



Model AGZ-D (Rev 0A)
Air-Cooled Scroll-Compressor Chillers
25 to 190 Tons • R-410A • 60Hz/50Hz
Packaged Chillers and Units with Remote Evaporators

Catalog 618-1



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Hazard Identification

DANGER

Dangers indicate a hazardous situation which will result in death or serious injury if not avoided.

WARNING

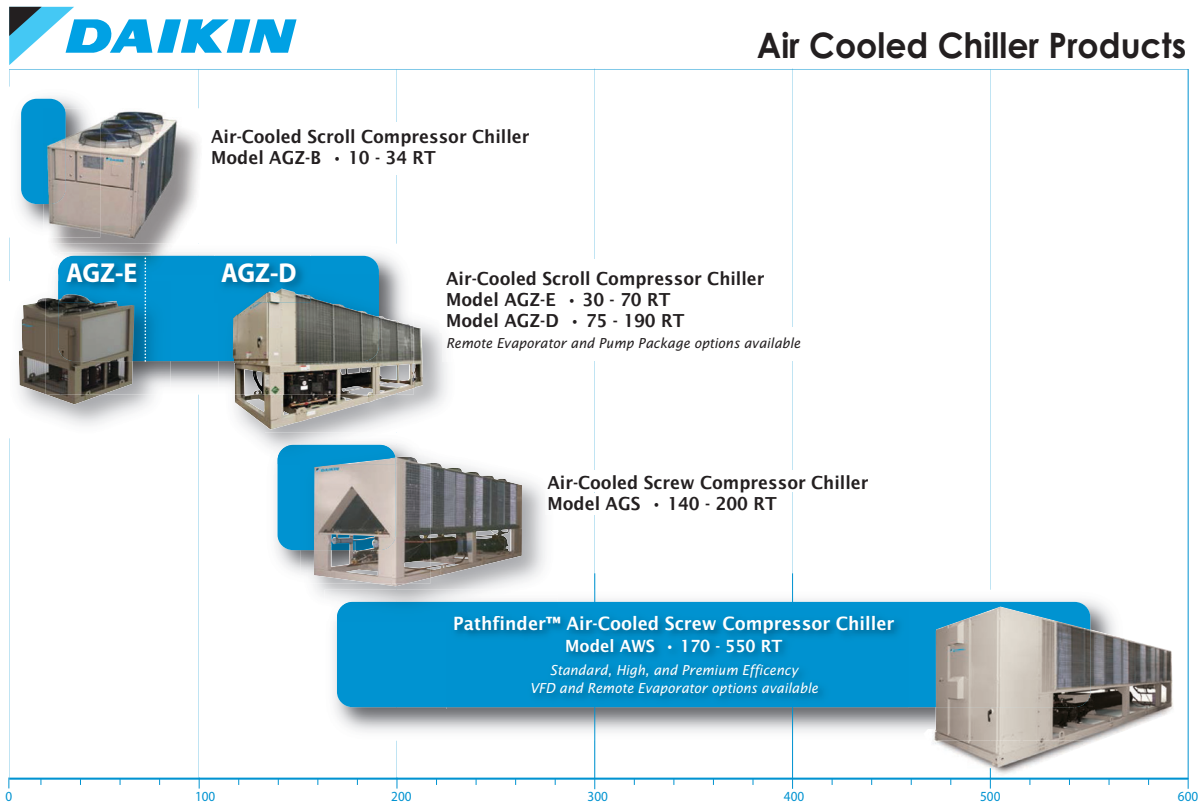
Warnings indicate potentially hazardous situations, which can result in property damage, severe personal injury, or death if not avoided.

CAUTION

Cautions indicate potentially hazardous situations, which can result in personal injury or equipment damage if not avoided.

Modbus





The AGZ family of air-cooled scroll chillers continues Daikin Applied's legacy of high quality, high efficiency, latest technology and quiet operation. These features make the AGZ family the best overall value in air-cooled packaged chillers available today. The AGZ-D series offers a wide selection of units from 25 to 190 tons with dual refrigerant circuits, available as packaged units, with remote evaporators or with an optional pump package.

Efficient Operation

The AGZ units utilize environmentally acceptable R-410A refrigerant and meet the performance requirements of ASHRAE Standard 90.1 for efficiency. Excellent part-load performance is achieved with four or six scroll compressors. High overall efficiency = lower annual energy costs

Latest Control Technology

These units have the latest control technology with the Daikin MicroTech III® microprocessor. Integrating with your building automation system is easy with the Open Choice™ feature using LonTalk®, BACnet® or Modbus® network communication, via field mounting of a small communication module to the unit controller.

Compact Size

Compact models with a small footprint continues to be a primary design feature. The coil design and canted fan deck allow close spacing to walls and other units. These attributes lower installation cost and are excellent for replacement jobs.

Application Flexibility

AGZ-D units are available as packaged chillers, or with remote evaporators. Information on remote evaporator models is included in this catalog. Factory-installed pump packages are also available, and information on that option is available in the installation manual IM 1110 (available on www.DaikinApplied.com).

Quiet Operation

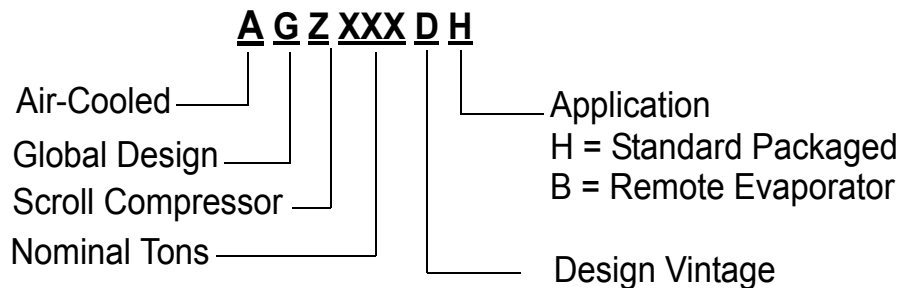
The AGZ units live up to Daikin Applied's reputation for low operating sound levels and make these chillers "neighborhood friendly". Full load sound pressure levels as low as 60dB without insulation.

LEED® Points

Developed by the U.S. Green Building Council (USGBC) in 1998, Leadership in Energy and Environmental Design (LEED®) is an internationally recognized certification program and intends to provide building owners and operators a consistent structure for identifying and implementing practical and measurable green building design, construction, operations and maintenance solutions.

For building owners who want to pursue LEED Green Building Certification, the AGZ-D series of air-cooled chillers can qualify for the Energy and Atmosphere Credit 4, Enhanced Refrigerant Management worth 2 points.

Chiller Nomenclature



Unit Design Features

Daikin AGZ air-cooled chillers are a product of our commitment to offer quiet, reliable, energy efficient equipment, incorporating high quality compressors, and innovative packaging.

Construction

AGZ chillers are factory-assembled and mounted on a heavy-gauge steel base. The base rails, supports and cabinetry are powder-coat painted for long life. The base distributes the unit weight for roof loading. Their small footprint allows smaller mounting pads or support structures and is a plus for retrofit or replacement applications.

Compressors

Reliable hermetic scroll compressors with cast iron scrolls and three Teflon® impregnated bearings are used on the AGZ-D chillers to promote longevity.

Each model has four to six steps of capacity modulation depending on model size. One to six compressors can run, depending on the load of the system, resulting in excellent part-load efficiency and reduced annual operating costs.

Compressor Communications

The communication module installed in the 20 to 40 ton compressor electrical box provides advanced diagnostics, protection, and communications that enhance compressor performance and reliability.

Features include motor temperature protection, scroll temperature protection, missing phase protection, reverse phase protection, low control circuit voltage protection, short cycling detection and alert, modbus communication to system controller, operational and fault history storage, and LED status display.

Evaporator

Models AGZ-025 through AGZ-130

The evaporator is a compact, high efficiency, dual circuit, brazed plate-to-plate type heat exchanger consisting of parallel stainless steel plates. These heat exchangers provide excellent heat exchange efficiency in a compact footprint and are especially attractive for smaller capacity units.

The water side working pressure is 653 psig (4502 kPa). Evaporators are designed and constructed according to, and listed by, Underwriters Laboratories (UL).

Models AGZ-140 through AGZ-190

The evaporator is direct-expansion, U-tube type with water flowing in the baffled shell side and refrigerant flowing through the tubes. Two independent refrigerant circuits within the evaporator serve the unit's dual refrigerant circuits. The water side working pressure is 152 psig (1048 kPa). Each evaporator is designed, constructed, inspected, and stamped according to the requirements of the ASME Boiler and Pressure Vessel Code. Double thickness insulation is available as an option.

Remote Evaporator (Option)

Units with the optional remote evaporator will have the evaporator shipped separately for field mounting and piping to the outdoor unit.

Condenser Coils

Condenser coils have internally enhanced seamless copper tubes arranged in a staggered row pattern. The coils are mechanically expanded into Daikin lanced and rippled aluminum fins with full fin collars. A variety of optional coil material and coatings are available so that the unit can be constructed to meet almost any environment. Options include copper fins, black fin and ElectroFin® coating; see [page 91](#) for description of options.

Figure 1: AGZD with Louvered Panel Option



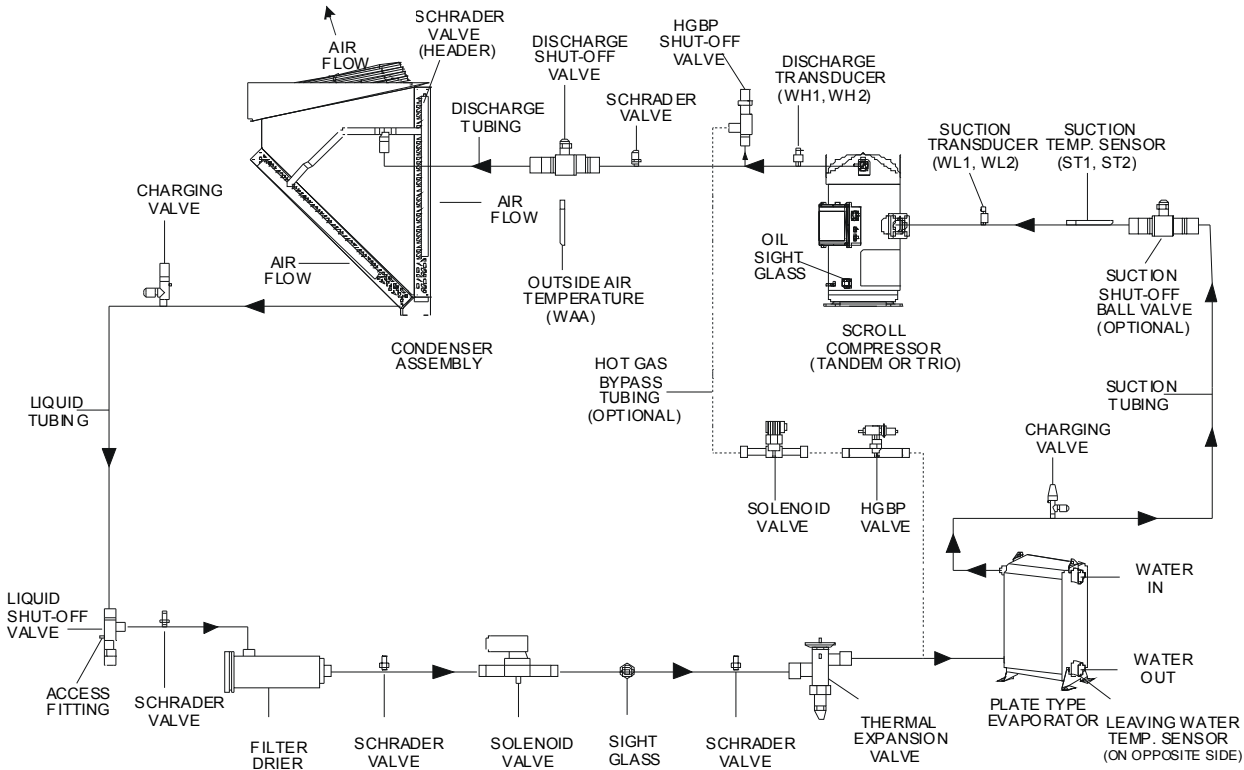
The fan deck is canted inward and directs discharge air toward the center of the unit, reducing the tendency to spill over the sides and into the coil, reducing capacity. This feature, combined with the coil design allows closer unit spacing than most competitors. The result is a smaller installation footprint and reduced first cost. The external condenser coils are fitted with a standard wire mesh guards to protect the coil from damage. Optional louvers create an attractive appearance that can eliminate the need for screening walls.

Condenser Fans and Motors

Multiple direct-drive, dynamically balanced propeller fans operate in formed venturi openings at low tip speeds for maximum efficiency and minimum noise and vibration. A heavy-gauge vinyl-coated fan guard protects each fan.

Each condenser fan motor (including the optional VFD fan motor) is Totally Enclosed Air Over (TEAO), heavy-duty, 3-phase with permanently lubricated ball bearings and inherent overload protection. These motors are designed specifically for outdoor use.

Figure 2: AGZ-D Piping Schematic (One circuit shown)



NOTES:

1. Evaporator is brazed-plate on AGZ 025-130 and shell-and-tube on AGZ 140-190.
2. Hot gas bypass (shown in dotted lines) is an option. The controls are factory installed.
3. Models 025 to 045 have TXV valves only, Models 140 to 190 have EXV valves only, Models 050 to 130 have TXV as standard with EXV available as an option.

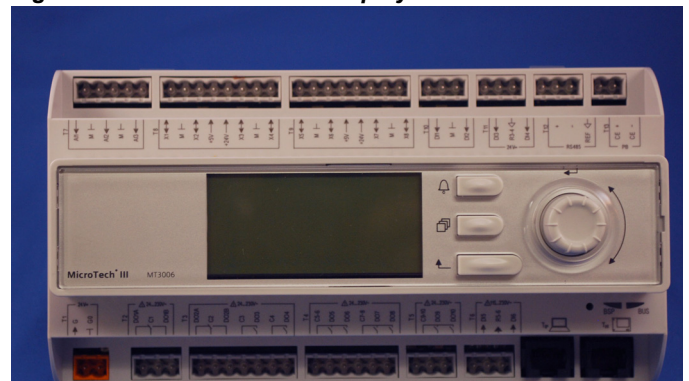
Control System

The MicroTech III advanced DDC chiller controller surpasses all other microprocessor-based chiller control systems available today. This powerful, user-friendly control system provides the flexibility and performance needed for either stand-alone unit operation or the controller can be easily tied into your building automation system of choice using Daikin's Open Choices feature. Open Choices allows you to choose from open standard protocols such as BACnet®, Modbus and LonWorks® to communicate easily with the building automation system that best meets your facility requirements. These optional communications modules are available factory installed or can be easily field installed.

The MicroTech III controller's design will not only permit the chiller to run more efficiently, but will also simplify

troubleshooting if a system failure occurs. Every MicroTech III controller is programmed and tested prior to shipment to help provide a trouble-free start-up.

Figure 3: MicroTech III Unit Display



Features and Benefits

Operator-friendly

The MicroTech III control menu structure is separated into four distinct categories that provide the operator or service technician with a full description of current unit status, control parameters, and alarms. Security protection helps prevent unauthorized changing of the setpoints and unit control parameters.

MicroTech III control continuously performs important self-diagnostic checks while monitoring system temperatures, pressures and protection devices. It will automatically shutdown a compressor, a refrigerant circuit or the entire unit if a fault occurs. The cause of the shutdown will be retained in memory and can be easily displayed in plain English or metric units for operator review. In addition to displaying alarm diagnostics, the MicroTech III chiller controller also provides the operator with a warning of pre-alarm conditions. Alarm notification data can also be passed to a BAS through an optional communication module.

Staging

The scroll compressors are staged on and off as a function of leaving chilled water temperature. Lead/lag is automatic and switched based on starts and operating hours.

Equipment Protection

The unit is protected in three ways:

- 1 alarms that shut the unit down and require manual reset to restore unit operation,
- 2 alarms that shut the unit down and then restart automatically (do not require manual restart), and
- 3 limit alarms that reduce unit capacity in response to some out-of-limit condition. Shut down alarms activate an alarm signal that can be exported to a remote location. Limit alarms activate a light on the controller and do not trigger a remote alarm.

Building Automation System (BAS) Interface

The following BAS protocols are supported:

- BACnet/IP
- BACnet MS/TP
- LonWorks (FTT-10A)
- Modbus

Optional Remote Interface Panel

In addition to the unit-mounted user interface provided with MicroTech III controls, the AGZ chillers can be individually equipped with a remote user interface. It provides convenient access to unit diagnostics and control adjustments, without

having to access a rooftop or outdoor location. One remote panel can be connected to up to eight chillers.

Each remote user interface is similar to its unit-mounted counterpart and offers the same functionality and display, including:

- Three buttons and a navigating wheel with a 8 line by 30-character display format.
- Digital display of messages in English language.
- All operating conditions, system alarms, control parameters and schedules are monitored.

Features

- Can be wired up to 1,000 feet (308 meters) from the unit for flexibility in placing each remote user interface within your building.

Benefits

- Allows you to access the user interface for each unit from one location, inside the building.
- Users need to learn one format because the remote user interface is identical to the unit-mounted version.
- No additional field commissioning is required for the remote user interface.
- Can be retrofit after unit installation.
- Is fully compatible with the optional BAS communication modules.

See IOM MTII Remote Panel-2, available on www.DaikinApplied.com, for more information.

Figure 4: Remote Interface Panel



Optional Pump Package

General Description

The popular pump package available on previous air-cooled chillers is now an available option on the new AGZ-D vintage chillers. The on-board, integrated, chilled water pump package provides important benefits:

- Greatly simplify the chilled water system design and installation
- Provide installation savings by reducing field piping, wiring and control costs
- Save valuable floor space inside the building.
- Reduce project engineering content
- Greatly reduce pump operating cost with the optional variable flow pump VFD

Standard Components

Single Pump: Model 4380 single spring inside seal, vertical, in-line, radially split-case pump, serviceable without breaking pipe connections. The motor and pump rotating assembly can be serviced without removing the pump casing from the line.

Dual Pumps in a Single Casting: Model 4392 single-spring inside-seal vertical, in-line, radially split-case pumps, mounted in a common casing with a common inlet connection and outlet connection and including a flapper valve to prevent recirculation when only one pump is operating. An isolation valve is included that allows one pump to operate when the other is removed. The pumps are designed for duty/standby, not parallel operation. All information and performance curves for the single pump arrangement (Model 4380) can be used for the dual pump arrangement (Model 4392).

The package is also equipped with a "Y" type inlet strainer, a combination triple-duty outlet valve having a discharge shutoff

valve, check valve, and flow throttling valve, a combination suction guide with flow stabilizing outlet vanes and stainless steel strainer with a disposable fine-mesh start-up strainer, a flow switch mounted and wired, factory power and control wiring, interconnecting piping and insulation of all cold surfaces. Various tank and connection options are available for field mounting.

Optional Variable Flow VFD

The operating cost savings resulting from using variable chilled water flow via a pump VFD is well known. In the past, however, its usage has been somewhat limited by the cost and uncertainty of field installing the required system pressure differential sensors.

Daikin Applied can now offer an innovative variable chilled water flow system completely self-contained within the pump package by simply ordering the optional pump VFD-no external sensors required.

In addition to the sensorless operation, there are three other selectable operating modes:

BAS Input: The pump speed and system flow will be controlled from a customer-supplied BAS input signal.

Remote Sensor Control: The VFD is wired to a pressure sensor mounted in the chilled water piping system. This is the standard VFD control when a sensorless VFD is not used.

Locally Selected Constant Speed Control: Provides manual control of the pump speed, overriding any current automatic speed control.

Consult Daikin publication IM 1110 for additional detailed information. It is available from the local Daikin Applied sales office or on www.DaikinApplied.com.

Operating and Standby Limits

Table 1: Operating Limits

Maximum standby ambient temperature	130°F (55°C)
Maximum operating ambient temperature	105°F (40°C)
-with optional high ambient package (see information under High Ambient Operation, page 14)	125°F (52°C)
Minimum operating ambient temperature (standard control)	35°F (2°C)
-with optional low ambient control (see information under Low Ambient Operation, page 14)	-10°F (-23°C)
Leaving chilled water temperature	40°F to 60°F (2°C to 16°C)
Leaving chilled fluid temperatures (with anti-freeze) - Unloading is not permitted with fluid leaving temperatures below 25°F (-4°C). When ambient air temperature is above 100°F, minimum leaving chilled fluid temperature (with antifreeze) is 25°F (4°C)	15°F to 60°F (-9°C to 16°C)
Operating chilled water delta-T range	6°F to 16°F (3.3°C to 8.9°C)
Maximum evaporator operating inlet fluid temperature	76°F (24°C)
Maximum evaporator non-operating inlet fluid temperature	100°F (38°C)

Application Considerations

Unit Placement

AGZ units are for outdoor applications and can be mounted either on a roof or at ground level. For roof mounted applications, install the unit on a steel channel or I-beam frame to support the unit above the roof. For ground level applications, install the unit on a substantial base that will not settle. Use a one-piece concrete slab with footings extended below the frost line. Be sure the foundation is level within 0.5" (13mm) over its length and width. The foundation must be strong enough to support the weights listed in the Physical Data Tables beginning on [page 46](#).

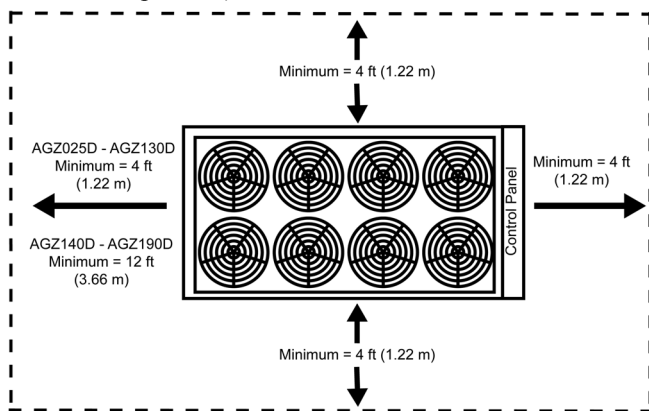
Service Clearance

Sides: Minimum of 4 feet (1.22 m)

Control panel end: Minimum of 4 feet

Opposite control panel:

- Minimum 4 feet on models 025 to 130;
- 12 feet on models 140-190 (allows clearance to remove the evaporator).



Air Clearance

Daikin's advanced "W" coil design and open air-passage ends allow very close unit spacing and a small installation footprint. The AGZ-D fans are canted inward and reduce recirculation by directing discharge air to the center of the unit, reducing the tendency to flow outward and spill over into the coil inlet.

Sufficient clearance must be maintained between the unit and adjacent walls or other units to allow the required unit air flow to reach the coils. Failure to do so will result in a capacity reduction and an increase in power consumption. No obstructions are allowed above the unit at any height.

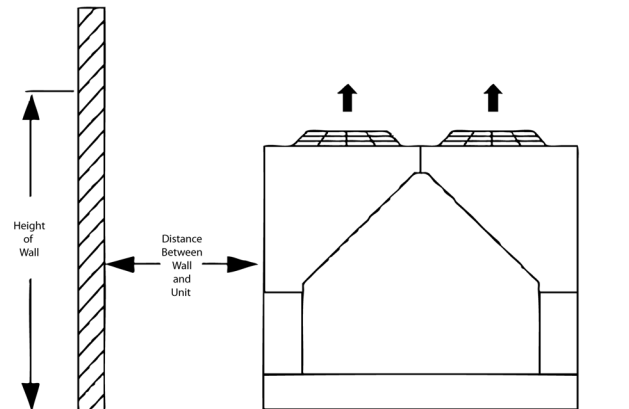
Spacing Requirements

In general, with a small performance penalty in some cases, AGZ-D units can be spaced at four feet from other units or a wall. Curves on the following pages give the minimum clearance for different types of installations and also capacity reduction and power increase if closer spacing is used.

Case 1: Wall on One Side

In this case a solid wall up to 24-feet is considered. (For walls higher than 24 ft., use the 24-foot values.) Also use these charts for an adjacent building. For perforated screening walls, use Case 4. Spacing is differentiated by unit size families.

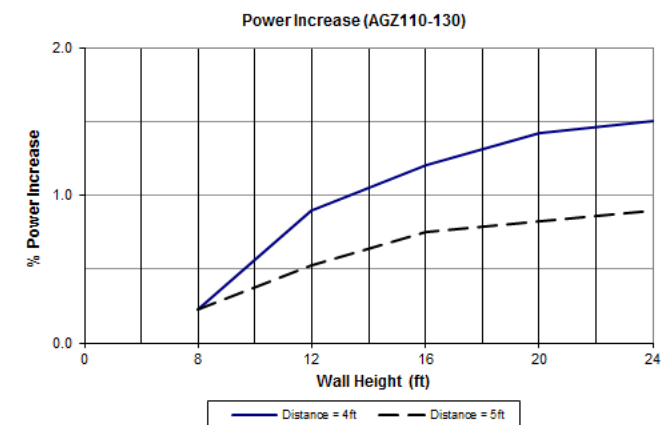
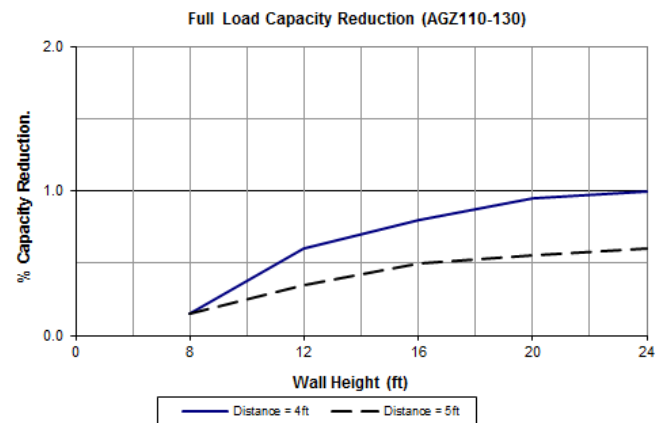
Figure 5: Wall on One Side of Unit



Note: Maintain a minimum of 4-feet on all sides; except models 140-190, which require 12-feet opposite the control panel to remove the evaporator.

For models AGZ 025-100: use 4 feet from any height wall. For models 110-190, use Performance Adjustment curves below.

Figure 6: Case 1 Adjustment Factors (AGZ110D-130D)



Application Considerations

Figure 7: Case 1 Adjustment Factors (AGZ140D-180D)

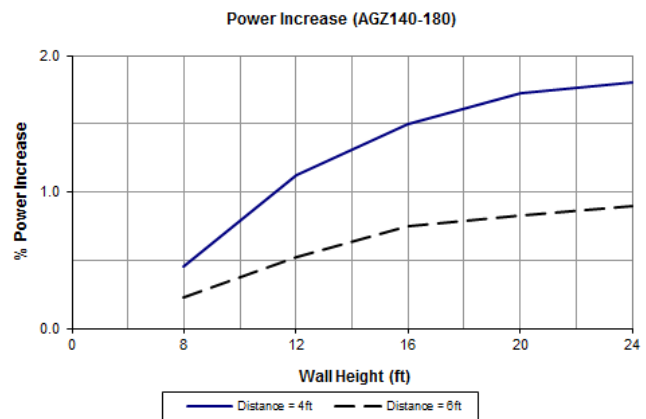
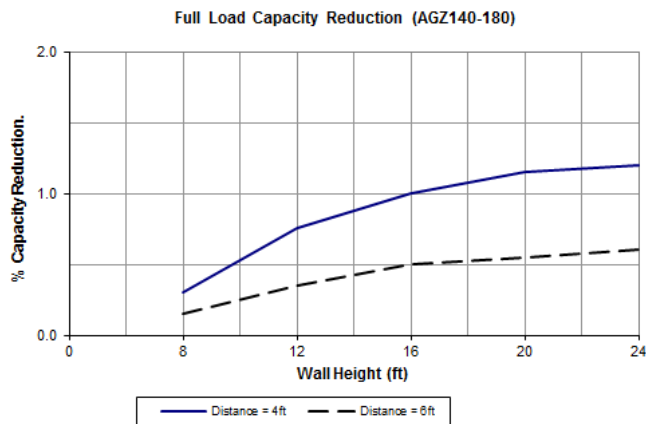
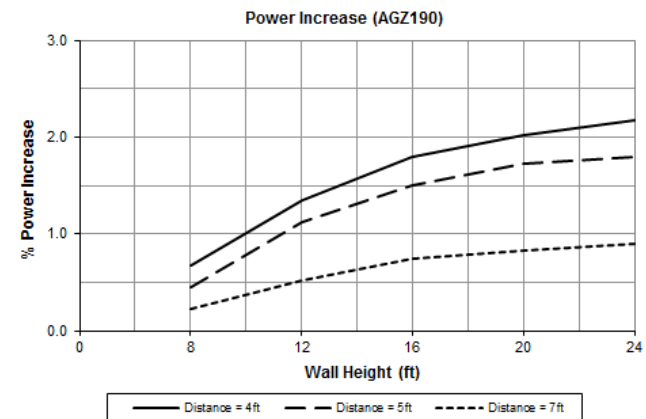
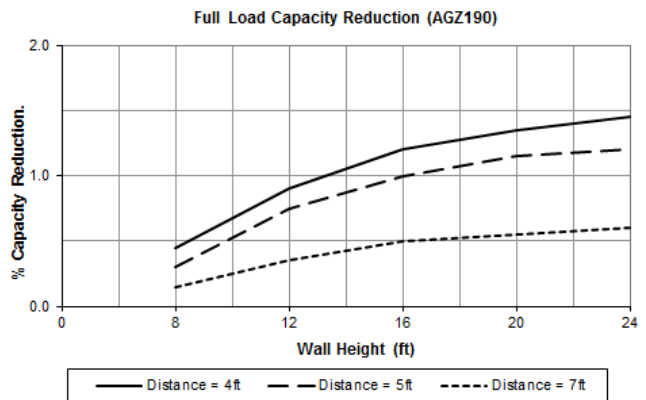


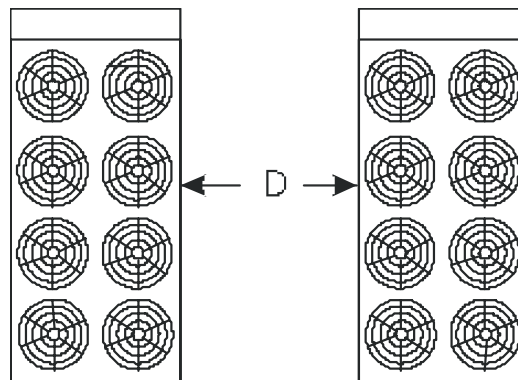
Figure 8: Case 1 Adjustment Factors (AGZ190D)



Case 2: Two Units, Side-by-Side

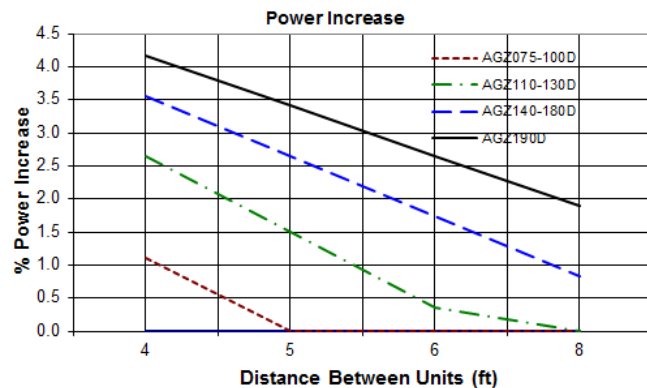
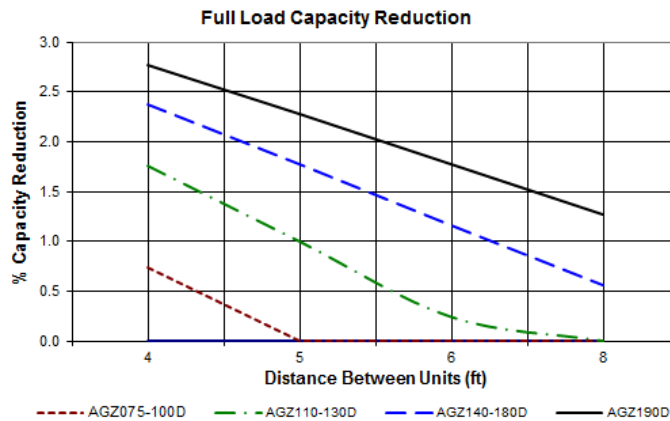
Maintain a minimum of 6-feet on all sides; except models 140-190, which require 12-feet opposite the control panel to remove the evaporator.

Figure 9: Case 2 - Two units side by side



For models AGZ 025-100: use 4 feet between units. For models 110-190, use Performance Adjustment chart in Figure 10.

Figure 10: Case 2 Adjustment Factors

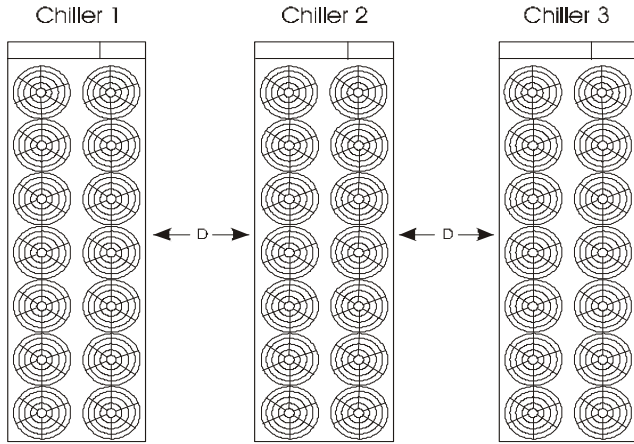


Application Considerations

Case 3: Three or More Units, Side-by-Side

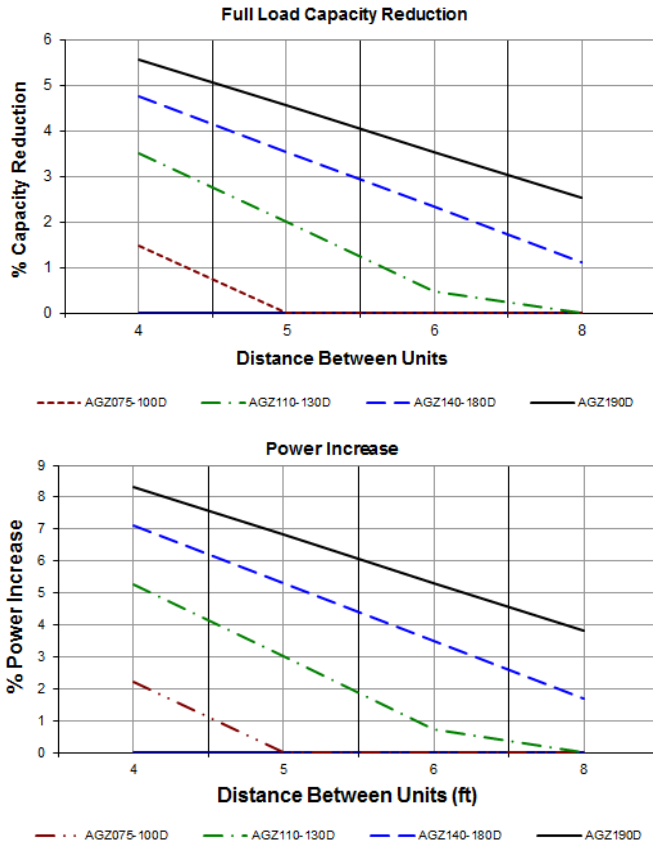
Maintain a minimum of 6-feet on all sides; except models 140-190, which require 12-feet opposite the control panel to remove the evaporator. For more than three units, allow an additional 2-feet clearance between units.

Figure 11: Case 3 - 3 units side by side



Data is for the middle unit - with a unit on each side. See Case 2, page 9 for Adjustment Factors for the two outside units.

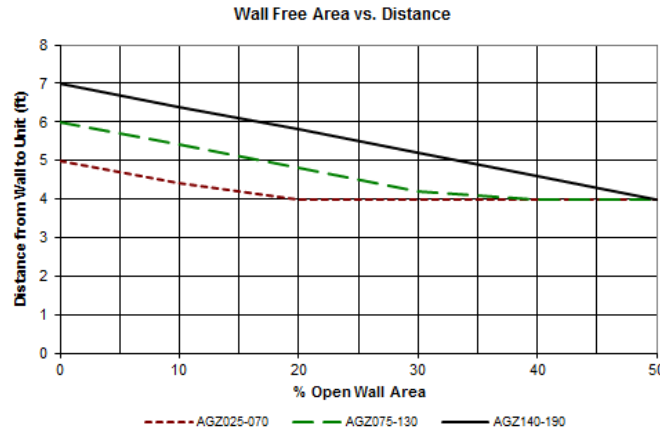
Figure 12: Case 3 Adjustment Factors



Case 4: Open Screening Walls

Decorative screening walls are often used to help conceal a unit either on grade or on a rooftop. Design these walls such that the combination of their open area and distance from the unit do not require performance adjustment. It is assumed that the wall height is equal to or less than the unit height when mounted on its base support. If the wall height is greater than the unit height, see Case 5, Pit Installation, page 11. The distance from the sides of the unit to the side walls must be sufficient for service, such as opening control panel doors. For uneven wall spacing, the distance from the unit to each wall can be averaged providing no distance is less than 4 feet. Values are based on walls on all four-sides.

Figure 13: Case 4 Adjustment Factor



Application Considerations

Case 5: Pit Installation

Pit installations can cause operating problems resulting from air recirculation and restriction, and require care that sufficient air clearance is provided, safety requirements are met and service access is provided. Pit covers must have abundant open area at least equal to the chiller footprint. A solid wall surrounding a unit is substantially a pit and this data should be used.

Steel grating is sometimes used to cover a pit to prevent accidental falls or trips into the pit. The grating material and installation design must be strong enough to prevent such accidents, yet provide abundant open area to avoid recirculation problems. Have any pit installation reviewed by the Daikin Applied sales representative prior to installation to ensure it has sufficient air-flow characteristics, and approved by the installation design engineer to avoid risk of accident.

Figure 14: Case 5 - Pit Installation

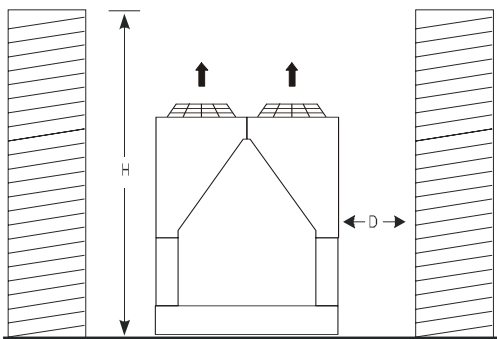


Figure 15: Case 5 Adjustment Factors (AGZ025D-070D)

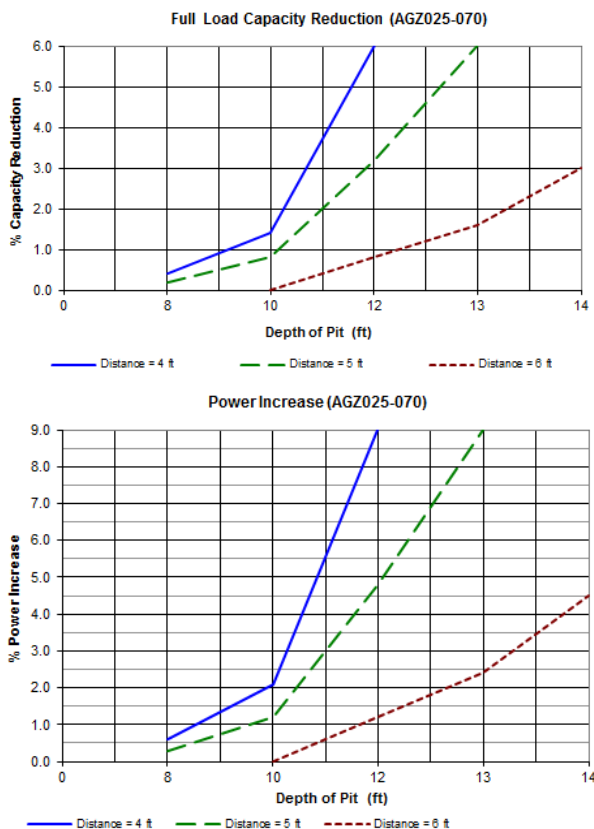


Figure 16: Case 5 Adjustment Factors (AGZ075D-130D)

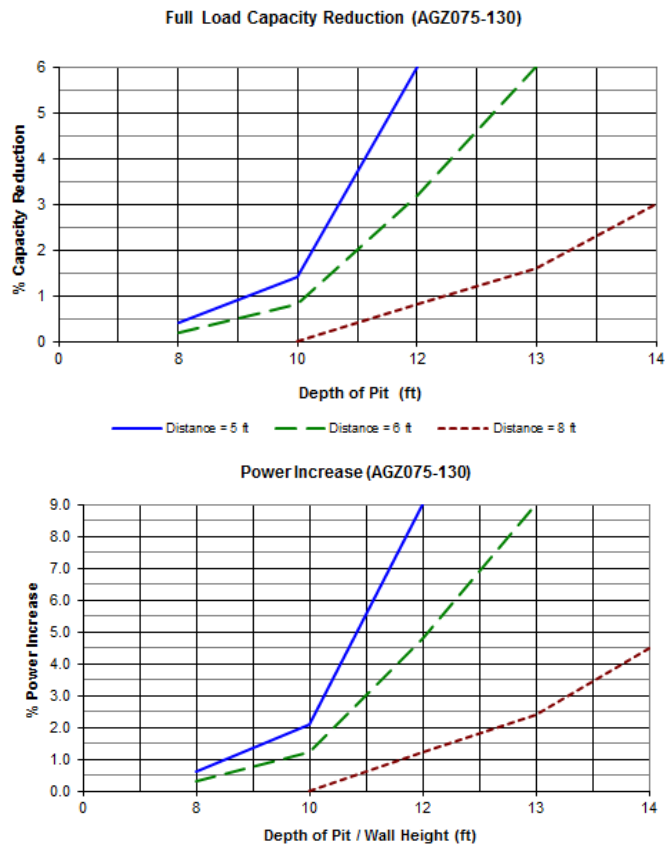
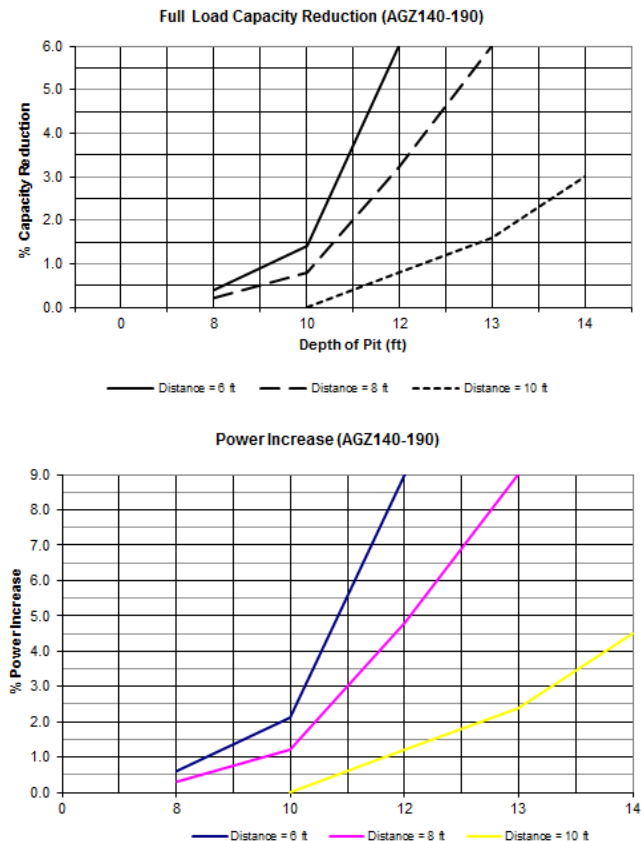


Figure 17: Case 5 Adjustment Factors (AGZ140D-190D)



Application Considerations

Chilled Water Piping

IMPORTANT: Piping design must be provided by a qualified Architect or Systems HVAC Design Engineer familiar with piping design, as well as local codes and regulations. The manufacturer recommendations provided here are to be used as a general guide, but do not replace system design by a qualified professional.

Follow all instructions and recommendations for Chilled Water Piping in IM 1100, available on www.DaikinApplied.com. Design the water piping so the chilled water circulating pump discharges into the evaporator inlet. A cleanable perforated basket strainer with 0.062-inch perforations and 41% open area must be installed in the water line just prior to the inlet of the evaporator on models 030 to 130 and a strainer with 0.125-inch perforations and 40% open area on models 150 to 200. The strainer may be field-supplied, or is available as field-installed kit. See [Optional Inlet Strainer](#) below for more information.

A water flow switch must be installed in the horizontal piping of the supply (evaporator outlet) water line to avoid evaporator freeze-up under low or no flow conditions. The flow switch may be ordered as a factory-installed option, a field-installed kit, or may be supplied and installed in the field (See Options and Accessories, [page 91](#) for more information).

Vibration eliminators are recommended in both the supply and return water lines. Pressure gauges must be installed in the inlet and outlet water lines to the evaporator.

Insulate chilled water piping to reduce heat loss and prevent condensation. Chillers not running in the winter should have their water systems thoroughly drained to protect against freezing. If the chiller operates year-round, or if the system is not drained for the winter, protect the chilled water piping exposed to outdoor temperature against freezing. Wrap the lines with a heater cable and add appropriate amount of glycol to further protect the system.

Optional Inlet Strainer

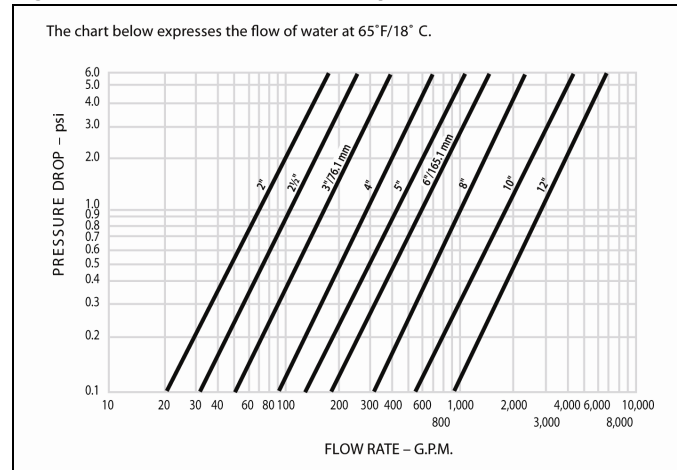
An inlet water strainer kit is available to be field-installed, sized per [Table 2](#) and with the pressure drop show in [Figure 18](#). This pressure drop must be accounted for in the total system pressure drop. The kit consists of:

- (1) Y-type strainer with 304 stainless steel 40 or 41% open area perforated basket, Victaulic pipe connections and strainer cap
- (1) Extension pipe with (2) Schrader fittings that can be used for a pressure gauge and thermal dispersion flow switch. The pipe provides sufficient clearance from the evaporator for strainer basket removal.
- (1) ½-inch blowdown valve
- (2) Victaulic clamps

Table 2: Strainer Data

AGZ Model	Strainer Size (in.)	Strainer Plus Pipe Length (in.)	Strainer Weight (lbs)
025-055	2.5	16.75	14
060-130	3.0	17.75	20
150-200	8.0	36.00	125

Figure 18: Strainer Pressure Drop



Water Flow Limitations

Constant Flow

The evaporator flow rates and pressure drops shown on [page 45](#) are for full load design purposes. The maximum flow rate and pressure drop are based on a 6°F temperature drop. Avoid higher flow rates with resulting lower temperature drops to prevent potential control problems resulting from very small control bands and limited start up/shut off temperature changes.

The minimum flow and pressure drop is based on a full load evaporator temperature drop of 16°F. Evaporator flow rates below the minimum values can result in laminar flow causing freeze-up problems, scaling and poor control. Flow rates above the maximum values will result in unacceptable pressure drops and can cause excessive erosion, potentially leading to failure.

Evaporator Variable Flow

Reducing evaporator flow in proportion to load can reduce system power consumption. The rate of flow change should be a maximum of 10 percent of the flow per minute. For example, if the maximum design flow is 200 gpm and it will be reduced to a flow of 140 gpm, the change in flow is 60 gpm. Ten percent of 200 gpm equals 20 gpm change per minute, or a minimum of three minutes to go from maximum to desired flow. Do not reduce flow lower than the minimum flows listed in the evaporator pressure drop section, [page 45](#). The water flow through the evaporator must remain between the minimum and maximum values listed on [page 45](#). If flow drops below the minimum allowable, large reductions in heat transfer can occur. If the flow exceeds the maximum rate, excessive pressure drop and tube erosion can occur.

Figure 19: Typical Piping, Brazed-Plate Evaporator (models AGZ025D-130D)

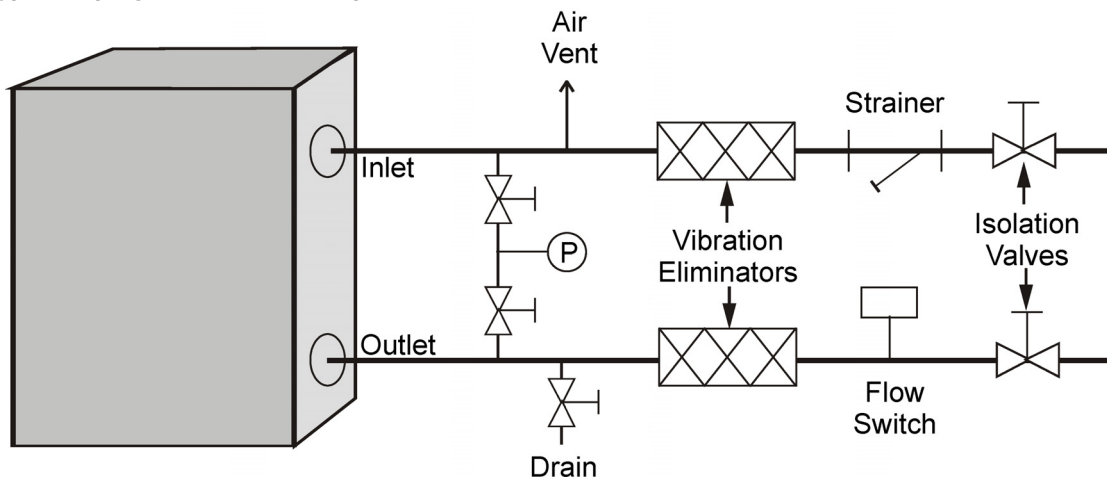
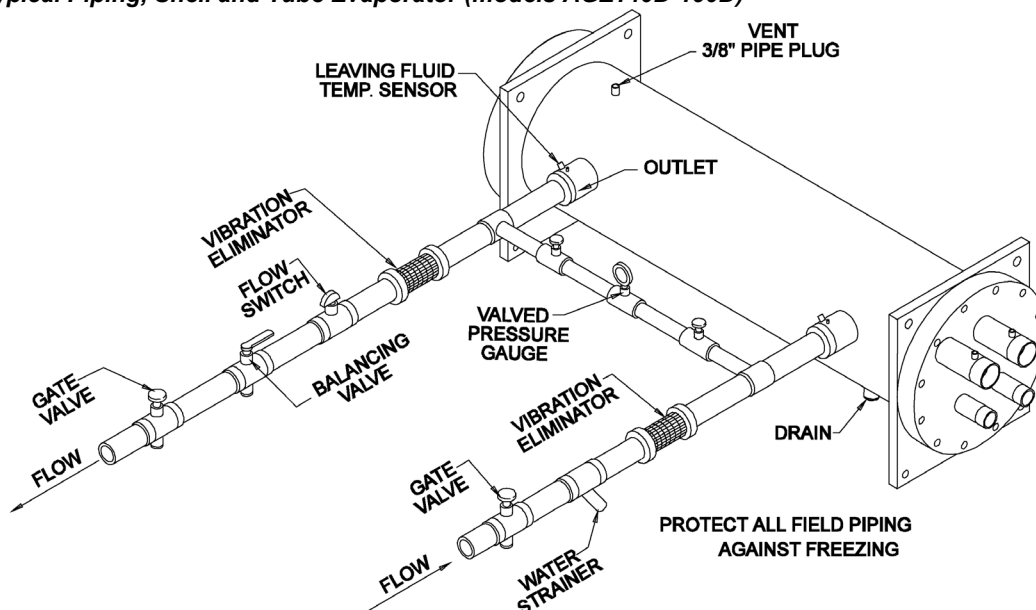


Figure 20: Typical Piping, Shell and Tube Evaporator (models AGZ140D-190D)



Typical Piping

Piping for units with brazed-plate evaporators must have a drain and vent connection provided in the bottom of the lower connection pipe and to the top of the upper connection pipe respectively. (See Figure 19) These evaporators do not have drain or vent connections due to their construction.

System Water Volume Considerations

All chilled water systems need adequate time to recognize a load change, respond to the change and stabilize to avoid undesirable short cycling of the compressors or loss of temperature control. In air conditioning systems, the potential for short cycling usually exists when the building load falls below the minimum chiller plant capacity or on close-coupled systems with very small water volumes. Some of the things the designer should consider when looking at water volume are the minimum cooling load, the minimum chiller plant capacity during the low load period and the desired cycle time for the

compressors. Assuming that there are no sudden load changes and that the chiller plant has reasonable turndown, a rule of thumb of “gallons of water volume equal to two to three times the chilled water gpm flow rate” is often used. A storage tank may have to be added to the system to reach the recommended system volume.

Evaporator Freeze Protection

Evaporator freeze-up can be a concern in the application of air-cooled water chillers in areas experiencing below freezing temperatures. To protect against freeze-up, insulation and an electric heater are furnished with the evaporator. Models 140 through 190 have immersion heaters with a thermostat; models 025 through 130 have an external plate heater and thermostat. This helps protect the evaporator down to -20°F (-29°C) ambient air temperature. Although the evaporator is equipped with freeze protection, it does not protect water piping external to the unit or the evaporator itself if there is a power failure or heater burnout, or if the chiller is unable to control the chilled

Application Considerations

water pumps. Use one of the following recommendations for additional protection:

- 1 If the unit will not be operated during the winter, drain evaporator and chilled water piping and flush with glycol. Drain and vent connections are provided on the evaporator to ease draining.
- 2 Add a glycol solution to the chilled water system to provide freeze protection. Freeze point should be approximately 10°F below minimum design ambient temperature.
- 3 The addition of thermostatically controlled heat and insulation to exposed piping.

The evaporator heater cable is factory wired to the 115 volt circuit in the control box. This power should be supplied from a separate source to maximize unit protection, but it can be supplied from the control circuit. Operation of the heaters is automatic through the ambient sensing thermostat that energizes the evaporator heaters for protection against freeze-up. Unless the evaporator is drained in the winter or contains an adequate concentration of anti-freeze, the disconnect switch to the evaporator heater must not be open.

Chilled Water Pump

It is important that the chilled water pumps be wired to, and controlled by, the chiller's microprocessor. When equipped with optional dual pump output, the chiller controller has the capability to selectively send the signal to a pump relay (by others) to start pump A or B or automatically alternate pump selection and also has standby operation capability. The controller will energize the pump whenever at least one circuit on the chiller is enabled to run, whether there is a call for cooling or not. This helps ensure proper unit start-up sequence. The pump will also be turned on when the water temperature reaches 1°F below the Freeze Setpoint to help prevent evaporator freeze-up. Connection points are shown in the Field Wiring Diagram on [page 80](#).

CAUTION

Adding glycol or draining the system is the recommended method of freeze protection. If the chiller does not have the ability to control the pumps and the water system is not drained in temperatures below freezing, catastrophic evaporator failure may occur.

Failure to allow pump control by the chiller may cause the following problems:

- 1 If any device other than the chiller attempts to start the chiller without first starting the pump, the chiller will lock out on the No Flow alarm and require manual reset.
- 2 If the chiller evaporator water temperature drops below the "Freeze setpoint" the chiller will attempt to start the water pumps to avoid evaporator freeze. If the chiller does not have the ability to start the pumps, the chiller will alarm due to lack of water flow.

- 3 If the chiller does not have the ability to control the pumps and the water system is not to be drained in temperatures below freezing, the chiller may be subject to catastrophic evaporator failure due to freezing. The freeze rating of the evaporator is based on the immersion heater and pump operation. The immersion heater itself may not be able to properly protect the evaporator from freezing without circulation of water.

Temperature and Water Flow Limitations

Evaporator flow rates below the minimum values can result in laminar flow causing freeze-up problems, scaling and poor control. Flow rates above the maximum values will result in unacceptable pressure drops and can cause excessive erosion, potentially leading to failure.

Low Ambient Operation

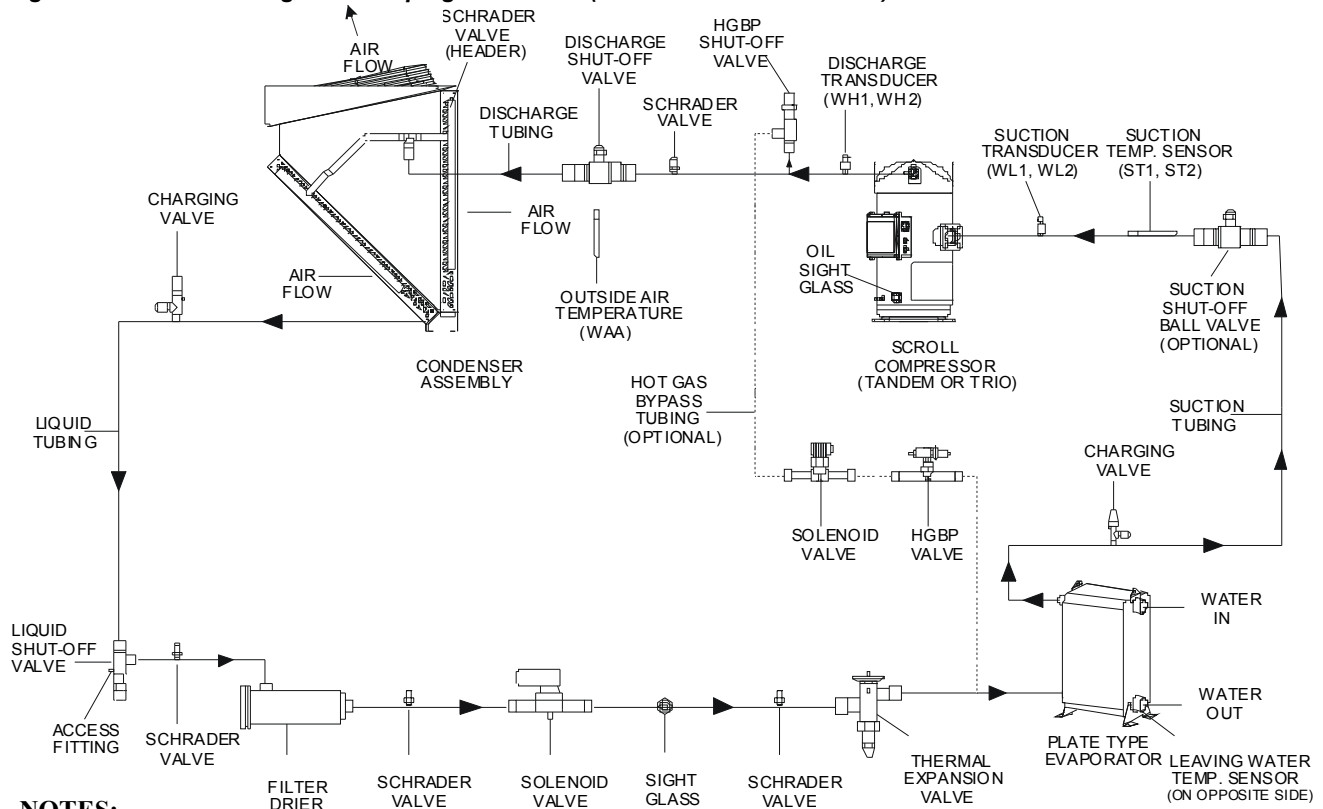
Compressor staging is adaptively determined by system load, ambient air temperature, and other inputs to the MicroTech III control. The standard minimum ambient temperature is 35°F (2°C). A low ambient option with fan VFD allows operation down to -10°F (-23°C). The minimum ambient temperature is based on still conditions where the wind is not greater than five mph. Greater wind velocities will result in reduced discharge pressure, increasing the minimum operating ambient temperature. Field installed hail/wind guards are available to allow the chiller to operate effectively down to the ambient temperature for which it was designed.

High Ambient Operation

AGZ-D units for high ambient operation (105°F to 125 F, 40.1 C to 51.7 C) require the addition of the optional high ambient package that includes a small fan with a filter in the air intake to cool the control panel.

All units with the optional VFD low ambient fan control automatically include the high ambient option.

Figure 21: AGZ-D Packaged Unit Piping Schematic (One circuit of two shown)



NOTES:

1. Evaporator is brazed-plate on AGZ 025-130 and shell-and-tube on AGZ 140-190.
2. Hot gas bypass (shown in dotted lines) is an option. The controls are factory installed.
3. Models 025 to 045 have TXV valves only, Models 140 to 190 have EXV valves only, Models 050 to 130 have TXV as standard with EXV available as an option.

Remote Evaporators

Refrigerant Piping Recommendations

IMPORTANT: Piping design must be provided by a qualified Architect or Systems HVAC Design Engineer familiar with piping design, as well as local codes and regulations. The manufacturer recommendations provided here are to be used as a general guide, but do not replace system design by a qualified professional. All field piping, wiring, and procedures must be performed in accordance with ASHRAE, EPA, and industry standards.

Proper refrigerant piping can make the difference between a reliable system and an inefficient, problematic system.

Important information about piping and installation of units with remote evaporators can be found in IM 1100, which is available on www.DaikinApplied.com. See the recommended field pipe sizes shown in IM 1100. For additional information about refrigerant piping techniques and sizing, see the Daikin Refrigerant Piping Design Guide, AG 31-011, which can also be found on www.DaikinApplied.com.

The primary concerns related to piping are refrigerant pressure drop; a solid liquid feed to the expansion valves, continuous oil return and properly sized refrigerant specialties.

AGZ-D Unit Performance is negatively affected by Suction Line Pressure Drop Losses. Distance between the AGZ-D unit and the Remote Evaporator should be kept as short as possible to minimize the performance derate.

Table 4: Recommended Horizontal or Downflow Suction Line Size, R-410A

Unit Model AGZ-DB (Remote Evap)	Nominal Tons Per Circuit	Tubing Conn. Size At Unit	Recommended Suction Line Sizes, OD Copper -based on Eq. ft. Length										Max. Suct. Riser Line Size for Vertical Upflow to Compr.	
			Up to 50 Equiv. Ft		Up to 75 Equiv. Ft		Up to 100 Equiv. Ft		Up to 125 Equiv. Ft		Up to 150 Equiv. Ft			
			Size	PD°F	Size	PD°F	Size	PD°F	Size	PD°F	Size	PD°F		
AGZ025DB	13	1 5/8	1 3/8	0.7	1 3/8	1.1	1 5/8	0.6	1 5/8	0.8	1 5/8	1.0	1 5/8	1.0
AGZ030DB	16	1 5/8	1 3/8	1.1	1 3/8	1.6	1 5/8	0.9	1 5/8	1.2	1 5/8	1.4	1 5/8	1.4
AGZ035DB	17.5	1 5/8	1 3/8	1.3	1 3/8	1.9	1 5/8	1.1	1 5/8	1.4	1 5/8	1.7	1 5/8	1.7
AGZ040DB	19	1 5/8	1 3/8	1.5	1 5/8	1.0	1 5/8	1.3	1 5/8	1.6	1 5/8	1.9	1 5/8	1.9
AGZ045DB	21.5	1 5/8	1 3/8	1.8	1 5/8	1.2	1 5/8	1.6	1 5/8	2.0	1 5/8	2.4	1 5/8	2.4
AGZ050DB	24	1 5/8	1 5/8	1.0	1 5/8	1.5	1 5/8	2.0	1 5/8	2.4	1 5/8	2.9	1 5/8	2.9
AGZ055DB	26	1 5/8	1 5/8	1.1	1 5/8	1.7	2 1/8	0.6	2 1/8	0.8	2 1/8	0.9	1 5/8	1.0
AGZ060DB	28	1 5/8	1 5/8	1.3	1 5/8	1.9	2 1/8	0.7	2 1/8	0.9	2 1/8	1.0	1 5/8	1.1
AGZ065DB	29	1 5/8	1 5/8	1.4	1 5/8	2.1	2 1/8	0.7	2 1/8	0.9	2 1/8	1.1	1 5/8	1.2
AGZ070DB	32	2 1/8	2 1/8	0.4	2 1/8	0.7	2 1/8	0.9	2 1/8	1.1	2 1/8	1.3	1 5/8	1.4
AGZ075DB	36	2 5/8	2 1/8	0.5	2 1/8	0.8	2 1/8	1.1	2 1/8	1.4	2 1/8	1.6	2 1/8	1.6
AGZ080DB	40	2 5/8	2 1/8	0.7	2 1/8	1.0	2 1/8	1.3	2 1/8	1.7	2 1/8	2.0	2 1/8	2.0
AGZ090DB	45	2 5/8	2 1/8	0.8	2 1/8	1.2	2 1/8	1.6	2 1/8	2.1	2 1/8	2.5	2 1/8	2.5
AGZ100DB	50	2 5/8	2 1/8	1.0	2 1/8	1.5	2 1/8	2.0	2 1/8	2.5	2 1/8	3.0	2 1/8	3.0
AGZ110DB	53	2 5/8	2 1/8	1.1	2 1/8	1.7	2 5/8	0.8	2 5/8	1.0	2 5/8	1.2	2 1/8	1.3
AGZ125DB	58	2 5/8	2 1/8	1.3	2 1/8	1.9	2 5/8	0.9	2 5/8	1.2	2 5/8	1.4	2 1/8	1.5
AGZ130DB	65	2 5/8	2 1/8	1.6	2 5/8	0.9	2 5/8	1.1	2 5/8	1.4	2 5/8	1.7	2 5/8	1.7
AGZ140DB	68	2 5/8	2 1/8	1.7	2 5/8	0.9	2 5/8	1.2	2 5/8	1.6	2 5/8	1.9	2 5/8	1.9
AGZ160DB	76	2 5/8	2 5/8	0.8	2 5/8	1.1	2 5/8	1.5	2 5/8	1.9	3 1/8	1.0	2 5/8	2.0
AGZ180DB	86	2 5/8	2 5/8	1.0	2 5/8	1.4	2 5/8	1.9	2 5/8	2.4	3 1/8	1.2	2 5/8	2.1
AGZ190DB	90	2 5/8	2 5/8	1.0	2 5/8	1.5	2 5/8	2.1	2 5/8	2.6	3 1/8	1.3	2 5/8	2.2

Notes:

1. PD°F is Pressure Drop shown in degrees F. Multiply by 2.25 for psi. Example: 1°F pressure drop = 2.25 psi.
2. For equivalent lengths between the table values, use the column higher than the length and calculate the pressure drop based on the direct ratio of the length compared to the column value. Example: For 90 ft equivalent length, use the column value for 100 ft times 90/100 for the pressure drop

Table 5: Performance Derate Factors for Suction Line Pressure Drop

Suction Line Press. Drop	Unit Capacity	Unit Power	Unit EER
°F	%	%	%
0°F	100.0	100.0	100.0
1.0°F	98.5	99.5	99
2.0°F	97.1	98.9	98.2
3.0°F	95.6	98.4	97.2
4.0°F	94.1	97.9	96.1
5.0°F	92.6	97.4	95.1

Note: Data at AHRl Standard Chiller Rating Condition of 54.0 F/ 44.0 F Chiller Inlet and Outlet Water Temps and 95.0 F Outdoor Air Temperature.

Table 3: Remote Evaporator Piping Limitations

Maximum <i>measured</i> piping distance between the unit and the remote evaporator	90 ft.
Maximum <i>equivalent</i> Feet of Distance between the unit and evaporator including elbows and traps	150 ft.
Note: For installations with distances exceeding these values Daikin factory must be consulted for approval of the piping design for factory warranty to be valid	

For Installations where the evaporator is installed either above or below the unit - the following recommendations apply:

Evaporator installed below outdoor unit:

- 30 ft. Maximum Vertical Distance
- Only single riser suction tubing is to be used - Double riser installations are not permitted
- A suction line trap must be installed at the bottom of the riser and a second trap at 20 ft. height

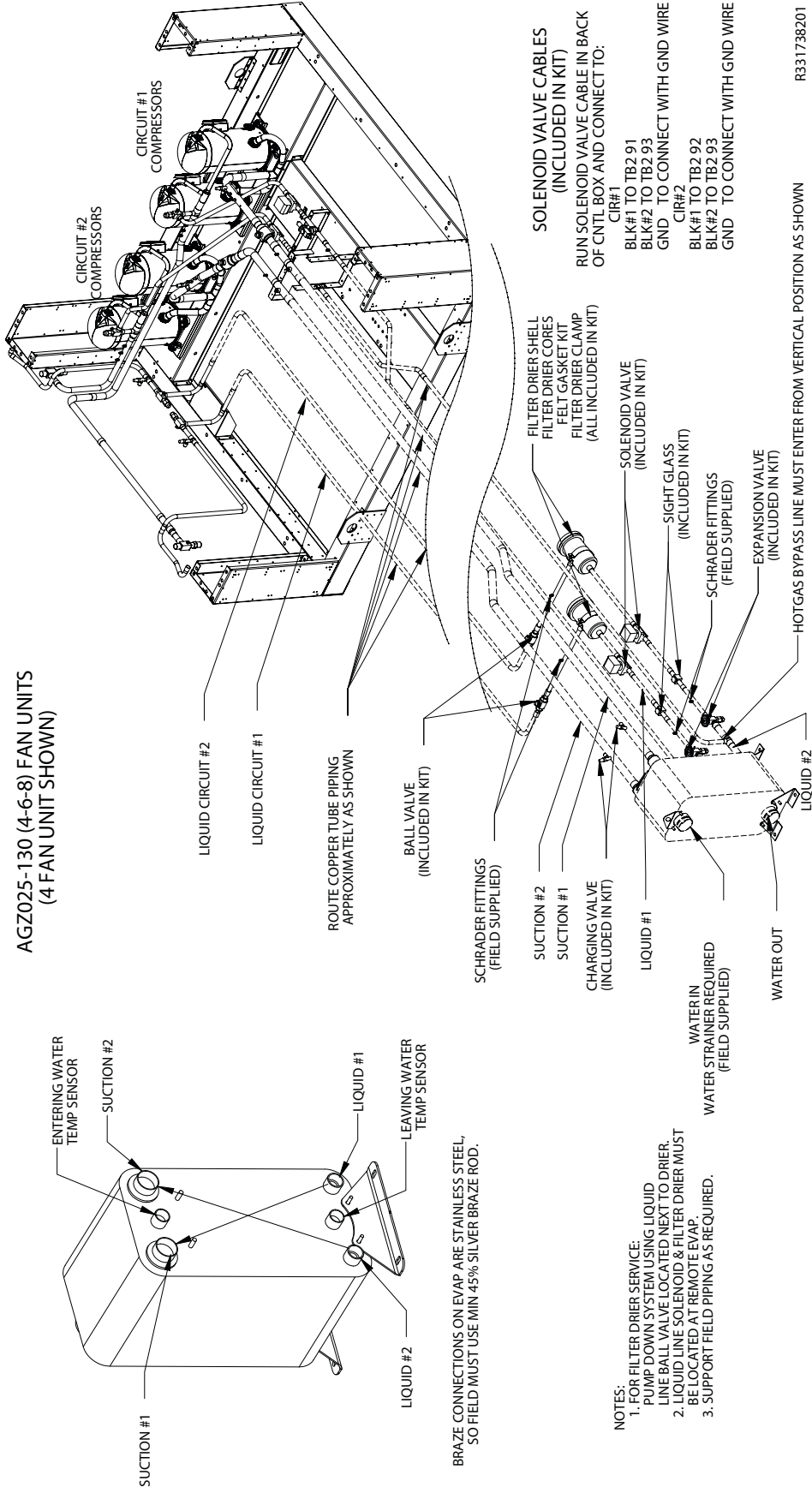
Evaporator installed above the AGZ-D Outdoor unit:

- 30 ft. Vertical Distance is the recommended maximum to prevent loss of liquid subcooling

How to determine performance derate:

Using the model size and the equivalent feet of piping between the unit and the evaporator, find the Pressure Drop in °F from [Table 4](#). Cross-reference the Pressure Drop in °F to [Table 5](#) to find the capacity, power, and EER derate factor.

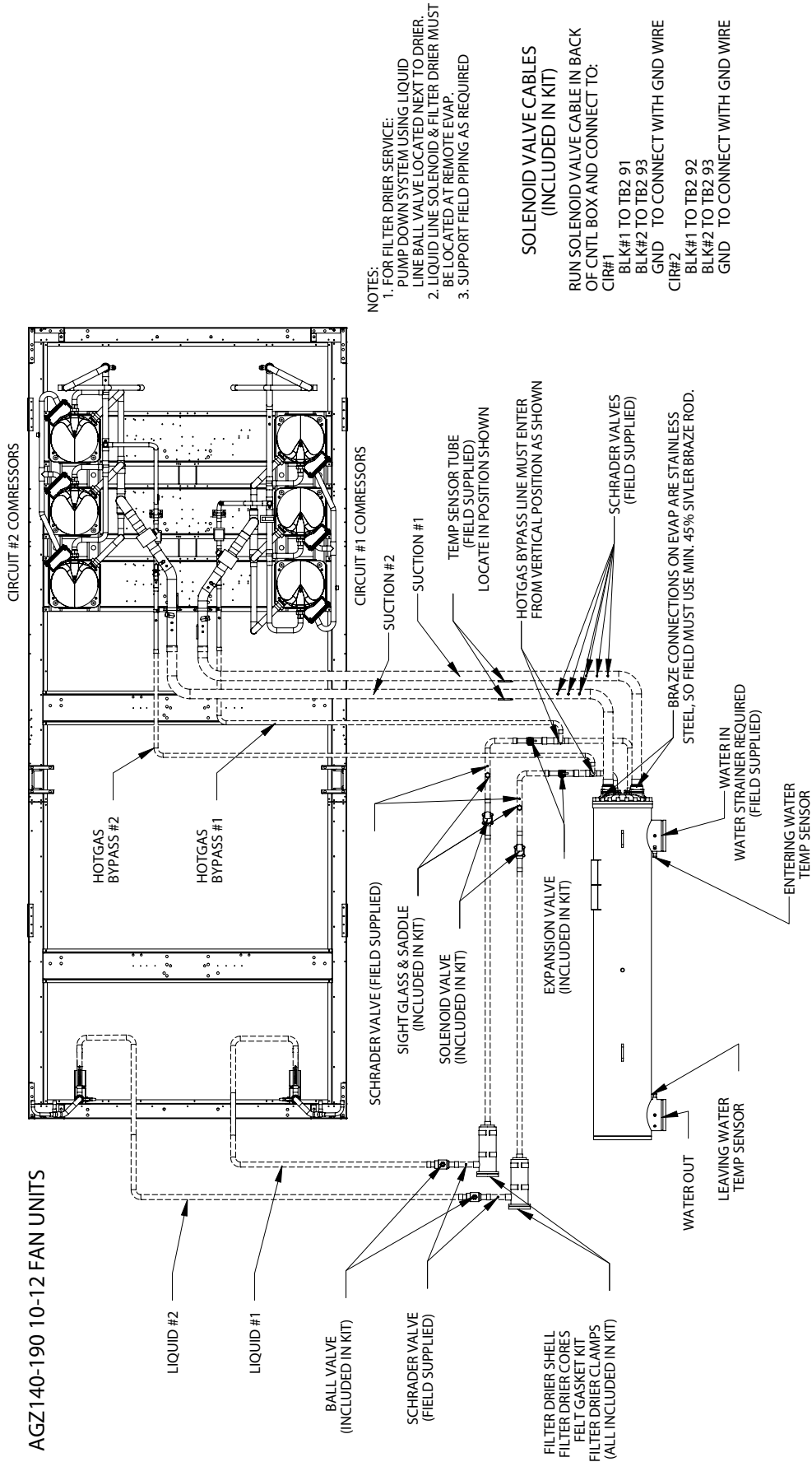
Figure 22: Remote Evaporator Piping Models 025-130



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Remote Evaporators

Figure 23: Remote Evaporator Piping Models 140-190



NOTES:

1. FOR FILTER DRIER SERVICE: PUMP DOWN SYSTEM USING LIQUID LINE BALL VALVE LOCATED NEXT TO DRIER.
2. LIQUID LINE SOLENOID & FILTER DRIER MUST BE LOCATED AT REMOTE EVAP.
3. SUPPORT FIELD PIPING AS REQUIRED

SOLENOID VALVE CABLES (INCLUDED IN KIT)

- RUN SOLENOID VALVE CABLE IN BACK OF CNTRL BOX AND CONNECT TO:
- CIR#1
 - BLK#1 TO TB2 91
 - BLK#2 TO TB2 93
 - GND TO CONNECT WITH GND WIRE
 - CIR#2
 - BLK#1 TO TB2 92
 - BLK#2 TO TB2 93
 - GND TO CONNECT WITH GND WIRE

Evaporator Dimensions

Figure 24: AGZ025D-055D Brazed Plate Evaporator Dimensions

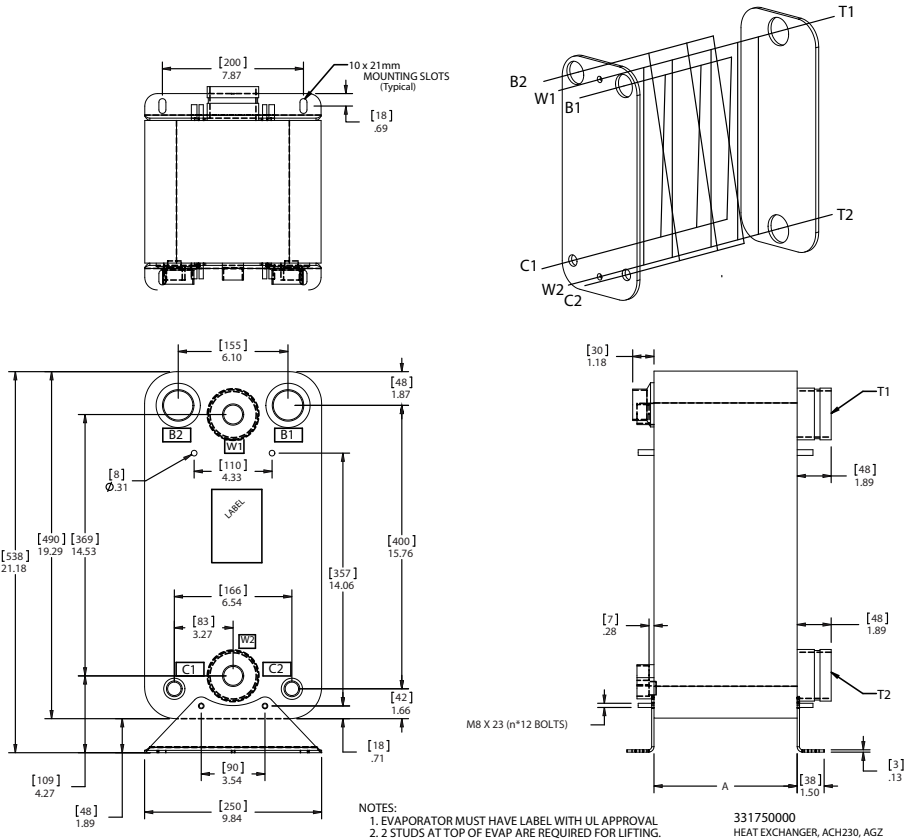
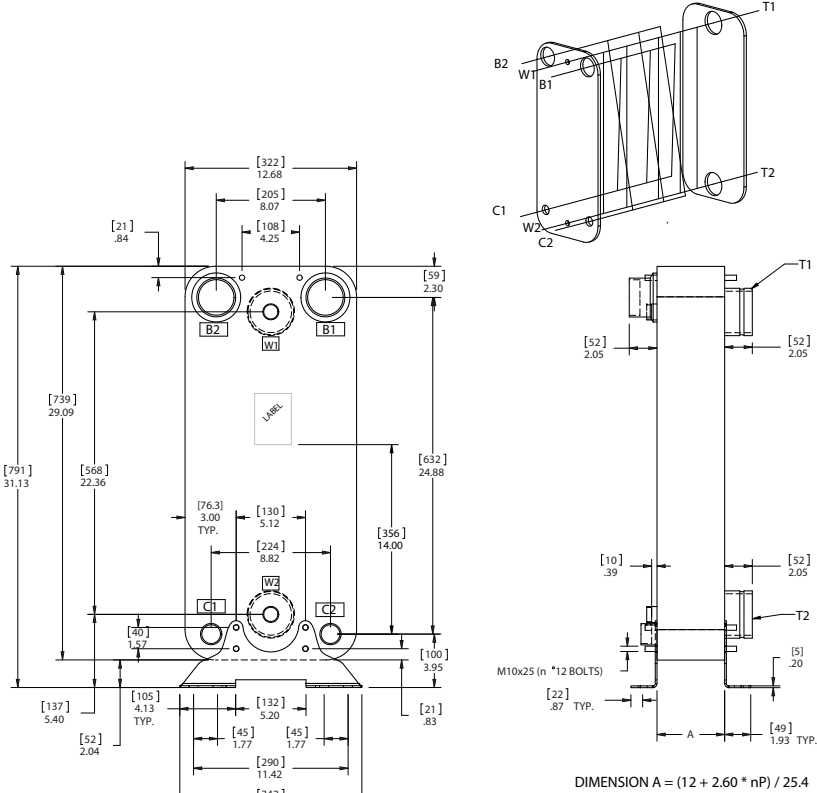


Figure 25: AGZ060D-130D Brazed Plate Evaporator Dimensions

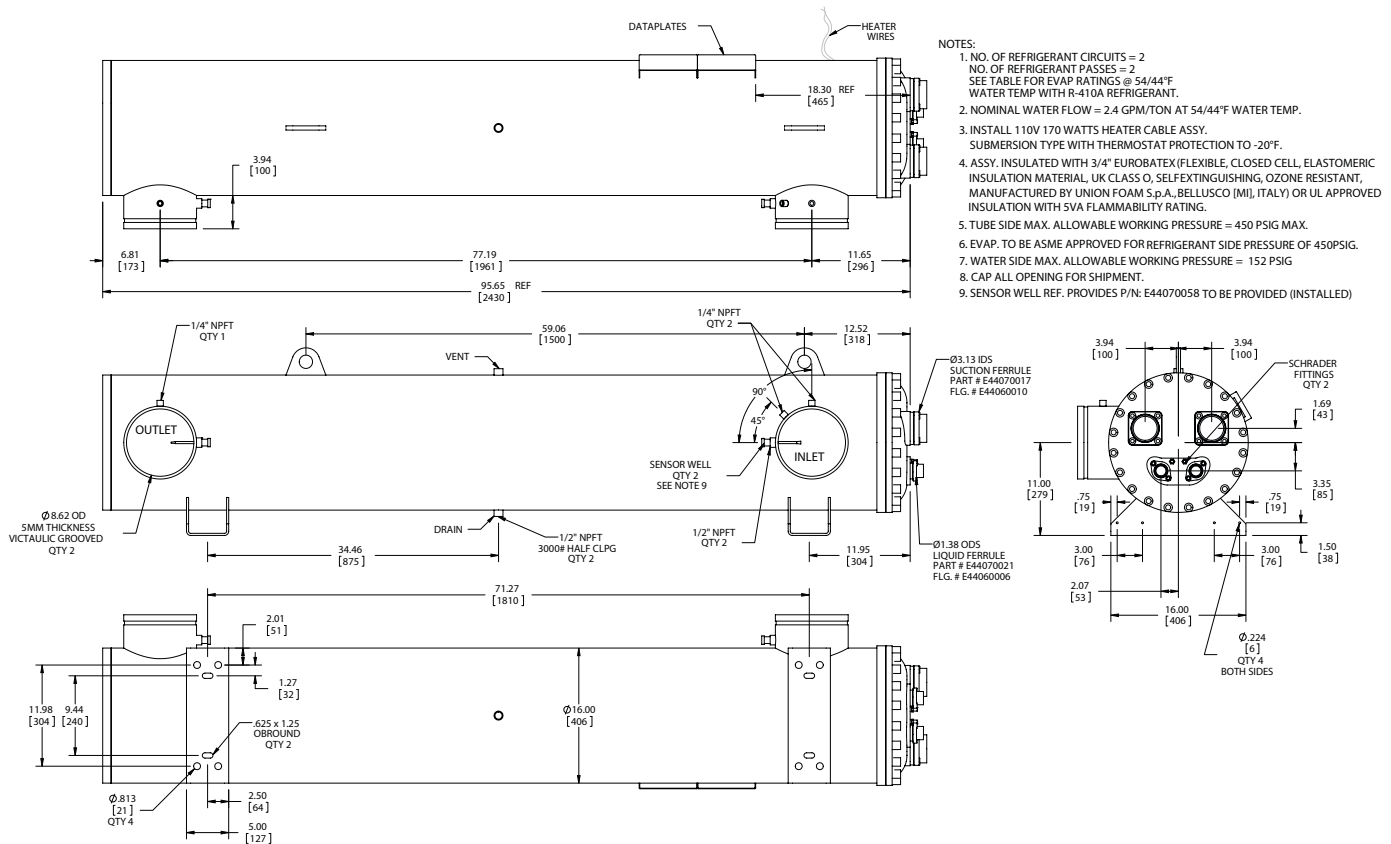


Remote Evaporators

Table 6: AGZ025D-130D Brazed Plate Evaporator Dimension References from Drawings

MODEL	2X Suction Connection (IDF)	2x Liquid Connection (IDF)	2x Water Connection (Victaulic)	2x Water Connection (NPT)	DIM A
	B1 & B2	C1 & C2	T1 & T2	W1 & W2	
	(in.)	(in.)	(in.)	(in.)	
AGZ025D	1.625	0.875	2.5	0.75	7.27
AGZ030D	1.625	0.875	2.5	0.75	7.27
AGZ035D	1.625	0.875	2.5	0.75	7.96
AGZ040D	1.625	0.875	2.5	0.75	8.65
AGZ045D	1.625	1.125	2.5	0.75	10.04
AGZ050D	1.625	1.125	2.5	0.75	11.43
AGZ055D	1.625	1.125	2.5	0.75	12.12
AGZ060D	2.125	1.375	3.0	0.75	7.66
AGZ065D	2.125	1.375	3.0	0.75	8.90
AGZ070D	2.125	1.375	3.0	0.75	8.90
AGZ075D	2.625	1.375	3.0	0.75	10.13
AGZ080D	2.625	1.375	3.0	0.75	11.36
AGZ090D	2.625	1.375	3.0	0.75	12.19
AGZ100D	2.625	1.375	3.0	0.75	14.24
AGZ110D	2.625	1.375	3.0	0.75	15.06
AGZ125D	2.625	1.375	3.0	0.75	17.15
AGZ130D	2.625	1.375	3.0	0.75	19.17

Figure 26: AGZ140D-190D Shell and Tube Evaporator Dimension Drawing



Sound levels can be as important as unit cost and efficiency. The inherently quiet scroll compressors used in model AGZ-D chillers are coupled with precision engineering for industry-leading sound levels.

Background

The sound data provided in this section is presented with both sound pressure and sound power levels. These values have been measured and/or calculated in accordance with AHRI Standard 370, "Sound Rating of Large Outdoor Refrigerating and Air Conditioning Equipment".

Sound Pressure Levels - Full Load

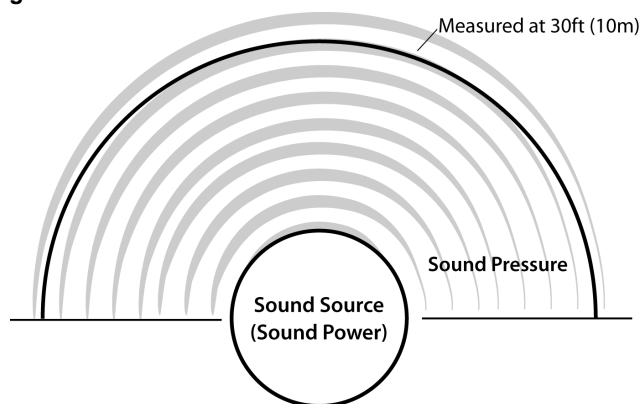
Sound pressure is the sound level that can be measured at some distance from the source. Sound pressure varies with distance from the source and depends on the surroundings. For example, a brick wall (a reflective surface) located 10 feet from a unit will affect the sound pressure measurements differently than a brick wall at 20 feet. Sound pressure is measured in decibels (dB).

All sound pressure data in the following pages are considered typical of what can be measured in a free field with a handheld sound meter, in the absence of any nearby reflective surfaces except the floor under the unit. Sound pressure levels are measured at 30 feet (10 meters) from the side of the unit at 100% load and standard AHRI conditions (per AHRI standard 550/590-2003) of 95°F (35°C) ambient air temperature and 44°F (7°C) leaving evaporator water temperatures for air-cooled units.

Sound Power Levels

Sound power is a calculated quantity and cannot be measured directly like sound pressure. Sound power is not dependent on the surrounding environment or distance from the source, as is sound pressure. It can be thought of as basic sound level emanating from the unit without consideration of distance or obstructions. Measurements are taken over a prescribed area around the unit and the data is mathematically calculated to give the sound power, dB. Acoustical consultants sometimes use sound power octave band data to perform a detailed acoustical analysis.

Figure 27: Sound Power vs. Sound Pressure



The data in the following tables present sound power levels per AHRI Standard 370, "Sound Rating of Large Outdoor

Refrigerating and Air Conditioning Equipment". This standard was developed to establish uniform methods of determining the sound power radiated by large outdoor equipment. Measurements are taken over a prescribed area around the unit and the data is mathematically calculated to give the sound power, dB.

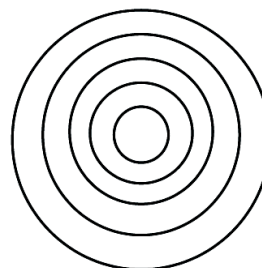
Sound Reduction due to Distance from the Unit

The distance between a source of sound and the location of the sound measurement plays an important role in minimizing sound problems. The equation below can be used to calculate the sound pressure level at any distance if the sound power is known. Results for typical distances are tabulated in Table 7.

Table 7: dB Conversion of Sound Power to Pressure

Distance from Sound Source ft. (m)	DB Reduction from Sound Power at the Source to Sound Pressure at Referenced Distance	
	Q=2	Q=4
30 (9)	27.1	24.0
50 (15)	31.6	28.5
75 (23)	35.1	32.0
100 (30)	37.6	34.5
150 (46)	41.1	38.0
200 (61)	43.6	40.5
300 (91)	47.6	44.0

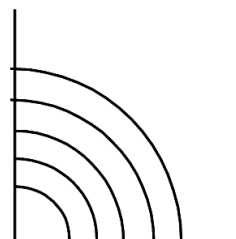
Figure 28: "Q" Reflective Sources Illustration



Uniform Spherical Radiation
Q=1 no reflecting surface



Uniform Hemispherical Radiation
Q=2 single reflecting surface



Uniform Radiation over 1/4 of sphere
Q=4 two reflecting surfaces

Sound Data

Another way of determining the effect of distance is to work from sound pressure only. "Q", the directionality factor, is a dimensionless number that compensates for the type of sound reflection from the source. For example, a unit sitting on a flat roof or ground with no other reflective surfaces or attenuation due to grass, snow, etc., between source and receiver: Q=2.

Sound pressure can be calculated at any distance from the unit if the sound power is known, using the equation:

$$L_p = L_w - (20 \log r) + (10 \log Q) - 0.5$$

Where:

- L_p = sound pressure
- L_w = sound power
- r = distance from unit in feet
- Q = directionality factor

With Q=1, Unit suspended in space (theoretical condition), the equation simplifies to:

$$L_p = L_w - (20 \log r) - 0.5$$

With Q=2, for a unit sitting on a flat roof or ground with no adjacent vertical wall as a reflective surface, the equation simplifies to:

$$L_p = L_w - (20 \log r) + 2.5$$

With Q=4 for a unit sitting on a flat roof or ground with one adjacent vertical wall as a reflective surface, the equation simplifies to:

$$L_p = L_w - (20 \log r) + 5.5$$

The equations are reduced to table form in [Table 7](#) for various distances and the two most usual cases of "Q" type of location.

Sound Data Notes

- 1 Octave band readings are flat dB, overall is A-weighted.
- 2 Sound pressure data taken at 30ft (9m) from side of unit; Q=2, unit on flat surface with no adjacent wall.

Table 8: 60 Hz Sound Pressure without Sound Insulation

Model	Number of Compressors	Number of Fans	Octave Band at Center Frequency								Overall A-Weighted
			63	125	250	500	1000	2000	4000	8000	
25	4	4	65	64	61	60	56	51	46	41	60
30	4	4	65	64	61	60	56	51	46	41	60
35	4	4	65	64	62	60	56	51	46	41	60
40	4	4	65	64	63	61	57	52	47	42	61
45	4	4	66	65	64	62	58	52	47	42	62
50	4	4	66	66	64	62	58	52	47	42	63
55	4	4	66	66	66	62	59	54	49	44	64
60	4	4	67	66	67	62	59	54	49	44	64
65	4	4	68	67	67	62	60	54	49	44	64
70	4	4	68	68	67	62	60	54	49	44	65
75	4	6	68	68	68	62	60	54	49	44	65
80	4	6	67	65	65	64	62	56	54	54	66
90	4	6	67	66	66	64	62	56	54	54	66
100	4	6	66	68	65	65	62	56	56	55	67
110	6	8	66	69	66	65	62	56	56	55	67
125	6	8	67	68	66	65	62	58	59	56	68
130	6	8	67	69	67	65	62	59	59	56	68
140	6	10	68	70	68	66	63	60	60	57	69
160	6	10	69	71	69	67	64	61	60	58	70
180	6	10	69	71	69	67	64	61	61	58	70
190	6	12	69	71	69	67	64	61	61	58	70

Table 9: 60 Hz Sound Power without Sound Insulation

Model	Number of Compressors	Number of Fans	Octave Band at Center Frequency								Overall A-Weighted
			63	125	250	500	1000	2000	4000	8000	
25	4	4	92	91	88	87	83	78	73	68	88
30	4	4	92	91	88	87	83	78	73	68	88
35	4	4	92	91	89	87	83	78	73	68	88
40	4	4	92	91	90	88	84	79	74	69	89
45	4	4	93	92	91	89	85	79	74	69	90
50	4	4	93	93	91	89	85	79	74	69	90
55	4	4	93	93	93	89	86	81	76	71	91
60	4	4	94	93	94	89	86	81	76	71	91
65	4	4	95	94	94	89	87	81	76	71	92
70	4	4	95	95	94	89	87	81	76	71	92
75	4	6	95	95	95	89	87	81	76	71	92
80	4	6	94	92	92	91	89	83	81	81	93
90	4	6	94	93	93	91	89	83	81	81	93
100	4	6	93	95	92	92	89	83	83	82	94
110	6	8	93	96	93	92	89	83	83	82	94
125	6	8	94	95	93	92	89	85	86	83	95
130	6	8	94	96	94	92	89	86	86	83	95
140	6	10	95	97	95	93	90	87	87	84	96
160	6	10	96	98	96	94	91	88	87	85	97
180	6	10	96	98	96	94	91	88	88	85	97
190	6	12	96	98	96	94	91	88	88	85	97

Table 10: 60 Hz Sound Pressure with Sound Insulation

Model	Number of Compressors	Number of Fans	Octave Band at Center Frequency								Overall A-Weighted
			63	125	250	500	1000	2000	4000	8000	
25	4	4	57	57	56	57	50	48	47	43	58
30	4	4	57	57	56	57	50	48	47	43	58
35	4	4	57	57	56	57	50	48	47	43	58
40	4	4	57	57	56	57	50	48	47	43	58
45	4	4	58	58	58	59	53	50	48	43	60
50	4	4	58	58	58	59	53	50	48	43	60
55	4	4	58	58	58	59	53	50	48	43	60
60	4	4	58	58	58	59	53	50	48	43	60
65	4	4	59	58	58	59	53	50	48	43	60
70	4	4	61	58	58	59	53	50	48	43	60
75	4	6	61	58	59	59	54	54	50	43	61
80	4	6	61	59	59	59	56	53	50	44	61
90	4	6	61	59	59	59	56	53	50	44	61
100	4	6	63	59	59	59	56	53	50	44	61
110	6	8	63	59	59	59	56	53	50	44	61
125	6	8	63	59	60	59	56	53	50	44	61
130	6	8	63	59	60	60	57	53	50	44	62
140	6	10	64	60	61	61	58	54	52	46	63
160	6	10	65	61	62	62	59	55	53	47	64
180	6	10	65	61	62	62	60	56	54	47	64
190	6	12	65	61	62	62	60	56	54	47	64

Sound Data

Table 11: 60 Hz Sound Power with Sound Insulation

Model	Number of Compressors	Number of Fans	Octave Band at Center Frequency								Overall A-Weighted
			63	125	250	500	1000	2000	4000	8000	
25	4	4	84	84	83	84	77	75	74	70	85
30	4	4	84	84	83	84	77	75	74	70	85
35	4	4	84	84	83	84	77	75	74	70	85
40	4	4	84	84	83	84	77	75	74	70	85
45	4	4	85	85	85	86	80	77	75	70	87
50	4	4	85	85	85	86	80	77	75	70	87
55	4	4	85	85	85	86	80	77	75	70	87
60	4	4	85	85	85	86	80	77	75	70	87
65	4	4	86	85	85	86	80	77	75	70	87
70	4	4	88	85	85	86	80	77	75	70	87
75	4	6	88	85	86	86	81	81	77	70	88
80	4	6	88	86	86	86	83	80	77	71	88
90	4	6	88	86	86	86	83	80	77	71	88
100	4	6	90	86	86	86	83	80	77	71	88
110	6	8	90	86	86	86	83	80	77	71	88
125	6	8	90	86	87	86	83	80	77	71	88
130	6	8	90	86	87	87	84	80	77	71	88
140	6	10	91	87	88	88	85	81	79	73	90
160	6	10	92	88	89	89	86	82	80	74	91
180	6	10	92	88	89	89	86	82	80	74	91
190	6	12	92	88	89	89	86	82	80	74	91

Table 12: 50 Hz Sound Pressure without Sound Insulation

Model	Number of Compressors	Number of Fans	Octave Band at Center Frequency								Overall A-Weighted
			63	125	250	500	1000	2000	4000	8000	
25	4	4	62	61	58	57	53	48	43	38	57
30	4	4	62	61	58	57	53	48	43	38	57
35	4	4	62	61	59	57	53	48	43	38	57
40	4	4	62	61	60	58	54	49	44	39	58
45	4	4	63	62	61	59	55	49	44	39	59
50	4	4	63	63	61	59	55	49	44	39	60
55	4	4	63	63	63	59	56	51	46	41	61
60	4	4	64	63	64	59	56	51	46	41	61
65	4	4	65	64	64	59	57	51	46	41	61
70	4	4	65	65	64	59	57	51	46	41	62
75	4	6	65	65	65	59	57	51	46	41	62
80	4	6	64	62	62	61	59	53	51	51	63
90	4	6	64	63	63	61	59	53	51	51	63
100	4	6	63	65	62	62	59	53	53	52	64
110	6	8	63	66	63	62	59	53	53	52	64
125	6	8	64	65	63	62	59	55	56	53	65
130	6	8	64	66	64	62	59	56	56	53	65
140	6	10	65	67	65	63	60	57	57	54	66
160	6	10	66	68	66	64	61	58	57	55	67
180	6	10	66	68	66	64	61	58	58	55	67
190	6	12	66	68	66	64	61	58	58	55	67

Table 13: 50 Hz Sound Power without Sound Insulation

Model	Number of Compressors	Number of Fans	Octave Band at Center Frequency								Overall A-Weighted
			63	125	250	500	1000	2000	4000	8000	
25	4	4	89	88	85	84	80	75	70	65	85
30	4	4	89	88	85	84	80	75	70	65	85
35	4	4	89	88	85	84	80	75	70	65	85
40	4	4	89	88	86	84	80	75	70	65	85
45	4	4	89	88	87	85	81	76	71	66	86
50	4	4	90	89	88	86	82	76	71	66	87
55	4	4	90	90	88	86	82	76	71	66	87
60	4	4	90	90	90	86	83	78	73	68	88
65	4	4	91	90	91	86	83	78	73	68	88
70	4	4	92	91	91	86	84	78	73	68	89
75	4	6	92	92	91	86	84	78	73	68	89
80	4	6	92	92	92	86	84	78	73	68	89
90	4	6	91	89	89	88	86	80	78	78	90
100	4	6	91	90	90	88	86	80	78	78	90
110	6	8	90	92	89	89	86	80	80	79	91
125	6	8	90	93	90	89	86	80	80	79	91
130	6	8	91	92	90	89	86	82	83	80	92
140	6	10	91	93	91	89	86	83	83	80	92
160	6	10	92	94	92	90	87	84	84	81	93
180	6	10	93	95	93	91	88	85	84	82	94
190	6	12	93	95	93	91	88	85	85	82	94

Table 14: 50 Hz Sound Pressure with Sound Insulation

Model	Number of Compressors	Number of Fans	Octave Band at Center Frequency								Overall A-Weighted
			63	125	250	500	1000	2000	4000	8000	
25	4	4	54	54	53	54	47	45	44	40	55
30	4	4	54	54	53	54	47	45	44	40	55
35	4	4	54	54	53	54	47	45	44	40	55
40	4	4	54	54	53	54	47	45	44	40	55
45	4	4	55	55	55	56	50	47	45	40	57
50	4	4	55	55	55	56	50	47	45	40	57
55	4	4	55	55	55	56	50	47	45	40	57
60	4	4	55	55	55	56	50	47	45	40	57
65	4	4	56	55	55	56	50	47	45	40	57
70	4	4	58	55	55	56	50	47	45	40	57
75	4	6	58	55	56	56	51	51	47	40	58
80	4	6	58	56	56	56	53	50	47	41	58
90	4	6	58	56	56	56	53	50	47	41	58
100	4	6	60	56	56	56	53	50	47	41	58
110	6	8	60	56	56	56	53	50	47	41	58
125	6	8	60	56	57	56	53	50	47	41	58
130	6	8	60	56	57	57	54	50	47	41	59
140	6	10	61	57	58	58	55	51	49	43	60
160	6	10	62	58	59	59	56	52	50	44	61
180	6	10	62	58	59	59	57	53	51	44	61
190	6	12	62	58	59	59	57	53	51	44	61

Sound Data

Table 15: 50 Hz Sound Power with Sound Insulation

Model	Number of Compressors	Number of Fans	Octave Band at Center Frequency								Overall A-Weighted
			63	125	250	500	1000	2000	4000	8000	
25	4	4	81	81	80	81	74	72	71	67	82
30	4	4	81	81	80	81	74	72	71	67	82
35	4	4	81	81	80	81	74	72	71	67	82
40	4	4	81	81	80	81	74	72	71	67	82
45	4	4	82	82	82	83	77	74	72	67	84
50	4	4	82	82	82	83	77	74	72	67	84
55	4	4	82	82	82	83	77	74	72	67	84
60	4	4	82	82	82	83	77	74	72	67	84
65	4	4	83	82	82	83	77	74	72	67	84
70	4	4	85	82	82	83	77	74	72	67	84
75	4	6	85	82	83	83	78	78	74	67	85
80	4	6	85	83	83	83	80	77	74	68	85
90	4	6	85	83	83	83	80	77	74	68	85
100	4	6	87	83	83	83	80	77	74	68	85
110	6	8	87	83	83	83	80	77	74	68	85
125	6	8	87	83	84	83	80	77	74	68	85
130	6	8	87	83	84	84	81	77	74	68	85
140	6	10	88	84	85	85	82	78	76	70	87
160	6	10	89	85	86	86	83	79	77	71	88
180	6	10	89	85	86	86	83	79	77	71	88
190	6	12	89	85	86	86	83	79	77	71	88

Note: Due to different performance characteristics, the factors shown in the following tables are separated into brazed-plate evaporators (AGZ025D - 130D) and shell-and-tube evaporators (AGZ140D - 190D).

Note: Derate factors for models with remote evaporators can be found on [page 16](#).

Ethylene & Propylene Glycol Factors

AGZ units can operate with a leaving chilled fluid temperature range of 20°F (-6°C) to 60°F (10°C). A glycol solution is required when leaving chilled fluid temperature is below 40°F (4.6°C). The use of glycol will reduce the performance of the unit depending on concentration.

Note: Ethylene and propylene glycol ratings are outside the scope of AHRI Standard 550/590-2003 certification program.

Table 16: Ethylene Glycol Correction Factors

Ethylene Glycol Factors for Models AGZ 025D to 130D

% E.G.	Point		Capacity	Power	Flow	PD
	° F	° C				
10	26	-3.3	0.998	0.998	1.036	1.097
20	18	-7.8	0.993	0.997	1.06	1.226
30	7	-14	0.987	0.995	1.092	1.369
40	-7	-22	0.98	0.992	1.132	1.557
50	-28	-33	0.973	0.991	1.182	1.791

Ethylene Glycol Factors for Models AGZ 140D to 190D

% E.G.	Point		Capacity	Power	Flow	PD
	° F	° C				
10	26	-3.3	0.994	0.998	1.038	1.101
20	18	-7.8	0.982	0.995	1.063	1.224
30	7	-14	0.97	0.992	1.095	1.358
40	-7	-22	0.955	0.987	1.134	1.536
50	-28	-33	0.939	0.983	1.184	1.755

Table 17: Propylene Glycol Correction Factors

Propylene Glycol Factors for Models AGZ 025D to 130D

% P.G.	Point		Capacity	Power	Flow	PD
	° F	° C				
10	26	-3.3	0.995	0.997	1.016	1.1
20	19	-7.2	0.987	0.995	1.032	1.211
30	9	-13	0.978	0.992	1.057	1.38
40	-5	-21	0.964	0.987	1.092	1.703
50	-27	-33	0.952	0.983	1.14	2.251

Propylene Glycol Factors for Models AGZ 140D to 190D

% P.G.	Point		Capacity	Power	Flow	PD
	° F	° C				
10	26	-3.3	0.988	0.996	1.019	1.097
20	19	-7.2	0.972	0.992	1.035	1.201
30	9	-13	0.951	0.987	1.059	1.351
40	-5	-21	0.926	0.979	1.095	1.598
50	-27	-33	0.906	0.974	1.142	2.039

Altitude Correction Factors

Performance tables are based at sea level. Elevations other than sea level affect the performance of the unit. The decreased air density will reduce condenser capacity consequently reducing the unit's performance. For performance at elevations other than sea level refer to [Table 18](#).

Table 18: Capacity and Power Derates

Capacity and Power Derates, Models AGZ 025 to 130

Altitude	Water		Fouling Factor							
	Delta T		0.0001 (0.0176)		0.00025 (0.044)		0.00075 (0.132)		0.00175 (0.308)	
	° F	° C	Cap.	Power	Cap.	Power	Cap.	Power	Cap.	Power
Sea Level	6	3.3	0.978	0.993	0.975	0.991	0.963	0.987	0.940	0.980
	8	4.4	0.989	0.996	0.986	0.994	0.973	0.990	0.950	0.983
	10	5.6	1.000	1.000	0.996	0.999	0.984	0.994	0.961	0.987
	12	6.7	1.009	1.003	1.005	1.001	0.993	0.997	0.969	0.990
	14	7.7	1.018	1.004	1.014	1.003	1.002	0.999	0.978	0.991
	16	8.9	1.025	1.007	1.021	1.006	1.009	1.001	0.985	0.994
2000 feet	6	3.3	0.977	1.001	0.973	1.000	0.961	0.996	0.938	0.989
	8	4.4	0.987	1.006	0.984	1.004	0.971	1.000	0.948	0.993
	10	5.6	0.998	1.009	0.995	1.007	0.982	1.003	0.959	0.996
	12	6.7	1.007	1.011	1.004	1.010	0.991	1.006	0.967	0.998
	14	7.7	1.014	1.014	1.011	1.013	0.998	1.009	0.974	1.001
	16	8.9	1.022	1.016	1.018	1.014	1.005	1.010	0.981	1.003
4000 feet	6	3.3	0.973	1.011	0.970	1.010	0.957	1.006	0.935	0.998
	8	4.4	0.984	1.014	0.980	1.013	0.968	1.009	0.945	1.001
	10	5.6	0.995	1.019	0.991	1.017	0.979	1.013	0.955	1.005
	12	6.7	1.004	1.021	1.000	1.020	0.987	1.016	0.964	1.008
	14	7.7	1.011	1.024	1.007	1.023	0.994	1.018	0.971	1.011
	16	8.9	1.018	1.027	1.014	1.026	1.002	1.021	0.978	1.014
6000 feet	6	3.3	0.969	1.021	0.966	1.020	0.954	1.016	0.931	1.008
	8	4.4	0.980	1.026	0.977	1.024	0.964	1.020	0.942	1.013
	10	5.6	0.989	1.029	0.986	1.027	0.973	1.023	0.950	1.015
	12	6.7	0.998	1.033	0.995	1.031	0.982	1.027	0.959	1.020
	14	7.7	1.007	1.036	1.004	1.034	0.991	1.030	0.967	1.022
	16	8.9	1.014	1.037	1.011	1.036	0.998	1.031	0.974	1.024

Capacity and Power Derates, Models AGZ 140 to 190

Altitude	Water		Fouling Factor							
	Delta T		0.0001 (0.0176)		0.00025 (0.044)		0.00075 (0.132)		0.00175 (0.308)	
	° F	° C	Cap.	Power	Cap.	Power	Cap.	Power	Cap.	Power
Sea Level	6	3.3	0.990	0.997	0.976	0.994	0.937	0.983	0.868	0.964
	8	4.4	0.994	0.998	0.981	0.995	0.942	0.984	0.872	0.965
	10	5.6	1.000	1.000	0.987	0.996	0.947	0.986	0.877	0.967
	12	6.7	1.005	1.001	0.991	0.997	0.951	0.986	0.881	0.968
	14	7.7	1.009	1.002	0.995	0.998	0.955	0.987	0.884	0.968
	16	8.9	1.013	1.004	1.000	1.000	0.960	0.989	0.889	0.970
2000 feet	6	3.3	0.987	1.005	0.974	1.002	0.934	0.991	0.865	0.972
	8	4.4	0.992	1.006	0.979	1.003	0.940	0.992	0.870	0.973
	10	5.6	0.997	1.008	0.984	1.004	0.944	0.994	0.875	0.975
	12	6.7	1.002	1.009	0.989	1.005	0.949	0.994	0.879	0.975
	14	7.7	1.007	1.011	0.993	1.007	0.953	0.996	0.883	0.977
	16	8.9	1.011	1.012	0.998	1.008	0.958	0.997	0.887	0.978
4000 feet	6	3.3	0.985	1.014	0.972	1.010	0.933	0.999	0.864	0.980
	8	4.4	0.991	1.015	0.977	1.012	0.938	1.001	0.869	0.981
	10	5.6	0.995	1.016	0.982	1.013	0.943	1.002	0.873	0.982
	12	6.7	1.000	1.018	0.987	1.014	0.947	1.003	0.877	0.984
	14	6.8	1.005	1.019	0.991	1.015	0.951	1.004	0.881	0.985
	16	8.9	1.009	1.021	0.995	1.017	0.955	1.006	0.884	0.987
6000 feet	6	3.3	0.982	1.023	0.969	1.020	0.930	1.009	0.861	0.989
	8	4.4	0.988	1.025	0.975	1.022	0.935	1.010	0.866	0.991
	10	5.6	0.992	1.026	0.979	1.022	0.940	1.011	0.870	0.992
	12	6.7	0.997	1.028	0.984	1.024	0.944	1.013	0.875	0.994
	14	7.7	1.002	1.029	0.989	1.025	0.949	1.014	0.879	0.995
	16	8.9	1.006	1.031	0.992	1.027	0.952	1.016	0.882	0.996

Performance Data

Evaporator Temperature Drop Factors

Performance tables are based on a 10°F (5°C) temperature drop through the evaporator. Adjustment factors for applications with temperature ranges from 6°F to 16°F (3.3°C to 8.9°C) are in [Table 18](#). Temperature drops outside this 6°F to 16°F (3.3°C to 8.9°C) range can affect the control system's

capability to maintain acceptable control and are not recommended.

AHRI Certification

Performance on all 60Hz standard packaged models is certified per AHRI standard 550/590. Chillers with optional remote evaporator and/or chillers with glycol applications are outside the scope of the AHRI rating program.

Table 19: 60 Hz Full Load Performance Data (IP)

Unit Size	Hz	Fan Power (kW)	LWT (°F)	Ambient Air Temperature														
				75°F			85°F			95°F			105°F			115°F		
				Unit Tons	Power kW	Unit EER	Unit Tons	Power kW	Unit EER	Unit Tons	Power kW	Unit EER	Unit Tons	Power kW	Unit EER	Unit Tons	Power kW	Unit EER
025D	60	5.6	40	28.7	27.4	12.6	27.2	30.2	10.8	25.7	33.6	9.2	24.0	37.3	7.7	22.2	41.4	6.4
			42	29.6	27.6	12.9	28.1	30.5	11.1	26.5	33.8	9.4	24.8	37.6	7.9	22.9	41.8	6.6
			44	30.5	27.9	13.1	29.0	30.8	11.3	27.3	34.1	9.6	25.5	37.9	8.1	23.6	42.1	6.7
			46	31.5	28.2	13.4	29.9	31.1	11.5	28.1	34.4	9.8	26.3	38.2	8.3	24.4	42.5	6.9
			48	32.4	28.5	13.7	30.8	31.3	11.8	29.0	34.7	10.0	27.1	38.5	8.4	25.1	42.9	7.0
			50	33.4	28.8	13.9	31.7	31.6	12.0	29.8	35.1	10.2	27.9	38.8	8.6	25.8	43.3	7.2
030D	60	5.6	40	33.2	31.7	12.6	31.5	35.0	10.8	29.7	38.9	9.2	27.8	43.2	7.7	25.7	48.0	6.4
			42	34.3	32.0	12.9	32.5	35.3	11.0	30.7	39.2	9.4	28.7	43.5	7.9	26.5	48.4	6.6
			44	35.4	32.3	13.1	33.6	35.6	11.3	31.6	39.5	9.6	29.5	43.9	8.1	27.3	48.8	6.7
			46	36.5	32.6	13.4	34.6	36.0	11.5	32.6	39.8	9.8	30.4	44.3	8.2	28.2	49.2	6.9
			48	37.5	33.0	13.7	35.6	36.3	11.8	33.6	40.2	10.0	31.4	44.6	8.4	29.0	49.7	7.0
			50	38.6	33.4	13.9	36.7	36.7	12.0	34.5	40.6	10.2	32.3	45.0	8.6	29.9	50.1	7.1
035D	60	5.6	40	36.7	33.6	13.1	34.8	37.2	11.2	32.8	41.2	9.5	30.7	45.8	8.0	28.4	50.9	6.7
			42	37.9	33.9	13.4	35.9	37.5	11.5	33.9	41.6	9.8	31.7	46.2	8.2	29.3	51.4	6.8
			44	39.1	34.3	13.7	37.1	37.8	11.8	34.9	41.9	10.0	32.6	46.6	8.4	30.2	51.8	7.0
			46	40.3	34.6	14.0	38.2	38.2	12.0	36.0	42.2	10.2	33.6	47.0	8.6	31.1	52.2	7.2
			48	41.5	35.0	14.2	39.3	38.5	12.3	37.1	42.7	10.4	34.7	47.3	8.8	32.0	52.7	7.3
			50	42.7	35.4	14.5	40.5	38.9	12.5	38.1	43.1	10.6	35.7	47.7	9.0	33.0	53.2	7.4
040D	60	5.6	40	39.9	36.1	13.2	37.8	39.9	11.4	35.6	44.3	9.7	33.3	49.2	8.1	30.9	54.7	6.8
			42	41.1	36.5	13.5	39.0	40.2	11.6	36.8	44.6	9.9	34.4	49.6	8.3	31.8	55.2	6.9
			44	42.4	36.8	13.8	40.2	40.6	11.9	37.9	45.0	10.1	35.4	50.0	8.5	32.8	55.6	7.1
			46	43.7	37.2	14.1	41.5	41.0	12.1	39.1	45.4	10.3	36.5	50.4	8.7	33.8	56.1	7.2
			48	45.0	37.6	14.4	42.7	41.4	12.4	40.2	45.8	10.5	37.6	50.9	8.9	34.8	56.6	7.4
			50	46.4	38.0	14.6	44.0	41.8	12.6	41.4	46.3	10.7	38.7	51.3	9.1	35.8	57.1	7.5
045D	60	5.7	40	44.8	39.8	13.5	42.5	44.0	11.6	40.0	48.8	9.8	37.4	54.2	8.3	34.7	60.3	6.9
			42	46.2	40.2	13.8	43.8	44.3	11.9	41.3	49.2	10.1	38.6	54.7	8.5	35.7	60.8	7.1
			44	47.7	40.6	14.1	45.2	44.7	12.1	42.6	49.6	10.3	39.8	55.1	8.7	36.8	61.3	7.2
			46	49.2	41.0	14.4	46.6	45.2	12.4	43.9	50.0	10.5	41.0	55.6	8.9	38.0	61.8	7.4
			48	50.6	41.4	14.7	48.0	45.6	12.6	45.2	50.5	10.8	42.3	56.0	9.1	39.1	62.3	7.5
			50	52.1	41.9	14.9	49.4	46.0	12.9	46.6	51.0	11.0	43.5	56.5	9.2	40.3	62.9	7.7
050D	60	5.7	40	50.6	45.9	13.2	48.0	50.6	11.4	45.2	56.2	9.7	42.3	62.4	8.1	39.2	69.4	6.8
			42	52.2	46.3	13.5	49.5	51.0	11.6	46.7	56.6	9.9	43.6	62.9	8.3	40.4	70.0	6.9
			44	53.8	46.7	13.8	51.1	51.5	11.9	48.1	57.1	10.1	45.0	63.4	8.5	41.6	70.6	7.1
			46	55.5	47.2	14.1	52.6	52.0	12.1	49.6	57.6	10.3	46.3	64.0	8.7	42.9	71.1	7.2
			48	57.1	47.7	14.4	54.2	52.5	12.4	51.1	58.1	10.5	47.8	64.5	8.9	44.2	71.8	7.4
			50	58.8	48.2	14.6	55.8	53.0	12.6	52.6	58.7	10.7	49.2	65.0	9.1	45.5	72.5	7.5
055D	60	5.7	40	54.3	49.7	13.1	51.5	54.9	11.3	48.5	60.9	9.6	45.4	67.7	8.0	42.0	75.2	6.7
			42	56.0	50.1	13.4	53.1	55.3	11.5	50.1	61.4	9.8	46.8	68.2	8.2	43.3	75.9	6.8
			44	57.7	50.6	13.7	54.8	55.8	11.8	51.6	61.9	10.0	48.2	68.8	8.4	44.6	76.5	7.0
			46	59.5	51.1	14.0	56.5	56.4	12.0	53.2	62.4	10.2	49.7	69.4	8.6	46.0	77.1	7.2
			48	61.3	51.7	14.2	58.2	56.9	12.3	54.8	63.0	10.4	51.2	69.9	8.8	47.4	77.8	7.3
			50	63.1	52.3	14.5	59.9	57.4	12.5	56.4	63.6	10.6	52.7	70.5	9.0	48.8	78.6	7.4

Table 20: 60 Hz Full Load Performance Data (IP) (continued)

Unit Size	Hz	Fan Power (kW)	LWT (°F)	Ambient Air Temperature														
				75°F			85°F			95°F			105°F			115°F		
				Unit Tons	Power kW	Unit EER	Unit Tons	Power kW	Unit EER	Unit Tons	Power kW	Unit EER	Unit Tons	Power kW	Unit EER	Unit Tons	Power kW	Unit EER
060D	60	5.7	40	59.0	55.2	12.8	56.0	60.9	11.0	52.7	67.6	9.4	49.3	75.1	7.9	45.7	83.5	6.6
			42	60.9	55.6	13.1	57.7	61.4	11.3	54.4	68.1	9.6	50.9	75.7	8.1	47.1	84.2	6.7
			44	62.8	56.2	13.4	59.6	62.0	11.5	56.1	68.7	9.8	52.5	76.3	8.2	48.5	84.9	6.9
			46	64.7	56.7	13.7	61.4	62.6	11.8	57.8	69.2	10.0	54.0	77.0	8.4	50.0	85.6	7.0
			48	66.6	57.4	13.9	63.2	63.1	12.0	59.6	69.9	10.2	55.7	77.6	8.6	51.5	86.3	7.2
			50	68.6	58.0	14.2	65.1	63.7	12.3	61.3	70.6	10.4	57.3	78.2	8.8	53.0	87.2	7.3
065D	60	7.3	40	61.1	54.4	13.5	58.0	60.0	11.6	54.6	66.6	9.8	51.1	74.0	8.3	47.3	82.2	6.9
			42	63.0	54.8	13.8	59.8	60.5	11.9	56.4	67.1	10.1	52.7	74.6	8.5	48.7	83.0	7.0
			44	65.0	55.4	14.1	61.7	61.1	12.1	58.1	67.7	10.3	54.3	75.2	8.7	50.3	83.7	7.2
			46	67.0	55.9	14.4	63.6	61.7	12.4	59.9	68.2	10.5	56.0	75.9	8.8	51.8	84.3	7.4
			48	69.0	56.5	14.7	65.5	62.2	12.6	61.7	68.9	10.7	57.7	76.5	9.1	53.3	85.1	7.5
			50	71.1	57.2	14.9	67.4	62.8	12.9	63.5	69.6	11.0	59.4	77.1	9.2	54.9	85.9	7.7
070D	60	7.3	40	67.4	63.7	12.7	64.0	70.3	10.9	60.3	78.0	9.3	56.3	86.7	7.8	52.2	96.3	6.5
			42	69.5	64.2	13.0	66.0	70.9	11.2	62.2	78.7	9.5	58.1	87.4	8.0	53.8	97.2	6.6
			44	71.7	64.9	13.3	68.1	71.5	11.4	64.1	79.3	9.7	59.9	88.1	8.2	55.4	98.0	6.8
			46	74.0	65.5	13.6	70.1	72.2	11.6	66.1	79.9	9.9	61.7	88.9	8.3	57.2	98.8	6.9
			48	76.2	66.2	13.8	72.2	72.9	11.9	68.1	80.7	10.1	63.7	89.6	8.5	58.8	99.7	7.1
			50	78.4	67.0	14.0	74.4	73.6	12.1	70.1	81.5	10.3	65.5	90.3	8.7	60.6	100.6	7.2
075D	60	10.9	40	76.8	72.2	12.8	73.0	78.7	11.1	68.7	86.3	9.6	64.2	94.8	8.1	59.4	104.3	6.8
			42	79.2	72.8	13.1	75.2	79.5	11.4	70.9	86.9	9.8	66.2	95.5	8.3	61.3	105.1	7.0
			44	81.7	73.5	13.3	77.6	80.2	11.6	73.1	87.7	10.0	68.3	96.3	8.5	63.2	105.9	7.2
			46	84.3	74.1	13.6	80.0	80.9	11.9	75.4	88.5	10.2	70.4	97.1	8.7	65.1	106.8	7.3
			48	86.9	74.7	14.0	82.4	81.6	12.1	77.6	89.2	10.4	72.6	97.8	8.9	67.0	107.7	7.5
			50	89.5	75.4	14.2	85.0	82.1	12.4	80.0	90.0	10.7	74.6	98.8	9.1	69.1	108.6	7.6
080D	60	10.9	40	85.2	81.7	12.5	80.9	89.1	10.9	76.2	97.7	9.4	71.2	107.3	8.0	65.9	118.1	6.7
			42	87.9	82.4	12.8	83.5	90.0	11.1	78.7	98.4	9.6	73.5	108.1	8.2	68.0	119.0	6.9
			44	90.7	83.2	13.1	86.0	90.8	11.4	81.1	99.3	9.8	75.8	109.0	8.3	70.2	119.9	7.0
			46	93.5	83.9	13.4	88.7	91.6	11.6	83.6	100.2	10.0	78.1	109.9	8.5	72.3	121.0	7.2
			48	96.4	84.6	13.7	91.4	92.4	11.9	86.1	101.0	10.2	80.5	110.7	8.7	74.4	121.9	7.3
			50	99.3	85.4	14.0	94.3	93.0	12.2	88.7	101.9	10.4	82.8	111.8	8.9	76.6	122.9	7.5
090D	60	10.9	40	93.7	89.9	12.5	89.0	98.0	10.9	83.8	107.5	9.4	78.3	118.0	8.0	72.5	129.8	6.7
			42	96.7	90.6	12.8	91.8	98.9	11.1	86.5	108.2	9.6	80.8	118.9	8.2	74.8	130.8	6.9
			44	99.7	91.5	13.1	94.6	99.8	11.4	89.2	109.2	9.8	83.4	119.9	8.3	77.2	131.8	7.0
			46	102.8	92.3	13.4	97.6	100.7	11.6	92.0	110.2	10.0	85.9	120.9	8.5	79.5	133.0	7.2
			48	106.1	93.0	13.7	100.5	101.6	11.9	94.7	111.1	10.2	88.6	121.8	8.7	81.8	134.1	7.3
			50	109.3	93.9	14.0	103.7	102.2	12.2	97.6	112.0	10.5	91.1	123.0	8.9	84.3	135.2	7.5
100D	60	10.9	40	104.8	102.7	12.2	99.6	111.9	10.7	93.8	122.8	9.2	87.6	134.9	7.8	81.1	148.4	6.6
			42	108.2	103.6	12.5	102.7	113.1	10.9	96.8	123.7	9.4	90.4	135.9	8.0	83.7	149.5	6.7
			44	111.6	104.6	12.8	105.9	114.1	11.1	99.8	124.8	9.6	93.3	137.0	8.2	86.3	150.6	6.9
			46	115.1	105.5	13.1	109.2	115.1	11.4	102.9	125.9	9.8	96.1	138.2	8.3	88.9	152.0	7.0
			48	118.7	106.3	13.4	112.5	116.1	11.6	106.0	126.9	10.0	99.1	139.2	8.5	91.5	153.3	7.2
			50	122.3	107.3	13.7	116.1	116.8	11.9	109.2	128.0	10.2	101.9	140.5	8.7	94.3	154.5	7.3

Performance Data

Table 21: 60 Hz Full Load Performance Data (IP) (continued)

Unit Size	Hz	Fan Power (kW)	LWT (°F)	Ambient Air Temperature														
				75°F			85°F			95°F			105°F			115°F		
				Unit Tons	Power kW	Unit EER	Unit Tons	Power kW	Unit EER	Unit Tons	Power kW	Unit EER	Unit Tons	Power kW	Unit EER	Unit Tons	Power kW	Unit EER
110D	60	14.5	40	111.4	106.9	12.5	105.9	116.5	10.9	99.7	127.8	9.4	93.2	140.4	8.0	86.3	154.5	6.7
			42	115.0	107.8	12.8	109.2	117.7	11.1	102.9	128.7	9.6	96.1	141.5	8.2	89.0	155.6	6.9
			44	118.6	108.9	13.1	112.6	118.7	11.4	106.1	129.9	9.8	99.2	142.6	8.3	91.8	156.8	7.0
			46	122.3	109.8	13.4	116.1	119.8	11.6	109.4	131.1	10.0	102.2	143.8	8.5	94.5	158.2	7.2
			48	126.2	110.7	13.7	119.6	120.8	11.9	112.7	132.1	10.2	105.4	144.8	8.7	97.3	159.5	7.3
			50	130.0	111.7	14.0	123.4	121.6	12.2	116.1	133.3	10.5	108.3	146.3	8.9	100.3	160.8	7.5
125D	60	14.5	40	123.0	118.0	12.5	116.9	128.6	10.9	110.1	141.1	9.4	102.8	155.0	8.0	95.2	170.5	6.7
			42	126.9	119.0	12.8	120.5	129.9	11.1	113.6	142.1	9.6	106.1	156.2	8.2	98.2	171.8	6.9
			44	130.9	120.2	13.1	124.2	131.1	11.4	117.1	143.4	9.8	109.5	157.5	8.3	101.3	173.1	7.0
			46	135.0	121.2	13.4	128.1	132.2	11.6	120.7	144.7	10.0	112.8	158.7	8.5	104.3	174.7	7.2
			48	139.2	122.2	13.7	132.0	133.4	11.9	124.4	145.8	10.2	116.3	159.9	8.7	107.4	176.1	7.3
			50	143.4	123.3	14.0	136.2	134.2	12.2	128.1	147.1	10.4	119.6	161.5	8.9	110.7	177.5	7.5
130D	60	14.5	40	136.1	133.3	12.2	129.3	145.3	10.7	121.8	159.4	9.2	113.8	175.1	7.8	105.4	192.6	6.6
			42	140.5	134.5	12.5	133.4	146.8	10.9	125.7	160.5	9.4	117.4	176.4	8.0	108.7	194.1	6.7
			44	144.9	135.8	12.8	137.5	148.1	11.1	129.6	162.0	9.6	121.2	177.9	8.2	112.1	195.5	6.9
			46	149.4	136.9	13.1	141.8	149.4	11.4	133.6	163.5	9.8	124.8	179.3	8.4	115.5	197.3	7.0
			48	154.1	138.0	13.4	146.1	150.7	11.6	137.6	164.8	10.0	128.7	180.6	8.5	118.8	198.9	7.2
			50	158.8	139.3	13.7	150.7	151.6	11.9	141.8	166.2	10.2	132.3	182.4	8.7	122.5	200.6	7.3
140D	60	18.2	40	143.0	131.8	13.0	135.9	143.7	11.4	128.0	157.6	9.7	119.6	173.2	8.3	110.7	190.5	7.0
			42	147.6	133.0	13.3	140.1	145.1	11.6	132.1	158.8	10.0	123.4	174.5	8.5	114.3	191.9	7.1
			44	152.3	134.2	13.6	144.5	146.4	11.8	136.2	160.2	10.2	127.3	175.9	8.7	117.8	193.4	7.3
			46	157.0	135.4	13.9	149.0	147.7	12.1	140.4	161.6	10.4	131.2	177.3	8.9	121.4	195.1	7.5
			48	161.9	136.5	14.2	153.5	149.0	12.4	144.6	162.9	10.7	135.2	178.6	9.1	124.9	196.7	7.6
			50	166.8	137.8	14.5	158.4	149.9	12.7	149.0	164.4	10.9	139.1	180.4	9.3	128.7	198.3	7.8
160D	60	18.2	40	161.0	151.4	12.8	153.0	165.0	11.1	144.1	181.0	9.6	134.6	198.9	8.1	124.6	218.7	6.8
			42	166.2	152.7	13.1	157.7	166.7	11.4	148.7	182.3	9.8	138.9	200.3	8.3	128.6	220.4	7.0
			44	171.4	154.2	13.3	162.7	168.1	11.6	153.3	184.0	10.0	143.3	202.0	8.5	132.6	222.0	7.2
			46	176.8	155.4	13.6	167.7	169.6	11.9	158.1	185.6	10.2	147.6	203.6	8.7	136.6	224.1	7.3
			48	182.3	156.7	14.0	172.8	171.1	12.1	162.8	187.1	10.4	152.2	205.1	8.9	140.6	225.9	7.5
			50	187.8	158.2	14.2	178.3	172.2	12.4	167.7	188.7	10.7	156.5	207.1	9.1	144.9	227.7	7.6
180D	60	18.2	40	180.8	177.2	12.2	171.9	193.1	10.7	161.9	211.9	9.2	151.2	232.7	7.8	140.0	256.0	6.6
			42	186.7	178.7	12.5	177.2	195.1	10.9	167.0	213.4	9.4	156.0	234.5	8.0	144.5	257.9	6.7
			44	192.5	180.4	12.8	182.7	196.8	11.1	172.2	215.3	9.6	161.0	236.4	8.2	149.0	259.9	6.9
			46	198.5	181.9	13.1	188.4	198.5	11.4	177.5	217.2	9.8	165.8	238.3	8.3	153.4	262.2	7.0
			48	204.7	183.4	13.4	194.1	200.2	11.6	182.9	219.0	10.0	171.0	240.1	8.5	157.9	264.4	7.2
			50	210.9	185.2	13.7	200.3	201.5	11.9	188.4	220.9	10.2	175.8	242.4	8.7	162.7	266.5	7.3
190D	60	21.8	40	189.1	176.1	12.9	179.7	192.0	11.2	169.3	210.6	9.6	158.1	231.3	8.2	146.4	254.4	6.9
			42	195.2	177.6	13.2	185.3	193.9	11.5	174.7	212.1	9.9	163.2	233.0	8.4	151.1	256.4	7.1
			44	201.4	179.3	13.5	191.1	195.6	11.7	180.1	214.0	10.1	168.4	235.0	8.6	155.8	258.3	7.2
			46	207.7	180.8	13.8	197.0	197.3	12.0	185.7	215.9	10.3	173.4	236.9	8.8	160.5	260.7	7.4
			48	214.1	182.3	14.1	203.0	199.0	12.2	191.3	217.6	10.5	178.8	238.6	9.0	165.2	262.8	7.5
			50	220.6	184.0	14.4	209.5	200.3	12.5	197.0	219.6	10.8	183.9	241.0	9.2	170.2	264.9	7.7

Table 22: 60 Hz Full Load Performance Data (SI)

Unit Size	Hz	Fan Power (kW)	LWT (°C)	Ambient Air Temperature														
				25°C			30°C			35°C			40°C			45°C		
				Unit kW	Power kW	Unit COP	Unit kW	Power kW	Unit COP	Unit kW	Power kW	Unit COP	Unit kW	Power kW	Unit COP	Unit kW	Power kW	Unit COP
025D	60	5.6	5	101.5	28.1	3.6	96.7	30.7	3.2	91.7	33.7	2.7	86.4	37.0	2.3	80.6	40.8	2.0
			6	104.4	28.3	3.7	99.5	30.9	3.2	94.3	33.9	2.8	88.8	37.3	2.4	82.9	41.1	2.0
			7	107.3	28.6	3.8	102.3	31.2	3.3	96.9	34.2	2.8	91.3	37.6	2.4	85.2	41.4	2.1
			8	110.3	28.8	3.8	105.1	31.5	3.3	99.6	34.4	2.9	93.7	37.9	2.5	87.5	41.7	2.1
			9	113.2	29.1	3.9	107.9	31.7	3.4	102.3	34.7	2.9	96.3	38.1	2.5	89.8	42.0	2.1
			10	116.2	29.4	4.0	110.7	32.0	3.5	104.9	35.1	3.0	98.9	38.4	2.6	92.2	42.4	2.2
030D	60	5.6	5	117.5	32.5	3.6	112.0	35.6	3.1	106.1	39.0	2.7	100.0	42.9	2.3	93.3	47.2	2.0
			6	120.8	32.8	3.7	115.2	35.8	3.2	109.1	39.3	2.8	102.8	43.2	2.4	95.9	47.6	2.0
			7	124.2	33.1	3.8	118.4	36.1	3.3	112.2	39.6	2.8	105.6	43.5	2.4	98.6	48.0	2.1
			8	127.7	33.4	3.8	121.6	36.4	3.3	115.3	39.9	2.9	108.5	43.9	2.5	101.3	48.3	2.1
			9	131.1	33.7	3.9	124.9	36.7	3.4	118.4	40.3	2.9	111.5	44.2	2.5	104.0	48.7	2.1
			10	134.5	34.0	4.0	128.2	37.1	3.5	121.5	40.6	3.0	114.4	44.5	2.6	106.7	49.1	2.2
035D	60	5.6	5	129.8	34.6	3.8	123.7	37.8	3.3	117.2	41.4	2.8	109.5	45.5	2.4	101.5	50.2	2.0
			6	133.4	34.9	3.8	127.1	38.1	3.3	120.4	41.7	2.9	112.6	45.9	2.5	104.2	50.6	2.1
			7	137.2	35.1	3.9	130.7	38.3	3.4	123.9	42.0	2.9	115.8	46.2	2.5	107.2	50.9	2.1
			8	141.0	35.4	4.0	134.3	38.6	3.5	127.2	42.3	3.0	118.9	46.6	2.6	110.1	51.3	2.1
			9	144.7	35.7	4.1	137.9	38.9	3.5	130.7	42.7	3.1	122.1	47.0	2.6	113.1	51.8	2.2
			10	148.5	36.0	4.1	141.5	39.3	3.6	134.1	43.1	3.1	125.3	47.4	2.6	116.1	52.2	2.2
040D	60	5.6	5	141.0	37.2	3.8	134.3	40.6	3.3	127.3	44.5	2.9	118.9	48.9	2.4	110.2	53.9	2.0
			6	144.9	37.5	3.9	138.1	40.9	3.4	130.8	44.8	2.9	122.2	49.3	2.5	113.2	54.3	2.1
			7	149.0	37.7	4.0	142.0	41.1	3.5	134.5	45.1	3.0	125.7	49.6	2.5	116.4	54.7	2.1
			8	153.1	38.0	4.0	145.9	41.5	3.5	138.2	45.5	3.0	129.2	50.0	2.6	119.6	55.1	2.2
			9	157.2	38.3	4.1	149.8	41.8	3.6	141.9	45.9	3.1	132.6	50.4	2.6	122.8	55.6	2.2
			10	161.3	38.7	4.2	153.7	42.2	3.6	145.6	46.2	3.1	136.1	50.9	2.7	126.1	56.1	2.2
045D	60	5.7	5	158.5	41.0	3.9	151.0	44.7	3.4	143.0	49.0	2.9	133.7	53.9	2.5	123.8	59.4	2.1
			6	162.9	41.3	3.9	155.2	45.0	3.4	147.0	49.4	3.0	137.4	54.3	2.5	127.2	59.9	2.1
			7	167.5	41.6	4.0	159.6	45.3	3.5	151.2	49.7	3.0	141.3	54.7	2.6	130.9	60.3	2.2
			8	172.1	41.9	4.1	164.0	45.7	3.6	155.3	50.1	3.1	145.2	55.1	2.6	134.4	60.8	2.2
			9	176.7	42.3	4.2	168.4	46.1	3.7	159.5	50.5	3.2	149.1	55.6	2.7	138.1	61.3	2.3
			10	181.3	42.6	4.3	172.7	46.5	3.7	163.6	51.0	3.2	152.9	56.1	2.7	141.7	61.8	2.3
050D	60	5.7	5	178.9	47.2	3.8	170.5	51.5	3.3	161.5	56.4	2.9	150.9	62.1	2.4	139.8	68.4	2.0
			6	183.9	47.5	3.9	175.2	51.9	3.4	166.0	56.9	2.9	155.1	62.5	2.5	143.7	69.0	2.1
			7	189.1	47.8	4.0	180.2	52.2	3.5	170.7	57.2	3.0	159.5	62.9	2.5	147.8	69.4	2.1
			8	194.3	48.2	4.0	185.1	52.6	3.5	175.4	57.7	3.0	163.9	63.5	2.6	151.8	70.0	2.2
			9	199.5	48.6	4.1	190.1	53.1	3.6	180.1	58.2	3.1	168.3	64.0	2.6	155.9	70.6	2.2
			10	204.7	49.1	4.2	195.0	53.5	3.6	184.8	58.7	3.1	172.7	64.5	2.7	160.0	71.2	2.2
055D	60	5.7	5	192.0	51.1	3.8	182.9	55.8	3.3	173.3	61.2	2.8	161.9	67.3	2.4	150.0	74.2	2.0
			6	197.3	51.5	3.8	188.0	56.2	3.3	178.1	61.7	2.9	166.4	67.8	2.5	154.1	74.8	2.1
			7	202.8	51.9	3.9	193.3	56.6	3.4	183.1	62.0	3.0	171.2	68.2	2.5	158.5	75.2	2.1
			8	208.4	52.3	4.0	198.6	57.0	3.5	188.1	62.5	3.0	175.9	68.8	2.6	162.8	75.8	2.1
			9	214.0	52.7	4.1	203.9	57.5	3.5	193.2	63.1	3.1	180.5	69.4	2.6	167.2	76.5	2.2
			10	219.6	53.2	4.1	209.2	58.0	3.6	198.2	63.6	3.1	185.2	70.0	2.6	171.6	77.1	2.2

Performance Data

Table 23: 60 Hz Full Load Performance Data (SI) continued

Unit Size	Hz	Fan Power (kW)	LWT (°C)	Ambient Air Temperature														
				25°C			30°C			35°C			40°C			45°C		
				Unit kW	Power kW _i	Unit COP	Unit kW	Power kW _i	Unit COP	Unit kW	Power kW _i	Unit COP	Unit kW	Power kW _i	Unit COP	Unit kW	Power kW _i	Unit COP
060D	60	5.7	5	208.6	56.6	3.7	198.8	61.8	3.2	188.4	67.9	2.8	177.5	74.5	2.4	165.7	82.1	2.0
			6	214.5	57.0	3.8	204.4	62.3	3.3	193.8	68.4	2.8	182.5	75.1	2.4	170.3	82.8	2.1
			7	220.6	57.5	3.8	210.2	62.8	3.3	199.1	68.9	2.9	187.5	75.7	2.5	175.0	83.4	2.1
			8	226.7	58.0	3.9	215.9	63.4	3.4	204.6	69.4	2.9	192.6	76.3	2.5	179.9	84.0	2.1
			9	232.7	58.6	4.0	221.7	63.9	3.5	210.1	70.0	3.0	198.0	76.8	2.6	184.6	84.7	2.2
			10	238.8	59.2	4.0	227.6	64.4	3.5	215.7	70.6	3.1	203.2	77.3	2.6	189.5	85.4	2.2
065D	60	7.3	5	216.1	55.7	3.9	205.9	60.9	3.4	195.1	66.9	2.9	183.8	73.5	2.5	171.6	81.0	2.1
			6	222.2	56.2	4.0	211.7	61.4	3.4	200.7	67.4	3.0	189.0	74.0	2.6	176.4	81.6	2.2
			7	228.4	56.7	4.0	217.7	61.9	3.5	206.2	67.9	3.0	194.2	74.6	2.6	181.3	82.2	2.2
			8	234.7	57.2	4.1	223.6	62.4	3.6	211.9	68.4	3.1	199.5	75.2	2.7	186.3	82.8	2.2
			9	241.0	57.7	4.2	229.6	62.9	3.6	217.6	69.0	3.2	205.0	75.7	2.7	191.2	83.4	2.3
			10	247.3	58.3	4.2	235.7	63.5	3.7	223.3	69.6	3.2	210.4	76.2	2.8	196.2	84.1	2.3
070D	60	7.3	5	238.4	65.3	3.7	227.2	71.4	3.2	215.3	78.3	2.7	202.8	86.1	2.4	189.3	94.8	2.0
			6	245.1	65.8	3.7	233.6	71.9	3.2	221.4	78.9	2.8	208.5	86.7	2.4	194.6	95.6	2.0
			7	252.0	66.4	3.8	240.2	72.5	3.3	227.5	79.5	2.9	214.3	87.3	2.5	200.0	96.3	2.1
			8	259.0	67.0	3.9	246.7	73.1	3.4	233.8	80.1	2.9	220.1	88.0	2.5	205.5	97.0	2.1
			9	265.9	67.6	3.9	253.3	73.7	3.4	240.1	80.8	3.0	226.2	88.7	2.6	211.0	97.8	2.2
			10	272.9	68.3	4.0	260.0	74.4	3.5	246.4	81.5	3.0	232.1	89.3	2.6	216.5	98.6	2.2
075D	60	10.9	5	271.6	73.8	3.7	259.1	79.8	3.2	245.5	86.6	2.8	231.0	94.2	2.5	215.8	102.8	2.1
			6	279.3	74.4	3.8	266.3	80.5	3.3	252.5	87.2	2.9	237.7	94.9	2.5	221.9	103.5	2.1
			7	287.2	75.0	3.8	273.7	81.1	3.4	259.5	88.0	3.0	244.4	95.6	2.6	228.0	104.2	2.2
			8	295.2	75.6	3.9	281.3	81.8	3.4	266.7	88.6	3.0	251.0	96.3	2.6	234.1	105.1	2.2
			9	303.4	76.2	4.0	289.0	82.4	3.5	273.9	89.3	3.1	258.0	96.9	2.7	240.4	105.8	2.3
			10	311.8	76.8	4.1	297.2	82.9	3.6	281.3	90.0	3.1	264.4	97.8	2.7	246.9	106.6	2.3
080D	60	10.9	5	301.3	83.6	3.6	287.4	90.4	3.2	272.4	98.1	2.8	256.3	106.7	2.4	239.4	116.4	2.1
			6	309.9	84.3	3.7	295.4	91.1	3.2	280.1	98.8	2.8	263.7	107.4	2.5	246.2	117.2	2.1
			7	318.6	84.9	3.8	303.7	91.9	3.3	287.9	99.6	2.9	271.1	108.2	2.5	253.0	118.0	2.1
			8	327.5	85.6	3.8	312.1	92.6	3.4	295.8	100.4	2.9	278.5	109.0	2.6	259.8	118.9	2.2
			9	336.6	86.2	3.9	320.6	93.3	3.4	303.8	101.1	3.0	286.2	109.7	2.6	266.7	119.8	2.2
			10	345.9	86.9	4.0	329.8	93.8	3.5	312.0	101.9	3.1	293.4	110.7	2.7	273.9	120.7	2.3
090D	60	10.9	5	331.4	91.9	3.6	316.1	99.4	3.2	299.6	107.8	2.8	281.9	117.3	2.4	263.3	128.0	2.1
			6	340.8	92.6	3.7	325.0	100.2	3.2	308.1	108.6	2.8	290.0	118.1	2.5	270.7	128.8	2.1
			7	350.4	93.4	3.8	334.0	101.0	3.3	316.6	109.5	2.9	298.2	119.0	2.5	278.2	129.8	2.1
			8	360.2	94.1	3.8	343.3	101.8	3.4	325.4	110.4	2.9	306.3	119.8	2.6	285.7	130.8	2.2
			9	370.2	94.8	3.9	352.6	102.6	3.4	334.2	111.2	3.0	314.8	120.6	2.6	293.3	131.7	2.2
			10	380.4	95.6	4.0	362.7	103.2	3.5	343.2	112.0	3.1	322.7	121.7	2.7	301.2	132.7	2.3
100D	60	10.9	5	370.8	105.0	3.5	353.7	113.6	3.1	335.2	123.2	2.7	315.4	134.1	2.4	294.6	146.2	2.0
			6	381.3	105.9	3.6	363.6	114.5	3.2	344.7	124.1	2.8	324.5	135.0	2.4	302.9	147.2	2.1
			7	392.1	106.7	3.7	373.7	115.4	3.2	354.3	125.1	2.8	333.6	136.0	2.5	311.3	148.3	2.1
			8	403.0	107.6	3.7	384.1	116.4	3.3	364.1	126.1	2.9	342.7	137.0	2.5	319.7	149.5	2.1
			9	414.2	108.4	3.8	394.5	117.2	3.4	373.9	127.0	2.9	352.2	137.9	2.6	328.2	150.6	2.2
			10	425.6	109.2	3.9	405.8	117.9	3.4	384.0	128.0	3.0	361.0	139.1	2.6	337.0	151.7	2.2

Table 24: 60 Hz Full Load Performance Data (SI) continued

Unit Size	Hz	Fan Power (kW)	LWT (°C)	Ambient Air Temperature														
				25°C			30°C			35°C			40°C			45°C		
				Unit kW	Power kW	Unit COP	Unit kW	Power kW	Unit COP	Unit kW	Power kW	Unit COP	Unit kW	Power kW	Unit COP	Unit kW	Power kW	Unit COP
110D	60	14.5	5	394.2	109.3	3.6	376.0	118.2	3.2	356.4	128.3	2.8	335.3	139.5	2.4	313.2	152.2	2.1
			6	405.4	110.2	3.7	386.5	119.2	3.2	366.4	129.2	2.8	345.0	140.5	2.5	322.0	153.3	2.1
			7	416.8	111.1	3.8	397.3	120.2	3.3	376.6	130.3	2.9	354.7	141.6	2.5	331.0	154.4	2.1
			8	428.5	112.0	3.8	408.3	121.1	3.4	387.0	131.3	2.9	364.3	142.6	2.6	339.9	155.6	2.2
			9	440.4	112.8	3.9	419.4	122.0	3.4	397.5	132.2	3.0	374.4	143.5	2.6	348.9	156.7	2.2
			10	452.5	113.7	4.0	431.4	122.8	3.5	408.2	133.3	3.1	383.8	144.8	2.7	358.3	157.9	2.3
125D	60	14.5	5	435.0	120.7	3.6	415.0	130.5	3.2	393.3	141.6	2.8	370.1	154.0	2.4	345.6	168.0	2.1
			6	447.4	121.7	3.7	426.6	131.6	3.2	404.4	142.6	2.8	380.7	155.1	2.5	355.4	169.2	2.1
			7	460.0	122.7	3.8	438.5	132.6	3.3	415.7	143.8	2.9	391.4	156.3	2.5	365.3	170.4	2.1
			8	472.9	123.6	3.8	450.7	133.7	3.4	427.2	144.9	2.9	402.1	157.4	2.6	375.1	171.8	2.2
			9	486.1	124.5	3.9	462.9	134.7	3.4	438.7	146.0	3.0	413.2	158.4	2.6	385.1	173.0	2.2
			10	499.4	125.5	4.0	476.1	135.5	3.5	450.6	147.1	3.1	423.6	159.9	2.6	395.4	174.3	2.3
130D	60	14.5	5	481.5	136.3	3.5	459.3	147.4	3.1	435.3	160.0	2.7	409.6	174.0	2.4	382.5	189.8	2.0
			6	495.2	137.4	3.6	472.1	148.7	3.2	447.6	161.1	2.8	421.4	175.2	2.4	393.4	191.1	2.1
			7	509.1	138.6	3.7	485.3	149.9	3.2	460.0	162.4	2.8	433.2	176.5	2.5	404.3	192.5	2.1
			8	523.4	139.6	3.7	498.8	151.0	3.3	472.8	163.7	2.9	445.0	177.8	2.5	415.1	194.0	2.1
			9	537.9	140.7	3.8	512.4	152.2	3.4	485.5	164.9	2.9	457.4	179.0	2.6	426.2	195.4	2.2
			10	552.7	141.8	3.9	527.0	153.1	3.4	498.6	166.2	3.0	468.8	180.6	2.6	437.7	196.9	2.2
140D	60	18.2	5	506.0	134.8	3.8	482.7	145.8	3.3	457.5	158.2	2.9	430.4	172.1	2.5	402.0	187.7	2.1
			6	520.4	135.9	3.8	496.2	147.0	3.4	470.4	159.3	3.0	442.8	173.3	2.6	413.4	189.0	2.2
			7	535.1	137.0	3.9	510.0	148.2	3.4	483.5	160.6	3.0	455.3	174.6	2.6	424.8	190.4	2.2
			8	550.0	138.1	4.0	524.2	149.4	3.5	496.8	161.9	3.1	467.7	175.8	2.7	436.3	191.9	2.3
			9	565.3	139.1	4.1	538.4	150.5	3.6	510.2	163.1	3.1	480.6	177.0	2.7	447.9	193.3	2.3
			10	580.9	140.2	4.1	553.8	151.4	3.7	524.0	164.4	3.2	492.7	178.6	2.8	460.0	194.7	2.4
160D	60	18.2	5	569.5	154.8	3.7	543.3	167.4	3.2	514.9	181.7	2.8	484.5	197.6	2.5	452.5	215.6	2.1
			6	585.8	156.1	3.8	558.5	168.8	3.3	529.5	183.0	2.9	498.4	199.0	2.5	465.3	217.0	2.1
			7	602.2	157.4	3.8	574.1	170.2	3.4	544.2	184.5	3.0	512.4	200.5	2.6	478.2	218.6	2.2
			8	619.1	158.5	3.9	590.0	171.5	3.4	559.2	185.9	3.0	526.4	201.9	2.6	491.0	220.3	2.2
			9	636.3	159.7	4.0	606.0	172.8	3.5	574.3	187.3	3.1	541.0	203.2	2.7	504.1	221.9	2.3
			10	653.8	161.0	4.1	623.3	173.8	3.6	589.8	188.7	3.1	554.6	205.1	2.7	517.7	223.6	2.3
180D	60	18.2	5	639.7	181.2	3.5	610.3	195.9	3.1	578.4	212.6	2.7	544.2	231.3	2.4	508.2	252.3	2.0
			6	658.0	182.7	3.6	627.3	197.6	3.2	594.7	214.1	2.8	559.9	232.9	2.4	522.7	254.0	2.1
			7	676.5	184.2	3.7	644.8	199.2	3.2	611.3	215.9	2.8	575.6	234.6	2.5	537.1	255.9	2.1
			8	695.4	185.6	3.7	662.7	200.7	3.3	628.2	217.6	2.9	591.3	236.3	2.5	551.6	257.9	2.1
			9	714.8	187.0	3.8	680.8	202.2	3.4	645.1	219.2	2.9	607.7	237.9	2.6	566.3	259.7	2.2
			10	734.4	188.4	3.9	700.2	203.5	3.4	662.6	220.9	3.0	622.9	240.0	2.6	581.5	261.7	2.2
190D	60	21.8	5	669.1	180.1	3.7	638.3	194.8	3.3	604.9	211.3	2.9	569.2	229.9	2.5	531.6	250.8	2.1
			6	688.2	181.6	3.8	656.1	196.4	3.3	622.0	212.8	2.9	585.5	231.5	2.5	546.7	252.5	2.2
			7	707.5	183.0	3.9	674.4	198.0	3.4	639.3	214.6	3.0	602.0	233.2	2.6	561.8	254.3	2.2
			8	727.3	184.4	3.9	693.1	199.5	3.5	657.0	216.3	3.0	618.4	234.9	2.6	576.9	256.3	2.3
			9	747.6	185.8	4.0	712.0	201.0	3.5	674.7	217.8	3.1	635.6	236.4	2.7	592.2	258.2	2.3
			10	768.1	187.3	4.1	732.3	202.2	3.6	693.0	219.6	3.2	651.5	238.6	2.7	608.2	260.1	2.3

Performance Data

Table 25: 50 Hz Full Load Performance Data (IP)

Unit Size	Hz	Fan Power (kW)	LWT (°F)	Ambient Air Temperature														
				75°F			85°F			95°F			105°F			115°F		
				Unit Tons	Power kW	Unit EER	Unit Tons	Power kW	Unit EER	Unit Tons	Power kW	Unit EER	Unit Tons	Power kW	Unit EER	Unit Tons	Power kW	Unit EER
025D	50	4.6	40	23.8	21.9	13.1	22.6	24.2	11.2	21.3	26.8	9.5	19.9	29.8	8.0	18.4	33.1	6.7
			42	24.6	22.1	13.4	23.3	24.4	11.5	22.0	27.1	9.7	20.6	30.1	8.2	19.0	33.4	6.8
			44	25.4	22.3	13.6	24.1	24.6	11.7	22.7	27.3	10.0	21.2	30.3	8.4	19.6	33.7	7.0
			46	26.1	22.5	13.9	24.8	24.9	12.0	23.4	27.5	10.2	21.8	30.6	8.6	20.2	34.0	7.1
			48	26.9	22.8	14.2	25.5	25.1	12.2	24.1	27.8	10.4	22.5	30.8	8.8	20.8	34.3	7.3
			50	27.7	23.1	14.4	26.3	25.3	12.5	24.8	28.0	10.6	23.2	31.1	8.9	21.4	34.6	7.4
030D	50	4.6	40	27.6	25.4	13.0	26.2	28.0	11.2	24.7	31.1	9.5	23.1	34.5	8.0	21.3	38.4	6.7
			42	28.5	25.6	13.3	27.0	28.3	11.5	25.4	31.3	9.7	23.8	34.8	8.2	22.0	38.7	6.8
			44	29.3	25.8	13.6	27.9	28.5	11.7	26.2	31.6	10.0	24.5	35.1	8.4	22.7	39.1	7.0
			46	30.3	26.1	13.9	28.7	28.8	12.0	27.0	31.9	10.2	25.3	35.4	8.6	23.4	39.4	7.1
			48	31.2	26.4	14.2	29.6	29.0	12.2	27.9	32.2	10.4	26.0	35.7	8.8	24.1	39.7	7.3
			50	32.1	26.7	14.4	30.4	29.3	12.5	28.7	32.5	10.6	26.8	36.0	8.9	24.8	40.1	7.4
035D	50	4.6	40	30.5	26.9	13.6	28.9	29.7	11.7	27.2	33.0	9.9	25.5	36.6	8.3	23.6	40.7	6.9
			42	31.4	27.2	13.9	29.8	30.0	11.9	28.1	33.3	10.1	26.3	36.9	8.5	24.3	41.1	7.1
			44	32.4	27.4	14.2	30.8	30.2	12.2	29.0	33.5	10.4	27.1	37.2	8.7	25.1	41.4	7.3
			46	33.4	27.7	14.5	31.7	30.5	12.5	29.9	33.8	10.6	27.9	37.6	8.9	25.8	41.8	7.4
			48	34.4	28.0	14.8	32.6	30.8	12.7	30.8	34.1	10.8	28.8	37.9	9.1	26.6	42.1	7.6
			50	35.4	28.3	15.0	33.6	31.1	13.0	31.7	34.5	11.0	29.6	38.2	9.3	27.4	42.5	7.7
040D	50	4.6	40	33.1	28.9	13.7	31.4	31.9	11.8	29.6	35.4	10.0	27.7	39.3	8.4	25.6	43.7	7.0
			42	34.1	29.2	14.0	32.4	32.2	12.1	30.5	35.7	10.3	28.5	39.7	8.6	26.4	44.1	7.2
			44	35.2	29.4	14.3	33.4	32.5	12.3	31.5	36.0	10.5	29.4	40.0	8.8	27.2	44.5	7.3
			46	36.3	29.7	14.6	34.4	32.8	12.6	32.4	36.3	10.7	30.3	40.4	9.0	28.1	44.9	7.5
			48	37.4	30.1	14.9	35.5	33.1	12.9	33.4	36.6	10.9	31.2	40.7	9.2	28.9	45.3	7.7
			50	38.5	30.4	15.2	36.5	33.4	13.1	34.4	37.0	11.1	32.1	41.0	9.4	29.7	45.7	7.8
045D	50	4.7	40	37.2	31.9	14.0	35.3	35.2	12.0	33.2	39.0	10.2	31.1	43.4	8.6	28.8	48.2	7.2
			42	38.4	32.1	14.3	36.4	35.5	12.3	34.3	39.4	10.5	32.1	43.7	8.8	29.7	48.6	7.3
			44	39.6	32.5	14.6	37.6	35.8	12.6	35.4	39.7	10.7	33.1	44.1	9.0	30.6	49.0	7.5
			46	40.8	32.8	14.9	38.7	36.1	12.8	36.5	40.0	10.9	34.0	44.5	9.2	31.5	49.4	7.7
			48	42.0	33.1	15.2	39.8	36.5	13.1	37.6	40.4	11.2	35.1	44.8	9.4	32.5	49.9	7.8
			50	43.2	33.5	15.5	41.0	36.8	13.4	38.6	40.8	11.4	36.1	45.2	9.6	33.4	50.4	8.0
050D	50	4.7	40	42.0	36.7	13.7	39.8	40.5	11.8	37.5	44.9	10.0	35.1	49.9	8.4	32.5	55.5	7.0
			42	43.3	37.0	14.0	41.1	40.8	12.1	38.7	45.3	10.3	36.2	50.3	8.6	33.5	56.0	7.2
			44	44.7	37.4	14.3	42.4	41.2	12.3	39.9	45.7	10.5	37.3	50.8	8.8	34.5	56.5	7.3
			46	46.1	37.7	14.7	43.7	41.6	12.6	41.2	46.0	10.7	38.4	51.2	9.0	35.6	56.9	7.5
			48	47.4	38.1	14.9	45.0	42.0	12.9	42.4	46.5	10.9	39.6	51.6	9.2	36.6	57.4	7.7
			50	48.8	38.6	15.2	46.3	42.4	13.1	43.6	47.0	11.2	40.8	52.0	9.4	37.7	58.0	7.8
055D	50	4.7	40	45.1	39.8	13.6	42.7	43.9	11.7	40.3	48.7	9.9	37.6	54.1	8.3	34.9	60.2	7.0
			42	46.5	40.1	13.9	44.1	44.3	11.9	41.5	49.1	10.1	38.8	54.6	8.5	35.9	60.7	7.1
			44	47.9	40.5	14.2	45.5	44.7	12.2	42.8	49.5	10.4	40.0	55.0	8.7	37.0	61.2	7.3
			46	49.4	40.9	14.5	46.9	45.1	12.5	44.2	49.9	10.6	41.2	55.5	8.9	38.2	61.7	7.4
			48	50.9	41.3	14.8	48.3	45.5	12.7	45.5	50.4	10.8	42.5	56.0	9.1	39.3	62.2	7.6
			50	52.4	41.8	15.0	49.7	46.0	13.0	46.8	50.9	11.0	43.8	56.4	9.3	40.5	62.8	7.7

Table 26: 50 Hz Full Load Performance Data (IP) continued

Unit Size	Hz	Fan Power (kW)	LWT (°F)	Ambient Air Temperature														
				75°F			85°F			95°F			105°F			115°F		
				Unit Tons	Power kW	Unit EER	Unit Tons	Power kW	Unit EER	Unit Tons	Power kW	Unit EER	Unit Tons	Power kW	Unit EER	Unit Tons	Power kW	Unit EER
060D	50	4.7	40	49.0	44.1	13.3	46.5	48.7	11.4	43.8	54.1	9.7	40.9	60.1	8.2	37.9	66.8	6.8
			42	50.5	44.5	13.6	47.9	49.1	11.7	45.2	54.5	9.9	42.2	60.6	8.4	39.1	67.4	7.0
			44	52.1	45.0	13.9	49.4	49.6	12.0	46.6	55.0	10.2	43.5	61.1	8.6	40.3	67.9	7.1
			46	53.7	45.4	14.2	50.9	50.1	12.2	48.0	55.4	10.4	44.8	61.6	8.7	41.5	68.5	7.3
			48	55.3	45.9	14.5	52.5	50.5	12.5	49.4	55.9	10.6	46.2	62.1	8.9	42.7	69.1	7.4
			50	56.9	46.4	14.7	54.0	51.0	12.7	50.9	56.5	10.8	47.6	62.6	9.1	44.0	69.7	7.6
065D	50	6.1	40	50.7	43.5	14.0	48.1	48.0	12.0	45.3	53.3	10.2	42.4	59.2	8.6	39.3	65.8	7.2
			42	52.3	43.9	14.3	49.6	48.4	12.3	46.8	53.7	10.4	43.7	59.7	8.8	40.5	66.4	7.3
			44	54.0	44.3	14.6	51.2	48.8	12.6	48.2	54.2	10.7	45.1	60.2	9.0	41.7	66.9	7.5
			46	55.6	44.7	14.9	52.8	49.3	12.8	49.7	54.6	10.9	46.4	60.7	9.2	43.0	67.5	7.7
			48	57.3	45.2	15.2	54.3	49.8	13.1	51.2	55.1	11.1	47.9	61.2	9.4	44.3	68.1	7.8
			50	59.0	45.8	15.5	55.9	50.3	13.4	52.7	55.7	11.4	49.3	61.7	9.6	45.6	68.7	8.0
070D	50	6.1	40	56.0	50.9	13.2	53.1	56.3	11.3	50.0	62.4	9.6	46.8	69.3	8.1	43.3	77.1	6.7
			42	57.7	51.4	13.5	54.7	56.7	11.6	51.6	62.9	9.8	48.3	69.9	8.3	44.6	77.8	6.9
			44	59.5	51.9	13.8	56.5	57.2	11.8	53.2	63.4	10.1	49.7	70.5	8.5	46.0	78.4	7.0
			46	61.4	52.4	14.1	58.2	57.8	12.1	54.9	63.9	10.3	51.2	71.1	8.6	47.5	79.0	7.2
			48	63.2	53.0	14.3	60.0	58.3	12.3	56.5	64.6	10.5	52.8	71.7	8.8	48.8	79.7	7.3
			50	65.1	53.6	14.6	61.7	58.9	12.6	58.2	65.2	10.7	54.4	72.3	9.0	50.3	80.5	7.5
075D	50	9.0	40	63.7	57.8	13.2	60.6	62.9	11.5	57.0	69.1	9.9	53.3	75.9	8.4	49.3	83.4	7.1
			42	65.8	58.2	13.6	62.4	63.6	11.8	58.9	69.5	10.2	55.0	76.4	8.6	50.9	84.1	7.3
			44	67.8	58.8	13.8	64.4	64.1	12.0	60.7	70.2	10.4	56.7	77.1	8.8	52.5	84.7	7.4
			46	70.0	59.3	14.2	66.4	64.7	12.3	62.6	70.8	10.6	58.4	77.7	9.0	54.1	85.5	7.6
			48	72.1	59.8	14.5	68.4	65.3	12.6	64.4	71.4	10.8	60.2	78.2	9.2	55.6	86.2	7.7
			50	74.3	60.4	14.8	70.6	65.7	12.9	66.4	72.0	11.1	61.9	79.0	9.4	57.3	86.9	7.9
080D	50	9.0	40	70.7	65.4	13.0	67.2	71.3	11.3	63.3	78.2	9.7	59.1	85.9	8.3	54.7	94.5	7.0
			42	73.0	65.9	13.3	69.3	72.0	11.5	65.3	78.7	10.0	61.0	86.5	8.5	56.5	95.2	7.1
			44	75.3	66.6	13.6	71.4	72.6	11.8	67.3	79.4	10.2	62.9	87.2	8.7	58.2	95.9	7.3
			46	77.6	67.1	13.9	73.6	73.2	12.1	69.4	80.2	10.4	64.8	87.9	8.8	60.0	96.8	7.4
			48	80.0	67.7	14.2	75.9	73.9	12.3	71.5	80.8	10.6	66.8	88.6	9.1	61.7	97.6	7.6
			50	82.5	68.3	14.5	78.3	74.4	12.6	73.6	81.5	10.8	68.7	89.5	9.2	63.6	98.4	7.8
090D	50	9.0	40	77.7	71.9	13.0	73.9	78.4	11.3	69.6	86.0	9.7	65.0	94.4	8.3	60.2	103.9	7.0
			42	80.3	72.5	13.3	76.2	79.1	11.6	71.8	86.6	10.0	67.1	95.1	8.5	62.1	104.7	7.1
			44	82.8	73.2	13.6	78.6	79.8	11.8	74.0	87.4	10.2	69.2	95.9	8.7	64.0	105.4	7.3
			46	85.4	73.8	13.9	81.0	80.5	12.1	76.3	88.1	10.4	71.3	96.7	8.8	66.0	106.4	7.4
			48	88.0	74.4	14.2	83.4	81.2	12.3	78.6	88.8	10.6	73.5	97.4	9.1	67.9	107.3	7.6
			50	90.7	75.1	14.5	86.1	81.8	12.6	81.0	89.6	10.8	75.6	98.4	9.2	70.0	108.2	7.8
100D	50	9.0	40	87.0	82.2	12.7	82.7	89.6	11.1	77.9	98.2	9.5	72.7	107.9	8.1	67.3	118.7	6.8
			42	89.8	82.9	13.0	85.2	90.5	11.3	80.3	98.9	9.7	75.0	108.7	8.3	69.5	119.6	7.0
			44	92.6	83.7	13.3	87.9	91.3	11.6	82.8	99.8	10.0	77.4	109.6	8.5	71.7	120.5	7.1
			46	95.5	84.4	13.6	90.6	92.1	11.8	85.4	100.7	10.2	79.8	110.5	8.7	73.8	121.6	7.3
			48	98.5	85.1	13.9	93.4	92.9	12.1	88.0	101.5	10.4	82.3	111.3	8.9	76.0	122.6	7.4
			50	101.5	85.9	14.2	96.3	93.5	12.4	90.6	102.4	10.6	84.6	112.4	9.0	78.3	123.6	7.6

Performance Data

Table 27: 50 Hz Full Load Performance Data (IP) continued

Unit Size	Hz	Fan Power (kW)	LWT (°F)	Ambient Air Temperature														
				75°F			85°F			95°F			105°F			115°F		
				Unit Tons	Power kW	Unit EER	Unit Tons	Power kW	Unit EER	Unit Tons	Power kW	Unit EER	Unit Tons	Power kW	Unit EER	Unit Tons	Power kW	Unit EER
110D	50	12.0	40	92.5	85.5	13.0	87.9	93.2	11.3	82.8	102.3	9.7	77.3	112.3	8.3	71.6	123.6	7.0
			42	95.5	86.3	13.3	90.6	94.2	11.5	85.4	103.0	10.0	79.8	113.2	8.5	73.9	124.5	7.1
			44	98.5	87.1	13.6	93.4	95.0	11.8	88.1	103.9	10.2	82.3	114.1	8.7	76.2	125.4	7.3
			46	101.5	87.8	13.9	96.3	95.8	12.1	90.8	104.9	10.4	84.8	115.0	8.8	78.5	126.6	7.4
			48	104.7	88.5	14.2	99.2	96.6	12.3	93.5	105.7	10.6	87.4	115.9	9.1	80.8	127.6	7.6
			50	107.9	89.4	14.5	102.4	97.3	12.6	96.3	106.6	10.8	89.9	117.0	9.2	83.2	128.7	7.8
125D	50	12.0	40	102.1	94.4	13.0	97.0	102.9	11.3	91.4	112.9	9.7	85.3	124.0	8.3	79.0	136.4	7.0
			42	105.4	95.2	13.3	100.0	103.9	11.5	94.3	113.7	10.0	88.1	124.9	8.5	81.5	137.4	7.1
			44	108.7	96.1	13.6	103.1	104.9	11.8	97.2	114.7	10.2	90.9	126.0	8.7	84.1	138.5	7.3
			46	112.1	96.9	13.9	106.3	105.8	12.1	100.2	115.8	10.4	93.6	127.0	8.8	86.6	139.7	7.4
			48	115.6	97.7	14.2	109.5	106.7	12.3	103.2	116.7	10.6	96.5	127.9	9.1	89.1	140.9	7.6
			50	119.1	98.7	14.5	113.0	107.4	12.6	106.3	117.7	10.8	99.2	129.2	9.2	91.8	142.0	7.8
130D	50	12.0	40	112.9	106.7	12.7	107.4	116.3	11.1	101.1	127.5	9.5	94.4	140.1	8.1	87.5	154.1	6.8
			42	116.6	107.6	13.0	110.7	117.4	11.3	104.3	128.4	9.7	97.5	141.1	8.3	90.2	155.3	7.0
			44	120.3	108.6	13.3	114.1	118.5	11.6	107.6	129.6	10.0	100.6	142.3	8.5	93.0	156.4	7.1
			46	124.0	109.5	13.6	117.7	119.5	11.8	110.9	130.8	10.2	103.6	143.5	8.7	95.8	157.9	7.3
			48	127.9	110.4	13.9	121.2	120.5	12.1	114.2	131.8	10.4	106.8	144.5	8.9	98.6	159.1	7.4
			50	131.8	111.5	14.2	125.1	121.3	12.4	117.7	133.0	10.6	109.8	145.9	9.0	101.7	160.4	7.6
140D	50	15.1	40	118.7	105.5	13.5	112.8	115.0	11.8	106.3	126.1	10.1	99.3	138.5	8.6	91.9	152.4	7.2
			42	122.5	106.4	13.8	116.3	116.1	12.0	109.7	127.0	10.4	102.4	139.6	8.8	94.8	153.5	7.4
			44	126.4	107.4	14.1	119.9	117.1	12.3	113.0	128.2	10.6	105.7	140.7	9.0	97.8	154.7	7.6
			46	130.3	108.3	14.4	123.7	118.2	12.6	116.6	129.3	10.8	108.9	141.9	9.2	100.7	156.1	7.7
			48	134.4	109.2	14.8	127.4	119.2	12.8	120.1	130.3	11.1	112.3	142.9	9.4	103.7	157.4	7.9
			50	138.5	110.2	15.1	131.5	120.0	13.2	123.7	131.5	11.3	115.4	144.3	9.6	106.8	158.7	8.1
160D	50	15.1	40	133.6	121.1	13.2	127.0	132.0	11.5	119.6	144.8	9.9	111.7	159.1	8.4	103.4	175.0	7.1
			42	137.9	122.1	13.6	130.9	133.3	11.8	123.4	145.8	10.2	115.3	160.3	8.6	106.8	176.3	7.3
			44	142.3	123.3	13.8	135.0	134.5	12.0	127.2	147.2	10.4	119.0	161.6	8.8	110.1	177.6	7.4
			46	146.7	124.4	14.2	139.2	135.7	12.3	131.2	148.5	10.6	122.5	162.9	9.0	113.4	179.3	7.6
			48	151.3	125.4	14.5	143.4	136.9	12.6	135.1	149.7	10.8	126.3	164.1	9.2	116.7	180.7	7.7
			50	155.9	126.6	14.8	148.0	137.7	12.9	139.2	151.0	11.1	129.9	165.7	9.4	120.2	182.2	7.9
180D	50	15.1	40	150.1	141.8	12.7	142.6	154.5	11.1	134.4	169.5	9.5	125.5	186.2	8.1	116.2	204.8	6.8
			42	154.9	143.0	13.0	147.1	156.0	11.3	138.6	170.7	9.7	129.5	187.6	8.3	119.9	206.3	7.0
			44	159.8	144.3	13.3	151.6	157.4	11.6	142.9	172.2	10.0	133.6	189.1	8.5	123.6	207.9	7.1
			46	164.8	145.5	13.6	156.4	158.8	11.8	147.4	173.8	10.2	137.6	190.7	8.7	127.3	209.8	7.3
			48	169.9	146.7	13.9	161.1	160.2	12.1	151.8	175.2	10.4	141.9	192.0	8.9	131.1	211.5	7.4
			50	175.1	148.1	14.2	166.2	161.2	12.4	156.4	176.7	10.6	145.9	193.9	9.0	135.1	213.2	7.6
190D	50	18.1	40	157.0	140.9	13.4	149.2	153.6	11.7	140.5	168.5	10.0	131.2	185.1	8.5	121.5	203.6	7.2
			42	162.0	142.1	13.7	153.8	155.1	11.9	145.0	169.7	10.3	135.4	186.4	8.7	125.4	205.1	7.3
			44	167.1	143.5	14.0	158.6	156.5	12.2	149.5	171.2	10.5	139.8	188.0	8.9	129.3	206.6	7.5
			46	172.4	144.7	14.3	163.5	157.8	12.4	154.1	172.7	10.7	144.0	189.5	9.1	133.2	208.5	7.7
			48	177.7	145.9	14.6	168.5	159.2	12.7	158.8	174.1	10.9	148.4	190.9	9.3	137.1	210.2	7.8
			50	183.1	147.2	14.9	173.8	160.2	13.0	163.5	175.7	11.2	152.6	192.8	9.5	141.3	211.9	8.0

Table 28: 50 Hz Full Load Performance Data (SI)

Unit Size	Hz	Fan Power (kW)	LWT (°C)	Ambient Air Temperature														
				25°C			30°C			35°C			40°C			45°C		
				Unit kW	Power kW	Unit COP	Unit kW	Power kW	Unit COP	Unit kW	Power kW	Unit COP	Unit kW	Power kW	Unit COP	Unit kW	Power kW	Unit COP
025D	50	4.6	5	84.3	22.5	3.8	80.3	24.6	3.3	76.1	27.0	2.8	71.7	29.6	2.4	66.9	32.6	2.1
			6	86.7	22.6	3.8	82.6	24.7	3.3	78.3	27.1	2.9	73.7	29.8	2.5	68.8	32.9	2.1
			7	89.1	22.8	3.9	84.9	24.9	3.4	80.4	27.3	2.9	75.7	30.0	2.5	70.7	33.1	2.1
			8	91.5	23.0	4.0	87.2	25.2	3.5	82.7	27.6	3.0	77.8	30.3	2.6	72.6	33.4	2.2
			9	94.0	23.3	4.0	89.6	25.4	3.5	84.9	27.8	3.1	80.0	30.5	2.6	74.6	33.6	2.2
			10	96.5	23.5	4.1	91.9	25.6	3.6	87.1	28.0	3.1	82.1	30.7	2.7	76.5	33.9	2.3
030D	50	4.6	5	97.5	26.0	3.7	92.9	28.4	3.3	88.1	31.2	2.8	83.0	34.3	2.4	77.5	37.8	2.0
			6	100.3	26.2	3.8	95.6	28.7	3.3	90.6	31.4	2.9	85.3	34.5	2.5	79.6	38.1	2.1
			7	103.1	26.5	3.9	98.3	28.9	3.4	93.1	31.7	2.9	87.7	34.8	2.5	81.8	38.4	2.1
			8	106.0	26.7	4.0	100.9	29.1	3.5	95.7	31.9	3.0	90.0	35.1	2.6	84.1	38.7	2.2
			9	108.8	26.9	4.0	103.7	29.4	3.5	98.2	32.2	3.1	92.6	35.3	2.6	86.3	39.0	2.2
			10	111.7	27.2	4.1	106.4	29.6	3.6	100.8	32.5	3.1	95.0	35.6	2.7	88.6	39.3	2.3
035D	50	4.6	5	107.7	27.6	3.9	102.7	30.2	3.4	97.3	33.1	2.9	91.7	36.4	2.5	85.6	40.1	2.1
			6	110.8	27.8	4.0	105.6	30.4	3.5	100.0	33.4	3.0	94.2	36.6	2.6	87.9	40.4	2.2
			7	113.9	28.1	4.1	108.5	30.7	3.5	102.8	33.6	3.1	96.8	36.9	2.6	90.4	40.7	2.2
			8	117.0	28.3	4.1	111.5	30.9	3.6	105.7	33.9	3.1	99.5	37.2	2.7	92.9	41.0	2.3
			9	120.1	28.6	4.2	114.5	31.2	3.7	108.5	34.2	3.2	102.2	37.5	2.7	95.3	41.3	2.3
			10	123.3	28.9	4.3	117.5	31.4	3.7	111.4	34.5	3.2	104.9	37.7	2.8	97.8	41.7	2.3
040D	50	4.6	5	117.0	29.6	3.9	111.5	32.4	3.4	105.7	35.6	3.0	99.5	39.1	2.5	92.9	43.1	2.2
			6	120.3	29.9	4.0	114.6	32.7	3.5	108.6	35.8	3.0	102.3	39.4	2.6	95.5	43.4	2.2
			7	123.7	30.1	4.1	117.9	32.9	3.6	111.7	36.1	3.1	105.2	39.7	2.7	98.2	43.7	2.2
			8	127.1	30.4	4.2	121.1	33.2	3.6	114.7	36.4	3.2	108.0	40.0	2.7	100.8	44.0	2.3
			9	130.5	30.7	4.2	124.3	33.5	3.7	117.8	36.7	3.2	111.0	40.3	2.8	103.5	44.4	2.3
			10	133.9	31.0	4.3	127.6	33.8	3.8	120.9	37.0	3.3	113.9	40.5	2.8	106.3	44.7	2.4
045D	50	4.7	5	131.5	32.7	4.0	125.3	35.7	3.5	118.8	39.2	3.0	111.9	43.1	2.6	104.4	47.5	2.2
			6	135.2	32.9	4.1	128.9	36.0	3.6	122.1	39.5	3.1	115.0	43.4	2.7	107.3	47.8	2.2
			7	139.0	33.2	4.2	132.5	36.3	3.7	125.5	39.8	3.2	118.2	43.7	2.7	110.3	48.2	2.3
			8	142.9	33.5	4.3	136.1	36.6	3.7	129.0	40.1	3.2	121.4	44.1	2.8	113.4	48.5	2.3
			9	146.6	33.8	4.3	139.7	36.9	3.8	132.4	40.4	3.3	124.8	44.4	2.8	116.4	48.9	2.4
			10	150.5	34.2	4.4	143.4	37.2	3.9	135.9	40.8	3.3	128.0	44.7	2.9	119.4	49.3	2.4
050D	50	4.7	5	148.5	37.6	3.9	141.5	41.1	3.4	134.1	45.1	3.0	126.3	49.6	2.5	117.9	54.6	2.2
			6	152.7	37.9	4.0	145.5	41.4	3.5	137.9	45.5	3.0	129.9	49.9	2.6	121.2	55.0	2.2
			7	157.0	38.2	4.1	149.6	41.8	3.6	141.7	45.8	3.1	133.4	50.3	2.7	124.6	55.5	2.2
			8	161.3	38.6	4.2	153.6	42.1	3.6	145.6	46.1	3.2	137.1	50.7	2.7	128.0	55.9	2.3
			9	165.6	39.0	4.3	157.8	42.5	3.7	149.5	46.5	3.2	140.9	51.1	2.8	131.4	56.3	2.3
			10	170.0	39.4	4.3	161.9	42.8	3.8	153.5	47.0	3.3	144.6	51.4	2.8	134.8	56.8	2.4
055D	50	4.7	5	159.3	40.8	3.9	151.8	44.6	3.4	143.8	48.9	2.9	135.5	53.7	2.5	126.5	59.2	2.1
			6	163.8	41.1	4.0	156.1	44.9	3.5	147.9	49.3	3.0	139.3	54.1	2.6	130.0	59.7	2.2
			7	168.4	41.5	4.1	160.5	45.3	3.5	152.0	49.6	3.1	143.2	54.5	2.6	133.6	60.1	2.2
			8	173.0	41.8	4.1	164.8	45.7	3.6	156.2	50.0	3.1	147.0	55.0	2.7	137.3	60.6	2.3
			9	177.6	42.2	4.2	169.3	46.0	3.7	160.4	50.5	3.2	151.1	55.4	2.7	140.9	61.0	2.3
			10	182.3	42.7	4.3	173.7	46.4	3.7	164.6	50.9	3.2	155.1	55.8	2.8	144.7	61.6	2.4

Performance Data

Table 29: 50 Hz Full Load Performance Data (SI) continued

Unit Size	Hz	Fan Power (kW)	LWT (°C)	Ambient Air Temperature														
				25°C			30°C			35°C			40°C			45°C		
				Unit kW	Power kW _i	Unit COP	Unit kW	Power kW _i	Unit COP	Unit kW	Power kW _i	Unit COP	Unit kW	Power kW _i	Unit COP	Unit kW	Power kW _i	Unit COP
060D	50	4.7	5	173.2	45.2	3.8	165.0	49.5	3.3	156.4	54.3	2.9	147.3	59.6	2.5	137.5	65.7	2.1
			6	178.1	45.6	3.9	169.7	49.8	3.4	160.8	54.7	2.9	151.5	60.1	2.5	141.4	66.2	2.1
			7	183.1	46.0	4.0	174.5	50.3	3.5	165.3	55.1	3.0	155.6	60.5	2.6	145.3	66.7	2.2
			8	188.1	46.4	4.1	179.2	50.7	3.5	169.9	55.5	3.1	159.9	61.0	2.6	149.3	67.2	2.2
			9	193.1	46.9	4.1	184.0	51.1	3.6	174.4	56.0	3.1	164.3	61.4	2.7	153.2	67.7	2.3
			10	198.2	47.3	4.2	188.9	51.5	3.7	179.0	56.5	3.2	168.6	61.9	2.7	157.3	68.3	2.3
065D	50	6.1	5	179.4	44.6	4.0	170.9	48.8	3.5	162.0	53.5	3.0	152.6	58.8	2.6	142.4	64.8	2.2
			6	184.4	44.9	4.1	175.7	49.1	3.6	166.5	53.9	3.1	156.9	59.2	2.7	146.4	65.3	2.2
			7	189.6	45.3	4.2	180.7	49.5	3.6	171.2	54.3	3.2	161.2	59.6	2.7	150.5	65.7	2.3
			8	194.8	45.7	4.3	185.6	49.9	3.7	175.9	54.7	3.2	165.6	60.1	2.8	154.6	66.2	2.3
			9	200.0	46.2	4.3	190.6	50.4	3.8	180.6	55.2	3.3	170.2	60.6	2.8	158.7	66.8	2.4
			10	205.3	46.7	4.4	195.6	50.8	3.9	185.4	55.7	3.3	174.6	61.0	2.9	162.9	67.3	2.4
070D	50	6.1	5	197.9	52.2	3.8	188.5	57.1	3.3	178.7	62.7	2.9	168.3	68.8	2.4	157.1	75.9	2.1
			6	203.5	52.7	3.9	193.9	57.5	3.4	183.7	63.1	2.9	173.1	69.4	2.5	161.5	76.5	2.1
			7	209.2	53.1	3.9	199.3	58.0	3.4	188.9	63.6	3.0	177.8	69.9	2.5	166.0	77.0	2.2
			8	215.0	53.6	4.0	204.8	58.5	3.5	194.1	64.1	3.0	182.7	70.4	2.6	170.6	77.6	2.2
			9	220.7	54.1	4.1	210.3	59.0	3.6	199.3	64.6	3.1	187.8	70.9	2.6	175.1	78.2	2.2
			10	226.5	54.7	4.1	215.8	59.5	3.6	204.5	65.2	3.1	192.7	71.4	2.7	179.7	78.9	2.3
075D	50	9.0	5	225.4	59.1	3.8	215.0	63.9	3.4	203.8	69.3	2.9	191.7	75.4	2.5	179.1	82.2	2.2
			6	231.8	59.5	3.9	221.0	64.4	3.4	209.5	69.8	3.0	197.3	75.9	2.6	184.2	82.8	2.2
			7	238.3	60.0	4.0	227.2	64.9	3.5	215.4	70.4	3.1	202.8	76.5	2.7	189.3	83.4	2.3
			8	245.0	60.5	4.1	233.5	65.4	3.6	221.3	70.9	3.1	208.3	77.0	2.7	194.3	84.1	2.3
			9	251.8	60.9	4.1	239.9	65.9	3.6	227.3	71.4	3.2	214.1	77.5	2.8	199.5	84.7	2.4
			10	258.8	61.4	4.2	246.7	66.3	3.7	233.4	72.0	3.2	219.5	78.2	2.8	204.9	85.3	2.4
080D	50	9.0	5	250.1	66.9	3.7	238.6	72.3	3.3	226.1	78.5	2.9	212.7	85.3	2.5	198.7	93.1	2.1
			6	257.2	67.4	3.8	245.2	72.9	3.4	232.5	79.0	2.9	218.8	85.9	2.5	204.3	93.7	2.2
			7	264.4	68.0	3.9	252.1	73.5	3.4	238.9	79.7	3.0	225.0	86.6	2.6	210.0	94.4	2.2
			8	271.8	68.5	4.0	259.1	74.1	3.5	245.5	80.3	3.1	231.1	87.2	2.7	215.6	95.2	2.3
			9	279.4	69.0	4.1	266.1	74.6	3.6	252.2	80.9	3.1	237.5	87.8	2.7	221.4	95.8	2.3
			10	287.1	69.5	4.1	273.7	75.1	3.6	259.0	81.5	3.2	243.5	88.6	2.7	227.3	96.6	2.4
090D	50	9.0	5	275.0	73.5	3.7	262.4	79.5	3.3	248.7	86.3	2.9	234.0	93.8	2.5	218.5	102.4	2.1
			6	282.9	74.1	3.8	269.7	80.2	3.4	255.7	86.9	2.9	240.7	94.5	2.5	224.7	103.1	2.2
			7	290.8	74.7	3.9	277.2	80.8	3.4	262.8	87.6	3.0	247.5	95.2	2.6	230.9	103.8	2.2
			8	299.0	75.3	4.0	284.9	81.4	3.5	270.1	88.3	3.1	254.2	95.9	2.7	237.1	104.6	2.3
			9	307.3	75.9	4.1	292.7	82.1	3.6	277.4	88.9	3.1	261.3	96.5	2.7	243.5	105.4	2.3
			10	315.7	76.5	4.1	301.0	82.6	3.6	284.9	89.6	3.2	267.8	97.4	2.8	250.0	106.2	2.4
100D	50	9.0	5	307.7	84.0	3.7	293.6	90.9	3.2	278.2	98.6	2.8	261.8	107.2	2.4	244.5	117.0	2.1
			6	316.5	84.7	3.7	301.8	91.6	3.3	286.1	99.3	2.9	269.3	108.0	2.5	251.4	117.8	2.1
			7	325.4	85.4	3.8	310.2	92.4	3.4	294.0	100.1	2.9	276.9	108.8	2.5	258.4	118.6	2.2
			8	334.5	86.0	3.9	318.8	93.1	3.4	302.2	100.9	3.0	284.4	109.6	2.6	265.3	119.6	2.2
			9	343.8	86.7	4.0	327.5	93.8	3.5	310.3	101.6	3.1	292.3	110.3	2.7	272.4	120.4	2.3
			10	353.3	87.4	4.0	336.8	94.3	3.6	318.7	102.4	3.1	299.7	111.3	2.7	279.7	121.4	2.3

Table 30: 50 Hz Full Load Performance Data (SI) continued

Unit Size	Hz	Fan Power (kW)	LWT (°C)	Ambient Air Temperature														
				25°C			30°C			35°C			40°C			45°C		
				Unit kW	Power kW	Unit COP	Unit kW	Power kW	Unit COP	Unit kW	Power kW	Unit COP	Unit kW	Power kW	Unit COP	Unit kW	Power kW	Unit COP
110D	50	12.0	5	327.2	87.4	3.7	312.1	94.6	3.3	295.8	102.6	2.9	278.3	111.6	2.5	259.9	121.8	2.1
			6	336.5	88.2	3.8	320.8	95.4	3.4	304.1	103.4	2.9	286.3	112.4	2.5	267.3	122.6	2.2
			7	345.9	88.9	3.9	329.8	96.1	3.4	312.6	104.2	3.0	294.4	113.2	2.6	274.7	123.5	2.2
			8	355.6	89.6	4.0	338.9	96.9	3.5	321.2	105.0	3.1	302.4	114.0	2.7	282.1	124.5	2.3
			9	365.5	90.2	4.1	348.1	97.6	3.6	329.9	105.8	3.1	310.8	114.8	2.7	289.6	125.4	2.3
			10	375.6	91.0	4.1	358.1	98.2	3.6	338.8	106.6	3.2	318.6	115.9	2.7	297.4	126.3	2.4
125D	50	12.0	5	361.1	96.5	3.7	344.4	104.4	3.3	326.4	113.3	2.9	307.2	123.2	2.5	286.9	134.4	2.1
			6	371.4	97.3	3.8	354.1	105.3	3.4	335.7	114.1	2.9	316.0	124.1	2.5	295.0	135.3	2.2
			7	381.8	98.1	3.9	364.0	106.1	3.4	345.0	115.0	3.0	324.9	125.0	2.6	303.2	136.3	2.2
			8	392.5	98.9	4.0	374.0	107.0	3.5	354.5	115.9	3.1	333.7	125.9	2.7	311.3	137.4	2.3
			9	403.4	99.6	4.0	384.2	107.8	3.6	364.1	116.8	3.1	343.0	126.7	2.7	319.6	138.4	2.3
			10	414.5	100.4	4.1	395.2	108.4	3.6	374.0	117.7	3.2	351.6	127.9	2.7	328.2	139.5	2.4
130D	50	12.0	5	399.6	109.1	3.7	381.2	117.9	3.2	361.3	128.0	2.8	340.0	139.2	2.4	317.5	151.9	2.1
			6	411.0	110.0	3.7	391.9	118.9	3.3	371.5	128.9	2.9	349.7	140.2	2.5	326.5	152.9	2.1
			7	422.6	110.9	3.8	402.8	119.9	3.4	381.8	129.9	2.9	359.6	141.2	2.5	335.5	154.0	2.2
			8	434.4	111.7	3.9	414.0	120.8	3.4	392.4	131.0	3.0	369.3	142.2	2.6	344.6	155.2	2.2
			9	446.5	112.5	4.0	425.3	121.7	3.5	403.0	131.9	3.1	379.6	143.2	2.7	353.7	156.4	2.3
			10	458.7	113.4	4.0	437.4	122.5	3.6	413.9	133.0	3.1	389.1	144.5	2.7	363.3	157.5	2.3
140D	50	15.1	5	420.0	107.8	3.9	400.6	116.6	3.4	379.7	126.6	3.0	357.3	137.7	2.6	333.7	150.2	2.2
			6	431.9	108.7	4.0	411.8	117.6	3.5	390.4	127.5	3.1	367.5	138.6	2.7	343.1	151.2	2.3
			7	444.1	109.6	4.1	423.3	118.6	3.6	401.3	128.5	3.1	377.9	139.7	2.7	352.6	152.3	2.3
			8	456.5	110.5	4.1	435.1	119.5	3.6	412.4	129.5	3.2	388.2	140.7	2.8	362.1	153.5	2.4
			9	469.2	111.3	4.2	446.9	120.4	3.7	423.5	130.5	3.2	398.9	141.6	2.8	371.7	154.6	2.4
			10	482.1	112.2	4.3	459.6	121.1	3.8	435.0	131.5	3.3	409.0	142.9	2.9	381.8	155.8	2.5
160D	50	15.1	5	472.7	123.8	3.8	450.9	133.9	3.4	427.4	145.3	2.9	402.1	158.1	2.5	375.5	172.5	2.2
			6	486.2	124.9	3.9	463.5	135.1	3.4	439.4	146.4	3.0	413.7	159.2	2.6	386.2	173.6	2.2
			7	499.8	125.9	4.0	476.5	136.1	3.5	451.7	147.6	3.1	425.3	160.4	2.7	396.9	174.9	2.3
			8	513.9	126.8	4.1	489.7	137.2	3.6	464.1	148.7	3.1	436.9	161.5	2.7	407.6	176.3	2.3
			9	528.1	127.8	4.1	503.0	138.2	3.6	476.7	149.8	3.2	449.0	162.6	2.8	418.4	177.5	2.4
			10	542.6	128.8	4.2	517.4	139.1	3.7	489.6	151.0	3.2	460.3	164.1	2.8	429.7	178.9	2.4
180D	50	15.1	5	531.0	144.9	3.7	506.5	156.8	3.2	480.1	170.1	2.8	451.7	185.0	2.4	421.8	201.8	2.1
			6	546.1	146.1	3.7	520.7	158.1	3.3	493.6	171.3	2.9	464.7	186.3	2.5	433.8	203.2	2.1
			7	561.5	147.3	3.8	535.2	159.3	3.4	507.3	172.7	2.9	477.8	187.7	2.5	445.8	204.7	2.2
			8	577.2	148.4	3.9	550.1	160.6	3.4	521.4	174.1	3.0	490.7	189.0	2.6	457.8	206.3	2.2
			9	593.3	149.6	4.0	565.0	161.8	3.5	535.4	175.3	3.1	504.4	190.3	2.7	470.0	207.8	2.3
			10	609.5	150.7	4.0	581.1	162.8	3.6	549.9	176.7	3.1	517.0	192.0	2.7	482.7	209.4	2.3
190D	50	18.1	5	555.3	144.1	3.9	529.8	155.8	3.4	502.1	169.1	3.0	472.4	183.9	2.6	441.2	200.6	2.2
			6	571.2	145.2	3.9	544.6	157.1	3.5	516.3	170.3	3.0	486.0	185.2	2.6	453.7	202.0	2.2
			7	587.2	146.4	4.0	559.8	158.4	3.5	530.6	171.7	3.1	499.7	186.6	2.7	466.3	203.5	2.3
			8	603.7	147.5	4.1	575.3	159.6	3.6	545.3	173.0	3.2	513.3	187.9	2.7	478.8	205.0	2.3
			9	620.5	148.7	4.2	591.0	160.8	3.7	560.0	174.3	3.2	527.5	189.1	2.8	491.6	206.5	2.4
			10	637.5	149.8	4.3	607.8	161.8	3.8	575.2	175.7	3.3	540.8	190.9	2.8	504.8	208.1	2.4

Part Load Performance Data (60 Hz)

Table 31: 60 Hz Part Load Performance Data (IP)

Model	% Load	Tons	kW	EER	IPLV
25	100	27.3	34.1	9.6	14.6
	75	20.5	18.8	13.1	
	50	13.7	10.4	15.7	
	25	6.8	5.0	16.3	
30	100	31.6	39.5	9.6	14.7
	75	23.7	21.7	13.1	
	50	15.8	12.0	15.8	
	25	7.9	5.8	16.4	
35	100	34.9	41.9	10.0	15.2
	75	26.2	23.1	13.6	
	50	17.5	12.8	16.3	
	25	8.7	6.1	17.2	
40	100	37.9	45.0	10.1	15.5
	75	28.4	24.7	13.8	
	50	19.0	13.7	16.6	
	25	9.5	6.4	17.8	
45	100	42.6	49.6	10.3	15.6
	75	32.0	27.6	13.9	
	50	21.3	15.3	16.7	
	25	10.7	7.1	17.9	
50	100	48.1	57.1	10.1	15.5
	75	36.1	31.1	13.9	
	50	24.1	17.4	16.6	
	25	12.0	8.2	17.6	
55	100	51.6	61.9	10.0	15.4
	75	38.7	33.7	13.8	
	50	25.8	18.8	16.5	
	25	12.9	8.8	17.5	
60	100	56.1	68.7	9.8	15.5
	75	42.1	36.3	13.9	
	50	28.1	20.3	16.6	
	25	14.0	9.5	17.7	
65	100	58.1	67.7	10.3	15.5
	75	43.6	37.4	14.0	
	50	29.1	21.1	16.5	
	25	14.5	9.8	17.7	
70	100	64.1	79.3	9.7	15.4
	75	48.1	42.1	13.7	
	50	32.1	23.3	16.5	
	25	16.0	11.0	17.5	
75	100	73.1	87.7	10.0	15.4
	75	54.8	48.4	13.6	
	50	36.6	26.4	16.6	
	25	18.3	12.2	18.0	

Model	% Load	Tons	kW	EER	IPLV
80	100	81.1	99.3	9.8	15.4
	75	60.8	54.1	13.5	
	50	40.6	29.3	16.6	
	25	20.3	13.6	17.9	
90	100	89.2	109.2	9.8	15.4
	75	66.9	59.5	13.5	
	50	44.6	32.2	16.6	
	25	22.3	14.9	17.9	
100	100	99.8	124.8	9.6	15.1
	75	74.9	68.6	13.1	
	50	49.9	36.5	16.4	
	25	25.0	17.2	17.4	
110	100	106.1	129.9	9.8	15.4
	75	79.6	71.3	13.4	
	50	53.1	38.1	16.7	
	25	26.5	18.1	17.6	
125	100	117.1	143.4	9.8	15.4
	75	87.8	77.5	13.6	
	50	58.6	42.3	16.6	
	25	29.3	19.7	17.8	
130	100	129.6	162.0	9.6	15.2
	75	97.2	86.4	13.5	
	50	64.8	47.7	16.3	
	25	32.4	22.6	17.2	
140	100	136.2	160.2	10.2	15.4
	75	102.2	89.5	13.7	
	50	68.1	49.2	16.6	
	25	34.1	23.5	17.4	
160	100	153.3	184.0	10.0	15.6
	75	115.0	100.7	13.7	
	50	76.7	54.8	16.8	
	25	38.3	25.8	17.8	
180	100	172.2	215.3	9.6	15.2
	75	129.2	116.5	13.3	
	50	86.1	62.6	16.5	
	25	43.1	29.4	17.6	
190	100	180.1	214.0	10.1	15.4
	75	135.1	118.3	13.7	
	50	90.1	65.5	16.5	
	25	45.0	30.7	17.6	

Part Load Performance Data (60 Hz)

Table 32: 60 Hz Part Load Performance Data (SI)

Model	%Load	Capacity kW	Power kW	COP	IPLV
25	100	96.0	33.5	2.9	4.3
	75	72.0	18.5	3.9	
	50	48.0	10.5	4.6	
	25	24.0	5.0	4.8	
30	100	111.1	38.5	2.9	4.3
	75	83.3	21.2	3.9	
	50	55.6	11.8	4.7	
	25	27.8	5.7	4.9	
35	100	122.7	41.9	2.9	4.5
	75	92.0	23.1	4.0	
	50	61.4	12.8	4.8	
	25	30.7	6.1	5.0	
40	100	133.3	45.0	3.0	4.5
	75	99.9	24.7	4.0	
	50	66.6	13.7	4.9	
	25	33.3	6.4	5.2	
45	100	149.8	49.6	3.0	4.6
	75	112.3	27.6	4.1	
	50	74.9	15.3	4.9	
	25	37.4	7.1	5.2	
50	100	169.1	57.1	3.0	4.5
	75	126.8	31.1	4.1	
	50	84.6	17.4	4.9	
	25	42.3	8.2	5.2	
55	100	181.4	61.9	2.9	4.5
	75	136.1	33.7	4.0	
	50	90.7	18.8	4.8	
	25	45.4	8.8	5.1	
60	100	197.3	68.7	2.9	4.6
	75	147.9	36.3	4.1	
	50	98.6	20.3	4.9	
	25	49.3	9.5	5.2	
65	100	204.3	67.7	3.0	4.6
	75	153.2	37.4	4.1	
	50	102.1	21.1	4.8	
	25	51.1	9.8	5.2	
70	100	225.4	79.3	2.8	4.5
	75	169.0	42.1	4.0	
	50	112.7	23.3	4.8	
	25	56.3	11.0	5.1	
75	100	257.0	87.7	2.9	4.5
	75	192.8	48.4	4.0	
	50	128.5	26.4	4.9	
	25	64.3	12.2	5.3	
80	100	285.2	99.3	2.9	4.5
	75	213.9	54.1	4.0	
	50	142.6	29.3	4.9	
	25	71.3	13.6	5.2	
90	100	313.6	109.2	2.9	4.5
	75	235.2	59.5	4.0	
	50	156.8	32.2	4.9	
	25	78.4	14.9	5.2	
100	100	350.9	124.8	2.8	4.4
	75	263.2	68.6	3.8	
	50	175.5	36.5	4.8	
	25	87.7	17.2	5.1	
110	100	373.1	129.9	2.9	4.5
	75	279.8	71.3	3.9	
	50	186.5	38.1	4.9	
	25	93.3	18.1	5.2	
125	100	411.7	143.4	2.9	4.5
	75	308.8	77.5	4.0	
	50	205.9	42.3	4.9	
	25	102.9	19.7	5.2	
130	100	455.7	162.0	2.8	4.4
	75	341.8	86.4	4.0	
	50	227.8	47.7	4.8	
	25	113.9	22.6	5.0	
140	100	478.9	160.2	3.0	4.5
	75	359.2	89.5	4.0	
	50	239.5	49.2	4.9	
	25	119.7	23.5	5.1	
160	100	539.0	184.0	2.9	4.6
	75	404.3	100.7	4.0	
	50	269.5	54.8	4.9	
	25	134.8	25.8	5.2	
180	100	605.5	215.3	2.8	4.5
	75	454.1	116.5	3.9	
	50	302.7	62.6	4.8	
	25	151.4	29.4	5.2	
190	100	633.3	214.0	3.0	4.5
	75	474.9	118.3	4.0	
	50	316.6	65.5	4.8	
	25	158.3	30.7	5.2	

Part Load Performance Data (50 Hz)

Table 33: 50 Hz Part Load Performance Data (IP)

Model	% Load	Tons	kW	EER	IPLV
25	100	22.7	27.3	10.0	15.2
	75	17.0	15.0	13.6	
	50	11.3	8.3	16.3	
	25	5.7	4.0	16.9	
30	100	26.2	31.6	10.0	15.2
	75	19.7	17.4	13.6	
	50	13.1	9.6	16.4	
	25	6.6	4.6	17.0	
35	100	29.0	33.5	10.4	15.8
	75	21.7	18.5	14.1	
	50	14.5	10.3	16.9	
	25	7.2	4.9	17.8	
40	100	31.5	36.0	10.5	16.1
	75	23.6	19.8	14.3	
	50	15.7	11.0	17.2	
	25	7.9	5.1	18.5	
45	100	35.4	39.7	10.7	16.2
	75	26.5	22.1	14.4	
	50	17.7	12.2	17.3	
	25	8.8	5.7	18.6	
50	100	39.9	45.7	10.5	16.1
	75	29.9	24.9	14.4	
	50	20.0	13.9	17.2	
	25	10.0	6.6	18.3	
55	100	42.8	49.5	10.4	16.0
	75	32.1	26.9	14.3	
	50	21.4	15.0	17.1	
	25	10.7	7.1	18.2	
60	100	46.6	55.0	10.2	16.1
	75	34.9	29.1	14.4	
	50	23.3	16.2	17.2	
	25	11.6	7.6	18.4	
65	100	48.2	54.2	10.7	16.1
	75	36.2	29.9	14.5	
	50	24.1	16.9	17.1	
	25	12.1	7.9	18.4	
70	100	53.2	63.4	10.1	16.0
	75	39.9	33.7	14.2	
	50	26.6	18.6	17.1	
	25	13.3	8.8	18.2	
75	100	60.7	70.2	10.4	16.0
	75	45.5	38.7	14.1	
	50	30.3	21.1	17.2	
	25	15.2	9.7	18.7	

Model	% Load	Tons	kW	EER	IPLV
80	100	67.3	79.4	10.2	16.0
	75	50.5	43.3	14.0	
	50	33.7	23.5	17.2	
	25	16.8	10.9	18.6	
90	100	74.0	87.4	10.2	16.0
	75	55.5	47.6	14.0	
	50	37.0	25.8	17.2	
	25	18.5	12.0	18.6	
100	100	82.8	99.8	10.0	15.6
	75	62.1	54.9	13.6	
	50	41.4	29.2	17.0	
	25	20.7	13.8	18.1	
110	100	88.1	103.9	10.2	15.9
	75	66.0	57.0	13.9	
	50	44.0	30.5	17.3	
	25	22.0	14.5	18.3	
125	100	97.2	114.7	10.2	16.0
	75	72.9	62.0	14.1	
	50	48.6	33.9	17.2	
	25	24.3	15.8	18.5	
130	100	107.6	129.6	10.0	15.7
	75	80.7	69.1	14.0	
	50	53.8	38.2	16.9	
	25	26.9	18.1	17.8	
140	100	113.0	128.2	10.6	16.0
	75	84.8	71.6	14.2	
	50	56.5	39.4	17.2	
	25	28.3	18.8	18.1	
160	100	127.2	147.2	10.4	16.1
	75	95.4	80.6	14.2	
	50	63.6	43.8	17.4	
	25	31.8	20.7	18.5	
180	100	142.9	172.2	10.0	15.8
	75	107.2	93.2	13.8	
	50	71.5	50.1	17.1	
	25	35.7	23.5	18.3	
190	100	149.5	171.2	10.5	16.0
	75	112.1	94.7	14.2	
	50	74.7	52.4	17.1	
	25	37.4	24.6	18.3	

Part Load Performance Data (50 Hz)

Table 34: 50 Hz Part Load Performance Data (SI)

Model	%Load	Capacity kW	Power kW	COP	IPLV
25	100	81.4	26.8	3.0	4.6
	75	61.1	14.8	4.1	
	50	40.7	8.4	4.9	
	25	20.4	4.0	5.1	
30	100	93.7	30.8	3.0	4.6
	75	70.3	17.0	4.1	
	50	46.8	9.5	5.0	
	25	23.4	4.5	5.2	
35	100	101.9	33.5	3.0	4.6
	75	76.4	18.5	4.1	
	50	50.9	10.3	5.0	
	25	25.5	4.9	5.2	
40	100	110.6	36.0	3.1	4.7
	75	83.0	19.8	4.2	
	50	55.3	11.0	5.0	
	25	27.7	5.1	5.4	
45	100	124.3	39.7	3.1	4.7
	75	93.2	22.1	4.2	
	50	62.2	12.2	5.1	
	25	31.1	5.7	5.4	
50	100	140.4	45.7	3.1	4.7
	75	105.3	24.9	4.2	
	50	70.2	13.9	5.0	
	25	35.1	6.6	5.4	
55	100	150.6	49.5	3.0	4.7
	75	112.9	26.9	4.2	
	50	75.3	15.0	5.0	
	25	37.6	7.1	5.3	
60	100	163.7	55.0	3.0	4.7
	75	122.8	29.1	4.2	
	50	81.9	16.2	5.0	
	25	40.9	7.6	5.4	
65	100	169.6	54.2	3.1	4.7
	75	127.2	29.9	4.3	
	50	84.8	16.9	5.0	
	25	42.4	7.9	5.4	
70	100	187.1	63.4	2.9	4.7
	75	140.3	33.7	4.2	
	50	93.5	18.6	5.0	
	25	46.8	8.8	5.3	
75	100	213.3	70.2	3.0	4.7
	75	160.0	38.7	4.1	
	50	106.7	21.1	5.0	
	25	53.3	9.7	5.5	
80	100	236.7	79.4	3.0	4.7
	75	177.5	43.3	4.1	
	50	118.3	23.5	5.0	
	25	59.2	10.9	5.4	
90	100	260.3	87.4	3.0	4.7
	75	195.2	47.6	4.1	
	50	130.2	25.8	5.0	
	25	65.1	12.0	5.4	
100	100	291.3	99.8	2.9	4.6
	75	218.4	54.9	4.0	
	50	145.6	29.2	5.0	
	25	72.8	13.8	5.3	
110	100	309.6	103.9	3.0	4.7
	75	232.2	57.0	4.1	
	50	154.8	30.5	5.1	
	25	77.4	14.5	5.4	
125	100	341.7	114.7	3.0	4.7
	75	256.3	62.0	4.1	
	50	170.9	33.9	5.0	
	25	85.4	15.8	5.4	
130	100	378.2	129.6	2.9	4.6
	75	283.7	69.1	4.1	
	50	189.1	38.2	5.0	
	25	94.6	18.1	5.2	
140	100	397.5	128.2	3.1	4.7
	75	298.1	71.6	4.2	
	50	198.7	39.4	5.0	
	25	99.4	18.8	5.3	
160	100	447.4	147.2	3.0	4.7
	75	335.5	80.6	4.2	
	50	223.7	43.8	5.1	
	25	111.8	20.7	5.4	
180	100	502.6	172.2	2.9	4.6
	75	376.9	93.2	4.0	
	50	251.3	50.1	5.0	
	25	125.6	23.5	5.4	
190	100	525.6	171.2	3.1	4.7
	75	394.2	94.7	4.2	
	50	262.8	52.4	5.0	
	25	131.4	24.6	5.4	

Selection Procedure

AGZ-D chillers are ideal for a wide range of applications and operating conditions.

Selection with Inch-Pound (I-P) units

The performance tables beginning on [page 29](#) cover the range of leaving evaporator water temperatures and outside ambient temperatures included under the latest AHRI Standard 550/590. The tables are based on a 10°F (5.5°C) temperature drop through the evaporator.

Adjustment factors for applications having other than a 10°F (5.5°C) drop can be found in [Table 18, page 28](#). The minimum leaving chilled water temperature setpoint without glycol is 40°F (4°C). For brine selections, see [Table 16](#) and [Table 17](#) on [page 28](#) for glycol adjustment factors. Ratings are based on a 0.0001 ft² x hr x °F/Btu fouling factor in the evaporator at sea level operation. For other fouling factors, different Delta-Ts, or altitude correction factors see [Table 18, page 28](#). For applications outside the catalog ratings, please contact your local Daikin Applied sales representative.

Selection example

Given:

- 50 tons minimum
- 95°F ambient temperature
- 120 gpm, 54°F to 44°F chilled water
- 0.0001 evaporator fouling factor

- 1 From [Table 19, page 29](#), an AGZ 055D at the given conditions will produce 52 tons with a unit kW input of 61.9 and a unit EER of 10.0.
- 2 Use the following formula to calculate any unknown elements (water only):

$$\frac{\text{tons} \times 24}{\Delta T(^{\circ}\text{F})} = \text{gpm}$$

- 3 Determine the evaporator pressure drop. Using [Figure 28, page 45](#), enter at about 124 gpm and follow up to the AGZ 055 line intersect. Read horizontally to obtain an evaporator pressure drop of 13 feet of water.

Selection example using ethylene glycol

Given:

- 44 tons minimum
 - 95°F ambient air temperature
 - 54°F - 44°F chilled water temperature
 - 0.0001 evaporator fouling factor
 - Protect from freezing down to 0°F
- 1 From [Table 16, page 28](#), select an ethylene glycol concentration of 40% to protect against freezing at 0°F.
 - 2 At 40% ethylene glycol, the adjustment factors are:
 - Capacity = 0.980
 - kW = 0.992
 - GPM = 1.132
 - Pressure Drop = 1.557
 - 3 Select the AGZ 050D from [Table 19, page 29](#) and correct with 40% ethylene glycol factors.
 - 4 Correct capacity = 0.980 X 48.1 tons = 47.1 tons
 - 5 Correct kW = 0.992 X 57.1 kW = 56.6 kW
 - 6 Calculate chilled water flow:

Water flow @ corrected capacity=

$$440. \text{ tons} \times 24 / 10 \text{ F} = 105.6 \text{ gpm}$$

Glycol flow (at 40% solution) =

$$1.132 \times 105.6 \text{ gpm} = 119.5 \text{ gpm}$$

Determine the evaporator pressure drop. Using [Figure 28, page 45](#), enter at 106 gpm (water) and follow up to the AGZ050 line intersect. Read horizontally to obtain an evaporator pressure drop of 11 feet. Correct the pressure drop for 40% solution = 1.557 x 11.3 feet = 17.6 feet for ethylene glycol using [Table 16, page 28](#).

Selection with SI units

Use the SI tables and the same procedures as with I-P units. Use the following formula to calculate any missing elements (water only):

$$\frac{\text{kW}}{4.18 \times \Delta T(^{\circ}\text{C})} = 1/\text{s}$$

Figure 29: Pressure Drop Curves

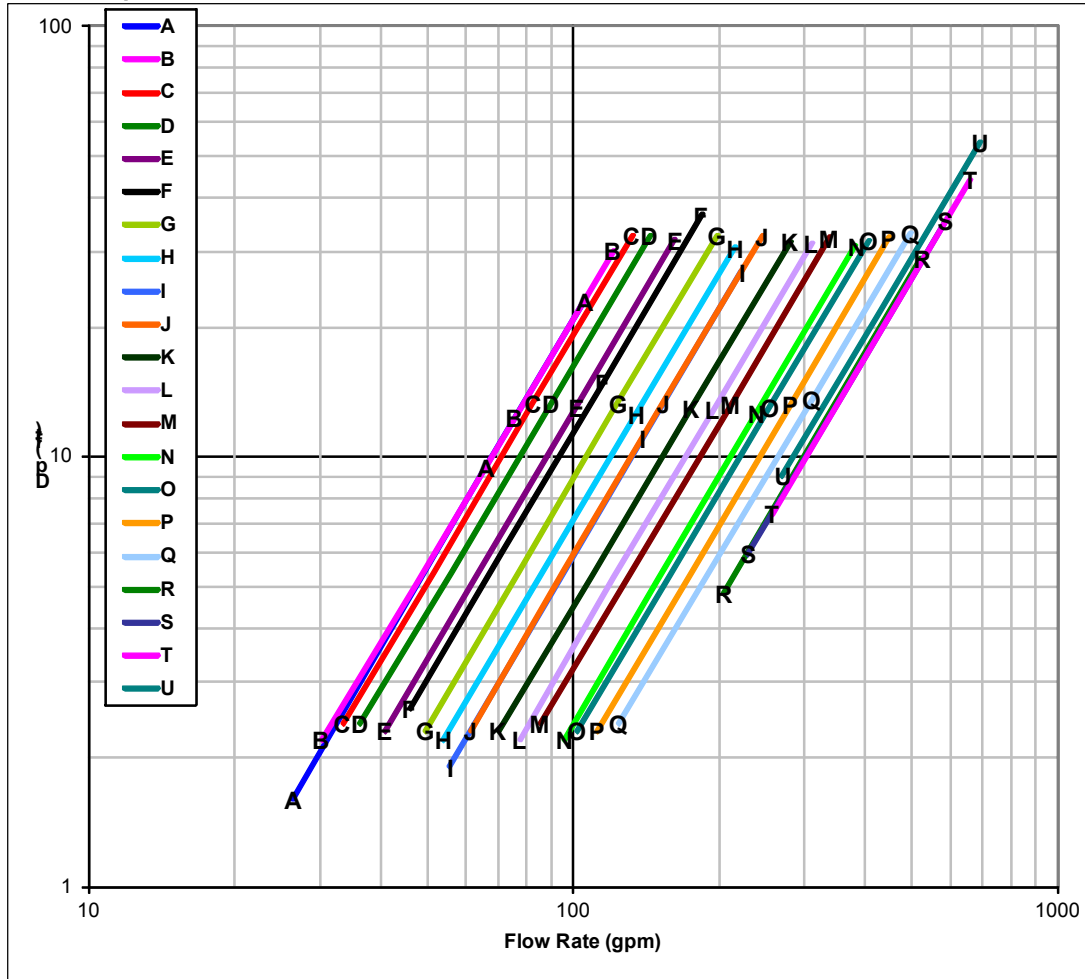


Table 35: Pressure Drop Data

Curve Ref.	Model	Evaporator Type	Variable Flow System Only Minimum Flow Rate				Fixed Flow System Only Minimum Flow Rate				Fixed and Variable Flow Systems							
			IP		SI		IP		SI		Nominal Flow Rate				Maximum Flow Rate			
			GPM	DP ft.	lps	DP kpa	gpm	DP ft.	lps	DP kpa	gpm	DP ft.	lps	DP kpa	gpm	DP ft.	lps	DP kpa
A	025D	Braze Plate	26.4	1.6	1.7	4.8	41.3	3.8	2.6	11.5	66.0	9.4	4.2	28.1	105.6	23.0	6.7	68.6
B	030D		30.3	2.2	1.9	6.4	47.4	5.0	3.0	15.0	75.8	12.3	4.8	36.7	121.3	30.0	7.7	89.7
C	035D		33.5	2.4	2.1	7.1	51.8	5.4	3.3	16.3	82.8	13.3	5.2	39.7	132.5	32.5	8.4	97.0
D	040D		36.4	2.4	2.3	7.1	56.4	5.4	3.6	16.3	90.2	13.3	5.7	39.7	144.4	32.5	9.1	97.0
E	045D		40.9	2.3	2.6	6.9	63.5	5.3	4.0	15.9	101.5	13.0	6.4	38.8	162.4	31.8	10.2	94.8
F	050D		46.2	2.6	2.9	7.8	72.2	6.1	4.6	18.2	115.4	14.9	7.3	44.5	184.7	36.4	11.7	108.7
G	055D		49.5	2.3	3.1	7.0	77.4	5.4	4.9	16.3	123.8	13.3	7.8	39.7	198.1	32.5	12.5	97.0
H	060D		53.8	2.2	3.4	6.6	84.2	5.1	5.3	15.3	134.6	12.5	8.5	37.3	215.4	30.5	13.6	91.2
I	065D		55.8	1.9	3.5	5.8	87.2	4.5	5.5	13.4	139.4	11.0	8.8	32.8	223.1	26.9	14.1	80.2
J	070D		61.5	2.3	3.9	7.0	96.2	5.4	6.1	16.3	153.8	13.3	9.7	39.7	246.1	32.5	15.5	97.0
K	075D		70.2	2.3	4.4	6.8	109.7	5.3	6.9	15.8	175.4	12.9	11.1	38.5	280.7	31.5	17.7	94.1
L	080D		77.8	2.2	4.9	6.7	121.7	5.2	7.7	15.6	194.6	12.8	12.3	38.2	311.4	31.3	19.7	93.4
M	090D		85.6	2.4	5.4	7.1	132.3	5.4	8.3	16.1	211.7	13.2	13.4	39.4	338.7	32.2	21.4	96.3
N	100D		95.8	2.2	6.0	6.6	149.7	5.2	9.4	15.4	239.5	12.6	15.1	37.6	383.2	30.8	24.2	91.9
O	110D		101.8	2.3	6.4	6.8	159.2	5.3	10.0	15.9	254.6	13.0	16.1	38.8	407.4	31.8	25.7	94.8
P	125D	112.4	2.3	7.1	6.9	175.7	5.4	11.1	16.1	281.0	13.2	17.7	39.4	449.7	32.2	28.4	96.3	
Q	130D	124.3	2.4	7.8	7.2	194.3	5.5	12.3	16.5	310.8	13.5	19.6	40.3	497.3	33.0	31.4	98.5	
R	140D	Shell-and-Tube	204.3	4.8	12.9	14.4	204.3	4.8	12.9	14.4	326.9	11.8	20.6	35.2	523.0	28.8	33.0	86.1
S	160D		229.9	5.9	14.5	17.7	230.0	5.9	14.5	17.7	367.9	14.5	23.2	43.3	588.7	35.4	37.1	105.8
T	180D		258.3	7.4	16.3	22.0	258.3	7.4	16.3	22.0	413.3	18.0	26.1	53.7	661.2	44.0	41.7	131.3
U	190D		270.1	9.0	17.0	26.9	270.2	9.0	17.0	26.9	432.2	22.0	27.3	65.7	691.6	53.7	43.6	160.5

Physical Data - Packaged Units

Table 36: Physical Data - AGZ025D - AGZ040D

PHYSICAL DATA	AGZ-DH (Packaged Chiller) Model Number							
	25		30		35		40	
BASIC DATA	Ckt.1	Ckt.2	Ckt.1	Ckt.2	Ckt.1	Ckt.2	Ckt.1	Ckt.2
Unit Capacity @ AHRI Conditions (See Note 1), Tons (kW)	27 (96)		32 (111)		35 (123)		38 (133)	
Number Of Refrigerant Circuits	2		2		2		2	
Unit Operating Charge, R-410A, lbs (kg)	28 (13)	28 (13)	32 (15)	32 (15)	32 (15)	32 (15)	39 (17)	39 (17)
Cabinet Dimensions, L x W x H, in. (mm)	94.4 x 88.0 x 100.4 (2398 x 2235 x 2550)		94.4 x 88.0 x 100.4 (2398 x 2235 x 2550)		94.4 x 88.0 x 100.4 (2398 x 2235 x 2550)		94.4 x 88.0 x 100.4 (2398 x 2235 x 2550)	
Unit Operating Weight, lbs (kg)	3163 (1435)		3195 (1449)		3205 (1454)		3285 (1490)	
Unit Shipping Weight, lbs (kg)	3148 (1428)		3180 (1442)		3185 (1445)		3265 (1481)	
Add'l Weight for Copper Finned Coils, lbs (kg)	315 (143)		315 (143)		315 (143)		531 (241)	
Add'l Weight for Optional Louvers - Upper, lbs (kg)	167 (76)		167 (76)		167 (76)		167 (76)	
Add'l Weight for Optional Louvers - Lower, lbs (kg)	144 (65)		144 (65)		144 (65)		144 (65)	
COMPRESSORS								
Type	Tandem Scrolls		Tandem Scrolls		Tandem Scrolls		Tandem Scrolls	
Nominal tonnage of each Compressor	7.5	7.5	8.5	8.5	8.5	10	10	10
Number Of Compressors per Circuit	2	2	2	2	2	2	2	2
Oil Charge Per Compressor, oz (g)	85 (2410)	85 (2410)	110 (3119)	110 (3119)	110 (3119)	110 (3119)	110 (3119)	110 (3119)
CAPACITY REDUCTION STEPS - PERCENT OF COMPRESSOR DISPLACEMENT								
Staging, 4 Stages, Circuit #1 in Lead	0-25-50-75-100		0-25-50-75-100		23-50-73-100		0-25-50-75-100	
Staging, 4 Stages, Circuit #2 in Lead	0-25-50-75-100		0-25-50-75-100		27-50-73-100		0-25-50-75-100	
CONDENSERS - HIGH EFFICIENCY FIN AND TUBE TYPE WITH INTEGRAL SUBCOOLING								
Coil Face Area, ft ²	26.3	26.3	26.3	26.3	26.3	26.3	44.1	44.1
Coil Face Area, (m ²)	2.4	2.4	2.4	2.4	2.4	2.4	4.1	4.1
Finned Height x Finned Length, in. (mm)	50x75.6 (1270x1920)	50x75.6 (1270x1920)	50x75.6 (1270x1920)	50x75.6 (1270x1920)	50x75.6 (1270x1920)	50x75.6 (1270x1920)	42x75.6 (1067x1920)	42x75.6 (1067x1920)
Fins Per Inch x Rows Deep	16 x 3	16 x 3	16 x 3	16 x 3	16 x 3	16 x 3	16 x 2	16 x 2
Pumpdown Capacity, 90% Full lbs (kg)	40 (18)	40 (18)	40 (18)	40 (18)	40 (18)	40 (18)	47 (21)	47 (21)
CONDENSER FANS - DIRECT DRIVE PROPELLER TYPE								
Number Of Fans - Fan Diameter, in. (mm)	4 - 30 (762)		4 - 30 (762)		4 - 30 (762)		4 - 30 (762)	
Number Of Motors - HP (kW) (Note 2)	4 - 1.5 (1.1)		4 - 1.5 (1.1)		4 - 1.5 (1.1)		4 - 1.5 (1.1)	
Fan And Motor RPM, 60Hz	1140		1140		1140		1140	
60 Hz Fan Tip Speed, FPM (m/sec)	8950 (45)		8950 (45)		8950 (45)		8950 (45)	
60 Hz Total Unit Airflow, CFM (l/sec)	24,316 (11,478)		24,316 (11,478)		24,316 (11,478)		39,600 (18,692)	
EVAPORATOR - BRAZED PLATE-TO-PLATE								
Number of Evaporators	1		1		1		1	
Number of Refrigerant Circuits	2		2		2		2	
Water Volume, Gallons, (l)	2.01 (7.6)		2.01 (7.6)		2.22 (8.4)		2.43 (9.2)	
Maximum Water Pressure, psig (kPa)	653 (4502)		653 (4502)		653 (4502)		653 (4502)	
Max. Refrig. Working Pressure, psig (kPa)	653 (4502)		653 (4502)		653 (4502)		653 (4502)	
Water Inlet / Outlet Victaulic Conn. in. (mm)	2.5 (65)		2.5 (65)		2.5 (65)		2.5 (65)	
Drain - NPT int, in. (mm) (Note 4)	Field Piping		Field Piping		Field Piping		Field Piping	
Vent - NPT int, in. (mm) (Note 4)	Field Piping		Field Piping		Field Piping		Field Piping	

Note 1: Nominal capacity based on 95° F ambient air and 54° F/44° F water range.

Note 2: For all 380V/60 & 575V/60 models, HP = 2.0.

Note 3: Water connection shown is nominal pipe size.

Note 4: Brazed plate evaporators do not have drain or vent connections integral to the heat exchanger. The connections must be installed in the field inlet and outlet piping as shown in Piping Section of IM 1100, available on www.DaikinApplied.com.

Physical Data - Packaged Units

Table 37: Physical Data - AGZ045D - AGZ060D

PHYSICAL DATA	AGZ-DH (Packaged Chiller) Model Number							
	45		50		55		60	
BASIC DATA	Ckt.1	Ckt.2	Ckt.1	Ckt.2	Ckt.1	Ckt.2	Ckt.1	Ckt.2
Unit Capacity @ AHRI Conditions (See Note 1), Tons (kW)	43 (150)		48 (169)		52 (181)		56 (197)	
Number Of Refrigerant Circuits	2		2		2		2	
Unit Operating Charge, R-410A, lbs (kg)	44 (20)	44 (20)	50 (23)	50 (23)	52 (24)	52 (24)	54 (25)	54 (25)
Cabinet Dimensions, L x W x H, in. (mm)	94.4 x 88.0 x 100.4 (2398 x 2235 x 2550)		94.4 x 88.0 x 100.4 (2398 x 2235 x 2550)		94.4 x 88.0 x 100.4 (2398 x 2235 x 2550)		94.4 x 88.0 x 100.4 (2398 x 2235 x 2550)	
Unit Operating Weight, lbs (kg)	3445 (1563)		3525 (1599)		3555 (1613)		3680 (1670)	
Unit Shipping Weight, lbs (kg)	3420 (1551)		3495 (1585)		3525 (1599)		3645 (1639)	
Add'l Weight for Copper Finned Coils, lbs (kg)	531 (241)		531 (241)		531 (241)		531 (241)	
Add'l Weight for Optional Louvers - Upper, lbs (kg)	167 (76)		167 (76)		167 (76)		167 (76)	
Add'l Weight for Optional Louvers - Lower, lbs (kg)	144 (65)		144 (65)		144 (65)		144 (65)	
COMPRESSORS								
Type	Tandem Scrolls		Tandem Scrolls		Tandem Scrolls		Tandem Scrolls	
Nominal tonnage of each Compressor	11.5	11.5	13	13	13	15	15	15
Number Of Compressors per Circuit	2	2	2	2	2	2	2	2
Oil Charge Per Compressor, oz (g)	110 (3119)	110 (3119)	110 (3119)	110 (3119)	110 (3119)	110 (3119)	110 (3119)	110 (3119)
CAPACITY REDUCTION STEPS - PERCENT OF COMPRESSOR DISPLACEMENT								
Staging, 4 Stages, Circuit #1 in Lead	0-25-50-75-100		0-25-50-75-100		0-23-50-73-100		0-25-50-75-100	
Staging, 4 Stages, Circuit #2 in Lead	0-25-50-75-100		0-25-50-75-100		0-27-50-77-100		0-25-50-75-100	
CONDENSERS - HIGH EFFICIENCY FIN AND TUBE TYPE WITH INTEGRAL SUBCOOLING								
Coil Face Area, ft ²	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1
Coil Face Area, (m ²)	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
Finned Height x Finned Length, in. (mm)	42x75.6 (1067x1920)	42x75.6 (1067x1920)	42x75.6 (1067x1920)	42x75.6 (1067x1920)	42x75.6 (1067x1920)	42x75.6 (1067x1920)	42x75.6 (1067x1920)	42x75.6 (1067x1920)
Fins Per Inch x Rows Deep	16 x 3	16 x 3	16 x 3	16 x 3	16 x 3	16 x 3	16 x 3	16 x 3
Pumpdown Capacity, 90% Full lbs (kg)	69 (31)	69 (31)	69 (31)	69 (31)	69 (31)	69 (31)	69 (31)	69 (31)
CONDENSER FANS - DIRECT DRIVE PROPELLER TYPE								
Number Of Fans - Fan Diameter, in. (mm)	4 – 30 (762)		4 – 30 (762)		4 – 30 (762)		4 – 30 (762)	
Number Of Motors - HP (kW) (Note 2)	4 – 1.5 (1.1)		4 – 1.5 (1.1)		4 – 1.5 (1.1)		4 – 1.5 (1.1)	
Fan And Motor RPM, 60Hz	1140		1140		1140		1140	
60 Hz Fan Tip Speed, FPM (m/sec)	8950 (45)		8950 (45)		8950 (45)		8950 (45)	
60 Hz Total Unit Airflow, CFM (l/sec)	37,228 (17,572)		37,228 (17,572)		37,228 (17,572)		37,228 (17,572)	
EVAPORATOR - BRAZED PLATE-TO-PLATE								
Number of Evaporators	1		1		1		1	
Number of Refrigerant Circuits	2		2		2		2	
Water Volume, Gallons, (l)	2.85 (10.8)		3.28 (12.4)		3.49 (13.2)		4.04 (15.3)	
Maximum Water Pressure, psig (kPa)	653 (4502)		653 (4502)		653 (4502)		653 (4502)	
Maximum Refrigerant Working Pressure, psig (kPa)	653 (4502)		653 (4502)		653 (4502)		653 (4502)	
Water Inlet / Outlet Victaulic Connections, in. (mm)	2.5 (65)		2.5 (65)		2.5 (65)		3 (80)	
Drain - NPT int, in. (mm) (Note 4)	Field Piping		Field Piping		Field Piping		Field Piping	
Vent - NPT int, in. (mm) (Note 4)	Field Piping		Field Piping		Field Piping		Field Piping	

Note 1: Nominal capacity based on 95° F ambient air and 54° F/44° F water range.

Note 2: For all 380V/60 & 575V/60 models, HP = 2.0.

Note 3: Water connection shown is nominal pipe size.

Note 4: Brazed plate evaporators do not have drain or vent connections integral to the heat exchanger. The connections must be installed in the field inlet and outlet piping as shown in Piping Section beginning on of IM 1100, available on www.DaikinApplied.com.

Physical Data - Packaged Units

Table 38: Physical Data - AGZ065D - AGZ070D

PHYSICAL DATA	AGZ-DH (Packaged Chiller) Model Number			
	65		70	
BASIC DATA	Ckt.1	Ckt.2	Ckt.1	Ckt.2
Unit Capacity @ AHRI Conditions (See Note 1), Tons (kW)	58 (204)		64 (225)	
Number Of Refrigerant Circuits	2			
Unit Operating Charge, R-410A, lbs (kg)	58 (26)	58 (26)	60 (27)	60 (27)
Cabinet Dimensions, L x W x H, in. (mm)	94.4 x 88.0 x 100.4 (2398 x 2235 x 2550)		94.4 x 88.0 x 100.4 (2398 x 2235 x 2550)	
Unit Operating Weight, lbs (kg)	3715 (1683)		4065 (1844)	
Unit Shipping Weight, lbs (kg)	3675 (1665)		4025 (1826)	
Add'l Weight for Copper Finned Coils, lbs (kg)	631 (286)		631 (286)	
Add'l Weight for Optional Louvers - Upper, lbs (kg)	167 (76)		167 (76)	
Add'l Weight for Optional Louvers - Lower, lbs (kg)	144 (65)		144 (65)	
COMPRESSORS				
Type	Tandem Scrolls		Tandem Scrolls	
Nominal tonnage of each Compressor	15	15	15/20	15/20
Number Of Compressors per Circuit	2	2	2	2
Oil Charge Per Compressor, oz (g)	110 (3119)	110 (3119)	110/135 3119/3827	110/135 3119/3827
CAPACITY REDUCTION STEPS - PERCENT OF COMPRESSOR DISPLACEMENT				
Staging, 4 Stages, Circuit #1 in Lead	0-25-50-75-100		0-21-50-71-100	
Staging, 4 Stages, Circuit #2 in Lead	0-25-50-75-100		0-28-50-78-100	
CONDENSERS - HIGH EFFICIENCY FIN AND TUBE TYPE WITH INTEGRAL SUBCOOLING				
Coil Face Area, ft ²	52.6	52.6	52.6	52.6
Coil Face Area, (m ²)	4.9	4.9	4.9	4.9
Finned Height x Finned Length, in. (mm)	50x75.6 (1270x1920)	50x75.6 (1270x1920)	50x75.6 (1270x1920)	50x75.6 (1270x1920)
Fins Per Inch x Rows Deep	16 x 3	16 x 3	16 x 3	16 x 3
Pumpdown Capacity, 90% Full lbs (kg)	81 (37)	81 (37)	81 (37)	81 (37)
CONDENSER FANS - DIRECT DRIVE PROPELLER TYPE				
Number Of Fans - Fan Diameter, in. (mm)	4 - 30 (762)		4 - 30 (762)	
Number Of Motors - HP (kW) (2)	4 - 2.0 (1.5)		4 - 2.0 (1.5)	
Fan And Motor RPM, 60Hz	1140		1140	
60 Hz Fan Tip Speed, FPM (m/sec)	8950 (45)		8950 (45)	
60 Hz Total Unit Airflow, CFM (l/sec)	43,452 (20,510)		43,452 (20,510)	
EVAPORATOR - BRAZED PLATE-TO-PLATE				
Number of Evaporators	1		1	
Number of Refrigerant Circuits	2		2	
Water Volume, Gallons, (l)	4.76 (18.0)		4.76 (18.0)	
Maximum Water Pressure, psig (kPa)	653 (4502)		653 (4502)	
Maximum Refrigerant Working Pressure, psig (kPa)	653 (4502)		653 (4502)	
Water Inlet / Outlet Victaulic Connections, in. (mm)	3 (80)		3 (80)	
Drain - NPT int, in. (mm) (Note 4)	Field Piping		Field Piping	
Vent - NPT int, in. (mm) (Note 4)	Field Piping		Field Piping	

Note 1: Nominal capacity based on 95° F ambient air and 54° F/44° F water range.

Note 2: For all 380V/60 & 575V/60 models, HP = 2.0.

Note 3: Water connection shown is nominal pipe size.

Note 4: Brazed plate evaporators do not have drain or vent connections integral to the heat exchanger. The connections must be installed in the field inlet and outlet piping as shown in Piping Section beginning on of IM 1100, available on www.DaikinApplied.com.

Physical Data - Packaged Units

Table 39: Physical Data - AGZ075D - AGZ100D

PHYSICAL DATA	AGZ-DH (Packaged Chiller) Model Number							
	75		80		90		100	
BASIC DATA	Ckt.1	Ckt.2	Ckt.1	Ckt.2	Ckt.1	Ckt.2	Ckt.1	Ckt.2
Unit Capacity @ AHRI Conditions (See Note 1), Tons (kW)	73 (257)		81 (285)		89 (314)		100 (351)	
Number Of Refrigerant Circuits	2		2		2		2	
Unit Operating Charge, R-410A, lbs (kg)	75 (34)	75 (34)	80 (36)	80 (36)	86 (39)	86 (39)	88 (40)	88 (40)
Cabinet Dimensions, L x W x H, in. (mm)	134.9 x 88.0 x 100.4 (3426 x 2235 x 2550)		134.9 x 88.0 x 100.4 (3426 x 2235 x 2550)		134.9 x 88.0 x 100.4 (3426 x 2235 x 2550)		134.9 x 88.0 x 100.4 (3426 x 2235 x 2550)	
Unit Operating Weight, lbs (kg)	5350 (2427)		5385 (2443)		5420 (2459)		5675 (2574)	
Unit Shipping Weight, lbs (kg)	5305 (2406)		5335 (2420)		5365 (2434)		5610 (2545)	
Add'l Weight for Copper Finned Coils, lbs (kg)	801 (363)		801 (363)		950 (431)		950 (431)	
Add'l Weight for Optional Louvers - Upper, lbs (kg)	237 (108)		237 (108)		237 (108)		237 (108)	
Add'l Weight for Optional Louvers - Low er, lbs (kg)	187 (85)		187 (85)		187 (85)		187 (85)	
COMPRESSORS								
Type	Tandem Scrolls		Tandem Scrolls		Tandem Scrolls		Tandem Scrolls	
Nominal tonnage of each Compressor	20	20	20	25	25	25	25/30	25/30
Number Of Compressors per Circuit	2	2	2	2	2	2	2	2
Oil Charge Per Compressor, oz (g)	135 (3827)	135 (3827)	135 (3827)	145 (4111)	145 (4111)	145 (4111)	145/213 (4111/6038)	145/213 (4111/6038)
CAPACITY REDUCTION STEPS - PERCENT OF COMPRESSOR DISPLACEMENT								
Staging, 4 Stages, Circuit #1 in Lead	0-25-50-75-100		0-22-50-72-100		0-25-50-75-100		0-22-50-72-100	
Staging, 4 Stages, Circuit #2 in Lead	0-25-50-75-100		0-28-50-78-100		0-25-50-75-100		0-22-50-72-100	
CONDENSERS - HIGH EFFICIENCY FIN AND TUBE TYPE WITH INTEGRAL SUBCOOLING								
Coil Face Area, ft ²	66.2	66.2	66.2	66.2	78.8	78.8	78.8	78.8
Coil Face Area, (m ²)	6.1	6.1	6.1	6.1	7.3	7.3	7.3	7.3
Finned Height x Finned Length, in. (mm)	42 x113.4 (1069x2880)	42 x113.4 (1069x2880)	42 x113.4 (1069x2880)	42 x113.4 (1069x2880)	50 x113.4 (1270x2880)	50 x113.4 (1270x2880)	50 x113.4 (1270x2880)	50 x113.4 (1270x2880)
Fins Per Inch x Row s Deep	16 x 3	16 x 3	16 x 3	16 x 3	16 x 3	16 x 3	16 x 3	16 x 3
Pumpdown Capacity, 90% Full lbs (kg)	111 (50)	111 (50)	111 (50)	111 (50)	130 (59)	130 (59)	130 (59)	130 (59)
CONDENSER FANS - DIRECT DRIVE PROPELLER TYPE								
Number Of Fans - Fan Diameter, in. (mm)	6 – 30 (762)		6 – 30 (762)		6 – 30 (762)		6 – 30 (762)	
Number Of Motors - HP (kW)	6 – 2.0 (1.5)		6 – 2.0 (1.5)		6 – 2.0 (1.5)		6 – 2.0 (1.5)	
Fan And Motor RPM, 60Hz	1140		1140		1140		1140	
60 Hz Fan Tip Speed, FPM (m/sec)	8950 (45)		8950 (45)		8950 (45)		8950 (45)	
60 Hz Total Unit Airflow, CFM (l/sec)	61,200 (28,888)		61,200 (28,888)		65,178 (30,765)		65,178 (30,765)	
EVAPORATOR – BRAZED PLATE-TO-PLATE								
Number of Evaporators	1		1		1		1,	
Number of Refrigerant Circuits	2		2		2		2	
Water Volume, Gallons, (l)	5.47 (20.7)		6.18 (23.4)		6.66 (25.2)		7.85 (29.7)	
Max. Water Pressure, psig (kPa)	653 (4502)		653 (4502)		653 (4502)		653 (4502)	
Max. Refrigerant Working Pressure, psig (kPa)	653 (4502)		653 (4502)		653 (4502)		653 (4502)	
Water Inlet/Outlet Victaulic Conn. in. (mm)	3 (80)		3 (80)		3 (80)		3 (80)	
Drain - NPT int, in. (mm) (Note 3)	Field Piping		Field Piping		Field Piping		Field Piping	
Vent - NPT int, in. (mm) (Note 3)	Field Piping		Field Piping		Field Piping		Field Piping	

Note 1: Nominal capacity based on 95° F ambient air and 54° F/44° F water range.

Note 2: For all 380V/60 & 575V/60 models, HP = 2.0.

Note 3: Water connection shown is nominal pipe size.

Note 4: Brazed plate evaporators do not have drain or vent connections integral to the heat exchanger. The connections must be installed in the field inlet and outlet piping as shown in Piping Section beginning on of IM 1100, available on www.DaikinApplied.com.

Physical Data - Packaged Units

Table 40: Physical Data - AGZ110D - AGZ130D (208/230 volt models; 380-575v models next page)

PHYSICAL DATA	AGZ-DH (Packaged Chiller) 208/230 volt models					
	110		125		130	
BASIC DATA	Ckt.1	Ckt.2	Ckt.1	Ckt.2	Ckt.1	Ckt.2
Unit Capacity @ AHRI Conditions (See Note 1), Tons (kW)	106 (373)		117 (412)		130 (456)	
Number Of Refrigerant Circuits	2		2		2	
Unit Operating Charge, R-410A, lbs (kg)	102 (46)	102 (46)	115 (52)	115 (52)	115 (52)	115 (52)
Cabinet Dimensions, L x W x H, in. (mm)	173.1 x 88.0 x 100.4 (4397 x 2235 x 2550)		173.1 x 88.0 x 100.4 (4397 x 2235 x 2550)		173.1 x 88.0 x 100.4 (4397 x 2235 x 2550)	
Unit Operating Weight, lbs (kg)	7120 (3230)		7265(3295)		7320 (3320)	
Unit Shipping Weight, lbs (kg)	7050 (3198)		7185 (3259)		7230 (3280)	
Add'l Weight for Copper Finned Coils, lbs (kg)	1070 (486)		1269 (576)		1269 (576)	
Add'l Weight for Optional Louvers - Upper, lbs (kg)	307 (139)		307 (139)		307 (139)	
Add'l Weight for Optional Louvers - Lower, lbs (kg)	230 (105)		230 (105)		230 (105)	
COMPRESSORS						
Type	Trio Scrolls		Trio Scrolls		Trio Scrolls	
Nominal tonnage of each Compressor	20	20	20	25	25	25
Number Of Compressors per Circuit	3	3	3	3	3	3
Oil Charge Per Compressor, oz (g)	135 (3827)	135 (3827)	135 (3827)	145 (4111)	145 (4111)	145 (4111)
CAPACITY REDUCTION STEPS - PERCENT OF COMPRESSOR DISPLACEMENT						
Staging, 6 Stages, Circuit #1 in Lead	0-17-33-50-67-83-100		0-15-33-48-67-81-100		0-17-33-50-67-83-100	
Staging, 6 Stages, Circuit #2 in Lead	0-17-33-50-67-83-100		0-19-33-52-67-86-100		0-17-33-50-67-83-100	
CONDENSERS - HIGH EFFICIENCY FIN AND TUBE TYPE WITH INTEGRAL SUBCOOLING						
Coil Face Area, ft ²	88.4	88.4	105.3	105.3	105.3	105.3
Coil Face Area, (m ²)	8.2	8.2	9.8	9.8	9.8	9.8
Finned Height x Finned Length, in. (mm)	42 x151.6 (1069x3851)	42 x151.6 (1069x3851)	50 x151.6 (1270x3851)	50 x151.6 (1270x3851)	50 x151.6 (1270x3851)	50 x151.6 (1270x3851)
Fins Per Inch x Rows Deep	16 x 3	16 x 3	16 x 3	16 x 3	16 x 3	16 x 3
Pumpdown Capacity, 90% Full lbs (kg)	142/64	142/64	166/75	166/75	166/75	166/75
CONDENSER FANS - DIRECT DRIVE PROPELLER TYPE						
Number Of Fans - Fan Diameter, in. (mm)	8 – 30 (762)		8 – 30 (762)		8 – 30 (762)	
Number Of Motors - HP (kW)	8 – 2.0 (1.5)		8 – 2.0 (1.5)		8 – 2.0 (1.5)	
Fan And Motor RPM, 60Hz	1140		1140		1140	
60 Hz Fan Tip Speed, FPM (m/sec)	8950 (45)		8950 (45)		8950 (45)	
60 Hz Total Unit Airflow, CFM (l/sec)	81,600 (38,517)		86,904 (41,020)		86,904 (41,020)	
EVAPORATOR – BRAZED PLATE-TO-PLATE						
Number of Evaporators	1		1		1	
Number of Refrigerant Circuits	2		2		2	
Water Volume, Gallons, (l)	8.32 (31.5)		9.51 (36.0)		10.7 (40.5)	
Max. Water Pressure, psig (kPa)	653 (4502)		653 (4502)		653 (4502)	
Max. Refrigerant Working Pressure, psig (kPa)	653 (4502)		653 (4502)		653 (4502)	
Water Inlet / Outlet Victaulic Conn, in. (mm)	3 (80)		3 (80)		3 (80)	
Drain - NPT int, in. (mm) (Note 3)	Field Piping		Field Piping		Field Piping	
Vent - NPT int, in. (mm) (Note 3)	Field Piping		Field Piping		Field Piping	

Note 1: Nominal capacity based on 95° F ambient air and 54° F/44° F water range.

Note 2: For all 380V/60 & 575V/60 models, HP = 2.0.

Note 3: Water connection shown is nominal pipe size.

Note 4: Brazed plate evaporators do not have drain or vent connections integral to the heat exchanger. The connections must be installed in the field inlet and outlet piping as shown in Piping Section beginning on of IM 1100, available on www.DaikinApplied.com.

Physical Data - Packaged Units

Table 41: Physical Data - AGZ110D - AGZ130D (380-575 volt models; 208/230v models previous page.)

PHYSICAL DATA	AGZ-DH (Packaged Chiller) 380-575 volt models					
	110		125		130	
BASIC DATA	Ckt.1	Ckt.2	Ckt.1	Ckt.2	Ckt.1	Ckt.2
Unit Capacity @ AHRI Conditions (See Note 1), Tons (kW)	106 (373)		117 (412)		130 (456)	
Number Of Refrigerant Circuits	2		2		2	
Unit Operating Charge, R-410A, lbs (kg)	102 (46)	102 (46)	115 (52)	115 (52)	115 (52)	115 (52)
Cabinet Dimensions, L x W x H, in. (mm)	173.1 x 88.0 x 100.4 (4397 x 2235 x 2550)		173.1 x 88.0 x 100.4 (4397 x 2235 x 2550)		173.1 x 88.0 x 100.4 (4397 x 2235 x 2550)	
Unit Operating Weight, lbs (kg)	7060(3202)		7205 (3268)		7260 (3293)	
Unit Shipping Weight, lbs (kg)	6990 (3170)		7125 (3232)		7170 (3252)	
Add'l Weight for Copper Finned Coils, lbs (kg)	1070 (486)		1269 (576)		1269 (576)	
Add'l Weight for Optional Louvers - Upper, lbs (kg)	307 (139)		307 (139)		307 (139)	
Add'l Weight for Optional Louvers - Lower, lbs (kg)	230 (105)		230 (105)		230 (105)	
COMPRESSORS						
Type	Trio Scrolls		Trio Scrolls		Trio Scrolls	
Nominal tonnage of each Compressor	20	20	20	25	25	25
Number Of Compressors per Circuit	3	3	3	3	3	3
Oil Charge Per Compressor, oz (g)	135 (3827)	135 (3827)	135 (3827)	145 (4111)	145 (4111)	145 (4111)
CAPACITY REDUCTION STEPS - PERCENT OF COMPRESSOR DISPLACEMENT						
Staging, 6 Stages, Circuit #1 in Lead	0-17-33-50-67-83-100		0-15-33-48-67-81-100		0-17-33-50-67-83-100	
Staging, 6 Stages, Circuit #2 in Lead	0-17-33-50-67-83-100		0-19-33-52-67-86-100		0-17-33-50-67-83-100	
CONDENSERS - HIGH EFFICIENCY FIN AND TUBE TYPE WITH INTEGRAL SUBCOOLING						
Coil Face Area, ft ²	88.4	88.4	105.3	105.3	105.3	105.3
Coil Face Area, (m ²)	8.2	8.2	9.8	9.8	9.8	9.8
Finned Height x Finned Length, in. (mm)	42 x151.6 (1069x3851)	42 x151.6 (1069x3851)	50 x151.6 (1270x3851)	50 x151.6 (1270x3851)	50 x151.6 (1270x3851)	50 x151.6 (1270x3851)
Fins Per Inch x Row s Deep	16 x 3	16 x 3	16 x 3	16 x 3	16 x 3	16 x 3
Pumpdown Capacity, 90% Full lbs (kg)	142/64	142/64	166/75	166/75	166/75	166/75
CONDENSER FANS - DIRECT DRIVE PROPELLER TYPE						
Number Of Fans - Fan Diameter, in. (mm)	8 – 30 (762)		8 – 30 (762)		8 – 30 (762)	
Number Of Motors - HP (kW)	8 – 2.0 (1.5)		8 – 2.0 (1.5)		8 – 2.0 (1.5)	
Fan And Motor RPM, 60Hz	1140		1140		1140	
60 Hz Fan Tip Speed, FPM (m/sec)	8950 (45)		8950 (45)		8950 (45)	
60 Hz Total Unit Airflow, CFM (l/sec)	81,600 (38,517)		86,904 (41,020)		86,904 (41,020)	
EVAPORATOR – BRAZED PLATE-TO-PLATE						
Number of Evaporators	1		1		1	
Number of Refrigerant Circuits	2		2		2	
Water Volume, Gallons, (l)	8.32 (31.5)		9.51 (36.0)		10.7 (40.5)	
Max. Water Pressure, psig (kPa)	653 (4502)		653 (4502)		653 (4502)	
Max. Refrigerant Working Pressure, psig (kPa)	653 (4502)		653 (4502)		653 (4502)	
Water Inlet / Outlet Victaulic Conn, in. (mm)	3 (80)		3 (80)		3 (80)	
Drain - NPT int, in. (mm) (Note 3)	Field Piping		Field Piping		Field Piping	
Vent - NPT int, in. (mm) (Note 3)	Field Piping		Field Piping		Field Piping	

Note 1: Nominal capacity based on 95° F ambient air and 54° F/44° F water range.

Note 2: For all 380V/60 & 575V/60 models, HP = 2.0.

Note 3: Water connection shown is nominal pipe size.

Physical Data - Packaged Units

Table 42: Physical Data - AGZ140D - AGZ190D

PHYSICAL DATA	AGZ-DH (Packaged Chiller) Model Number							
	140		160		180		190	
BASIC DATA	Ckt.1	Ckt.2	Ckt.1	Ckt.2	Ckt.1	Ckt.2	Ckt.1	Ckt.2
Unit Capacity @ AHRI (See Note 1), Tons (kW)	136 (479)		153 (539)		172 (605)		180 (633)	
Number Of Refrigerant Circuits	2		2		2		2	
Unit Operating Charge, R-410A, lbs (kg)	125 (57)	125 (57)	130 (59)	130 (59)	130 (59)	130 (59)	140 (64)	140 (64)
Cabinet Dimensions, L x W x H, in. (mm)	218.6 x 88.0 x 100.4 (5552 x 2235 x 2545)		218.6 x 88.0 x 100.4 (5552 x 2235 x 2545)		218.6 x 88.0 x 100.4 (5552 x 2235 x 2545)		256.9 x 88.0 x 100.4 (6525 x 2235 x 2545)	
Unit Operating Weight, lbs (kg)	9432(4278)		9762 (4428)		10107 (4578)		11070 (5015)	
Unit Shipping Weight, lbs (kg)	8950 (4060)		9280 (4209)		9625 (4360)		10585 (4795)	
Add'l Weight for Copper Finned Coils, lbs (kg)	1588 (720)		1588 (720)		1588 (720)		1908 (865)	
Add'l Weight for Optional Louvers - Upper, lbs (kg)	376 (171)		376 (171)		376 (171)		446 (202)	
Add'l Weight for Optional Louvers - Lower, lbs (kg)	225 (102)		225 (102)		225 (102)		323 (146)	
COMPRESSORS								
Type	Trio Scrolls		Trio Scrolls		Trio Scrolls		Trio Scrolls	
Nominal tonnage of each Compressor	25	25	25	30	30	30	30	30
Number Of Compressors per Circuit	3	3	3	3	3	3	3	3
Oil Charge Per Compressor, oz (g)	145 (4111)	145 (4111)	145 (4111)	213 (6038)	213 (6038)	213 (6038)	213 (6038)	213 (6038)
CAPACITY REDUCTION STEPS - PERCENT OF COMPRESSOR DISPLACEMENT								
Staging, 6 Stages, Circuit #1 in Lead	0-17-33-50-67-83-100		0-15-33-48-67-81-100		0-17-33-50-67-83-100		0-17-33-50-67-83-100	
Staging, 6 Stages, Circuit #2 in Lead	0-17-33-50-67-83-100		0-19-33-52-67-86-100		0-17-33-50-67-83-100		0-17-33-50-67-83-100	
CONDENSERS - HIGH EFFICIENCY FIN AND TUBE TYPE WITH INTEGRAL SUBCOOLING								
Coil Face Area, ft ²	131.8	131.8	131.8	131.8	131.8	131.8	158.3	158.3
Coil Face Area, (m ²)	12.2	12.2	12.2	12.2	12.2	12.2	14.7	14.7
Finned Height x Finned Length, in. (mm)	50 x 190 (1270x4821)	50 x 190 (1270x4821)	50 x 190 (1270x4821)	50 x 190 (1270x4821)	50 x 190 (1270x4821)	50 x 190 (1270x4821)	50 x 228 (1270x5791)	50 x 228 (1270x5791)
Fins Per Inch x Rows Deep	16 x 3	16 x 3	16 x 3	16 x 3	16 x 3	16 x 3	16 x 3	16 x 3
Pumpdown Capacity, 90% Full lbs (kg)	202 (92)	202 (92)	202 (92)	202 (92)	202 (92)	202 (92)	242 (110)	242 (110)
CONDENSER FANS - DIRECT DRIVE PROPELLER TYPE								
Number Of Fans - Fan Diameter, in. (mm)	10 – 30 (762)		10 – 30 (762)		10 – 30 (762)		12 – 30 (762)	
Number Of Motors - HP (kW)	10 – 2.0 (1.5)		10 – 2.0 (1.5)		10 – 2.0 (1.5)		12 - 2.0 (1.5)	
Fan And Motor RPM, 60Hz	1140		1140		1140		1140	
60 Hz Fan Tip Speed, FPM (m/sec)	8950 (45)		8950 (45)		8950 (45)		8950 (45)	
60 Hz Total Unit Airflow, CFM (l/sec)	108,630 (51,268)		108,630 (51,268)		108,630 (51,268)		130,356 (61,522)	
EVAPORATOR - SHELL-AND-TUBE								
Number of Evaporators	1		1		1		1	
Number of Refrigerant Circuits	2		2		2		2	
Water Volume, Gallons, (l)	60 (227)		60 (227)		58 (219)		57 (215)	
Maximum Water Pressure, psig (kPa)	152 (1048)		152 (1048)		152 (1048)		152 (1048)	
Max. Refrig. Working Pressure, psig (kPa)	450 (3103)		450 (3103)		450 (3103)		450 (3103)	
Water Inlet / Outlet Victaulic Conn. in. (mm)	8.0 (200)		8.0 (200)		8.0 (200)		8.0 (200)	
Drain - NPT int, in.	½-in. NPTF		½-in. NPTF		½-in. NPTF		½-in. NPTF	
Vent - NPT int, in.	½-in. NPTF		½-in. NPTF		½-in. NPTF		½-in. NPTF	

Note 1: Nominal capacity based on 95° F ambient air and 54° F/44° F water range.

Note 2: For all 380V/60 & 575V/60 models, HP = 2.0.

Note 3: Water connection shown is nominal pipe size.

Physical Data - Remote Evaporator Units

Table 43: Physical Data - AGZ025D - AGZ040D

PHYSICAL DATA	AGZ-DB Rev 0A Remote Evaporator Model							
	25		30		35		40	
BASIC DATA	Ckt.1	Ckt.2	Ckt.1	Ckt.2	Ckt.1	Ckt.2	Ckt.1	Ckt.2
Unit Capacity @ AHRl Conditions (See Note 1), Tons (kW)	27 (96)		32 (111)		35 (123)		38 (133)	
Number Of Refrigerant Circuits	2		2		2		2	
Unit Operating Charge, R-410A, lbs (kg)	28 (13)	28 (13)	32 (15)	32 (15)	32 (15)	32 (15)	39 (17)	39 (17)
Cabinet Dimensions, L x W x H, in. (mm)	94.4 x 88.0 x 100.4 (2398 x 2235 x 2550)		94.4 x 88.0 x 100.4 (2398 x 2235 x 2550)		94.4 x 88.0 x 100.4 (2398 x 2235 x 2550)		94.4 x 88.0 x 100.4 (2398 x 2235 x 2550)	
Unit Operating Weight, lbs (kg)	3002 (1362)		3046 (1382)		3046 (1382)		3105 (1408)	
Unit Shipping Weight, lbs (kg)	2944 (1335)		2980 (1352)		2980 (1352)		3027 (1373)	
Add'l Weight for Copper Finned Coils, lbs (kg)	315 (143)		315 (143)		315 (143)		531 (241)	
Add'l Weight for Optional Louvers - Upper, lbs (kg)	167 (76)		167 (76)		167 (76)		167 (76)	
Add'l Weight for Optional Louvers - Lower, lbs (kg)	144 (65)		144 (65)		144 (65)		144 (65)	
COMPRESSORS								
Type	Tandem Scrolls		Tandem Scrolls		Tandem Scrolls		Tandem Scrolls	
Nominal tonnage of each Compressor	7.5	7.5	8.5	8.5	8.5	10	10	10
Number Of Compressors per Circuit	2	2	2	2	2	2	2	2
Oil Charge Per Compressor, oz (g)	85 (2410)	85 (2410)	110 (3119)	110 (3119)	110 (3119)	110 (3119)	110 (3119)	110 (3119)
CAPACITY REDUCTION STEPS - PERCENT OF COMPRESSOR DISPLACEMENT								
Staging, 4 Stages, Circuit #1 in Lead	0-25-50-75-100		0-25-50-75-100		23-50-73-100		0-25-50-75-100	
Staging, 4 Stages, Circuit #2 in Lead	0-25-50-75-100		0-25-50-75-100		27-50-73-100		0-25-50-75-100	
CONDENSERS - HIGH EFFICIENCY FIN AND TUBE TYPE WITH INTEGRAL SUBCOOLING								
Coil Face Area, ft ²	26.3	26.3	26.3	26.3	26.3	26.3	44.1	44.1
Coil Face Area, (m ²)	2.4	2.4	2.4	2.4	2.4	2.4	4.1	4.1
Finned Height x Finned Length, in. (mm)	50x75.6 (1270x1920)	50x75.6 (1270x1920)	50x75.6 (1270x1920)	50x75.6 (1270x1920)	50x75.6 (1270x1920)	50x75.6 (1270x1920)	42x75.6 (1067x1920)	42x75.6 (1067x1920)
Fins Per Inch x Rows Deep	16 x 3	16 x 3	16 x 3	16 x 3	16 x 3	16 x 3	16 x 2	16 x 2
Pumpdown Capacity, 90% Full lbs (kg)	40 (18)	40 (18)	40 (18)	40 (18)	40 (18)	40 (18)	47 (21)	47 (21)
CONDENSER FANS - DIRECT DRIVE PROPELLER TYPE								
Number Of Fans - Fan Diameter, in. (mm)	4 - 30 (762)		4 - 30 (762)		4 - 30 (762)		4 - 30 (762)	
Number Of Motors - HP (kW) (Note 2)	4 - 1.5 (1.1)		4 - 1.5 (1.1)		4 - 1.5 (1.1)		4 - 1.5 (1.1)	
Fan And Motor RPM, 60Hz	1140		1140		1140		1140	
60 Hz Fan Tip Speed, FPM (m/sec)	8950 (45)		8950 (45)		8950 (45)		8950 (45)	
60 Hz Total Unit Airflow, CFM (l/sec)	24,316 (11,478)		24,316 (11,478)		24,316 (11,478)		39,600 (18,692)	
REMOTE EVAPORATOR - BRAZED PLATE-TO-PLATE								
Number of Evaporators	1		1		1		1	
Number of Refrigerant Circuits	2		2		2		2	
Evaporator Model	ACH-230DQ-78H		ACH-230DQ-78H		ACH-230DQ-86H		ACH-230DQ-94H	
Dry Weight lbs (kg)	84 (38.1)		84 (38.1)		91 (41.3)		98 (44.5)	
Water Volume, Gallons, (l)	1.6 (6.1)		1.6 (6.1)		1.8 (6.8)		1.9 (7.2)	
Maximum Water Pressure, psig (kPa)	653 (4502)		653 (4502)		653 (4502)		653 (4502)	
Max. Refrig. Working Pressure, psig (kPa)	653 (4502)		653 (4502)		653 (4502)		653 (4502)	
Water Inlet / Outlet Victaulic Conn. in. (mm)	2.5 (65)		2.5 (65)		2.5 (65)		2.5 (65)	
Drain - NPT int, in. (mm) (Note 4)	Field Piping		Field Piping		Field Piping		Field Piping	
Vent - NPT int, in. (mm) (Note 4)	Field Piping		Field Piping		Field Piping		Field Piping	

Note 1: Nominal capacity based on base unit capacity without derate for refrigerant piping. See Refrigerant Piping section on [page 16](#).

Note 2: For all 380V/60 & 575V/60 models, HP = 2.0.

Note 3: Water connection shown is nominal pipe size.

Note 4: Brazed plate evaporators do not have drain or vent connections integral to the heat exchanger. The connections must be installed in the field inlet and outlet piping as shown in Piping Section beginning on of IM 1100, available on www.DaikinApplied.com.

Physical Data - Remote Evaporator Units

Table 44: Physical Data - AGZ045D - AGZ060D

PHYSICAL DATA	AGZ-DB Rev 0A Remote Evaporator Model							
	45		50		55		60	
BASIC DATA	Ckt.1	Ckt.2	Ckt.1	Ckt.2	Ckt.1	Ckt.2	Ckt.1	Ckt.2
Unit Capacity @ AHRI Conditions (See Note 1), Tons (kW)	43 (150)		48 (169)		52 (181)		56 (197)	
Number Of Refrigerant Circuits	2		2		2		2	
Unit Operating Charge, R-410A, lbs (kg)	44 (20)	44 (20)	50 (23)	50 (23)	52 (24)	52 (24)	54 (25)	54 (25)
Cabinet Dimensions, L x W x H, in. (mm)	94.4 x 88.0 x 100.4 (2398 x 2235 x 2550)		94.4 x 88.0 x 100.4 (2398 x 2235 x 2550)		94.4 x 88.0 x 100.4 (2398 x 2235 x 2550)		94.4 x 88.0 x 100. (2398 x 2235 x 2550)	
Unit Operating Weight, lbs (kg)	3248 (1473)		3309 (1501)		3332 (1511)		3411 (1547)	
Unit Shipping Weight, lbs (kg)	3160 (1433)		3209 (1456)		3228 (1464)		3303 (1498)	
Add'l Weight for Copper Finned Coils, lbs (kg)	531 (241)		531 (241)		531 (241)		531 (241)	
Add'l Weight for Optional Louvers - Upper, lbs (kg)	167 (76)		167 (76)		167 (76)		167 (76)	
Add'l Weight for Optional Louvers - Lower, lbs (kg)	144 (65)		144 (65)		144 (65)		144 (65)	
COMPRESSORS								
Type	Tandem Scrolls		Tandem Scrolls		Tandem Scrolls		Tandem Scrolls	
Nominal tonnage of each Compressor	11.5	11.5	13	13	13	15	15	15
Number Of Compressors per Circuit	2	2	2	2	2	2	2	2
Oil Charge Per Compressor, oz (g)	110 (3119)	110 (3119)	110 (3119)	110 (3119)	110 (3119)	110 (3119)	110 (3119)	110 (3119)
CAPACITY REDUCTION STEPS - PERCENT OF COMPRESSOR DISPLACEMENT								
Staging, 4 Stages, Circuit #1 in Lead	0-25-50-75-100		0-25-50-75-100		0-23-50-73-100		0-25-50-75-100	
Staging, 4 Stages, Circuit #2 in Lead	0-25-50-75-100		0-25-50-75-100		0-27-50-77-100		0-25-50-75-100	
CONDENSERS - HIGH EFFICIENCY FIN AND TUBE TYPE WITH INTEGRAL SUBCOOLING								
Coil Face Area, ft ²	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1
Coil Face Area, (m ²)	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
Finned Height x Finned Length, in. (mm)	42x75.6 (1067x1920)	42x75.6 (1067x1920)	42x75.6 (1067x1920)	42x75.6 (1067x1920)	42x75.6 (1067x1920)	42x75.6 (1067x1920)	42x75.6 (1067x1920)	42x75.6 (1067x1920)
Fins Per Inch x Rows Deep	16 x 3	16 x 3	16 x 3	16 x 3	16 x 3	16 x 3	16 x 3	16 x 3
Pumpdown Capacity, 90% Full lbs (kg)	69 (31)	69 (31)	69 (31)	69 (31)	69 (31)	69 (31)	69 (31)	69 (31)
CONDENSER FANS - DIRECT DRIVE PROPELLER TYPE								
Number Of Fans - Fan Diameter, in. (mm)	4 - 30 (762)		4 - 30 (762)		4 - 30 (762)		4 - 30 (762)	
Number Of Motors - HP (kW) (Note 2)	4 - 1.5 (1.1)		4 - 1.5 (1.1)		4 - 1.5 (1.1)		4 - 1.5 (1.1)	
Fan And Motor RPM, 60Hz	1140		1140		1140		1140	
60 Hz Fan Tip Speed, FPM (m/sec)	8950 (45)		8950 (45)		8950 (45)		8950 (45)	
60 Hz Total Unit Airflow, CFM (l/sec)	37,228 (17,572)		37,228 (17,572)		37,228 (17,572)		37,228 (17,572)	
REMOTE EVAPORATOR - BRAZED PLATE-TO-PLATE								
Number of Evaporators	1		1		1		1	
Number of Refrigerant Circuits	2		2		2		2	
Evaporator Model	ACH-230DQ-110H		ACH-230DQ-126H		ACH-230DQ-134H		ACH-500DQ-70H	
Dry Weight lbs (kg)	112 (50.1)		126 (57.2)		133 (60.3)		158 (71.7)	
Water Volume, Gallons, (l)	2.3 (8.7)		2.6 (9.8)		2.8 (10.6)		4.2 (15.9)	
Maximum Water Pressure, psig (kPa)	653 (4502)		653 (4502)		653 (4502)		653 (4502)	
Maximum Refrigerant Working Pressure, psig (kPa)	653 (4502)		653 (4502)		653 (4502)		653 (4502)	
Water Inlet / Outlet Victaulic Connections, in. (mm)	2.5 (65)		2.5 (65)		2.5 (65)		3 (80)	
Drain - NPT int, in. (mm) (Note 4)	Field Piping		Field Piping		Field Piping		Field Piping	
Vent - NPT int, in. (mm) (Note 4)	Field Piping		Field Piping		Field Piping		Field Piping	

Note 1: Nominal capacity based on base unit capacity without derate for refrigerant piping. See Refrigerant Piping section on [page 16](#).

Note 2: For all 380V/60 & 575V/60 models, HP = 2.0.

Note 3: Water connection shown is nominal pipe size.

Note 4: Brazed plate evaporators do not have drain or vent connections integral to the heat exchanger. The connections must be installed in the field inlet and outlet piping as shown in Piping Section beginning on of IM 1100, available on [www.DaikinApplied.com](#).

Physical Data - Remote Evaporator Units

Table 45: Physical Data - AGZ065D - AGZ070D

PHYSICAL DATA	AGZ-DB Rev 0A Remote Evaporator Model			
	65		70	
BASIC DATA	Ckt.1	Ckt.2	Ckt.1	Ckt.2
Unit Capacity @ AHRI Conditions (See Note 1), Tons (kW)	58 (204)		64 (225)	
Number Of Refrigerant Circuits	2		2	
Unit Operating Charge, R-410A, lbs (kg)	58 (26)	58 (26)	60 (27)	60 (27)
Cabinet Dimensions, L x W x H, in. (mm)	94.4 x 88.0 x 100.4 (2398 x 2235 x 2550)		94.4 x 88.0 x 100.4 (2398 x 2235 x 2550)	
Unit Operating Weight, lbs (kg)	3419 (1551)		3759 (1705)	
Unit Shipping Weight, lbs (kg)	3303 (1498)		3639 (1651)	
Add'l Weight for Copper Finned Coils, lbs (kg)	631 (286)		631 (286)	
Add'l Weight for Optional Louvers - Upper, lbs (kg)	167 (76)		167 (76)	
Add'l Weight for Optional Louvers - Lower, lbs (kg)	144 (65)		144 (65)	
COMPRESSORS				
Type	Tandem Scrolls		Tandem Scrolls	
Nominal tonnage of each Compressor	15	15	15/20	15/20
Number Of Compressors per Circuit	2	2	2	2
Oil Charge Per Compressor, oz (g)	110 (3119)	110 (3119)	110/135 3119/3827	110/135 3119/3827
CAPACITY REDUCTION STEPS - PERCENT OF COMPRESSOR DISPLACEMENT				
Staging, 4 Stages, Circuit #1 in Lead	0-25-50-75-100		0-21-50-71-100	
Staging, 4 Stages, Circuit #2 in Lead	0-25-50-75-100		0-28-50-78-100	
CONDENSERS - HIGH EFFICIENCY FIN AND TUBE TYPE WITH INTEGRAL SUBCOOLING				
Coil Face Area, ft ²	52.6	52.6	52.6	52.6
Coil Face Area, (m ²)	4.9	4.9	4.9	4.9
Finned Height x Finned Length, in. (mm)	50x75.6 (1270x1920)	50x75.6 (1270x1920)	50x75.6 (1270x1920)	50x75.6 (1270x1920)
Fins Per Inch x Rows Deep	16 x 3	16 x 3	16 x 3	16 x 3
Pumpdown Capacity, 90% Full lbs (kg)	81 (37)	81 (37)	81 (37)	81 (37)
CONDENSER FANS - DIRECT DRIVE PROPELLER TYPE				
Number Of Fans - Fan Diameter, in. (mm)	4 - 30 (762)		4 - 30 (762)	
Number Of Motors - HP (kW) (2)	4 - 2.0 (1.5)		4 - 2.0 (1.5)	
Fan And Motor RPM, 60Hz	1140		1140	
60 Hz Fan Tip Speed, FPM (m/sec)	8950 (45)		8950 (45)	
60 Hz Total Unit Airflow, CFM (l/sec)	43,452 (20,510)		43,452 (20,510)	
REMOTE EVAPORATOR - BRAZED PLATE-TO-PLATE				
Number of Evaporators	1		1	
Number of Refrigerant Circuits	2		2	
Evaporator Model	ACH-500DQ-82H		ACH-500DQ-82H	
Dry Weight lbs (kg)	180 (81.7)		180 (81.7)	
Water Volume, Gallons, (l)	4.9 (18.6)		4.9 (18.6)	
Maximum Water Pressure, psig (kPa)	653 (4502)		653 (4502)	
Maximum Refrigerant Working Pressure, psig (kPa)	653 (4502)		653 (4502)	
Water Inlet / Outlet Victaulic Connections, in. (mm)	3 (80)		3 (80)	
Drain - NPT int, in. (mm) (Note 4)	Field Piping		Field Piping	
Vent - NPT int, in. (mm) (Note 4)	Field Piping		Field Piping	

Note 1: Nominal capacity based on base unit capacity without derate for refrigerant piping. See Refrigerant Piping section on [page 16](#).

Note 2: For all 380V/60 & 575V/60 models, HP = 2.0.

Note 3: Water connection shown is nominal pipe size.

Note 4: Brazed plate evaporators do not have drain or vent connections integral to the heat exchanger. The connections must be installed in the field inlet and outlet piping as shown in Piping Section beginning on of IM 1100, available on www.DaikinApplied.com.

Physical Data - Remote Evaporator Units

Table 46: Physical Data - AGZ075D - AGZ100D

PHYSICAL DATA	AGZ-DB Rev 0A Remote Evaporator Model							
	75		80		90		100	
BASIC DATA	Ckt.1	Ckt.2	Ckt.1	Ckt.2	Ckt.1	Ckt.2	Ckt.1	Ckt.2
Unit Capacity @ AHRI Conditions (See Note 1), Tons (kW)	73 (257)		81 (285)		89 (314)		100 (351)	
Number Of Refrigerant Circuits	2		2		2		2	
Unit Operating Charge, R-410A, lbs (kg)	75 (34)	75 (34)	80 (36)	80 (36)	86 (39)	86 (39)	88 (40)	88 (40)
Cabinet Dimensions, L x W x H, in. (mm)	134.9 x 88.0 x 100.4 (3426 x 2235 x 2550)		134.9 x 88.0 x 100.4 (3426 x 2235 x 2550)		134.9 x 88.0 x 100.4 (3426 x 2235 x 2550)		134.9 x 88.0 x 100.4 (3426 x 2235 x 2550)	
Unit Operating Weight, lbs (kg)	4997(2267)		5004 (2270)		5020 (2277)		5228 (2371)	
Unit Shipping Weight, lbs (kg)	4847 (2199)		4844 (2197)		4848 (2199)		5052 (2292)	
Add'l Weight for Copper Finned Coils, lbs (kg)	801 (363)		801 (363)		950 (431)		950 (431)	
Add'l Weight for Optional Louvers - Upper, lbs (kg)	237 (108)		237 (108)		237 (108)		237 (108)	
Add'l Weight for Optional Louvers - Lower, lbs (kg)	187 (85)		187 (85)		187 (85)		187 (85)	
COMPRESSORS								
Type	Tandem Scrolls		Tandem Scrolls		Tandem Scrolls		Tandem Scrolls	
Nominal tonnage of each Compressor	20	20	20	25	25	25	25/30	25/30
Number Of Compressors per Circuit	2	2	2	2	2	2	2	2
Oil Charge Per Compressor, oz (g)	135 (3827)	135 (3827)	135 (3827)	145 (4111)	145 (4111)	145 (4111)	145/213 4111/6038	145/213 4111/6038
CAPACITY REDUCTION STEPS - PERCENT OF COMPRESSOR DISPLACEMENT								
Staging, 4 Stages, Circuit #1 in Lead	0-25-50-75-100		0-22-50-72-100		0-25-50-75-100		0-22-50-72-100	
Staging, 4 Stages, Circuit #2 in Lead	0-25-50-75-100		0-28-50-78-100		0-25-50-75-100		0-22-50-72-100	
CONDENSERS - HIGH EFFICIENCY FIN AND TUBE TYPE WITH INTEGRAL SUBCOOLING								
Coil Face Area, ft ²	66.2	66.2	66.2	66.2	78.8	78.8	78.8	78.8
Coil Face Area, (m ²)	6.1	6.1	6.1	6.1	7.3	7.3	7.3	7.3
Finned Height x Finned Length, in. (mm)	42 x113.4 (1069x2880)	42 x113.4 (1069x2880)	42 x113.4 (1069x2880)	42 x113.4 (1069x2880)	50 x113.4 (1270x2880)	50 x113.4 (1270x2880)	50 x113.4 (1270x2880)	50 x113.4 (1270x2880)
Fins Per Inch x Rows Deep	16 x 3	16 x 3	16 x 3	16 x 3	16 x 3	16 x 3	16 x 3	16 x 3
Pumpdown Capacity, 90% Full lbs (kg)	111 (50)	111 (50)	111 (50)	111 (50)	130 (59)	130 (59)	130 (59)	130 (59)
CONDENSER FANS - DIRECT DRIVE PROPELLER TYPE								
Number Of Fans - Fan Diameter, in. (mm)	6 – 30 (762)		6 – 30 (762)		6 – 30 (762)		6 – 30 (762)	
Number Of Motors - HP (kW)	6 – 2.0 (1.5)		6 – 2.0 (1.5)		6 – 2.0 (1.5)		6 – 2.0 (1.5)	
Fan And Motor RPM, 60Hz	1140		1140		1140		1140	
60 Hz Fan Tip Speed, FPM (m/sec)	8950 (45)		8950 (45)		8950 (45)		8950 (45)	
60 Hz Total Unit Airflow , CFM (l/sec)	61,200 (28,888)		61,200 (28,888)		65,178 (30,765)		65,178 (30,765)	
REMOTE EVAPORATOR - BRAZED PLATE-TO-PLATE								
Number of Evaporators	1		1		1		1	
Number of Refrigerant Circuits	2		2		2		2	
Evaporator Model	ACH-500DQ-94H		ACH-500DQ-106H		ACH-500DQ-114H		ACH-500DQ-134H	
Dry Weight lbs (kg)	207 (93.9)		230 (104.3)		244 (110.7)		281 (127.5)	
Water Volume, Gallons, (l)	5.6 (21.2)		6.3 (23.9)		6.8 (25.7)		7.9 (29.9)	
Max. Water Pressure, psig (kPa)	653 (4502)		653 (4502)		653 (4502)		653 (4502)	
Max. Refrigerant Working Pressure, psig (kPa)	653 (4502)		653 (4502)		653 (4502)		653 (4502)	
Water Inlet/Outlet Victaulic Conn. in. (mm)	3 (80)		3 (80)		3 (80)		3 (80)	
Drain - NPT int, in. (mm) (Note 3)	Field Piping		Field Piping		Field Piping		Field Piping	
Vent - NPT int, in. (mm) (Note 3)	Field Piping		Field Piping		Field Piping		Field Piping	

Note 1: Nominal capacity based on base unit capacity without derate for refrigerant piping. See Refrigerant Piping section on [page 16](#).

Note 2: For all 380V/60 & 575V/60 models, HP = 2.0.

Note 3: Water connection shown is nominal pipe size.

Note 4: Brazed plate evaporators do not have drain or vent connections integral to the heat exchanger. The connections must be installed in the field inlet and outlet piping as shown in Piping Section beginning on of IM 1100, available on www.DaikinApplied.com.

Physical Data - Remote Evaporator Units

Table 47: Physical Data - AGZ110D - AGZ130D - 208/230 Volt Models (380-575 Volts Next Page)

PHYSICAL DATA	AGZ-DB Rev 0A Remote Evaporator Model - 208/230 Volt Models					
	110		125		130	
BASIC DATA	Ckt.1	Ckt.2	Ckt.1	Ckt.2	Ckt.1	Ckt.2
Unit Capacity @ AHRI Conditions (See Note 1), Tons (kW)	106 (373)		117 (412)		130 (456)	
Number Of Refrigerant Circuits	2		2		2	
Unit Operating Charge, R-410A, lbs (kg)	102 (46)	102 (46)	115 (52)	115 (52)	115 (52)	115 (52)
Cabinet Dimensions, L x W x H, in. (mm)	173.1 x 88.0 x 100.4 (4397 x 2235 x 2550)		173.1 x 88.0 x 100.4 (4397 x 2235 x 2550)		173.1 x 88.0 x 100.4 (4397 x 2235 x 2550)	
Unit Operating Weight, lbs (kg)	6748 (3061)		6846(3105)		6854 (3109)	
Unit Shipping Weight, lbs (kg)	6544 (2968)		6616 (3001)		6624 (3005)	
Add'l Weight for Copper Finned Coils, lbs (kg)	1070 (486)		1269 (576)		1269 (576)	
Add'l Weight for Optional Louvers - Upper, lbs (kg)	307 (139)		307 (139)		307 (139)	
Add'l Weight for Optional Louvers - Lower, lbs (kg)	230 (105)		230 (105)		230 (105)	
COMPRESSORS						
Type	Trio Scrolls		Trio Scrolls		Trio Scrolls	
Nominal tonnage of each Compressor	20	20	20	25	25	25
Number Of Compressors per Circuit	3	3	3	3	3	3
Oil Charge Per Compressor, oz (g)	135 (3827)	135 (3827)	135 (3827)	145 (4111)	145 (4111)	145 (4111)
CAPACITY REDUCTION STEPS - PERCENT OF COMPRESSOR DISPLACEMENT						
Staging, 6 Stages, Circuit #1 in Lead	0-17-33-50-67-83-100		0-15-33-48-67-81-100		0-17-33-50-67-83-100	
Staging, 6 Stages, Circuit #2 in Lead	0-17-33-50-67-83-100		0-19-33-52-67-86-100		0-17-33-50-67-83-100	
CONDENSERS - HIGH EFFICIENCY FIN AND TUBE TYPE WITH INTEGRAL SUBCOOLING						
Coil Face Area, ft ²	88.4	88.4	105.3	105.3	105.3	105.3
Coil Face Area, (m ²)	8.2	8.2	9.8	9.8	9.8	9.8
Finned Height x Finned Length, in. (mm)	42 x151.6 (1069x3851)	42 x151.6 (1069x3851)	50 x151.6 (1270x3851)	50 x151.6 (1270x3851)	50 x151.6 (1270x3851)	50 x151.6 (1270x3851)
Fins Per Inch x Row s Deep	16 x 3	16 x 3	16 x 3	16 x 3	16 x 3	16 x 3
Pumpdown Capacity, 90% Full lbs (kg)	142/64	142/64	166/75	166/75	166/75	166/75
CONDENSER FANS - DIRECT DRIVE PROPELLER TYPE						
Number Of Fans - Fan Diameter, in. (mm)	8 – 30 (762)		8 – 30 (762)		8 – 30 (762)	
Number Of Motors - HP (kW)	8 – 2.0 (1.5)		8 – 2.0 (1.5)		8 – 2.0 (1.5)	
Fan And Motor RPM, 60Hz	1140		1140		1140	
60 Hz Fan Tip Speed, FPM (m/sec)	8950 (45)		8950 (45)		8950 (45)	
60 Hz Total Unit Airflow, CFM (l/sec)	81,600 (38,517)		86,904 (41,020)		86,904 (41,020)	
REMOTE EVAPORATOR - BRAZED PLATE-TO-PLATE						
Number of Evaporators	1		1		1	
Number of Refrigerant Circuits	2		2		2	
Evaporator Model	ACH-500DQ-142H		ACH-500DQ-162H		ACH-500DQ-182H	
Dry Weight lbs (kg)	296 (134.3)		333 (151.1)		370 (167.8)	
Water Volume, Gallons, (l)	8.4 (31.8)		9.6 (36.3)		10.8 (40.9)	
Max. Water Pressure, psig (kPa)	653 (4502)		653 (4502)		653 (4502)	
Max. Refrigerant Working Pressure, psig (kPa)	653 (4502)		653 (4502)		653 (4502)	
Water Inlet / Outlet Victaulic Conn, in. (mm)	3 (80)		3 (80)		3 (80)	
Drain - NPT int, in. (mm) (Note 3)	Field Piping		Field Piping		Field Piping	
Vent - NPT int, in. (mm) (Note 3)	Field Piping		Field Piping		Field Piping	

NOTE: This table for 208/230V models only. Information for 380V, 460V, and 575V models next page.

Note 1: Nominal capacity based on base unit capacity without derate for refrigerant piping. See Refrigerant Piping section on [page 16](#).

Note 2: For all 380V/60 & 575V/60 models, HP = 2.0.

Note 3: Water connection shown is nominal pipe size.

Note 4: Brazed plate evaporators do not have drain or vent connections integral to the heat exchanger. The connections must be installed in the field inlet and outlet piping as shown in Piping Section beginning on of IM 1100, available on www.DaikinApplied.com.

Physical Data - Remote Evaporator Units

Table 48: Physical Data - AGZ110D - AGZ130D - 380-575 Volt Models (208/230 Volts Previous Page)

PHYSICAL DATA	AGZ-DB Rev 0A Remote Evaporator Model 380-575 Volt Models					
	110		125		130	
BASIC DATA	Ckt.1	Ckt.2	Ckt.1	Ckt.2	Ckt.1	Ckt.2
Unit Capacity @ AHRI Conditions (See Note 1), Tons (kW)	106 (373)		117 (412)		130 (456)	
Number Of Refrigerant Circuits	2		2		2	
Unit Operating Charge, R-410A, lbs (kg)	102 (46)	102 (46)	115 (52)	115 (52)	115 (52)	115 (52)
Cabinet Dimensions, L x W x H, in. (mm)	173.1 x 88.0 x 100.4 (4397 x 2235 x 2550)		173.1 x 88.0 x 100.4 (4397 x 2235 x 2550)		173.1 x 88.0 x 100.4 (4397 x 2235 x 2550)	
Unit Operating Weight, lbs (kg)	6633 (3009)		6731 (3053)		6739 (3057)	
Unit Shipping Weight, lbs (kg)	6429 (2916)		6501 (2949)		6379 (2894)	
Add'l Weight for Copper Finned Coils, lbs (kg)	1070 (486)		1269 (576)		1269 (576)	
Add'l Weight for Optional Louvers - Upper, lbs (kg)	307 (139)		307 (139)		307 (139)	
Add'l Weight for Optional Louvers - Lower, lbs (kg)	230 (105)		230 (105)		230 (105)	
COMPRESSORS						
Type	Trio Scrolls		Trio Scrolls		Trio Scrolls	
Nominal tonnage of each Compressor	20	20	20	25	25	25
Number Of Compressors per Circuit	3	3	3	3	3	3
Oil Charge Per Compressor, oz (g)	135 (3827)	135 (3827)	135 (3827)	145 (4111)	145 (4111)	145 (4111)
CAPACITY REDUCTION STEPS - PERCENT OF COMPRESSOR DISPLACEMENT						
Staging, 6 Stages, Circuit #1 in Lead	0-17-33-50-67-83-100		0-15-33-48-67-81-100		0-17-33-50-67-83-100	
Staging, 6 Stages, Circuit #2 in Lead	0-17-33-50-67-83-100		0-19-33-52-67-86-100		0-17-33-50-67-83-100	
CONDENSERS - HIGH EFFICIENCY FIN AND TUBE TYPE WITH INTEGRAL SUBCOOLING						
Coil Face Area, ft ²	88.4	88.4	105.3	105.3	105.3	105.3
Coil Face Area, (m ²)	8.2	8.2	9.8	9.8	9.8	9.8
Finned Height x Finned Length, in. (mm)	42 x151.6 (1069x3851)	42 x151.6 (1069x3851)	50 x151.6 (1270x3851)	50 x151.6 (1270x3851)	50 x151.6 (1270x3851)	50 x151.6 (1270x3851)
Fins Per Inch x Rows Deep	16 x 3	16 x 3	16 x 3	16 x 3	16 x 3	16 x 3
Pumpdown Capacity, 90% Full lbs (kg)	142/64	142/64	166/75	166/75	166/75	166/75
CONDENSER FANS - DIRECT DRIVE PROPELLER TYPE						
Number Of Fans - Fan Diameter, in. (mm)	8 – 30 (762)		8 – 30 (762)		8 – 30 (762)	
Number Of Motors - HP (kW)	8 – 2.0 (1.5)		8 – 2.0 (1.5)		8 – 2.0 (1.5)	
Fan And Motor RPM, 60Hz	1140		1140		1140	
60 Hz Fan Tip Speed, FPM (m/sec)	8950 (45)		8950 (45)		8950 (45)	
60 Hz Total Unit Airflow, CFM (l/sec)	81,600 (38,517)		86,904 (41,020)		86,904 (41,020)	
REMOTE EVAPORATOR - BRAZED PLATE-TO-PLATE						
Number of Evaporators	1		1		1	
Number of Refrigerant Circuits	2		2		2	
Evaporator Model	ACH-500DQ-142H		ACH-500DQ-162H		ACH-500DQ-182H	
Dry Weight lbs (kg)	296 (134.3)		333 (151.1)		370 (167.8)	
Water Volume, Gallons, (l)	8.4 (31.8)		9.6 (36.3)		10.8 (40.9)	
Max. Water Pressure, psig (kPa)	653 (4502)		653 (4502)		653 (4502)	
Max. Refrigerant Working Pressure, psig (kPa)	653 (4502)		653 (4502)		653 (4502)	
Water Inlet / Outlet Victaulic Conn, in. (mm)	3 (80)		3 (80)		3 (80)	
Drain - NPT int, in. (mm) (Note 3)	Field Piping		Field Piping		Field Piping	
Vent - NPT int, in. (mm) (Note 3)	Field Piping		Field Piping		Field Piping	

NOTE: This table for 380V, 460V, and 575V models only. Information for 208/230V models previous page.

Note 1: Nominal capacity based on base unit capacity without derate for refrigerant piping. See Refrigerant Piping section on [page 16](#).

Note 2: For all 380V/60 & 575V/60 models, HP = 2.0.

Note 3: Water connection shown is nominal pipe size.

Note 4: Brazed plate evaporators do not have drain or vent connections integral to the heat exchanger. The connections must be installed in the field inlet and outlet piping as shown in Piping Section beginning on of IM 1100, available on www.DaikinApplied.com.

Physical Data - Remote Evaporator Units

Table 49: Physical Data - AGZ140D - AGZ190D

PHYSICAL DATA	AGZ-DB Rev 0A Remote Evaporator Model							
	140		160		180		190	
BASIC DATA	Ckt.1	Ckt.2	Ckt.1	Ckt.2	Ckt.1	Ckt.2	Ckt.1	Ckt.2
Unit Capacity @ AHRI (See Note 1), Tons (kW)	136 (479)		153 (539)		172 (605)		180 (633)	
Number Of Refrigerant Circuits	2		2		2		2	
Unit Operating Charge, R-410A, lbs (kg)	125 (57)	125 (57)	130 (59)	130 (59)	130 (59)	130 (59)	140 (64)	140 (64)
Cabinet Dimensions, L x W x H, in. (mm)	218.6 x 88.0 x 100.4 (5552 x 2235 x 2545)		218.6 x 88.0 x 100.4 (5552 x 2235 x 2545)		218.6 x 88.0 x 100.4 (5552 x 2235 x 2545)		256.9 x 88.0 x 100.4 (6525 x 2235 x 2545)	
Unit Operating Weight, lbs (kg)	7990 (3624)		8320 (3774)		8635 (3917)		9555 (4334)	
Unit Shipping Weight, lbs (kg)	7740 (3511)		8060 (3656)		8375 (3799)		9255 (4198)	
Add'l Weight for Copper Finned Coils, lbs (kg)	1588 (720)		1588 (720)		1588 (720)		1908 (865)	
Add'l Weight for Optional Louvers - Upper, lbs (kg)	376 (171)		376 (171)		376 (171)		446 (202)	
Add'l Weight for Optional Louvers - Lower, lbs (kg)	225 (102)		225 (102)		225 (102)		323 (146)	
COMPRESSORS								
Type	Trio Scrolls		Trio Scrolls		Trio Scrolls		Trio Scrolls	
Nominal tonnage of each Compressor	25	25	25	30	30	30	30	30
Number Of Compressors per Circuit	3	3	3	3	3	3	3	3
Oil Charge Per Compressor, oz (g)	145 (4111)	145 (4111)	145 (4111)	213 (6038)	213 (6038)	213 (6038)	213 (6038)	213 (6038)
CAPACITY REDUCTION STEPS - PERCENT OF COMPRESSOR DISPLACEMENT								
Staging, 6 Stages, Circuit #1 in Lead	0-17-33-50-67-83-100		0-15-33-48-67-81-100		0-17-33-50-67-83-100		0-17-33-50-67-83-100	
Staging, 6 Stages, Circuit #2 in Lead	0-17-33-50-67-83-100		0-19-33-52-67-86-100		0-17-33-50-67-83-100		0-17-33-50-67-83-100	
CONDENSERS - HIGH EFFICIENCY FIN AND TUBE TYPE WITH INTEGRAL SUBCOOLING								
Coil Face Area, ft ²	131.8	131.8	131.8	131.8	131.8	131.8	158.3	158.3
Coil Face Area, (m ²)	12.2	12.2	12.2	12.2	12.2	12.2	14.7	14.7
Finned Height x Finned Length, in. (mm)	50 x 190 (1270x4821)	50 x 190 (1270x4821)	50 x 190 (1270x4821)	50 x 190 (1270x4821)	50 x 190 (1270x4821)	50 x 190 (1270x4821)	50 x 228 (1270x5791)	50 x 228 (1270x5791)
Fins Per Inch x Rows Deep	16 x 3	16 x 3	16 x 3	16 x 3	16 x 3	16 x 3	16 x 3	16 x 3
Pumpdown Capacity, 90% Full lbs (kg)	202 (92)	202 (92)	202 (92)	202 (92)	202 (92)	202 (92)	242 (110)	242 (110)
CONDENSER FANS - DIRECT DRIVE PROPELLER TYPE								
Number Of Fans - Fan Diameter, in. (mm)	10 - 30 (762)		10 - 30 (762)		10 - 30 (762)		12 - 30 (762)	
Number Of Motors - HP (kW)	10 - 2.0 (1.5)		10 - 2.0 (1.5)		10 - 2.0 (1.5)		12 - 2.0 (1.5)	
Fan And Motor RPM, 60Hz	1140		1140		1140		1140	
60 Hz Fan Tip Speed, FPM (m/sec)	8950 (45)		8950 (45)		8950 (45)		8950 (45)	
60 Hz Total Unit Airflow, CFM (l/sec)	108,630 (51,268)		108,630 (51,268)		108,630 (51,268)		130,356 (61,522)	
REMOTE EVAPORATOR - SHELL-AND-TUBE								
Number of Evaporators	1		1		1		1	
Number of Refrigerant Circuits	2		2		2		2	
Evaporator Model	EV34191010/9		EV34191111/9		EV34191111/9		EV34191212/7	
Dry Weight lbs (kg)	840 (381)		840 (381)		870 (395)		900 (408)	
Water Volume, Gallons, (l)	58.8 (223)		57.8 (219)		57.8 (219)		56.8 (215)	
Maximum Water Pressure, psig (kPa)	152 (1048)		152 (1048)		152 (1048)		152 (1048)	
Max. Refrig. Working Pressure, psig (kPa)	450 (3103)		450 (3103)		450 (3103)		450 (3103)	
Water Inlet / Outlet Victaulic Conn. in. (mm)	8.0 (200)		8.0 (200)		8.0 (200)		8.0 (200)	
Drain - NPT int, in.	½-in. NPTF		½-in. NPTF		½-in. NPTF		½-in. NPTF	
Vent - NPT int, in.	½-in. NPTF		½-in. NPTF		½-in. NPTF		½-in. NPTF	

Note 1: Nominal capacity based on base unit capacity without derate for refrigerant piping. See Refrigerant Piping section on [page 16](#).

Note 2: For all 380V/60 & 575V/60 models, HP = 2.0.

Note 3: Water connection shown is nominal pipe size.

Dimensions - Packaged

Figure 30: AGZ025DH - 035DH (Packaged)

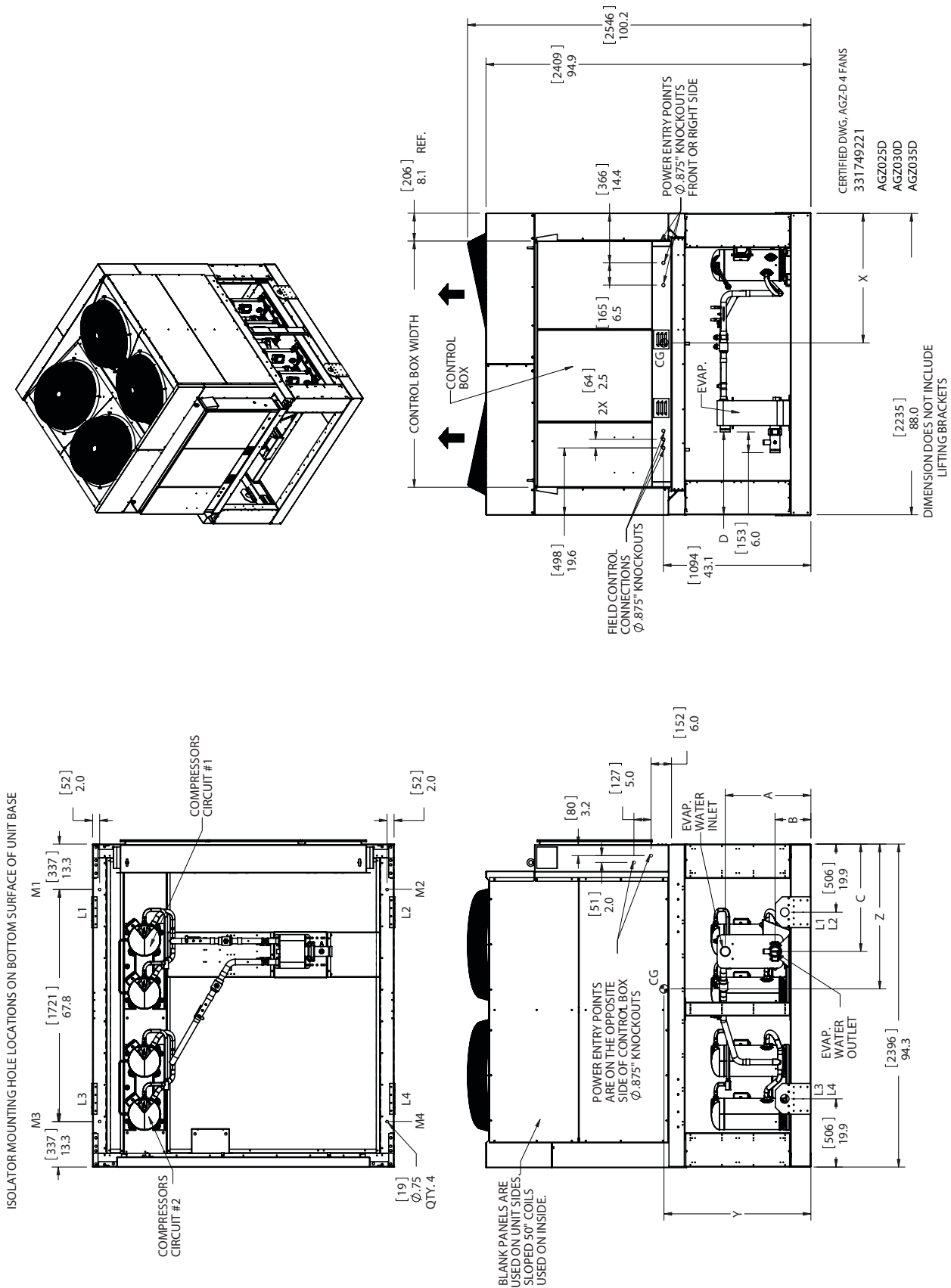
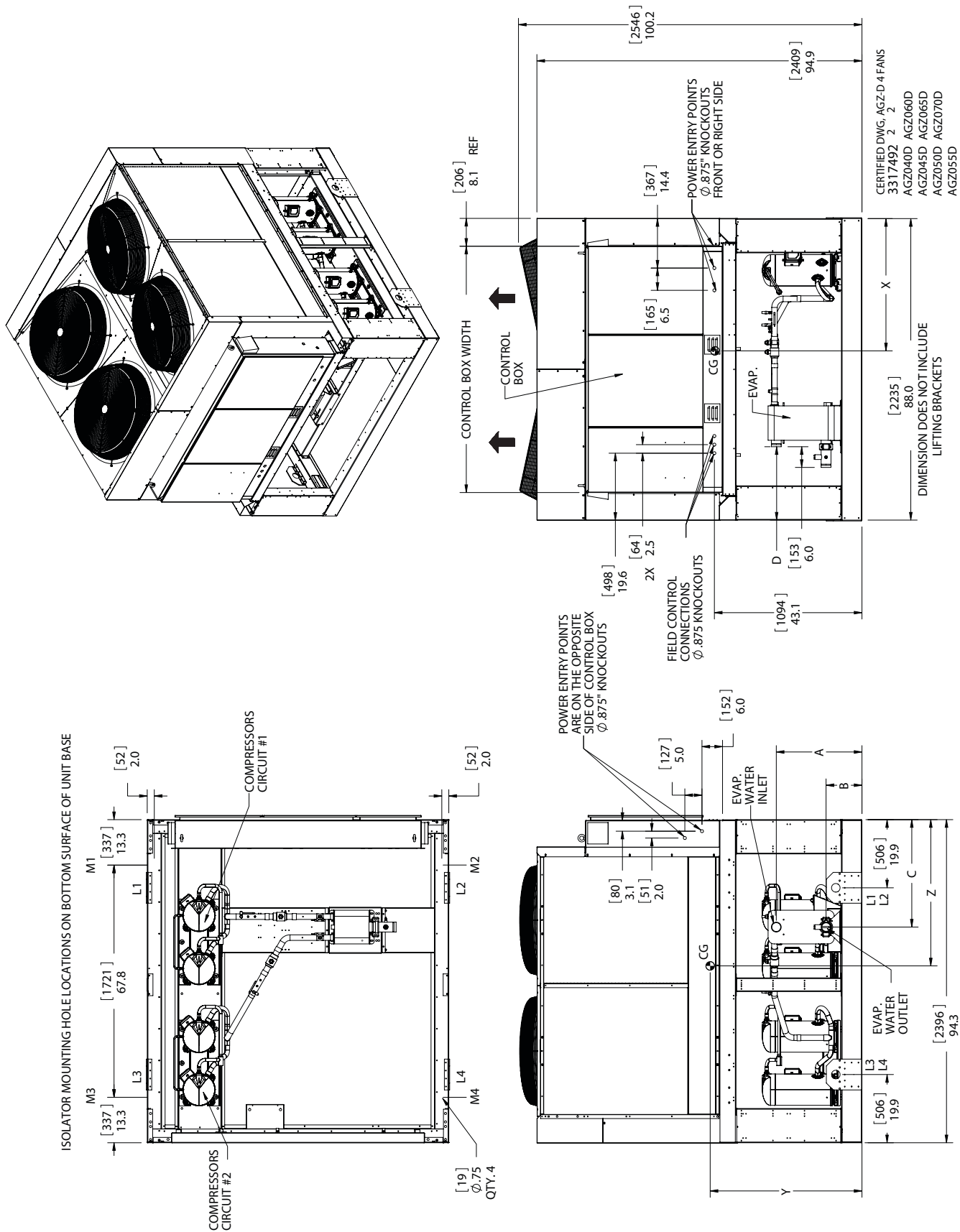


Figure 31: AGZ040DH - 070DH (Packaged)



Dimensions - Packaged

Figure 32: AGZ075DH - 100DH (Packaged)

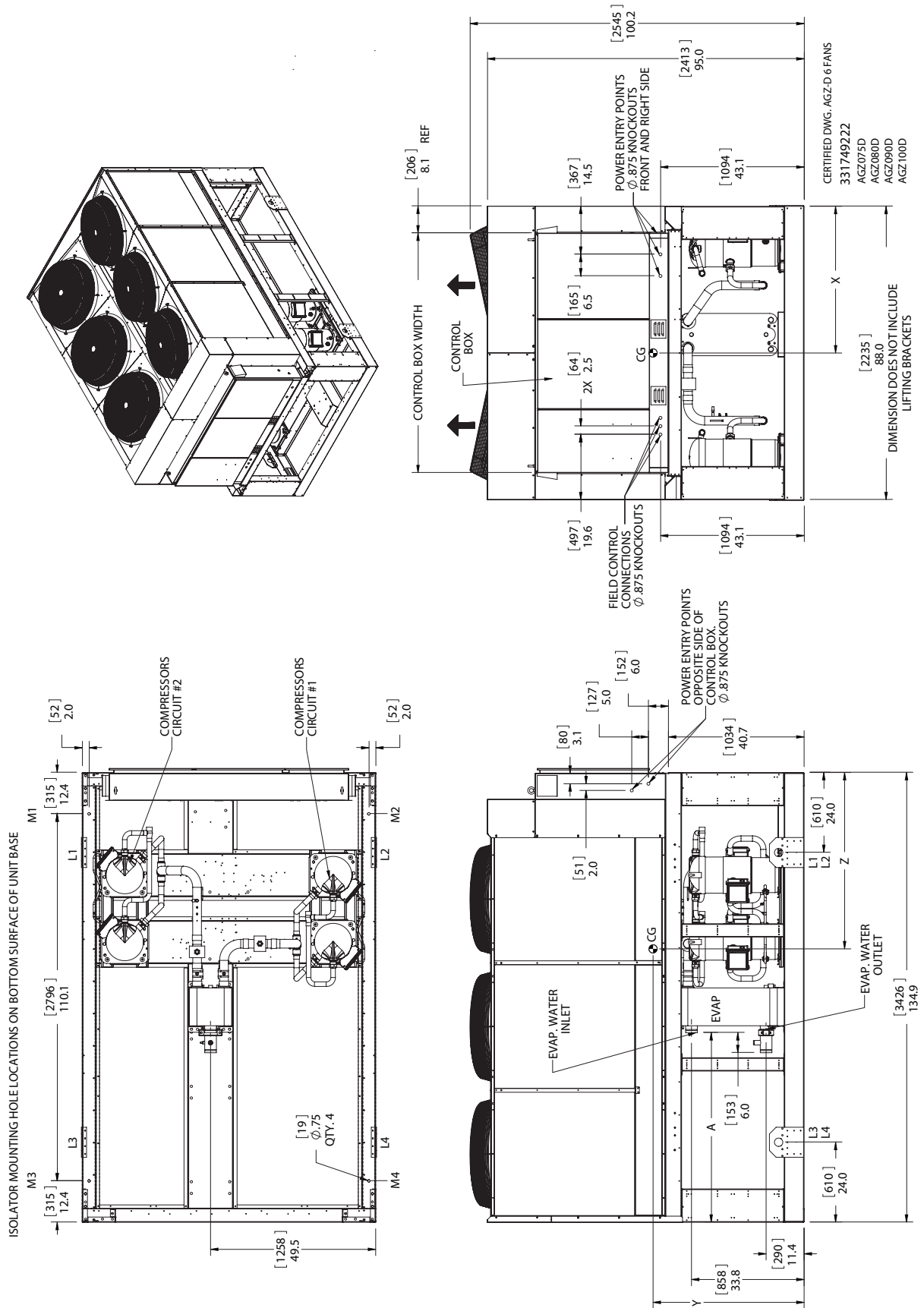
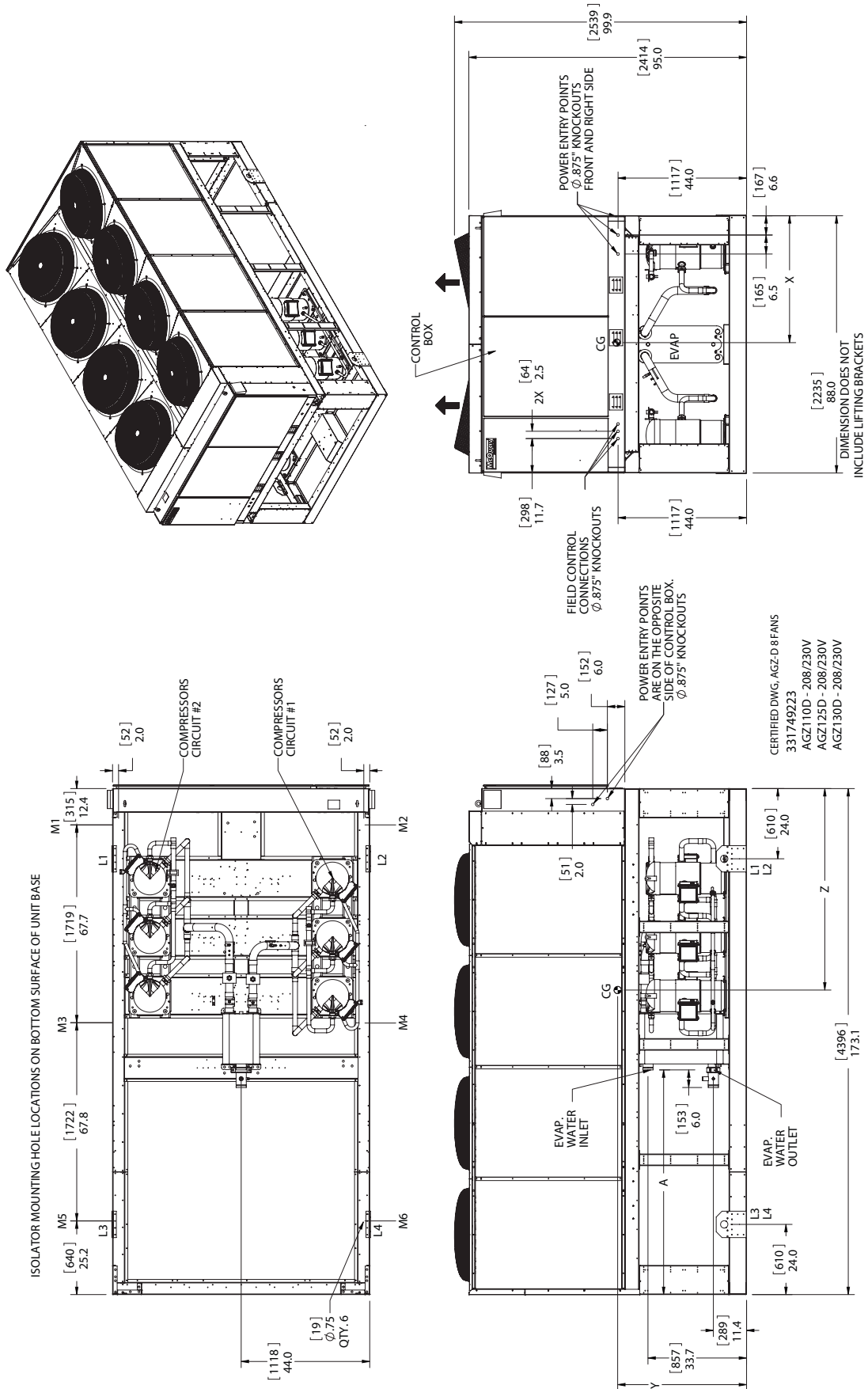


Figure 33: AGZ110DH - 130DH 208/230 volt models (380-575 next page)



Dimensions - Packaged

Figure 34: AGZ110DH - 130DH 380-575 volt models (208/230 previous page)

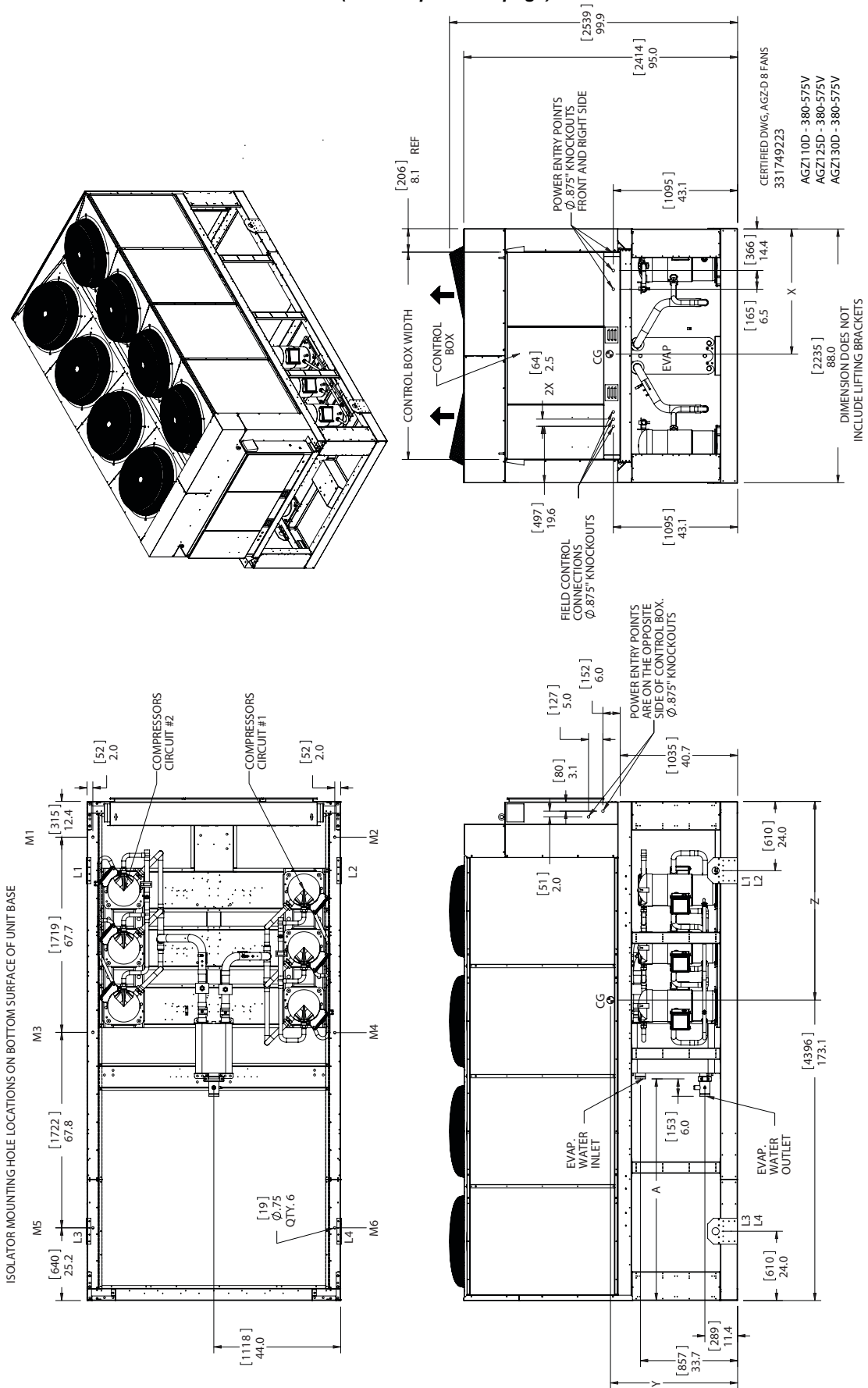
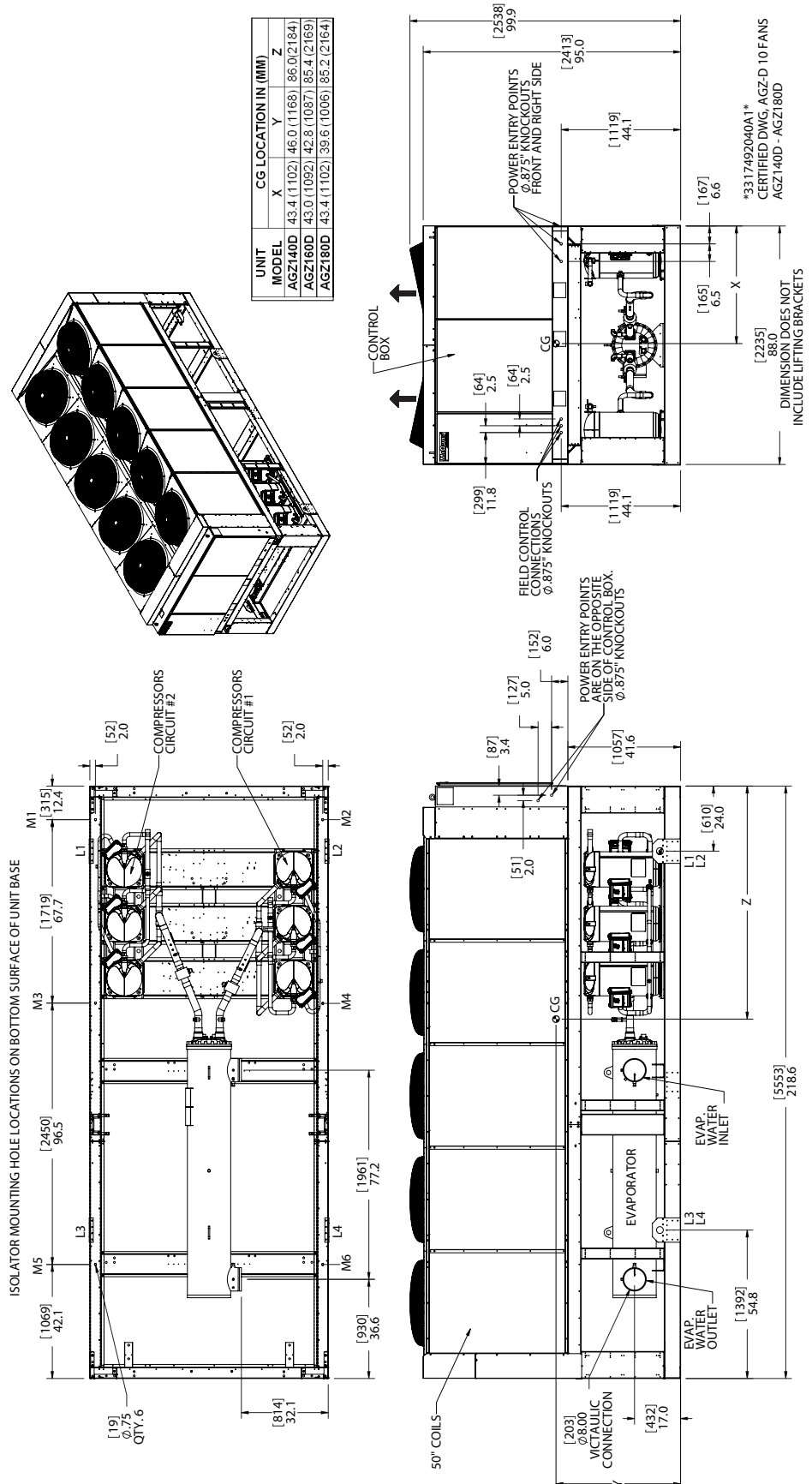
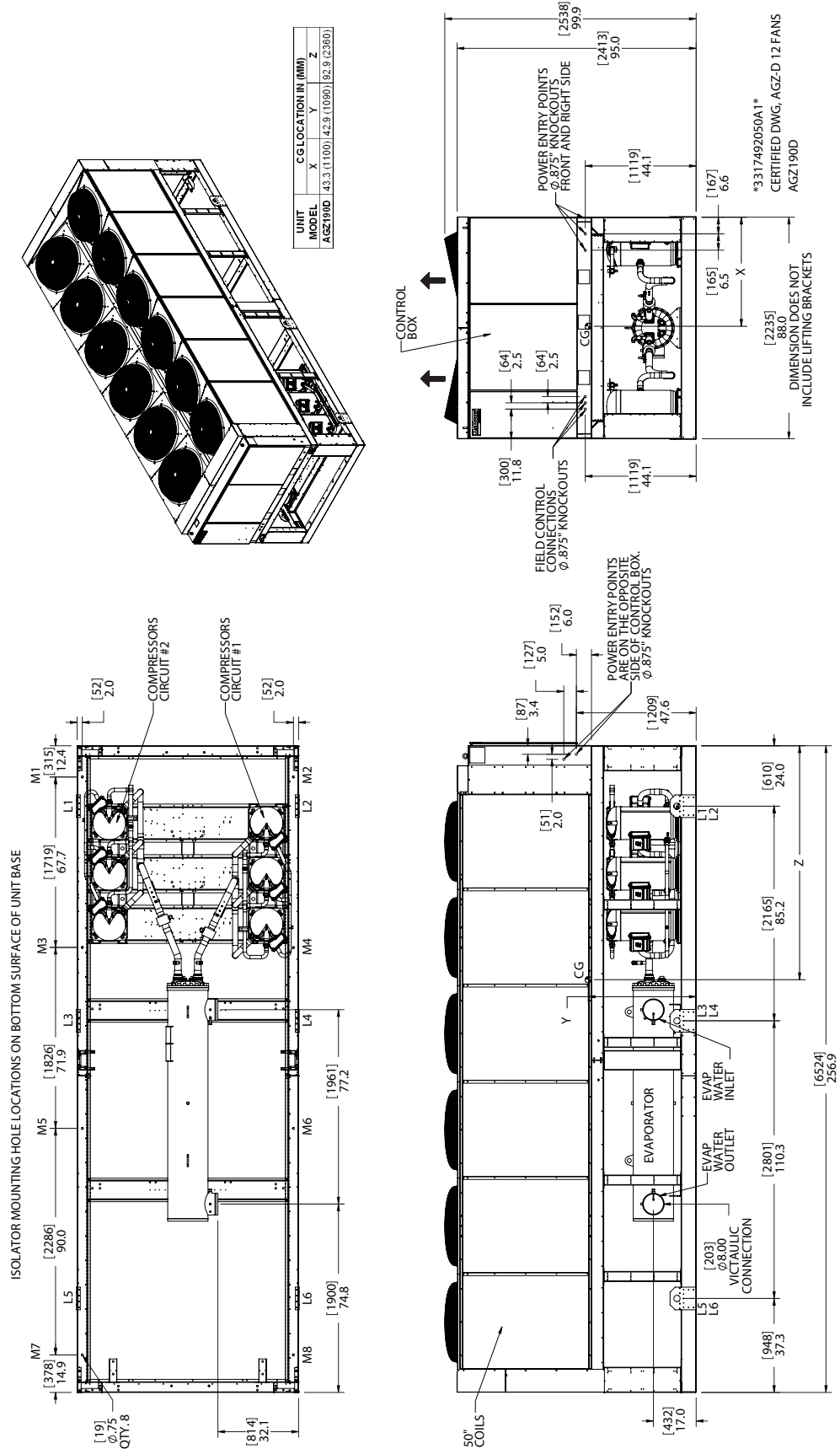


Figure 35: AGZ140DH - 180DH (Packaged)



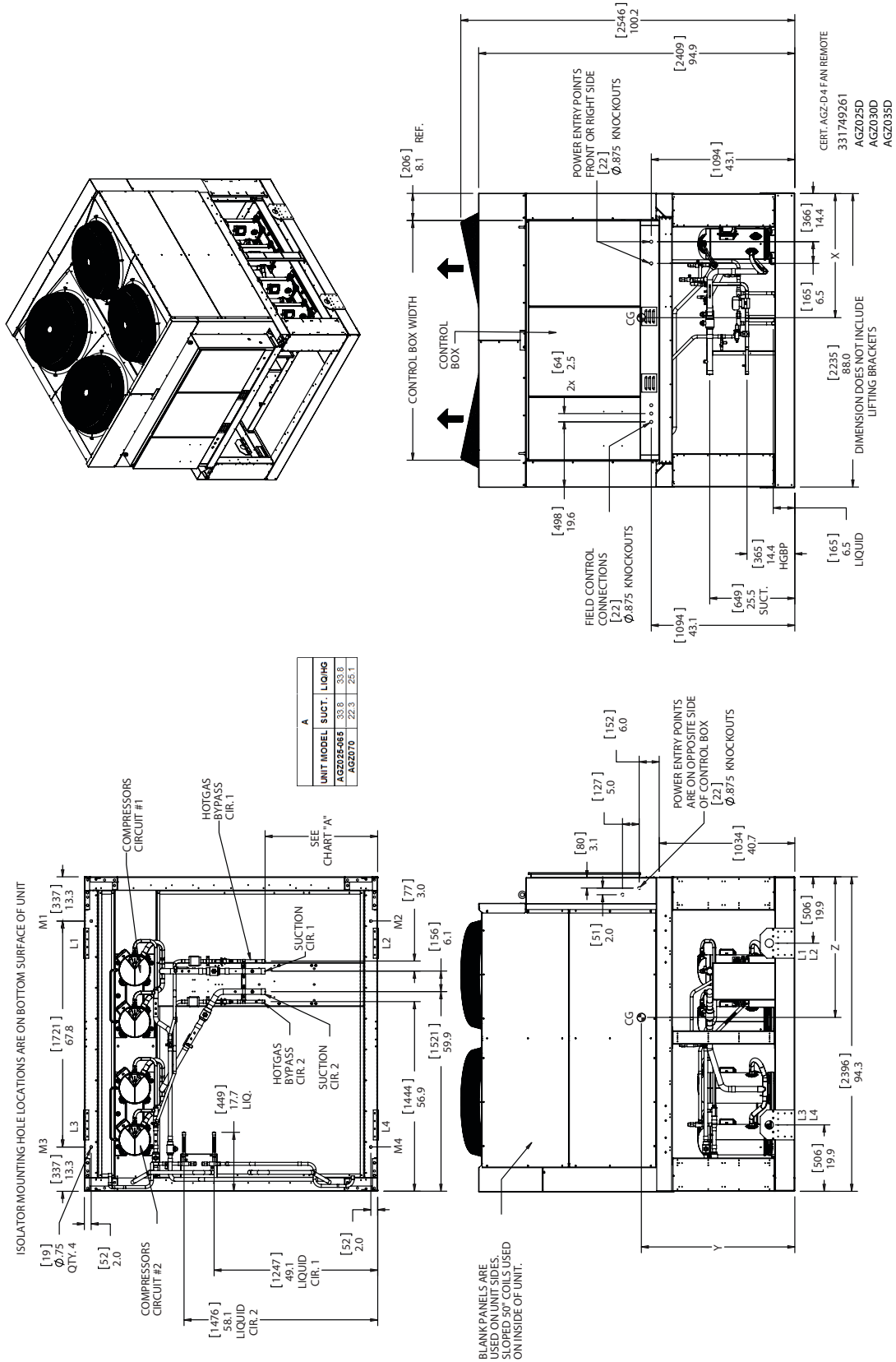
Dimensions - Packaged

Figure 36: AGZ190DH (Packaged)



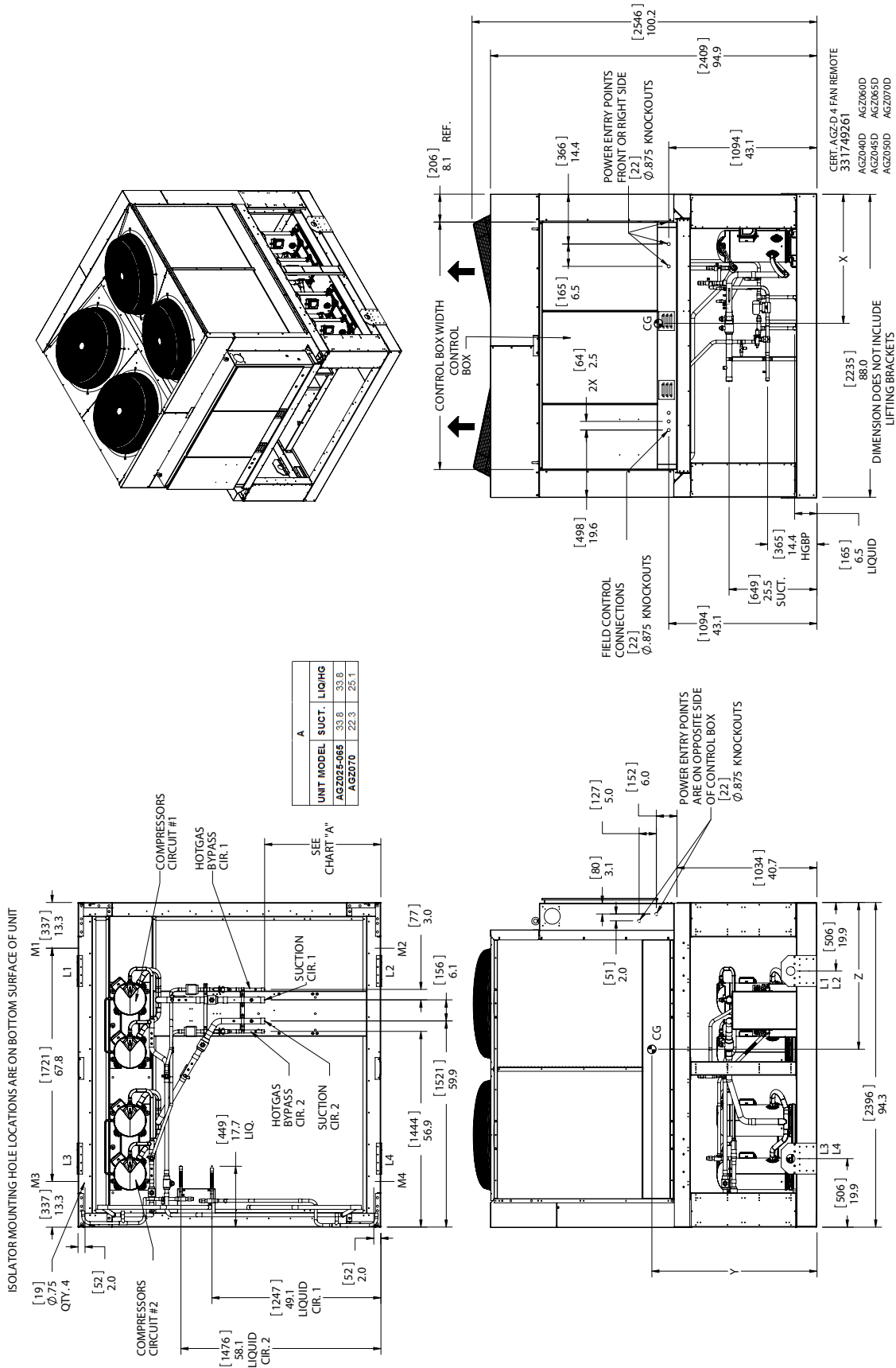
Dimensions - Remote Evaporator Models

Note: Evaporator Dimensions begin on page 19.
Figure 37: AGZ025DH - 035DH (Remote Evaporator)



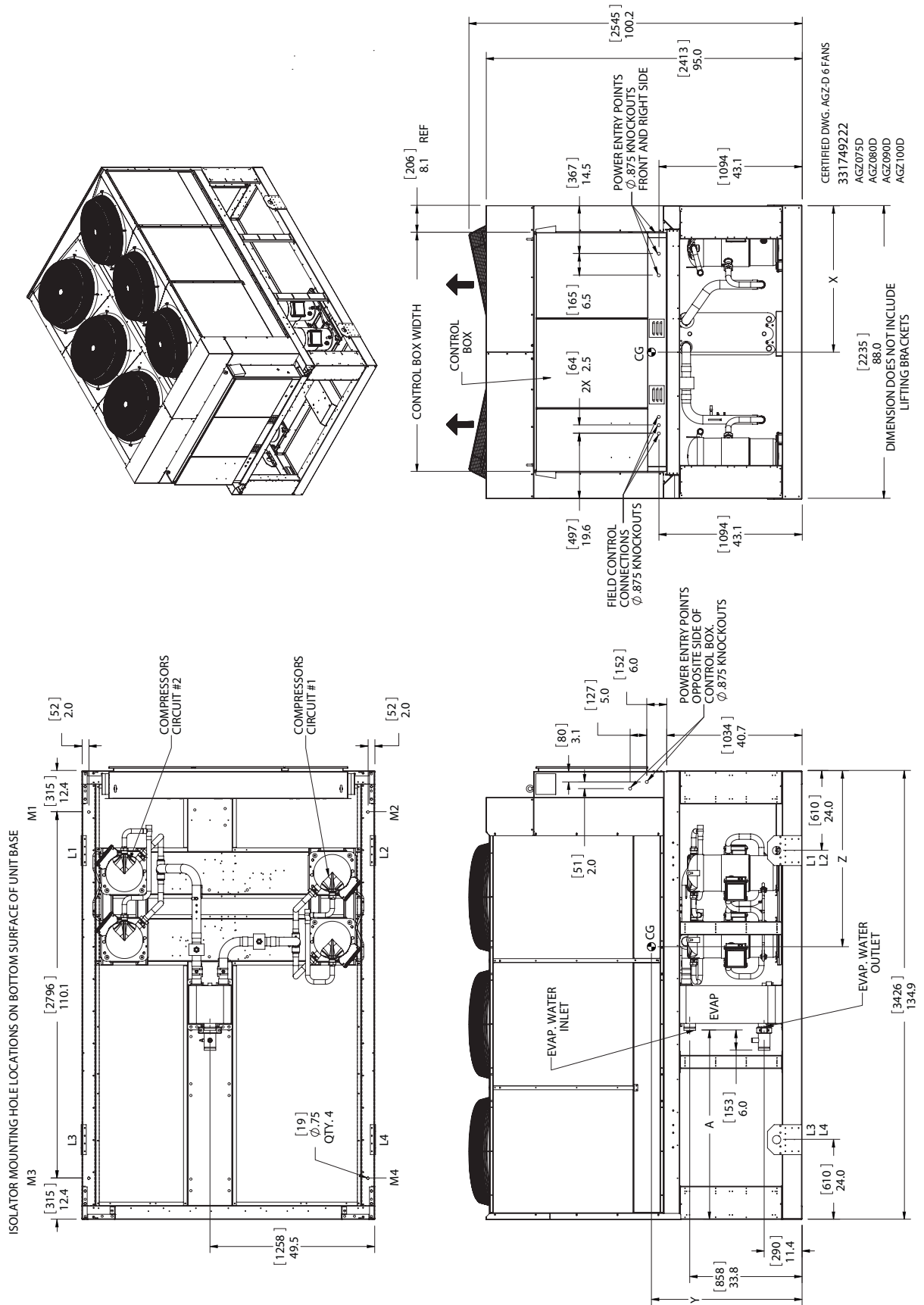
Dimensions - Remote Evaporator Models

Figure 38: AGZ040DH - 070DH (Remote Evaporator)



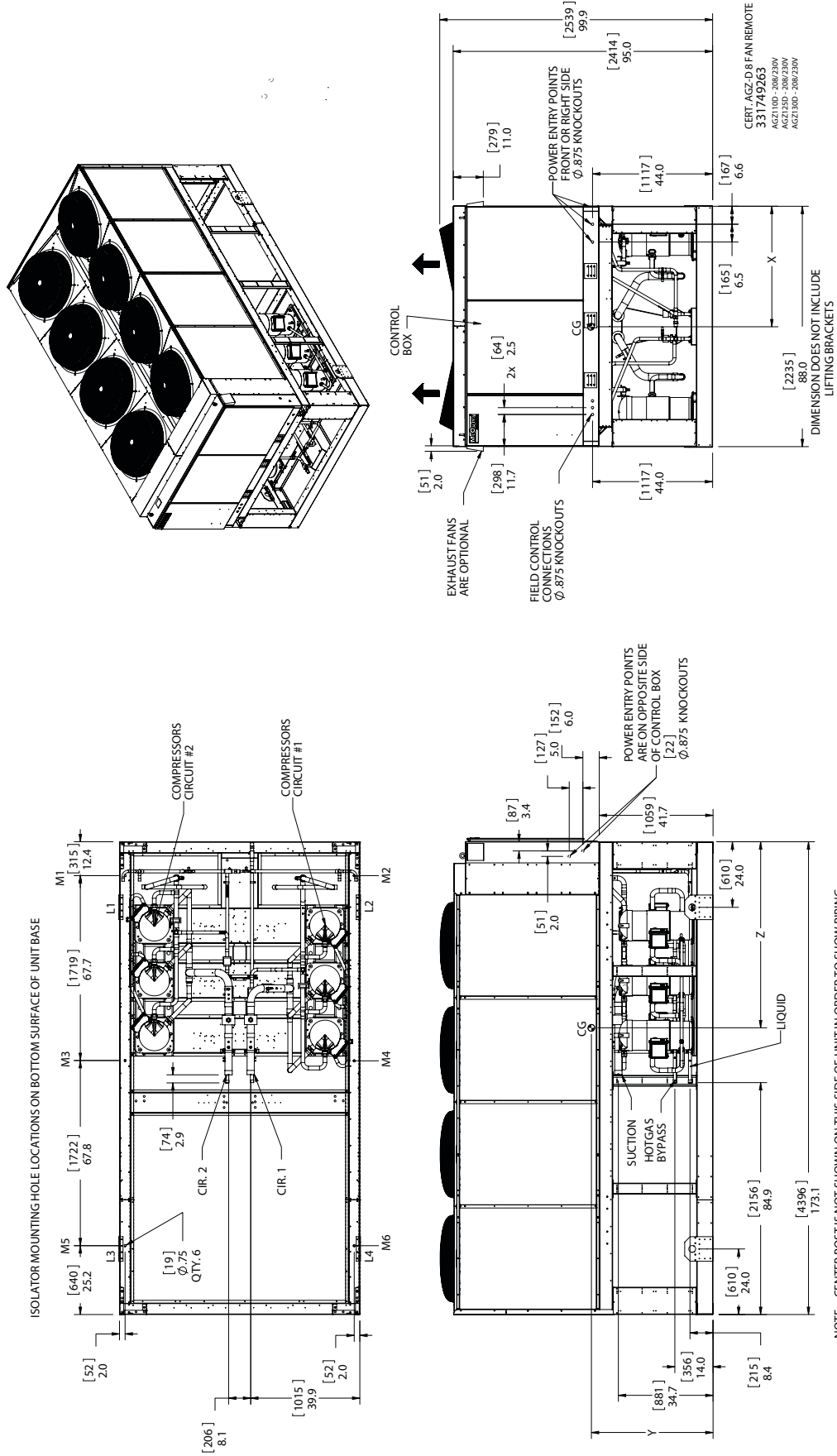
Dimensions - Remote Evaporator Models

Figure 39: AGZ075DH - 100DH (Remote Evaporator)



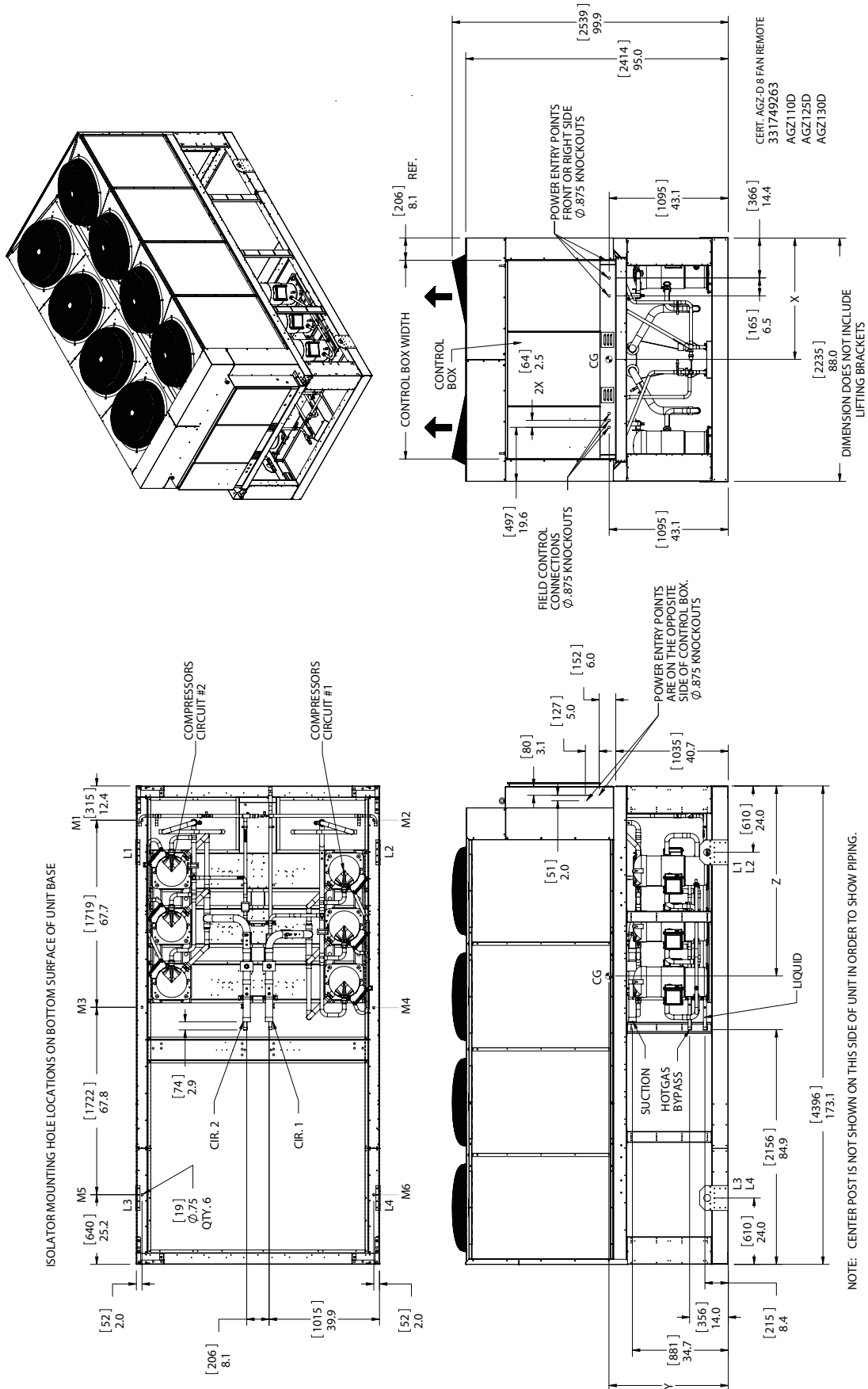
Dimensions - Remote Evaporator Models

Figure 40: AGZ110DH - 130DH 208/230 volt models (Remote Evaporator) (380-575 next page)



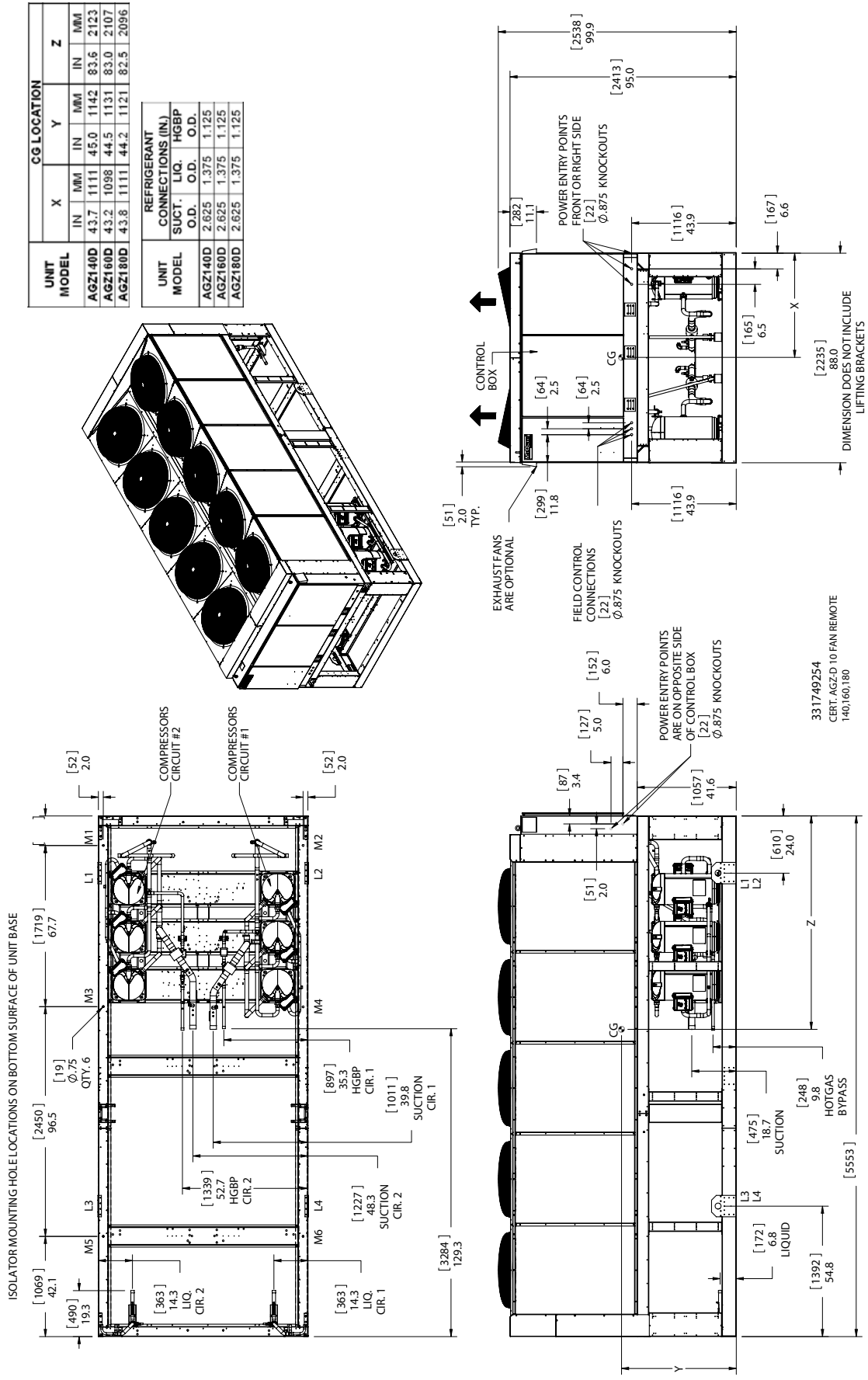
Dimensions - Remote Evaporator Models

Figure 41: AGZ110DH - 130DH 380-575 volt models (Remote Evaporator) (208/230 previous page)



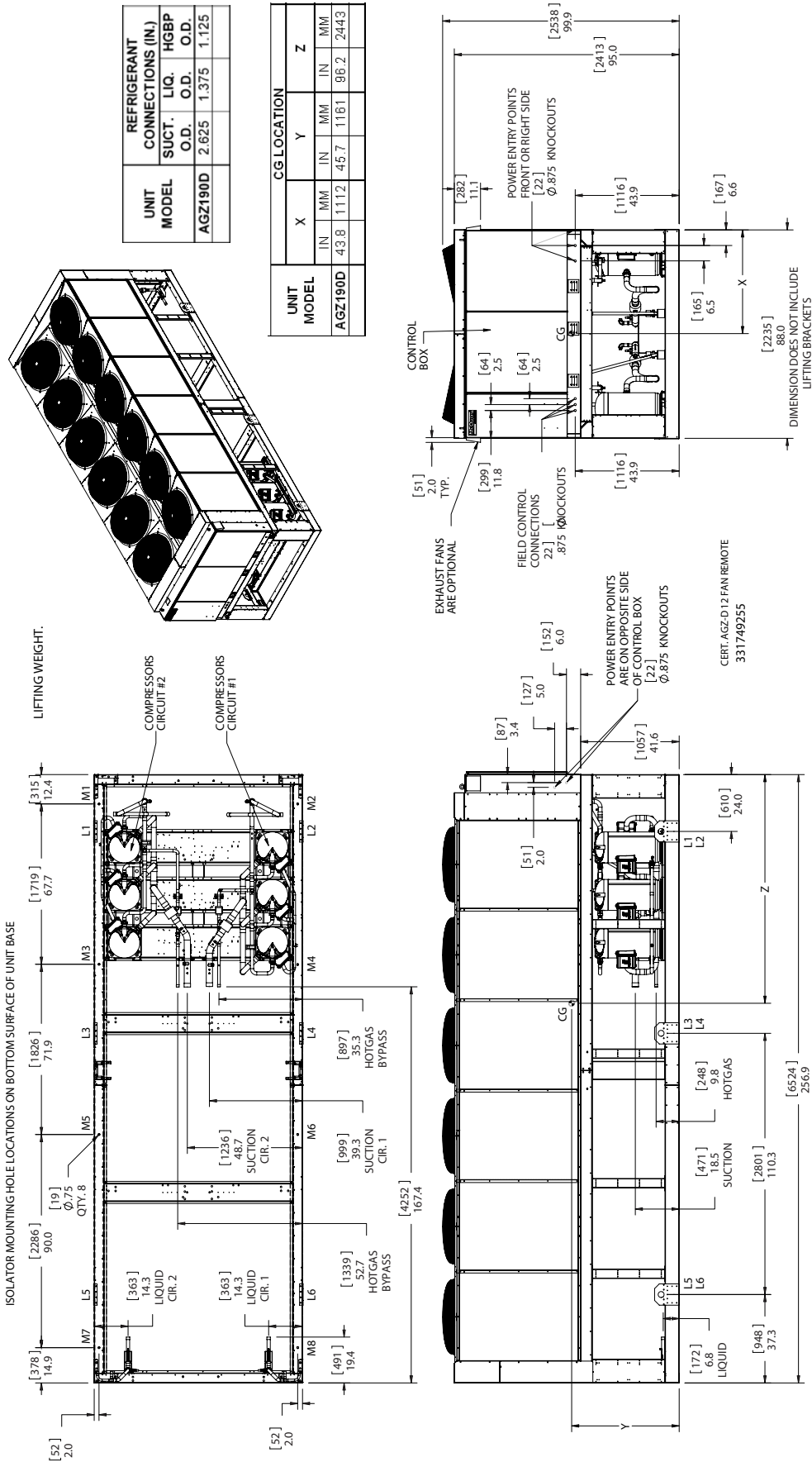
Dimensions - Remote Evaporator Models

Figure 42: AGZ140DH - 180DH (Remote Evaporator)



Dimensions - Remote Evaporator Models

Figure 43: AGZ190DH (Remote Evaporator)



Lifting and Mounting Weights

Table 50: Lifting Locations

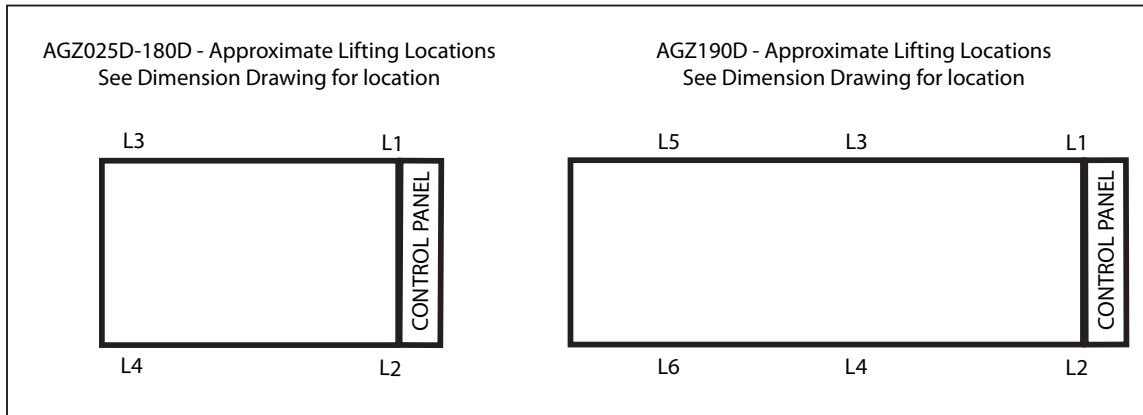


Table 51: Lifting Weights - Packaged Chillers (Remote Models next page)

UNIT MODEL	LIFTING WEIGHT BY CORNER LBS (KG)					
	L1	L2	L3	L4	L5	L6
AGZ025D	1053 (478)	806 (366)	729 (331)	561 (254)		
AGZ030D	1069 (485)	806 (366)	745 (338)	561 (254)		
AGZ035D	1070 (485)	810 (367)	743 (337)	562 (255)		
AGZ040D	1084 (492)	829 (376)	766 (347)	586 (266)		
AGZ045D	1116 (506)	871 (395)	805 (365)	628 (285)		
AGZ050D	1143 (518)	898 (407)	815 (370)	640 (290)		
AGZ055D	1150 (522)	908 (412)	820 (372)	647 (293)		
AGZ060D	1195 (542)	950 (431)	837 (380)	663 (301)		
AGZ065D	1200 (544)	963 (437)	840 (381)	671 (304)		
AGZ070D	1297 (588)	943 (428)	1033 (469)	752 (341)		
AGZ075D	1710 (776)	1680 (762)	965 (438)	950 (431)		
AGZ080D	1720 (780)	1782 (808)	916 (415)	915 (415)		
AGZ090D	1716(778)	1680 (762)	994 (451)	975 (442)		
AGZ100D	1820 (826)	17833 (809)	1014 (460)	994 (451)		
AGZ110D (208/230V)	2235 (1014)	2235 (1014)	1290 (585)	1290 (585)		
AGZ110D (380-575V)	2207 (1001)	2210 (1002)	1286 (583)	1287 (584)		
AGZ125D (208/230V)	2295 (1041)	2230 (1012)	1350 (612)	1310 (594)		
AGZ125D (380-575V)	2270 (1030)	2205 (1030)	1344 (610)	1306 (592)		
AGZ130D (208/230V)	2260 (1025)	2260 (1030)	1355 (615)	1355 (615)		
AGZ130D (380-575V)	2235 (1014)	2235 (1014)	1350 (612)	1350 (612)		
AGZ140D	2631 (1193)	2555 (1159)	2092 (949)	2032 (922)		
AGZ160D	2715 (1232)	2592 (1176)	2125 (964)	2029 (920)		
AGZ180D	2746 (1246)	2670 (1211)	2134 (968)	2075 (941)		
AGZ190D	2280 (1034)	2245 (1018)	1823 (827)	1795 (814)	1231 (558)	1212 (550)

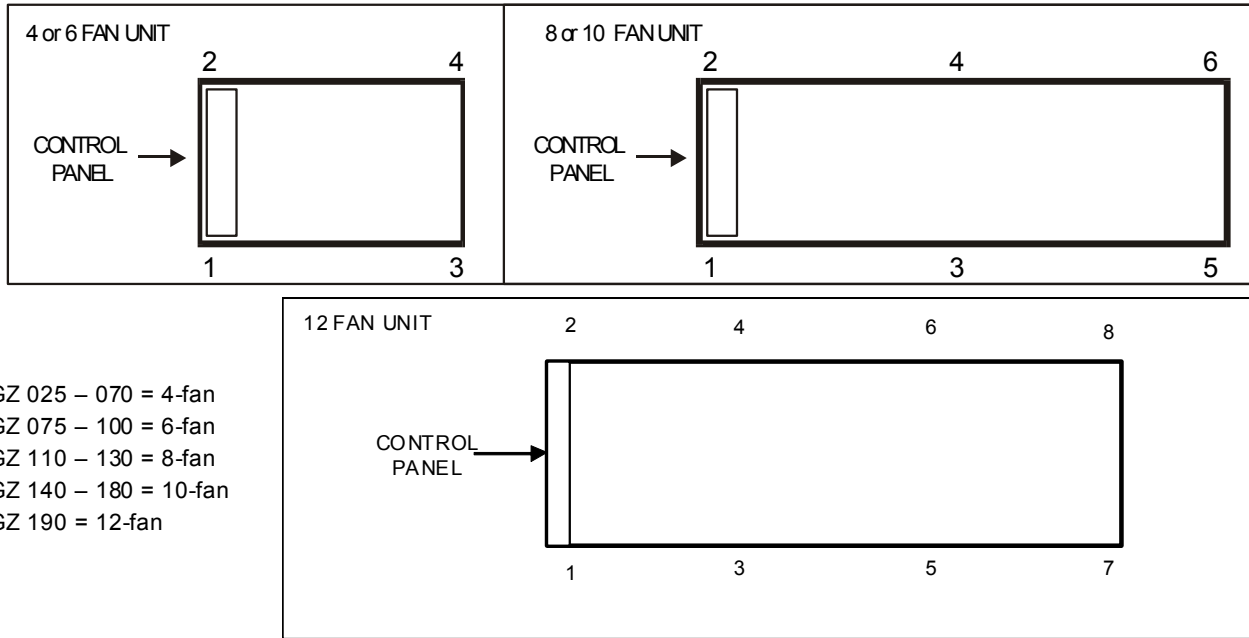
Lifting and Mounting Weights

Table 52: Lifting Weights - Chillers with Remote Evaporators

UNIT MODEL	LIFTING WEIGHT BY CORNER LBS (KG)					
	L1	L2	L3	L4	L5	L6
AGZ025D Remote	1002 (454)	754 (342)	678 (308)	510 (231)		
AGZ030D Remote	1017 (461)	745 (338)	703 (319)	515 (234)		
AGZ035D Remote	1017 (461)	745 (338)	703 (319)	515 (234)		
AGZ040D Remote	1026 (465)	752 (341)	721 (327)	528 (239)		
AGZ045D Remote	1054 (478)	784 (356)	758 (344)	564 (256)		
AGZ050D Remote	1075 (488)	796 (361)	769 (349)	569 (258)		
AGZ055D Remote	1078 (489)	801 (363)	774 (351)	575 (261)		
AGZ060D Remote	1103 (500)	820 (372)	792 (359)	589 (267)		
AGZ065D Remote	1101 (499)	818 (371)	794 (360)	590 (268)		
AGZ070D Remote	1199 (544)	786 (357)	1036 (470)	679 (308)		
AGZ075D Remote	1621 (735)	1612 (731)	869 (394)	864 (392)		
AGZ080D Remote	1647 (747)	1646 (747)	865 (392)	865 (392)		
AGZ090D Remote	1622 (736)	1614 (732)	929 (421)	924 (419)		
AGZ100D Remote	1649 (748)	1640 (744)	944 (428)	939 (426)		
AGZ110D Remote (208/230V)	2170 (984)	2182 (990)	1183 (537)	1190 (540)		
AGZ110D Remote (380-575V)	2109 (957)	2111 (958)	1194 (542)	1195 (542)		
AGZ125D Remote (208/230V)	2222 (1008)	2234 (1013)	1212 (550)	1218 (552)		
AGZ125D Remote (380-575V)	2193 (995)	2168 (983)	1212 (550)	1198 (543)		
AGZ130D Remote (208/230V)	2268 (1029)	2279 (1034)	1216 (552)	1222 (554)		
AGZ130D Remote (380-575V)	2212 (1003)	2213 (1004)	1221 (554)	1222 (554)		
AGZ140D Remote	2337 (1060)	2310 (1048)	1737 (788)	1716 (778)		
AGZ160D Remote	2424 (1100)	2341 (1062)	1768 (802)	1707 (774)		
AGZ180D Remote	2449 (1111)	2421 (1098)	1763 (800)	1743 (791)		
AGZ190D Remote	2036 (924)	2015 (914)	1594 (723)	1577 (715)	1231 (558)	1212 (550)

Lifting and Mounting Weights

Figure 44: Mounting Locations



AGZ 025 – 070 = 4-fan
 AGZ 075 – 100 = 6-fan
 AGZ 110 – 130 = 8-fan
 AGZ 140 – 180 = 10-fan
 AGZ 190 = 12-fan

Table 53: Packaged Chiller Isolator Loads at Each Mounting Location (with Aluminum Fins)

Unit Size	Fans (Qty)	Shipping Weight lbs (kg)	Operating Weight lbs (kg)	M1 lbs (kg)	M2 lbs (kg)	M3 lbs (kg)	M4 lbs (kg)	M5 lbs (kg)	M6 lbs (kg)	M7 lbs (kg)	M8 lbs (kg)	Copper Fin Weight Add - See Note
AGZ025D	4	3148 (1428)	3163 (1435)	1028 (466)	781 (354)	769 (349)	584 (265)	—	—	—	—	71 (32)
AGZ030D	4	3180 (1442)	3195 (1449)	1043 (473)	785 (356)	780 (354)	587 (266)	—	—	—	—	71 (32)
AGZ035D	4	3185 (1445)	3205 (1454)	1043 (473)	789 (358)	780 (354)	590 (268)	—	—	—	—	72 (33)
AGZ040D	4	3265 (1481)	3285 (1490)	1060 (481)	810 (367)	803 (364)	613 (278)	—	—	—	—	72 (33)
AGZ045D	4	3420 (1551)	3445 (1563)	1095 (497)	856 (388)	839 (381)	656 (297)	—	—	—	—	119 (54)
AGZ050D	4	3495 (1585)	3525 (1599)	1121 (509)	880 (399)	854 (387)	670 (304)	—	—	—	—	119 (54)
AGZ055D	4	3525 (1599)	3555 (1613)	1128 (512)	890 (404)	859 (390)	678 (307)	—	—	—	—	119 (54)
AGZ060D	4	3645 (1653)	3680 (1669)	1150 (522)	950 (431)	866 (393)	715 (324)	—	—	—	—	142 (65)
AGZ065D	4	3675 (1667)	3715 (1685)	1159 (526)	961 (436)	872 (396)	723 (328)	—	—	—	—	142 (65)
AGZ070D	4	4025 (1826)	4065 (1844)	1288 (584)	956 (434)	1079 (490)	801 (364)	—	—	—	—	142 (65)
AGZ075D	6	5305 (2406)	5350 (2427)	1697 (770)	1667 (756)	1063 (482)	1044 (473)	—	—	—	—	218 (99)
AGZ080D	6	5335 (2420)	5385 (2443)	1759 (798)	1759 (798)	1024 (464)	1024 (464)	—	—	—	—	218 (99)
AGZ090D	6	5363 (2434)	5420 (2459)	1761 (799)	1729 (784)	1095 (497)	1075 (488)	—	—	—	—	218 (99)
AGZ100D	6	5610 (2545)	5675 (2574)	1806 (819)	1773 (804)	1118 (507)	1098 (498)	—	—	—	—	218 (99)

Note: Weight Add for Copper fins is per mounting location

Lifting and Mounting Weights

Table 54: Packaged Chiller Isolator Loads at Each Mounting Location (with Aluminum Fins) (continued)

Unit Size	Fans (Qty)	Shipping Weight lbs (kg)	Operating Weight lbs (kg)	M1 lbs (kg)	M2 lbs (kg)	M3 lbs (kg)	M4 lbs (kg)	M5 lbs (kg)	M6 lbs (kg)	M7 lbs (kg)	M8 lbs (kg)	Copper Fin Weight Add - See Note
AGZ110D 380-575V	8	6990 (3170)	7060 (3202)	1504 (682)	1504 (682)	1207 (547)	1207 (547)	909 412	909 412	---	---	193 (87)
AGZ110D 208-230V	8	7050 (3198)	7120 (3202)	1517 (688)	1517 (688)	1217 (552)	1217 (552)	917 416	917 416	---	---	193 (87)
AGZ125D 380-575V	8	7125 (3232)	7205 (3268)	1577 (715)	1534 (696)	1263 (573)	1229 (558)	949 430	923 419	---	---	193 (87)
AGZ125D 208-230V	8	7185 (3259)	7265 (3295)	1590 (721)	1547 (702)	1273 (578)	1239 (562)	956 434	931 422	---	---	193 (87)
AGZ130D 380-575V	8	7170 (3252)	7260 (3293)	1586 (719)	1586 (719)	1270 (576)	1270 (576)	954 433	954 433	---	---	193 (87)
AGZ130D 208-230V	8	7230 (3078)	7320 (3320)	1598 (725)	1598 (725)	1280 (581)	1280 (581)	962 436	962 436	---	---	193 (87)
AGZ140D	10	8950 (4060)	9432 (4278)	1759 (798)	1711 (776)	1667 (756)	1622 (736)	1537 697	1496 678	---	---	266 (121)
AGZ160D	10	9280 (4209)	9762 (4428)	1819 (825)	1738 (788)	1710 (776)	1634 (741)	1555 705	1486 674	---	---	266 (121)
AGZ180D	10	9625 (4366)	10107 (4584)	1838 (834)	1789 (811)	1724 (782)	1677 (761)	1560 708	1518 689	---	---	266 (121)
AGZ190D	12	10585 (4801)	11070 (5021)	2013 (913)	1950 (884)	1637 (742)	1585 (719)	1237 561	1198	737 334	714 324	239 (109)

Note: Weight Add for Copper fins is per mounting location

Note: Isolator Loads for models with remote evaporator next page.

Lifting and Mounting Weights

Table 55: Remote Evaporator Models - Isolator Loads at Each Mounting Location (with Aluminum Fins)

Unit Size	Fans (Qty)	Shipping Weight lbs (kg)	Operating Weight lbs (kg)	M1 lbs (kg)	M2 lbs (kg)	M3 lbs (kg)	M4 lbs (kg)	M5 lbs (kg)	M6 lbs (kg)	M7 lbs (kg)	M8 lbs (kg)	Copper Fin Weight Add - See Note
AGZ025D Remote	4	2944 (1335)	3002 (1362)	991 (450)	746 (338)	722 (327)	544 (247)	---	---	---	---	71 (32)
AGZ030D Remote	4	2980 (1352)	3046 (1382)	1009 (458)	739 (335)	749 (340)	549 (249)	---	---	---	---	71 (32)
AGZ035D Remote	4	2980 (1352)	3046 (1382)	1009 (458)	739 (335)	749 (340)	549 (249)	---	---	---	---	72 (33)
AGZ040D Remote	4	3027 (1373)	3105 (1408)	1023 (464)	749 (340)	769 (349)	564 (256)	---	---	---	---	72 (33)
AGZ045D Remote	4	3160 (1433)	3248 (1473)	1055 (479)	785 (356)	807 (366)	601 (273)	---	---	---	---	119 (54)
AGZ050D Remote	4	3209 (1456)	3309 (1501)	1079 (489)	799 (362)	822 (373)	609 (276)	---	---	---	---	119 (54)
AGZ055D Remote	4	3228 (1464)	3332 (1511)	1083 (491)	805 (365)	828 (376)	616 (279)	---	---	---	---	119 (54)
AGZ060D Remote	4	3303 (1498)	3411 (1547)	1109 (503)	824 (374)	848 (385)	630 (286)	---	---	---	---	142 (65)
AGZ065D Remote	4	3303 (1498)	3419 (1551)	1109 (503)	825 (374)	851 (386)	633 (287)	---	---	---	---	142 (65)
AGZ070D Remote	4	3639 (1651)	3759 (1705)	1193 (542)	801 (363)	1054 (479)	710 (322)	---	---	---	---	142 (65)
AGZ075D Remote	6	4847 (2197)	4997 (2267)	1529 (694)	1520 (690)	977 (444)	972 (441)	---	---	---	---	218 (99)
AGZ080D Remote	6	4844 (2199)	5004 (2270)	1495 (679)	1554 (706)	978 (444)	978 (444)	---	---	---	---	218 (99)
AGZ090D Remote	6	4848 (2199)	5020 (2277)	1481 (672)	1473 (669)	1036 (470)	1030 (467)	---	---	---	---	218 (99)
AGZ100D Remote	6	5052 (2292)	5228 (2371)	1568 (711)	1560 (708)	1053 (478)	1048 (475)	---	---	---	---	218 (99)
AGZ110D Remote 460-575V	8	6429 (2916)	6633 (3009)	1319 (599)	1320 (599)	1135 (515)	1136 (515)	861 (391)	862 (391)	---	---	193 (87)
AGZ110D Remote 208-230V	8	6544 (2968)	6748 (3061)	1367 (621)	1375 (624)	1152 (523)	1158 (525)	846 (384)	850 (386)	---	---	193 (87)
AGZ125D Remote 460-575V	8	6501 (2949)	6731 (3053)	1345 (611)	1318 (598)	1174 (533)	1160 (526)	872 (396)	862 (391)	---	---	193 (87)
AGZ125D Remote 208-230V	8	6616 (3001)	6846 (3105)	1395 (633)	1353 (614)	1194 (542)	1170 (531)	872 (396)	862 (391)	---	---	193 (87)
AGZ130D Remote 460-575V	8	6379 (2894)	6739 (3057)	1308 (594)	1308 (594)	1183 (537)	1184 (537)	878 (398)	879 (399)	---	---	193 (87)
AGZ130D Remote 208-230V	8	6624 (3005)	6854 (3109)	1351 (631)	1358 (617)	1200 (544)	1206 (547)	868 (394)	872 (396)	---	---	193 (87)
AGZ140D Remote	10	7740 (3511)	7990 (3624)	1425 (647)	1407 (639)	1358 (617)	1341 (609)	1236 (561)	1222 (554)	---	---	266 (121)
AGZ160D Remote	10	8060 (3656)	8320 (3744)	1557 (706)	1502 (682)	1422 (646)	1372 (623)	1555 (705)	1486 (674)	---	---	266 (121)
AGZ180D Remote	10	8375 (3799)	8635 (3917)	1625 (737)	1606 (728)	1469 (666)	1453 (659)	1248 (566)	1234 (560)	---	---	266 (121)
AGZ190D Remote	12	9255 (4198)	9555 (4334)	1660 (753)	1642 (745)	1375 (624)	1361 (617)	1073 (487)	1062 (482)	695 (316)	688 (312)	239 (109)

Note: Weight Add for Copper fins is per mounting location

Electrical Data Notes

Notes for Unit Amp Draw:

- 1 Compressor RLA values are for wire sizing purposes only. Normal operating current draw at rated capacity may be less than the RLA value.

Notes for Electrical Data Single- and Multi-Point

- 1 Unit wire size ampacity (MCA) is equal to 125% of the largest compressor-motor RLA plus 100% of RLA of all other loads in the circuit.
- 2 The control transformer is furnished and no separate 115V power is required. For both single- and multi-point power connections, the control transformer is in circuit #1 with control power wired from there to circuit #2. In multi-point power, disconnecting power to circuit #1 disconnects control power to the unit.
- 3 Wire sizing amps is 10 amps if a separate 115V power supply is used for the control circuit.
- 4 Recommended power lead wire sizes for 3 conductors per conduit are based on 100% conductor ampacity in accordance with NEC. Voltage drop has not been included. It is recommended that power leads be kept short. All terminal block connections must be made with copper (type THW) wire.
- 5 Recommended Fuse Sizes are selected at approximately 175% of the largest compressor RLA, plus 100% of all other loads in the circuit.
- 6 Maximum Fuse or breaker size is equal to 225% of the largest compressor RLA, plus 100% of all other loads.
- 7 The recommended power wire sizes are based on an ambient temperature of 86°F (30°C). Ampacity correction factors must be applied for other ambient temperatures. Refer to the NEC Handbook.
- 8 Must be electrically grounded according to national and local electrical codes.

Notes for Wiring Data

- 1 Single-point power supply requires a single disconnect to supply electrical power to the unit. This power supply must either be fused or use a circuit breaker.
- 2 All field wiring to unit power block or optional non-fused disconnect switch must be copper.
- 3 All field wire size values given in table apply to 75°C rated wire per NEC.

Voltage Limitations:

- 1 Within 10 percent of nameplate rating.
- 2 Voltage unbalance not to exceed 2% with a resultant current unbalance of 6 to 10 times the voltage unbalance per NEMA MG-1, 2009 Standard Rev. 1-2010.

Table 56: HSSCR Panel Rating

AGZ-D Model Size	208V-230V	380V-460V	575V
025-065	100kA	65kA	25kA
070-190	100kA	65kA	25kA

Table 57: Standard Panel Rating

AGZ-D Model Size	208V	230V	380V	460V	575V
025-080, 125	5kA	5kA	5kA	5kA	5kA
090-110, 130-160	5kA	5kA	10kA	5kA	5kA
180,190	5kA	10kA	10kA	10kA	5kA

Circuit Breakers

Factory installed compressor circuit breakers are standard on units with single point power supply only. This option provides compressor short circuit protection and makes servicing easier.

Electrical Control Center

Operating and equipment protection controls and motor starting components are separately housed in a centrally located, weather resistant control panel with hinged and tool-locked doors. In addition to the MicroTech III controller described in the next sections, the following components are housed in the panel:

- Power terminal blocks, multi-point connection standard
- Control, input, and output terminal block
- Control transformer
- Optional disconnect switch (through-the-door handle)
- Compressor motor inherent thermal and overload protection is standard
- Optional phase voltage monitor with under/over voltage and phase reversal protection
- Fan contactors with short circuit protective devices.
- Optional ground fault protection
- FanTrol fan staging head pressure control system
- Power connections are per the following table

Power Connections

Table 58: Power Connection Availability

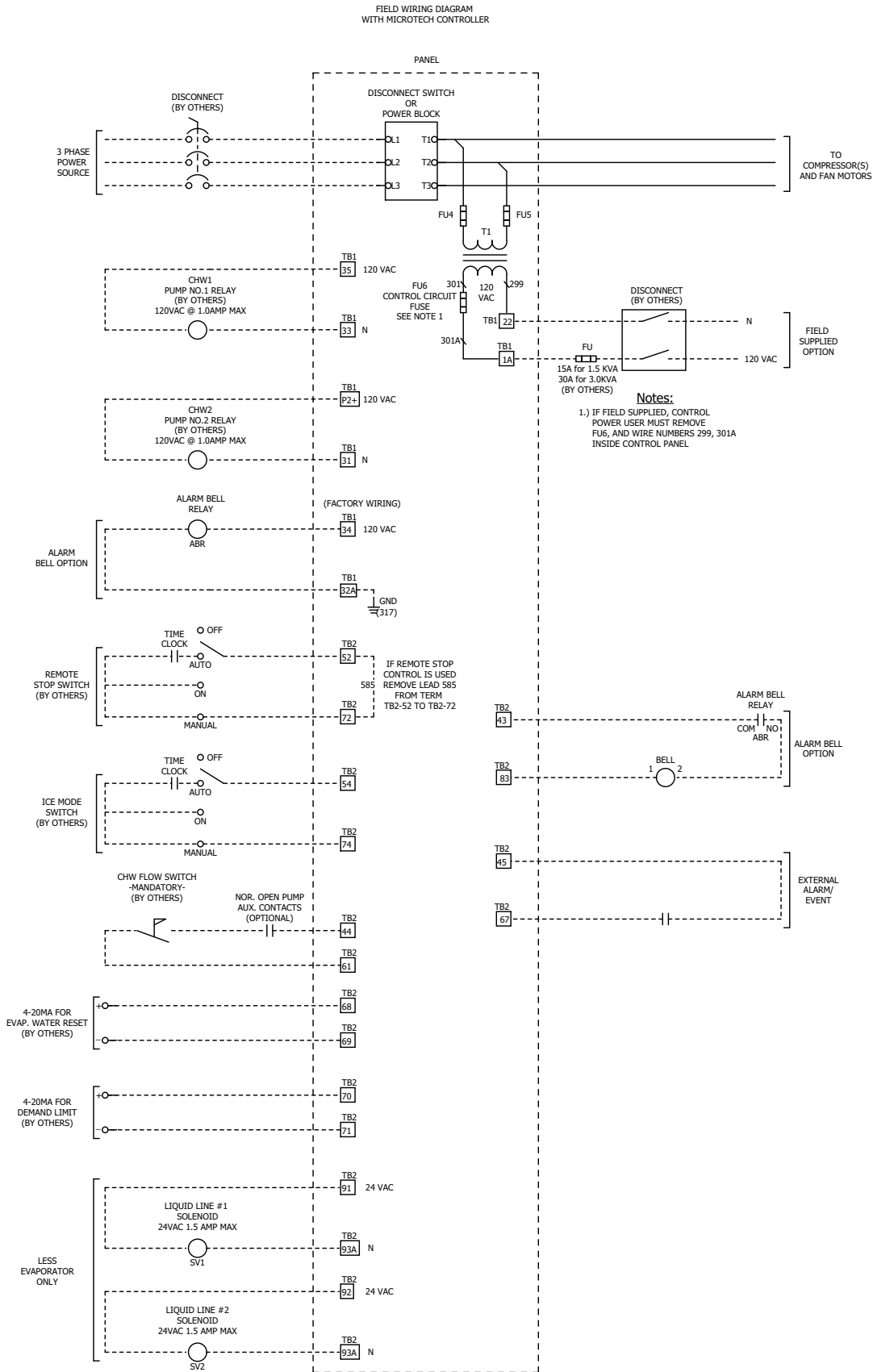
Power Connection	Power Block	Disc. Swt.	Comp Circuit Breakers	Panel High Short Circuit Current Rating
AGZ025D-190D Optional Single Point	Std	Opt.	Std	Opt
AGZ025D-190D Standard Multi-Point	Std	Opt.	Not Avail.	Opt.

Definitions:

- 1 Power Block: An electrical device to directly accept field wiring without any disconnecting means.
- 2 Disconnect Switch: A molded case switch that accepts field wiring and disconnects main power to the entire unit or each main power supply if the multi-point power supply option is selected. This option does not provide overcurrent protection.
- 3 Compressor Circuit Breakers: A manually reset circuit breaker for each compressor, providing compressor only short circuit protection and located ahead of the contactor.
- 4 Control Panel High Short Circuit Current Rating: (Previously known as "withstand rating"). The entire control panel is designed for short circuit current rating as shown above. In the event of a short circuit, the damage is contained within the control panel enclosure.

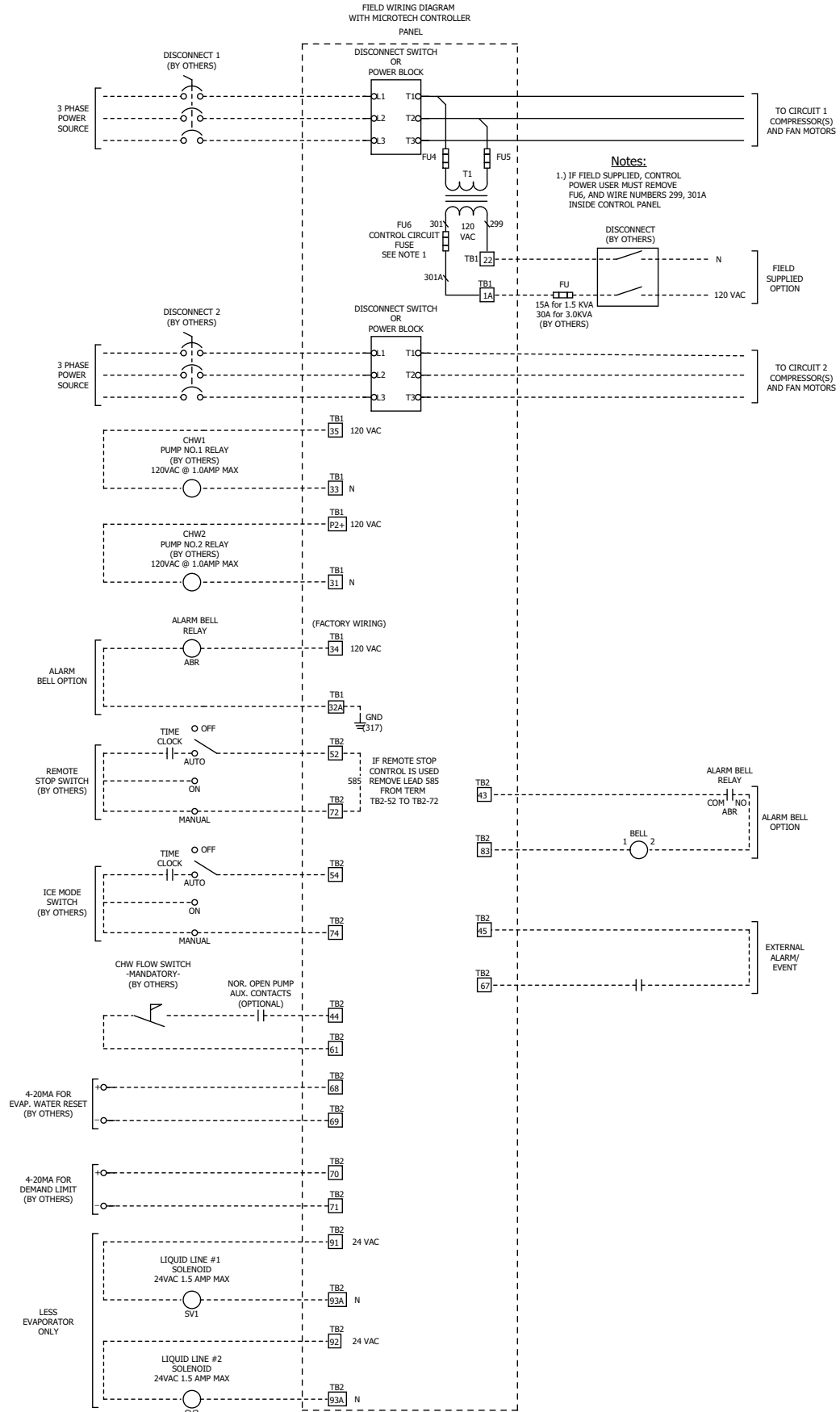
Field Wiring Diagram

Figure 45: Typical Field Wiring Diagram (Single-point connection)



Field Wiring Diagram

Figure 46: Typical Field Wiring Diagram (Multi-point connection)



Electrical Information

Table 59: Unit Amp Draw, 50 & 60 Hz

AGZ-D Size	Volts/ Phase	Rated Load Amps						Locked Rotor Amps						Fan Motors		
		Circuit #1			Circuit #2			Circuit #1			Circuit #2			Qty	FLA (ea)	LRA (ea)
		#1	#3	#5	#2	#4	#6	#1	#3	#5	#2	#4	#6			
025D	208V/60	29.5	29.5		29.5	29.5		195	195		195	195		4	5.8	23.3
	230V/60	29.5	29.5		29.5	29.5		195	195		195	195		4	5.8	23.3
	380V/60	16.7	16.7		16.7	16.7		123	123		123	123		4	4.1	20.0
	460V/60	14.7	14.7		14.7	14.7		95	95		95	95		4	2.8	13.0
	400V/50	14.7	14.7		14.7	14.7		95	95		95	95		4	2.8	13.0
	575V/60	12.2	12.2		12.2	12.2		80	80		80	80		4	3.0	14.0
030D	208V/60	31.6	31.6		31.6	31.6		225	225		225	225		4	5.8	23.3
	230V/60	30.1	30.1		30.1	30.1		225	225		225	225		4	5.8	23.3
	380V/60	19.2	19.2		19.2	19.2		140	140		140	140		4	4.1	20.0
	460V/60	16.7	16.7		16.7	16.7		114	114		114	114		4	2.8	13.0
	400V/50	16.7	16.7		16.7	16.7		111	111		111	111		4	2.8	13.0
	575V/60	13.0	13.0		13.0	13.0		80	80		80	80		4	3.0	14.0
035D	208V/60	31.6	31.6		36.3	36.3		225	225		239	239		4	5.8	23.3
	230V/60	30.1	30.1		36.0	36.0		225	225		239	239		4	5.8	23.3
	380V/60	19.2	19.2		23.7	23.7		140	140		145	145		4	4.1	20.0
	460V/60	16.7	16.7		17.9	17.9		114	114		125	125		4	2.8	13.0
	400V/50	16.7	16.7		17.9	17.9		111	111		118	118		4	2.8	13.0
	575V/60	13.0	13.0		13.0	13.0		80	80		80	80		4	3.0	14.0
040D	208V/60	36.3	36.3		36.3	36.3		239	239		239	239		4	5.8	23.3
	230V/60	36.0	36.0		36.0	36.0		239	239		239	239		4	5.8	23.3
	380V/60	23.7	23.7		23.7	23.7		145	145		145	145		4	4.1	20.0
	460V/60	17.9	17.9		17.9	17.9		125	125		125	125		4	2.8	13.0
	400V/50	17.9	17.9		17.9	17.9		118	118		118	118		4	2.8	13.0
	575V/60	13.0	13.0		13.0	13.0		80	80		80	80		4	3.0	14.0
045D	208V/60	48.1	48.1		48.1	48.1		245	245		245	245		4	5.8	23.3
	230V/60	48.1	48.1		48.1	48.1		245	245		245	245		4	5.8	23.3
	380V/60	23.7	23.7		23.7	23.7		145	145		145	145		4	4.1	20.0
	460V/60	18.9	18.9		18.9	18.9		125	125		125	125		4	2.8	13.0
	400V/50	18.9	18.9		18.9	18.9		118	118		118	118		4	2.8	13.0
	575V/60	15.1	15.1		15.1	15.1		100	100		100	100		4	3.0	14.0
050D	208V/60	52.8	52.8		52.8	52.8		300	300		300	300		4	5.8	23.3
	230V/60	52.8	52.8		52.8	52.8		300	300		300	300		4	5.8	23.3
	380V/60	26.9	26.9		26.9	26.9		139	139		139	139		4	4.1	20.0
	460V/60	23.1	23.1		23.1	23.1		150	150		150	150		4	2.8	13.0
	400V/50	23.1	23.1		23.1	23.1		140	140		140	140		4	2.8	13.0
	575V/60	19.9	19.9		19.9	19.9		109	109		109	109		4	3.0	14.0
055D	208V/60	52.8	52.8		56.6	56.6		300	300		340	340		4	5.8	23.3
	230V/60	52.8	52.8		55.8	55.8		300	300		340	340		4	5.8	23.3
	380V/60	26.9	26.9		34.0	34.0		139	139		196	196		4	4.1	20.0
	460V/60	23.1	23.1		26.9	26.9		150	150		173	173		4	2.8	13.0
	400V/50	23.1	23.1		26.9	26.9		140	140		173	173		4	2.8	13.0
	575V/60	19.9	19.9		23.7	23.7		109	109		132	132		4	3.0	14.0

Electrical Information

Table 60: Unit Amp Draw, 50 & 60 Hz continued

AGZ-D Size	Volts/ Phase	Rated Load Amps						Locked Rotor Amps						Fan Motors		
		Circuit #1			Circuit #2			Circuit #1			Circuit #2			Qty	FLA (ea)	LRA (ea)
		#1	#3	#5	#2	#4	#6	#1	#3	#5	#2	#4	#6			
060D	208V/60	56.6	56.6		56.6	56.6		340	340		340	340		4	5.8	23.3
	230V/60	55.8	55.8		55.8	55.8		340	340		340	340		4	5.8	23.3
	380V/60	34.0	34.0		34.0	34.0		196	196		196	196		4	4.1	20.0
	460V/60	26.9	26.9		26.9	26.9		173	173		173	173		4	2.8	13.0
	400V/50	26.9	26.9		26.9	26.9		173	173		173	173		4	2.8	13.0
	575V/60	23.7	23.7		23.7	23.7		132	132		132	132		4	3.0	14.0
065D	208V/60	56.6	56.6		56.6	56.6		340	340		340	340		4	7.8	31.7
	230V/60	55.8	55.8		55.8	55.8		340	340		340	340		4	7.8	35.6
	380V/60	34.0	34.0		34.0	34.0		196	196		196	196		4	4.1	20.0
	460V/60	26.9	26.9		26.9	26.9		173	173		173	173		4	3.6	17.8
	400V/50	26.9	26.9		26.9	26.9		173	173		173	173		4	3.6	17.8
	575V/60	23.7	23.7		23.7	23.7		132	132		132	132		4	3.0	14.0
070D	208V/60	56.6	72.4		56.6	72.4		340	538		340	538		4	7.8	31.7
	230V/60	55.8	72.4		55.8	72.4		340	538		340	538		4	7.8	35.6
	380V/60	34.0	38.2		34.0	38.2		196	290		196	290		4	4.1	20.0
	460V/60	26.9	30.8		26.9	30.8		173	229		173	229		4	3.6	17.8
	400V/50	26.9	30.8		26.9	30.8		173	229		173	229		4	3.6	17.8
	575V/60	23.7	25.2		23.7	25.2		132	180		132	180		4	3.0	14.0
075D	208V/60	72.4	72.4		72.4	72.4		538	538		538	538		6	7.8	31.7
	230V/60	72.4	72.4		72.4	72.4		538	538		538	538		6	7.8	35.6
	380V/60	38.2	38.2		38.2	38.2		290	290		290	290		6	4.1	20.0
	460V/60	30.8	30.8		30.8	30.8		229	229		229	229		6	3.6	17.8
	400V/50	30.8	30.8		30.8	30.8		229	229		229	229		6	3.6	17.8
	575V/60	25.2	25.2		25.2	25.2		180	180		180	180		6	3.0	14.0
080D	208V/60	72.4	72.4		89.1	89.1		538	538		605	605		6	7.8	31.7
	230V/60	72.4	72.4		89.1	89.1		538	538		605	605		6	7.8	35.6
	380V/60	38.2	38.2		51.9	51.9		290	290		380	380		6	4.1	20.0
	460V/60	30.8	30.8		39.0	39.0		229	229		320	320		6	3.6	17.8
	400V/50	30.8	30.8		39.0	39.0		229	229		320	320		6	3.6	17.8
	575V/60	25.2	25.2		34.7	34.7		180	180		250	250		6	3.0	14.0
090D	208V/60	89.1	89.1		89.1	89.1		605	605		605	605		6	7.8	31.7
	230V/60	89.1	89.1		89.1	89.1		605	605		605	605		6	7.8	35.6
	380V/60	51.9	51.9		51.9	51.9		380	380		380	380		6	4.1	20.0
	460V/60	39.0	39.0		39.0	39.0		320	320		320	320		6	3.6	17.8
	400V/50	39.0	39.0		39.0	39.0		320	320		320	320		6	3.6	17.8
	575V/60	34.7	34.7		34.7	34.7		250	250		250	250		6	3.0	14.0
100D	208V/60	115.5	89.1		89.1	115.5		599	605		605	599		6	7.8	31.7
	230V/60	115.5	89.1		89.1	115.5		599	605		605	599		6	7.8	35.6
	380V/60	69.2	51.9		51.9	69.2		358	380		380	358		6	4.1	20.0
	460V/60	54.5	39.0		39.0	54.5		310	320		320	310		6	3.6	17.8
	400V/50	54.5	39.0		39.0	54.5		310	320		320	310		6	3.6	17.8
	575V/60	49.4	34.7		34.7	49.4		239	250		250	239		6	3.0	14.0

Electrical Information

Table 61: Unit Amp Draw, 50 & 60 Hz continued

AGZ-D Size	Volts/Phase	Rated Load Amps						Locked Rotor Amps						Fan Motors		
		Circuit #1			Circuit #2			Circuit #1			Circuit #2			Qty	FLA (ea)	LRA (ea)
		#1	#3	#5	#2	#4	#6	#1	#3	#5	#2	#4	#6			
110D	208V/60	74.5	74.5	74.5	74.5	74.5	74.5	538	538	538	538	538	538	8	7.8	31.7
	230V/60	74.5	74.5	74.5	74.5	74.5	74.5	538	538	538	538	538	538	8	7.8	35.6
	380V/60	38.2	38.2	38.2	38.2	38.2	38.2	290	290	290	290	290	290	8	4.1	20.0
	460V/60	30.8	30.8	30.8	30.8	30.8	30.8	229	229	229	229	229	229	8	3.6	17.8
	400V/50	30.8	30.8	30.8	30.8	30.8	30.8	229	229	229	229	229	229	8	3.6	17.8
	575V/60	25.2	25.2	25.2	25.2	25.2	25.2	180	180	180	180	180	180	8	3.0	14.0
125D	208V/60	74.5	74.5	74.5	89.1	89.1	89.1	538	538	538	605	605	605	8	7.8	31.7
	230V/60	74.5	74.5	74.5	89.1	89.1	89.1	538	538	538	605	605	605	8	7.8	35.6
	380V/60	38.2	38.2	38.2	51.9	51.9	51.9	290	290	290	380	380	380	8	4.1	20.0
	460V/60	30.8	30.8	30.8	44.5	44.5	44.5	229	229	229	320	320	320	8	3.6	17.8
	400V/50	30.8	30.8	30.8	44.5	44.5	44.5	229	229	229	320	320	320	8	3.6	17.8
	575V/60	25.2	25.2	25.2	34.7	34.7	34.7	180	180	180	250	250	250	8	3.0	14.0
130D	208V/60	89.1	89.1	89.1	89.1	89.1	89.1	605	605	605	605	605	605	8	7.8	31.7
	230V/60	89.1	89.1	89.1	89.1	89.1	89.1	605	605	605	605	605	605	8	7.8	35.6
	380V/60	51.9	51.9	51.9	51.9	51.9	51.9	380	380	380	380	380	380	8	4.1	20.0
	460V/60	44.5	44.5	44.5	44.5	44.5	44.5	320	320	320	320	320	320	8	3.6	17.8
	400V/50	44.5	44.5	44.5	44.5	44.5	44.5	320	320	320	320	320	320	8	3.6	17.8
	575V/60	34.7	34.7	34.7	34.7	34.7	34.7	250	250	250	250	250	250	8	3.0	14.0
140D	208V/60	89.1	89.1	89.1	89.1	89.1	89.1	605	605	605	605	605	605	10	7.8	31.7
	230V/60	89.1	89.1	89.1	89.1	89.1	89.1	605	605	605	605	605	605	10	7.8	35.6
	380V/60	51.9	51.9	51.9	51.9	51.9	51.9	380	380	380	380	380	380	10	4.1	20.0
	460V/60	44.5	44.5	44.5	44.5	44.5	44.5	320	320	320	320	320	320	10	3.6	17.8
	400V/50	44.5	44.5	44.5	44.5	44.5	44.5	320	320	320	320	320	320	10	3.6	17.8
	575V/60	34.7	34.7	34.7	34.7	34.7	34.7	250	250	250	250	250	250	10	3.0	14.0
160D	208V/60	89.1	89.1	89.1	115.5	115.5	115.5	605	605	605	599	599	599	10	7.8	31.7
	230V/60	89.1	89.1	89.1	115.5	115.5	115.5	605	605	605	599	599	599	10	7.8	35.6
	380V/60	51.9	51.9	51.9	69.2	69.2	69.2	380	380	380	358	358	358	10	4.1	20.0
	460V/60	44.5	44.5	44.5	54.5	54.5	54.5	320	320	320	310	310	310	10	3.6	17.8
	400V/50	44.5	44.5	44.5	54.5	54.5	54.5	320	320	320	310	310	310	10	3.6	17.8
	575V/60	34.7	34.7	34.7	49.4	49.4	49.4	250	250	250	239	239	239	10	3.0	14.0
180D	208V/60	127.5	127.5	128	127.5	127.5	127.5	599	599	599	599	599	599	10	7.8	31.7
	230V/60	115.5	115.5	115.5	115.5	115.5	115.5	599	599	599	599	599	599	10	7.8	35.6
	380V/60	69.2	69.2	69.2	69.2	69.2	69.2	358	358	358	358	358	358	10	4.1	20.0
	460V/60	57.2	57.2	57.2	57.2	57.2	57.2	310	310	310	310	310	310	10	3.6	17.8
	400V/50	57.2	57.2	57.2	57.2	57.2	57.2	310	310	310	310	310	310	10	3.6	17.8
	575V/60	49.4	49.4	49.4	49.4	49.4	49.4	239	239	239	239	239	239	10	3.0	14.0
190D	208V/60	127.5	127.5	128	127.5	127.5	127.5	599	599	599	599	599	599	12	7.8	31.7
	230V/60	115.5	115.5	115.5	115.5	115.5	115.5	599	599	599	599	599	599	12	7.8	35.6
	380V/60	69.2	69.2	69.2	69.2	69.2	69.2	358	358	358	358	358	358	12	4.1	20.0
	460V/60	57.2	57.2	57.2	57.2	57.2	57.2	310	310	310	310	310	310	12	3.6	17.8
	400V/50	57.2	57.2	57.2	57.2	57.2	57.2	310	310	310	310	310	310	12	3.6	17.8
	575V/60	49.4	49.4	49.4	49.4	49.4	49.4	239	239	239	239	239	239	12	3.0	14.0

Table 62: Electrical Data - Single Point (50/60 Hz)

Model	Volts/Phase	Single Point Field Data				
		Ratings			Lug Range	
		MCA	RFS	MFS	Power Block	Disconnect
025D	208V/60	149	175	175	(1) 2/0 - #14	(2) 300 - 1/0
	230V/60	149	175	175	(1) 2/0 - #14	(2) 300 - 1/0
	380V/60	88	100	100	(1) 2/0 - #14	(1) 1/0 - #14
	460V/60	74	80	80	(1) 2/0 - #14	(1) 1/0 - #14
	400V/50	74	80	80	(1) 2/0 - #14	(1) 1/0 - #14
	575V/60	64	70	70	(1) 2/0 - #14	(1) 1/0 - #14
030D	208V/60	158	175	175	(1) 2/0 - #14	(2) 300 - 1/0
	230V/60	152	175	175	(1) 2/0 - #14	(2) 300 - 1/0
	380V/60	98	110	110	(1) 2/0 - #14	(1) 3/0 - #14
	460V/60	83	90	90	(1) 2/0 - #14	(1) 1/0 - #14
	400V/50	83	90	90	(1) 2/0 - #14	(1) 1/0 - #14
	575V/60	68	80	80	(1) 2/0 - #14	(1) 1/0 - #14
035D	208V/60	169	200	200	(1) 600 - #2	(2) 300 - 1/0
	230V/60	165	200	200	(1) 2/0 - #14	(2) 300 - 1/0
	380V/60	109	125	125	(1) 2/0 - #14	(1) 3/0 - #14
	460V/60	85	100	100	(1) 2/0 - #14	(1) 1/0 - #14
	400V/50	85	100	100	(1) 2/0 - #14	(1) 1/0 - #14
	575V/60	68	80	80	(1) 2/0 - #14	(1) 1/0 - #14
040D	208V/60	178	200	200	(1) 600 - #2	(2) 300 - 1/0
	230V/60	177	200	200	(1) 600 - #2	(2) 300 - 1/0
	380V/60	118	125	125	(1) 2/0 - #14	(1) 3/0 - #14
	460V/60	88	100	100	(1) 2/0 - #14	(1) 1/0 - #14
	400V/50	88	100	100	(1) 2/0 - #14	(1) 1/0 - #14
	575V/60	68	80	80	(1) 2/0 - #14	(1) 1/0 - #14
045D	208V/60	228	250	250	(1) 600 - #2	(2) 300 - 1/0
	230V/60	228	250	250	(1) 600 - #2	(2) 300 - 1/0
	380V/60	118	125	125	(1) 2/0 - #14	(1) 3/0 - #14
	460V/60	92	110	110	(1) 2/0 - #14	(1) 1/0 - #14
	400V/50	92	110	110	(1) 2/0 - #14	(1) 1/0 - #14
	575V/60	77	90	90	(1) 2/0 - #14	(1) 1/0 - #14
050D	208V/60	248	300	300	(1) 600 - #2	(1) 600 - #1 & (2) 250 - #1
	230V/60	248	300	300	(1) 600 - #2	(1) 600 - #1 & (2) 250 - #1
	380V/60	131	150	150	(1) 2/0 - #14	(1) 3/0 - #14
	460V/60	110	125	125	(1) 2/0 - #14	(1) 3/0 - #14
	400V/50	110	125	125	(1) 2/0 - #14	(1) 3/0 - #14
	575V/60	97	110	110	(1) 2/0 - #14	(1) 3/0 - #14
055D	208V/60	257	300	300	(1) 600 - #2	(1) 600 - #1 & (2) 250 - #1
	230V/60	255	300	300	(1) 600 - #2	(1) 600 - #1 & (2) 250 - #1
	380V/60	147	175	175	(1) 2/0 - #14	(2) 300 - 1/0
	460V/60	118	125	125	(1) 2/0 - #14	(1) 3/0 - #14
	400V/50	118	125	125	(1) 2/0 - #14	(1) 3/0 - #14
	575V/60	106	125	125	(1) 2/0 - #14	(1) 3/0 - #14

Note: Power wiring connections to the chiller requires copper wiring. Wire should be sized per NEC and/or local codes. Wire sizing and wire count must fit in the power connection lug sizing shown the above table.

Electrical Information

Table 63: Electrical Data - Single Point (50/60 Hz) continued

Model	Volts/Phase	Single Point Field Data				
		Ratings			Lug Range	
		MCA	RFS	MFS	Power Block	Disconnect
060D	208V/60	264	300	300	(1) 600 - #2	(1) 600 - #1 & (2) 250 - #1
	230V/60	261	300	300	(1) 600 - #2	(1) 600 - #1 & (2) 250 - #1
	380V/60	161	175	175	(1) 2/0 - #14	(2) 300 - 1/0
	460V/60	126	150	150	(1) 2/0 - #14	(1) 3/0 - #14
	400V/50	126	150	150	(1) 2/0 - #14	(1) 3/0 - #14
	575V/60	113	125	125	(1) 2/0 - #14	(1) 3/0 - #14
065D	208V/60	272	300	300	(1) 600 - #2	(1) 600 - #1 & (2) 250 - #1
	230V/60	269	300	300	(1) 600 - #2	(1) 600 - #1 & (2) 250 - #1
	380V/60	161	175	175	(1) 2/0 - #14	(2) 300 - 1/0
	460V/60	129	150	150	(1) 2/0 - #14	(1) 3/0 - #14
	400V/50	129	150	150	(1) 2/0 - #14	(1) 3/0 - #14
	575V/60	113	125	125	(1) 2/0 - #14	(1) 3/0 - #14
070D	208V/60	308	350	350	(1) 600 - #2	(1) 600 - #1 & (2) 250 - #1
	230V/60	306	350	350	(1) 600 - #2	(1) 600 - #1 & (2) 250 - #1
	380V/60	171	200	200	(1) 600 - #2	(2) 300 - 1/0
	460V/60	138	150	150	(1) 2/0 - #14	(1) 3/0 - #14
	400V/50	138	150	150	(1) 2/0 - #14	(1) 3/0 - #14
	575V/60	117	125	125	(1) 2/0 - #14	(1) 3/0 - #14
075D	208V/60	355	400	400	(2) 500 - #6	(1) 600 - #1 & (2) 250 - #1
	230V/60	355	400	400	(2) 500 - #6	(1) 600 - #1 & (2) 250 - #1
	380V/60	187	225	225	(1) 600 - #2	(2) 300 - 1/0
	460V/60	153	175	175	(1) 2/0 - #14	(2) 300 - 1/0
	400V/50	153	175	175	(1) 2/0 - #14	(2) 300 - 1/0
	575V/60	126	150	150	(1) 2/0 - #14	(1) 3/0 - #14
080D	208V/60	393	450	450	(2) 500 - #6	(2) 500 - 3/0
	230V/60	393	450	450	(2) 500 - #6	(2) 500 - 3/0
	380V/60	218	250	250	(1) 600 - #2	(2) 300 - 1/0
	460V/60	171	200	200	(1) 600 - #2	(2) 300 - 1/0
	400V/50	171	200	200	(1) 600 - #2	(2) 300 - 1/0
	575V/60	147	175	175	(1) 2/0 - #14	(2) 300 - 1/0
090D	208V/60	426	500	500	(2) 500 - #6	(2) 500 - 3/0
	230V/60	426	500	500	(2) 500 - #6	(2) 500 - 3/0
	380V/60	246	250	250	(1) 600 - #2	(1) 600 - #1 & (2) 250 - #1
	460V/60	188	225	225	(1) 600 - #2	(2) 300 - 1/0
	400V/50	188	225	225	(1) 600 - #2	(2) 300 - 1/0
	575V/60	166	200	200	(1) 2/0 - #14	(2) 300 - 1/0
100D	208V/60	485	600	600	(2) 500 - #6	(2) 500 - 3/0
	230V/60	485	600	600	(2) 500 - #6	(2) 500 - 3/0
	380V/60	285	350	350	(1) 600 - #2	(1) 600 - #1 & (2) 250 - #1
	460V/60	223	250	250	(1) 600 - #2	(2) 300 - 1/0
	400V/50	223	250	250	(1) 600 - #2	(2) 300 - 1/0
	575V/60	199	225	225	(1) 600 - #2	(2) 300 - 1/0

Note: Power wiring connections to the chiller requires copper wiring. Wire should be sized per NEC and/or local codes. Wire sizing and wire count must fit in the power connection lug sizing shown the above table.

Table 64: Electrical Data - Single Point (50/60 Hz) continued

Model	Volts/Phase	Single Point Field Data				
		Ratings			Lug Range	
		MCA	RFS	MFS	Power Block	Disconnect
110D	208V/60	528	600	600	(2) 500 - #6	(2) 500 - 3/0
	230V/60	528	600	600	(2) 500 - #6	(2) 500 - 3/0
	380V/60	272	300	300	(1) 600 - #2	(1) 600 - #1 & (2) 250 - #1
	460V/60	221	250	250	(1) 600 - #2	(2) 300 - 1/0
	400V/50	222	250	250	(1) 600 - #2	(2) 300 - 1/0
	575V/60	182	200	200	(1) 600 - #2	(2) 300 - 1/0
125D	208V/60	576	600	600	(2) 500 - #6	(3) 500 - 3/0
	230V/60	576	600	600	(2) 500 - #6	(3) 500 - 3/0
	380V/60	317	350	350	(1) 600 - #2	(1) 600 - #1 & (2) 250 - #1
	460V/60	266	300	300	(1) 600 - #2	(1) 600 - #1 & (2) 250 - #1
	400V/50	266	300	300	(1) 600 - #2	(1) 600 - #1 & (2) 250 - #1
	575V/60	213	225	225	(1) 600 - #2	(2) 300 - 1/0
130D	208V/60	620	700	700	(2) 500 - #6	(3) 500 - 3/0
	230V/60	620	700	700	(2) 500 - #6	(3) 500 - 3/0
	380V/60	358	400	400	(2) 500 - #6	(1) 600 - #1 & (2) 250 - #1
	460V/60	307	350	350	(1) 600 - #2	(1) 600 - #1 & (2) 250 - #1
	400V/50	307	350	350	(1) 600 - #2	(1) 600 - #1 & (2) 250 - #1
	575V/60	241	250	250	(1) 600 - #2	(1) 600 - #1 & (2) 250 - #1
140D	208V/60	635	700	700	(2) 500 - #6	(3) 500 - 3/0
	230V/60	635	700	700	(2) 500 - #6	(3) 500 - 3/0
	380V/60	366	400	400	(2) 500 - #6	(2) 500 - 3/0
	460V/60	315	350	350	(1) 600 - #2	(1) 600 - #1 & (2) 250 - #1
	400V/50	315	350	350	(1) 600 - #2	(1) 600 - #1 & (2) 250 - #1
	575V/60	247	250	250	(1) 600 - #2	(1) 600 - #1 & (2) 250 - #1
160D	208V/60	721	800	800	(4) 600 - #2	(4) 500 - 3/0
	230V/60	721	800	800	(4) 600 - #2	(4) 500 - 3/0
	380V/60	422	450	450	(2) 500 - #6	(2) 500 - 3/0
	460V/60	347	400	400	(2) 500 - #4	(1) 600 - #1 & (2) 250 - #1
	400V/50	347	400	400	(2) 500 - #4	(1) 600 - #1 & (2) 250 - #1
	575V/60	295	300	300	(1) 600 - #2	(1) 600 - #1 & (2) 250 - #1
180D	208V/60	875	1000	1000	(4) 500 - #6	(4) 500 - 3/0
	230V/60	800	800	800	(4) 500 - #6	(4) 500 - 3/0
	380V/60	474	500	500	(2) 500 - #6	(2) 500 - 3/0
	460V/60	394	450	450	(2) 500 - #6	(2) 500 - 3/0
	400V/50	394	450	450	(2) 500 - #6	(2) 500 - 3/0
	575V/60	339	350	350	(2) 500 - #6	(1) 600 - #1 & (2) 250 - #1
190D	208V/60	891	1000	1000	(4) 500 - #6	(4) 500 - 3/0
	230V/60	816	800	800	(4) 500 - #6	(4) 500 - 3/0
	380V/60	482	500	500	(2) 500 - #6	(2) 500 - 3/0
	460V/60	401	450	450	(2) 500 - #6	(2) 500 - 3/0
	400V/50	401	450	450	(2) 500 - #6	(2) 500 - 3/0
	575V/60	345	350	350	(2) 500 - #6	(1) 600 - #1 & (2) 250 - #1

Note: Power wiring connections to the chiller requires copper wiring. Wire should be sized per NEC and/or local codes. Wire sizing and wire count must fit in the power connection lug sizing shown the above table.

Electrical Information

Table 65: Electrical Data - Multi-point (50/60 Hz)

AGZ	Volts/ Phase	Multiple Point Field Data - Circuit #1					Multiple Point Field Data - Circuit #2				
		Ratings			Lug Range		Ratings			Lug Range	
		MCA	RFS	MFS	Power Block	Disconnect Switch	MCA	RFS	MFS	Power Block	Disconnect Switch
025D	208V/60	78	100	100	(1) 2/0 - #14	(1) 1/0 - #14	78	100	100	(1) 2/0 - #14	(1) 1/0 - #14
	230V/60	78	100	100	(1) 2/0 - #14	(1) 1/0 - #14	78	100	100	(1) 2/0 - #14	(1) 1/0 - #14
	380V/60	46	60	60	(1) 2/0 - #14	(1) 1/0 - #14	46	60	60	(1) 2/0 - #14	(1) 1/0 - #14
	460V/60	39	50	50	(1) 2/0 - #14	(1) 1/0 - #14	39	50	50	(1) 2/0 - #14	(1) 1/0 - #14
	400V/50	39	50	50	(1) 2/0 - #14	(1) 1/0 - #14	39	50	50	(1) 2/0 - #14	(1) 1/0 - #14
	575V/60	34	45	45	(1) 2/0 - #14	(1) 1/0 - #14	34	45	45	(1) 2/0 - #14	(1) 1/0 - #14
030D	208V/60	83	110	110	(1) 2/0 - #14	(1) 1/0 - #14	83	110	110	(1) 2/0 - #14	(1) 1/0 - #14
	230V/60	80	100	100	(1) 2/0 - #14	(1) 1/0 - #14	80	100	100	(1) 2/0 - #14	(1) 1/0 - #14
	380V/60	52	70	70	(1) 2/0 - #14	(1) 1/0 - #14	52	70	70	(1) 2/0 - #14	(1) 1/0 - #14
	460V/60	44	60	60	(1) 2/0 - #14	(1) 1/0 - #14	44	60	60	(1) 2/0 - #14	(1) 1/0 - #14
	400V/50	44	60	60	(1) 2/0 - #14	(1) 1/0 - #14	44	60	60	(1) 2/0 - #14	(1) 1/0 - #14
	575V/60	36	45	45	(1) 2/0 - #14	(1) 1/0 - #14	36	45	45	(1) 2/0 - #14	(1) 1/0 - #14
035D	208V/60	83	110	110	(1) 2/0 - #14	(1) 1/0 - #14	94	125	125	(1) 2/0 - #14	(1) 1/0 - #14
	230V/60	80	100	100	(1) 2/0 - #14	(1) 1/0 - #14	93	125	125	(1) 2/0 - #14	(1) 1/0 - #14
	380V/60	52	70	70	(1) 2/0 - #14	(1) 1/0 - #14	62	80	80	(1) 2/0 - #14	(1) 1/0 - #14
	460V/60	44	60	60	(1) 2/0 - #14	(1) 1/0 - #14	46	60	60	(1) 2/0 - #14	(1) 1/0 - #14
	400V/50	44	60	60	(1) 2/0 - #14	(1) 1/0 - #14	46	60	60	(1) 2/0 - #14	(1) 1/0 - #14
	575V/60	36	45	45	(1) 2/0 - #14	(1) 1/0 - #14	36	45	45	(1) 2/0 - #14	(1) 1/0 - #14
040D	208V/60	94	125	125	(1) 2/0 - #14	(1) 1/0 - #14	94	125	125	(1) 2/0 - #14	(1) 1/0 - #14
	230V/60	93	125	125	(1) 2/0 - #14	(1) 1/0 - #14	93	125	125	(1) 2/0 - #14	(1) 1/0 - #14
	380V/60	62	80	80	(1) 2/0 - #14	(1) 1/0 - #14	62	80	80	(1) 2/0 - #14	(1) 1/0 - #14
	460V/60	46	60	60	(1) 2/0 - #14	(1) 1/0 - #14	46	60	60	(1) 2/0 - #14	(1) 1/0 - #14
	400V/50	46	60	60	(1) 2/0 - #14	(1) 1/0 - #14	46	60	60	(1) 2/0 - #14	(1) 1/0 - #14
	575V/60	36	45	45	(1) 2/0 - #14	(1) 1/0 - #14	36	45	45	(1) 2/0 - #14	(1) 1/0 - #14
045D	208V/60	120	150	150	(1) 2/0 - #14	(1) 3/0 - #14	120	150	150	(1) 2/0 - #14	(1) 3/0 - #14
	230V/60	120	150	150	(1) 2/0 - #14	(1) 3/0 - #14	120	150	150	(1) 2/0 - #14	(1) 3/0 - #14
	380V/60	62	80	80	(1) 2/0 - #14	(1) 1/0 - #14	62	80	80	(1) 2/0 - #14	(1) 1/0 - #14
	460V/60	49	60	60	(1) 2/0 - #14	(1) 1/0 - #14	49	60	60	(1) 2/0 - #14	(1) 1/0 - #14
	400V/50	49	60	60	(1) 2/0 - #14	(1) 1/0 - #14	49	60	60	(1) 2/0 - #14	(1) 1/0 - #14
	575V/60	40	50	50	(1) 2/0 - #14	(1) 1/0 - #14	40	50	50	(1) 2/0 - #14	(1) 1/0 - #14
050D	208V/60	131	175	175	(1) 2/0 - #14	(1) 3/0 - #14	131	175	175	(1) 2/0 - #14	(1) 3/0 - #14
	230V/60	131	175	175	(1) 2/0 - #14	(1) 3/0 - #14	131	175	175	(1) 2/0 - #14	(1) 3/0 - #14
	380V/60	69	90	90	(1) 2/0 - #14	(1) 1/0 - #14	69	90	90	(1) 2/0 - #14	(1) 1/0 - #14
	460V/60	58	80	80	(1) 2/0 - #14	(1) 1/0 - #14	58	80	80	(1) 2/0 - #14	(1) 1/0 - #14
	400V/50	58	80	80	(1) 2/0 - #14	(1) 1/0 - #14	58	80	80	(1) 2/0 - #14	(1) 1/0 - #14
	575V/60	51	70	70	(1) 2/0 - #14	(1) 1/0 - #14	51	70	70	(1) 2/0 - #14	(1) 1/0 - #14
055D	208V/60	131	175	175	(1) 2/0 - #14	(1) 3/0 - #14	139	175	175	(1) 2/0 - #14	(1) 3/0 - #14
	230V/60	131	175	175	(1) 2/0 - #14	(1) 3/0 - #14	138	175	175	(1) 2/0 - #14	(1) 3/0 - #14
	380V/60	69	90	90	(1) 2/0 - #14	(1) 1/0 - #14	85	110	110	(1) 2/0 - #14	(1) 1/0 - #14
	460V/60	58	80	80	(1) 2/0 - #14	(1) 1/0 - #14	67	90	90	(1) 2/0 - #14	(1) 1/0 - #14
	400V/50	58	80	80	(1) 2/0 - #14	(1) 1/0 - #14	67	90	90	(1) 2/0 - #14	(1) 1/0 - #14
	575V/60	51	70	70	(1) 2/0 - #14	(1) 1/0 - #14	60	80	80	(1) 2/0 - #14	(1) 1/0 - #14

Note: Power wiring connections to the chiller requires copper wiring. Wire should be sized per NEC and/or local codes. Wire sizing and wire count must fit in the power connection lug sizing shown the above table.

Table 66: Electrical Data - Multi-point (50/60 Hz) continued

AGZ	Volts/ Phase	Multiple Point Field Data - Circuit #1					Multiple Point Field Data - Circuit #2				
		Ratings			Lug Range		Ratings			Lug Range	
		MCA	RFS	MFS	Power Block	Disconnect Switch	MCA	RFS	MFS	Power Block	Disconnect Switch
060D	208V/60	139	175	175	(1) 2/0 - #14	(1) 3/0 - #14	139	175	175	(1) 2/0 - #14	(1) 3/0 - #14
	230V/60	138	175	175	(1) 2/0 - #14	(1) 3/0 - #14	138	175	175	(1) 2/0 - #14	(1) 3/0 - #14
	380V/60	85	110	110	(1) 2/0 - #14	(1) 1/0 - #14	85	110	110	(1) 2/0 - #14	(1) 1/0 - #14
	460V/60	67	90	90	(1) 2/0 - #14	(1) 1/0 - #14	67	90	90	(1) 2/0 - #14	(1) 1/0 - #14
	400V/50	67	90	90	(1) 2/0 - #14	(1) 1/0 - #14	67	90	90	(1) 2/0 - #14	(1) 1/0 - #14
	575V/60	60	80	80	(1) 2/0 - #14	(1) 1/0 - #14	60	80	80	(1) 2/0 - #14	(1) 1/0 - #14
065D	208V/60	143	175	175	(1) 2/0 - #14	(1) 3/0 - #14	143	175	175	(1) 2/0 - #14	(1) 3/0 - #14
	230V/60	142	175	175	(1) 2/0 - #14	(1) 3/0 - #14	142	175	175	(1) 2/0 - #14	(1) 3/0 - #14
	380V/60	85	110	110	(1) 2/0 - #14	(1) 1/0 - #14	85	110	110	(1) 2/0 - #14	(1) 1/0 - #14
	460V/60	68	90	90	(1) 2/0 - #14	(1) 1/0 - #14	68	90	90	(1) 2/0 - #14	(1) 1/0 - #14
	400V/50	68	90	90	(1) 2/0 - #14	(1) 1/0 - #14	68	90	90	(1) 2/0 - #14	(1) 1/0 - #14
	575V/60	60	80	80	(1) 2/0 - #14	(1) 1/0 - #14	60	80	80	(1) 2/0 - #14	(1) 1/0 - #14
070D	208V/60	163	225	225	(1) 2/0 - #14	(2) 300 - 1/0	163	225	225	(1) 2/0 - #14	(2) 300 - 1/0
	230V/60	163	225	225	(1) 2/0 - #14	(2) 300 - 1/0	163	225	225	(1) 2/0 - #14	(2) 300 - 1/0
	380V/60	90	125	125	(1) 2/0 - #14	(1) 1/0 - #14	90	125	125	(1) 2/0 - #14	(1) 1/0 - #14
	460V/60	73	100	100	(1) 2/0 - #14	(1) 1/0 - #14	73	100	100	(1) 2/0 - #14	(1) 1/0 - #14
	400V/50	73	100	100	(1) 2/0 - #14	(1) 1/0 - #14	73	100	100	(1) 2/0 - #14	(1) 1/0 - #14
	575V/60	62	80	80	(1) 2/0 - #14	(1) 1/0 - #14	62	80	80	(1) 2/0 - #14	(1) 1/0 - #14
075D	208V/60	187	250	250	(1) 600 - #2	(2) 300 - 1/0	187	250	250	(1) 600 - #2	(2) 300 - 1/0
	230V/60	187	250	250	(1) 600 - #2	(2) 300 - 1/0	187	250	250	(1) 600 - #2	(2) 300 - 1/0
	380V/60	99	125	125	(1) 2/0 - #14	(1) 3/0 - #14	99	125	125	(1) 2/0 - #14	(1) 3/0 - #14
	460V/60	81	110	110	(1) 2/0 - #14	(1) 1/0 - #14	81	110	110	(1) 2/0 - #14	(1) 1/0 - #14
	400V/50	81	110	110	(1) 2/0 - #14	(1) 1/0 - #14	81	110	110	(1) 2/0 - #14	(1) 1/0 - #14
	575V/60	66	90	90	(1) 2/0 - #14	(1) 1/0 - #14	66	90	90	(1) 2/0 - #14	(1) 1/0 - #14
080D	208V/60	187	250	250	(1) 600 - #2	(2) 300 - 1/0	224	300	300	(1) 600 - #2	(2) 300 - 1/0
	230V/60	187	250	250	(1) 600 - #2	(2) 300 - 1/0	224	300	300	(1) 600 - #2	(2) 300 - 1/0
	380V/60	99	125	125	(1) 2/0 - #14	(1) 3/0 - #14	130	175	175	(1) 2/0 - #14	(1) 3/0 - #14
	460V/60	81	110	110	(1) 2/0 - #14	(1) 1/0 - #14	99	125	125	(1) 2/0 - #14	(1) 3/0 - #14
	400V/50	81	110	110	(1) 2/0 - #14	(1) 1/0 - #14	99	125	125	(1) 2/0 - #14	(1) 3/0 - #14
	575V/60	66	90	90	(1) 2/0 - #14	(1) 1/0 - #14	88	110	110	(1) 2/0 - #14	(1) 1/0 - #14
090D	208V/60	224	300	300	(1) 600 - #2	(2) 300 - 1/0	224	300	300	(1) 600 - #2	(2) 300 - 1/0
	230V/60	224	300	300	(1) 600 - #2	(2) 300 - 1/0	224	300	300	(1) 600 - #2	(2) 300 - 1/0
	380V/60	130	175	175	(1) 2/0 - #14	(1) 3/0 - #14	130	175	175	(1) 2/0 - #14	(1) 3/0 - #14
	460V/60	99	125	125	(1) 2/0 - #14	(1) 3/0 - #14	99	125	125	(1) 2/0 - #14	(1) 3/0 - #14
	400V/50	99	125	125	(1) 2/0 - #14	(1) 3/0 - #14	99	125	125	(1) 2/0 - #14	(1) 3/0 - #14
	575V/60	88	110	110	(1) 2/0 - #14	(1) 1/0 - #14	88	110	110	(1) 2/0 - #14	(1) 1/0 - #14
100D	208V/60	257	350	350	(1) 600 - #2	(1) 600 - #1 & (2) 250 - #1	257	350	350	(1) 600 - #2	(1) 600 - #1 & (2) 250 - #1
	230V/60	257	350	350	(1) 600 - #2	(1) 600 - #1 & (2) 250 - #1	257	350	350	(1) 600 - #2	(1) 600 - #1 & (2) 250 - #1
	380V/60	151	200	200	(1) 2/0 - #14	(2) 300 - 1/0	151	200	200	(1) 2/0 - #14	(2) 300 - 1/0
	460V/60	118	150	150	(1) 2/0 - #14	(1) 3/0 - #14	118	150	150	(1) 2/0 - #14	(1) 3/0 - #14
	400V/50	118	150	150	(1) 2/0 - #14	(1) 3/0 - #14	118	150	150	(1) 2/0 - #14	(1) 3/0 - #14
	575V/60	106	150	150	(1) 2/0 - #14	(1) 3/0 - #14	106	150	150	(1) 2/0 - #14	(1) 3/0 - #14

Note: Power wiring connections to the chiller requires copper wiring. Wire should be sized per NEC and/or local codes. Wire sizing and wire count must fit in the power connection lug sizing shown the above table.

Electrical Information

Table 67: Electrical Data - Multi-point (50/60 Hz) continued

AGZ	Volts/ Phase	Multiple Point Field Data - Circuit #1					Multiple Point Field Data - Circuit #2				
		Ratings			Lug Range		Ratings			Lug Range	
		MCA	RFS	MFS	Power Block	Disconnect Switch	MCA	RFS	MFS	Power Block	Disconnect Switch
110D	208V/60	274	300	300	(1) 600 - #2	(1) 600 - #1 & (2) 250 - #1	274	300	300	(1) 600 - #2	(1) 600 - #1 & (2) 250 - #1
	230V/60	274	300	300	(1) 600 - #2	(1) 600 - #1 & (2) 250 - #1	274	300	300	(1) 600 - #2	(1) 600 - #1 & (2) 250 - #1
	380V/60	141	175	175	(1) 2/0 - #14	(2) 300 - 1/0	141	175	175	(1) 2/0 - #14	(2) 300 - 1/0
	460V/60	115	125	125	(1) 2/0 - #14	(1) 3/0 - #14	115	125	125	(1) 2/0 - #14	(1) 3/0 - #14
	400V/50	115	125	125	(1) 2/0 - #14	(1) 3/0 - #14	115	125	125	(1) 2/0 - #14	(1) 3/0 - #14
	575V/60	94	110	110	(1) 2/0 - #14	(1) 3/0 - #14	94	110	110	(1) 2/0 - #14	(1) 3/0 - #14
125D	208V/60	274	300	300	(1) 600 - #2	(1) 600 - #1 & (2) 250 - #1	321	400	400	(1) 600 - #2	(1) 600 - #1 & (2) 250 - #1
	230V/60	274	300	300	(1) 600 - #2	(1) 600 - #1 & (2) 250 - #1	321	400	400	(1) 600 - #2	(1) 600 - #1 & (2) 250 - #1
	380V/60	141	175	175	(1) 2/0 - #14	(2) 300 - 1/0	186	225	225	(1) 600 - #2	(2) 300 - 1/0
	460V/60	115	125	125	(1) 2/0 - #14	(1) 3/0 - #14	159	200	200	(1) 2/0 - #14	(2) 300 - 1/0
	400V/50	115	125	125	(1) 2/0 - #14	(1) 3/0 - #14	159	200	200	(1) 2/0 - #14	(2) 300 - 1/0
	575V/60	94	110	110	(1) 2/0 - #14	(1) 3/0 - #14	125	150	150	(1) 2/0 - #14	(1) 3/0 - #14
130D	208V/60	321	400	400	(1) 600 - #2	(1) 600 - #1 & (2) 250 - #1	321	400	400	(1) 600 - #2	(1) 600 - #1 & (2) 250 - #1
	230V/60	321	400	400	(1) 600 - #2	(1) 600 - #1 & (2) 250 - #1	321	400	400	(1) 600 - #2	(1) 600 - #1 & (2) 250 - #1
	380V/60	186	225	225	(1) 600 - #2	(2) 300 - 1/0	186	225	225	(1) 600 - #2	(2) 300 - 1/0
	460V/60	159	200	200	(1) 2/0 - #14	(2) 300 - 1/0	159	200	200	(1) 2/0 - #14	(2) 300 - 1/0
	400V/50	159	200	200	(1) 2/0 - #14	(2) 300 - 1/0	159	200	200	(1) 2/0 - #14	(2) 300 - 1/0
	575V/60	125	150	150	(1) 2/0 - #14	(1) 3/0 - #14	125	150	150	(1) 2/0 - #14	(1) 3/0 - #14
140D	208V/60	329	400	400	(1) 600 - #2	(1) 600 - #1 & (2) 250 - #1	329	400	400	(1) 600 - #2	(1) 600 - #1 & (2) 250 - #1
	230V/60	329	400	400	(1) 600 - #2	(1) 600 - #1 & (2) 250 - #1	329	400	400	(1) 600 - #2	(1) 600 - #1 & (2) 250 - #1
	380V/60	190	225	225	(1) 600 - #2	(2) 300 - 1/0	190	225	225	(1) 600 - #2	(2) 300 - 1/0
	460V/60	163	200	200	(1) 2/0 - #14	(2) 300 - 1/0	163	200	200	(1) 2/0 - #14	(2) 300 - 1/0
	400V/50	163	200	200	(1) 2/0 - #14	(2) 300 - 1/0	163	200	200	(1) 2/0 - #14	(2) 300 - 1/0
	575V/60	128	150	150	(1) 2/0 - #14	(1) 3/0 - #14	128	150	150	(1) 2/0 - #14	(1) 3/0 - #14
160D	208V/60	329	400	400	(1) 600 - #2	(1) 600 - #1 & (2) 250 - #1	415	500	500	(2) 500 - #6	(2) 500 - 3/0
	230V/60	329	400	400	(1) 600 - #2	(1) 600 - #1 & (2) 250 - #1	415	500	500	(2) 500 - #6	(2) 500 - 3/0
	380V/60	190	225	225	(1) 600 - #2	(2) 300 - 1/0	246	300	300	(1) 600 - #2	(1) 600 - #1 & (2) 250 - #1
	460V/60	163	200	200	(1) 2/0 - #14	(2) 300 - 1/0	196	225	225	(1) 600 - #2	(2) 300 - 1/0
	400V/50	163	200	200	(1) 2/0 - #14	(2) 300 - 1/0	196	225	225	(1) 600 - #2	(2) 300 - 1/0
	575V/60	128	150	150	(1) 2/0 - #14	(1) 3/0 - #14	176	225	225	(1) 600 - #2	(2) 300 - 1/0
180D	208V/60	454	500	500	(2) 500 - #6	(2) 500 - 3/0	454	500	500	(2) 500 - #6	(2) 500 - 3/0
	230V/60	415	500	500	(2) 500 - #6	(2) 500 - 3/0	415	500	500	(2) 500 - #6	(2) 500 - 3/0
	380V/60	246	300	300	(1) 600 - #2	(1) 600 - #1 & (2) 250 - #1	246	300	300	(1) 600 - #2	(1) 600 - #1 & (2) 250 - #1
	460V/60	204	250	250	(1) 600 - #2	(2) 300 - 1/0	204	250	250	(1) 600 - #2	(2) 300 - 1/0
	400V/50	204	250	250	(1) 600 - #2	(2) 300 - 1/0	204	250	250	(1) 600 - #2	(2) 300 - 1/0
	575V/60	176	225	225	(1) 600 - #2	(2) 300 - 1/0	176	225	225	(1) 600 - #2	(2) 300 - 1/0
190D	208V/60	462	500	500	(2) 500 - #6	(2) 500 - 3/0	462	500	500	(2) 500 - #6	(2) 500 - 3/0
	230V/60	423	500	500	(2) 500 - #6	(2) 500 - 3/0	423	500	500	(2) 500 - #6	(2) 500 - 3/0
	380V/60	250	300	300	(1) 600 - #2	(1) 600 - #1 & (2) 250 - #1	250	300	300	(1) 600 - #2	(1) 600 - #1 & (2) 250 - #1
	460V/60	208	250	250	(1) 600 - #2	(2) 300 - 1/0	208	250	250	(1) 600 - #2	(2) 300 - 1/0
	400V/50	208	250	250	(1) 600 - #2	(2) 300 - 1/0	208	250	250	(1) 600 - #2	(2) 300 - 1/0
	575V/60	179	225	225	(1) 600 - #2	(2) 300 - 1/0	179	225	225	(1) 600 - #2	(2) 300 - 1/0

Note: Power wiring connections to the chiller requires copper wiring. Wire should be sized per NEC and/or local codes. Wire sizing and wire count must fit in the power connection lug sizing shown the above table.

Controls Options & Accessories

Hot Gas Bypass (Factory Installed)

Hot gas bypass permits unit operation down to 10% of full load capacity. This option includes a factory-mounted hot gas bypass valve, solenoid valve, and manual shutoff valve for each circuit.

Low Ambient Control (Factory Installed)

Optional fan VFD control allows unit operation down to -10°F (-23.3 C). Not available on 380 volt, 60 Hz.

High Ambient Control Panel

Includes an exhaust fan with rain hood, two inlet screens with filters, necessary controls and wiring. Required for operation from 105°F to 125°F ambient temperature. This panel is included on units with Low Ambient Control, regardless of ambient temperature, to dissipate additional VFD heat.

Water Flow Switch (Field Installed)

A thermal dispersion water flow switch is available for field installation in the chilled water piping to avoid evaporator freeze-up under low or no flow conditions. Terminals are provided in the unit control center for field hook-up of the water flow switch. If this option is not ordered with the unit, then a field supplied water flow switch must be installed.

Water Flow Switch (Factory Installed)

A factory-mounted and wired thermal dispersion flow switch to avoid evaporator freeze-up under low or no flow conditions.

Alarm Bell (Field Installed)

Field installed and wired to the control panel to provide remote indication of unit alarm condition.

Remote Operator Interface Panel (Field Installed)

A remote interface panel, field wired to the unit, providing all the data viewable on the unit's controller, including alarm clearing and setpoint change capability. See page [page 7](#) for details.

BAS Interface (Open Choices™) (Field Installed)

Your preferred module is shipped loose for field installation on the Microtech III controller to provide the interface to the following standard protocols:

- BACnet/IP
- Modbus
- BACnet Ethernet
- LonMark

Unit Options and Accessories

Remote Evaporators

AGZ-DB models have an evaporator shipped separately for field installation and piping to the outdoor unit. Information on models with remote evaporators can be found in this catalog and in IM 1100, available on www.DaikinApplied.com.

Pump Packages

See [page 7](#) for general information, and refer to IM 1110, available on www.DaikinApplied.com, for detailed selection and installation information.

Vibration Isolators (Field Installed)

Spring or neoprene-in-shear vibration isolators are available for field installation to reduce vibration transmission through the unit base.

Protective Base Guards

Optional factory-installed, vinyl-coated, welded-wire base guards provide around lower section protection on ground level installations. Coil guards are standard.

Louvers (Base and/or Coil)

Available for the upper portion or both the upper and lower portions of unit (upper not required on Models 025 and 030). Selecting both will completely enclose the unit with louvers. The louvers protect the coils from hail damage.

Wind Baffles and Hail Guards

Protection against negative effects from wind, and protection against fin damage from hail, can be achieved with this option. Wind baffles/hail guards area field-installed option used to stabilize unit operation in high wind areas and assist in operation at low ambient temperatures. See IM 1100 for installation details and kit components.

Copper Fin Condenser Coils

Copper fin condenser coils are available as an option on all models.

Black Fin Coils

Aluminum fin stock pre-coated with a phenolic coating with 1000-hour salt spray resistance (ASTM B117-90).

Coated Fins

Copper or aluminum fins coated with ElectroFin® baked epoxy protective coating with 5000-hour salt spray resistance (ASTM B117-90).

Evaporator Insulation

Double insulation thickness (total of 1½ inch) for high humidity areas or low fluid temperatures.

Options and Accessories

Sound Reduction

Acoustical blankets are factory-installed on each compressor. They are also available for retrofit field installation.

Hail and Wind Guards

A field-mounted option shipped as a kit including panels, fasteners, and instructions. They protect the unit from hail damage and help stabilize operation in installations that experience high prevailing winds. Hail and wind guards add 20 inches to the width of each side.

Shut-off Valves

Factory mounted suction valves (one per circuit). Liquid line and discharge shutoff valves are standard.

Chicago Code Relief Valves

Unit will be provided with factory-mounted relief valves to meet Chicago code requirements.

Evaporator Inlet Strainer

Evaporator water strainer kit consisting of Y-type strainer, blowdown valve, pipe extension with two Schrader fittings and two Victaulic couplings; all for field-installation. See [page 12](#) for details.

Right-Hand Evaporator Connections

Right-hand evaporator connections (when looking at the unit control panel) are available on Models 140 to 190.

Electrical

Single-Point Electrical Connection

Provides a single power connection to the unit power block with compressor circuit breakers or to a disconnect switch with compressor circuit breakers.

Either option also available without circuit breakers.

Multi-Point with Disconnect Switch

Provides a disconnect switch mounted inside the power section of the control box with a through-the-door handle for each circuit and no compressor circuit breakers. Requires field-installed circuit protection.

Phase Loss/Voltage Protection

Phase loss with under/over voltage protection and multiple LED indication of fault type is available as a factory installed option to guard against compressor motor burnout.

Convenience Outlet

10.0 amp, 115 volt Ground Fault Circuit Interruption (GFCI) outlet in control panel for servicing unit.

Ground Fault Protection

Protects equipment from damage from line-to-ground fault currents less than those required for conductor protection.

Dual Pump Control

Provides an additional analog output to operate a second chilled water pump. Standard requires a field-installed alternating relay.

High Short Circuit Current Rating (HSCCR) with Single-Point Disconnect Breaker Switch

Provides control panel with high short circuit rating per table and is so labeled. See [page 79](#) for standard panel ratings.

Voltage	208	230	380	460	575
AGZ025-190	100 kA	100 kA	65kA	65 kA	25 kA

Electronic Expansion Valve

An electronic expansion valve is optional on Models 050 through 130, which have thermal expansion valves as standard.

Note: The specification is available from www.DaikinApplied.com.

SECTION 15XXX: AIR-COOLED SCROLL COMPRESSOR CHILLERS (AGZ025DH-190DH)

PART 1 - GENERAL

1.01 Summary

A Section includes design, performance criteria, refrigerants, controls, and installation requirements for air-cooled scroll compressor chillers.

1.02 REFERENCES

- A** Comply with applicable Standards/Codes of AHRI 550/590-2003, ANSI/ASHRAE 15, ETL, cETL, NEC, and OSHA as adopted by the State.
- B** [**Packaged Chillers Only:** Units shall meet the efficiency standards of ASHRAE Standard 90.1, 2010.]

1.03 SUBMITTALS

- A** Submit shop drawings and product data in accordance with the specifications.
- B** Submittals shall include the following:
- 1 Dimensioned plan and elevation view drawings, required clearances, and location of all field connections.
 - 2 Single-line schematic drawing of the power field hookup requirements, indicating all items that are furnished.
 - 3 Schematic diagram of control system indicating points for field interface/connection.
 - 4 Diagram shall fully delineate field and factory wiring.
 - 5 Certification of factory-run test of chiller unit signed by company officer.
 - 6 Installation manuals.

1.04 QUALITY ASSURANCE

- A** Qualifications: Equipment manufacturer must specialize in the manufacture of the products specified and have five years experience with the type of equipment and refrigerant offered.
- B** Regulatory Requirements: Comply with the codes and standards specified.
- C** Chiller manufacturer's plant must be ISO registered.

1.05 DELIVERY AND HANDLING

- A** [**Packaged Chillers Only:** Chiller shall be delivered to the job site completely assembled and charged with refrigerant and oil by the manufacturer.] [**Remote Evaporator Option:** The outdoor unit shall be delivered to the job site completely assembled. It and the remote evaporator shall have a holding charge of nitrogen/helium. Interconnecting piping shall be field supplied and installed.]
- B** Comply with the manufacturer's instructions for rigging and handling equipment.

1.06. WARRANTY

C The chiller manufacturer's warranty shall cover parts and labor costs for the repair or replacement of defects in material or workmanship [OPTION] including refrigerant for the entire unit, for a period of one year from equipment startup or 18 months from shipment, whichever occurs first, [OPTION] and also include an additional extended warranty for (one OR two OR three OR four) years on (the entire unit) OR (on entire unit including refrigerant coverage) OR (compressor and drive train only). Warranty support shall be provided by company direct or factory authorized service permanently located near the job site..

1.07 MAINTENANCE

A Maintenance of the chillers shall be the responsibility of the owner and performed in accordance with the manufacturer's instructions.

PART 2--PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A** Daikin Applied
- B** (Approved Equal)

2.02 UNIT DESCRIPTION

- A** Provide and install as shown on the plans factory-assembled, factory-charged air-cooled scroll compressor packaged chillers in the quantity specified. Each chiller shall consist of hermetic tandem or triple scroll compressor sets (total four or six compressors), [braze plate evaporator (models 025-130)] or [direct expansion evaporator (models 140-190)], air-cooled condenser section, microprocessor-based control system and all components necessary for controlled unit operation. [**Remote Evaporator Option:** A multi-circuit, direct expansion, insulated evaporator shall be provided for remote location to be installed and piped to the outdoor unit by the installing contractor The outdoor condensing unit shall have a holding charge of nitrogen.]
- B** Each packaged chiller shall be factory run-tested with water to verify operation. Operating controls and refrigerant charge shall be checked for proper operation and optimum performance. Any deviation shall be remedied prior to shipment and the unit retested if necessary to confirm repairs or adjustments.

2.03 DESIGN REQUIREMENTS

- A** General:[**Packaged Chillers:** Provide a complete scroll compressor packaged chiller as specified herein and as shown on the drawings. The unit shall be in accordance with the standards referenced in section 1.02 and any local codes in effect.] [**Remote Evaporator Option:** Provide a complete scroll compressor chiller system consisting of an outdoor compressor-condenser section and a remote indoor evaporator as specified herein and as shown on the

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drawings. The unit shall be in accordance with the standards referenced in section 1.02 and any local codes in effect.]

B Performance: Refer to the schedule of performance on the drawings. The chiller shall be capable of stable operation to a minimum percentage of full load (without hot gas bypass) of 25% for units 110 tons and less and 17% for units over

110 tons. Performance shall be in accordance with AHRI Standard 550/590.

C Acoustics: Sound pressure levels for the unit shall not exceed the following specified levels. The manufacturer shall provide the necessary sound treatment to meet these levels if required. Sound data shall be provided with the quotation. Test shall be in accordance with AHRI Standard 370.

Sound Pressure (at 30 feet)											
63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	Overall dBA	75% Load dBA	50% Load dBA	25% Load dBA
Sound Power											
63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	Overall dBA	75% Load dBA	50% Load dBA	25% Load dBA

2.04 CHILLER COMPONENTS

A Compressors

1 The compressors shall be sealed hermetic, scroll type with crankcase oil heater and suction strainer. The compressor motor shall be refrigerant gas cooled, high torque, hermetic induction type, two-pole, with inherent thermal protection on all three phases and shall be mounted on RIS vibration isolator pads. The 20 - 40 ton compressors shall be equipped with an internal module providing compressor protection and communication capability.

B Evaporators

Units up to 130 nominal tons:

- The evaporator shall be a compact, high efficiency, dual circuit, brazed plate-to-plate type heat exchanger consisting of parallel stainless steel plates.
- The evaporator shall be protected with an electric resistance heater (heat trace tape) and insulated with 3/4" (19mm) thick, 0.28 k value, closed-cell polyurethane insulation. This combination shall provide freeze protection down to -20°F (-29°C) ambient air temperature.
- The water-side working pressure shall be a minimum of 653 psig (4502 kPa). Vent and drain connections shall be provided in the inlet and outlet chilled water piping by the installing contractor. Evaporators shall be designed and constructed according to, and listed by, Underwriters Laboratories (UL).

Units over 130 tons:

- The evaporator shall be direct expansion, U-tube type with water flowing in the baffled shell side and refrigerant flowing through the tubes. Two independent

refrigerant circuits within the evaporator serve the unit's dual refrigerant circuits.

- The evaporator shall have a carbon steel shell and seamless high efficiency copper tubes roller-expanded into a carbon steel tube sheet.
- The top and bottom of the evaporator shall have 1/2" (10mm) vent and drain plugs.
- The evaporator shall have an electric resistance immersion heater and be insulated with 3/4" (19mm) thick vinyl nitrate polymer sheet insulation and have a K-factor of at least 0.28 at 75°F (23°C) protecting against water freeze-up at ambient air temperatures to -20°F (-29°C). A fluid thermostat shall control the heater.
- The water side working pressure shall be 152 psig (1048 kPa). Each evaporator shall be designed, constructed, inspected, and stamped according to the requirements of the ASME Boiler and Pressure Vessel Code.
- [OPTION: Evaporator shall have double-thickness insulation.]

C Condenser

- The condenser coils shall consist of 3/8 inch (10mm) seamless copper tubes mechanically bonded into plate-type fins. The fins shall have full drawn collars to completely cover the tubes. A subcooling coil shall be an integral part of the main condenser coil. Condenser fans shall be propeller type arranged for vertical air discharge and individually driven by direct-drive fan motors. The fans shall be equipped with a heavy-gauge vinyl-coated fan guard. Fan motors shall be TEAO type with permanently lubricated ball bearings, inherent overload protection, three-phase, direct-drive, 1140 rpm. Each fan section shall be partitioned to avoid cross circulation.

2 OPTIONS

- a Condenser coils shall include rippled and lanced aluminum fins.
- b [Condenser coils shall include aluminum fins pre-coated with a phenolic epoxy coating with 1000 hour salt spray rating (ASTM B117-90)]
- c [Condenser coils shall include copper fins.]
- d [Condenser coils shall include ElectroFin™ baked epoxy coating providing 5000+ hour salt spray resistance (ASTM B117-90) applied to both the coil and the coil frames.]

D Refrigerant Circuit

- 1 Each of the two refrigerant circuits shall include a replaceable-core refrigerant filter-drier, sight glass with moisture indicator, liquid line solenoid valve (no exceptions), expansion valve, and insulated suction line.

E Construction

- 1 Unit casing and all structural members and rails shall be fabricated of steel and painted to meet ASTM B117, 500-hour salt spray test.

2 OPTIONS

- a Protective, 12 GA, PVC-coated, wire base guards for the lower section of the unit
- b Protective and decorative louvers for upper section of the unit, covering the coils and unit end
- c Protective and decorative louvers for lower section of the unit

F Control System

- 1 A centrally located weatherproof control panel shall contain the field power connection points, control interlock terminals, and control system. Power and starting components shall include factory circuit breaker for fan motors and control circuit, individual contactors for each fan motor, solid-state compressor three-phase motor overload protection, inherent fan motor overload protection and two power blocks (one per circuit) for connection to remote, contractor supplied disconnect switches. Hinged access doors shall be lockable. Factory-mounted barrier panels or separate enclosures are required to protect against accidental contact with line voltage when accessing the control system.

2 OPTIONS

- a [Shall include standard multi-point power blocks.]
- b [Shall include single-point power connection to power block with compressor circuit breakers (Customer-supplied disconnect required).]
- c [Shall include single-point connection to a non-fused disconnect switch with through-the-door handle and compressor circuit breakers.]

- d [Shall include multi-point disconnect switches (one per circuit).]
- e [Shall include high short circuit current rating with single-point disconnect switch.]

- G An advanced DDC microprocessor unit controller with a 5-line by 22-character liquid crystal display provides the operating and protection functions. The controller shall take preemptive limiting action in case of high discharge pressure or low evaporator pressure. The controller shall contain the following features as a minimum:

1 Equipment Protection

- a The unit shall be protected in two ways: (1) by alarms that shut the unit down and require manual reset to restore unit operation and (2) by limit alarms that reduce unit operation in response to some out-of-limit condition. Shut down alarms shall activate an alarm signal.

b Shutdown Alarms

- No evaporator water flow
- Sensor failures
- Low evaporator pressure
- Evaporator freeze protection
- High condenser pressure
- Outside ambient temperature (auto-restart)
- Motor protection system
- Phase voltage protection (Optional)

c Limit Alarms

- Condenser pressure stage down, unloads unit at high discharge pressures
- Low ambient lockout, shuts off unit at low ambient temperatures
 - Low evaporator pressure hold, holds stage #1 until pressure rises
 - Low evaporator pressure unload, shuts off one compressor

d Unit Enable Selection

- Enables unit operation from either local keypad, digital input, or BAS

e Unit Mode Selection

- Selects standard cooling, ice, glycol, or test operation mode

f Analog Inputs

- Reset of leaving water temperature, 4-20 mA

g Digital Inputs

- Unit off switch
- Remote start/stop
- Flow switch
- Ice mode switch, converts operation and setpoints for ice production

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- Motor protection
- h** Digital Outputs
 - Shutdown alarm; field wired, activates on an alarm condition, off when alarm is cleared
 - Evaporator pump; field wired, starts pump when unit is set to start
- i** Condenser Fan Control
 - The unit controller shall provide control of condenser fans based on compressor discharge pressure.
- j** Building Automation System (BAS) Interface
 - Factory mounted DDC controller(s) shall support operation on a BACnet®, Modbus® or LONMARK® network via one of the data link / physical layers listed below as specified by the successful Building Automation System (BAS) supplier.
 - BACnet MS/TP master (Clause 9)
 - BACnet IP, (Annex J)
 - BACnet ISO 8802-3, (Ethernet)
 - LONMARK FTT-10A. The unit controller shall be LONMARK® certified.
 - The information communicated between the BAS and the factory mounted unit controllers shall include the reading and writing of data to allow unit monitoring, control and alarm notification as specified in the unit sequence of operation and the unit points list.
 - For chillers communicating over a LONMARK network, the corresponding LONMARK eXternal Interface File (XIF) shall be provided with the chiller submittal data.
 - All communication from the chiller unit controller as specified in the points list shall be via standard BACnet objects. Proprietary BACnet objects shall not be allowed. BACnet communications shall conform to the BACnet protocol (ANSI/ASHRAE135-2001). A BACnet Protocol Implementation Conformance Statement (PICS) shall be provided along with the unit submittal.

2.05 OPTIONS AND ACCESSORIES

- A** The following options are to be included:
- Hot Gas Bypass: allows unit operation to 10 percent of full load. Includes factory-mounted hot gas bypass valve, solenoid valve, and manual shutoff valve for each circuit. Shall be ready for field piping according to manufacturer instructions.
 - Low Ambient Control: Fan VFD allows unit operation down to -10°F (-23.3 C).
 - High ambient control box for operation in ambient temperatures from 105°F to 125°F
 - Ground Fault Protection: Factory installed circuit breaker to protect equipment from damage from line-

to-ground fault currents less than those required for conductor protection.

- Phase loss with under/over voltage protection and with LED indication of the fault type to guard against compressor motor burnout.
- Factory-mounted flow switch
- Field-mounted, paddle type, chilled water flow switch field wired to the control panel
- Evaporator inlet strainer, 40-mesh with extension pipe and Victaulic couplings
- Spring vibration isolators for field installation
- Rubber-in-shear isolators for field installation
- Compressor sound reduction package
- Remote operator interface panel (field-wired)
- 115V GFI convenience outlet
- BAS interface module, factory mounted

2.05 Optional Factory-Installed Pump Package

A The pump package shall be factory mounted and wired on the chiller. The chiller controller shall provide a pump start/stop signal when operation is required. On dual pump systems, the chiller shall also provide automatic alternating of pump starts and duty/standby functionality. The package shall be equipped with:

- **Single Pump Model 4380:** single spring inside-seal, vertical, in-line, radially split-case pump, serviceable without breaking pipe connections. The motor and pump rotating assembly shall be serviceable without removing the pump casing from the line, or...
- **Dual Pumps in a Single Casting Model 4392:** single-spring inside-seal vertical, in-line, radially split-case pumps, mounted in a common casing with a common inlet connection and outlet connection and including a flapper valve to prevent recirculation when only one pump is operating. An isolation valve shall be included to allow one pump to operate when the other is removed. The pumps shall be designed for duty/standby, not parallel operation.

Pump package shall also be equipped with:

- "Y" type inlet strainer
- Combination triple-duty outlet valve having a drip-tight discharge shutoff valve, non-slam check valve, and flow throttling valve
- Combination suction guide with flow stabilizing outlet vanes and stainless steel strainer with a disposable fine-mesh strainer for start-up
- Factory power and control wiring from the AGZ chiller to the pump package control panel
- Flow switch mounted and wired

- Interconnecting schedule 40 piping with Victaulic couplings
- Insulation of all cold surfaces

B Pump Package Options

- Water pressure gauges on the pump suction and discharge
- Expansion tank with size increments from 4.4 to 90 gallons, field installed (small sizes can be factory mounted)
- Air separator with air vent, field installed
- Storage tanks, vertical, insulated, 150, 300, 600, 1000 gallon sizes with optional immersion heater, field installed
- Pump VFD for variable chilled water flow capability.
 - The VFD shall be completely sensorless requiring no field installation or wiring of sensors. The drive shall incorporate an integrated graphical user interface that shall provide running and diagnostic information and identify faults and status in clear English language. Faults shall be logged / recorded for interrogation at a later date. The keypad shall incorporate Hand-Off-Auto push-buttons to enable switching between auto control modes and manual control. The drive shall incorporate a USB port for direct connection to a PC and an RS485 connection with Modbus RTU protocol. The built-in BAS mode shall be equipped with the same protocol as the chiller.
 - Control software shall provide automatic speed control in variable volume systems without the need for pump mounted (internal/external) or remotely mounted differential pressure system feedback sensor. Control mode setting and minimum / maximum head and flow set-points shall be set at the factory and be user adjustable via the inbuilt programming interface.

PART 3 - EXECUTION

3.01 INSTALLATION

- A** Install in strict accordance with manufacturer's requirements, shop drawings, and contract documents.
- B** Adjust and level chiller in alignment on supports.

- C** Coordinate electrical installation with electrical contractor.
- D** Coordinate controls with control contractor.
- E** Install a cleanable, field-supplied 40-mesh strainer in the chilled water return line at the evaporator inlet.

3.02 START-UP

- A** Provide testing and starting of machine, and instruct the Owner in its proper operation and maintenance.

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