbtuh	LWT	Feet Head
45	40.3	300.4	208.3	0.69	13.32	345.8	62.2	7.3
	49.6	300.7	208.6	0.69	13.11	345.5	58.9	10.5
	55.8	300.8	208.6	0.69	13.02	345.3	57.4	12.9
	62.0	300.9	208.7	0.69	12.95	345.0	56.1	15.5
	65.1	300.9	208.7	0.69	12.85	344.8	55.6	16.9
	68.2	300.9	208.7	0.69	12.82	344.6	55.1	18.3
	74.4	301.0	208.7	0.69	12.78	344.6	54.3	21.3
55	40.3	295.1	206.0	0.70	14.26	343.8	72.1	7.0
	49.6	295.9	206.6	0.70	13.98	343.6	68.9	10.1
	55.8	296.2	206.8	0.70	13.86	343.5	67.3	12.4
	62.0	296.5	207.0	0.70	13.76	343.5	66.1	14.9
	65.1	296.6	207.1	0.70	13.72	343.5	65.6	16.2
	68.2	296.7	207.1	0.70	13.68	343.4	65.1	17.6
	74.4	296.8	207.2	0.70	13.62	343.3	64.2	20.5
68	40.3	284.7	202.0	0.71	15.89	338.9	84.8	6.7
	49.6	285.9	202.8	0.71	15.53	338.9	81.7	9.6
	55.8	286.5	203.2	0.71	15.37	338.9	80.1	11.8
	62.0	286.9	203.5	0.71	15.24	338.9	78.9	14.2
	65.1	287.1	203.7	0.71	15.19	338.9	78.4	15.5
	68.2	287.3	203.8	0.71	15.14	338.9	77.9	16.8
	74.4	287.5	204.0	0.71	15.05	338.9	77.1	19.6
75	40.3	277.8	199.5	0.72	16.94	335.6	91.7	6.5
	49.6	279.1	200.4	0.72	16.55	335.6	88.5	9.4
	55.8	279.7	200.9	0.72	16.37	335.6	87.0	11.6
	62.0	280.2	201.2	0.72	16.23	335.6	85.8	13.9
	65.1	280.4	201.4	0.72	16.17	335.6	85.3	15.1
	68.2	280.6	201.5	0.72	16.12	335.6	84.8	16.4
	74.4	281.0	201.8	0.72	16.02	335.7	84.0	19.1
86	40.3	265.3	194.9	0.73	18.85	329.6	102.4	6.3
	49.6	266.7	196.0	0.73	18.43	329.6	99.3	9.1
	55.8	267.5	196.6	0.73	18.23	329.7	97.8	11.2
	62.0	268.0	196.9	0.73	18.07	329.7	96.6	13.4
	65.1	268.3	197.2	0.73	18.01	329.8	96.1	14.6
	68.2	268.4	197.3	0.73	17.95	329.7	95.7	15.8
	74.4	268.8	197.6	0.73	17.85	329.7	94.9	18.5
95	40.3	254.0	191.1	0.75	20.58	324.2	111.1	5.8
	49.6	255.5	192.2	0.75	20.13	324.2	108.1	8.4
	55.8	256.2	192.7	0.75	19.92	324.2	106.6	10.3
	62.0	256.7	193.1	0.75	19.75	324.1	105.5	12.4
	65.1	257.0	193.3	0.75	19.68	324.2	105.0	13.6
	68.2	257.2	193.5	0.75	19.61	324.2	104.5	14.7
	74.4	257.6	193.8	0.75	19.50	324.2	103.7	17.2



**Table 41. GER240 cooling performance (continued)**

<b>EWT</b>	<b>GPM</b>	<b>Gross Mbtuh</b>	<b>Sen Mbtuh</b>	<b>SHR</b>	<b>Comp Pwr kW</b>	<b>Reject Mbtuh</b>	<b>LWT</b>	<b>Feet Head</b>
105	40.3	240.5	186.5	0.78	22.71	318.0	120.8	5.6
	49.6	242.0	187.7	0.78	22.25	317.9	117.8	8.2
	55.8	242.7	188.2	0.78	22.03	317.9	116.4	10.0
	62.0	243.3	188.7	0.78	21.85	317.8	115.3	12.1
	65.1	243.5	188.9	0.78	21.77	317.8	114.8	13.2
	68.2	243.7	189.0	0.78	21.71	317.8	114.3	14.3
	74.4	244.1	189.3	0.78	21.59	317.8	113.5	16.7
115	40.3	226.0	181.9	0.80	25.01	311.4	130.5	5.5
	49.6	227.5	183.1	0.80	24.53	311.2	127.5	7.9
	55.8	228.2	183.7	0.80	24.30	311.1	126.2	9.8
	62.0	228.7	184.1	0.80	24.11	311.0	125.0	11.8
	65.1	228.9	184.3	0.80	24.04	311.0	124.6	12.8
	68.2	229.1	184.4	0.80	23.97	310.9	124.1	13.9
	74.4	229.5	184.7	0.80	23.85	310.9	123.4	16.2
120	40.3	218.2	179.4	0.82	26.19	307.6	135.3	5.4
	49.6	219.7	180.7	0.82	25.77	307.6	132.4	7.9
	55.8	220.4	181.3	0.82	25.54	307.6	131.0	9.7
	62.0	220.9	181.7	0.82	25.36	307.5	129.9	11.6
	65.1	221.2	181.9	0.82	25.28	307.5	129.4	12.7
	68.2	221.4	182.1	0.82	25.21	307.4	129.0	13.8
	74.4	221.7	182.4	0.82	25.09	307.4	128.3	16.0

**Note:** Cooling performance data is tabulated at 80.6°F DB / 66.2°F WB at the rated CFM. For conditions other than what is tabulated, multipliers must be used to correct performance. See Table 43, p. 51 for Fan Correction Factors for CFM other than rated and the Cooling Correction Factors for variations in entering air temperatures. Rated GPM 62.0; Minimum CFM 6400; Rated CFM 7600; Maximum CFM 9600.

## GER240 Heating Performance

**Table 42. GER240 heating performance**

<b>EWT</b>	<b>GPM</b>	<b>Gross Mbtuh</b>	<b>Absorb Mbtuh</b>	<b>Comp Pwr kW</b>	<b>LWT</b>	<b>Feet Head</b>
25	40.3	179.2	129.4	14.57	18.6	9.8
	49.6	182.3	132.3	14.64	19.7	14.1
	55.8	184.6	134.4	14.69	20.2	17.3
	62.0	186.0	135.7	14.73	20.6	20.8
	65.1	186.7	136.4	14.75	20.8	22.7
	68.2	187.2	136.8	14.75	21.0	24.6
	74.4	188.3	137.9	14.78	21.3	28.6
32	40.3	198.8	147.4	15.06	24.7	9.6
	49.6	202.7	151.0	15.14	25.9	13.7
	55.8	204.8	153.0	15.18	26.5	16.8
	62.0	206.3	154.3	15.22	27.0	20.2
	65.1	207.4	155.3	15.25	27.2	22.0
	68.2	207.8	155.7	15.26	27.4	23.9
	74.4	209.4	157.1	15.32	27.8	27.8



## Performance Data

**Table 42. GER240 heating performance (continued)**

EWT	GPM	Gross Mbtuh	Absorb Mbtuh	Comp Pwr kW	LWT	Feet Head
45	40.3	241.0	185.8	16.15	35.8	7.3
	49.6	246.1	190.5	16.30	37.3	10.5
	55.8	247.9	192.1	16.33	38.1	12.9
	62.0	249.9	194.0	16.39	38.7	15.5
	65.1	250.6	194.6	16.41	39.0	16.9
	68.2	251.3	195.3	16.42	39.3	18.3
	74.4	252.4	196.3	16.45	39.7	21.3
55	40.3	272.4	214.2	17.05	44.4	7.0
	49.6	277.5	218.7	17.20	46.2	10.1
	55.8	280.1	221.1	17.28	47.1	12.4
	62.0	282.5	223.3	17.36	47.8	14.9
	65.1	283.1	223.8	17.38	48.1	16.2
	68.2	283.9	224.5	17.40	48.4	17.6
	74.4	285.8	226.2	17.46	48.9	20.5
68	40.3	314.7	251.9	18.39	55.5	6.7
	49.6	319.6	256.3	18.55	57.7	9.6
	55.8	323.2	259.5	18.67	58.7	11.8
	62.0	324.9	261.0	18.75	59.6	14.2
	65.1	325.9	261.8	18.78	60.0	15.5
	68.2	326.6	262.4	18.81	60.3	16.8
	74.4	327.3	262.9	18.85	60.9	19.6
75	40.3	336.4	271.1	19.12	61.5	6.5
	49.6	342.2	276.3	19.29	63.9	9.4
	55.8	344.9	278.7	19.40	65.0	11.6
	62.0	347.2	280.7	19.49	65.9	13.9
	65.1	347.7	281.1	19.52	66.4	15.1
	68.2	349.5	282.7	19.57	66.7	16.4
	74.4	350.7	283.7	19.63	67.4	19.1
86	40.3	369.8	300.6	20.27	71.1	6.3
	49.6	376.8	306.7	20.54	73.6	9.1
	55.8	379.5	309.0	20.66	74.9	11.2
	62.0	380.9	310.4	20.66	76.0	13.4
	65.1	382.4	311.7	20.72	76.4	14.6
	68.2	383.3	312.4	20.76	76.8	15.8
	74.4	383.7	312.7	20.80	77.6	18.5

**Note:** Heating performance data is tabulated at 68.0°F DB at the rated CFM. For conditions other than what is tabulated, multipliers must be used to correct performance. See [Table 43, p. 51](#) for Fan Correction Factors for CFM other than rated and the Heating Correction Factors for variations in entering air temperatures. Rated GPM 62.0; Minimum CFM 6400; Rated CFM 7600; Maximum CFM 9600.

**Table 43. GER240 fan correction factors**

Entering CFM	Cooling Capacity	Sensible Capacity	Cooling Input Watts	Heating Capacity	Heating Input Watts
6400	0.969	0.915	0.996	0.978	1.061
6620	0.976	0.932	0.997	0.983	1.048
6840	0.982	0.947	0.998	0.991	1.038
7200	0.991	0.973	0.999	0.993	1.017
7600	1.000	1.000	1.000	1.000	1.000
8000	1.008	1.028	1.001	1.005	0.984
8800	1.024	1.085	1.004	1.016	0.956
9600	1.039	1.142	1.006	1.023	0.933

**GER300 Cooling Performance**
**Table 44. GER300 cooling performance**

EWT	GPM	Gross Mbtuh	Sen Mbtuh	SHR	Comp Pwr kW	Reject Mbtuh	LWT	Feet Head
46	50.4	329.7	235.1	0.71	13.55	375.9	60.9	7.2
	62.0	324.9	227.4	0.70	13.34	370.5	58.0	10.5
	69.8	322.6	225.8	0.70	13.27	367.8	56.5	12.9
	77.5	319.5	220.5	0.69	13.19	364.5	55.4	15.6
	81.4	319.9	223.9	0.70	13.16	364.8	55.0	17.0
	85.3	320.1	223.7	0.70	13.20	365.1	54.6	18.4
	93.0	318.1	221.4	0.70	13.16	363.0	53.8	21.5
55	50.4	329.2	238.3	0.72	14.38	378.3	70.0	7.0
	62.0	326.5	235.1	0.72	14.16	374.8	67.1	10.1
	69.8	323.0	232.2	0.72	14.13	371.2	65.6	12.5
	77.5	322.2	231.4	0.72	14.08	370.3	64.6	15.0
	81.4	321.3	228.4	0.71	14.00	369.1	64.1	16.4
	85.3	320.3	226.8	0.71	13.96	367.9	63.6	17.8
	93.0	318.2	222.7	0.70	13.88	365.5	62.9	20.7
68	50.4	320.5	239.1	0.75	15.81	374.5	82.9	6.7
	62.0	319.9	237.1	0.74	15.60	373.2	80.0	9.6
	69.8	319.7	235.9	0.74	15.55	372.7	78.7	11.9
	77.5	318.9	234.7	0.74	15.51	371.9	77.6	14.3
	81.4	318.3	233.6	0.73	15.48	371.1	77.1	15.6
	85.3	318.2	233.6	0.73	15.45	370.9	76.7	16.9
	93.0	317.2	232.5	0.73	15.39	369.7	76.0	19.8
75	50.4	314.5	238.1	0.76	16.63	371.2	89.7	6.5
	62.0	313.9	237.0	0.75	16.49	370.2	86.9	9.4
	69.8	313.6	235.2	0.75	16.39	369.6	85.6	11.6
	77.5	313.6	235.8	0.75	16.31	369.3	84.5	14.0
	81.4	313.6	233.7	0.75	16.25	369.1	84.1	15.2
	85.3	313.4	234.1	0.75	16.28	368.9	83.7	16.5
	93.0	313.7	233.4	0.74	16.23	369.1	82.9	19.3

## Performance Data

**Table 44. GER300 cooling performance (continued)**

<b>EWT</b>	<b>GPM</b>	<b>Gross Mbtuh</b>	<b>Sen Mbtuh</b>	<b>SHR</b>	<b>Comp Pwr kW</b>	<b>Reject Mbtuh</b>	<b>LWT</b>	<b>Feet Head</b>
86	50.4	299.5	236.0	0.79	18.14	361.4	100.3	6.3
	62.0	300.5	235.6	0.78	17.98	361.8	97.7	9.1
	69.8	301.9	234.6	0.78	17.87	362.9	96.4	11.2
	77.5	302.9	234.2	0.77	17.77	363.6	95.4	13.5
	81.4	302.3	234.3	0.77	17.79	363.0	94.9	14.7
	85.3	302.6	232.7	0.77	17.72	363.1	94.5	16.0
	93.0	302.5	232.3	0.77	17.68	362.8	93.8	18.6
95	50.4	282.5	231.9	0.82	19.45	348.8	108.8	6.1
	62.0	287.9	232.6	0.81	19.32	353.8	106.4	8.9
	69.8	288.9	232.5	0.81	19.25	354.6	105.2	10.9
	77.5	289.6	232.2	0.80	19.15	354.9	104.2	13.1
	81.4	289.6	232.3	0.80	19.15	355.0	103.7	14.3
	85.3	289.0	232.3	0.80	19.15	354.3	103.3	15.6
	93.0	290.0	231.7	0.80	19.13	355.3	102.6	18.1
105	50.4	249.9	222.7	0.89	21.39	322.9	117.8	6.0
	62.0	259.8	225.5	0.87	21.07	331.7	115.7	8.6
	69.8	269.2	228.1	0.85	20.86	340.5	114.8	10.6
	77.5	270.9	228.4	0.84	20.77	341.8	113.8	12.8
	81.4	271.5	228.3	0.84	20.73	342.2	113.4	13.9
	85.3	272.9	228.5	0.84	20.67	343.5	113.1	15.1
	93.0	274.0	228.8	0.83	20.61	344.4	112.4	17.6
115	50.4	215.5	212.5	0.99	23.48	295.6	126.7	5.8
	62.0	237.2	219.1	0.92	22.97	315.6	125.2	8.4
	69.8	240.4	220.0	0.92	22.86	318.4	124.1	10.3
	77.5	242.7	220.6	0.91	22.75	320.3	123.3	12.5
	81.4	243.9	221.0	0.91	22.70	321.4	122.9	13.6
	85.3	244.9	221.2	0.90	22.68	322.3	122.6	14.7
	93.0	245.3	221.3	0.90	22.62	322.5	121.9	17.2
120	50.4	206.1	206.1	1.00	24.51	289.8	131.5	5.8
	62.0	214.2	211.8	0.99	24.18	296.7	129.6	8.3
	69.8	224.1	215.4	0.96	23.95	305.8	128.8	10.2
	77.5	228.0	216.4	0.95	23.81	309.2	128.0	12.3
	81.4	229.0	216.7	0.95	23.79	310.2	127.6	13.4
	85.3	230.7	217.3	0.94	23.79	311.9	127.3	14.5
	93.0	234.4	218.5	0.93	23.68	315.2	126.8	17.0

**Note:** Cooling performance data is tabulated at 80.6°F DB / 66.2°F WB at the rated CFM. For conditions other than what is tabulated, multipliers must be used to correct performance. See [Table 45, p. 53](#) for Fan Correction Factors for CFM other than rated and the Cooling Correction Factors for variations in entering air temperatures. Rated GPM 77.5; Minimum CFM 7000; Rated CFM 9500; Maximum CFM 11000.

**Note:** GER300 is cooling only.

**Table 45. GER300 fan correction factors**

Entering CFM	Cooling Capacity	Sensible Capacity	Cooling Input Watts	Heating Capacity	Heating Input Watts
7000	0.939	0.853	0.971	—	—
7750	0.961	0.897	0.983	—	—
8500	0.976	0.941	0.994	—	—
9000	0.991	0.973	0.997	—	—
9500	1.000	1.000	1.000	—	—
10000	1.007	1.034	1.008	—	—
10500	1.013	1.061	1.011	—	—
11000	1.020	1.094	1.017	—	—

**Table 46. GER036 correction factors for variation in entering air temperature**

Cooling Entering Air WB °F	Cooling Capacity	Cooling Input Watts	Sensible vs Entering Dry Bulb Multipliers					Heating Entering Air DB °F	Heating Capacity	Heating Input Watts
			65.6	70.6	75.6	80.6	85.6			
49.4	0.935	1.009	1.039	1.107	1.176	*	*	53.0	1.048	0.868
56.3	0.936	1.009	0.815	1.036	1.177	*	*	58.0	1.034	0.911
60.3	0.936	1.009	0.633	0.846	1.064	*	*	63.0	1.016	0.954
63.2	0.958	1.003	0.490	0.714	0.927	1.148	*	68.0	1.000	1.000
66.2	1.000	1.000		0.565	0.788	1.000	1.225	73.0	0.987	1.052
72.1	1.088	0.991			0.481	0.724	0.931	78.0	0.966	1.101
77.1	1.161	0.986				0.440	0.686	83.0	0.950	1.155

**Table 47. GER048 correction factors for variation in entering air temperature**

Cooling Entering Air WB F	Cooling Capacity	Cooling Input Watts	Sensible vs Entering Dry Bulb Multipliers					Heating Entering Air DB F	Heating Capacity	Heating Input Watts
			65.6	70.6	75.6	80.6	85.6			
49.4	0.920	1.010	1.001	1.068	1.139	*	*	53.0	1.051	0.870
56.3	0.922	1.010	0.804	1.021	1.140	*	*	58.0	1.033	0.911
60.3	0.924	1.009	0.614	0.838	1.059	1.211	*	63.0	1.015	0.953
63.2	0.956	1.001	0.459	0.699	0.922	1.142	*	68.0	1.000	1.000
66.2	1.000	1.000		0.549	0.778	1.000	1.219	73.0	0.983	1.048
72.1	1.096	1.000			0.472	0.699	0.925	78.0	0.966	1.101
77.1	1.181	0.997				0.439	0.662	83.0	0.949	1.155

**Table 48. GER060 correction factors for variation in entering air temperature**

Cooling Entering Air WB F	Cooling Capacity	Cooling Input Watts	Sensible vs Entering Dry Bulb Multipliers					Heating Entering Air DB F	Heating Capacity	Heating Input Watts
			65.6	70.6	75.6	80.6	85.6			
49.4	0.940	1.002	0.987	1.058	1.130	*	*	53.0	1.051	0.871
56.3	0.941	1.002	0.796	1.036	1.131	*	*	58.0	1.036	0.912
60.3	0.942	1.002	0.603	0.831	1.070	*	*	63.0	1.016	0.953
63.2	0.959	0.999	0.460	0.689	0.919	1.162	*	68.0	1.000	1.000
66.2	1.000	1.000		0.543	0.767	1.000	1.247	73.0	0.984	1.049



## Performance Data

**Table 48. GER060 correction factors for variation in entering air temperature**

Cooling Entering Air WB F	Cooling Capacity	Cooling Input Watts	Sensible vs Entering Dry Bulb Multipliers					Heating Entering Air DB F	Heating Capacity	Heating Input Watts
			65.6	70.6	75.6	80.6	85.6			
72.1	1.103	1.002			0.466	0.705	0.926	78.0	0.967	1.097
77.1	1.190	1.003				0.423	0.680	83.0	0.950	1.147

**Table 49. GER072 correction factors for variation in entering air temperature**

Cooling Entering Air WB F	Cooling Capacity	Cooling Input Watts	Sensible vs Entering Dry Bulb Multipliers					Heating Entering Air DB F	Heating Capacity	Heating Input Watts
			65.6	70.6	75.6	80.6	85.6			
49.4	0.940	1.007	1.032	1.098	1.165	*	*	53.0	1.050	0.863
56.3	0.941	1.004	0.815	1.042	1.167	*	*	58.0	1.036	0.908
60.3	0.941	1.007	0.621	0.844	1.071	*	*	63.0	1.016	0.952
63.2	0.959	1.003	0.477	0.700	0.925	1.154	*	68.0	1.000	1.000
66.2	1.000	1.000		0.552	0.774	1.000	1.232	73.0	0.987	1.054
72.1	1.091	0.992			0.474	0.699	0.920	78.0	0.968	1.104
77.1	1.173	0.987				0.429	0.662	83.0	0.948	1.157

**Table 50. GER090 correction factors for variation in entering air temperature**

Cooling Entering Air WB F	Cooling Capacity	Cooling Input Watts	Sensible vs Entering Dry Bulb Multipliers					Heating Entering Air DB F	Heating Capacity	Heating Input Watts
			65.6	70.6	75.6	80.6	85.6			
49.4	0.932	0.998	1.077	1.143	1.211	*	*	53.0	1.038	0.868
56.3	0.933	0.998	0.824	1.056	1.212	*	*	58.0	1.028	0.910
60.3	0.938	0.998	0.605	0.846	1.085	1.285	*	63.0	1.012	0.952
63.2	0.962	0.998	0.436	0.681	0.926	1.164	*	68.0	1.000	1.000
66.2	1.000	1.000		0.508	0.757	1.000	1.238	73.0	0.984	1.047
72.1	1.089	1.004			0.397	0.648	0.898	78.0	0.971	1.098
77.1	1.169	1.007				0.328	0.587	83.0	0.958	1.153

**Table 51. GER120 correction factors for variation in entering air temperature**

Cooling Entering Air WB F	Cooling Capacity	Cooling Input Watts	Sensible vs Entering Dry Bulb Multipliers					Heating Entering Air DB F	Heating Capacity	Heating Input Watts
			65.6	70.6	75.6	80.6	85.6			
49.4	0.934	1.002	1.023	1.090	1.157	*	*	53.0	1.054	0.843
56.3	0.935	1.002	0.815	1.030	1.158	*	*	58.0	1.037	0.894
60.3	0.936	1.002	0.635	0.847	1.061	*	*	63.0	1.018	0.946
63.2	0.957	1.001	0.499	0.713	0.926	1.142	*	68.0	1.000	1.000
66.2	1.000	1.000		0.573	0.784	1.000	1.218	73.0	0.984	1.061
72.1	1.089	0.999			0.497	0.713	0.926	78.0	0.966	1.119
77.1	1.169	0.999				0.466	0.675	83.0	0.944	1.179

**Table 52. GER150 correction factors for variation in entering air temperature**

Cooling Entering Air WB F	Cooling Capacity	Cooling Input Watts	Sensible vs Entering Dry Bulb Multipliers					Heating Entering Air DB F	Heating Capacity	Heating Input Watts
			65.6	70.6	75.6	80.6	85.6			
49.4	0.936	1.001	1.026	1.094	1.163	*	*	53.0	1.048	0.872
56.3	0.937	1.000	0.812	1.042	1.164	*	*	58.0	1.033	0.913
60.3	0.937	1.002	0.620	0.844	1.072	*	*	63.0	1.017	0.956
63.2	0.958	1.000	0.475	0.701	0.925	1.157	*	68.0	1.000	1.000
66.2	1.000	1.000		0.549	0.772	1.000	1.235	73.0	0.986	1.049
72.1	1.096	0.997			0.468	0.704	0.923	78.0	0.968	1.097
77.1	1.178	0.994				0.425	0.654	83.0	0.952	1.149

**Table 53. GER180 correction factors for variation in entering air temperature**

Cooling Entering Air WB F	Cooling Capacity	Cooling Input Watts	Sensible vs Entering Dry Bulb Multipliers					Heating Entering Air DB F	Heating Capacity	Heating Input Watts
			65.6	70.6	75.6	80.6	85.6			
49.4	0.939	0.992	1.031	1.096	1.161	*	*	53.0	1.083	0.893
56.3	0.940	0.993	0.816	1.026	1.163	*	*	58.0	1.058	0.928
60.3	0.942	0.994	0.618	0.844	1.062	1.223	*	63.0	1.030	0.965
63.2	0.962	0.997	0.470	0.699	0.926	1.138	*	68.0	1.000	1.000
66.2	1.000	1.000		0.544	0.772	1.000	1.209	73.0	0.972	1.038
72.1	1.086	1.008			0.461	0.689	0.919	78.0	0.942	1.077
77.1	1.159	1.017				0.419	0.647	83.0	0.911	1.117

**Table 54. GER240 correction factors for variation in entering air temperature**

Cooling Entering Air WB F	Cooling Capacity	Cooling Input Watts	Sensible vs Entering Dry Bulb Multipliers					Heating Entering Air DB F	Heating Capacity	Heating Input Watts
			65.6	70.6	75.6	80.6	85.6			
49.4	0.931	0.993	1.061	1.129	1.198	*	*	53.0	1.053	0.884
56.3	0.932	0.993	0.822	1.049	1.199	*	*	58.0	1.036	0.920
60.3	0.935	0.993	0.619	0.847	1.078	1.269	*	63.0	1.016	0.958
63.2	0.961	0.995	0.471	0.701	0.929	1.158	*	68.0	1.000	1.000
66.2	1.000	1.000		0.542	0.769	1.000	1.232	73.0	0.981	1.042
72.1	1.088	1.010			0.453	0.683	0.912	78.0	0.963	1.087
77.1	1.166	1.023				0.405	0.635	83.0	0.945	1.134

**Table 55. GER300 correction factors for variation in entering air temperature**

Cooling Entering Air WB °F	Cooling Capacity	Cooling Input Watts	Sensible vs Entering Dry Bulb Multipliers					Heating Entering Air DB °F	Heating Capacity	Heating Input Watts
			65.6	70.6	75.6	80.6	85.6			
49.4	0.942	0.971	0.778	0.933	1.098	*	*	—	—	—
56.3	0.943	0.971	0.720	0.936	1.100	*	*	—	—	—
60.3	0.943	0.972	0.561	0.822	1.085	*	*	—	—	—
63.2	0.959	0.979	0.447	0.691	0.930	1.176	*	—	—	—
66.2	1.000	1.000		0.523	0.751	1.000	1.246	—	—	—
72.1	1.066	1.041			0.389	0.600	0.864	—	—	—
77.1	1.101	1.059				0.254	0.487	—	—	—



## Performance Data

**Table 56. Multispeed direct drive evaporator fan performance - only available on single phase 3-5 ton units**

Unit Model		External Static Pressure (Inches of Water) & Motor Power (Bhp) <sup>(a)</sup>														
		Rated Speed Set 1			Standard Low Speed Speed Set 2			Mid Speed Speed Set 3			Standard High Speed Speed Set 4			High Speed Speed Set 5		
		CFM	ESP	RPM	BHP	ESP	RPM	BHP	ESP	RPM	BHP	ESP	RPM	BHP	ESP	RPM
GER036 Downflow Airflow	960	0.43	707	0.21	0.70	843	0.38	0.88	919	0.38	1.02	979	0.36	1.15	1027	0.50
	1020	0.37	687	0.20	0.62	818	0.37	0.80	896	0.37	0.94	956	0.35	1.07	1006	0.49
	1080	0.31	668	0.19	0.55	792	0.36	0.73	872	0.36	0.87	933	0.34	0.99	985	0.48
	1140	0.25	648	0.19	0.47	766	0.35	0.65	849	0.35	0.79	911	0.33	0.91	964	0.47
	1200	0.19	628	0.18	0.39	740	0.34	0.57	826	0.34	0.71	888	0.32	0.83	943	0.46
	1260	0.13	609	0.18	0.31	715	0.32	0.50	803	0.33	0.63	866	0.32	0.75	922	0.45
	1320	0.07	589	0.17	0.24	689	0.31	0.42	780	0.32	0.56	843	0.31	0.68	901	0.44
	1380	0.01	569	0.17	0.16	663	0.30	0.34	757	0.31	0.48	820	0.30	0.60	880	0.43
	1440	—	—	—	0.08	637	0.29	0.26	734	0.30	0.40	798	0.29	0.52	859	0.42
GER036 Horizontal Airflow	960	0.40	707	0.21	0.69	856	0.31	0.88	941	0.39	1.03	987	0.45	1.16	1034	0.50
	1020	0.35	688	0.20	0.62	831	0.30	0.80	916	0.38	0.95	967	0.44	1.08	1011	0.49
	1080	0.30	669	0.19	0.55	806	0.29	0.73	891	0.37	0.87	947	0.43	1.00	989	0.48
	1140	0.24	650	0.19	0.48	781	0.28	0.65	866	0.36	0.79	927	0.42	0.92	966	0.47
	1200	0.19	631	0.18	0.41	756	0.28	0.58	841	0.35	0.71	906	0.41	0.84	943	0.46
	1260	0.14	612	0.18	0.34	731	0.27	0.50	816	0.34	0.63	886	0.40	0.76	920	0.45
	1320	0.09	593	0.17	0.26	706	0.26	0.43	791	0.33	0.55	866	0.39	0.68	898	0.44
	1380	0.04	574	0.17	0.19	681	0.25	0.35	766	0.32	0.47	846	0.38	0.60	875	0.43
	1440	—	—	—	0.12	655	0.24	0.28	741	0.30	0.40	826	0.37	0.52	852	0.42
GER048 Downflow Airflow	1280	0.60	865	0.36	0.84	977	0.47	1.02	1044	0.55	1.17	1090	0.63	—	—	—
	1360	0.48	833	0.35	0.72	944	0.45	0.90	1012	0.54	1.04	1062	0.61	—	—	—
	1440	0.37	802	0.34	0.60	912	0.44	0.77	980	0.52	0.92	1033	0.60	—	—	—
	1520	0.25	770	0.32	0.48	879	0.42	0.65	948	0.50	0.80	1005	0.58	1.06	1100	0.69
	1600	0.14	739	0.31	0.36	846	0.41	0.52	915	0.49	0.68	976	0.56	0.92	1069	0.67
	1680	0.02	707	0.30	0.24	814	0.39	0.39	883	0.47	0.56	948	0.55	0.78	1038	0.65
	1760	—	—	—	0.13	781	0.38	0.27	851	0.45	0.43	920	0.53	0.64	1006	0.63
	1840	—	—	—	0.01	748	0.36	0.14	819	0.43	0.31	891	0.52	0.50	975	0.62
	1920	—	—	—	—	—	—	0.02	787	0.42	0.19	863	0.50	0.37	944	0.60
GER048 Horizontal Airflow	1280	0.61	864	0.36	0.84	967	0.47	1.00	1038	0.55	1.16	1115	0.65	—	—	—
	1360	0.51	831	0.35	0.73	935	0.45	0.88	1006	0.53	1.05	1084	0.63	—	—	—
	1440	0.40	798	0.33	0.62	904	0.44	0.77	974	0.52	0.94	1052	0.61	1.10	1114	0.70
	1520	0.30	766	0.32	0.51	873	0.42	0.66	943	0.50	0.82	1020	0.59	0.99	1084	0.68
	1600	0.19	733	0.31	0.40	842	0.41	0.55	911	0.48	0.71	989	0.57	0.87	1054	0.66
	1680	0.09	701	0.29	0.29	810	0.39	0.44	879	0.47	0.60	957	0.55	0.75	1023	0.65
	1760	—	—	—	0.18	779	0.38	0.32	848	0.45	0.48	925	0.54	0.64	993	0.63
	1840	—	—	—	0.08	748	0.36	0.21	816	0.43	0.37	893	0.52	0.52	963	0.61
	1920	—	—	—	—	—	—	0.10	784	0.42	0.26	861	0.50	0.40	932	0.59
GER060 Downflow Airflow	1600	0.83	888	0.49	0.95	948	0.56	1.19	1048	0.67	—	—	—	—	—	—
	1700	0.69	847	0.46	0.82	908	0.53	1.04	1004	0.64	1.33	1110	0.78	—	—	—
	1800	0.56	806	0.44	0.69	867	0.51	0.90	959	0.62	1.18	1063	0.75	—	—	—
	1900	0.43	764	0.42	0.56	826	0.48	0.76	915	0.59	1.02	1016	0.71	—	—	—
	2000	0.30	723	0.40	0.43	785	0.46	0.62	870	0.56	0.87	969	0.68	1.18	1089	0.88
	2100	0.16	681	0.37	0.30	744	0.44	0.47	826	0.53	0.71	922	0.65	1.03	1044	0.84
	2200	0.03	640	0.35	0.17	703	0.41	0.33	781	0.50	0.56	876	0.61	0.87	999	0.81
	2300	—	—	—	0.04	663	0.39	0.19	737	0.47	0.41	829	0.58	0.72	954	0.77
	2400	—	—	—	—	—	—	0.05	693	0.44	0.25	782	0.55	0.56	909	0.73



**Table 56. Multispeed direct drive evaporator fan performance - only available on single phase 3-5 ton units (continued)**

Unit Model		External Static Pressure (Inches of Water) & Motor Power (Bhp) <sup>(a)</sup>														
		Rated Speed Set 1			Standard Low Speed Speed Set 2			Mid Speed Speed Set 3			Standard High Speed Speed Set 4			High Speed Speed Set 5		
		CFM	ESP	RPM	BHP	ESP	RPM	BHP	ESP	RPM	BHP	ESP	RPM	BHP	ESP	RPM
GER060 Horizontal Airflow	1600	0.76	884	0.48	0.82	932	0.55	0.98	1022	0.66	1.13	1104	0.77	—	—	—
	1700	0.63	842	0.46	0.69	893	0.52	0.85	981	0.63	1.00	1061	0.74	—	—	—
	1800	0.50	801	0.44	0.57	854	0.50	0.72	941	0.60	0.87	1018	0.71	—	—	—
	1900	0.36	759	0.42	0.45	815	0.48	0.60	900	0.58	0.74	975	0.68	—	—	—
	2000	0.23	718	0.39	0.32	776	0.46	0.47	859	0.55	0.61	932	0.65	0.87	1069	0.86
	2100	0.10	676	0.37	0.20	737	0.43	0.34	818	0.53	0.49	890	0.62	0.74	1025	0.83
	2200	—	—	—	0.07	699	0.41	0.22	778	0.50	0.36	847	0.59	0.61	980	0.79
	2300	—	—	—	—	—	—	0.09	737	0.47	0.23	804	0.56	0.48	936	0.75
	2400	—	—	—	—	—	—	—	—	—	0.10	761	0.53	0.35	892	0.72

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.

(a) Data includes pressure drop due to wet coil and filters.

**Table 57. Belt drive evaporator fan performance - GER036 downflow airflow (3 phase units only)**

CFM		External Static Pressure (Inches of Water)																				
		0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80		0.90		1.00		
RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
1-hp Standard Motor & Field Supplied Low Static Drive <sup>(a)</sup>										1-hp Standard Motor & Drive <sup>(b)</sup>												
960	—	—	572	0.14	639	0.19	702	0.23	762	0.28	816	0.34	865	0.39	907	0.44	948	0.49	986	0.54		
1080	—	—	608	0.18	672	0.23	731	0.27	785	0.33	840	0.38	890	0.44	937	0.50	979	0.56	1017	0.62		
1200	572	0.18	645	0.23	707	0.28	762	0.33	814	0.38	864	0.44	913	0.50	961	0.57	1005	0.63	1046	0.70		
1320	614	0.22	684	0.28	744	0.33	797	0.39	846	0.44	894	0.50	939	0.56	984	0.63	1028	0.70	1070	0.78		
1440	656	0.27	723	0.34	781	0.40	833	0.46	881	0.52	925	0.58	969	0.64	1011	0.71	1053	0.78	1094	0.86		

**Continued**

CFM		External Static Pressure (Inches of Water)									
		1.10		1.20		1.30		1.40		1.50	
RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1-hp Standard Motor & Drive <sup>(b)</sup>											
960	1022	0.59	1057	0.64	1092	0.69	1125	0.74	1157	0.79	
1080	1053	0.67	1088	0.73	1121	0.79	1152	0.84	1184	0.9	
1200	1084	0.77	1118	0.83	1152	0.89	1182	0.95	1213	1.01	
1320	1110	0.85	1147	0.92	1182	1	1214	1.07	—	—	
1440	1133	0.94	1170	1.01	1207	1.1	—	—	—	—	

**1-hp Standard Motor & Field Supplied High Static Drive<sup>(c)</sup>**
**Notes:**

- For Standard Evaporator Fan Speed (rpm), reference [Table 74, p. 73](#).
- Data includes pressure drop due to standard filters and wet coils. No accessories or options are included in pressure drop data.
- Refer to [Table 79, p. 74](#) to determine additional static pressure drop due to other options/accessories.
- 1-hp Fan Motor Heat (MBh) = 2.7672 x Fan bhp + 0.4705.
- Factory supplied motors, in equipment, are definite purpose motors, specifically designed and tested to operate 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 AK71x3/4" required. Field Supplied Belt may be necessary.  
 (b) Field Supplied Fan Sheave AK51x3/4" required. Field Supplied Belt may be necessary.  
 (c) Field Supplied Fan Sheave AK41x3/4" required. Field Supplied Belt may be necessary.



## Performance Data

**Table 58. Belt drive evaporator fan performance - GER036 horizontal airflow (3 phase units only)**

		External Static Pressure (Inches of Water)																			
		0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80		0.90		1.00	
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
1-hp Standard Motor & Field Supplied Low Static Drive <sup>(a)</sup>									1-hp Standard Motor & Drive <sup>(b)</sup>												
960	—	—	560	0.13	641	0.17	711	0.22	770	0.27	822	0.32	868	0.37	911	0.41	952	0.46	991	0.52	
1080	—	—	589	0.16	665	0.21	735	0.26	796	0.31	850	0.37	899	0.42	942	0.48	983	0.53	1021	0.58	
1200	551	0.15	622	0.19	691	0.24	758	0.30	820	0.36	875	0.42	925	0.48	971	0.54	1012	0.60	1052	0.66	
1320	592	0.19	657	0.24	720	0.29	783	0.35	843	0.41	899	0.47	950	0.54	997	0.60	1041	0.67	1081	0.74	
1440	634	0.24	695	0.29	753	0.34	810	0.40	867	0.46	922	0.53	974	0.60	1022	0.67	1066	0.75	1108	0.82	

**Continued**

		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	
1-hp Standard Motor & Drive <sup>(b)</sup>											
960	1028	0.57	1064	0.62	1099	0.67	1133	0.73	1165	0.78	
1080	1057	0.64	1093	0.70	1127	0.75	1160	0.81	1192	0.87	
1200	1087	0.72	1123	0.78	1156	0.84	1189	0.90	1221	0.97	
1320	1118	0.80	1153	0.87	1187	0.94	1218	1.00	—	—	
1440	1146	0.89	1182	0.97	1217	1.04	—	—	—	—	
<b>1-hp Standard Motor &amp; Field Supplied High Static Drive<sup>(c)</sup></b>											

**Notes:**

1. For Standard Evaporator Fan Speed (rpm), reference [Table 74, p. 73](#).
2. Data includes pressure drop due to standard filters and wet coils. No accessories or options are included in pressure drop data.
3. Refer to [Table 79, p. 74](#) to determine additional static pressure drop due to other options/accessories.
4. 1-hp Fan Motor Heat (MBh) = 2.7672 x Fan bhp + 0.4705.
5. Factory supplied motors, in equipment, are definite purpose motors, specifically designed and tested to operate 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 AK71x3/4" required. Field Supplied Belt may be necessary.

(b) Field Supplied Fan Sheave AK51x3/4" required. Field Supplied Belt may be necessary.

(c) Field Supplied Fan Sheave AK41x3/4" required. Field Supplied Belt may be necessary.

**Table 59. Belt drive evaporator fan performance - GER048 downflow airflow (3 phase units only)**

		External Static Pressure (Inches of Water)																			
		0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80		0.90		1.00	
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
1-hp Standard Motor & Field Supplied Low Static Drive <sup>(a)</sup>										1-hp Standard Motor & Drive <sup>(b)</sup>											
1280	—	—	619	0.20	680	0.24	735	0.29	789	0.34	843	0.39	894	0.45	940	0.51	983	0.56	1025	0.63	
1440	597	0.20	664	0.25	724	0.30	775	0.35	823	0.40	872	0.46	921	0.52	968	0.58	1012	0.65	1052	0.71	
1600	648	0.26	710	0.32	768	0.37	818	0.43	864	0.49	908	0.54	950	0.60	995	0.67	1039	0.74	1081	0.81	
1760	700	0.34	758	0.39	812	0.46	862	0.52	907	0.58	948	0.64	988	0.71	1027	0.77	1068	0.84	1108	0.91	
1920	753	0.43	807	0.49	858	0.55	906	0.62	952	0.70	992	0.76	1029	0.83	1066	0.89	1102	0.96	1138	1.03	

**Continued**

		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	
1-hp Standard Motor & Drive <sup>(b)</sup>											
1280	1063	0.69	1101	0.75	1138	0.81	1175	0.88	1208	0.94	
1440	1091	0.78	1128	0.85	1164	0.91	1198	0.98	1233	1.05	
1600	1120	0.88	1157	0.95	1193	1.02	1227	1.10	1259	1.17	
1760	1147	0.99	1185	1.07	1220	1.14	1256	1.23	—	—	
1920	1174	1.11	1212	1.19	1247	1.27	—	—	—	—	
1-hp Standard Motor & Field Supplied High Static Drive <sup>(c)</sup>											

1. For Standard Evaporator Fan Speed (rpm), reference [Table 74, p. 73](#).
2. Data includes pressure drop due to standard filters and wet coils. No accessories or options are included in pressure drop data.
3. Refer to [Table 79, p. 74](#) to determine additional static pressure drop due to other options/accessories.
4. 1-hp Fan Motor Heat (MBh) = 2.7672 x Fan bhp + 0.4705.
5. Factory supplied motors, in equipment, are definite purpose motors, specifically designed and tested to operate 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 AK69x3/4" required. Field Supplied Belt may be necessary.  
 (b) Field Supplied Fan Sheave AK49x3/4" required. Field Supplied Belt may be necessary.  
 (c) Field Supplied Fan Sheave AK41x3/4" required. Field Supplied Belt may be necessary.



## Performance Data

**Table 60. Belt drive evaporator fan performance - GER048 horizontal airflow (3 phase units only)**

External Static Pressure (Inches of Water)																					
0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80		0.90		1.00			
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
1-hp Standard Motor & Field Supplied Low Static Drive <sup>(a)</sup>										1-hp Standard Motor & Drive <sup>(b)</sup>											
1280	—	—	633	0.20	704	0.26	767	0.31	822	0.37	871	0.42	915	0.48	957	0.54	997	0.60	1035	0.66	
1440	604	0.20	676	0.26	744	0.32	805	0.38	859	0.44	909	0.50	954	0.57	996	0.63	1035	0.69	1073	0.76	
1600	656	0.27	721	0.32	785	0.39	843	0.45	897	0.52	946	0.59	991	0.66	1034	0.73	1075	0.80	1110	0.87	
1760	709	0.34	768	0.40	827	0.47	883	0.54	936	0.61	984	0.69	1030	0.77	1072	0.84	1113	0.92	1149	1.00	
1920	762	0.43	817	0.50	872	0.57	925	0.64	975	0.72	1023	0.80	1067	0.88	1109	0.97	1150	1.05	1188	1.14	
										1-hp Standard Motor & Field Supplied High Static Drive <sup>(c)</sup>											

**Continued**

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
1-hp Standard Motor & Drive <sup>(b)</sup>										
1280	1072	0.71	1107	0.77	1142	0.84	1176	0.90	1210	0.97
1440	1108	0.83	1143	0.89	1176	0.96	1209	1.02	1239	1.09
1600	1146	0.95	1180	1.02	1212	1.09	1243	1.16	—	—
1760	1185	1.08	1219	1.16	1251	1.24	—	—	—	—
1920	1223	1.22	1258	1.31	—	—	—	—	—	—
1-hp Standard Motor & Field Supplied High Static Drive <sup>(c)</sup>										

**Notes:**

1. For Standard Evaporator Fan Speed (rpm), reference [Table 74, p. 73](#).
2. Data includes pressure drop due to standard filters and wet coils. No accessories or options are included in pressure drop data.
3. Refer to [Table 79, p. 74](#) to determine additional static pressure drop due to other options/accessories.
4. 1-hp Fan Motor Heat (MBh) = 2.7672 x Fan bhp + 0.4705.
5. Factory supplied motors, in equipment, are definite purpose motors, specifically designed and tested to operate 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 AK69x3/4" required. Field Supplied Belt may be necessary.  
 (b) Field Supplied Fan Sheave AK49x3/4" required. Field Supplied Belt may be necessary.  
 (c) Field Supplied Fan Sheave AK41x3/4" required. Field Supplied Belt may be necessary.

**Table 61. Belt drive evaporator fan performance - GER060 downflow airflow (3 phase units only)**

		External Static Pressure (Inches of Water)																			
		0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80		0.90		1.00	
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
1-hp Standard Motor & Field Supplied Low Static Drive <sup>(a)</sup>												1-hp Standard Motor & Drive <sup>(b)</sup>									
1600	—	—	—	—	623	0.26	681	0.31	734	0.36	783	0.41	831	0.46	878	0.52	923	0.58	965	0.64	
1800	—	—	594	0.27	656	0.32	712	0.38	763	0.43	810	0.49	855	0.54	899	0.60	941	0.67	983	0.73	
2000	571	0.28	633	0.34	690	0.40	744	0.46	794	0.52	840	0.58	883	0.64	924	0.71	964	0.77	1003	0.84	
2200	615	0.36	674	0.42	727	0.49	778	0.55	826	0.62	871	0.69	913	0.76	953	0.82	991	0.89	1030	0.96	
2400	660	0.45	715	0.52	766	0.59	814	0.66	859	0.74	903	0.81	945	0.88	984	0.96	1021	1.03	1057	1.11	

**Continued**

		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	
1-hp Standard Motor & Drive <sup>(b)</sup>											
1600	1005	0.71	1045	0.78	1083	0.84	1120	0.91	1155	0.98	
1800	1023	0.8	1062	0.87	1098	0.94	1134	1.01	1170	1.09	
2000	1041	0.91	1079	0.98	1116	1.06	1152	1.13	1186	1.21	
2200	1065	1.03	1100	1.11	1135	1.18	1169	1.26	1203	1.34	
2400	1092	1.18	1125	1.26	1159	1.34	1191	1.41	1223	1.50	
1-hp Standard Motor & Field Supplied High Static Drive <sup>(c)</sup>											

**Notes:**

1. For Standard Evaporator Fan Speed (rpm), reference [Table 74, p. 73](#).
2. Data includes pressure drop due to standard filters and wet coils. No accessories or options are included in pressure drop data.
3. Refer to [Table 79, p. 74](#) to determine additional static pressure drop due to other options/accessories.
4. 1-hp Fan Motor Heat (MBh) = 2.7672 x Fan bhp + 0.4705.
5. Factory supplied motors, in equipment, are definite purpose motors, specifically designed and tested to operate 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 AK69x3/4" required. Field Supplied Belt may be necessary.  
 (b) Field Supplied Fan Sheave AK49x3/4" required. Field Supplied Belt may be necessary.  
 (c) Field Supplied Fan Sheave AK41x3/4" required. Field Supplied Belt may be necessary.



## Performance Data

**Table 62. Belt drive evaporator fan performance - GER060 horizontal airflow (3 phase units only)**

External Static Pressure (Inches of Water)																					
		0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80		0.90		1.00	
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
1-hp Standard Motor & Field Supplied Low Static Drive <sup>(a)</sup>											1-hp Standard Motor & Drive <sup>(b)</sup>										
1600	—	—	585	0.23	659	0.29	724	0.35	787	0.42	846	0.49	901	0.56	950	0.64	995	0.71	1038	0.78	
1800	—	—	622	0.29	690	0.36	753	0.43	811	0.49	866	0.57	922	0.65	973	0.73	1020	0.81	1064	0.90	
2000	598	0.31	661	0.37	724	0.44	784	0.52	840	0.59	893	0.66	943	0.74	993	0.83	1041	0.92	1085	1.01	
2200	647	0.40	703	0.46	761	0.54	817	0.62	870	0.70	921	0.78	970	0.86	1016	0.95	1061	1.04	1106	1.13	
2400	696	0.50	746	0.57	799	0.65	853	0.74	903	0.82	952	0.91	998	1.00	1043	1.09	1086	1.18	1127	1.27	

**Continued**

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	
1-hp Standard Motor & Drive <sup>(b)</sup>											
1600	1078	0.86	1115	0.93	1150	1.01	1183	1.08	1214	1.16	
1800	1105	0.98	1143	1.06	1180	1.15	1215	1.23	—	—	
2000	1128	1.10	1169	1.20	1207	1.29	—	—	—	—	
2200	1150	1.24	1190	1.34	—	—	—	—	—	—	
2400	1170	1.38	1211	1.48	—	—	—	—	—	—	
1-hp Standard Motor & Field Supplied High Static Drive <sup>(c)</sup>											

**Notes:**

1. For Standard Evaporator Fan Speed (rpm), reference [Table 74, p. 73](#).
2. Data includes pressure drop due to standard filters and wet coils. No accessories or options are included in pressure drop data.
3. Refer to [Table 79, p. 74](#) to determine additional static pressure drop due to other options/accessories.
4. 1-hp Fan Motor Heat (MBh) = 2.7672 x Fan bhp + 0.4705.
5. Factory supplied motors, in equipment, are definite purpose motors, specifically designed and tested to operate 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 AK69x3/4" required. Field Supplied Belt may be necessary.

(b) Field Supplied Fan Sheave AK49x3/4" required. Field Supplied Belt may be necessary.

(c) Field Supplied Fan Sheave AK41x3/4" required. Field Supplied Belt may be necessary.

**Table 63. Belt drive evaporator fan performance - GER072 downflow airflow**

External Static Pressure (Inches of Water)																					
		0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80		0.90		1.00	
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
1-hp Standard Motor & Field Supplied Low Static Drive <sup>(a)</sup>											1-hp Standard Motor & Drive										
1920	—	—	581	0.28	636	0.34	685	0.39	732	0.45	775	0.50	815	0.55	854	0.60	892	0.66	927	0.71	
2160	—	—	626	0.37	677	0.43	725	0.49	769	0.55	810	0.61	849	0.67	887	0.73	922	0.79	956	0.84	
2400	620	0.42	672	0.49	720	0.55	766	0.61	807	0.68	847	0.75	885	0.81	921	0.88	956	0.95	989	1.01	
2640	672	0.55	719	0.62	765	0.69	808	0.76	848	0.83	886	0.90	923	0.98	957	1.05	991	1.12	1024	1.20	
2880	725	0.70	768	0.77	811	0.85	852	0.92	890	1.00	927	1.08	962	1.16	995	1.24	1028	1.32	1059	1.40	

**Continued**

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	
1-hp Standard Motor & Drive											2-hp Oversized Motor & Drive										
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	

**Notes:**

1. For Standard Evaporator Fan Speed (rpm), reference [Table 74, p. 73](#).
2. Data includes pressure drop due to standard filters and wet coils. No accessories or options are included in pressure drop data.
3. Refer to [Table 79, p. 74](#) to determine additional static pressure drop due to other options/accessories.
4. 1-HP Fan Motor Heat (MBH) = 2.829 x Fan BHP + 0.4024. 2-HP Fan Motor Heat (MBH) = 3.000 x Fan BHP + 0.5000.
5. Factory supplied motors, in equipment, are definite purpose motors, specifically designed and tested to operate 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.



## Performance Data

**Table 64. Belt drive evaporator fan performance - GER072 horizontal airflow**

External Static Pressure (Inches of Water)																					
		0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80		0.90		1.00	
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
1-hp Standard Motor & Field Supplied Low Static Drive <sup>(a)</sup>											1-hp Standard Motor & Drive										
1920	581	0.31	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										

**Continued**

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	
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 [Table 74, p. 73](#).
2. Data includes pressure drop due to standard filters and wet coils. No accessories or options are included in pressure drop data.
3. Refer to [Table 79, p. 74](#) to determine additional static pressure drop due to other options/accessories.
4. 1-HP Fan Motor Heat (MBH) = 2.829 x Fan BHP + 0.4024. 2-HP Fan Motor Heat (MBH) = 3.000 x Fan BHP + 0.5000.
5. Factory supplied motors, in equipment, are definite purpose motors, specifically designed and tested to operate 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.



**Table 65. Belt drive evaporator fan performance - GER090 downflow airflow**

External Static Pressure (Inches of Water)																													
0.10			0.20			0.30			0.40			0.50			0.60			0.70			0.80			0.90			1.00		
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
1-hp Standard Motor & Low Static Accessory Kit <sup>(a)</sup>														1-hp Standard Motor & Drive															
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									

**Continued**

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	RPM	BHP	RPM	BHP	RPM	BHP	
1-hp Standard Motor & Drive											3-hp Oversized Motor & Drive																		
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									

**Notes:**

1. For Standard Evaporator Fan Speed (rpm), reference [Table 74, p. 73](#).
2. Data includes pressure drop due to standard filters and wet coils. No accessories or options are included in pressure drop data.
3. Refer to [Table 79, p. 74](#) to determine additional static pressure drop due to other options/accessories.
4. 1-HP Fan Motor Heat (MBH) = 2.829 x Fan BHP + 0.4024. 3-HP Fan Motor Heat (MBH) = 2.9000 x Fan BHP + 0.4750.
5. Factory supplied motors, in equipment, are definite purpose motors, specifically designed and tested to operate 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



## Performance Data

**Table 66. Belt drive evaporator fan performance - GER090 horizontal airflow**

External Static Pressure (Inches of Water)																					
		0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80		0.90		1.00	
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
1-hp Standard Motor & Low Static Accessory Kit <sup>(a)</sup>											1-hp Standard Motor & Drive										
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	
											3-hp Oversized Motor & Drive										

**Continued**

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	
1-hp Standard Motor & Drive								3-hp Oversized Motor & Drive													
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	—	—	—	—	
								3-hp Oversized Motor & Field Supplied High Static Drive <sup>(b)</sup>													

**Notes:**

1. For Standard Evaporator Fan Speed (rpm), reference [Table 74, p. 73](#).
2. Data includes pressure drop due to standard filters and wet coils. No accessories or options are included in pressure drop data.
3. Refer to [Table 79, p. 74](#) to determine additional static pressure drop due to other options/accessories.
4. 1-HP Fan Motor Heat (MBH) = 2.829 x Fan BHP + 0.4024. 3-HP Fan Motor Heat (MBH) = 2.9000 x Fan BHP + 0.4750.
5. Factory supplied motors, in equipment, are definite purpose motors, specifically designed and tested to operate 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

**Table 67. Direct drive evaporator fan performance - GER120 downflow airflow**

External Static Pressure (Inches of Water)																					
		0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80		0.90		1.00	
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
3200	1024	0.65	1056	0.73	1087	0.81	1118	0.89	1146	0.98	1172	1.06	1199	1.15	1226	1.24	1255	1.35	1280	1.44	
3600	1144	0.90	1173	0.99	1201	1.08	1229	1.18	1256	1.27	1282	1.36	1305	1.45	1328	1.55	1352	1.65	1377	1.76	
4000	1264	1.21	1291	1.31	1317	1.41	1342	1.51	1367	1.62	1392	1.72	1414	1.82	1437	1.93	1458	2.03	1478	2.14	
4400	1385	1.58	1410	1.70	1434	1.81	1457	1.92	1480	2.03	1503	2.15	1525	2.26	1546	2.37	1567	2.49	1586	2.60	
4800	1507	2.03	1530	2.16	1552	2.28	1574	2.40	1595	2.52	1616	2.65	1636	2.77	1657	2.89	1677	3.02	1696	3.14	

**Continued**

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	
3200	1303	1.53	1326	1.62	1349	1.72	1374	1.82	1401	1.93	1425	2.04	1450	2.15	1474	2.27	1498	2.38	1521	2.50	
3600	1401	1.87	1426	1.99	1448	2.09	1467	2.19	1487	2.29	1508	2.39	1530	2.51	1552	2.62	1576	2.75	1598	2.87	
4000	1500	2.25	1522	2.37	1544	2.49	1567	2.62	1588	2.75	1608	2.86	1625	2.97	1643	3.08	1661	3.19	1681	3.31	
4400	1605	2.72	1624	2.84	1643	2.96	1664	3.09	1684	3.22	—	—	—	—	—	—	—	—	—	—	
4800	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	

**Notes:**

1. For Direct Drive Fan Speed (rpm), reference [Table 74, p. 73](#).
2. Data includes pressure drop due to standard filters and wet coils. No accessories or options are included in pressure drop data.
3. Refer to [Table 79, p. 74](#) to determine additional static pressure drop due to other options/accessories.
4. Direct Drive Fan Motor Heat (MBH) = 2.8623 x Fan BHP - 0.1504
5. Factory supplied motors, in equipment, are definite purpose motors, specifically designed and tested to operate 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.



## Performance Data

**Table 68. Direct drive evaporator fan performance - GER120 horizontal airflow**

		External Static Pressure (Inches of Water)																					
		0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80		0.90		1.00			
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
3200	1038	0.69	1080	0.80	1120	0.91	1161	1.04	1200	1.16	1235	1.29	1269	1.41	1303	1.54	1336	1.67	1368	1.81			
3600	1158	0.95	1195	1.07	1231	1.20	1267	1.33	1304	1.47	1339	1.61	1371	1.75	1402	1.89	1432	2.03	1462	2.17			
4000	1278	1.27	1313	1.41	1346	1.55	1378	1.69	1411	1.83	1443	1.98	1475	2.14	1506	2.30	1534	2.45	1561	2.61			
4400	1399	1.66	1431	1.81	1462	1.96	1491	2.12	1520	2.27	1550	2.43	1580	2.60	1610	2.77	1638	2.94	1665	3.12			
4800	1520	2.12	1550	2.29	1579	2.45	1606	2.62	1633	2.79	1659	2.96	1687	3.13	-	-	-	-	-	-			

**Continued**

		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	1400	1.95	1432	2.09	1464	2.23	1495	2.39	1525	2.54	1556	2.69	1586	2.85	1616	3.02	1645	3.18	1675	3.34			
3600	1491	2.32	1520	2.47	1549	2.62	1578	2.78	1606	2.94	1634	3.10	1662	3.28	1689	3.44	—	—	—	—			
4000	1588	2.76	1615	2.92	1642	3.09	1668	3.25	1694	3.43	—	—	—	—	—	—	—	—	—	—			
4400	1690	3.29	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
4800	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			

**Notes:**

1. For Standard Evaporator Fan Speed (rpm), reference [Table 74, p. 73](#).
2. Data includes pressure drop due to standard filters and wet coils. No accessories or options are included in pressure drop data.
3. Refer to [Table 79, p. 74](#) to determine additional static pressure drop due to other options/accessories.
4. Direct Drive Fan Motor Heat (MBH) = 2.8623 x Fan BHP - 0.1504
5. Factory supplied motors, in equipment, are definite purpose motors, specifically designed and tested to operate 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.

**Table 69. Belt drive evaporator fan performance - GER150 downflow or horizontal airflow**

External Static Pressure (Inches of Water)																					
		0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80		0.90		1.00	
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
3-hp Standard Motor & Low Static Drive											3-hp Standard Motor & Drive										
4000	—	—	382	0.56	420	0.66	459	0.79	496	0.91	531	1.05	564	1.19	595	1.34	625	1.50	654	1.67	
4500	—	—	410	0.73	446	0.85	479	0.97	514	1.11	548	1.26	578	1.40	610	1.56	639	1.72	666	1.89	
5000	400	0.80	440	0.95	473	1.07	504	1.20	534	1.34	566	1.50	597	1.66	625	1.81	653	1.98	681	2.16	
5500	431	1.03	470	1.19	502	1.34	531	1.48	559	1.62	586	1.77	615	1.95	643	2.12	670	2.30	695	2.47	
6000	463	1.30	500	1.48	531	1.65	559	1.80	585	1.95	611	2.11	636	2.28	662	2.46	689	2.66	714	2.85	
											3-hp Standard Motor & High Static Drive										

**Continued**

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	
3-hp Standard Motor & Low Static Drive						3-hp Standard Motor & High Static Drive															
4000	682	1.83	708	1.99	734	2.16	758	2.32	782	2.49	804	2.66	826	2.83	847	3.01	867	3.19	886	3.38	
4500	693	2.07	719	2.25	745	2.44	769	2.62	793	2.80	815	2.99	838	3.17	859	3.36	880	3.55	900	3.74	
5000	707	2.34	732	2.53	757	2.72	780	2.92	804	3.13	826	3.33	848	3.54	870	3.74	891	3.95	911	4.15	
5500	721	2.66	747	2.86	771	3.05	794	3.26	816	3.46	838	3.68	860	3.90	881	4.13	902	4.36	922	4.58	
6000	738	3.04	760	3.22	784	3.43	808	3.65	831	3.86	852	4.08	873	4.30	893	4.53	913	4.77	933	5.01	
											5-hp Oversized Motor & Drive										

**Notes:**

1. For Standard Evaporator Fan Speed (rpm), reference [Table 74, p. 73](#).
2. Data includes pressure drop due to standard filters and wet coils. No accessories or options are included in pressure drop data.
3. Refer to [Table 79, p. 74](#) to determine additional static pressure drop due to other options/accessories.
4. Fan Motor Heat (MBH) = 3.15 x Fan BHP
5. Factory supplied motors, in equipment, are definite purpose motors, specifically designed and tested to operate 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.



## Performance Data

**Table 70. Belt drive evaporator fan performance - GER180 downflow or horizontal airflow**

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

**Continued**

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	
3-hp Standard Motor & High Static Drive											5-hp Oversized Motor & Drive										
4800	708	2.27	734	2.46	758	2.66	782	2.86	806	3.06	829	3.25	850	3.45	872	3.65	893	3.85	913	4.04	
5400	727	2.65	752	2.85	776	3.05	799	3.25	821	3.47	843	3.69	865	3.91	886	4.13	907	4.36	927	4.58	
6000	747	3.11	770	3.30	794	3.51	817	3.73	839	3.95	861	4.17	881	4.40	902	4.63	922	4.87	942	5.12	
6600	770	3.66	793	3.87	815	4.08	835	4.28	857	4.51	879	4.74	900	4.98	920	5.22	940	5.46	959	5.71	
7200	794	4.25	817	4.49	839	4.73	860	4.96	880	5.19	899	5.41	918	5.64	—	—	—	—	—	—	

**Notes:**

1. For Standard Evaporator Fan Speed (rpm), reference [Table 74, p. 73](#).
2. Data includes pressure drop due to standard filters and wet coils. No accessories or options are included in pressure drop data.
3. Refer to [Table 79, p. 74](#) to determine additional static pressure drop due to other options/accessories.
4. Fan Motor Heat (MBH) = 3.15 x Fan BHP
5. Factory supplied motors, in equipment, are definite purpose motors, specifically designed and tested to operate 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.

**Table 71. Belt drive evaporator fan performance - GER240 downflow or horizontal airflow**

External Static Pressure (Inches of Water)																					
		0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80		0.90		1.00	
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
5-hp Standard Motor & Drive																					
6400	—	—	—	—	507	1.72	535	1.88	560	2.07	584	2.27	607	2.46	631	2.66	654	2.86	677	3.07	
7200	—	—	519	2.10	549	2.30	576	2.48	600	2.67	623	2.88	644	3.10	665	3.32	686	3.54	707	3.76	
8000	531	2.50	563	2.77	592	3.00	617	3.21	641	3.41	663	3.62	684	3.86	704	4.10	723	4.34	742	4.58	
8800	578	3.26	607	3.56	634	3.83	659	4.08	683	4.31	704	4.54	724	4.77	744	5.01	762	5.27	779	5.54	
9600	626	4.19	653	4.51	679	4.81	703	5.10	725	5.36	746	5.62	765	5.85	784	6.11	802	6.36	819	6.64	
5-hp Standard Motor & High Static Drive											7.5-hp Oversized Motor & Low Static Drive										

**Continued**

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	
5-hp Standard Motor & High Static Drive																					
6400	699	3.30	721	3.52	742	3.75	762	3.98	780	4.20	798	4.42	815	4.66	832	4.89	849	5.12	866	5.36	
7200	727	3.98	748	4.22	768	4.46	789	4.71	808	4.97	827	5.22	845	5.48	861	5.73	878	5.98	893	6.24	
8000	760	4.82	779	5.07	798	5.32	816	5.57	834	5.83	853	6.11	871	6.38	889	6.67	906	6.95	923	7.23	
8800	797	5.81	814	6.07	831	6.34	848	6.60	865	6.88	882	7.15	898	7.42	915	7.72	932	8.02	—	—	
9600	836	6.93	852	7.22	868	7.51	884	7.81	—	—	—	—	—	—	—	—	—	—	—	—	
7.5-hp Oversized Motor & Low Static Drive							7.5-hp Oversized Motor & Drive														

**Notes:**

1. For Standard Evaporator Fan Speed (rpm), reference [Table 74, p. 73](#).
2. Data includes pressure drop due to standard filters and wet coils. No accessories or options are included in pressure drop data.
3. Refer to [Table 79, p. 74](#) to determine additional static pressure drop due to other options/accessories.
4. Fan Motor Heat (MBH) = 3.15 x Fan BHP
5. Factory supplied motors, in equipment, are definite purpose motors, specifically designed and tested to operate 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.



## Performance Data

**Table 72. Belt drive evaporator fan performance - GER300 downflow or horizontal airflow**

		External Static Pressure (Inches of Water)																			
		0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80		0.90		1.00	
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
7.5-hp Standard Motor & Low Static Drive											7.5-hp Standard Motor & Drive										
7000	—	—	—	—	603	2.50	629	2.69	653	2.87	675	3.04	698	3.22	720	3.41	741	3.61	763	3.82	
7500	—	—	607	2.74	635	2.97	660	3.18	683	3.38	704	3.57	726	3.76	747	3.95	767	4.16	787	4.36	
8000	610	3.03	639	3.26	667	3.50	691	3.74	714	3.97	735	4.17	755	4.37	775	4.57	795	4.78	814	4.99	
8500	644	3.61	673	3.86	699	4.09	723	4.36	745	4.61	765	4.83	785	5.04	804	5.26	823	5.48	841	5.69	
9000	677	4.22	705	4.50	731	4.77	755	5.05	776	5.31	796	5.57	816	5.81	834	6.03	852	6.25	870	6.48	
9500	714	4.98	739	5.25	764	5.53	787	5.81	807	6.08	828	6.37	846	6.63	864	6.87	882	7.10	899	7.34	
10000	747	5.73	773	6.07	797	6.35	818	6.62	839	6.93	859	7.24	878	7.52	896	7.81	912	8.04	929	8.30	
10500	785	6.68	806	6.93	829	7.25	851	7.54	872	7.86	891	8.18	908	8.48	—	—	—	—	—	—	
11000	816	7.53	840	7.90	864	8.27	885	8.58	—	—	—	—	—	—	—	—	—	—	—	—	
7.5-hp Standard Motor & Drive							7.5-hp Standard Motor & High Static Drive														

**Continued**

		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	
7.5-hp Standard Motor & Drive											
7000	786	4.05	809	4.28	831	4.51	852	4.73	872	4.94	
7500	808	4.59	829	4.82	850	5.07	871	5.31	892	5.56	
8000	833	5.21	852	5.44	871	5.69	891	5.94	911	6.21	
8500	860	5.92	877	6.15	895	6.39	913	6.64	932	6.91	
9000	887	6.71	904	6.95	921	7.19	938	7.44	955	7.70	
9500	915	7.58	932	7.83	949	8.08	965	8.33	981	8.60	
10000	945	8.55	—	—	—	—	—	—	—	—	
10500	—	—	—	—	—	—	—	—	—	—	
11000	—	—	—	—	—	—	—	—	—	—	
7.5-hp Standard Motor & High Static Drive											

**Notes:**

1. For Standard Evaporator Fan Speed (rpm), reference [Table 74, p. 73](#).
2. Data includes pressure drop due to standard filters and wet coils. No accessories or options are included in pressure drop data.
3. Refer to [Table 79, p. 74](#) to determine additional static pressure drop due to other options/accessories.
4. Fan Motor Heat (MBH) = 3.15 x Fan BHP
5. Factory supplied motors, in equipment, are definite purpose motors, specifically designed and tested to operate 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.



**Table 73. Potentiometer setting standard motor & drive/fan speed (rpm) GER120 only**

<b>MIN RPM</b>	<b>1000</b>	<b>MIN RPM</b>	<b>1000</b>
<b>MAX RPM</b>	<b>1700</b>	<b>MAX RPM</b>	<b>1700</b>
<b>Potentiometer Voltage</b>	<b>Motor RPM</b>	<b>Potentiometer Voltage</b>	<b>Motor RPM</b>
1.00	1000	5.50	1394
1.50	1044	6.00	1438
2.00	1088	6.50	1481
2.50	1131	7.00	1525
3.00	1175	7.50	1569
3.50	1219	8.00	1613
4.00	1263	8.50	1656
4.50	1306	9.00	1700
5.00	1350		

**Table 74. Standard motor & drive/fan speed (rpm)**

<b>Tons</b>	<b>Unit Model Number</b>	<b>Fan Sheave</b>	<b>6 Turns Open</b>	<b>5 Turns Open</b>	<b>4 Turns Open</b>	<b>3 Turns Open</b>	<b>2 Turns Open</b>	<b>1 Turns Open</b>	<b>Closed</b>
3	GER036	AK51x3/4	N/A	761	835	909	982	1057	1125
4	GER048	AK49x3/4	N/A	801	874	946	1019	1091	1164
5	GER060	AK49x3/4	N/A	798	868	939	1010	1081	1152
6	GER072	AK59x1	N/A	805	865	925	985	1045	1105
7.5	GER090	AK64x1	N/A	695	751	807	863	919	975
12½	GER150		500	537	574	611	648	685	N/A
15	GER180		500	537	574	611	648	685	N/A
20	GER240		506	544	581	619	656	694	N/A
25	GER300		694	731	768	805	842	881	N/A

**Table 75. Standard motor & low static drive/fan speed (rpm)**

<b>Tons</b>	<b>Unit Model Number</b>	<b>Fan Sheave</b>	<b>6 Turns Open</b>	<b>5 Turns Open</b>	<b>4 Turns Open</b>	<b>3 Turns Open</b>	<b>2 Turns Open</b>	<b>1 Turns Open</b>	<b>Closed</b>
3	GER036	AK71x3/4	N/A	549	600	650	701	751	802
4	GER048	AK69x3/4	N/A	567	619	671	723	775	828
5	GER060	AK69x3/4	N/A	566	617	668	719	770	821
6	GER072	AK79x1	N/A	581	626	671	716	761	805
7.5	GER090	AK79x1	N/A	581	626	671	716	761	805
7.5	GER090	AK99x1	N/A	462	497	533	569	604	640
12½	GER150		379	407	435	463	491	519	N/A
15	GER180		379	407	435	463	491	519	N/A
25	GER300		581	619	657	695	733	769	N/A



## Performance Data

**Table 76. Standard motor & high static drive/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 Turns Open	"Closed"
3	GER036	AK41x3/4	N/A	966	1041	1115	1190	1227	N/A
4	GER048	AK41x3/4	N/A	958	1034	1110	1186	1261	N/A
5	GER060	AK41x3/4	N/A	970	1034	1097	1161	1224	N/A
12½	GER150		685	722	759	796	833	870	N/A
15	GER180		685	722	759	796	833	870	N/A
20	GER240		694	739	784	829	874	919	N/A
25	GER300		806	844	882	920	958	994	N/A

**Table 77. Oversized motor & drive/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 Turns Open	Closed
7.5	GER090	AK64x1	N/A	835	891	946	1002	1057	1113
12½	GER150		751	807	863	919	975	1029	N/A
15	GER180		751	807	863	919	975	1029	N/A
20	GER240		829	874	919	964	1009	1053	N/A

**Table 78. Oversized motor & high static drive/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 Turns Open	Closed
7.5	GER090	AK59x1	N/A	908	968	1029	1090	1150	1211

**Table 79. Static pressure drop through accessories (inches water column)**

Tons	Unit Model Number	Standard 2" MERV 7 Filters <sup>(a)</sup>	MERV 7 Filter <sup>(b)</sup>	MERV 13 Filter <sup>(b)</sup>	Economizer with OA/RA Dampers <sup>(c)</sup>				Electric Heater Access (kW) <sup>(d),(e)</sup>					
					100% OA Downflow	100% RA	100% OA Horiz.	100% RA	5-12	14-23	23-36	54	72	
3	GER036	960	0.02	0.03	0.03	0.05	0.01	0.05	0.01	0.01	0.02	0.02	—	—
		1200	0.03	0.05	0.04	0.07	0.02	0.07	0.01	0.02	0.03	0.03	—	—
		1440	0.03	0.06	0.04	0.10	0.03	0.10	0.01	0.03	0.04	0.04	—	—
4	GER048	1280	0.03	0.05	0.06	0.09	0.02	0.09	0.01	0.02	0.03	0.03	—	—
		1600	0.04	0.07	0.07	0.13	0.04	0.13	0.02	0.04	0.05	0.05	—	—
		1920	0.06	0.10	0.08	0.17	0.06	0.17	0.02	0.05	0.06	0.08	—	—
5	GER060	1600	0.03	0.06	0.05	0.09	0.01	0.05	0.01	0.01	0.01	0.02	—	—
		2000	0.05	0.08	0.07	0.11	0.01	0.07	0.02	0.02	0.01	0.03	—	—
		2400	0.07	0.10	0.10	0.12	0.03	0.09	0.03	0.03	0.02	0.04	—	—
6	GER072	1920	0.04	0.07	0.10	0.10	0.01	0.06	0.02	—	0.01	0.02	—	—
		2400	0.06	0.09	0.13	0.11	0.02	0.08	0.02	—	0.02	0.03	—	—
		2880	0.09	0.12	0.15	0.13	0.04	0.10	0.04	—	0.03	0.05	—	—
7.5	GER090	2400	0.04	0.06	0.12	0.11	0.02	0.08	0.02	—	0.02	0.02	—	—
		3000	0.06	0.09	0.13	0.14	0.05	0.12	0.05	—	0.03	0.03	—	—
		3600	0.09	0.13	0.15	0.21	0.07	0.25	0.08	—	0.04	0.05	—	—

**Table 79. Static pressure drop through accessories (inches water column) (continued)**

Unit Model	Standard 2" Filters <sup>(a)</sup>	MERV 7 Filter <sup>(b)</sup>	MERV 13 Filter <sup>(b)</sup>	Economizer with OA/RA Dampers <sup>(c)</sup>				Electric Heater Access (kW) <sup>(d),(e)</sup>						
				100% OA Downflow	100% RA	100% OA Horiz.	100% RA	5-12	14-23	23-36	54	72		
10	GER120	3200	0.07	0.10	0.14	0.17	0.05	0.14	0.05	—	0.02	0.03	0.05	—
		4000	0.11	0.15	0.16	0.26	0.07	0.30	0.08	—	0.02	0.03	0.05	—
		4800	0.16	0.20	0.18	0.34	0.09	0.35	0.10	—	0.03	0.04	0.06	—
12½	GER150	4000	0.02	0.04	0.08	0.20	0.02	0.20	0.02	—	0.03	0.03	0.04	—
		5000	0.03	0.05	0.11	0.26	0.03	0.26	0.03	—	0.04	0.05	0.06	—
		6000	0.05	0.07	0.14	0.35	0.04	0.35	0.04	—	0.06	0.07	0.09	—
15	GER180	4800	0.03	0.05	0.10	0.24	0.03	0.24	0.03	—	0.04	0.04	0.05	—
		6000	0.05	0.07	0.14	0.35	0.04	0.35	0.04	—	0.06	0.07	0.08	—
		7200	0.07	0.09	0.17	0.42	0.05	0.42	0.05	—	0.09	0.10	0.12	—
20	GER240	6400	0.05	0.08	0.12	0.22	0.04	0.22	0.04	—	—	0.06	0.08	0.09
		8000	0.08	0.10	0.15	0.31	0.05	0.31	0.05	—	—	0.10	0.12	0.14
		9600	0.11	0.14	0.19	0.44	0.07	0.44	0.07	—	—	0.14	0.17	0.20
25	GER300	7000	0.09	0.13	0.17	0.26	0.04	0.26	0.04	—	—	0.08	0.10	0.11
		9000	0.14	0.18	0.23	0.40	0.07	0.40	0.07	—	—	0.13	0.15	0.18
		11000	0.21	0.25	0.32	0.57	0.10	0.57	0.10	—	—	0.18	0.22	0.26

(a) Tested with 2" filters

(b) Tested with standard filters. Difference in pressure drop should be considered when utilizing 2" MERV 7 and MERV 13 filters.

(c) OA = Outside Air and RA = Return Air

(d) Nominal kW ratings at 240, 480, 600V.

(e) Electric heaters restricted on applications below 320 cfm/Ton.

**Table 80. Air temperature rise across electric heaters (°F) 3 - 5 ton**

kW	Stages	GER036 <sup>(a)</sup> 3 ton 1200 CFM		GER048 4 ton 1600 CFM		GER060 <sup>(b)</sup> 5 ton 2000 CFM	
		Single Phase	Three Phase	Single Phase	Three Phase	Single Phase	Three Phase
5.00	1	13.8	—	10.5	—	8.5	—
6.00	1	—	18.5	—	10.5	—	11.4
10.00	2	26.8	—	20.3	—	16.3	—
12.00	2	—	36.2	—	22.3	—	21.5
13.80	2	36.9	—	27.8	—	22.3	—
17.40	2	—	48.2	—	33.0	—	30.0
17.60	2	—	—	35.5	—	28.3	—
23.00	2	—	—	—	—	—	38.8

**Notes:**

1. For minimum design airflow, see airflow performance table for each unit.

2. To calculate temp rise at different airflow, use the following formula: Temp rise across Electric Heater = kW x 0.3414/1.08 x CFM

(a) The minimum allowable airflow for a GER036 with a 17.4 kW heater is 1080 CFM

(b) The minimum allowable airflow for a GER060 with a 23.0 kW heater is 1900 CFM



## Performance Data

**Table 81. Air temperature rise across electric heaters (°F) 6 - 25 ton**

kW	Stages	GER072 (a)	GER090	GER120(b)	GER150	GER180	GER240	GER300 (c)
		6 ton 3000 CFM	7.5 ton 3400 CFM	10 ton 4000 CFM	12.5 ton 5000 CFM	15 ton 6000 CFM	20 ton 8000 CFM	25 ton 9000 CFM
9.0	1	14.2	9.5	—	—	—	—	—
18.0	1	28.5	19.0	14.2	11.4	9.5	—	—
27.0	2	42.7	28.5	21.3	—	—	—	9.5
36.0	2	56.9	37.9	28.5	23.0	19.0	14.2	12.6
54.0	2	—	—	42.7	34.1	28.4	21.3	19.0
72.0	2	—	—	—	—	—	28.5	25.3

**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 x 0.3414/1.08 x CFM

(a) The minimum allowable airflow for a GER072 with a 36.0 kW heater is 2400 CFM

(b) The minimum allowable airflow for a GER120 with a 54.0 kW heater is 4000 CFM

(c) 27 kW heater can not be used in the GER300 with an oversized motor.

**Table 82. Electric heater temperature rise correction factors**

% Variation from Nominal CFM	-20	-15	-10	—	+5	+10	+15	+20
Temperature Rise Multiplier	1.25	1.17	1.11	1.00	0.95	0.91	0.87	0.83

**Table 83. Water volume**

Unit Size	Water Side	Water Side	Water Side
	Volume Cubic In.	Volume Cubic In.	Volume Gallons
036	105	0.061	0.455
048	171	0.099	0.740
060	171	0.099	0.740
072	259	0.150	1.121
090	210	0.122	0.909
120	342	0.198	1.481
150	508	0.294	2.199
180	508	0.294	2.199
240	779	0.451	3.372
300	1057	0.612	4.576

**Table 84. Correction factors for antifreeze solutions**

Item	Concentration by Volume				
	10%	20%	30%	40%	50%
<b>Methanol</b>					
Cool Capacity	0.9980	0.9965	0.9949	0.9932	0.9915
Heat Capacity	0.9950	0.9898	0.9846	0.9794	0.9742
Pressure Drop	1.023	1.057	1.091	1.122	1.160
<b>Ethylene Glycol</b>					
Cool Capacity	0.9955	0.9912	0.9870	0.9830	0.9790
Heat Capacity	0.9925	0.9848	0.9770	0.9690	0.9610
Pressure Drop	1.024	1.068	1.124	1.188	1.263
<b>Propylene Glycol</b>					
Cool Capacity	0.9934	0.9869	0.9804	0.9739	0.9681
Heat Capacity	0.9863	0.9732	0.9603	0.9477	0.9350
Pressure Drop	1.040	1.098	1.174	1.273	1.405

**Example 1 (Ethylene Glycol):**

The antifreeze solution is 20% by volume of Ethylene Glycol. Determine the corrected cooling capacity and waterside pressure drop for a GERA036 when the EWT is 86°F and the GPM is 9.0.

From the catalog data, the cooling capacity at these conditions with 100% water is 39.6 MBTUH, and the waterside pressure drop is 11.5 feet of head. At 20% Ethylene Glycol, the correction factor for cool capacity is 0.9912 and the pressure drop is 1.068.

The corrected cooling capacity (MBTUH) =  $36.9 * 0.9912 = 36.58$ . The corrected water side pressure drop (Ft. head) =  $11.5 * 1.068 = 12.23$ .

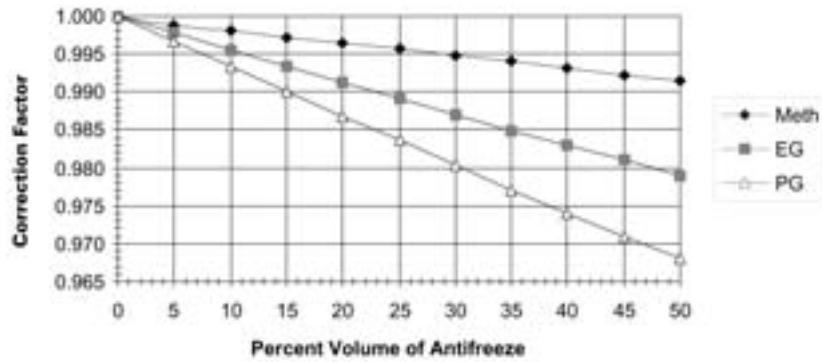
**Example 2 (Propylene Glycol):**

The antifreeze solution is 30% by volume of Propylene Glycol. Determine the corrected heating capacity and waterside pressure drop for a GERA048 when the EWT is 45°F and the GPM is 12.0.

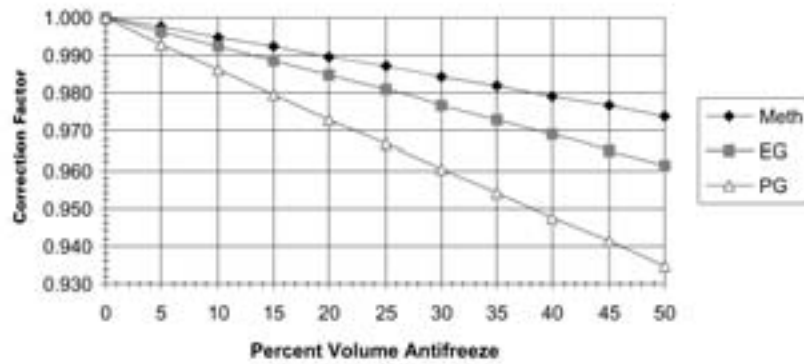
From the catalog data, the heating capacity at these conditions with 100% water is 49.1 MBTUH, and the waterside pressure drop is 11.0 feet of head. At 30% Propylene Glycol, the correction factor for heat capacity is 0.9603 and the pressure drop is 1.174.

The corrected cooling capacity (MBTUH) =  $49.1 * 0.9603 = 47.15$ . The corrected water side pressure drop (Ft. head) =  $11.0 * 1.174 = 12.91$ .

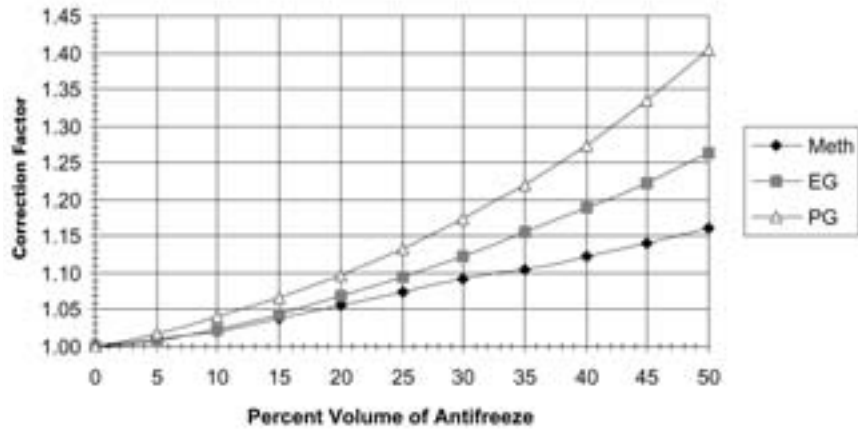
### Cooling Capacity Correction Factor



### Heating Capacity Correction Factor



### Water Pressure Drop Correction Factor



# Electrical Data

**Table 85. Electrical performance**

<b>Model No.</b>	<b>Unit Volts</b>	<b>Total Unit Comp FLA</b>	<b>Comp RLA (ea)</b>	<b>Comp LRA (ea)</b>	<b>No. of Compres.</b>	<b>Blower Motor FLA</b>	<b>Blower Motor HP</b>	<b>Fan Motor Num</b>	<b>Minimum Circuit Ampacity</b>	<b>Maximum Overcurrent Protective Device</b>
GER036	208/60/1	24.6	18.6	105.0	1	6.00	0.75	1	29.3	45
	230/60/1	24.6	18.6	105.0	1	6.00	0.75	1	29.3	45
	208/60/3	18.5	13.5	88.0	1	5.00	1	1	21.9	35
	230/60/3	18.5	13.5	88.0	1	5.00	1	1	21.9	35
	460/60/3	8.9	6.4	39.0	1	2.50	1	1	10.5	15
	575/60/3	6.8	5.1	34.0	1	1.70	1	1	8.1	15
GER048	208/60/1	30.7	23.1	134.0	1	7.60	1	1	36.5	50
	230/60/1	30.7	23.1	134.0	1	7.60	1	1	36.5	50
	208/60/3	21.0	16.0	91.0	1	5.00	1	1	25.0	40
	230/60/3	21.0	16.0	91.0	1	5.00	1	1	25.0	40
	460/60/3	9.6	7.1	46.0	1	2.50	1	1	11.4	15
	575/60/3	7.3	5.6	37.0	1	1.70	1	1	8.7	15
GER060	208/60/1	35.2	27.6	158.0	1	7.60	1	1	42.1	60
	230/60/1	35.2	27.6	158.0	1	7.60	1	1	42.1	60
	208/60/3	23.1	18.1	137.0	1	5.00	1	1	27.6	45
	230/60/3	23.1	18.1	137.0	1	5.00	1	1	27.6	45
	460/60/3	11.5	9.0	62.0	1	2.50	1	1	13.8	20
	575/60/3	8.5	6.8	50.0	1	1.70	1	1	10.2	15
GER072	208/60/3	27.4	22.4	149.0	1	5.00	1	1	33.0	50
	230/60/3	27.4	22.4	149.0	1	5.00	1	1	33.0	50
	460/60/3	13.1	10.6	75.0	1	2.50	1	1	15.8	25
	575/60/3	9.2	7.7	54.0	1	1.50	1	1	11.1	15
	208/60/3	28.7	22.4	149.0	1	6.30	2	1	34.3	50
	230/60/3	28.7	22.4	149.0	1	6.30	2	1	34.3	50
	460/60/3	13.7	10.6	75.0	1	3.10	2	1	16.4	25
	575/60/3	10.1	7.7	54.0	1	2.40	2	1	12.0	15
GER090	208/60/3	28.6	25.0	164.0	1	3.60	1	1	34.9	50
	230/60/3	28.6	25.0	164.0	1	3.60	1	1	34.9	50
	460/60/3	13.9	12.2	100.0	1	1.70	1	1	17.0	25
	575/60/3	10.4	9.0	78.0	1	1.40	1	1	12.7	20
	208/60/3	34.4	25.0	164.0	1	9.40	3	1	40.7	60
	230/60/3	34.4	25.0	164.0	1	9.40	3	1	40.7	60
	460/60/3	16.8	12.2	100.0	1	4.60	3	1	19.9	30
GER120	575/60/3	12.4	9.0	78.0	1	3.40	3	1	14.7	20
	208/60/3	26.6	18.1	137.0	2	8.50	3.6	1	49.2	60
	230/60/3	26.6	18.1	137.0	2	8.50	3.6	1	49.2	60
	460/60/3	13.3	9.0	62.0	2	4.30	3.6	1	24.6	30
	575/60/3	11.1	6.8	50.0	2	4.30	3.6	1	19.6	25



## Electrical Data

**Table 85. Electrical performance**

Model No.	Unit Volts	Total Unit FLA	Comp RLA (ea)	Comp LRA (ea)	No. of Compres.	Blower Motor FLA	Blower Motor HP	Fan Motor Num	Minimum Circuit Ampacity	Maximum Overcurrent Protective Device
GER150	208/60/3	33.0	22.4	149.0	2	10.60	3	1	61.0	80
	230/60/3	33.0	22.4	149.0	2	10.60	3	1	61.0	80
	460/60/3	15.4	10.6	75.0	2	4.80	3	1	28.7	35
	575/60/3	11.8	7.9	54.0	2	3.90	3	1	21.7	25
	208/60/3	39.1	22.4	149.0	2	16.70	5	1	67.1	80
	230/60/3	39.1	22.4	149.0	2	16.70	5	1	67.1	80
	460/60/3	18.2	10.6	75.0	2	7.60	5	1	31.5	40
	575/60/3	14.0	7.9	54.0	2	6.10	5	1	23.9	30
GER180	208/60/3	35.6	25.0	164.0	2	10.60	3	1	66.9	90
	230/60/3	35.6	25.0	164.0	2	10.60	3	1	66.9	90
	460/60/3	17.3	12.5	100.0	2	4.80	3	1	32.9	45
	575/60/3	14.2	10.3	78.0	2	3.90	3	1	27.1	35
	208/60/3	41.7	25.0	164.0	2	16.70	5	1	73.0	90
	230/60/3	41.7	25.0	164.0	2	16.70	5	1	73.0	90
	460/60/3	20.1	12.5	100.0	2	7.60	5	1	35.7	45
	575/60/3	16.4	10.3	78.0	2	6.10	5	1	29.3	35
GER240	208/60/3	55.8	39.1	267.0	2	16.70	5	1	104.7	125
	230/60/3	55.8	39.1	267.0	2	16.70	5	1	104.7	125
	460/60/3	24.9	17.3	142.0	2	7.60	5	1	46.5	60
	575/60/3	21.5	15.4	103.0	2	6.10	5	1	40.8	50
	208/60/3	56.7	39.1	267.0	2	17.60	7.5	1	105.6	125
	230/60/3	56.7	39.1	267.0	2	17.60	7.5	1	105.6	125
	460/60/3	25.9	17.3	142.0	2	8.60	7.5	1	47.5	60
	575/60/3	22.4	15.4	103.0	2	7.00	7.5	1	41.7	50
GER300	208/60/3	63.3	39.1	267.0	2	24.20	7.5	1	112.2	150
	230/60/3	63.3	39.1	267.0	2	24.20	7.5	1	112.2	150
	460/60/3	29.6	18.6	103.0	2	11.00	7.5	1	52.9	70
	575/60/3	24.4	15.4	160.0	2	9.00	7.5	1	43.7	50



**Table 86. Electrical performance for units with electric heat (single point connection)**

Unit Model Number	Heater Model Number	Electric Heat Amps	Electric Heat kW	Control Stages	Standard Indoor Motor		Oversized Indoor Motor	
					Minimum Circuit Ampacity	Max Over current Protection	Minimum Circuit Ampacity	Max Over current Protection
<b>208 Volt Single Phase</b>								
GER036	BAYHTRE105*	18.3	3.8	1	52.1	60	—	—
	BAYHTRE110*	36.1	7.5	2	74.4	80	—	—
	BAYHTRE114*	50.0	10.4	2	91.8	100	—	—
GER048	BAYHTRE105*	18.3	3.8	1	59.4	70	—	—
	BAYHTRE110*	36.1	7.5	2	81.6	90	—	—
	BAYHTRE114*	50.0	10.4	2	99.0	100	—	—
	BAYHTRE118*	63.5	13.2	2	115.9	125	—	—
GER060	BAYHTRE105*	18.3	3.8	1	65.0	80	—	—
	BAYHTRE110*	36.1	7.5	2	87.2	100	—	—
	BAYHTRE114*	50.0	10.4	2	104.6	110	—	—
	BAYHTRE118*	63.5	13.2	2	121.5	125	—	—
<b>230 Volt Single Phase</b>								
GER036	BAYHTRE105*	20.8	5.0	1	55.3	60	—	—
	BAYHTRE110*	41.7	10.0	2	81.4	90	—	—
	BAYHTRE114*	57.5	13.8	2	101.1	110	—	—
GER048	BAYHTRE105*	20.8	5.0	1	62.5	80	—	—
	BAYHTRE110*	41.7	10.0	2	88.6	100	—	—
	BAYHTRE114*	57.5	13.8	2	108.4	110	—	—
	BAYHTRE118*	73.3	17.6	2	128.1	150	—	—
GER060	BAYHTRE105*	20.8	5.0	1	68.1	90	—	—
	BAYHTRE110*	41.7	10.0	2	94.2	110	—	—
	BAYHTRE114*	57.5	13.8	2	114.0	125	—	—
	BAYHTRE118*	73.3	17.6	2	133.7	150	—	—
<b>208 Volt Three Phase</b>								
GER036	BAYHTRE306*	12.5	4.5	1	37.5	45	—	—
	BAYHTRE312*	25.0	9.0	2	53.1	60	—	—
	BAYHTRE318*	36.4	13.1	2	67.4	70	—	—
GER048	BAYHTRE306*	12.5	4.5	1	40.6	50	—	—
	BAYHTRE312*	25.0	9.0	2	56.3	60	—	—
	BAYHTRE318*	36.4	13.1	2	70.5	80	—	—
GER060	BAYHTRE306*	12.5	4.5	1	43.3	50	—	—
	BAYHTRE312*	25.0	9.0	2	58.9	70	—	—
	BAYHTRE318*	36.4	13.1	2	73.1	80	—	—
	BAYHTRX323*	48.0	17.3	2	87.6	90	—	—
GER072	BAYHTRW309A	18.9	6.8	1	56.6	70	57.9	70
	BAYHTRW318A	37.5	13.5	1	79.9	90	81.2	90
	BAYHTRW327A	56.3	20.3	2	103.4	110	104.7	110
	BAYHTRW336A	74.9	27.0	2	126.6	150	127.9	150



## Electrical Data

**Table 86. Electrical performance for units with electric heat (single point connection)**

Unit Model Number	Heater Model Number	Electric Heat Amps	Electric Heat kW	Control Stages	Standard Indoor Motor		Oversized Indoor Motor	
					Minimum Circuit Ampacity	Max Over current Protection	Minimum Circuit Ampacity	Max Over current Protection
GER090	BAYHTRU309A	18.9	6.8	1	58.4	70	64.2	80
	BAYHTRU318A	37.5	13.5	1	81.7	90	87.5	100
	BAYHTRU327A	56.3	20.3	2	105.3	110	111.1	125
	BAYHTRU336A	74.9	27.0	2	128.5	150	134.3	150
GER120	BAYHTRB318A	37.5	13.5	1	96.1	100	—	—
	BAYHTRB327A	56.3	20.3	2	119.7	125	—	—
	BAYHTRB336A	74.9	27.0	2	142.9	150	—	—
	BAYHTRB354A	112.7	40.6	2	190.1	200	—	—
GER150	AYDHTRK318/ AYHHTRM318	37.5	13.5	1	107.9	110	114.0	125
GER150	AYDHTRK336/ AYHHTRM336	74.9	27.0	2	154.6	175	160.7	175
GER150	AYDHTRK354/ AYHHTRM354	112.4	40.5	2	201.5	225	207.6	225
GER180	AYDHTRK318/ AYHHTRM318	37.5	13.5	1	113.7	125	119.8	125
GER180	AYDHTRK336/ AYHHTRM336	74.9	27.0	2	160.5	175	166.6	175
GER180	AYDHTRK354/ AYHHTRM354	112.4	40.5	2	207.4	225	213.5	225
GER240	AYDHTRL336/ AYHHTRN336	74.9	27.0	2	198.3	200	199.2	200
GER240	AYDHTRL354/ AYHHTRN354	112.4	40.5	2	245.2	250	246.1	250
GER240	AYDHTRK372/ AYHHTRN372	149.9	54.0	2	292.1	300	293.0	300
GER300	AYDHTRL336/ AYHHTRN336	74.9	27.0	2	205.8	225	—	—
GER300	AYDHTRL354/ AYHHTRN354	112.4	40.5	2	252.7	300	—	—
GER300	AYDHTRK372/ AYHHTRN372	149.9	54.0	2	299.6	300	—	—
<b>230 Volt Three Phase</b>								
GER036	BAYHTRE306*	14.4	6.0	1	39.9	45	—	—
	BAYHTRE312*	28.9	12.0	2	58.0	60	—	—
	BAYHTRE318*	41.9	17.4	2	74.3	80	—	—
GER048	BAYHTRE306*	14.4	6.0	1	43.0	50	—	—
	BAYHTRE312*	28.9	12.0	2	61.1	70	—	—
	BAYHTRE318*	41.9	17.4	2	77.4	80	—	—
GER060	BAYHTRE306*	14.4	6.0	1	45.6	60	—	—
	BAYHTRE312*	28.9	12.0	2	63.8	70	—	—
	BAYHTRE318*	41.9	17.4	2	80.0	80	—	—
	BAYHTRX323*	55.3	23.0	2	96.8	100	—	—

**Table 86. Electrical performance for units with electric heat (single point connection)**

Unit Model Number	Heater Model Number	Electric Heat Amps	Electric Heat kW	Control Stages	Standard Indoor Motor		Oversized Indoor Motor	
					Minimum Circuit Ampacity	Max Over current Protection	Minimum Circuit Ampacity	Max Over current Protection
GER072	BAYHTRW309A	21.7	9.0	1	60.1	70	61.4	70
	BAYHTRW318A	43.3	18.0	1	87.1	90	88.4	100
	BAYHTRW327A	65.0	27.0	2	114.2	125	115.5	125
	BAYHTRW336A	86.6	86.6	2	141.3	150	142.6	150
GER090	BAYHTRU309A	21.7	9.0	1	61.9	80	67.7	80
	BAYHTRU318A	43.3	18.0	1	89.0	100	94.8	100
	BAYHTRU327A	65.0	27.0	2	116.0	125	121.8	125
	BAYHTRU336A	86.6	36.0	2	143.1	150	148.9	150
GER120	BAYHTRB318A	43.3	18.0	1	103.4	110	—	—
	BAYHTRB327A	65.0	27.0	2	130.4	150	—	—
	BAYHTRB336A	86.6	36.0	2	157.5	175	—	—
	BAYHTRB354A	129.9	54.0	2	211.6	225	—	—
GER150	AYDHTRK318/ AYHHTRM318	43.3	18.0	1	115.1	125	121.2	125
	AYDHTRK336/ AYHHTRM336	86.6	36.0	2	169.3	175	175.4	200
	AYDHTRK354/ AYHHTRM354	129.9	54.0	2	223.4	225	229.5	250
GER180	AYDHTRK318/ AYHHTRM318	43.3	18.0	1	121.0	125	127.1	150
	AYDHTRK336/ AYHHTRM336	86.6	36.0	2	175.1	200	181.2	200
	AYDHTRK354/ AYHHTRM354	129.9	54.0	2	229.2	250	235.3	250
GER240	AYDHTRL336/ AYHHTRN336	86.6	36.0	2	212.9	225	213.8	225
	AYDHTRL354/ AYHHTRN354	129.9	54.0	2	267.1	300	268.0	300
	AYDHTRK372/ AYHHTRN372	173.2	72.0	2	321.2	300	322.1	300
GER300	AYDHTRL336/ AYHHTRN336	86.6	36.0	2	220.4	225	—	—
	AYDHTRL354/ AYHHTRN354	129.9	54.0	2	274.6	300	—	—
	AYDHTRK372/ AYHHTRN372	173.2	72.0	2	328.7	300	—	—
<b>460 Volt Three Phase</b>								
GER036	BAYHTRE406*	7.2	6.0	1	19.5	20	—	—
	BAYHTRE412*	14.4	12.0	2	28.5	30	—	—
	BAYHTRE418*	20.9	17.4	2	36.6	40	—	—
GER048	BAYHTRE406*	7.2	6.0	1	20.4	25	—	—
	BAYHTRE412*	14.4	12.0	2	29.4	30	—	—
	BAYHTRE418*	20.9	17.4	2	37.5	40	—	—



## Electrical Data

**Table 86. Electrical performance for units with electric heat (single point connection)**

Unit Model Number	Heater Model Number	Electric Heat Amps	Electric Heat kW	Control Stages	Standard Indoor Motor		Oversized Indoor Motor	
					Minimum Circuit Ampacity	Max Over current Protection	Minimum Circuit Ampacity	Max Over current Protection
GER060	BAYHTRE406*	7.2	6.0	1	22.8	25	—	—
	BAYHTRE412*	14.4	12.0	2	31.8	35	—	—
	BAYHTRE418*	20.9	17.4	2	39.9	40	—	—
	BAYHTRX423*	27.7	23.0	2	48.4	50	—	—
GER072	BAYHTRW409A	9.0	10.8	1	29.3	35	29.9	35
	BAYHTRW418A	18.0	21.7	1	42.8	45	43.4	45
	BAYHTRW427A	27.0	32.5	2	56.3	60	56.9	60
	BAYHTRW436A	36.0	43.3	2	69.9	70	70.5	80
GER090	BAYHTRU409A	9.0	10.8	1	30.5	35	33.4	40
	BAYHTRU418A	18.0	21.7	1	44.0	50	46.9	50
	BAYHTRU427A	27.0	32.5	2	57.5	60	60.4	70
	BAYHTRU436A	36.0	43.3	2	71.1	80	74.0	80
GER120	BAYHTRB418A	18.0	21.7	1	51.6	60	—	—
	BAYHTRB427A	27.0	32.5	2	65.1	70	—	—
	BAYHTRB436A	36.0	43.3	2	78.7	80	—	—
	BAYHTRB454A	54.0	65.0	2	105.7	110	—	—
GER150	AYDHTRK418/ AYHHTRM418	21.7	18.0	1	55.8	60	58.6	60
	AYDHTRK436/ AYHHTRP436	43.3	36.0	2	82.8	90	85.6	90
	AYDHTRK454/ AYHHTRM454	65.0	54.0	2	109.9	110	112.7	125
GER180	AYDHTRK418/ AYHHTRM418	21.7	18.0	1	60.1	70	62.9	70
	AYDHTRK436/ AYHHTRP436	43.3	36.0	2	87.1	90	89.9	90
	AYDHTRK454/ AYHHTRM454	65.0	54.0	2	114.2	125	117.0	125
GER240	AYDHTRL436/ AYHHTRN436	43.3	36.0	2	100.7	110	101.7	110
	AYDHTRL454/ AYHHTRN454	65.0	54.0	2	127.8	150	128.8	150
	AYDHTRK472/ AYHHTRN472	86.6	72.0	2	154.8	175	155.8	175
GER300	AYDHTRL436/ AYHHTRN436	43.3	36.0	2	107.0	110	—	—
	AYDHTRL454/ AYHHTRN454	65.0	54.0	2	134.1	150	—	—
	AYDHTRK472/ AYHHTRN472	86.6	72.0	2	161.1	175	—	—
<b>575 Volt Three Phase</b>								
GER036	BAYHTREW06*	5.8	6.0	1	15.3	20	—	—
	BAYHTREW12*	11.5	12.0	2	22.5	25	—	—
	BAYHTREW18*	16.7	17.4	2	29.0	30	—	—

**Table 86. Electrical performance for units with electric heat (single point connection)**

Unit Model Number	Heater Model Number	Electric Heat Amps	Electric Heat kW	Control Stages	Standard Indoor Motor		Oversized Indoor Motor	
					Minimum Circuit Ampacity	Max Over current Protection	Minimum Circuit Ampacity	Max Over current Protection
GER048	BAYHTREW06*	5.8	6.0	1	16.0	20	—	—
	BAYHTREW12*	11.5	12.0	2	23.1	25	—	—
	BAYHTREW18*	16.7	17.4	2	29.6	30	—	—
GER060	BAYHTREW06*	5.8	6.0	1	17.5	20	—	—
	BAYHTREW12*	11.5	12.0	2	24.6	25	—	—
	BAYHTREW18*	16.7	17.4	2	31.1	35	—	—
	BAYHTRXW23*	22.1	23.0	2	37.8	40	—	—
GER072	BAYHTRWW18A	18.0	17.3	1	32.8	35	33.7	35
	BAYHTRWW27A	27.0	26.0	2	43.6	45	44.5	45
	BAYHTRWW36A	36.0	34.6	2	54.4	60	55.3	60
GER090	BAYHTRUW18A	18.0	17.3	1	34.3	35	36.3	40
	BAYHTRUW27A	27.0	26.0	2	45.1	50	47.1	50
	BAYHTRUW36A	36.0	34.6	2	56.0	60	58.0	60
GER120	BAYHTRBW18A	18.0	17.3	1	41.2	45	—	—
	BAYHTRBW36A	36.0	34.6	2	62.9	70	—	—
	BAYHTRBW54A	54.0	52.0	2	84.6	90	—	—
GER150	AYDHTRKW18/ AYHHTRMW18	17.3	18.0	1	43.3	45	45.5	50
	AYDHTRKW36/ AYHHTRMW36	34.6	36.0	2	64.9	70	67.1	70
	AYDHTRKW54/ AYHHTRMW54	52.0	54.0	2	86.7	90	88.9	90
GER180	AYDHTRKW18/ AYHHTRMW18	17.3	18.0	1	48.7	50	50.9	60
	AYDHTRKW36/ AYHHTRMW36	34.6	36.0	2	70.3	80	72.5	80
	AYDHTRKW54/ AYHHTRMW54	52.0	54.0	2	92.1	100	94.3	100
GER240	AYDHTRLW36/ AYHHTRNW36	34.6	36.0	2	84.0	90	84.9	90
	AYDHTRLW54/ AYHHTRNW54	52.0	54.0	2	105.8	110	106.7	110
	AYDHTRKW72/ AYHHTRNW72	69.3	72.0	2	127.4	150	128.3	150
GER300	AYDHTRMW36/ AYHHTRMW36	34.6	36.0	2	86.9	90	—	—
	AYDHTRLW54/ AYHHTRNW54	52.0	54.0	2	108.7	110	—	—
	AYDHTRKW72/ AYHHTRNW72	69.3	72.0	2	130.3	150	—	—

# Dimensional Data

Figure 1. 3 to 4 ton unit clearance and roof opening

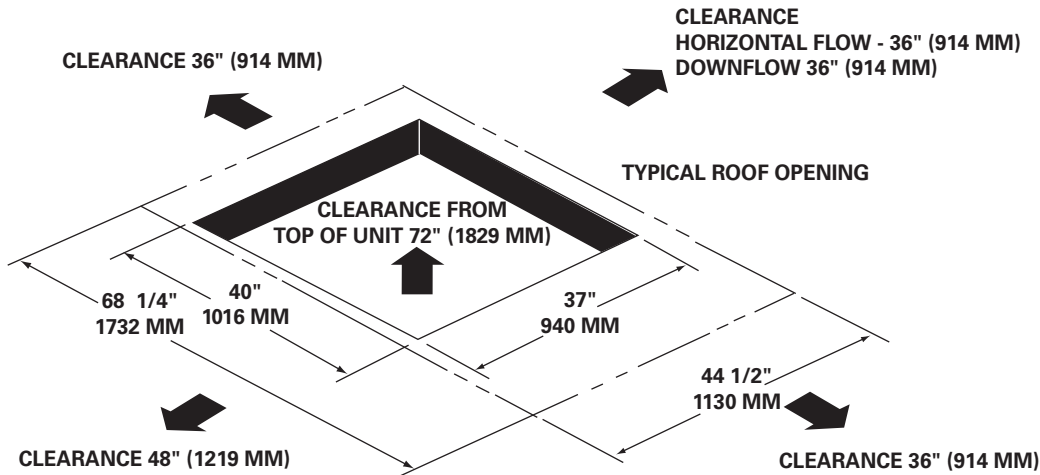
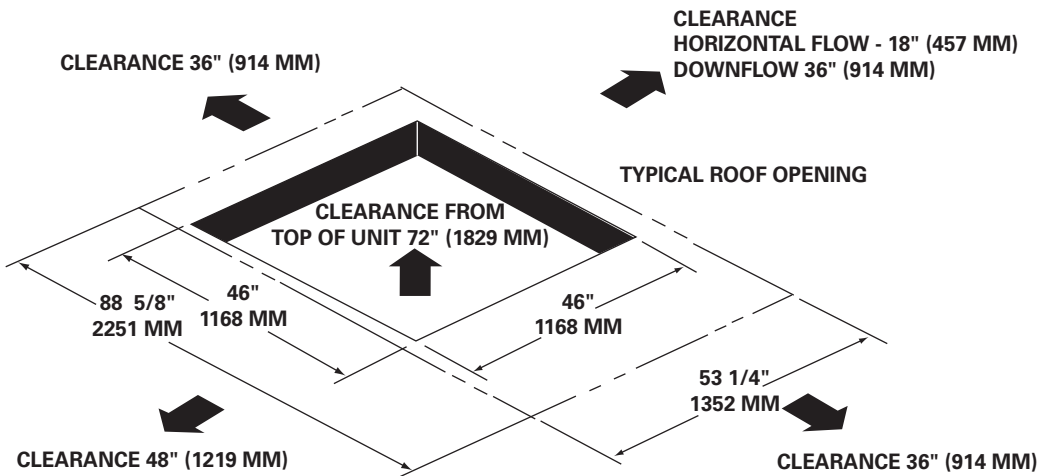
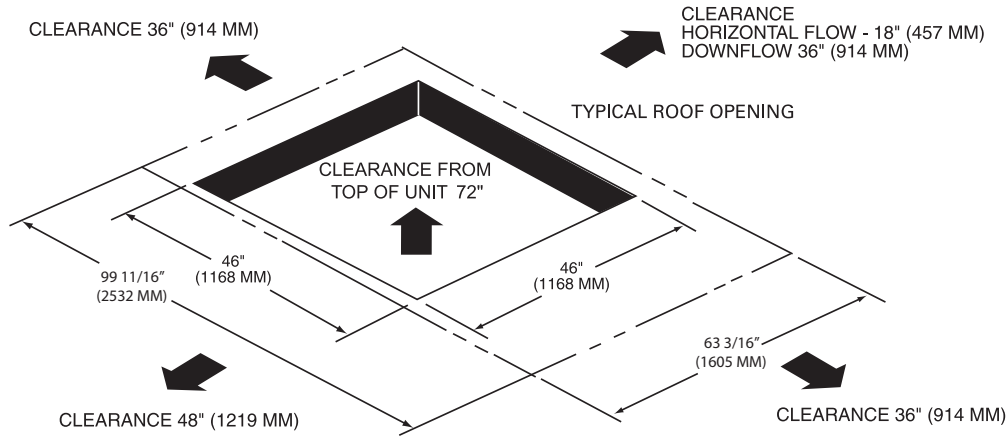


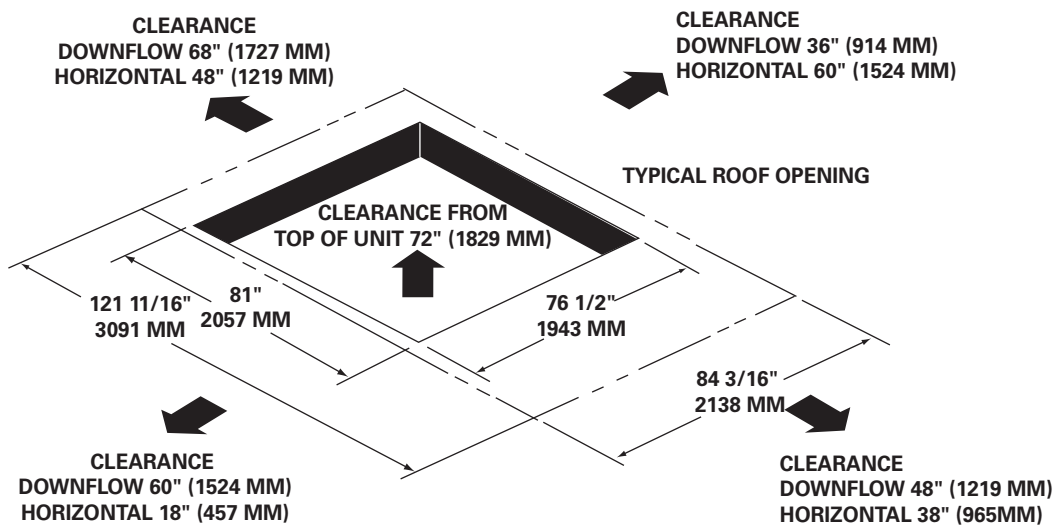
Figure 2. 5 to 7-1/2 ton unit clearance and roof opening



**Figure 3. 10 ton unit clearance and roof opening**



**Figure 4. 12½ and 15 tons unit clearance and roof opening**



## Dimensional Data

---

Figure 5. 20 and 25 tons unit clearance and roof opening

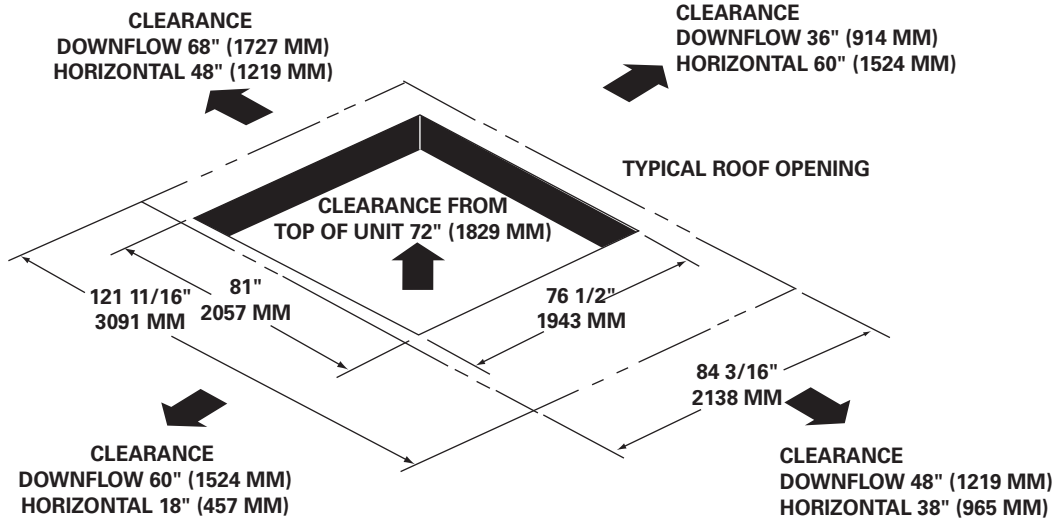
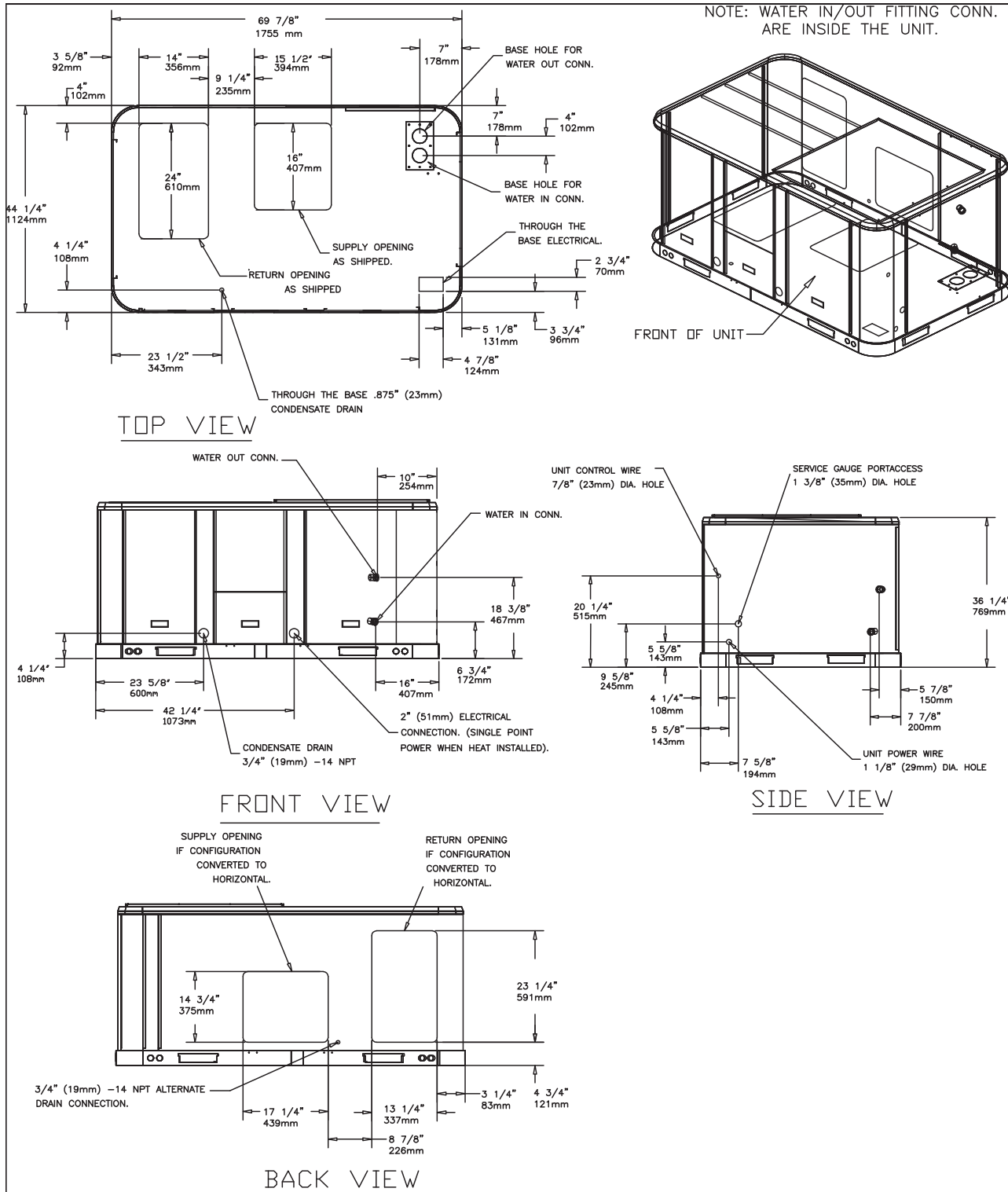




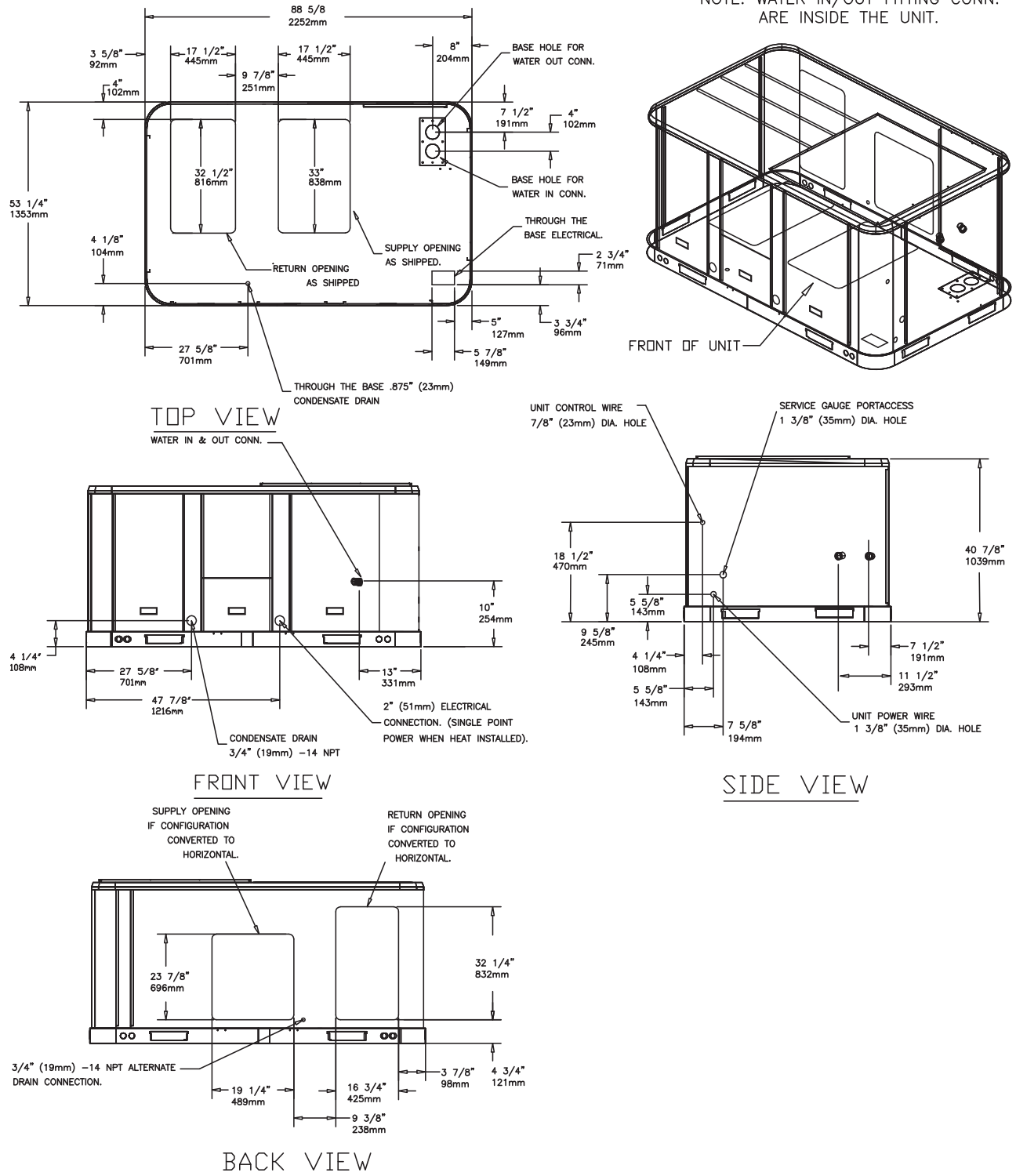
Figure 6. 3 to 4 ton unit(a)



(a) See tables in chapter "General Data," p. 13, for water connection sizes.

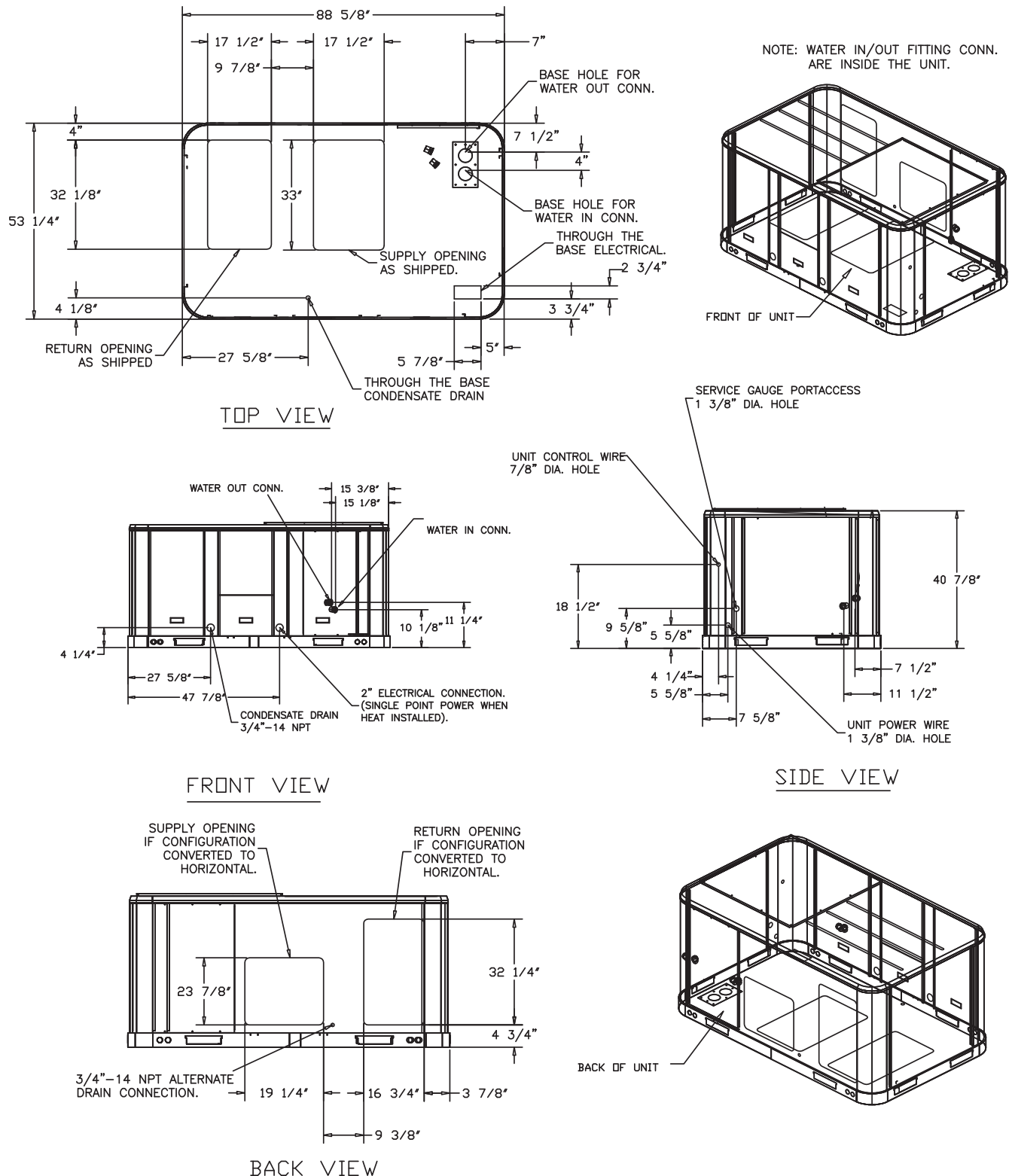
## Dimensional Data

Figure 7. 5 ton unit(a)



(a) See tables in chapter "General Data," p. 13, for water connection sizes.

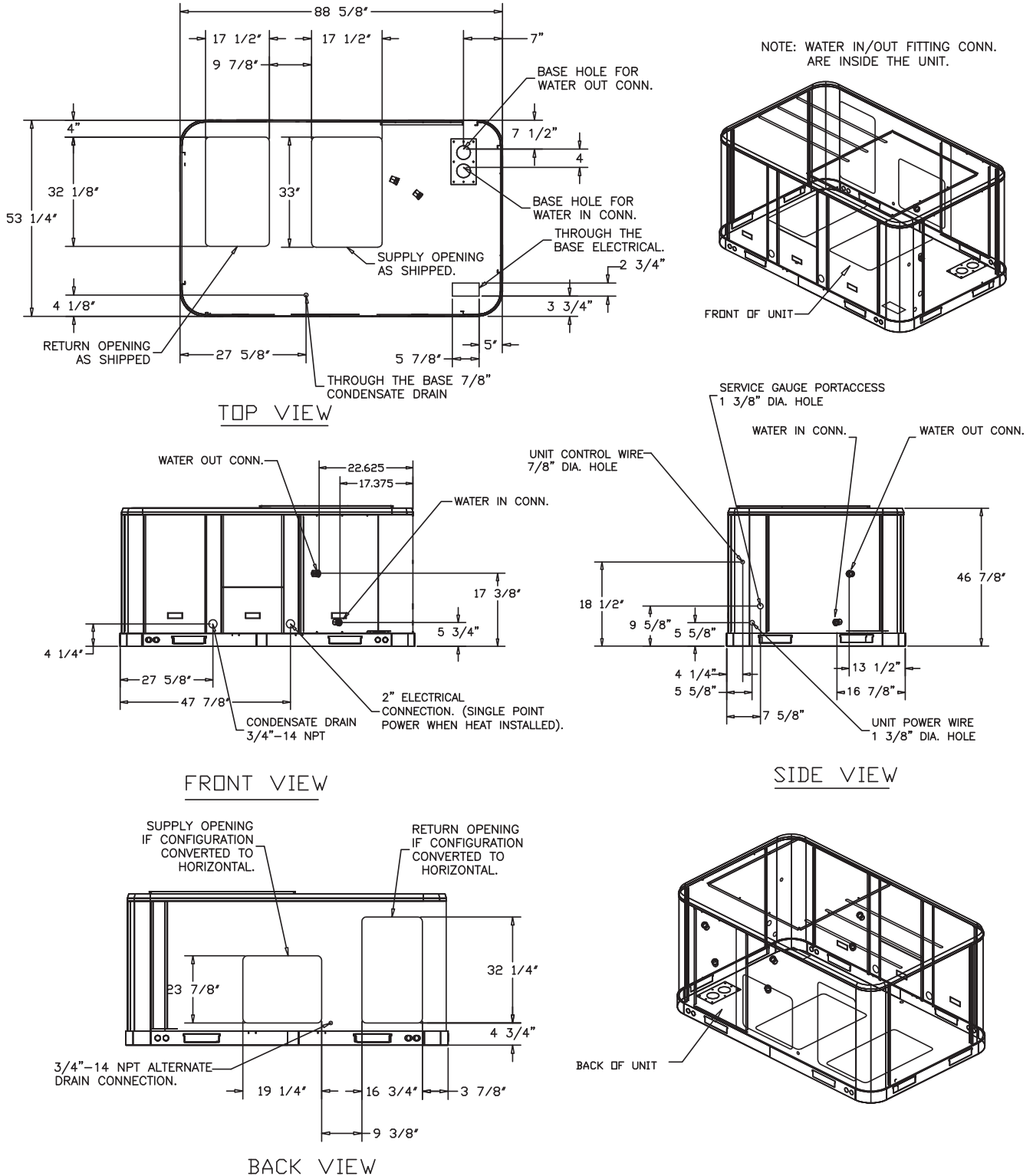
**Figure 8. 6 ton unit<sup>(a)</sup>**



(a) See tables in chapter "General Data," p. 13, for water connection sizes.

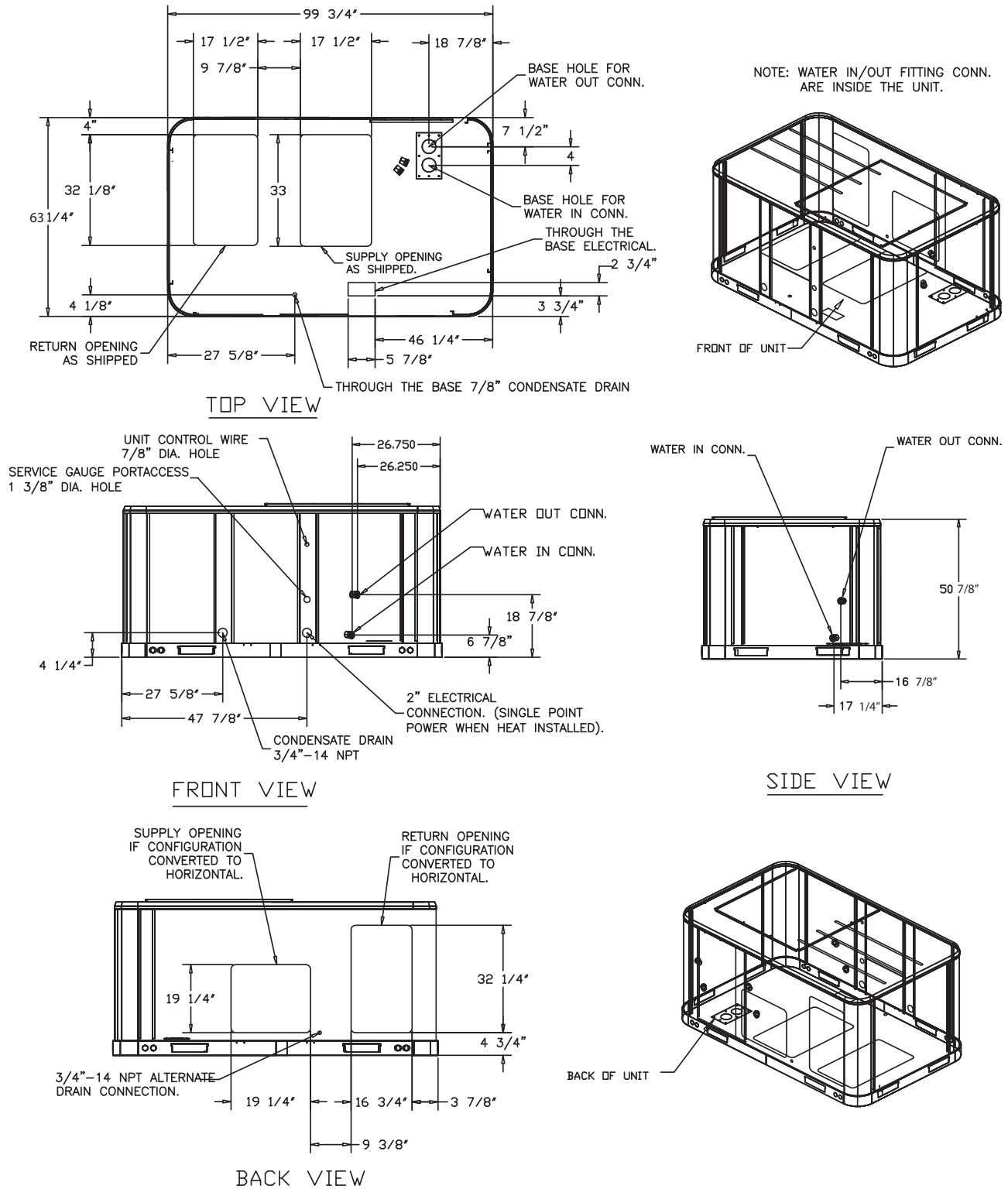
## Dimensional Data

Figure 9. 7½ ton unit(a)



(a) See tables in chapter "General Data," p. 13, for water connection sizes.

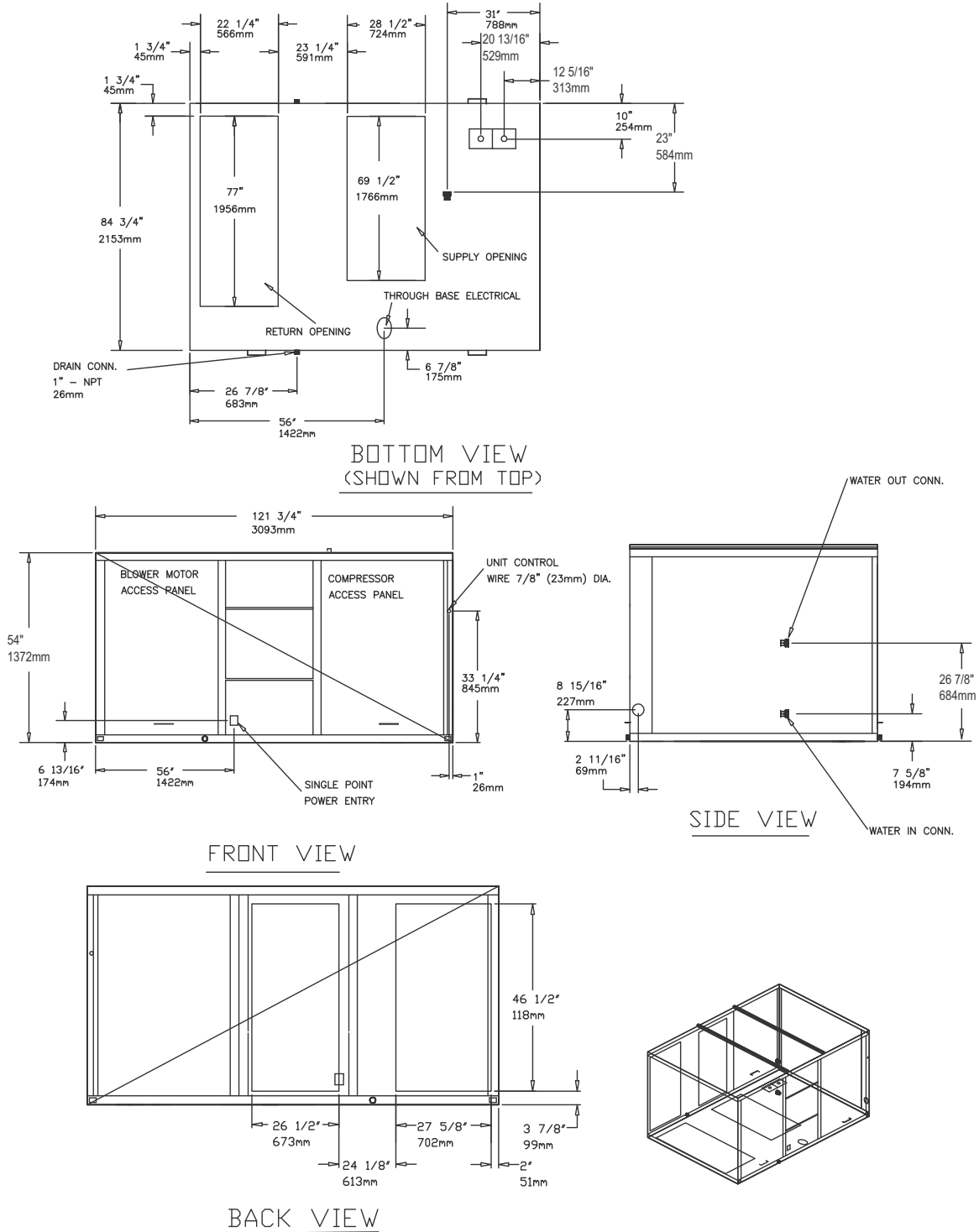
**Figure 10. 10 ton unit (a)**



(a) See tables in chapter "General Data," p. 13, for water connection sizes.

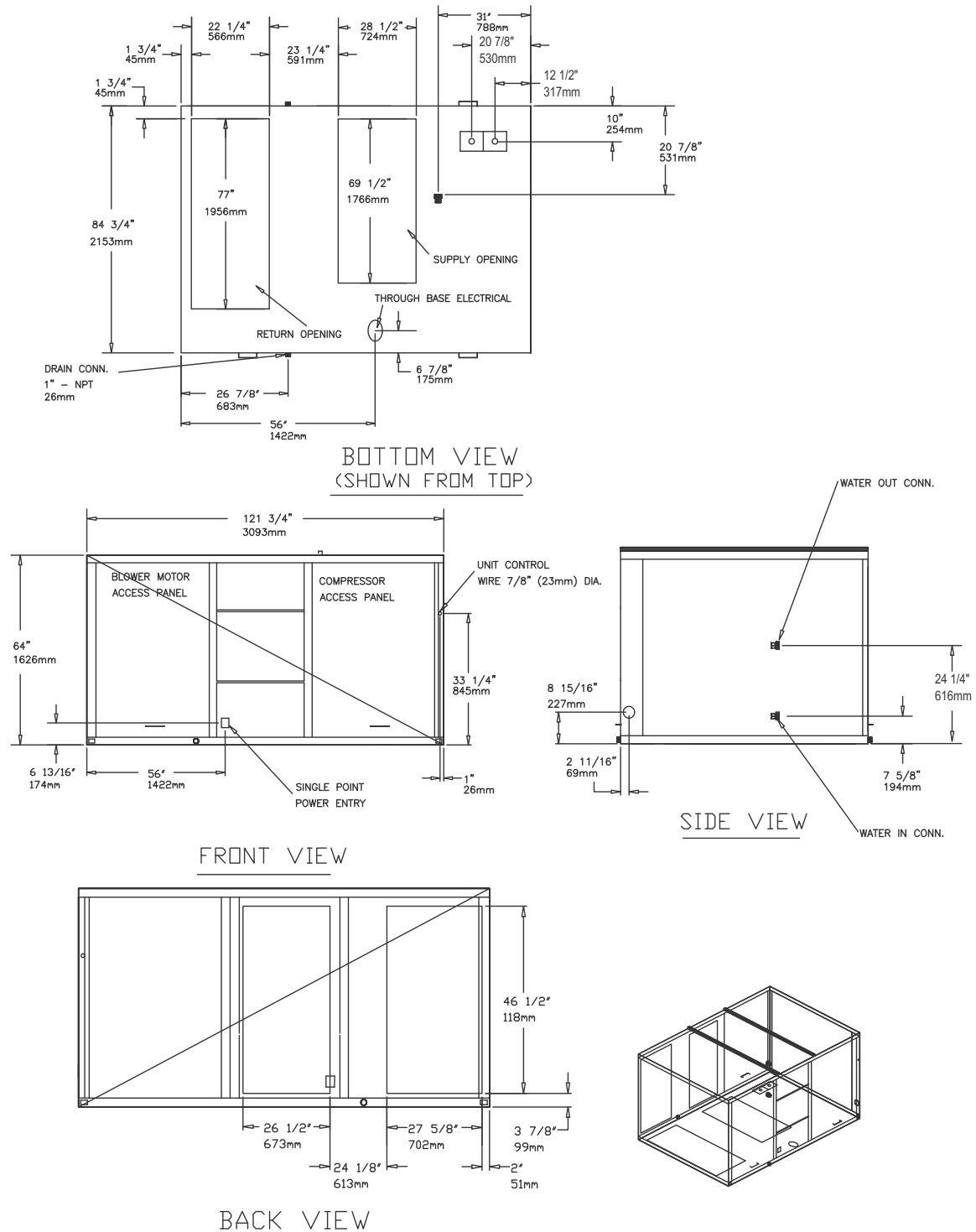
# Dimensional Data

Figure 11. 12½ and 15 ton unit(a)



(a) See tables in chapter "General Data," p. 13, for water connection sizes.

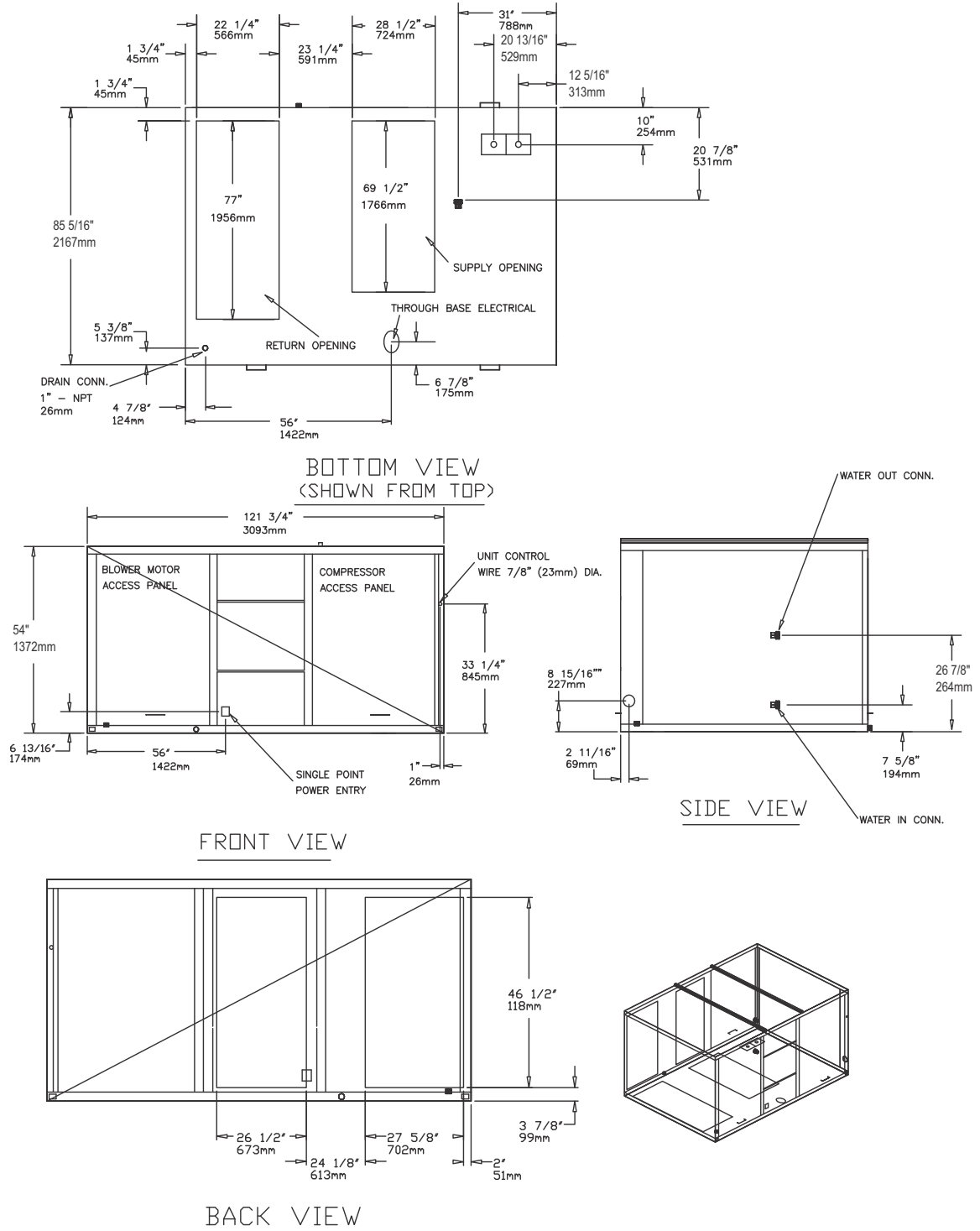
Figure 12. 20 ton unit(a)



(a) See tables in chapter "General Data," p. 13, for water connection sizes.

# Dimensional Data

Figure 13. 25 ton unit(a)



(a) See tables in chapter "General Data," p. 13, for water connection sizes.



Figure 14. 3 to 4 ton roofcurb

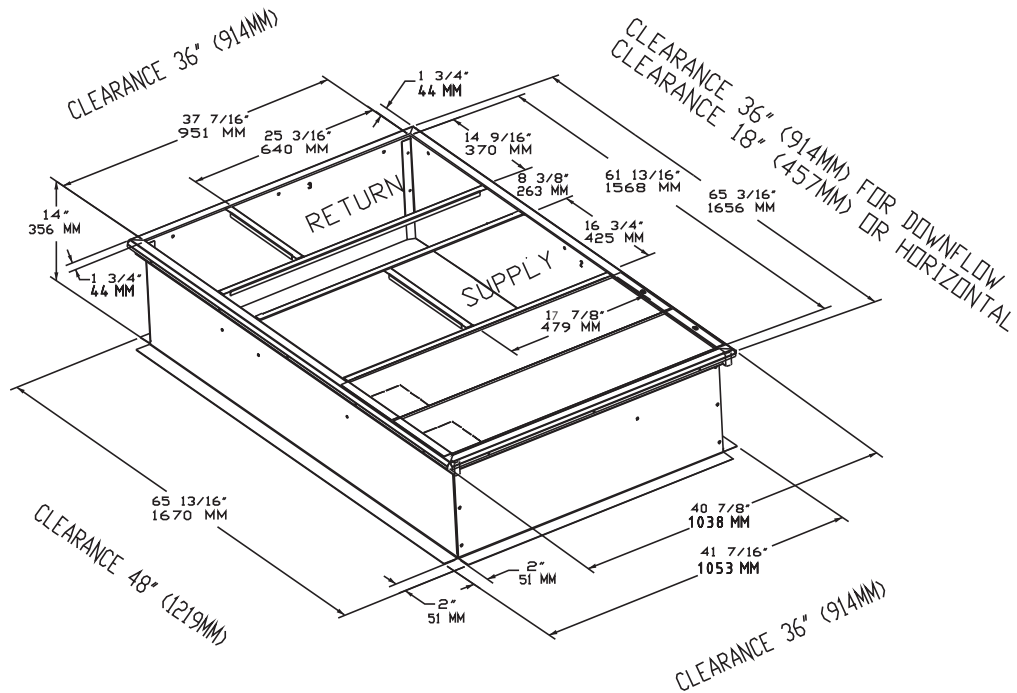
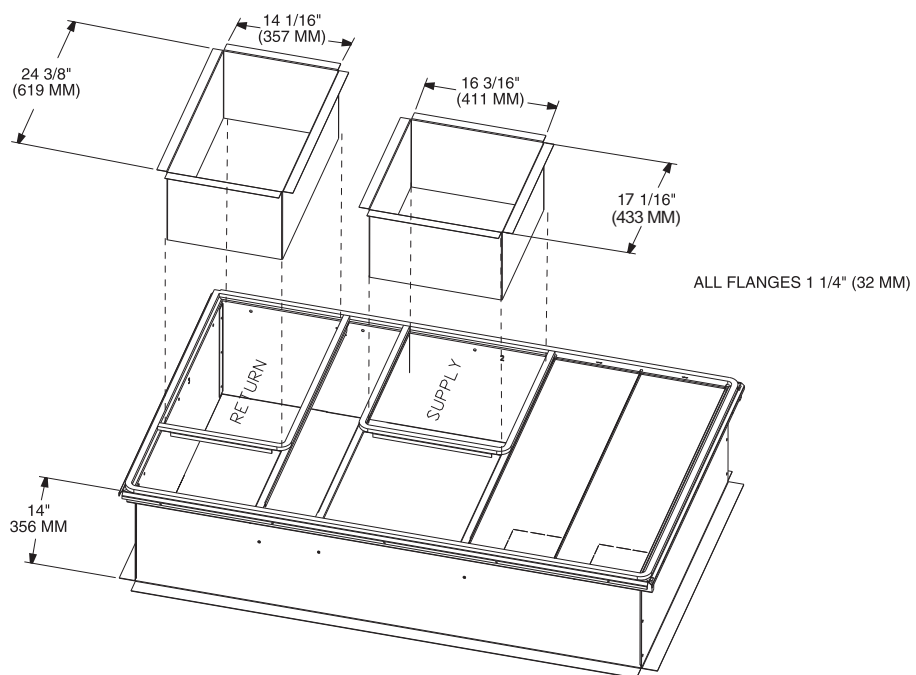


Figure 15. 3 to 4 ton roofcurb - downflow duct connections

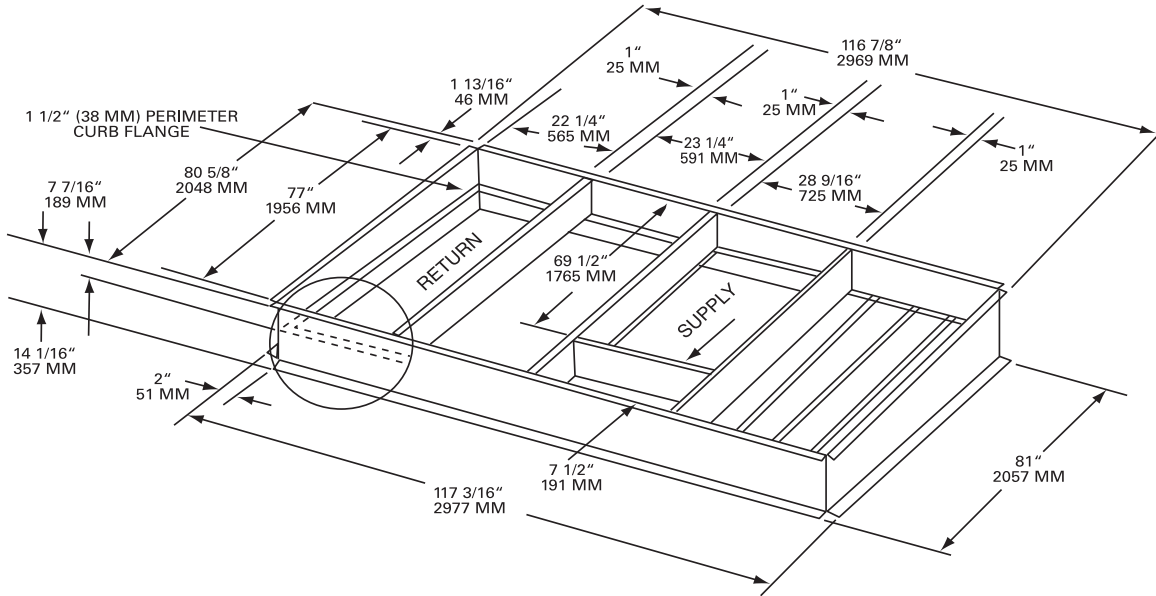






## Dimensional Data

**Figure 20. 12½ to 25 ton roofcurb**



**Figure 21. 12½ to 25 ton roofcurb - duct connections**

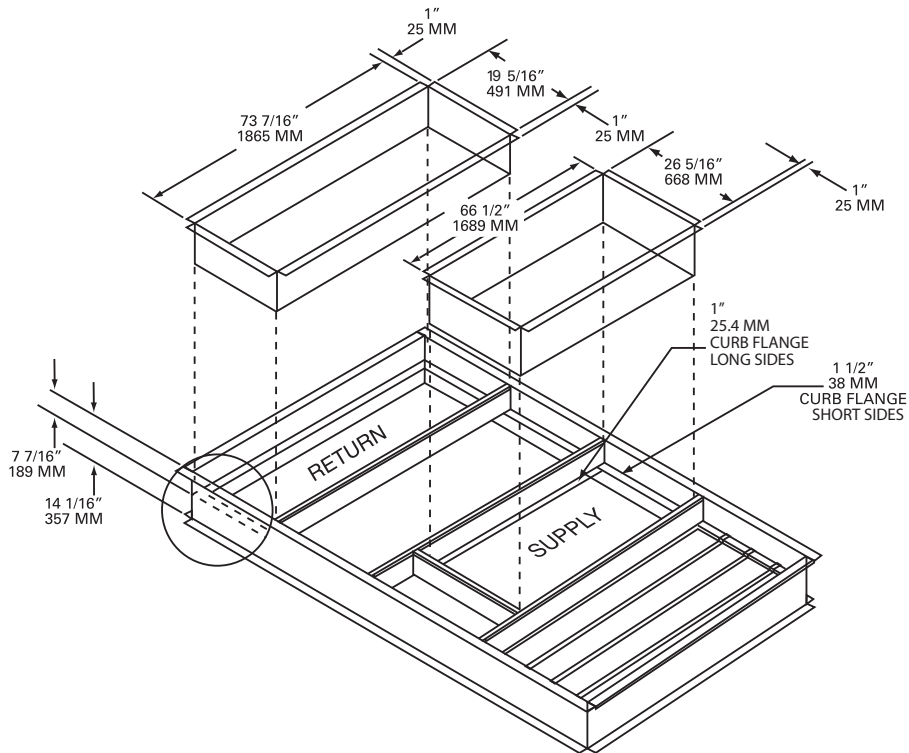
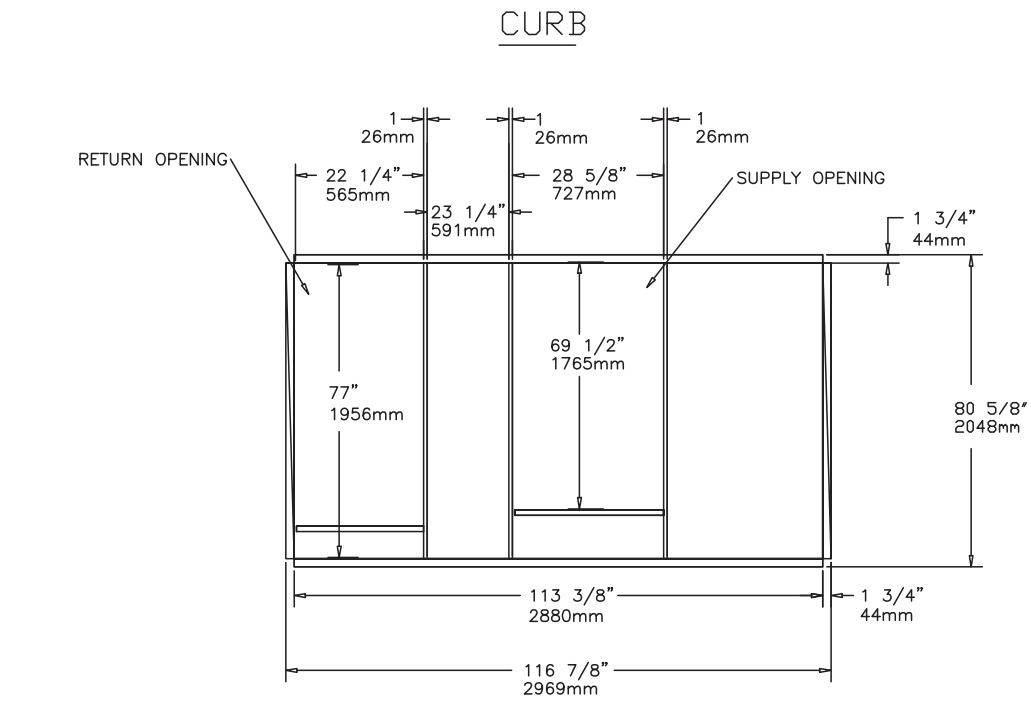
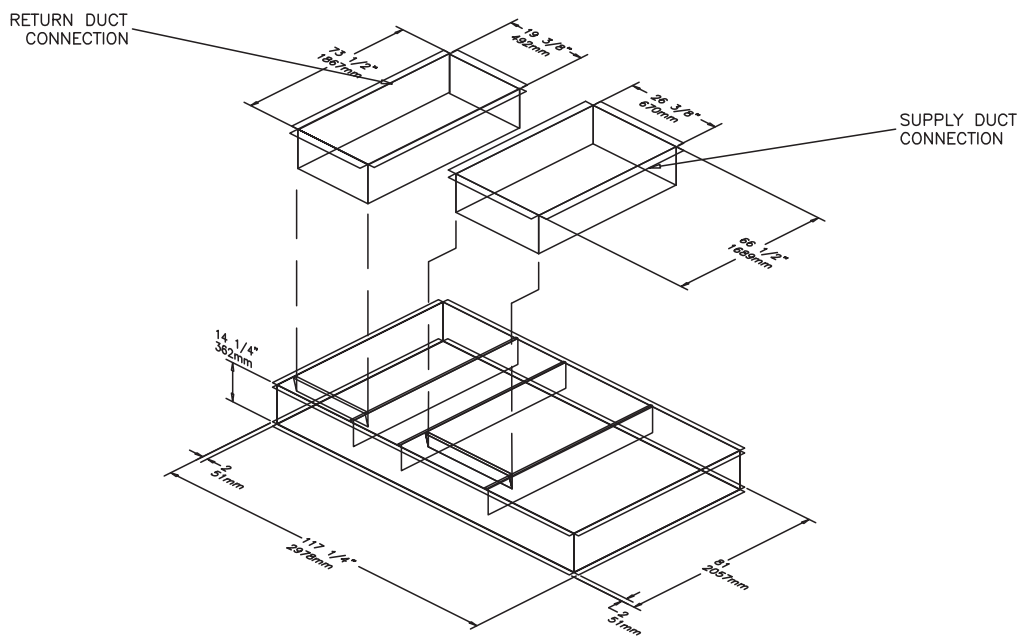


Figure 22. 12½ to 25 ton roofcurb



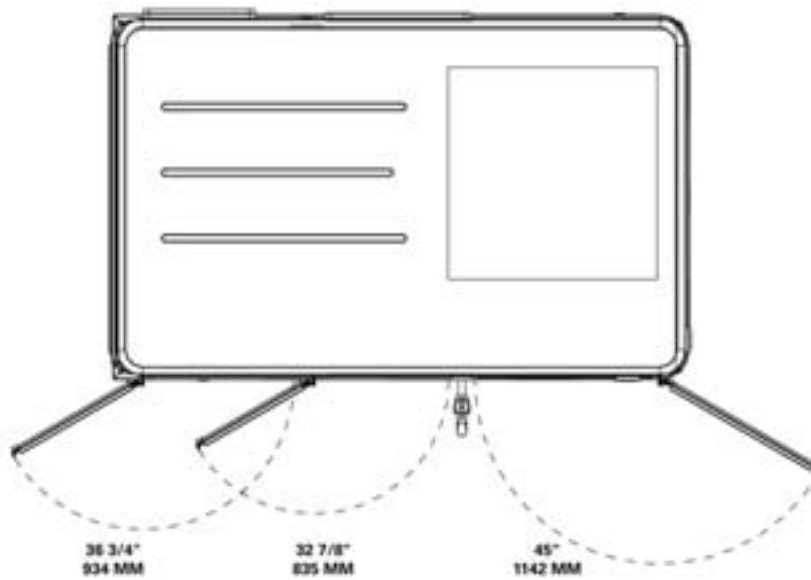
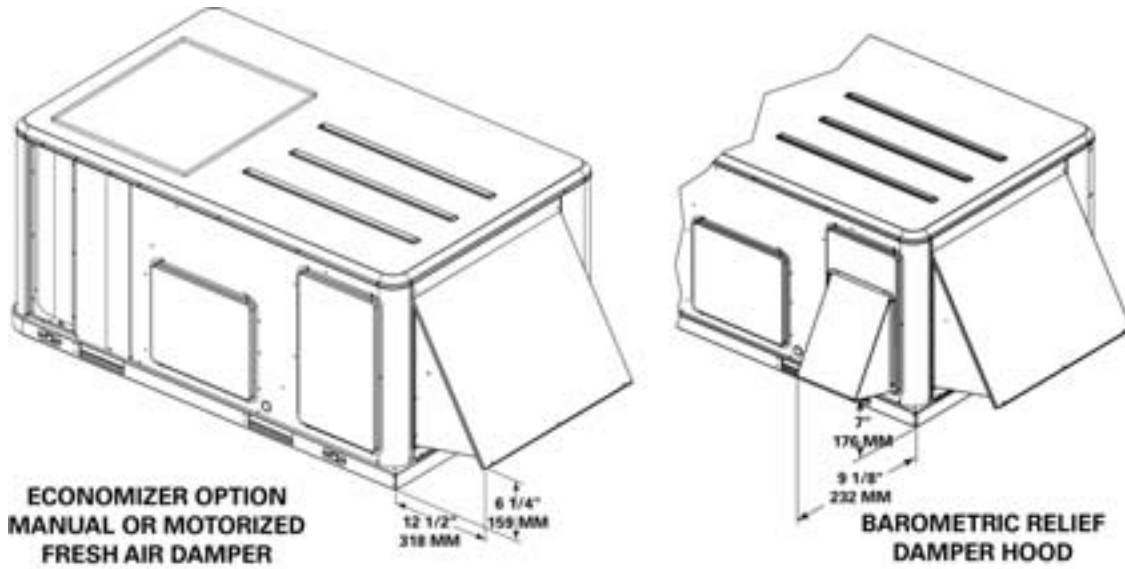
TOP VIEW



## Dimensional Data

---

Figure 23. 3 to 5 ton accessories



**SWING DIAMETER  
FOR HINGED DOORS OPTION**

Figure 24. Fresh air hood (horizontal units)

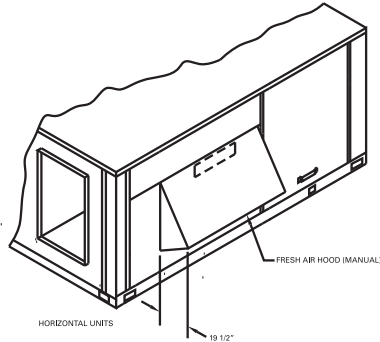


Figure 25. Fresh air hood (downflow units)

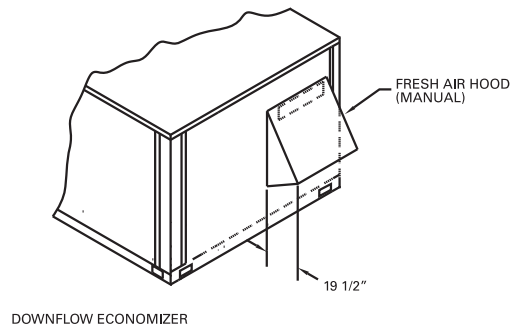


Figure 26. Power exhaust - downflow economizers

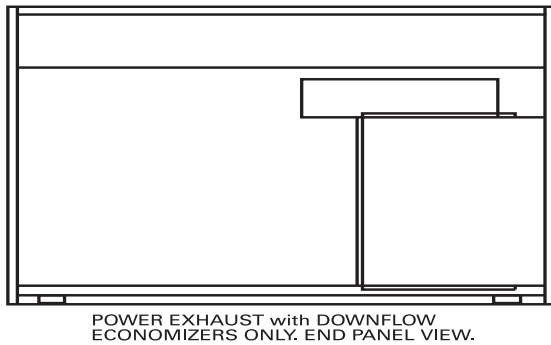


Figure 27. Power exhaust - downflow economizers - side view

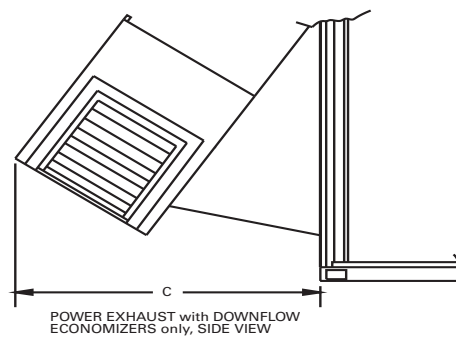


Figure 28. Economizer - horizontal units

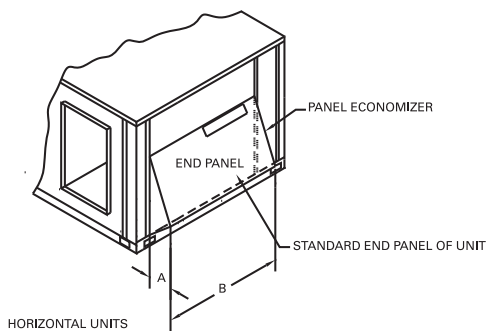
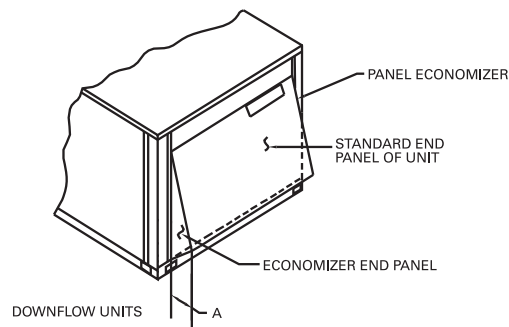


Figure 29. Economizer - downflow units



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

Table 87. Power exhaust dimensions

Unit Model #	A	B(a)	C(b)
GER 150-240	19½	64¾	39

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

# Weights and Center of Gravity

**Table 88. Accessory weights**

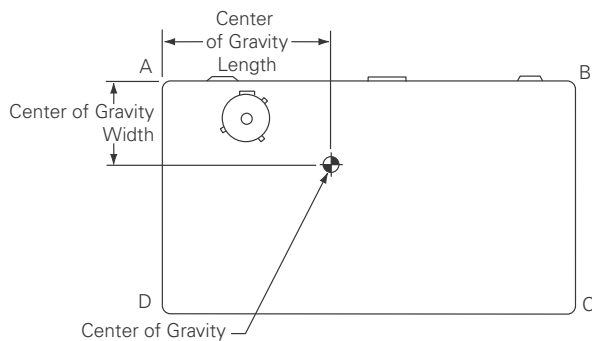
Option/Accessory Description	Net Weight 036-060	Net Weight 072-120	Net Weight 150-300	Option/Accessory Description	Net Weight 036-060	Net Weight 072-120	Net Weight 150-180	Net Weight 240-300
Electric Heat	15	30	*	Smoke Detector, Return	7	7	7	7
Economizer	26	36	65/80	Smoke Detector, Supply/Return	5	5	5	5
Motorized Damper	20	30	75	Clogged Filter Switch	1	1	1	1
Manual Damper	16	26	32	Fan Fail Switch	1	1	1	1
Barometric Relief	7	10	—	Discharge Air Tube	3	3	3	3
Power Exhaust	N/A	80	95	Roof curb	61	89	235	—
Oversized Motor	5	8	5	Zone Sensors	1	1	1	1
Belt Drive Motor (3-phase only)	31	Standard	10/15					
Hinged Access	10	12	27					
Hail Guard	12	20	—					
Through the base electrical	8	13	23					
Unit Disconnect Switch	5	5	5/10					
Unit Circuit Breaker	5	5	5/10					
TCI, LCI	1	1	1					
Frostat	1	1	1					
Crankcase Heater	1	1	1					

Unit Size	23-36 kW	54 kW	72 kW
GER 150-300	33/27	40/32	43/34

\* Note 1: Net weights for electric heat are as follows

**Figure 30. Corner weight locations and center of gravity**



**Table 89. Typical unit weights and point loading data**

Model	Net Weight	Corner Weights				Center of Gravity	
		A	B	C	D	Length	Width
GER 036	487	132	121	112	121	33.0	19.0
GER 048	538	146	134	124	134	33.0	19.0
GER 060	678	188	164	154	173	40.5	23.0
GER 072	700	194	169	159	179	40.5	23.0
GER 090	794	218	194	182	201	41.0	23.0
GER 120	941	235	251	234	221	52.0	28.0
GER 150	1800	491	481	410	418	60.0	32.0
GER 180	1848	505	493	421	429	60.0	32.0
GER 240	2008	548	536	458	466	60.0	32.0
GERE300	1906	520	509	435	442	30.0	32.0



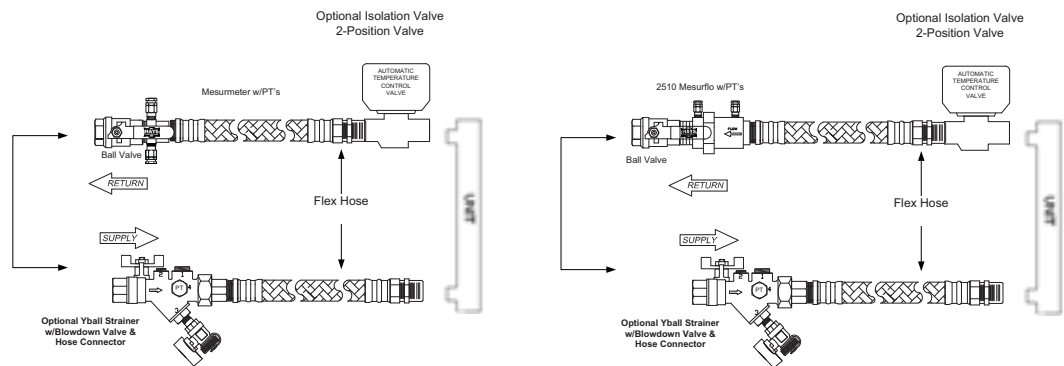
# Accessories

## System balancing hose kit

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

**Note:** At low differential pressure the flow area required to achieve higher flow can exceed the flow area available for the respective series. Therefore, the minimum pressure differential requirement is increased for the higher flow ranges of each series Mesurflo valve.

**Figure 31. Ball valve kit (manual)/MesurfloVac kit (automatic)**

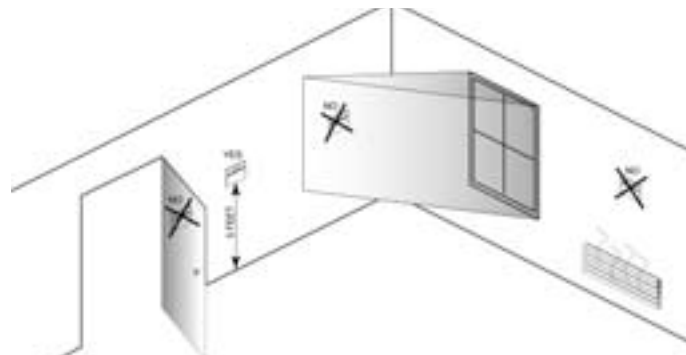


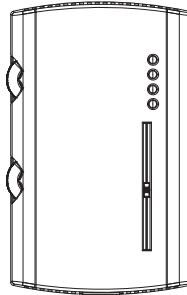
## Thermostat/Sensor Location

Location of thermostat or zone sensor is an important element of effective room control and comfort. The best location is typically on a wall, remote from HVAC unit's supply/return-air grille. Readings at this location assure the desired setpoint is achieved across the space, not just near the unit. It may be necessary to subdivide the zone to ensure adequate control and comfort is accomplished. Figure 32 indicates areas where thermostat or zone sensor should not be mounted. These include:

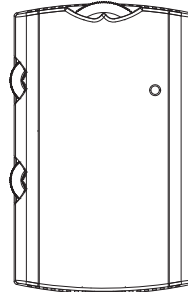
- Near drafts or dead spots (e.g. behind doors or corners)
- Near hot or cold air ducts
- Near radiant heat (e.g. heat emitted from appliances or the sun)
- Near concealed pipes or chimneys
- On outside walls or other non conditioned surfaces
- In air flows from adjacent zones or other units

**Figure 32. Thermostat/sensor location**

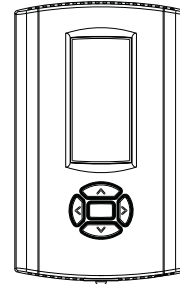


**Zone Sensors**
**Manual/Automatic Changeover**


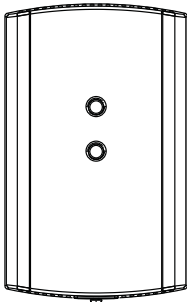
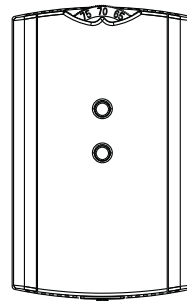
Auto, Heat, Cool or Off System Switch. Fan Auto or Off Switch. Two temperature setpoint levers. Status Indication LED lights, System On, Heat, Cool, or Service.

**Manual/Automatic Changeover**


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

**Programmable Night Setback**


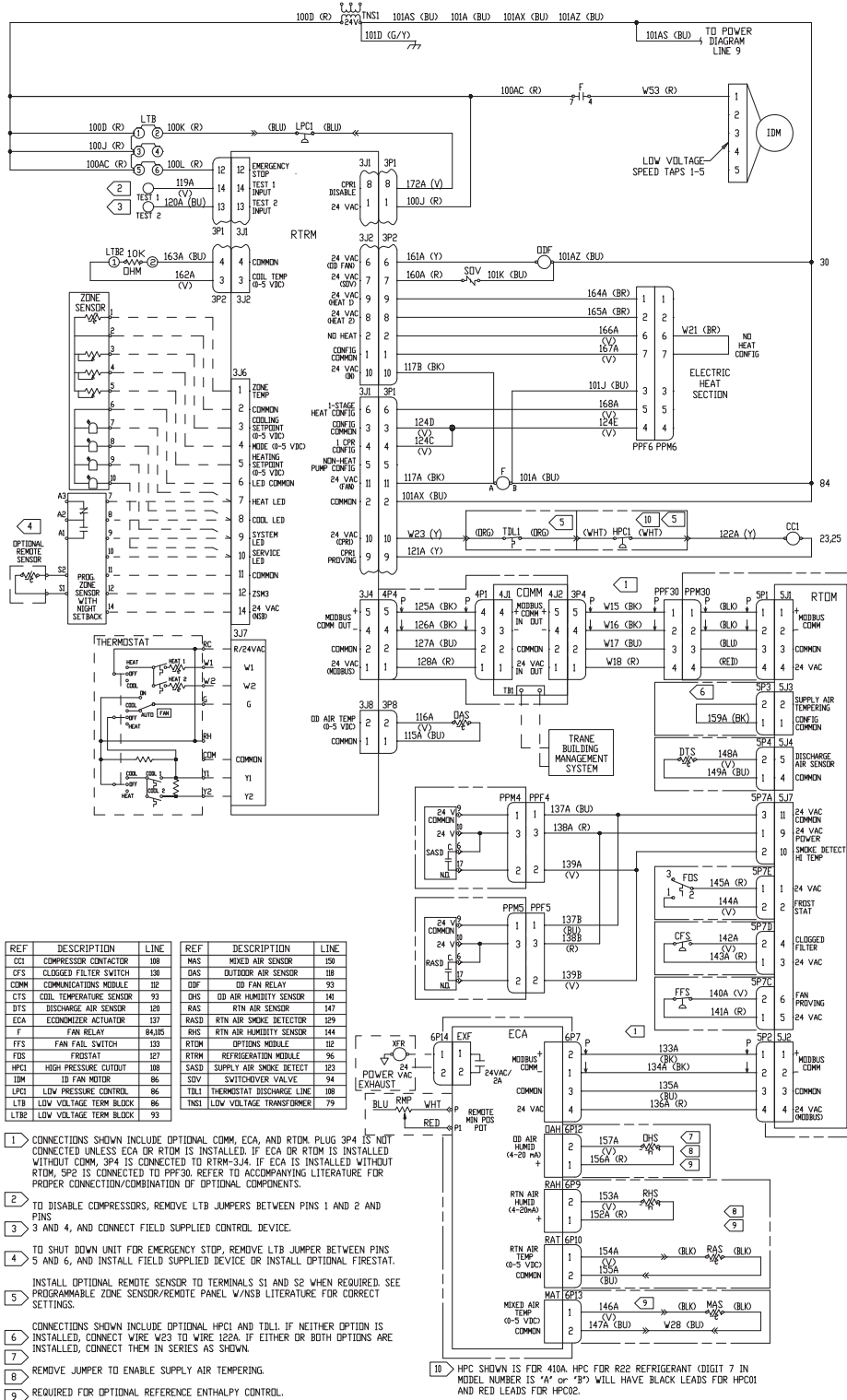
Auto or manual changeover with seven-day programming. Keyboard selection of Heat, Cool, Fan, Auto, or On. All programmable sensors have System On, Heat, Cool, Service LED/indicators as standard. Night Setback Sensors have one (1) Occupied, one (1) Un-occupied, and one (1) Override program per day.

**Room Sensor with Timed Override Button**

**Integrated Comfort™ System**


Sensor(s) available with optional temperature adjustment and override buttons to provide central control through a Trane Integrated Comfort™ system.

# Wiring

Figure 33. 3-5 ton 1ph control diagram

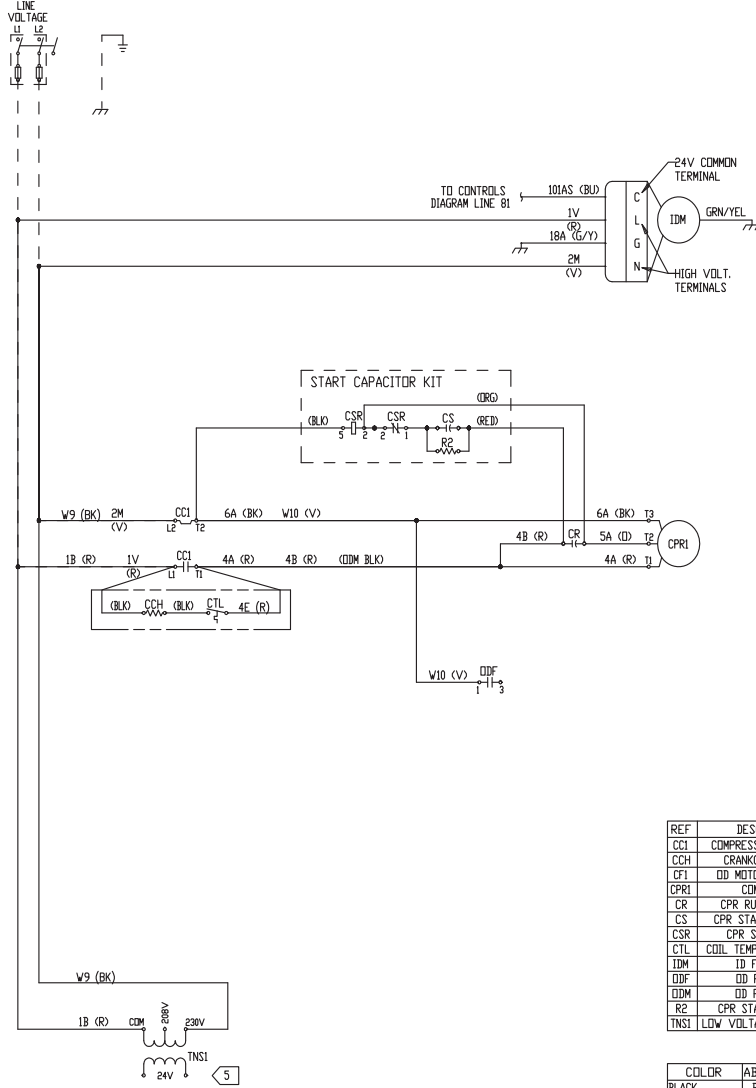


REF	DESCRIPTION	LINE	REF	DESCRIPTION	LINE
CC1	COMPRESSOR CONTACTOR	108	MAS	MIXED AIR SENSOR	150
CFS	CLOGGED FILTER SWITCH	108	OAS	OUTDOOR AIR SENSOR	108
COMM	COMMUNICATIONS MODULE	102	OFR	OD FAN RELAY	92
CTS	COIL TEMPERATURE SENSOR	93	OHS	OD AIR HUMIDITY SENSOR	141
DTS	DISCHARGE AIR SENSOR	120	RAS	RTN AIR HUMIDITY SENSOR	141
ECA	ECONOMIZER ACTUATOR	127	RASS	RTN AIR SMOKE DETECTOR	127
F	FAN RELAY	84J05	RHS	RTN AIR HUMIDITY SENSOR	144
FFS	FAN FAIL SWITCH	123	RTOM	OPTIONS MODULE	102
FDS	FROSTSTAT	127	RFRM	REFRIGERATION MODULE	96
HPC1	HIGH PRESSURE CUTOUT	108	SASD	SUPPLY AIR SMOKE DETECT	123
IDM	ID FAN MOTOR	86	SDV	SWITCHOVER VALVE	94
LPC1	LOW PRESSURE CONTROL	86	TDL	THERMOSTAT DISCHARGE LINE	98
LTB	LDV VOLTAGE TERM BLOCK	86	TNS1	LDV VOLTAGE TRANSFORMER	79
LTB2	LDV VOLTAGE TERM BLOCK	93			

- 1 CONNECTIONS SHOWN INCLUDE OPTIONAL COMM, ECA, AND RTOM. PLUG 3P4 IS NOT CONNECTED UNLESS ECA OR RTOM IS INSTALLED. IF ECA OR RTOM IS INSTALLED WITHOUT COMM, 3P4 IS CONNECTED TO RTRM-3J4. IF ECA IS INSTALLED WITHOUT RTOM, 3P2 IS CONNECTED TO PPF30. REFER TO ACCOMPANYING LITERATURE FOR PROPER CONNECTION/COMBINATION OF OPTIONAL COMPONENTS.
- 2 TO DISABLE COMPRESSORS, REMOVE LTB JUMPERS BETWEEN PINS 1 AND 2 AND PINS 3 AND 4, AND CONNECT FIELD SUPPLIED CONTROL DEVICE.
- 3 TO SHUT DOWN UNIT FOR EMERGENCY STOP, REMOVE LTB JUMPER BETWEEN PINS 5 AND 6, AND INSTALL FIELD SUPPLIED DEVICE OR INSTALL OPTIONAL FIRESTAT.
- 4 INSTALL OPTIONAL REMOTE SENSOR TO TERMINALS S1 AND S2 WHEN REQUIRED. SEE PROGRAMMABLE ZONE SENSOR/REMOTE PANEL W/NS3 LITERATURE FOR CORRECT SETTINGS.
- 5 CONNECTIONS SHOWN INCLUDE OPTIONAL HPC1 AND TDL. IF NEITHER OPTION IS INSTALLED, CONNECT WIRE W23 TO WIRE 122A. IF EITHER OR BOTH OPTIONS ARE INSTALLED, CONNECT THEM IN SERIES AS SHOWN.
- 6 REMOVE JUMPER TO ENABLE SUPPLY AIR TEMPERING.
- 7 REQUIRED FOR OPTIONAL REFERENCE ENTHALPY CONTROL.
- 8 REQUIRED FOR OPTIONAL COMPARATIVE ENTHALPY CONTROL.
- 9 OPTIONAL MAS, RAS, RHS, OHS, AND ASSOCIATED WIRING NOT USED WITH MOTORIZED OUTSIDE AIR DAMPER.

# Wiring

**Figure 34. 3-5 ton 1ph power connection**



REF	DESCRIPTION	LINE
CCI	COMPRESSOR CONTACTOR	23,25
CCH	CRANKCASE HEATER	27
CFI	OD MOTOR CAPACITOR	30
CPR1	COMPRESSOR	24
CR	CPR RUN CAPACITOR	24
CS	CPR START CAPACITOR	19
CSR	CPR START RELAY	19
CTL	COIL TEMP LIMIT SWITCH	27
IDM	ID FAN MOTOR	10
ODF	OD FAN RELAY	30
ODM	OD FAN MOTOR	31
R2	CPR START RESISTOR	20
TNS1	LOW VOLTAGE TRANSFORMER	45

COLOR	ABBR	COLOR	ABBR
BLACK	BK	ORANGE	O
BLUE	BU	RED	R
BROWN	BR	VIOLET (PURPLE)	V
GRAY (SLATE)	GY	WHITE	W
GREEN/YELLOW	G/Y	YELLOW	Y

- UNLESS OTHERWISE NOTED, ALL SWITCHES ARE SHOWN AT 25° C (77° F) AT ATMOSPHERIC PRESSURE, AT 50% RELATIVE HUMIDITY WITH ALL UTILITIES TURNED OFF AND AFTER A NORMAL SHUTDOWN HAS OCCURRED.
  - DASHED LINES INDICATE RECOMMENDED FIELD WIRING BY OTHERS; DASHED LINE ENCLOSURES AND/OR DASHED DEVICE OUTLINES INDICATE COMPONENTS PROVIDED BY THE FIELD. PHANTOM LINE ENCLOSURES INDICATE ALTERNATE CIRCUITRY OR AVAILABLE SALES OPTIONS.
  - NUMBERS ALONG THE RIGHT SIDE OF THE SCHEMATIC DESIGNATE THE LOCATION OF CONTACTS BY LINE NUMBER. AN UNDERLINED NUMBER INDICATES A NORMALLY CLOSED CONTACT.
  - THREE-PHASE MOTORS ARE PROTECTED UNDER PRIMARY SINGLE PHASING CONDITIONS; ALL MOTORS HAVE INTERNAL OVERLOAD PROTECTION AND COMPRESSORS HAVE INTERNAL THERMAL PROTECTION.
- ⑤ CONNECTIONS SHOWN ARE FOR 230V/60HZ/1PH UNITS. WHEN 208V/60HZ/1PH OPERATION IS REQUIRED, MOVE WIRE W9 (BKO) FROM THE 230V TERMINAL ON TNS1 TO THE 208V TERMINAL.

<p><b>⚠ WARNING</b> HAZARDOUS VOLTAGE! DISCONNECT ALL ELECTRIC POWER INCLUDING ANY TEST DEVICES, AND FOLLOW LOCK OUT AND TAG PROCEDURES BEFORE SERVICING. INSURE THAT ALL MOTOR CAPACITORS HAVE DISCHARGED STORED VOLTAGE. UNITS WITH VARIABLE SPEED DRIVE REFER TO BONE'S INSTRUCTIONS FOR CAPACITOR DISCHARGE.</p> <p>FAILURE TO DO THE ABOVE BEFORE SERVICING COULD RESULT IN DEATH OR SERIOUS INJURY.</p>	<p><b>⚠ AVERTISSEMENT</b> TENSION DANGEREUSE! COUPER TOUTES LES TENSIONS ET DÉVIER LES DISPOSITIFS À TESTER. PUIS SUIVRE LES PROCÉDURES DE VERROUILLAGE ET DES ÉTIQUETTES AVANT TOUTE INTERVENTION. VÉRIFIER QUE TOUTES LES CONDENSATEURS DES MOTEURS SONT DÉCHARGÉS. DANS LE CAS PARTICULIER COMPORTANT DES ÉQUIPEMENTS À VITESSE VARIABLE, SE REPORTER AUX INSTRUCTIONS DE L'ENVIRONNEMENT POUR DÉCHARGER LES CONDENSATEURS.</p> <p>NE PAS RESPECTER CES MESURES DE PRÉCAUTION PEUT ENTRAINER DES BLESSURES GRAVES POUVANT ÊTRE MORTELLES.</p>	<p><b>⚠ ADVERTENCIA</b> VOLTAJE PELIGROSO DESCONECTE TODA LA ENERGÍA ELÉCTRICA, INCLUIDO LOS DISPOSITIVOS DE PRUEBA Y SIGA LOS PROCEDIMIENTOS DE CERRAJE Y ETIQUETADO ANTES DE PROCEDER AL SERVICIO. ASEGURESE DE QUE TODOS LOS CONDENSADORES DEL MOTOR HAYAN DESCARGADO EL VOLTAJE ALMACENADO PARA LOS MOTORES CON C.C. DE VELOCIDAD VARIABLE. CONSULTAR LAS INSTRUCCIONES PARA LA RECARGA DEL CONDENSADOR.</p> <p>EL NO REALIZAR LO ANTERIORMENTE INDICADO PUEDE CAUSAR LA MUERTE O SERIAS LESIONES PERSONALES.</p>
---	--	---

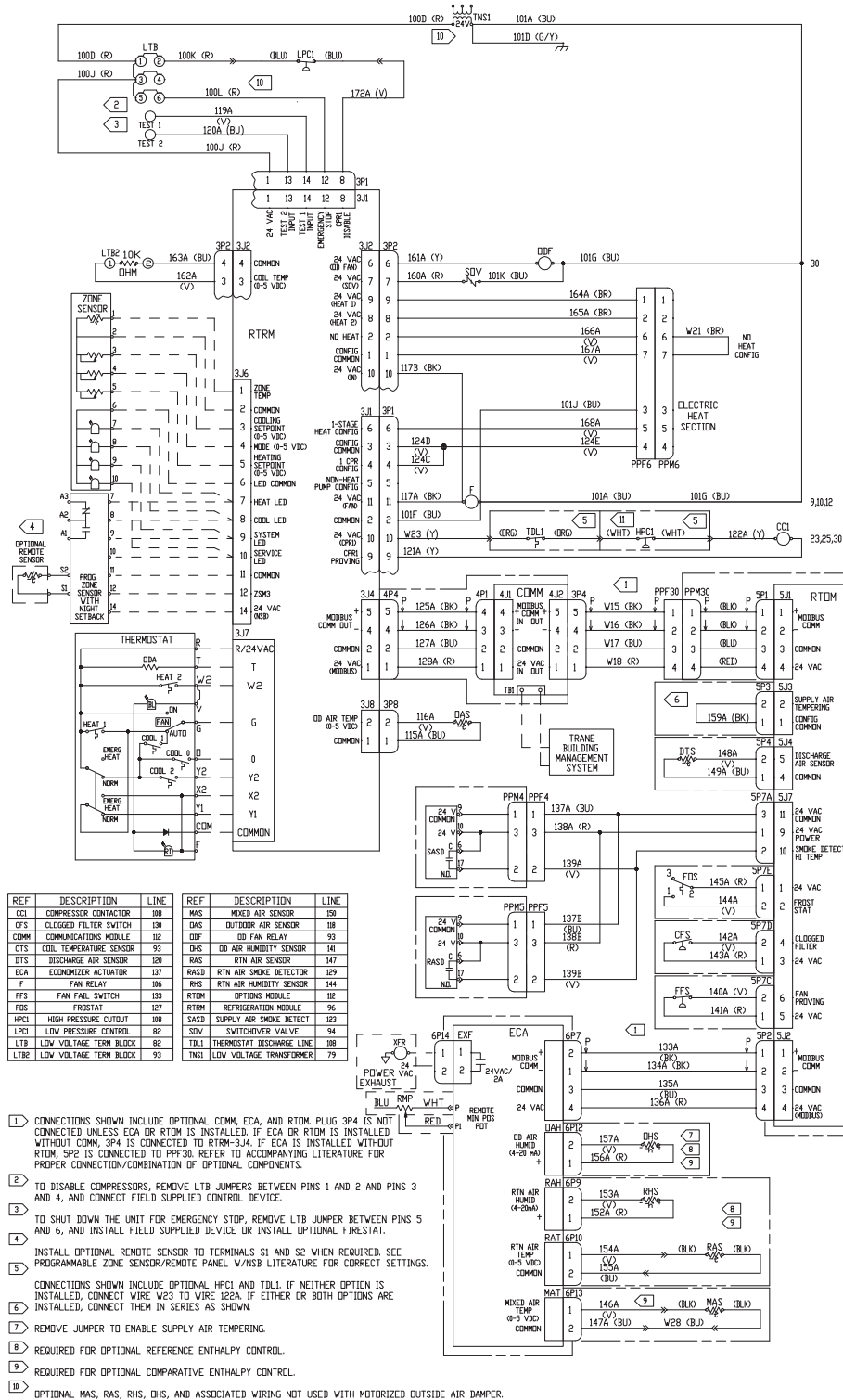
**CAUTION**  
USE COPPER CONDUCTORS ONLY!  
UNIT TERMINALS ARE NOT DESIGNED TO ACCEPT OTHER TYPES OF CONDUCTORS.  
FAILURE TO DO SO MAY CAUSE DAMAGE TO THE EQUIPMENT.

**ATTENTION**  
UTILISER QUE DES CONDUCTEURS EN COPRE!  
LES BORNES DE L'UNITÉ NE SONT PAS CONÇUES POUR RECEVOIR D'AUTRES TYPES DE CONDUCTEURS.  
L'UTILISATION DE TOUT AUTRE CONDUCTEUR PEUT ENDOMMAGER L'ÉQUIPEMENT.

**PRECAUCIÓN**  
UTILICE ÚNICAMENTE CONDUCTORES DE COPRE!  
LAS TERMINALES DE LA UNIDAD NO ESTÁN DISEÑADAS PARA ACEPTAR OTROS TIPOS DE CONDUCTORES.  
SI NO LO HACE, PUEDE OCASIONAR DAÑO AL EQUIPO.

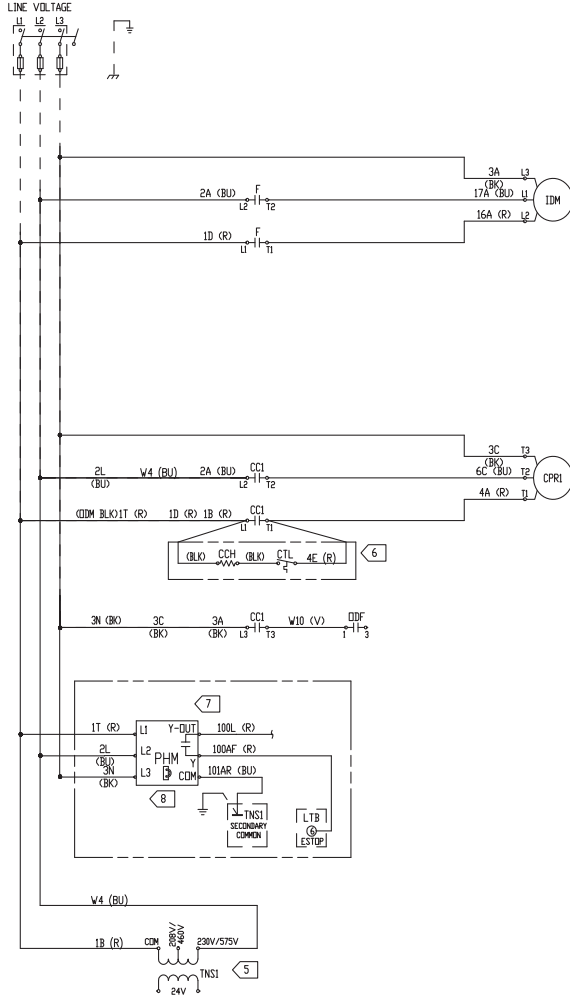
**IMPORTANT**  
DO NOT ENERGIZE UNIT UNTIL CHECK-OUT AND START-UP PROCEDURE HAS BEEN COMPLETED.

**Figure 35. 3-7.5 ton 3ph control diagram**



# Wiring

**Figure 36. 3-7.5 ton 3ph power connection**



REF	DESCRIPTION	LINE
CTL	COIL TEMP LIMIT SWITCH	27
CPR1	COMPRESSOR	23
CC1	COMPRESSOR CONTACTOR	23,25,30
CCH	CRANKCASE HEATER	27
F	FAN CONTACTOR	10,12
IDM	ID FAN MOTOR	10
TNS1	LOW VOLTAGE TRANSFORMER	45
ODM	OD FAN MOTOR	31
ODF	OD FAN RELAY	30
CF1	OD MOTOR CAPACITOR	30
PHM	PHASE MONITOR	34

COLOR	ABBR	COLOR	ABBR
BLACK	BK	ORANGE	O
BLUE	BU	RED	R
BROWN	BR	VIOLET (PURPLE)	V
GRAY (SLATE)	GY	WHITE	W
GREEN/YELLOW	G/Y	YELLOW	Y

- UNLESS OTHERWISE NOTED, ALL SWITCHES ARE SHOWN AT 25°C (77°F), AT ATMOSPHERIC PRESSURE, AT 50% RELATIVE HUMIDITY WITH ALL UTILITIES TURNED OFF AND AFTER A NORMAL SHUTDOWN HAS OCCURRED.
- DASHED LINES INDICATE RECOMMENDED FIELD WIRING BY OTHERS. DASHED LINE ENCLOSURES AND/OR DASHED DEVICE OUTLINES INDICATE COMPONENTS PROVIDED BY THE FIELD. PHANTOM LINE ENCLOSURES INDICATE ALTERNATE CIRCUITRY OR AVAILABLE SALES OPTIONS.
- NUMBERS ALONG THE RIGHT SIDE OF THE SCHEMATIC DESIGNATE THE LOCATION OF CONTACTS BY LINE NUMBER. AN UNDERLINED NUMBER INDICATES A NORMALLY CLOSED CONTACT.
- THREE-PHASE MOTORS ARE PROTECTED UNDER PRIMARY SINGLE PHASING CONDITIONS. ALL MOTORS HAVE INTERNAL OVERLOAD PROTECTION AND COMPRESSORS HAVE INTERNAL THERMAL PROTECTION.
- CONNECTIONS SHOWN ARE FOR 230V/60HZ/3PH OR 575V/60HZ/3PH UNITS. WHEN 208V/60HZ/3PH, 460V/60HZ/3PH, OR 200V/50HZ/3PH OPERATION IS REQUIRED, MOVE WIRE W4(BLU) FROM THE 230V/575V TERMINAL ON TNS1 TO THE 208V/460V TERMINAL.
- THESE CONNECTIONS ARE FOR UNITS WITH A CRANKCASE HEATER INSTALLED. FOR 5-TON AND SMALLER UNITS, CONNECT AS SHOWN FOR UNITS LARGER THAN 5-TON, CTL AND WIRE 4E(R) ARE NOT PRESENT, AND CCH WIRES ARE CONNECTED TO CCI-L1 AND CCI-T1.
- OPTIONAL PHASE MONITOR CONNECTIONS FOR RELIATEL CONTROLS, MOVE 100L FROM LTB1-6 100AF TO LTB1-6. CONNECT WIRE 101AR TO TNS1 SECONDARY COM AND WIRE 100AG IS NOT USED.
- CUT PHM JUMPER FOR 50 HZ.

<p><b>⚠ WARNING</b> HAZARDOUS VOLTAGE DISCONNECT ALL ELECTRIC POWER BEFORE WORKING. DISCONNECT AND FOLLOW LOCK OUT AND TAG PROCEDURE BEFORE WORKING. INSURE THAT ALL MOTOR CAPACITORS HAVE DISCHARGED STORED VOLTAGE. UNITS WITH VARIABLE SPEED DRIVES REFER TO SERVO INSTRUCTIONS FOR CAPACITOR DISCHARGE. FAILURE TO DO SO MAY RESULT IN SERVO DRIVE DAMAGE OR SEVERE INJURY.</p>	<p><b>⚠ AVERTISSEMENT</b> TENSION DANGEREUSE! COUPER TOUTES LES TENSIONS ET SUIVRE LES PROCÉDURES DE VERIFICATION ET DE VERIFICATION AVANT TOUTE INTERVENTION. VÉRIFIER QUE TOUTES LES CONDENSATEURS DES MOTEURS SONT DÉCHARGÉS. DANS LE CAS D'UNITS AVEC VITESSE VARIABLE, RÉFÉRER AUX INSTRUCTIONS DE DÉCHARGEMENT POUR LES CONDENSATEURS. NE PAS RESPECTER CES MESURES DE PRÉCAUTION PEUT ENDANGERER VOS BESŒNS PERSONNELS.</p>	<p><b>⚠ ADVERTENCIA</b> VOLTAJE PELIGROSO DESCONECTE TODA LA ENERGÍA ELÉCTRICA ANTES DE TRABAJAR. SIGA LAS INSTRUCCIONES DE VERIFICACIÓN Y VERIFICACIÓN ANTES DE EMPEZAR. ASEGURESE DE QUE TODOS LOS CONDENSADORES DE LOS MOTORES SEAN DESCARGADOS. EN EL CASO DE UNIDADES CON CONTROL DE VELOCIDAD VARIABLE, CONSULTE LAS INSTRUCCIONES PARA LA DESCARGA DE CONDENSADORES. EL NO RESPECTAR LAS MEDIDAS DE PRECAUCIÓN PUEDE CAUSAR LA MUERTE O SERIA LESIONES PERSONALES.</p>
---	--	---

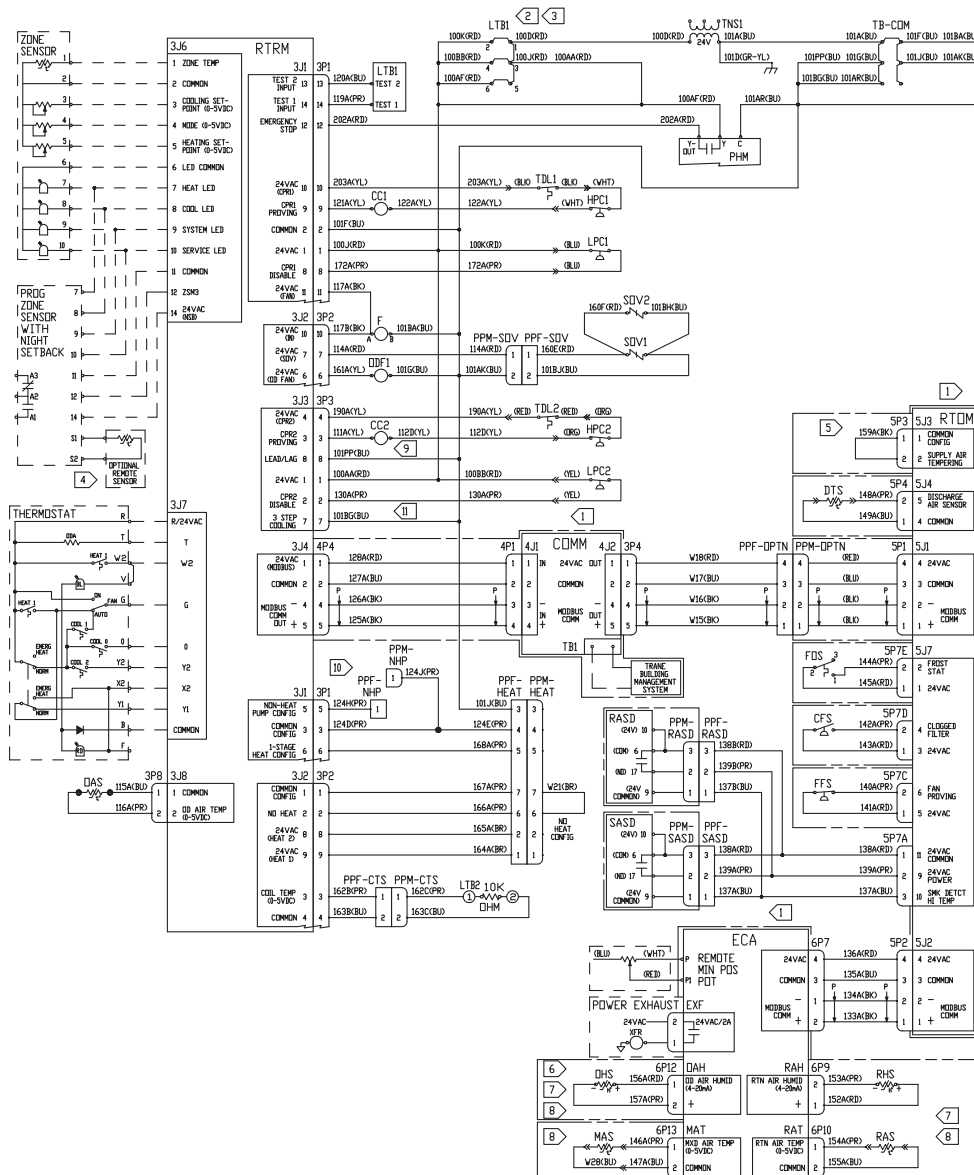
**CAUTION**  
USE COPPER CONDUCTORS ONLY!  
UNIT TERMINALS ARE NOT DESIGNED TO  
ACCEPT OTHER TYPES OF CONDUCTORS.  
FAILURE TO DO SO MAY CAUSE DAMAGE TO  
THE EQUIPMENT.

**ATTENTION**  
UTILISER SEULES DES CONDUCTEURS EN  
CUIVRE!  
LES BORNES DE L'UNITÉ NE SONT PAS  
CONÇUES POUR ACCEPTER D'AUTRES TYPES  
DE CONDUCTEURS.

**PRECAUCIÓN**  
UTILICE ÚNICAMENTE CONDUCTORES DE  
COBRE!  
LAS TERMINALES DE LA UNIDAD NO ESTÁN  
DISEÑADAS PARA ACEPTAR OTROS TIPOS DE  
CONDUCTORES.  
SI NO LO HACE, PUEDE DAÑAR O DESTRUIR  
EL EQUIPO.

**IMPORTANT**  
DO NOT ENERGIZE UNIT UNTIL  
CHECK-OUT AND START-UP  
PROCEDURE HAS BEEN COMPLETED.

**Figure 37. 10 ton control diagram**



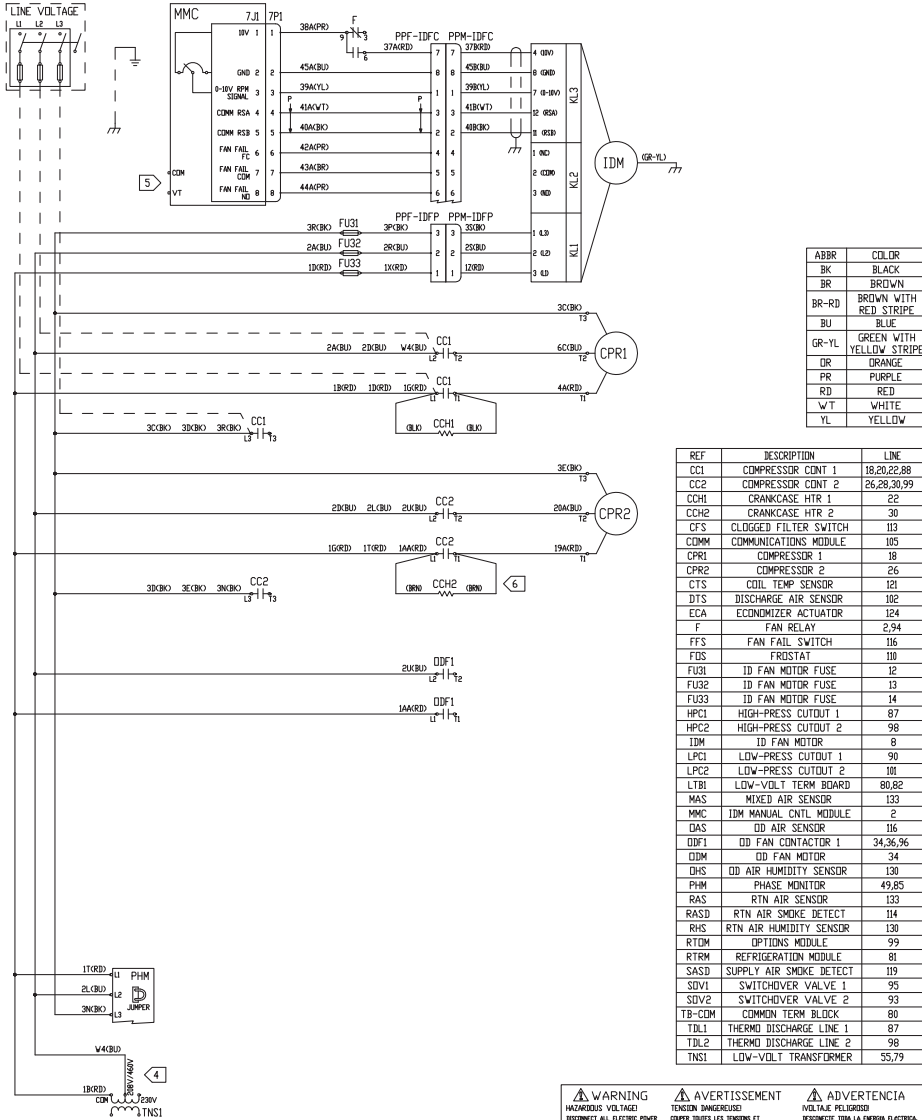
**NOTES:**

- 1 CONNECTIONS SHOWN INCLUDE OPTIONAL ECA, RTDM, AND COMM. IF NEITHER ECA NOR RTDM ARE INSTALLED, DO NOT CONNECT PLUG 3P4 TO ANYTHING. IF ECA AND/OR RTDM ARE INSTALLED WITHOUT COMM, CONNECT PLUG 3P4 TO RTRM-3J4. IF ECA IS INSTALLED WITHOUT RTDM, CONNECT PLUG 5P2 TO PPF-DPTN. REFER TO ACCOMPANYING LITERATURE FOR PROPER CONNECTION/COMBINATION OF OPTIONAL COMPONENTS.
- 2 TO DISABLE THE COMPRESSORS, REMOVE THE JUMPER ON LTBI BETWEEN PINS 1 & 2 AND PINS 3 & 4 AND CONNECT FIELD SUPPLIED CONTROL DEVICE.
- 3 TO SHUT DOWN THE UNIT FOR EMERGENCY STOP, REMOVE THE JUMPERS ON LTBI BETWEEN PINS 5 & 6 AND CONNECT FIELD SUPPLIED CONTROL DEVICE OR INSTALL OPTIONAL FIRESTAT.
- 4 OPTIONAL FIRESTAT.
- 5 INSTALL OPTIONAL REMOTE SENSOR TO PINS S1 & S2 WHEN REQUIRED. SEE PROGRAMMABLE ZONE SENSOR/REMOTE PANEL WITH NIGHT SETBACK LITERATURE FOR CORRECT SETTINGS.
- 6 TO ENABLE SUPPLY AIR TEMPERING, REMOVE PLUG 5P3.
- 7 REQUIRED FOR OPTIONAL REFERENCE ENTHALPY CONTROL.
- 8 REQUIRED FOR OPTIONAL COMPARATIVE ENTHALPY CONTROL.
- 9 OPTIONAL MAS, RAS, RHS, DHS, AND ASSOCIATED WIRING ARE NOT USED WITH MOTORIZED OUTSIDE AIR DAMPER.
- 10 TO ENABLE LEAD/LAG, CUT AND ISOLATE WIRE 101PP.

PLUG PPF-NHP IS NOT CONNECTED TO PPM-NHP ON A HEAT PUMP UNIT.

LT1T AND 1T51ATF WIRE 101BG ON ALL HEAT PUMP UNITS.

**Figure 38. 10 ton power connection**



ABBR	COLOR
BK	BLACK
BR	BROWN
BR-RD	BROWN WITH RED STRIPE
BU	BLUE
GR-YL	GREEN WITH YELLOW STRIPE
OR	ORANGE
PR	PURPLE
RD	RED
WT	WHITE
YL	YELLOW

REF	DESCRIPTION	LINE
CC1	COMPRESSOR CNT 1	18,20,22,88
CC2	COMPRESSOR CNT 2	26,28,30,99
CCH1	CRANKCASE HTR 1	22
CCH2	CRANKCASE HTR 2	30
CFS	CLOGGED FILTER SWITCH	113
CDMM	COMMUNICATIONS MODULE	105
CPR1	COMPRESSOR 1	18
CPR2	COMPRESSOR 2	26
CTS	COIL TEMP SENSOR	121
DTS	DISCHARGE AIR SENSOR	102
ECA	ECONOMIZER ACTUATOR	124
F	FAN RELAY	2,94
FFS	FAN FAIL SWITCH	116
FDS	FROSTAT	110
FU31	ID FAN MOTOR FUSE	12
FU32	ID FAN MOTOR FUSE	13
FU33	ID FAN MOTOR FUSE	14
HPC1	HIGH-PRESS CUTOUT 1	87
HPC2	HIGH-PRESS CUTOUT 2	98
IDM	ID FAN MOTOR	8
LPC1	LOW-PRESS CUTOUT 1	90
LPC2	LOW-PRESS CUTOUT 2	101
LTBI	LOW-VOLT TERM BOARD	80,82
MAS	MIXED AIR SENSOR	133
MMC	IDM MANUAL CNTL MODULE	2
OAS	OD AIR SENSOR	116
DDF1	DD FAN CONTACTOR 1	34,36,96
CDMM	OD FAN MOTOR	34
DHS	OD AIR HUMIDITY SENSOR	130
PHM	PHASE MONITOR	49,85
RAS	RTN AIR SENSOR	133
RASD	RTN AIR SMOKE DETECT	114
RHS	RTN AIR HUMIDITY SENSOR	130
RTDM	OPTIONS MODULE	99
RTRM	REFRIGERATION MODULE	81
SASD	SUPPLY AIR SMOKE DETECT	119
SDV1	SWITCHOVER VALVE 1	95
SDV2	SWITCHOVER VALVE 2	95
TB-COM	COMMON TERM BLOCK	80
TDL1	THERMO DISCHARGE LINE 1	87
TDL2	THERMO DISCHARGE LINE 2	98
TNS1	LOW-VOLT TRANSFORMER	55,79

**NOTES:**

- UNLESS OTHERWISE NOTED, ALL SWITCHES ARE SHOWN AT 25°C (77°F), AT ATMOSPHERIC PRESSURE, AT 50% RELATIVE HUMIDITY WITH ALL UTILITIES TURNED OFF AND AFTER A NORMAL SHUTDOWN HAS OCCURRED.
- DASHED LINES INDICATE RECOMMENDED FIELD WIRING BY OTHERS. DASHED LINE ENCLOSURES AND/OR DASHED DEVICE OUTLINES INDICATE COMPONENTS PROVIDED BY THE FIELD. PHANTOM LINE ENCLOSURES INDICATE ALTERNATE CIRCUITRY OR AVAILABLE SALES OPTIONS.
- THREE-PHASE MOTORS ARE PROTECTED UNDER PRIMARY SINGLE PHASING CONDITIONS. ALL MOTORS HAVE INTERNAL OVERLOAD PROTECTION AND COMPRESSORS HAVE INTERNAL THERMAL PROTECTION.
- CONNECTIONS SHOWN ARE FOR 208V/60HZ/3PH OR 460V/60HZ/3PH OPERATION. WHEN 230V/60HZ/3PH OPERATION IS REQUIRED, MOVE WIRE #4 FROM TNS1-208V/460V TO TNS1-230V.
- RPM INDICATION 0-10V.
- CCH2 LEADS ARE BLACK WITH BROWN TAPE WRAPPED AROUND THE END OF EACH LEAD.

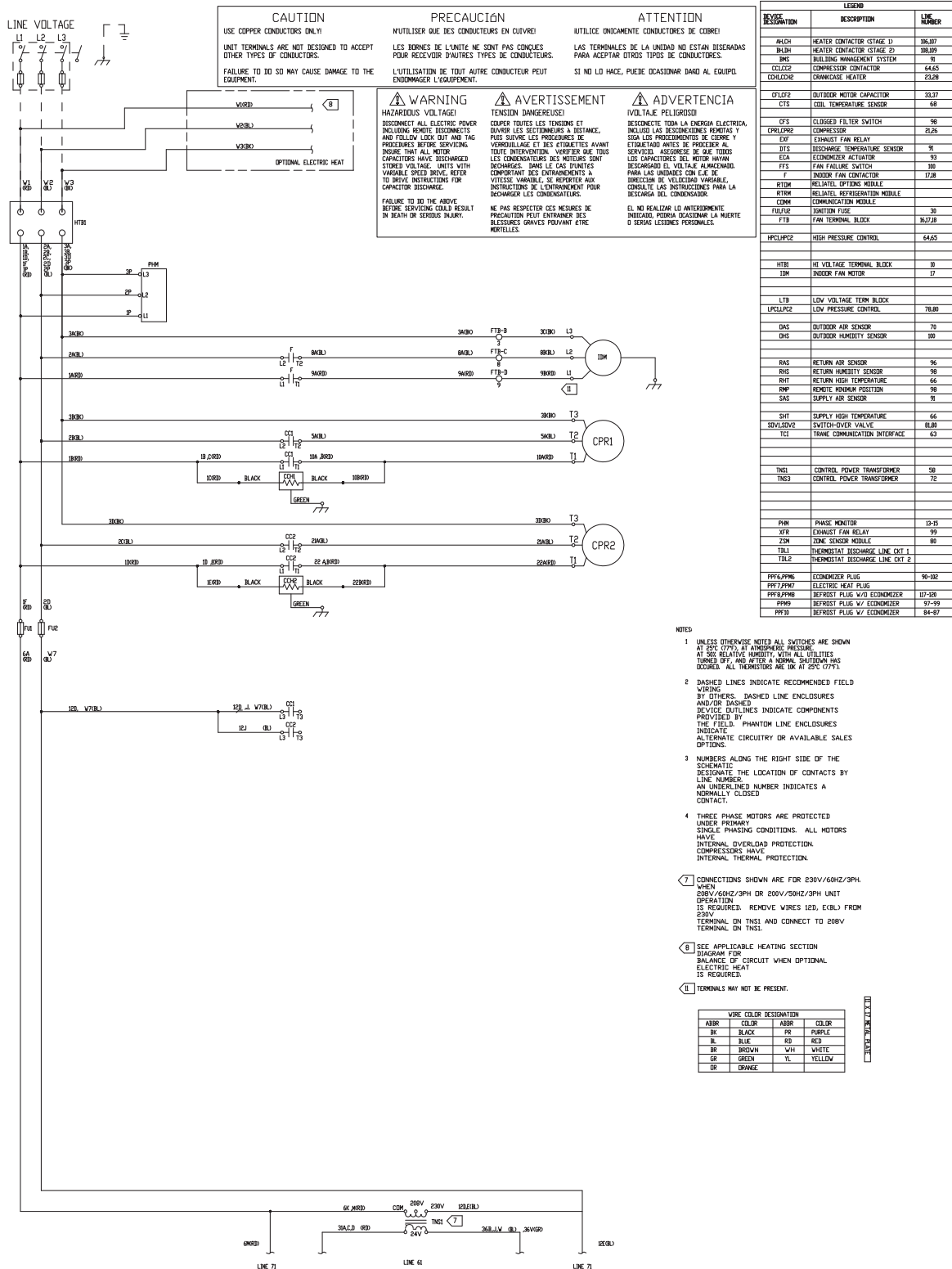
<p><b>WARNING</b> HAZARDOUS VOLTAGE DISCONNECT ALL ELECTRIC POWER INCLUDING REMOTE DISCONNECTS AND FOLLOW LOCK OUT AND TAG PROCEDURES BEFORE WORKING ON THIS EQUIPMENT. FAILURE TO DO SO MAY CAUSE DEATH OR SERIOUS INJURY. REFER TO BROWN TAPE WRAPPED CCH2 LEADS FOR WIRING INSTRUCTIONS FOR CAPACITOR DISCHARGE.</p>	<p><b>AVERTISSEMENT</b> TENSION DANGEREUSE DÉBRAYEZ TOUS LES TENDONS ET SUIVEZ LES PROCÉDURES DE VERROUILLAGE ET ÉTIQUETAGE AVANT DE TRAVAILLER SUR CE MATÉRIEL. L'ÉCHEC À LE FAIRE PEUT CAUSER LA MORT OU DE GRAVES LÉSIONS PERSONNELLES. RÉFÉREZ-VOUS À LA BANDE NOIR ENROUÉE AUTOUR DES CÂBLES CCH2 POUR LES INSTRUCTIONS DE DÉCHARGEMENT DES CONDENSATEURS.</p>	<p><b>ADVERTENCIA</b> VOLTAJE PELIGROSO DESCONECTE TODA LA ENERGÍA ELÉCTRICA INCLUIDO LOS DESCONECTOS REMOTOS Y SIGA LOS PROCEDIMIENTOS DE BLOQUEO Y ETIQUETADO ANTES DE TRABAJAR EN ESTE EQUIPO. EL NO HACERLO PUEDE CAUSAR LA MUERTE O SERIAS LESIONES PERSONALES. CONSULTE LAS INSTRUCCIONES PARA LA DESCARGA DE CONDENSADORES.</p>
---	---	--

**IMPORTANT**  
DO NOT ENERGIZE UNIT UNTIL CHECK-OUT AND START-UP PROCEDURE HAS BEEN COMPLETED.

**CAUTION**  
USE COPPER CONDUCTORS ONLY!  
UNIT TERMINALS ARE NOT DESIGNED TO ACCEPT OTHER TYPES OF CONDUCTORS. FAILURE TO DO SO MAY CAUSE DAMAGE TO THE EQUIPMENT.  
**ATTENTION**  
UTILISER QUE DES CONDUCTEURS EN COUPE!  
LES BORNES DE L'UNITÉ NE SONT PAS CONÇUES POUR RECEVOIR D'AUTRES TYPES DE CONDUCTEURS.  
**PRECAUCIÓN**  
UTILICE ÚNICAMENTE CONDUCTORES DE COBRE!  
LAS TERMINALES DE LA UNIDAD NO ESTÁN DISEÑADAS PARA ACEPTAR OTROS TIPOS DE CONDUCTORES.  
SI NO LO HACE, PUEDE OCASIONAR DAÑO AL EQUIPO.



**Figure 39. 12.5-20 ton 208-230V power connection**



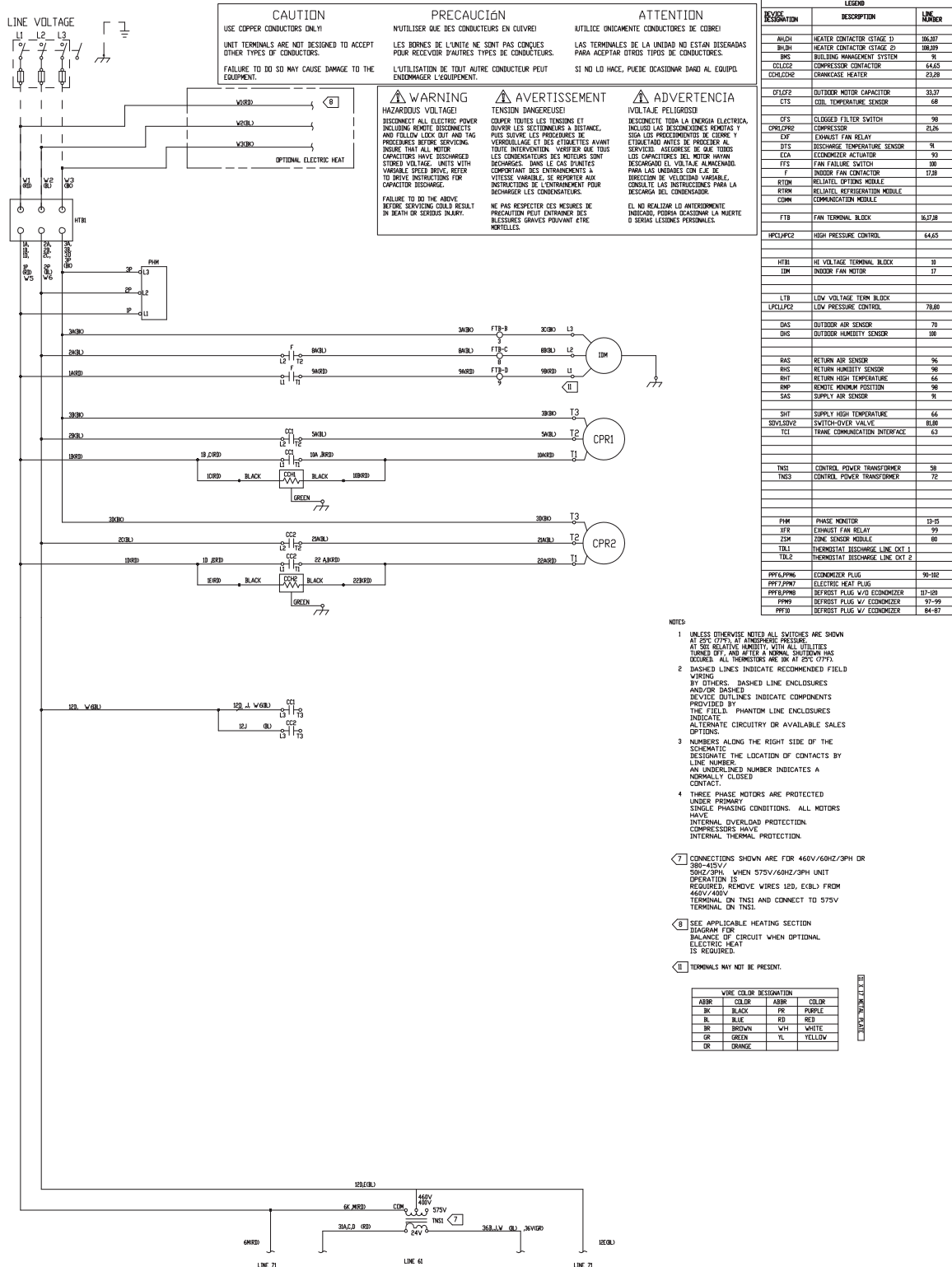
**NOTES**

- UNLESS OTHERWISE NOTED ALL SWITCHES ARE SHOWN AT 25°C (77°F) AT ATMOSPHERIC PRESSURE. AT 50% RELATIVE HUMIDITY, WITH ALL UTILITIES TUNED OFF, AND AFTER A NORMAL OUTDOOR HAS OCCURED, ALL THERMISTORS ARE 10K AT 25°C (77°F).
- DASHED LINES INDICATE RECOMMENDED FIELD WIRING. DASHED LINE ENCLOSURES AND/OR DASHED DEVICE OUTLINES INDICATE COMPONENTS PROVIDED BY THE FIELD. PHANTOM LINE ENCLOSURES INDICATE ALTERNATE CIRCUITRY OR AVAILABLE SALES OPTIONS.
- NUMBERS ALONG THE RIGHT SIDE OF THE SCHEMATIC DESIGNATE THE LOCATION OF CONTACTS BY LINE NUMBER. AN UNDERLINED NUMBER INDICATES A NORMALLY CLOSED CONTACT.
- THREE PHASE MOTORS ARE PROTECTED UNDER PRIMARY SINGLE PHASING CONDITIONS. ALL MOTORS HAVE INTERNAL OVERLOAD PROTECTION. COMPRESSORS HAVE INTERNAL THERMAL PROTECTION.
- CONNECTIONS SHOWN ARE FOR 230V/60HZ/3PH. WHEN 208V/60HZ/3PH OR 200V/50HZ/3PH UNIT OPERATION IS REQUIRED, REMOVE WIRES 12D, EC(L) FROM 230V TERMINAL ON TNS1 AND CONNECT TO 208V TERMINAL ON TNS1.
- SEE APPLICABLE HEATING SECTION DIAGRAM FOR BALANCE OF CIRCUIT WHEN OPTIONAL ELECTRIC HEAT IS REQUIRED.
- TERMINALS MAY NOT BE PRESENT.

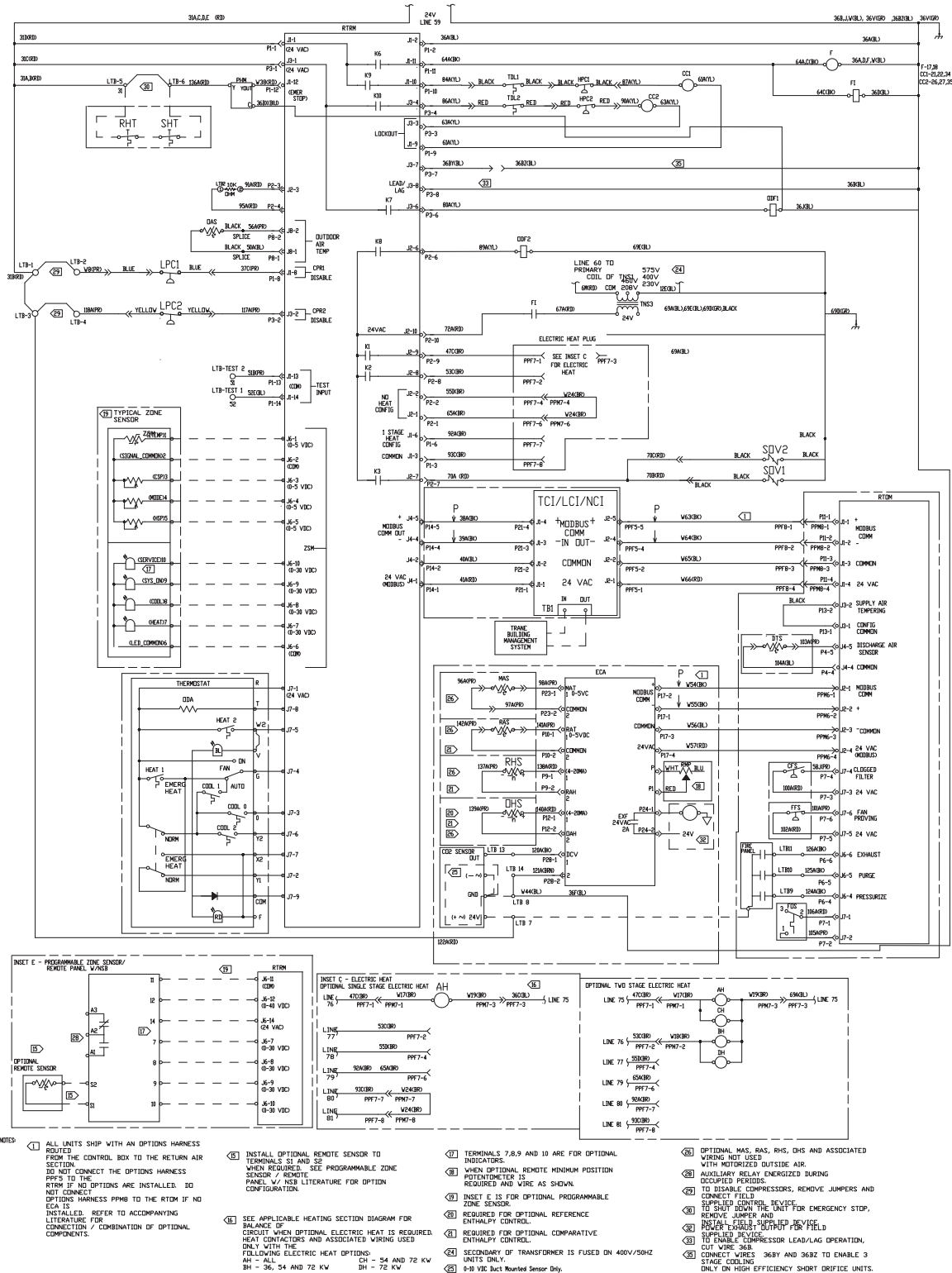
WIRE COLOR DESIGNATION			
ABBR	COLOR	ABBR	COLOR
BL	BLACK	PR	PURPLE
B	BLUE	RB	RED
BR	BROWN	WH	WHITE
GR	GREEN	YL	YELLOW
DR	DRAB		

# Wiring

**Figure 40. 12.5-20 ton 460-575V power connection**

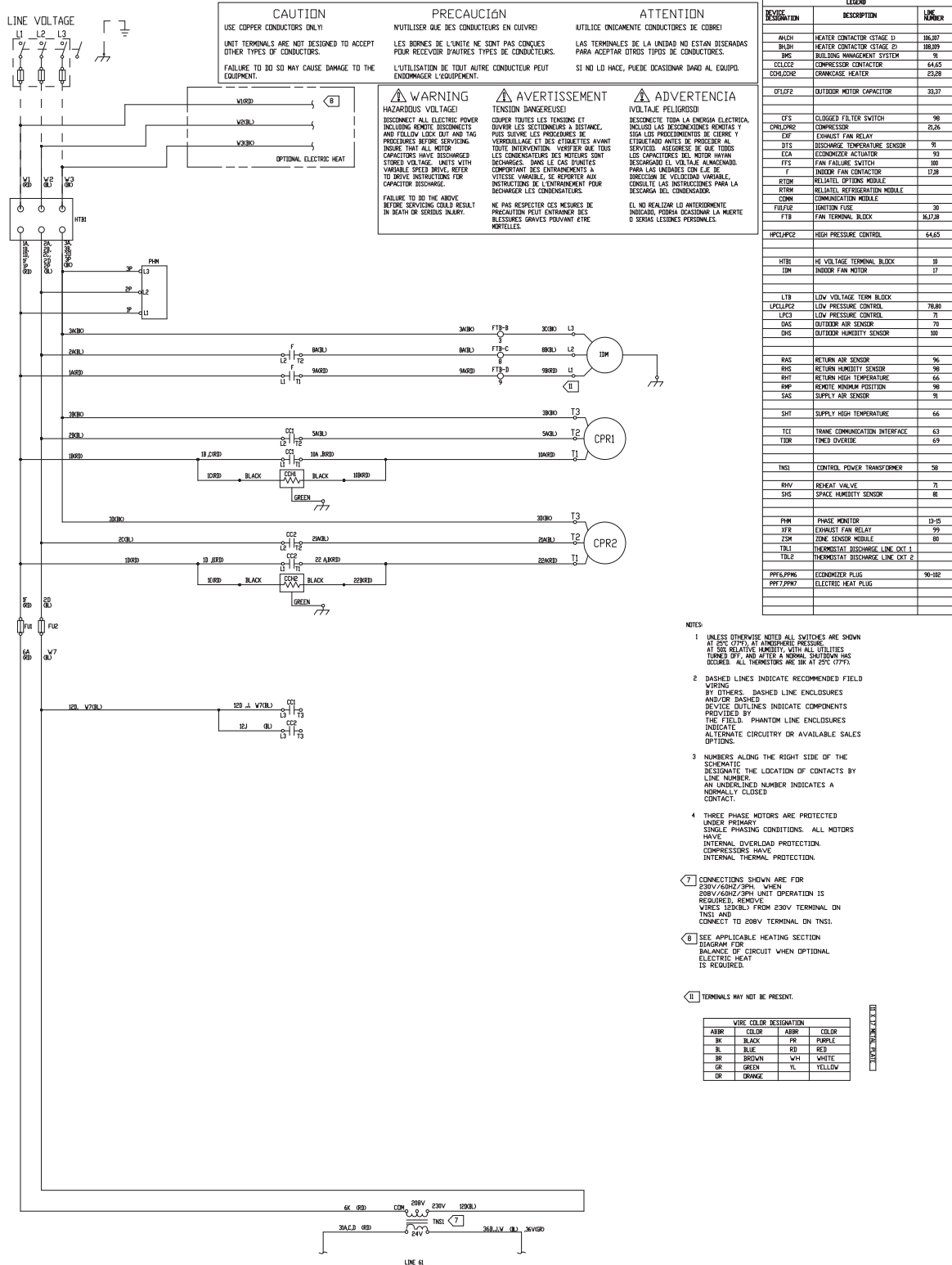


**Figure 41. 12.5-20 ton control diagram**

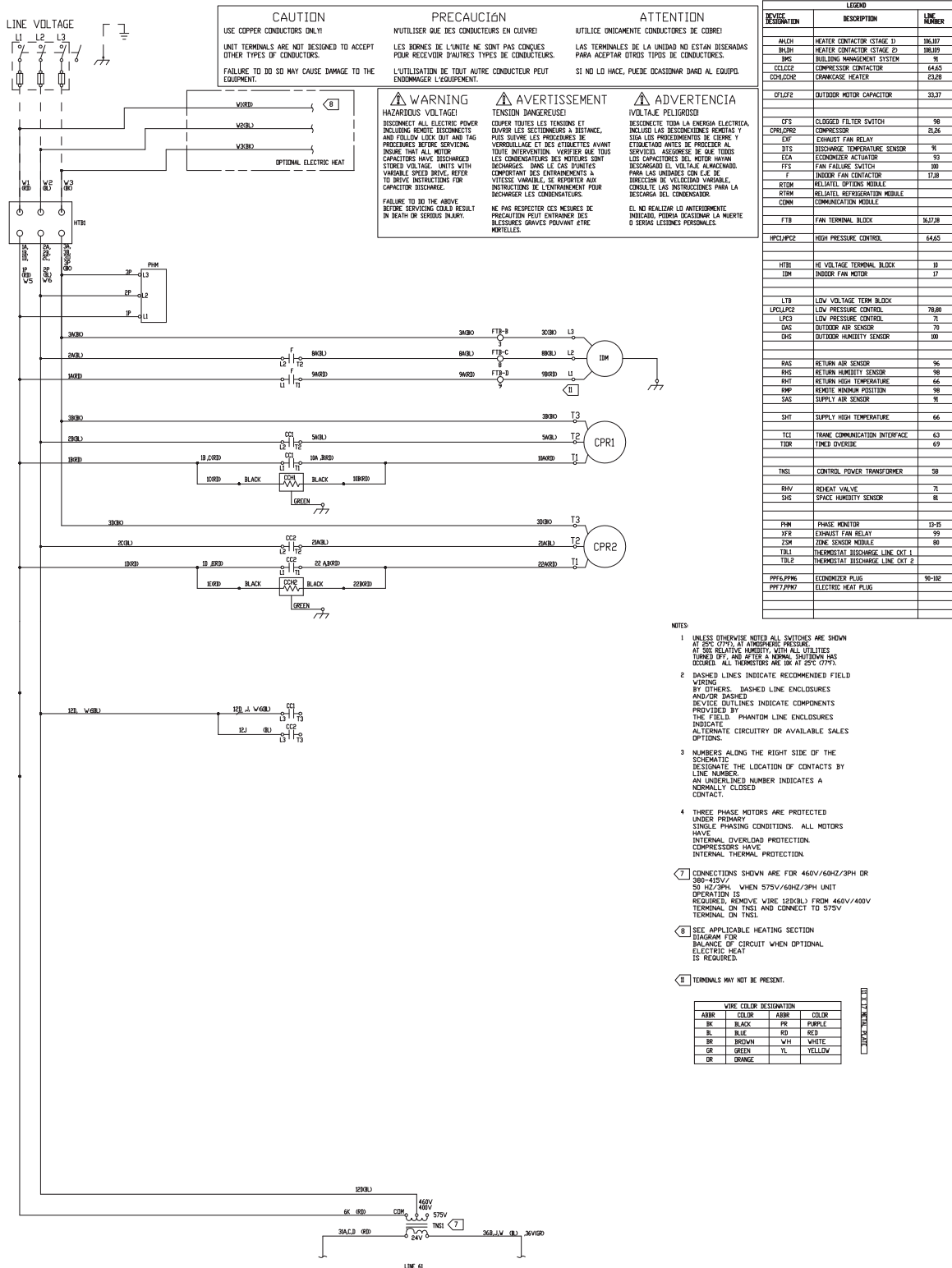


# Wiring

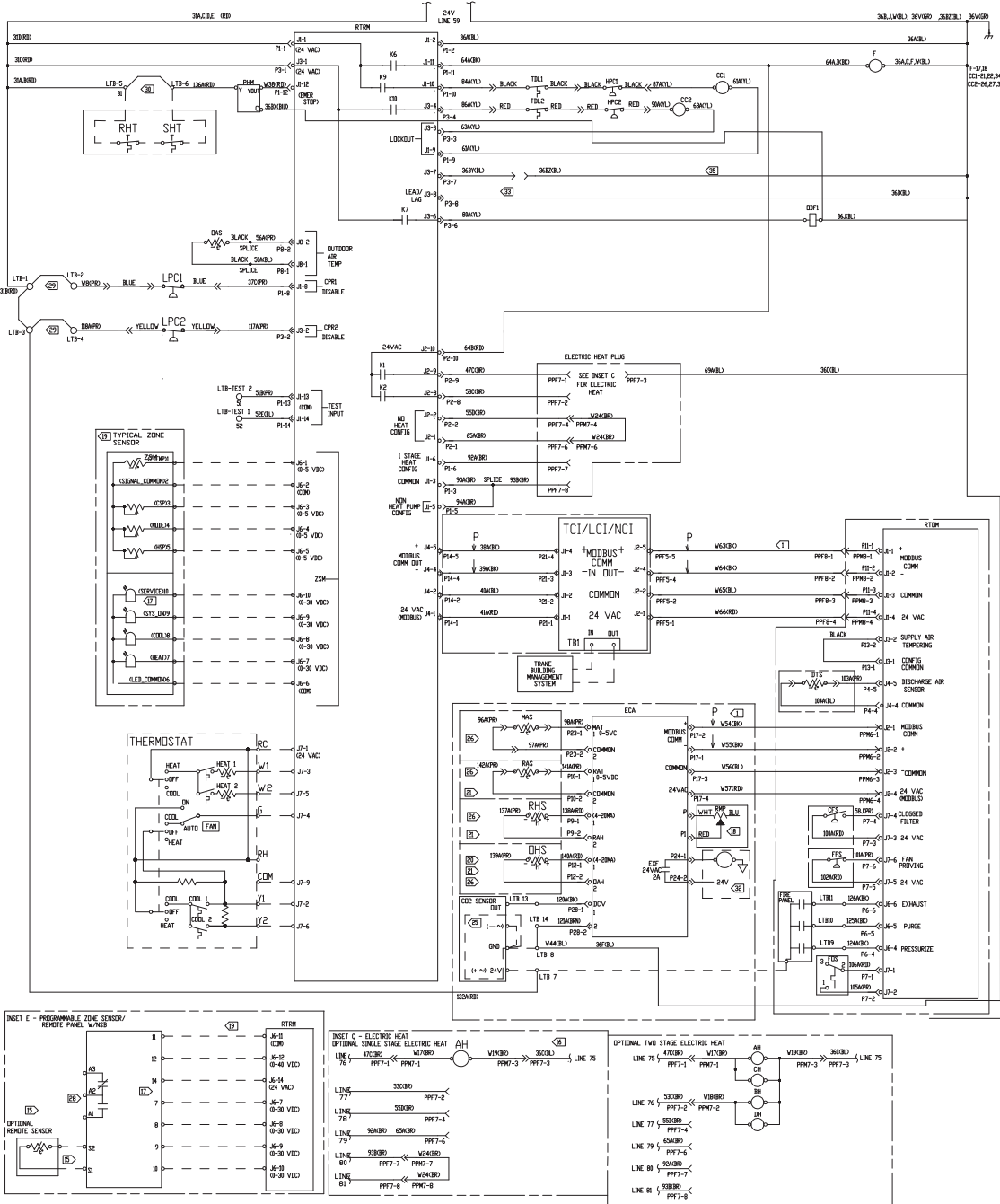
**Figure 42. 25 ton 208-230V power connection**



**Figure 43. 25 ton 460-575V power connection**



**Figure 44. 25 ton control diagram**



- NOTES**
- 1 ALL UNITS SHIP WITH AN OPTIONS HARNESS ROUTED FROM THE CONTROL BOX TO THE RETURN AIR SECTION. DO NOT CONNECT THE OPTIONS HARNESS PFF-3 TO THE RTM IF NO OPTIONS ARE INSTALLED. DO NOT CONNECT THE OPTIONS HARNESS PFF-8 TO THE RTM IF NO OPTIONS ARE INSTALLED. REFER TO ACCOMPANYING LITERATURE FOR CONNECTION / COMBINATION OF OPTIONAL COMPONENTS.
  - 2 INSTALL OPTIONAL REMOTE SENSOR TO TERMINALS S1 AND S2 WHEN REQUIRED. SEE PROGRAMMABLE ZONE SENSOR / REMOTE PANEL W/ NSB LITERATURE FOR OPTION CONFIGURATION.
  - 3 SEE APPLICABLE HEATING SECTION FOR BALANCE OF CIRCUIT WHEN OPTIONAL ELECTRIC HEAT IS REQUIRED. HEAT CONTACTORS AND ASSOCIATED WIRING USED ONLY WITH THE FOLLOWING ELECTRIC HEAT OPTIONS:
    - AH - 54 AND 72 KW
    - BH - 36, 54 AND 72 KW
    - DH - 72 KW
  - 4 TERMINALS 7,8,9 AND 10 ARE FOR OPTIONAL INDICATORS.
  - 5 WHEN OPTIONAL REMOTE MINIMUM POSITION POTENTIOMETER IS REQUIRED AND WIRE AS SHOWN. INSET E IS FOR OPTIONAL PROGRAMMABLE ZONE SENSOR.
  - 6 REQUIRED FOR OPTIONAL REFERENCE ENTHALPHY CONTROL.
  - 7 REQUIRED FOR OPTIONAL COMPARATIVE ENTHALPHY CONTROL.
  - 8 OPTIONAL MAS, BAS, RAS, DHS AND ASSOCIATED WIRING NOT USED.
  - 9 MERL (MILITARY) COMPRESSOR LEAD/LAG DURING OCCUPIED PERIODS.
  - 10 TO DISABLE COMPRESSORS, REMOVE JUMPERS AND CONNECT FIELD SUPPLY CONTROL DEVICE. TO SHUT DOWN THE UNIT FOR EMERGENCY STOP, REMOVE JUMPER AND INSTALL FIELD SUPPLIED RELAY FIELD SUPPLIED RELAY. TO DISABLE COMPRESSOR LEAD/LAG OPERATION, CUT WIRE 36B.
  - 11 CONNECT WIRES 36B9 AND 36B2 TO ENABLE 3 STAGE COOLING ONLY ON HIGH EFFICIENCY SHORT ORIFICE UNITS.

# Mechanical Specifications

## General

Equipment shall be completely assembled, piped, internally wired and test operated at the factory. A field convertible airflow shall be provided.

The equipment shall contain both ETL and ISO-AHRI 13256-1 listings and labels prior to leaving the factory. Canadian units shall be CETL certified. Service and caution area labels shall also be placed on the unit in their appropriate locations.

## Air-to-Refrigerant Coil

Internally finned, 3/8-inch 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 coil shall be leak tested to 200 psig and pressure tested to 450 psig.

## 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 100-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 only a single fastener while providing a water and air tight seal.

All exposed vertical panels and top covers in the indoor air section shall be insulated with cleanable foil faced, fire-retardant permanent, odorless glass fiber material. The base of the unit shall be insulated with 1/2-inch, 1-pound density foil-faced, closed-cell material. All insulation edges shall be either captured or sealed. The units base pan shall have no penetrations within the perimeter of the curb other than the raised 1 1/8-inch high down flow 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.

## Clogged Filter/Fan Failure Switch (Option)

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

## Compressors

All units shall have direct-drive, hermetic, scroll type compressors with centrifugal type oil pumps. The 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. The compressor(s) shall have internal spring isolation and sound muffling to minimize vibration transmission and noise. External high and low pressure switches shall be standard. For the 25-ton equipment, external discharge temperature limit, winding temperature limit and compressor overload shall be provided.

## 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 provided for all 24-volt 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 enhance machine protection.

## Mechanical Specifications

---

### **Drain Pan**

The drain pan shall be constructed of non ferrous or stainless steel, corrosive resistant material and shall be reversible, removable, double sloped with provisions for through the base condensate drain.

### **Differential Enthalpy (Option)**

The differential enthalpy controller shall replace the standard dry bulb controller 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 shall offer the highest level of comfort control, plus energy efficiency available. This option shall be capable of field or factory installation when the factory-installed economizer is selected.

### **Differential Pressure Switches (Option)**

These factory or field-installed options shall allow for individual fan failure and dirty filter indication. The fan failure switch shall disable all unit functions and "flash" the Service LED on the zone sensor. The dirty filter switch shall light the Service LED on the zone sensor and shall allow continued unit operation.

### **Discharge Air Sensing Kit (Option)**

This factory or field-installed option provides true discharge air sensing in heating models. This sensor is a status indicator readable through Tracer® or Tracker®.

### **Discharge Line Thermostat**

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

### **Economizer (Option)**

The economizer may be field installed for 12-25T horizontal airflow units. For all other configurations, economizer is factory-installed. It shall be available with or without barometric relief. The assembly shall include a fully modulating 0-100 percent motor and damper, relief, minimum position setting, preset linkage, wiring harness with fixed dry bulb. The barometric relief damper shall provide a pressure operated damper that shall be gravity closing and shall prohibit entrance of outside air during the equipment OFF cycle. Solid state enthalpy and differential enthalpy control shall be factory or field-installed options. The factory-installed economizer shall arrive 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 the basic unit. The electric heat elements shall be constructed of heavy-duty nickel chromium elements internally delta connected for 240 volt, wye connected for 480 and 600 volt. Staging shall be achieved through the unit control processor (UCP). Each heater package shall have automatically reset high limit control operating through the 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 a single-point connection. Electric heat modules shall be UL listed or CSA certified.

### **Enthalpy Control (Option)**

The enthalpy controller shall replace the dry bulb control with a wet bulb changeover controller (which has a fully adjustable set point). The enthalpy controller shall offer a higher level of comfort control, along with energy savings potential than the standard dry bulb controller due to the



additional wet bulb sensing capability. This option shall be capable of field or factory installation when the factory-installed economizer is selected.

### **Filters**

One inch, throwaway filters shall be standard. Filter rack shall be capable of converting to a two-inch filter.

### **High Pressure Cutout**

All units have high pressure cutout as standard.

### **Hinged Access Doors (Option)**

Sheet metal hinges are available factory-installed on the indoor fan section, supply fan, and the compressor control access doors.

### **Hoses (option)**

Hoses shall consist of a stainless steel outer braid with an inner core of tube made of a nontoxic synthetic polymer material. The hoses shall be suitable for water temperatures ranging between 33°F and 211°F without the use of glycol.

### **Automatic Flow Devices (option)**

The automatic self-balancing device shall automatically limit the rate of flow to within 10-percent of the specified amount, over a 40 to 1 differential pressure operating range of 2 to 80 PSID. The operational temperature shall be rated from fluid freezing, to 225°F.

The valve body shall be suited for working pressures of 400 PSIG. The valve internal core shall consist of one or more high temperature elastomeric diaphragms and precision orifice with sculptured orifice seat.

Dual pressure/temperature test ports shall be standard for verifying the pressure differential and system temperature.

### **Indoor Fan**

Three-phase units shall offer a choice of a direct-drive, FC, centrifugal fan, or a belt driven, FC, centrifugal fan with adjustable motor sheaves. Single-phase units shall offer a direct drive motor only. Units utilizing the belt-driven option shall contain an idler-arm assembly for quick-adjustment of fan belts and motor sheaves. All motors shall be thermally protected. Oversized motors shall be available for high static applications. All indoor fan motors shall meet the U.S. Energy Policy Act of 1992 (EPACT).

### **LonTalk™ Communications Interface**

The LonTalk communication interface allows the equipment to communicate as a Tracer LCI-V device or generally with a LonTalk Network Building Automation System.

### **Manual Outside Air Damper (Option)**

Factory or field-installed rain hood and screen shall provide up to 50-percent outside air.

### **Motorized Outside Air Dampers (Option)**

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

### **Motorized Water Valve (Option)**

When extreme fluid temperature conditions do not exist with an open loop system, a motorized water valve shall be applied to vary water flow in the system. The motorized valve shall aid in maintaining pressure in the loop during equipment cycling.

## Mechanical Specifications

---

### **Oversized Motors (Option)**

Factory or field installed direct drive oversized motors shall be available for high static applications.

### **Pump Module**

The pump module shall consist of either a single or dual 1/6 hp bronze pump and a brass 3-way shut-off valve. Cast iron pumps are also acceptable. The pump module kits shall contain the necessary components for the installation, operation and maintenance of the water circuit of a closed-loop distributed pumping application.

### **Reference or Comparative Enthalpy (Option)**

Reference or Comparative Enthalpy option shall be available when a factory installed economizer is ordered.

### **Refrigerant Circuits**

The refrigerant circuit shall contained a thermal expansion device, service pressure ports, and refrigerant line filter driers factory-installed as standard. An area shall be provided for replacement suction line driers.

### **Remote Potentiometer (Option)**

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

### **Roof Curb (Option)**

The roof curb shall be designed to mate with the down flow supply and return openings 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. The curb design shall comply with NRCA requirements. The curb shall be shipped, knocked down for field assembly and shall include wood nailer strips.

### **Supply and/or Return-Air Smoke Detector (Option)**

With this option factory installed, if smoke is detected, all unit operation will be shut down. Reset will be manual at the unit. Return-air smoke detectors require minimum allowable airflow when used with certain models. See the installation, operation, and maintenance (IOM) manual for the models affected and the minimum allowable airflow required.

### **Through the Base Electrical with Circuit Breaker (Option)**

This option is a factory-installed 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. Factory wiring will be provided from the switch to the unit high voltage terminal block. The circuit breaker will provide over current protection, be sized per NEC and UL guidelines, and be agency recognized by UL/CSA.

### **Through the Base Electrical with Disconnect Switch (Option)**

Factory installed 3-pole, molded case, disconnect switch with provisions for through the base electrical connections are available. This disconnect switch will be installed in the unit in a water tight enclosure with access through a swinging door. Factory wiring will be provided from the switch to the high voltage terminal block. The switch will be UL/CSA agency recognized. Note: The disconnect switch will be sized per NEC and UL guidelines but will not be used in place of unit over current protection.

### **Through the Base Utilities Access (Option)**

A factory-installed 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.

**Trane™ Communications Interface**

An option for a factory or field-installed Trane Communication Interface shall be available to allow a twisted wire pair communication with a Trane Integrated Comfort™ system.

**Unit Top**

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

**Water-to-Refrigerant Heat Exchanger**

The water-to-refrigerant heat exchanger shall be of a high quality co-axial coil for maximum heat transfer. The copper or optional cupro-nickel coil shall be deeply fluted to enhance heat transfer and minimize fouling and scaling. The coil shall have a working pressure of 400 psig on the refrigerant and 650 psig on the watersides.

**Zone Sensors (Option)**

This field installed option shall be provided to interface with the micro-equipped rooftop equipment, and shall be available in either manual, automatic, programmable with night setback, with system malfunction lights or remote sensor options.

**Warranty**

The unit shall be warranted by the manufacturer against defects in material and factory workmanship for one year. The refrigerant circuit including motor-compressor, expansion device, all heat exchangers in contact with refrigerants, and reversing valve (less solenoid coil) shall be warranted for that year (parts only). Optional extended warranties shall be made available.



Trane optimizes the performance of homes and buildings around the world. A business of Ingersoll Rand, the leader in creating and sustaining safe, comfortable and energy efficient environments, Trane offers a broad portfolio of advanced controls and HVAC systems, comprehensive building services, and parts. For more information, visit [www.Trane.com](http://www.Trane.com).

Trane has a policy of continuous product and product data improvement and reserves the right to change design and specifications without notice.