

Technical Specifications

InRow[®] Direct Expansion Air Conditioners

Air-Cooled/Fluid-Cooled

Up to 37kW



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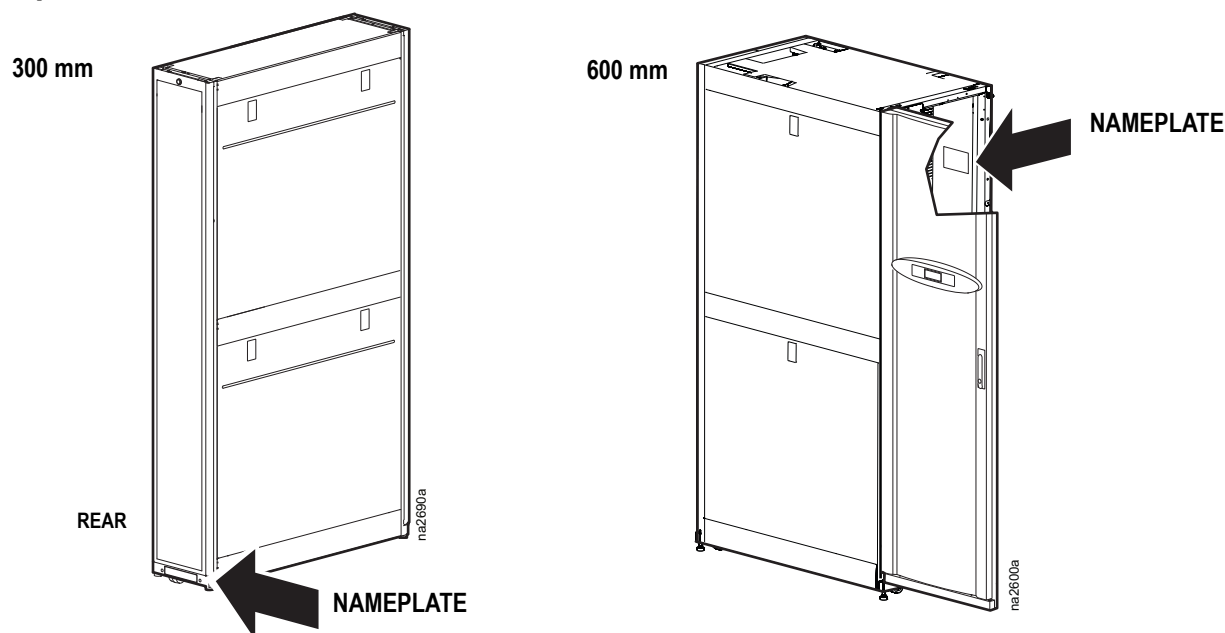
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Technical Data

Model Identification

Nameplate location



Model Descriptions

Model	Width	Range of Capacity	Heat Rejection	Humidifier/ Reheat	Power
ACRD100	300 mm	Up to 10 kW	Air-cooled	No	208–230 1-Phase 60 Hz
ACRD101	300 mm	Up to 10 kW	Air-cooled	No	220–240 1-Phase 50 Hz
ACRD200	300 mm	Up to 10 kW	Fluid-cooled	No	208–230 1-Phase 60 Hz
ACRD201	300 mm	Up to 10 kW	Fluid-cooled	No	220–240 1-Phase 50 Hz
ACRD500	600 mm	Up to 37 kW	Air-cooled	No	200–240 3-Phase 50/60 Hz
ACRD501	600 mm	Up to 37 kW	Air-cooled	No	460–480 3-Phase 60 Hz
ACRD502	600 mm	Up to 37 kW	Air-cooled	No	380–415 3-Phase 50/60 Hz
ACRP100	600 mm	Up to 37 kW	Air-cooled	Yes	200–240V 3-Phase 50/60 Hz
ACRP101	600 mm	Up to 37 kW	Air-cooled	Yes	460–480V 3-Phase 60 Hz
ACRP102	600 mm	Up to 37 kW	Air-cooled	Yes	380–415V3-Phase 50/60 Hz

Standard Features and Options

The modular, row-based computer room cooling system offers efficient, predictable, and economical cooling for a variety of spaces.

Critical environmental requirements now reach far beyond the confines of the traditional data center or computer room to encompass a larger suite of applications, referred to as technology rooms. Critical environment applications include:

- Computer rooms
- Telecommunication facilities
- Clean rooms
- Power equipment
- Medical equipment rooms
- LAN/WAN environments

A worldwide network by Schneider Electric representatives is fully qualified to provide engineering, sales, installation, and service for our products.

Capacities

InRow Direct Expansion (DX) units are available in two sizes (300 mm and 600 mm) with nominal capacities ranging from 2-10 kW (300 mm) and 10-37 kW (600 mm).

Room air distribution

Row-based systems are placed in line with rack enclosures. At least one system is used per hot aisle. Air is drawn in through the rear of the system, cooled, and discharged into the cold aisle, thereby neutralizing the sensible heating effects of the data processing equipment. InRow[®] DX products deliver high volumes of airflow to eliminate hot spots in densely populated environments.

Configuration:

- Air-cooled
- Fluid-cooled

Compliance Approval:

- UL Listed
- CE
- C-Tick
- C-UL Listed
- VDE (ACRP 100 series only)

Standard Features

All series

- Variable-speed fans
- Remote shutdown input
- Common alarm output
- Internal condensate pump
- Top or bottom piping
- Network Management Card (NMC)
- Remote temperature sensors
- Microprocessor controller
- Insulated cabinet

ACRD100 series and ACRD200 series only

- Washable filter
- Condensate management with two dual floats
- Condensate pumps
- Scroll compressor
- Hot gas bypass
- 2-way/3-way floating point valve (ACRD200 series only)
- Liquid line solenoid valve (ACRD100 series only)

ACRD500/ACRP100 series only

- Backward inclined impeller
- Pleated 100-mm (4-in) filter
- Condensate management with one dual float
- Variable speed reciprocating compressor using VFD control
- Pressure equalization solenoid
- Pipe adapters
- Electric reheat (ACRP100 series only)
- Humidifier (ACRP100 series only)

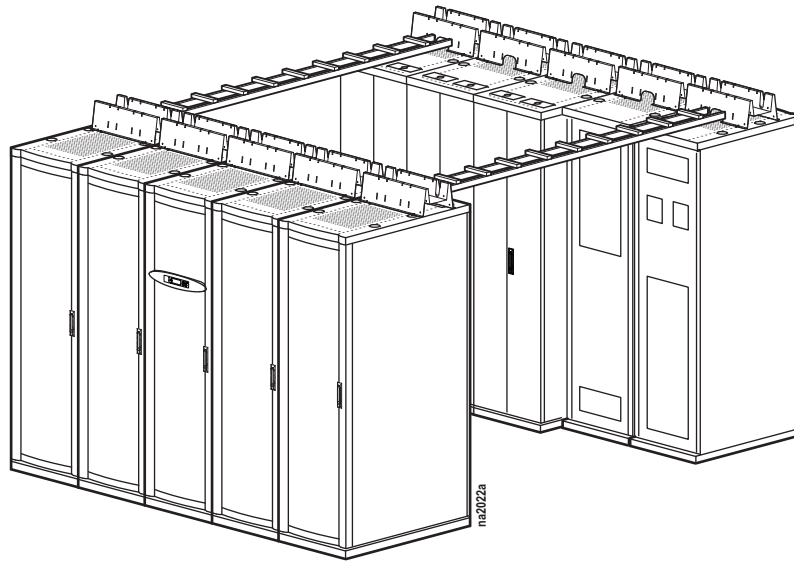
Accessories

- Cable leak detector
- Joining kit-InRow DX to NetShelter VX rack
- NetShelter SX 42-U to 48-U height adapters
- NetShelter VX 42-U height adapters
- Bridge trough power cable shield
- Data cable bridge partition
- Isolation ball valves (ACRD100 series only)
- Fluid cooler
- Condenser
- Aisle containment
- Rack containment

Scalable Solution for Critical Environments

InRow advantages

The row-based solution improves energy efficiency and cooling ability in a number of ways. First, the InRow DX cooling unit draws air directly from the hot aisle, allowing the InRow DX cooling unit to take advantage of higher heat transfer efficiency due to higher temperature differences. It can then discharge room-temperature air directly in front of the servers it is cooling. Placing the cooling unit in the row enables the unit to operate at higher return and supply air temperature, yielding 100% sensible capacity. This significantly reduces the need for humidification.



Scalable for high density

The predictable performance of the row-based architecture makes it well-suited for high density applications. The focus on heat removal instead of cold air delivery is the key to making this approach scalable. The modular design of the InRow DX cooling unit allows it to be easily added in the row as the demand for cooling increases.

The additional benefit of the row-based architecture is the ability to add hot aisle containment. Containing the hot aisle further reduces any chance of hot and cold air streams mixing. This provides ultimate predictability and allows the cooling capacity to be matched to the IT heat load.

Cabinet

The frame is constructed of 16-gauge formed steel for maximum strength. The cabinet is serviceable from the front and rear. All exterior panels and corner posts on the frame are powder coated for durability and an attractive finish. The front and rear exterior panels are constructed of 18 gauge perforated steel with 69.5% open free area. All panels, which include a key latch for safety and security, allow easy access and removal. Insulation (ACRD100 and ACRD200 series only) is 80.1 kg/m³ (5 lb/ft³) density and complies with ASTM E84 rating of 25/50.

Shutdown input/alarm output

The unit provides one field connection input for remote shutdown and one field connection alarm output.

Variable speed fans

Each unit is equipped with variable speed fans to allow for varying heat loads. In order to provide uniform airflow over the cooling coil, the fans provide a draw-through air pattern. The ACRD100 and ACRD200 series units are equipped with six direct drive fan modules. These fans are easily replaceable while the unit is in operation. The ACRD500 and ACRP100 series is equipped with two backward inclined, direct drive fans.

Joining Kit-InRow DX/NetShelter SX

Joining kits made of 16-gauge steel enable joining the InRow DX cooling unit to NetShelter enclosures.

Counterflow cooling coil/condensate pan

Designed for high-sensible heat ratios, the coil is constructed with copper tubes, raised lance type aluminum fins, and 18 gauge galvanized steel end plates. Coil headers are equipped with anti-drip shields in the event of condensation. The condensate pan is thermal formed non-ferrous material, and is sloped for positive drainage to provide higher indoor air quality.

Filters

Filtration of conditioned air is extremely vital to maintaining the clean, particle-free environment required by electrical equipment. Filters are easily replaceable from the rear of the unit. The ACRD100 and 200 series systems use greater-than 20% efficiency ASHRAE 52.1, 12.7 mm (1/2 in.) washable filters that meet HF-1 standards for electronics (MERV 1 per ASHRAE 52.2). The ACRD500/ACRP100 series system uses a 30% efficient, 102 mm (4 in.), deep loading, pleated filter (MERV 8 per ASHRAE 52.2, EN779 G4).

Selectable top or bottom piping connections

The unit includes both top and bottom piping connections. All ACRD100 and ACRP500 series connections use threaded ring seals for ease of installation and service. The ACRD200 series uses union connectors.

Network Management Card

The Network Management Card (NMC) allows communication with the Local Area Network (LAN). In addition, the NMC permits multi-level access to monitoring, control, and event notification features over the building network.

Condensate pump

ACRD100 and ACRD200 series:

A condensate pump is factory wired and piped internally to the condensate drain pan. The pump is capable of pumping 34 l/h (9 g/hr) against head pressures of up to 50 ft (15.2 m) of total run. Of that run, 16 ft (4.9 m) can be vertical lift as measured from floor level. Dual floats are included with the unit. One float is used for condensate pump control, and the other float generates a condensate pump failure alarm. The InRow DX cooling unit can be set to either continue running in an alarm condition or shut down to prevent condensate pan overflow.

ACRD500 and ACRP100 series:

A condensate pump is factory wired and piped internally to the condensate drain pan. The pump is capable of pumping a maximum of 18 m (60 ft) at 32 l/h (8.45 g/hr), which may include a maximum lift of 3.5 m (11.5 ft) as measured from floor level. Within the condensate pump, there is a dual position float. The first position is used for condensate pump control and the other float generates a condensate pump failure alarm to prevent condensate pan overflow.

Remote temperature sensors

To control the unit based on rack inlet temperature, remote temperature sensors are provided. The ACRD100 and ACRD200 series units come equipped with one temperature sensor, and the ACRD500 and ACRP100 series units come equipped with three. These sensors measure temperature at a point 4 m (13 ft) from the connection inside the InRow DX cooling unit. These sensors are used for remote placement in the field on an adjacent IT rack.

Electric reheat (ACRP100 series only)

Electric reheat elements are low watt density, wired for three-phase and loaded equally on all three phases, and electrically and thermally protected by both automatic and manual reset thermal cut outs. Reheat elements are stainless steel, fin tubular construction.

Pipe adapters (ACRD500 and ACRP100 series only)

Standard pipe connections are 31.75 mm (1 1/4 in.) 12 UNF female threaded ring seal (manufactured in accordance with ANSI B1.1). The adapter converts the threaded ring seal to a sweat adapter.

Humidifier (ACRP100 series only)

The humidifier is a self-contained, steam-generating type, factory piped and wired, with a disposable cylinder and an automatic solid state control circuit. Humidifier canisters are replaceable. The humidifier controller communicates directly to the microprocessor controller and provides complete status and control at the operator interface.

Optional Features

Cable water detector

A leak detection cable is placed on the floor or subfloor around all possible leak sources. If water or other conductive liquids contact the cable anywhere along its length, the microprocessor controller announces the leak visually, audibly, and across the network. The 6.1-m (20-ft) cable may be cascaded to make custom lengths up to 24.4 m (80 ft).

Network cable

Various lengths of network cable are available to ship with your cooling system. The network cable is used to interconnect multiple cooling units in a redundant group, as well as to connect the Network Management Card to your LAN.

Filters

Electrical equipment requires clean, particle free air, thus making air filtration extremely important. As an optional feature, higher efficiency filters can be purchased for the InRow DX cooling units. The ACRD100 and ACRD200 series units optionally use an 50.8 mm (2 in.) pleated, deep loading, 30% ASHRAE 52.1 filter (MERV 8 per ASHRAE 52.2). The ACRD500 and ACRP100 series units optionally use 102 mm (4 in.) pleated, deep loading, 85% ASHRAE 52.1 filter (MERV13 per ASHRAE 52.2).

Power trough

Overhead power distribution between adjacent NetShelter racks allows for removal of the InRow DX cooling units without disrupting overhead power cabling.

Data partition

Overhead cable distribution between adjacent NetShelter racks allows for removal of the InRow RP cooling units without disrupting overhead cabling.

Height adapters

To match height of the InRow RP to various rack heights, height adapters are available for NetShelter 42-U VX and 48-U SX racks.

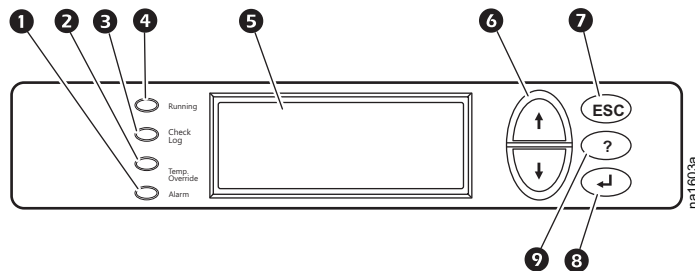
Hot-aisle containment system

Modular ceiling tiles and doors can be used to enclose the hot aisle. This increases the densities that can be handled in a single rack enclosure by eliminating mixing of hot and cold air streams. This method, called load neutralization, removes the heat from the hot aisle, cools it, and then returns it to the surrounding room area at or slightly below room temperature. The warmer return air temperatures that are achieved in this application increase the capacity of the air conditioner.

Use of modular ceiling tiles across a 914.4-mm (3-ft) hot aisle that connects two opposite rack enclosures makes expansion quick and simple. Expansion kits, with the necessary ceiling tile and all baying hardware, can be ordered to increase the size of the hot aisle by one rack on each side. The end doors can be easily removed and re-attached for expansion.

The enclosed hot aisle prevents any warm return air from mixing with cold supply air. In effect, all surrounding room air can act as supply air to the system. The hot aisle containment system is beneficial in any environment. It can be deployed quickly in any controlled space without expensive additions to the infrastructure, such as raised flooring or ductwork.

Microprocessor Controller



Item	Description
1	Critical Alarm LED
2	Warning Alarm LED
3	Check Log LED
4	Status LED
5	Liquid Crystal Display (LCD)
6	Menu Selection scroll keys
7	Escape key
8	Enter key
9	Help key

Microprocessor controller

The microprocessor controller is standard on each system. The controller provides precision control for the demanding requirements of the following:

- Computer rooms
- Telecommunication facilities
- Clean rooms
- Power equipment
- Medical equipment rooms
- LAN/WAN environments

The easy-to-use display allows the operator to select options from the device menu-driven interface to control and monitor the connected air conditioning system.

Open architecture

The InRow Direct Expansion protocol is open for integration with all building management systems. Communication interface on the system can be MODBUS RS485 or Ethernet.

Control type

The controller uses proportional/integral/derivative (PID), a time-proven precision environmental control method. This allows for custom tuning of control variables to achieve desired system response.

Functions

- Supply and Return Air Conditions
- Operational Mode Control
- Event Logging
- Alarms
- Redundant Group Control
- Fan Speed Adjustment
- Input/Output Module Programming

Logging

The event log keeps a record of all alarms and events. Each event log contains a time/date stamp. The controller also displays run time, in hours, for major components (air filters, fans, and condensate pump, as well as humidifier, heater, and compressor for the air-cooled unit).

Control

The back-lit, four-line by twenty-character display is password configurable.

Alarms

The microprocessor controller shall activate a visible and audible alarm in the following occurrences:

All series

- Cool fail
- Air filter clogged
- Return air sensor fault
- Supply air sensor fault
- Rack temperature sensor fault
- High discharge pressure
- Low suction pressure
- Fan fault
- Water detected (if optional leak detector used)
- Check condensate management system
- Air filter run hours violation
- Group communication fault
- Supply air high temperature violation
- Return air high temperature violation
- Filter DP sensor failure
- Suction pressure sensor failure
- Discharge pressure sensor failure
- Persistent high discharge pressure fault
- Rack inlet temperature high violation
- External communication fault
- Internal communication fault
- On standby input contact fault
- A-link isolation relay fault

ACRD100 series and ACRD200 series only

- Condensate pan full
- Upper fan power supply fault
- Lower fan power supply fault
- Suction temperature sensor failure
- Persistent low suction pressure fault
- Factory configuration not completed
- Liquid refrigerant sensor failure

ACRD200 series only

- Condenser fluid valve actuator fault
- Outdoor heat exchanger (OHE) fault

ACRD500/ACRP100 series only

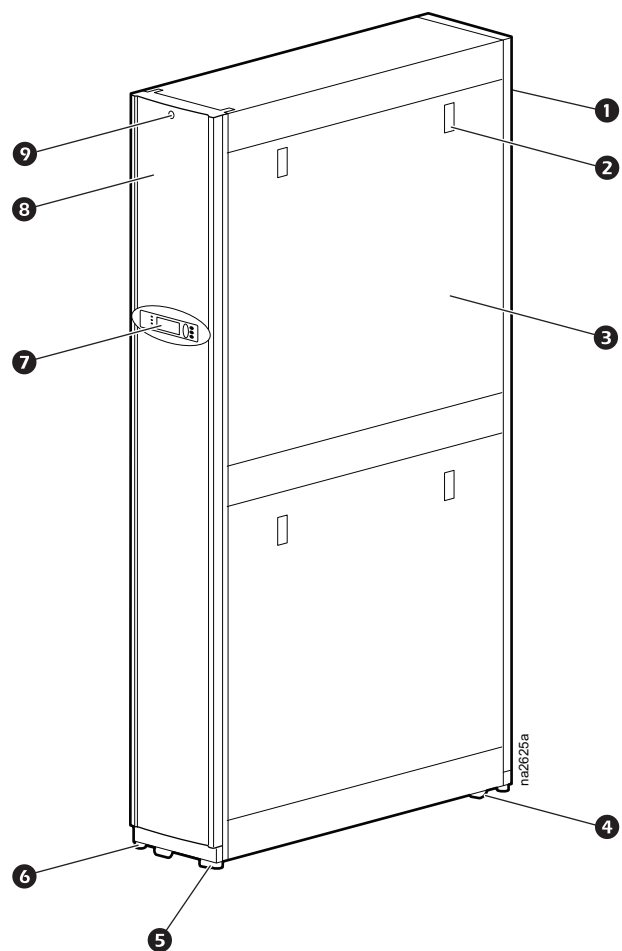
- Compressor drive communication fault
- Compressor drive fault
- Compressor drive warning
- Compressor run hours violation
- Condensate pump run hours violation
- Fan run hours violation
- Invalid supply setpoint
- Idle mode active
- High pressure switch active
- Compressor high pressure
- Supply humidity sensor fault
- High suction pressure
- Excessive compressor cycling

ACRP100 series only

- Humidifier water conductivity high violation
- Humidifier fault tolerance exceeded
- Humidifier low water
- Humidifier excessive output reduction
- Humidifier drain fault
- Humidifier cylinder full
- Humidifier replace cylinder
- Humidifier RS485 communication fault
- Humidifier run hours violation
- Humidity high/low violation
- Return humidity sensor fault
- Heater fault
- Heater run hours exceeded
- Heater interlock shutdown

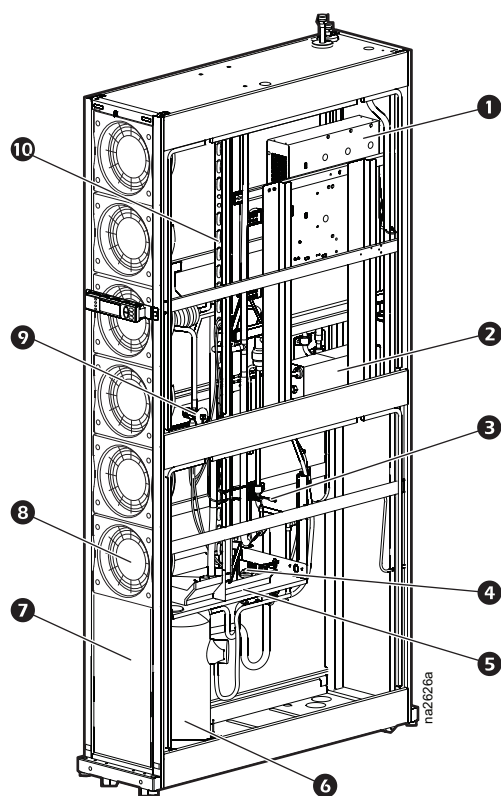
InRow DX Models

Exterior components (ACRD100 and ACRD200 series)



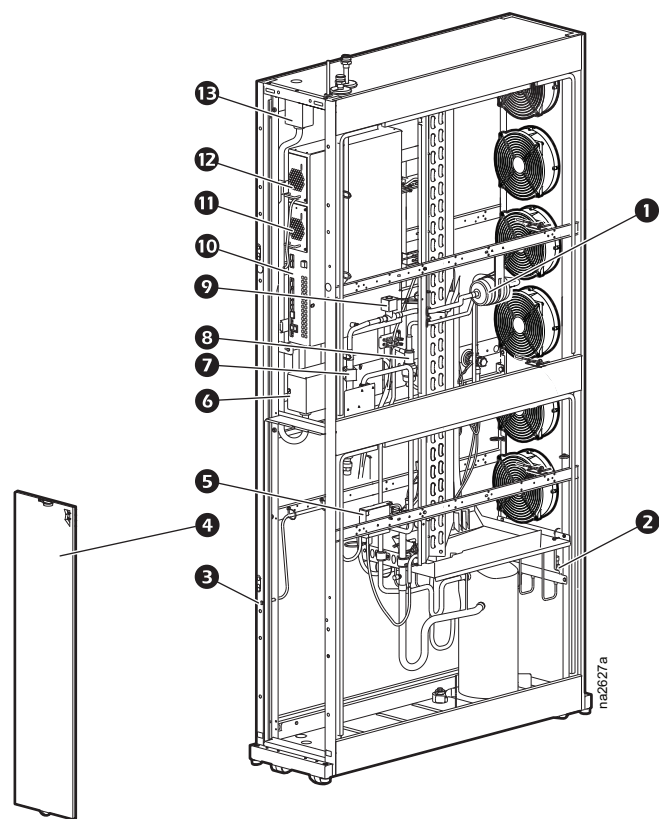
Item	Description	Item	Description
❶	Removable rear door	❸	Removable side panel
❷	Side panel latch	❹	Rear casters (non-swiveling)
❸	Removable side panel	❺	Front casters (swiveling)
❹	Rear casters (non-swiveling)	❻	Adjustable leveling feet
❺	Front casters (swiveling)	❼	Display interface
		❽	Removable front door
		❾	Door lock (front and rear)

Interior components (front) (ACRD100 series)



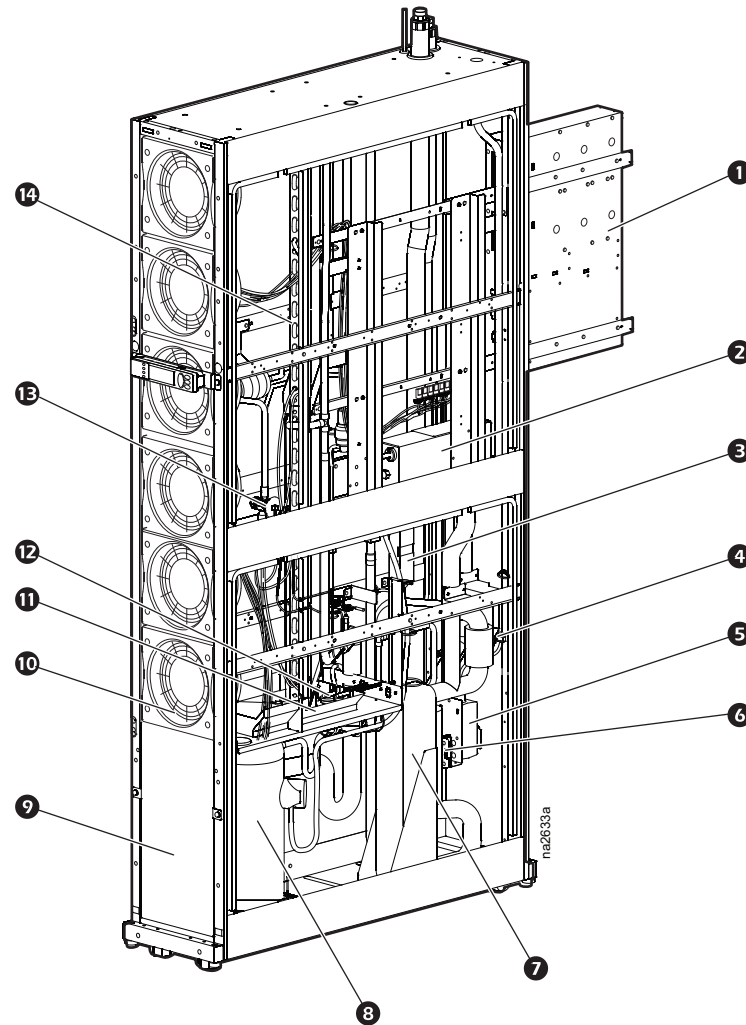
Item	Description	Item	Description
①	Electrical control box 1 (retractable)	⑥	Compressor
②	Electrical control box 2	⑦	Front air block panel
③	Return air temperature sensor	⑧	Evaporator fans (6 total)
④	Condensate pan floats (2 total)	⑨	Expansion valve
⑤	Condensate pan	⑩	Evaporator coil

Interior components (rear)(ACRD100 series)



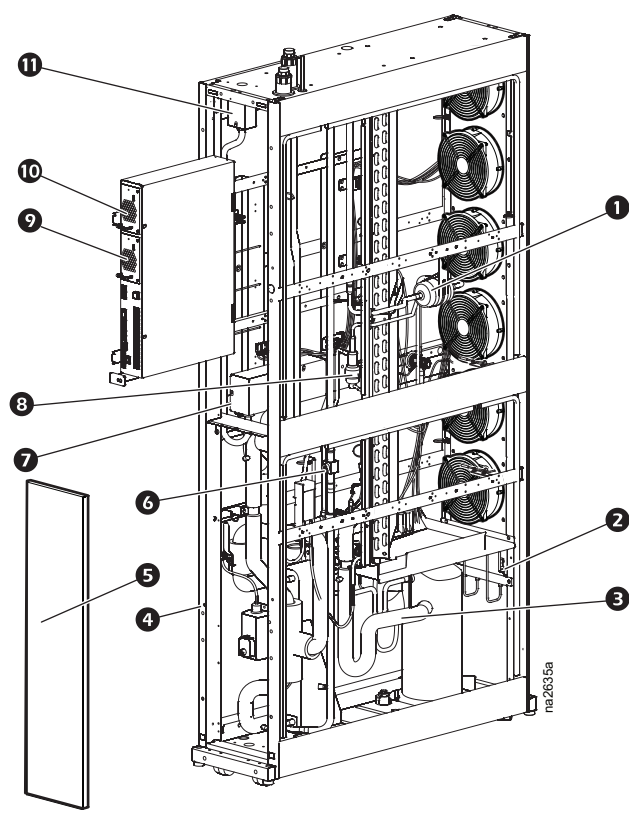
Item	Description	Item	Description
1	Filter/dryer	8	Hot gas bypass valve
2	Pressure transducer (2 total, located behind air block)	9	Liquid line shutoff solenoid
3	Filter differential pressure port	10	Electrical control box 1
4	Air filter (2 total)	11	Power supply unit (bottom)
5	Condensate pump (2 total)	12	Evaporator coil
6	Electrical control box 2	13	Service junction box (top entry shown)
7	Sight glass		

Interior components (front)(ACRD200 series)



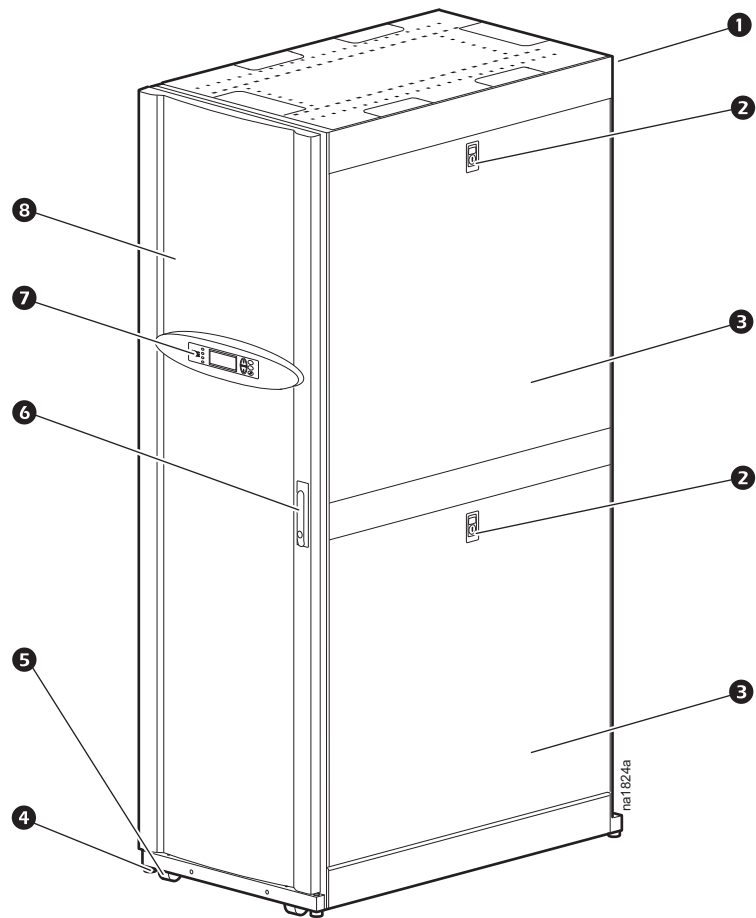
Item	Description	Item	Description
①	Electrical control box 1 (retractable)	⑧	Compressor
②	Electrical control box 2	⑨	Front air block panel
③	Condensate pumps	⑩	Evaporator fans (6 total)
④	Bypass shutoff valve (2-way)	⑪	Condensate pan
⑤	Water control actuator	⑫	Condensate pan floats (2 total)
⑥	Water regulating valve (3-way)	⑬	Expansion valve
⑦	Brazed plate heat exchanger	⑭	Evaporator coil

Interior components (rear)(ACRD200 series)



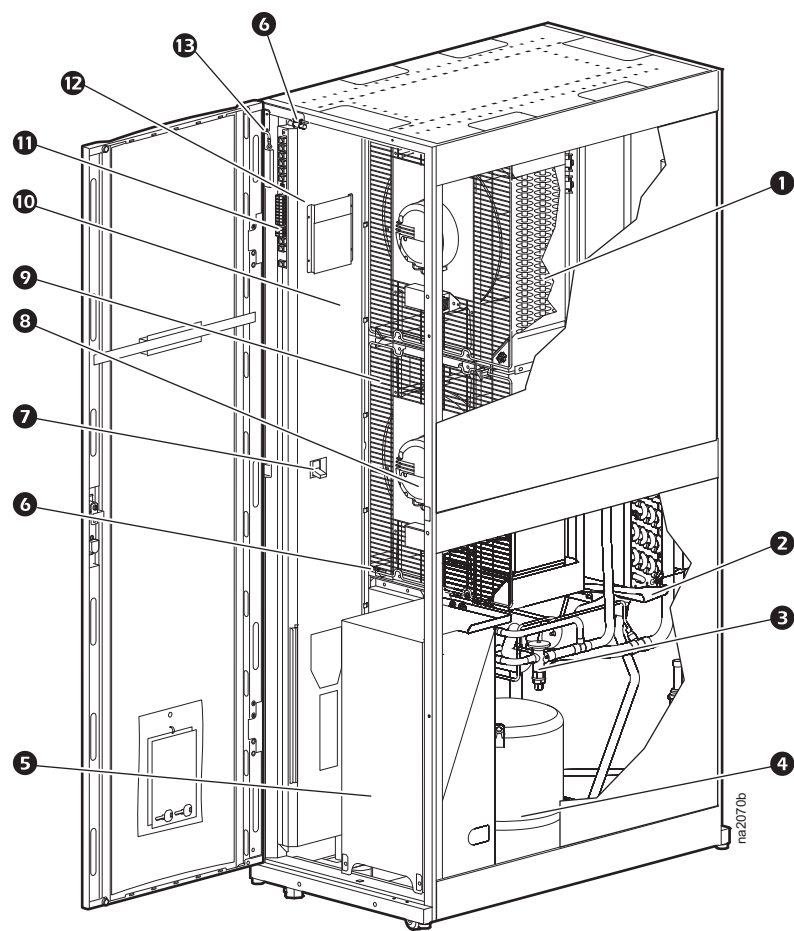
Item	Description	Item	Description
1	Filter/dryer	7	Electrical control box 2
2	Pressure transducer (2 total, located behind air block)	8	Hot gas bypass valve
3	Suction line	9	Power supply unit (bottom)
4	Filter differential pressure port	10	Power supply unit (top)
5	Air filters (2 total)	11	Service junction box (top entry shown)
6	Sight glass		

Exterior components(ACRD500/ACRP100 series)



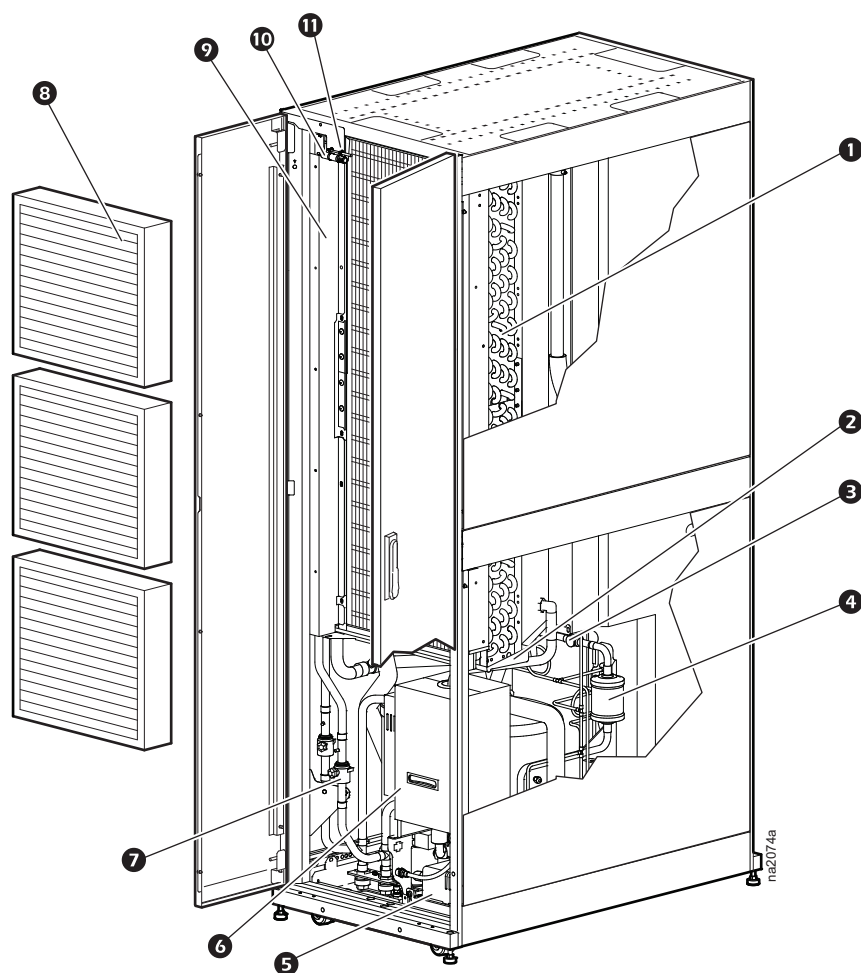
Item	Description	Item	Description
①	Removable rear doors	⑤	Casters (all swiveling)
②	Side panel lock	⑥	Door handle and lock
③	Removable side panel	⑦	Display interface
④	Adjustable leveling feet	⑧	Removable front door

Interior components (front) (ACRD500/ACRP100 series)



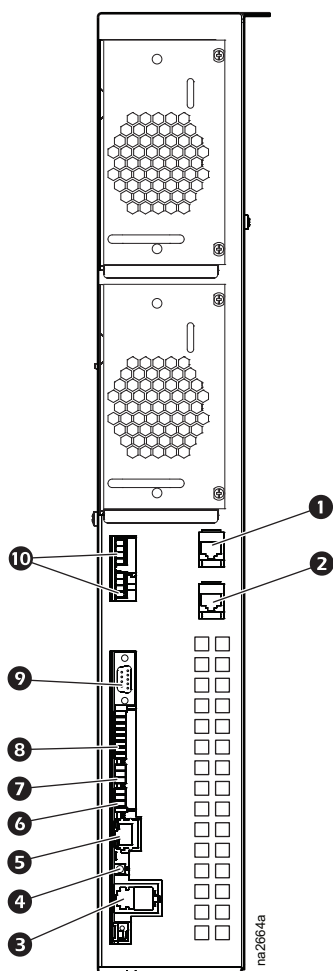
Item	Description	Item	Description
1	Electric heater (ACRP100 series only)	8	Fan
2	Condensate drain pan	9	Fan guard
3	Thermal expansion valve	10	Electric Panel
4	Compressor	11	Customer Communications Interface
5	Variable Frequency Drive (for compressor)	12	Ladder diagrams
6	Supply air temperature sensor	13	Ground Wire
7	Main circuit breaker	14	Humidity sensor

Air-cooled interior components (ACRD500/ACRP100 series) (rear of unit)



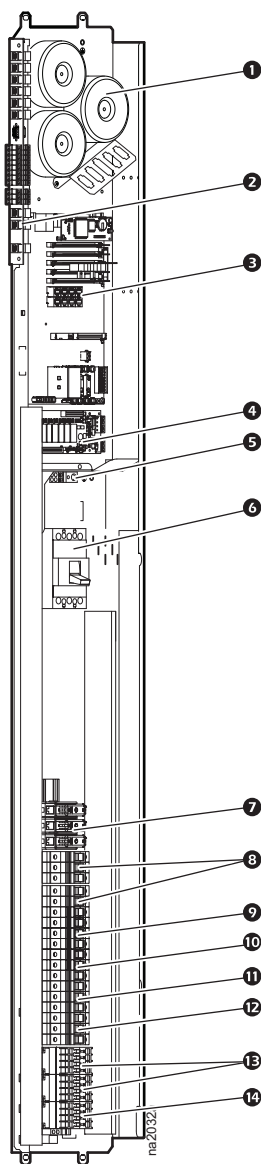
Item	Description	Item	Description
❶	Evaporator coil	❷	Shutoff valves (top piping only)
❸	Condensate drain pan	❸	Air filters
❹	Sight glass	❹	Pipe chase
❺	Filter dryer	❺	Humidity sensor (ACRP100 series only)
❻	Condensate pump	❻	Return air temperature sensor
❼	Humidifier (ACRP100 series only)		

Electrical panel (ACRD100 and ACRD200 series)



Item	Description	Item	Description
❶	Leak detector port	❸	A-Link ports
❷	Remote temperature sensor port	❹	Reset button
❸	A-Link ports	❺	Network port
❹	Reset button	❻	Building management system (BMS) RS-485 port
❺	Network port	❼	Control RS-485 port
		❽	Form C and shutdown input
		❾	RS-232 console port
		❿	Outdoor heat exchanger (OHE) input and output ports (optional connection for ACRD100 and ACRD101)

Electrical panel (ACRD500/ACRP100 series)



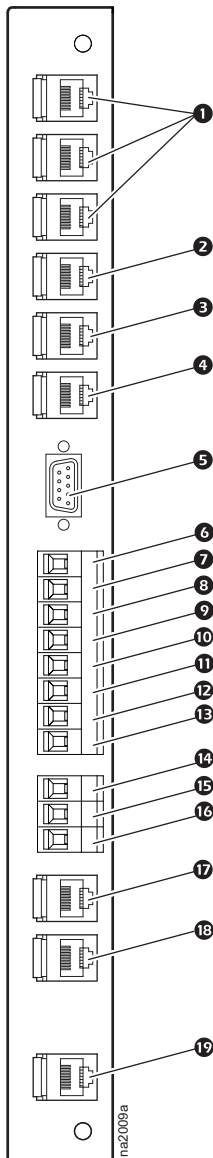
Item	Description
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- | | |
|----|--|
| 1 | Transformers |
| 2 | User interface connectors |
| 3 | Main controller board |
| 4 | Relay board |
| 5 | Ground lug |
| 6 | Main circuit breaker |
| 7 | <ul style="list-style-type: none"> Compressor fuse block (ACRP100, ACRP101, ACRD500, ACRD501) Compressor circuit breaker (ACRP102 and ACRD502) |
| 8 | Fan circuit breakers |
| 9 | Controller circuit breaker |
| 10 | Humidifier circuit breaker (ACRP100 series) |
| 11 | Heater circuit breaker (ACRP100) |
| 12 | Heater contactors (ACRP100 series) |
| 13 | Humidifier contactor (ACRP100) |

NOTE: For a top installation, control wiring is routed through the wire channel located at the top left hand corner just above the user interface connectors.

For a bottom installation, the control wiring is routed to the access hole in the bottom of the equipment through wire clamps from the interface connectors. Then, the wiring is routed down along the electrical panel and secured with wire clamps.

User interface panel (ACRD500/ACRP100 series)



Item	Description
1	Rack inlet temperature sensors 1, 2, 3
2	A-Link IN
3	A-Link OUT
4	Network port
5	Console port
6	Alarm output, NC (Normally Closed)
7	Alarm output, COM (Common)
8	Alarm output, NO (Normally Open)
9	Supply GND (Ground)
10	Supply 12 VDC (current limit: 20 mA)
11	Supply 24 VDC (current limit: 20 mA)
12	Remote shutdown+ (12–30 VAC/VDC, 24 VDC @ 11 mA)
13	Remote shutdown-
14	BMS D1 (RXTX+)
15	BMS D0 (RXTX-)
16	BMS GND
17	Supply air temperature sensor (front)
18	Supply air humidity sensor (front)
19	Display interface

Performance Specifications

Net cooling capacity (air- and glycol-cooled)

Return Air Temperature	Model	Total Capacity kW (BTU/hr)	Sensible Capacity kW (BTU/hr)
22.2°C DB, 15.5°C WB (72°F DB, 60°F WB)	ACRD100	8.22 (28,000)	8.04 (27,400)
	ACRD101	8.01 (27,200)	7.71 (26,400)
	ACRD200	8.22 (28,000)	8.04 (27,400)
	ACRD201	8.01 (27,200)	7.71 (26,400)
	ACRD500/ACRP100 series	22.8 (78,000)	19.0 (65,000)
23.9°C DB, 16.2°C WB (75°F DB, 61.1°F WB)	ACRD100	8.52 (29,000)	8.52 (29,000)
	ACRD101	8.16 (27,900)	8.16 (27,900)
	ACRD200	8.52 (29,000)	8.52 (29,000)
	ACRD201	8.16 (27,900)	8.16 (27,900)
	ACRD500/ACRP100 series	25.2 (86,000)	21.7 (74,000)
26.7°C DB, 19.4°C WB (80°F DB, 67.0°F WB)	ACRD100	10.02 (34,000)	9.12 (31,000)
	ACRD101	9.72 (33,200)	8.85 (30,200)
	ACRD200	10.02 (34,000)	9.12 (31,000)
	ACRD201	9.72 (33,200)	8.85 (30,200)
	ACRD500/ACRP100 series	N/A	N/A
26.7°C DB, 17.1°C WB (80°F DB, 62.8°F WB)	ACRD100	9.36 (32,000)	9.36 (32,000)
	ACRD101	8.97 (30,700)	8.97 (30,700)
	ACRD200	10.02 (34,000)	9.12 (31,000)
	ACRD201	9.72 (33,200)	8.85 (30,200)
	ACRD500/ACRP100 series	26.9 (92,000)	26.9 (92,000)
29.4°C DB, 18.1°C WB (85°F DB, 64.6°F WB)	ACRD100	9.90 (33,800)	9.90 (33,800)
	ACRD101	9.69 (33,100)	9.69 (33,100)
	ACRD200	9.90 (33,800)	9.90 (33,800)
	ACRD201	9.69 (33,100)	9.69 (33,100)
	ACRD500/ACRP100 series	29.0 (99,000)	29.0 (99,000)
32.2°C DB, 19.0°C WB (90°F DB, 66.2°F WB)	ACRD100 ¹	10.44 (35,600)	10.44 (35,600)
	ACRD101 ¹	10.29 (35,200)	10.29 (35,200)
	ACRD200 ¹	10.44 (35,600)	10.44 (35,600)
	ACRD201 ¹	10.29 (35,200)	10.29 (35,200)
	ACRD500/ACRP100 series	30.5 (104,000)	30.5 (104,000)
35.0°C DB, 19.9°C WB (95°F DB, 67.8°F WB)	ACRD100 ²	10.62 (36,200)	10.62 (36,200)
	ACRD101 ²	10.5 (35,900)	10.5 (35,900)
	ACRD200 ²	10.62 (36,200)	10.62 (36,200)
	ACRD201 ²	10.5 (35,900)	10.5 (35,900)
	ACRD500/ACRP100 series	33.7 (115,000)	33.7 (115,000)
37.8°C DB, 20.7°C WB (100°F DB, 69.3°F WB)	ACRD100 ³	10.62 (36,200)	10.62 (36,200)
	ACRD101 ³	10.5 (35,900)	10.5 (35,900)
	ACRD200 ³	10.62 (36,200)	10.62 (36,200)
	ACRD201 ³	10.5 (35,900)	10.5 (35,900)
	ACRD500/ACRP100 series	36.9 (126,000)	36.9 (126,000)
40.6°C DB, 21.6°C WB (105°F DB, 70.8°F WB)	ACRD100 ⁴	10.56 (36,000)	10.56 (36,000)
	ACRD101 ⁴	10.5 (35,900)	10.5 (35,900)
	ACRD200 ⁴	10.56 (36,000)	10.56 (36,000)
	ACRD201 ⁴	10.5 (35,900)	10.5 (35,900)
	ACRD500/ACRP100 series*	36.6 (125,000)	36.6 (125,000)

¹Airflow is reduced to 887 l/s (1880 SCFM) at this condition to maintain adequate evaporating temperature.

²Airflow is reduced to 717 l/s (1520 SCFM) at this condition to maintain adequate evaporating temperature

³Airflow is reduced to 599 l/s (1270 SCFM) at this condition to maintain adequate evaporating temperature.

⁴Airflow is reduced to 510 l/s (1080 SCFM) at this condition to maintain adequate evaporating temperature

Return Air Temperature	Model	Total Capacity kW (BTU/hr)	Sensible Capacity kW (BTU/hr)
43.3°C DB, 22.2°C WB) (110°F DB, 72.0°F WB) 5Airflow is reduced to 448 l/s (950 SCFM) at this condition to maintain adequate evaporating temperature.	ACRD100 ⁵	10.6 (36,000)	10.6 (36,000)
	ACRD101 ⁵	10.5 (35,900)	10.5 (35,900)
	ACRD200 ⁵	10.6 (36,000)	10.6 (36,000)
	ACRD201 ⁵	10.5 (35,900)	10.5 (35,900)

*Airflow reduced to 4000 SCFM at this condition to maintain adequate return gas temperature.

Airflow at full evaporating fan speed: ACRD100/200 series – 1081 l/s (2290 SCFM); ACRD500/ACRP100 series – 2171 l/s (4600 SCFM).

Minimum recommended loads: ACRD100/200 series – 2kW (6,831 BTU); ACRD500/ACRP100 series – 10kW (34,152 BTU)

Note: For ACRD100, ACRD500, and ACRP100 series the outdoor air temperature is 35°C (95°F)

Note: For ACRD200 series, a 40% at 0.64 l/s (10gpm), the entering glycol mixture temperature is 40.6°C (105°F)

Note: For ACRD500 series, reduce airflow and cooling capacity specifications by 7% for cooling units run at low input voltage (380V).

Net Cooling Capacity (Water Cooled)

Return Air Temperature	Model	Total Capacity kW (BTU/hr)	Sensible Capacity kW (BTU/hr)
22.2°C DB, 15.5°C WB (72°F DB, 60°F WB)	ACRD200	9.72 (33,200)	8.94 (30,500)
	ACRD201	9.57 (32,700)	8.79 (30,100)
23.9°C DB, 16.2°C WB (75°F DB, 61.1°F WB)	ACRD200	8.43 (28,200)	8.43 (28,200)
	ACRD201	9.30 (31,800)	9.30 (31,800)
26.7°C DB, 19.4°C WB (80°F DB, 67.0°F WB)	ACRD200	11.52 (39,300)	9.90 (33,800)
	ACRD201	11.64 (39,800)	9.99 (34,200)
26.7°C DB, 17.1°C WB (80°F DB, 62.8°F WB)	ACRD200	10.38 (35,400)	10.38 (35,400)
	ACRD201	10.11 (34,500)	10.11 (34,500)
29.4°C DB, 18.1°C WB (85°F DB, 64.6°F WB)	ACRD200	10.92 (37,300)	10.92 (37,300)
	ACRD201	10.98 (37,500)	10.98 (37,500)
32.2°C DB, 19.0°C WB (90°F DB, 66.2°F WB) Note: Airflow is reduced to 887 l/s (1880 SCFM) at this condition to maintain adequate evaporating temperature.	ACRD200	11.64 (39,700)	11.64 (39,700)
	ACRD201	11.76 (40,200)	11.76 (40,200)
35.0°C DB, 19.9°C WB (95°F DB, 67.8°F WB) Note: Airflow is reduced to 717 l/s (1520 SCFM) at this condition to maintain adequate evaporating temperature.	ACRD200	12.00 (41,000)	12.00 (40,900)
	ACRD201	12.00 (41,000)	12.00 (41,000)
37.8°C DB, 20.7°C WB (100°F DB, 69.3°F WB) Note: Airflow is reduced to 599 l/s (1270 SCFM) at this condition to maintain adequate evaporating temperature.	ACRD200	12.06 (41,200)	12.06 (41,200)
	ACRD201	12.00 (41,000)	12.00 (41,000)
40.6°C DB, 21.6°C WB (105°F DB, 70.8°F WB) Note: Airflow is reduced to 510 l/s (1080 SCFM) at this condition to maintain adequate evaporating temperature.	ACRD200	12.06 (41,000)	12.00 (41,000)
	ACRD201	12.00 (41,000)	12.00 (41,000)
43.3°C DB, 22.2°C WB) (110°F DB, 72.0°F WB) Note: Airflow is reduced to 448 l/s (950 SCFM) at this condition to maintain adequate evaporating temperature.	ACRD200	12.06 (41,200)	12.06 (41,200)
	ACRD201	12.06 (41,200)	12.06 (41,200)
Airflow for the ACRD200 series is 1081 l/s (2290 SCFM) at full evaporating fan speed. Note: Minimum recommended loads: ACRD200 series - 2kW (6,831 BTU) Note: For ACRD200 series, a 0.64 l/s (10gpm) entering water temperature is 29.4°C (85°F)			

Performance at Percentage of Fan Speed

ACRD100 series

% Fan Speed	Voltage/Phase/Hz	L/S (SCFM)	Unit Power in kW	Condenser Fan Power in kW	Net Sensible Capacity kW (BTU/h)	SA Temp °C (°F)
Return Air Temperature – 29.4°C (85°F)						
30	200-240/1/60	448 (950)	2.57	0.13	4.60 (15,710)	20.8 (69.5)
	200-240/1/50		2.58	0.13	4.60 (15,710)	20.8 (69.5)
40	200-240/1/60	562 (1190)	2.67	0.18	5.75 (19,637)	20.8 (69.5)
	200-240/1/50		2.70	0.20	5.75 (19,637)	20.8 (69.5)
50	200-240/1/60	947 (1370)	2.76	0.23	6.65 (22,711)	20.8 (69.5)
	200-240/1/50		2.80	0.25	6.65 (22,711)	20.8 (69.5)
60	200-240/1/60	717 (1520)	2.86	0.28	7.35 (25,102)	20.8 (69.5)
	200-240/1/50		2.90	0.29	7.35 (25,102)	20.8 (69.5)
70	200-240/1/60	779 (1650)	2.92	0.32	8.00 (27,321)	20.8 (69.5)
	200-240/1/50		2.98	0.35	8.00 (27,321)	20.8 (69.5)
80	200-240/1/60	850 (1800)	3.04	0.38	8.70 (29,712)	20.8 (69.5)
	200-240/1/50		3.08	0.40	8.70 (29,712)	20.8 (69.5)
90	200-240/1/60	944 (2000)	3.19	0.47	9.70 (33,127)	20.8 (69.5)
	200-240/1/50		3.22	0.49	9.70 (33,127)	20.8 (69.5)
100	200-240/1/60	1081 (2290)	3.46	0.50	9.90 (33,810)	21.7 (71.1)
	200-240/1/50		3.50	0.51	9.90 (33,810)	21.9 (71.5)
Return Air Temperature – 35°C (95°F)						
30	200-240/1/60	448 (950)	2.68	0.28	7.55 (25,785)	20.8 (69.5)
	200-240/1/50		2.70	0.30	7.55 (25,785)	20.8 (69.5)
40	200-240/1/60	562 (1190)	2.80	0.42	9.50 (32,444)	20.8 (69.5)
	200-240/1/50		2.81	0.44	9.50 (32,444)	20.8 (69.5)
50	200-240/1/60	947 (1370)	2.89	0.48	10.20 (34,835)	21.8 (71.2)
	200-240/1/50		2.91	0.48	9.90 (33,810)	22.2 (71.9)
60	200-240/1/60	717 (1520)	3.00	0.52	10.62 (36,269)	22.6 (72.6)
	200-240/1/50		3.01	0.50	10.29 (35,142)	23.1 (73.5)
70	200-240/1/60	N/A	N/A	N/A	N/A	N/A
	200-240/1/50		N/A	N/A	N/A	N/A
80	200-240/1/60	N/A	N/A	N/A	N/A	N/A
	200-240/1/50		N/A	N/A	N/A	N/A
90	200-240/1/60	N/A	N/A	N/A	N/A	N/A
	200-240/1/50		N/A	N/A	N/A	N/A
100	200-240/1/60	N/A	N/A	N/A	N/A	N/A
	200-240/1/50		N/A	N/A	N/A	N/A
Return Air Temperature – 40.6°C (105°F)						
30	200-240/1/60	448 (950)	2.78	0.47	10.20 (34,835)	21.3 (70.4)
	200-240/1/50		2.78	0.48	10.00 (34,152)	21.6 (70.9)
40	200-240/1/60	562 (1190)	2.85	0.51	10.56 (36,064)	24.8 (76.6)
	200-240/1/50		2.87	0.53	10.55 (36,030)	24.8 (76.6)
50	200-240/1/60	N/A	N/A	N/A	N/A	N/A
	200-240/1/50		N/A	N/A	N/A	N/A
60	200-240/1/60	N/A	N/A	N/A	N/A	N/A
	200-240/1/50		N/A	N/A	N/A	N/A
70	200-240/1/60	N/A	N/A	N/A	N/A	N/A
	200-240/1/50		N/A	N/A	N/A	N/A
80	200-240/1/60	N/A	N/A	N/A	N/A	N/A
	200-240/1/50		N/A	N/A	N/A	N/A

% Fan Speed	Voltage/Phase/Hz	L/S (SCFM)	Unit Power in kW	Condenser Fan Power in kW	Net Sensible Capacity kW (BTU/h)	SA Temp °C (°F)
90	200-240/1/60	N/A	N/A	N/A	N/A	N/A
	200-240/1/50		N/A	N/A	N/A	N/A
100	200-240/1/60	N/A	N/A	N/A	N/A	N/A
	200-240/1/50		N/A	N/A	N/A	N/A

ACRD200 series

% Fan Speed	Voltage/Phase/Hz	L/S (SCFM)	Unit Power in kW	Net Sensible Capacity kW (BTU/h)	SA Temp °C (°F)
Return Air Temperature – 29.4°C (85°F)					
30	200-240/1/60	448 (950)	2.35	4.60 (15,710)	20.8 (69.5)
	200-240/1/50		2.25	4.60 (15,710)	20.8 (69.5)
40	200-240/1/60	562 (1190)	2.41	5.76 (19,671)	20.8 (69.5)
	200-240/1/50		2.31	5.76 (19,671)	20.8 (69.5)
50	200-240/1/60	947 (1370)	2.47	6.63 (22,643)	20.8 (69.5)
	200-240/1/50		2.37	6.63 (22,643)	20.8 (69.5)
60	200-240/1/60	717 (1520)	2.55	7.36 (25,136)	20.8 (69.5)
	200-240/1/50		2.45	7.36 (25,136)	20.8 (69.5)
70	200-240/1/60	779 (1650)	2.60	8.00 (27,321)	20.8 (69.5)
	200-240/1/50		2.50	8.00 (27,321)	20.8 (69.5)
80	200-240/1/60	850 (1800)	2.68	8.70 (29,712)	20.8 (69.5)
	200-240/1/50		2.58	8.70 (29,712)	20.8 (69.5)
90	200-240/1/60	944 (2000)	2.80	9.70 (33,127)	20.8 (69.5)
	200-240/1/50		2.70	9.70 (33,127)	20.8 (69.5)
100	200-240/1/60	1081 (2290)	3.06	10.90 (37,225)	21.0 (69.8)
	200-240/1/50		3.00	10.98 (37,499)	20.9 (69.7)
Return Air Temperature – 35°C (95°F)					
30	200-240/1/60	448 (950)	2.25	7.50 (25,614)	20.8 (69.5)
	200-240/1/50		2.25	7.50 (25,614)	20.8 (69.5)
40	200-240/1/60	562 (1190)	2.31	9.50 (32,444)	20.8 (69.5)
	200-240/1/50		2.31	9.50 (32,444)	20.8 (69.5)
50	200-240/1/60	947 (1370)	2.37	10.50 (35,859)	21.2 (70.)
	200-240/1/50		2.37	10.50 (35,859)	21.2 (70.)
60	200-240/1/60	717 (1520)	2.50	11.35 (38,762)	21.8 (71.3)
	200-240/1/50		2.45	11.35 (38,762)	21.8 (71.3)
70	200-240/1/60	779 (1650)	2.61	11.75 (40,128)	22.4 (72.4)
	200-240/1/50		2.50	11.75 (40,128)	22.4 (72.4)
80	200-240/1/60	850 (1800)	2.71	12.00 (40,982)	23.2 (73.7)
	200-240/1/50		2.58	12.00 (40,982)	23.2 (73.7)
90	200-240/1/60	N/A	N/A	N/A	N/A
	200-240/1/50		N/A	N/A	N/A
100	200-240/1/60	N/A	N/A	N/A	N/A
	200-240/1/50		N/A	N/A	N/A
Return Air Temperature – 40.6°C (105°F)					
30	200-240/1/60	448 (950)	2.35	10.55 36,030)	20.8 (69.5)
	200-240/1/50		2.25	10.55 36,030)	20.8 (69.5)
40	200-240/1/60	562 (1190)	2.40	11.70 (39,958)	22.8 (73.0)
	200-240/1/50		2.31	11.70 (39,958)	22.8 (73.0)
50	200-240/1/60	947 (1370)	2.46	12.00 (40,982)	24.8 (76.7)
	200-240/1/50		2.37	12.00 (40,982)	24.8 (76.7)
60	200-240/1/60	N/A	N/A	N/A	N/A
	200-240/1/50		N/A	N/A	N/A
70	200-240/1/60	N/A	N/A	N/A	N/A
	200-240/1/50		N/A	N/A	N/A
80	200-240/1/60	N/A	N/A	N/A	N/A
	200-240/1/50		N/A	N/A	N/A
90	200-240/1/60	N/A	N/A	N/A	N/A
	200-240/1/50		N/A	N/A	N/A

% Fan Speed	Voltage/Phase/Hz	L/S (SCFM)	Unit Power in kW	Net Sensible Capacity kW (BTU/h)	SA Temp °C (°F)
100	200-240/1/60	N/A	N/A	N/A	N/A
	200-240/1/50		N/A	N/A	N/A

ACRD500/ACRP100 series (no humidifier/no reheat)

% Fan Speed	Voltage	L/S (SCFM)	Unit Power in kW	Condenser Fan Power in kW	Net Sensible Capacity kW (BTU/h)	SA Temp °C (°F)
Return Air Temperature – 29.4°C (85°F)						
30	All	700 (1400)	2.03	0.01	7.3 (24,931)	20.8 (69.5)*
40	All	900 (1800)	3.25	0.02	9.8 (33,469)	20.8 (69.5)*
50	All	1100 (2300)	4.28	0.03	12.1 (41,324)	20.8 (69.5)*
60	All	1300 (2800)	6.32	0.06	14.5 (49,520)	20.8 (69.5)
70	All	1500 (3200)	7.12	0.07	16.9 (57,717)	20.8 (69.5)
80	All	1700 (3700)	9.13	0.10	19.4 (66,254)	20.8 (69.5)
90	All	2000 (4100)	9.52	0.18	21.8 (74,451)	20.8 (69.5)
100	All	2200 (4600)	11.74	0.31	24.2 (82,647)	20.8 (69.5)
Return Air Temperature – 35°C (95°F)						
30	All	700 (1400)	4.28	0.05	11.95 (40,811)	20.8 (69.5)*
40	All	900 (1800)	6.51	0.08	15.93 (54,404)	20.8 (69.5)
50	All	1100 (2300)	7.65	0.14	19.91 (67,996)	20.8 (69.5)
60	All	1300 (2800)	10.19	0.20	23.89 (81,589)	20.8 (69.5)
70	All	1500 (3200)	12.28	0.27	27.87 (95,181)	20.8 (69.5)
80	All	1700 (3700)	14.66	0.45	30.6 (104,505)	21.4 (70.5)
90	All	2000 (4100)	15.09	0.55	33.0 (112,701)	21.9 (71.5)
100	All	2200 (4600)	15.69	0.60	33.7 (115,092)	23 (73.4)
Return Air Temperature – 40.6°C (105°F)						
30	All	700 (1400)	7.13	0.09	16.6 (56,692)	20.8 (69.5)*
40	All	900 (1800)	9.46	0.28	22.2 (75,817)	20.8 (69.5)
50	All	1100 (2300)	11.77	0.57	27.7 (94,600)	20.8 (69.5)
60	All	1300 (2800)	13.96	0.93	29.6 (101,089)	21.1 (70.0)
70	All	1500 (3200)	14.43	1.00	34.5 (117,824)	23 (73.4)
80	All	1700 (3700)	14.93	1.04	35.6 (121,580)	24.7 (76.5)
90	All	2000 (4100)	15.58	1.25	36.5 (124,654)	29.0 (26.1)
100	All	2200 (4600)	16.17	1.55	37.9 (129,435)	27.1 (80.7)
*In this case, the compressor will cycle because its speed is down to the minimum of 35 Hz. The minimum fan speed for the InRow mode is 30%; the minimum fan speed for HACS and RACS mode is 40%. Note: Outdoor temperature is 35°C (95°F) Note: For ACRD500 series, reduce airflow and cooling capacity specifications by 7% for cooling units run at low input voltage (380 V).						

General Data

General Specifications – ACRD200 series

Data	Units	Water Cooled	Glycol Mixture Cooled
Nominal flow rate entering to the unit	l/s (GPM)	0.64 (10.0)	0.64 (10.0)
Design entering temperature	°C (°F)	29.4 (85.0)	40.6 (105.0)
Maximum heat rejection	kW (BTU/hr)	15.2 (52,000)	15.2 (52,000)
Maximum glycol percentage	%	0	40
Entering temperature range for 0.64 l/s (10 GPM) flow rate entering to the unit	°C (°F)	12.8 - 43.3 (55.0 - 110.0)	12.8 - 43.3 (55.0 - 110.0)
Unit pressure drop at 0.64 l/s (10 GPM)	kPa (psi)	33.1 (4.8)	43.4 (6.3)

Fluid-cooled unit performance

MODEL		ACRD200 Series
AIR SYSTEM - FAN (Standard Filter Installed)		
Size - mm (in.)		200 (7.9)
Air Volume - l/s (SCFM)		1080 (2290)
Fan Motor - W (HP) each		115 (0.15)
Number of Fans		6
COOLING COIL - COPPER TUBE/ALUMINUM FIN		
Face Area - m ² (ft ²)		0.37 (3.97)
Rows Deep		2
FILTERS - WASHABLE (STANDARD)		
Quantity		2
Size - mm (in.)		238 X 933 (9.375 X 36.75)
Depth - mm (in.)		13 (1/2)
Efficiency (%)		<20% MERV 1
FILTERS - PLEATED (OPTIONAL)		
Quantity		2
Size - mm (in.)		238 X 933 (9.375 X 36.75)
Depth - mm (in.)		51 (2)
Efficiency (%)		30% MERV 8
PHYSICAL DATA		
Weight - kg (lbs)		199.09 (438)
Height - mm (in.)		1991 (78.39)
Width - mm (in.)		300 (11.8)
Depth - mm (in.)		1070 (42.13)
CONNECTION SIZES		
Liquid	In	7/8-in. O DF brazed
	Return	7/8-in. ODF brazed
Condensate Drain	Drain Line - in.	3/16-in. ID, 5/16-in. OD
REFRIGERANT		
Type		R410A
Charge - kg (oz)		2.2 (78)

Air-Cooled unit performance

Data	Model	Value
AIR SYSTEM - FAN (Standard Filter Installed)		
Size - mm (in.)	ACRD100 series	200 (7.9)
	ACRD500/ACRP100 series	400 (15.8)
Air Volume - l/s (SCFM)	ACRD100 series	1080 (2290)
	ACRD500/ACRP100 series	2200 (4600)
Fan Motor - W (HP) each	ACRD100 series	115 (0.15)
	ACRD500/ACRP100 series	1100 (1.5)
Number of Fans	ACRD100 series	6
	ACRD500/ACRP100 series	2
COOLING COIL - COPPER TUBE/ALUMINUM FIN		
Face Area - m ² (ft ²)	ACRD100 series	0.37 (3.97)
	ACRD500/ACRP100 series	0.56 (6.0)
Rows Deep	ACRD100 series	2
	ACRD500/ACRP100 series	4
FILTERS - WASHABLE (STANDARD)		
Quantity	ACRD100 series	2
Size - mm (in.)		238 X 933 (9.375 X 36.75)
Depth - mm (in.)		13 (1/2)
Efficiency (%)		<20% MERV 1
FILTERS - PLEATED (STANDARD)		
Quantity	ACRD500/ACRP100 series	3
Size - mm (in.)		418 x 470 (16.45 x 18.5)
Depth - mm (in.)		101.6 (4)
Efficiency (%)		30
FILTERS - PLEATED (OPTIONAL)		
Quantity	ACRD100 series	2
Size - mm (in.)		238 X 933 (9.375 X 36.75)
Depth - mm (in.)		51 (2)
Efficiency (%)		30% MERV 8
FILTERS - PLEATED (OPTIONAL)		
Quantity	ACRD500/ACRP100 series	3
Size - mm (in)		418 x 470 (16.45 x 18.5)
Depth - mm (in.)		101.6 (4)
Efficiency (%)		85

Data	Model	Value
PHYSICAL DATA		
Weight - kg (lbs)	ACRD100 series	183 (404)
	ACRD500 series	367 (808)
	ACRP100 series	372 (820)
Height - mm (in.)	ACRD100 series	1991 (78.39)
	ACRD500/ACRP100 series	1991 (78.39)
Width - mm (in.)	ACRD100 series	300 (11.8)
	ACRD500/ACRP100 series	600 (23.62)
Depth - mm (in.)	ACRD100 series	1070 (42.13)
	ACRD500/ACRP100 series	1070 (42.13)
CONNECTION SIZES		
Refrigerant		
Discharge	ACRD100 series	1/2-in. ODF brazed
	ACRD500/ACRP100 series	7/8-in. ODF brazed
Maximum pressure drop - bar (PSI)	ACRD100 series	0.7 (10)
	ACRD500/ACRP100 series	0.7 (10)
Liquid	ACRD100 series	1/2-in. ODF brazed
	ACRD500/ACRP100 series	7/8-in. ODF brazed
Condensate Drain		
Drain Line - in.	ACRD100 series	3/16-in. ID, 5/16-in. OD
	ACRD500/ACRP100 series	1/2
Humidifier		
Supply Line – mm (in.)	ACRD100 series	6.35 (1/4)
REFRIGERANT		
Type	ACRD100 series	R410A (amount determined at installation)
	ACRD500/ACRP100 series	R407C (amount determined at installation)
HUMIDIFICATION – SOLID STATE ELECTRODE CANISTER		
Flush Cycle	ACRP100 series	Automatic
Capacity – kg/hr (lbs/hr)	ACRP100 series	3.0 (6.6)
kW	ACRP100 series	2.25
REHEAT – ELECTRIC (Equally Loaded Three Stage, Finned Tubular, Low-Watt Density)		
Capacity – kW (BTU/hr)	ACRP100 series	6.0 (20,491)
Stages	ACRP100 series	2

Altitude correction factors

Room Condition: 72 DB/50% RH											
Altitude – m (ft)	0	305 (1000)	610 (2000)	915 (3000)	1219 (4000)	1524 (5000)	1829 (6000)	2134 (7000)	2438 (8000)	2743 (9000)	3048 (10000)
Specific volume – cm ³ /g (ft ³ /lb)	847.77 (13.58)	879.61 (14.09)	912.70 (14.62)	947.66 (15.18)	983.86 (15.76)	1021.32 (16.36)	1061.28 (17.00)	1103.10 (17.67)	1146.80 (18.37)	1193.00 (19.11)	1241.69 (19.89)
Density – g/m ³ (lb/ft ³)	1185.37 (0.074)	1137.31 (0.071)	1089.26 (0.068)	1057.22 (0.066)	1009.16 (0.063)	977.13 (0.061)	945.10 (0.059)	913.05 (0.057)	865.00 (0.054)	832.97 (0.052)	800.92 (0.050)
Density Ratio*	1.000	0.964	0.929	0.895	0.862	0.830	0.799	0.769	0.739	0.711	0.683
Capacity Correction**	1.000	0.981	0.962	0.933	0.913	0.884	0.865	0.846	0.826	0.807	0.787
*Density ratio is used for air flow correction factor. **Capacity correction is used to derate performance.											

Sound performance data

ACRD100 and ACRD200 series tested sound data

Fan Speed %	Fan RPM	Airflow m ³ /s (SCFM)	Sound Power dB at Frequency Hz re: 10 ⁻¹² W								Lp Sound Pressure dB re: 20 µPa*
			125	250	500	1000	2000	4000	8000	dBA**	dBA
60	2300	0.66 (1400)	62.3	68.3	69.8	74.8	67.8	59.3	53.3	76.5	70.5
70	3000	0.78 (1650)	65.3	76.3	74.8	77.8	73.8	67.8	61.3	80.8	74.7
80	3450	0.85 (1800)	67.3	80.3	77.3	78.2	76.3	71.8	66.3	82.7	76.6
90	3800	0.92 (1950)	68.3	81.8	78.8	80.8	77.3	74.3	68.3	84.5	78.4
100	4300	1.08 (2290)	70.3	80.8	83.3	85.3	80.3	77.8	72.3	88.3	82.2

*Weighted Sound Pressure dBA in a 28.3 m³ (1000 ft³) room at 1.5 m (5-ft) distance.

**Based on compressor operating at full speed.

ACRD500/ACRP100 Series Air-cooled tested sound data

Fan Speed%	Airflow m ³ /s (SCFM)	Sound Power dB at Frequency Hz re: 10 ⁻¹² W								Lp Sound Pressure dB re: 20 µPa*
		125	250	500	1000	2000	4000	8000	dBA**	dBA
50	1.27 (2700)	84.5	87.5	78.0	77.5	75.0	66.5	65.5	83.4	72.8
75	1.79 (3800)	92.5	90.0	84.0	81.5	77.5	71.5	68.5	87.6	76.8
100	2.36 (5000)	90.0	98.0	91.0	85.0	81.0	76.5	72.0	92.3	82.8

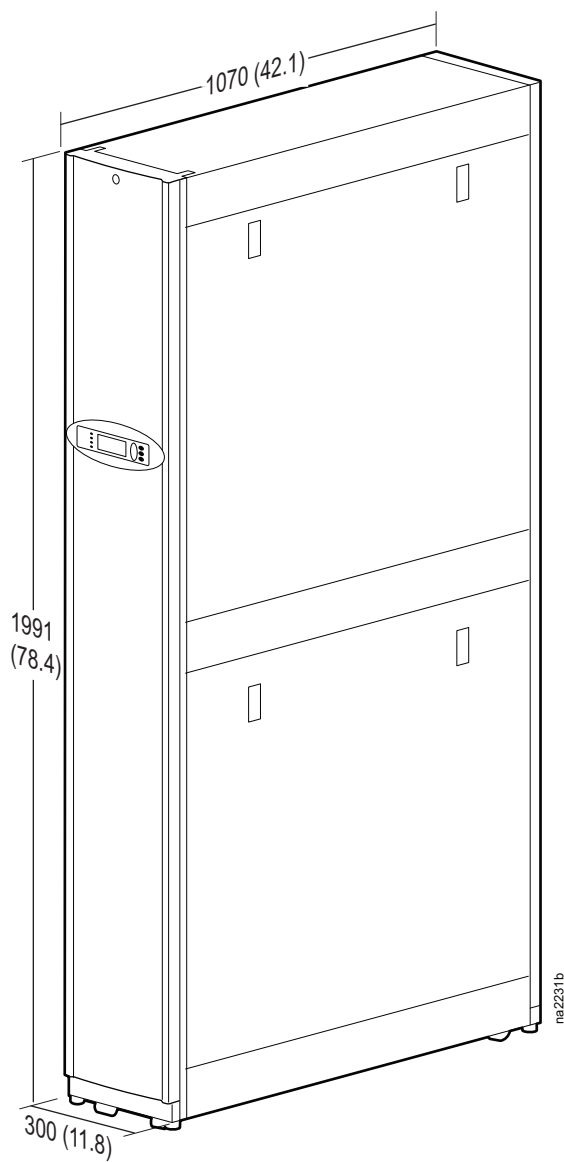
*Weighted Sound Pressure dBA in an 8200 ft³ (232.2 m³) room at 6 ft (1.8 m) distance.

**Based on compressor operating at full speed.

Electrical Data

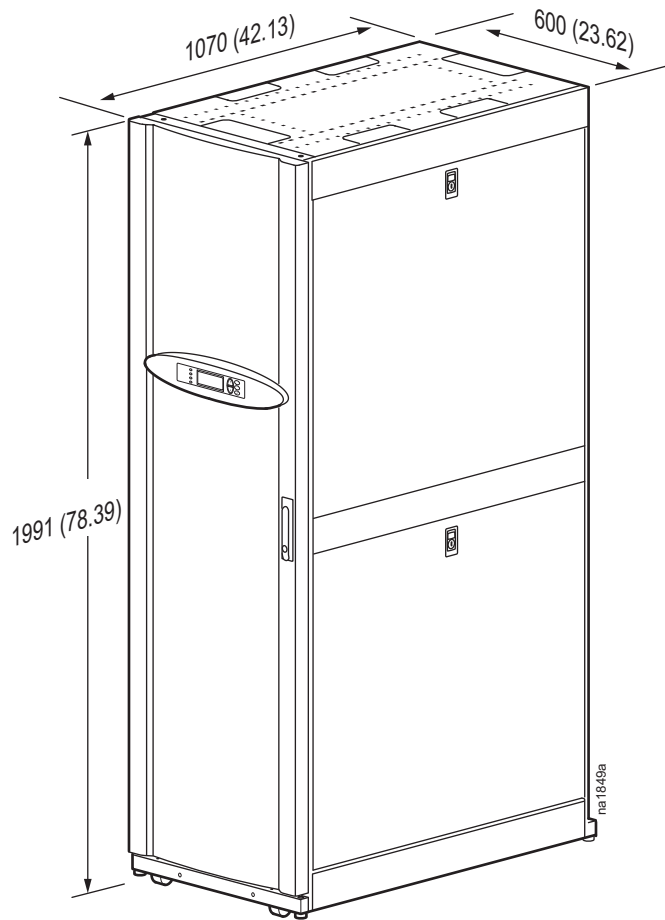
Model	MCA**	MOP**	FLA**	Compressor		Power
				LRA	RLA	
ACRD100 – 208-240V, 1 Ph, 60Hz	25	40	N/A	87.5	16.0	4.6
ACRD101 – 220-240V, 1 Ph, 50Hz	N/A	N/A	21	97.0	16.3	4.4
ACRD200 – 208-240V, 1 Ph, 60Hz	25	40	N/A	87.5	16.0	4.6
ACRD201 – 220-240V, 1 Ph, 50Hz	N/A	N/A	21	97.0	16.3	4.4
ACRD500 – 200-240V, 3 Ph, 50/60Hz	54.0	90	N/A	160*	50	15
ACRD501 – 460-480V, 3 Ph, 60Hz	27.0	40	N/A	139*	23.2	16
ACRD502 – 380-415V, 3 Ph, 50Hz	N/A	N/A	26.0	139*	23.2	16
ACRP100 – 200-240V, 3 Ph, 50/60Hz	80.1	100	N/A	160*	50	19
ACRP101 – 460-480V, 3 Ph, 60 Hz	39.9	50	N/A	139*	23.2	21
ACRP102 – 380-415V, 3 Ph, 50/60Hz	N/A	N/A	32	139*	23.2	20
Note: Above data is based on maximum operating condition Note: Installation must comply with national and/or local electrical codes. Note: All models are hard-wired. Note: Use LRA for estimation of inrush current. * The compressor is powered by the VFD. **Cells marked N/A indicate that this information is not required because of regional differences in electrical codes.						

Dimensional Data
ACRD100/ACRD200 series



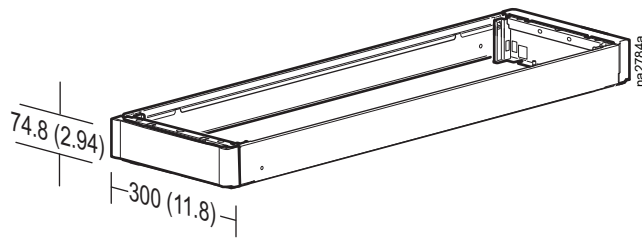
Dimensions are shown in mm (in.).

ACRD500/ACRP100 series

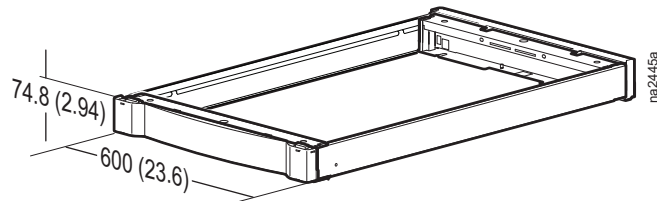


Dimensions are shown in mm (in.).

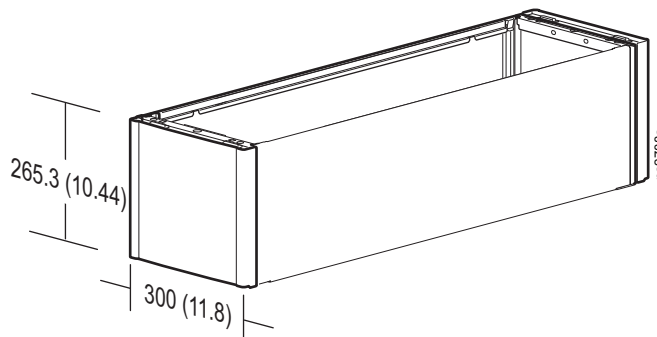
NetShelter SX to VX Height Adapter – ACRD100/ACRD200 series



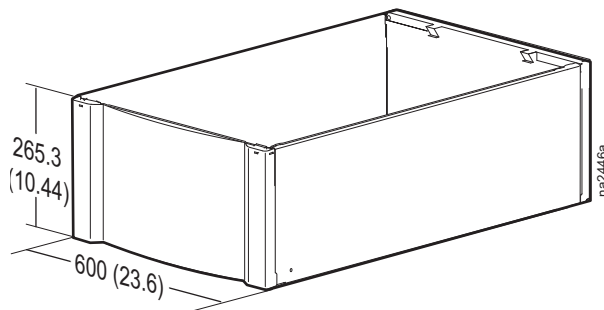
NetShelter SX to VX Height Adapter – ACRD500/ACRP100 series



NetShelter SX to 48-U SX Height Adapter – ACRD100/ACRD200 series



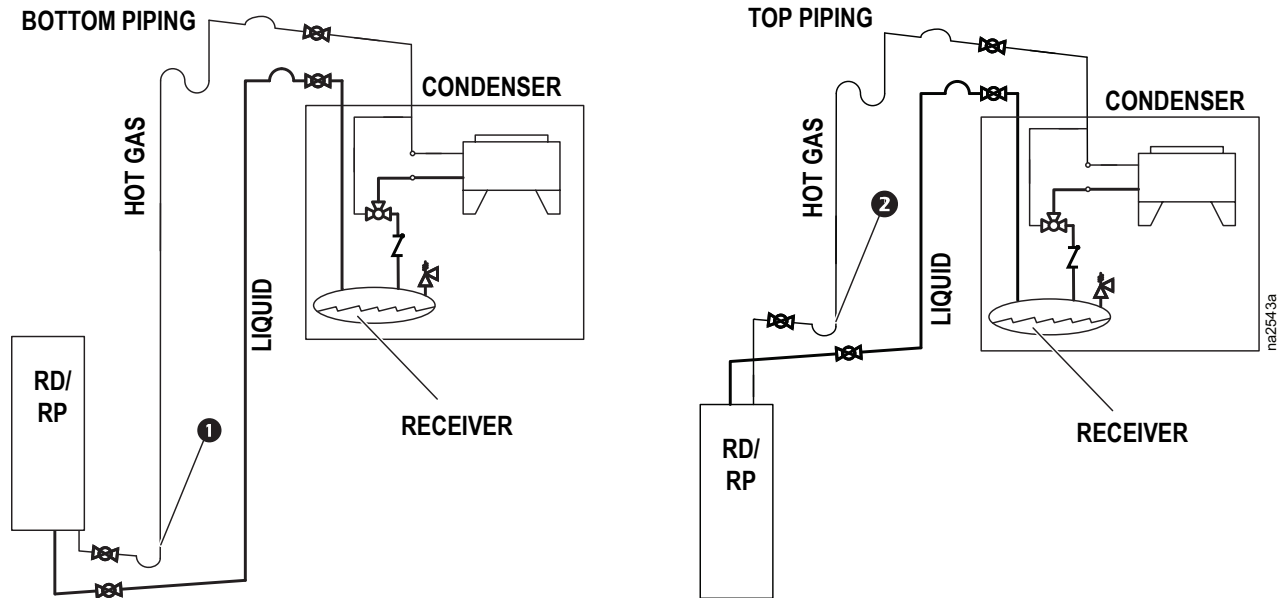
NetShelter SX to 48-U SX Height Adapter – ACRD500/ACRP100 series



Dimensions are shown in mm (in.).

Piping and Mechanical Connections

Refrigeration piping diagram (ACRD100/ACRD500/ACRP100 series))



NOTE: Shutoff valves shown nearest to the condensers **are not** supplied by Schneider Electric.

ACRD500/ACRP100 series: The shutoff valves nearest to the cooling unit **are** supplied by Schneider Electric.

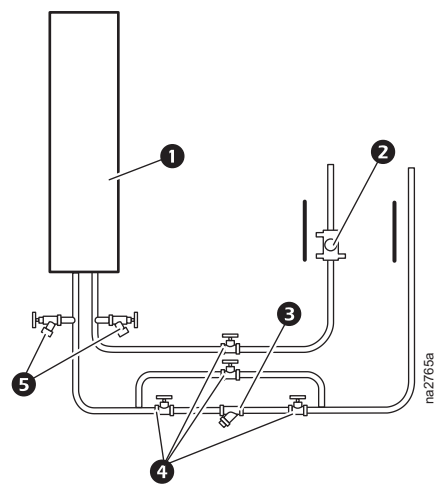
ACRD100 series: The shutoff valves **are not** supplied and must be ordered.

①	Pitch in direction of refrigerant flow; 4 mm per m (1/2 in. per 10 ft)		P-trap
	Shutoff valves		S-trap
	Head pressure control valve		Inverted P-trap
	Check valve		Pressure relief valve

- Route piping through the top or bottom of the InRow ACRD/ACRP series.
- All lines are Type L ACR copper tubing.
- Trap the vertical discharge line every 6 m (20 ft) to ensure proper oil return.
- Pipe size should change after the P-trap based on the recommended piping charts provided with the installation manual.
- For the ACRD500/ACRP100 series, the maximum piping run is 61 m (200 ft) equivalent length. Size the piping pursuant to accepted refrigeration practice.
- For the ACRD100 series, piping is 46m (150 ft) equivalent length. Size the piping pursuant to accepted refrigeration practices.

IMPORTANT: Do not install the air-cooled condenser below the InRow ACRD/ACRP series. The condenser must be positioned above or at the same level as the InRow ACRD/ACRP series to ensure proper function.

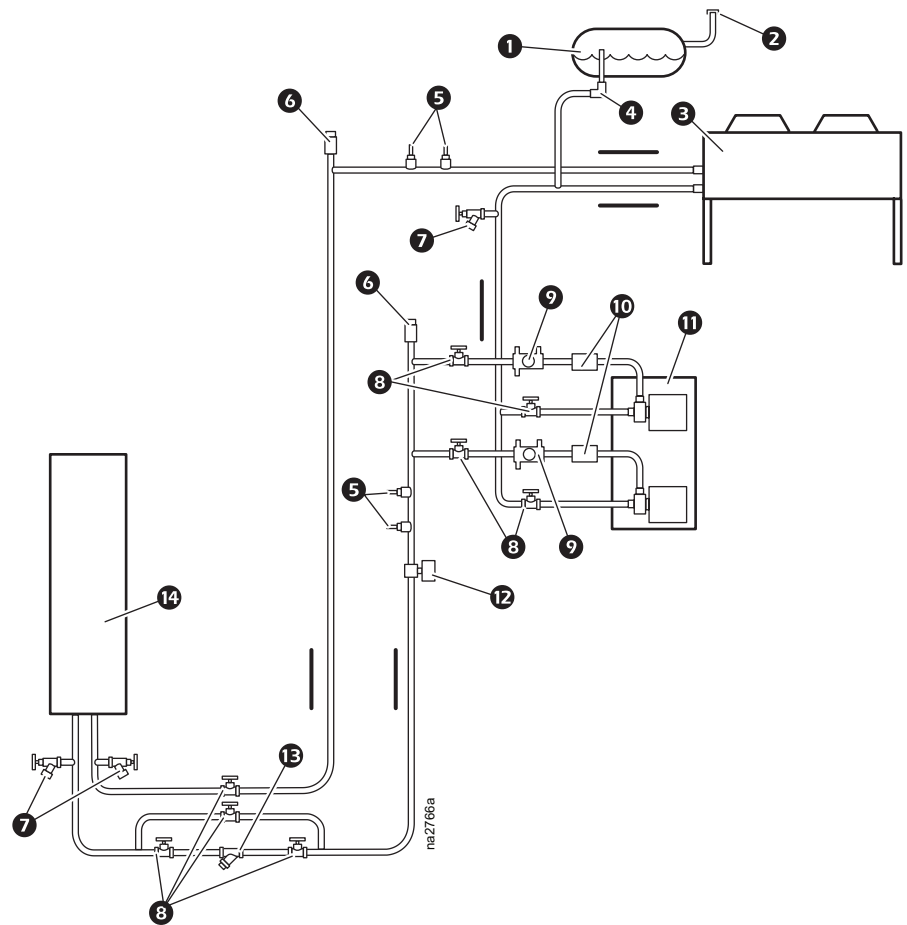
Water-cooled piping–bottom piping (ACRD200 series)



Item	Description
❶	InRow DX
❷	Balancing valve*
❸	Strainer, 20 mesh*
❹	Gate valve*
❺	Hose bib*

*Field supplied and installed

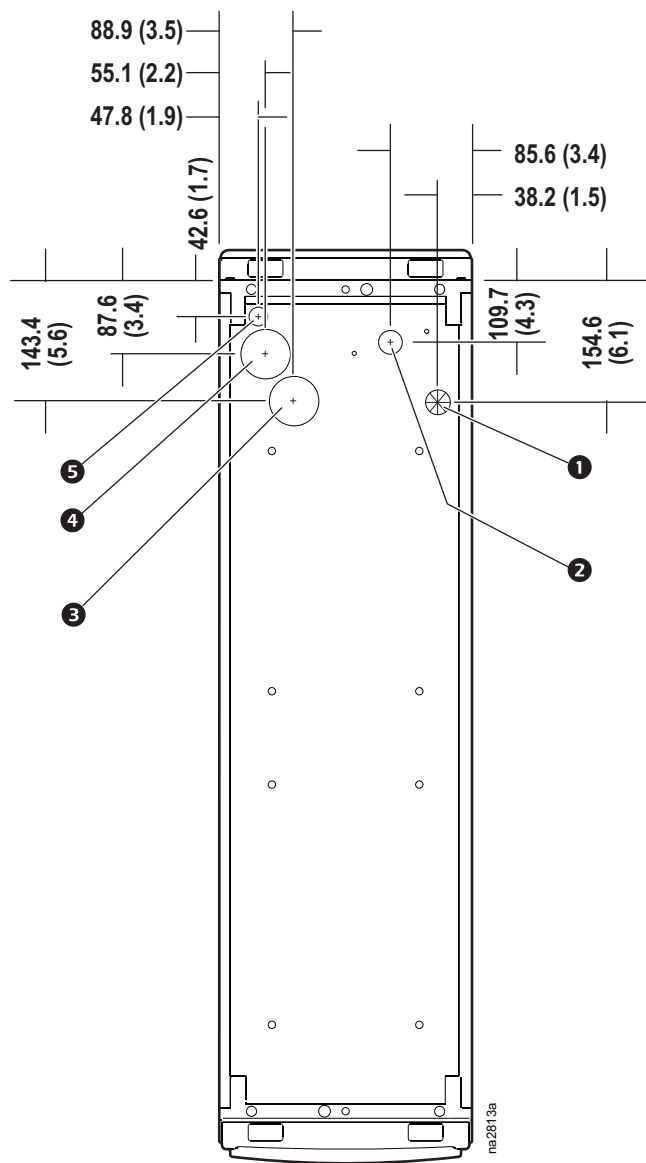
Glycol-cooled bottom piping (ACRD200 series)



Item	Description	Item	Description
1	Expansion tank*	8	Gate valves*
2	Tank fill*	9	Balancing valve*
3	Fluid-cooler	10	Check valve
4	Airtrol fitting*	11	Pump package*
5	Temperature and pressure gauges*	12	Flow switch
6	Air vent*	13	Strainer, 20 mesh*
7	Hose bibs*	14	InRow RD

*Field supplied and installed

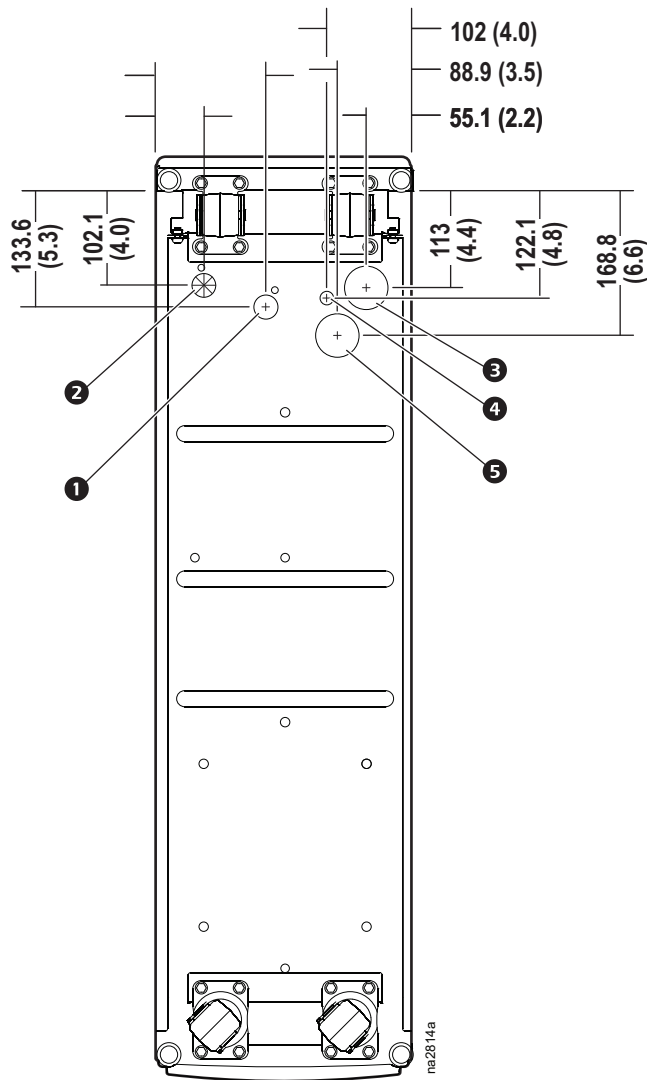
Top piping and power access locations (ACRD100/ACRD200 series)



Dimensions are shown in mm (in.).

Item	Description
1	Low voltage wiring input
2	Electrical input
3	Hot gas discharge line (ACRD100 series) Water/glycol out (ACRD200 series)
4	Liquid line (ACRD100 series) Water/glycol in (ACRD200 series)
5	Condensate pump outlet

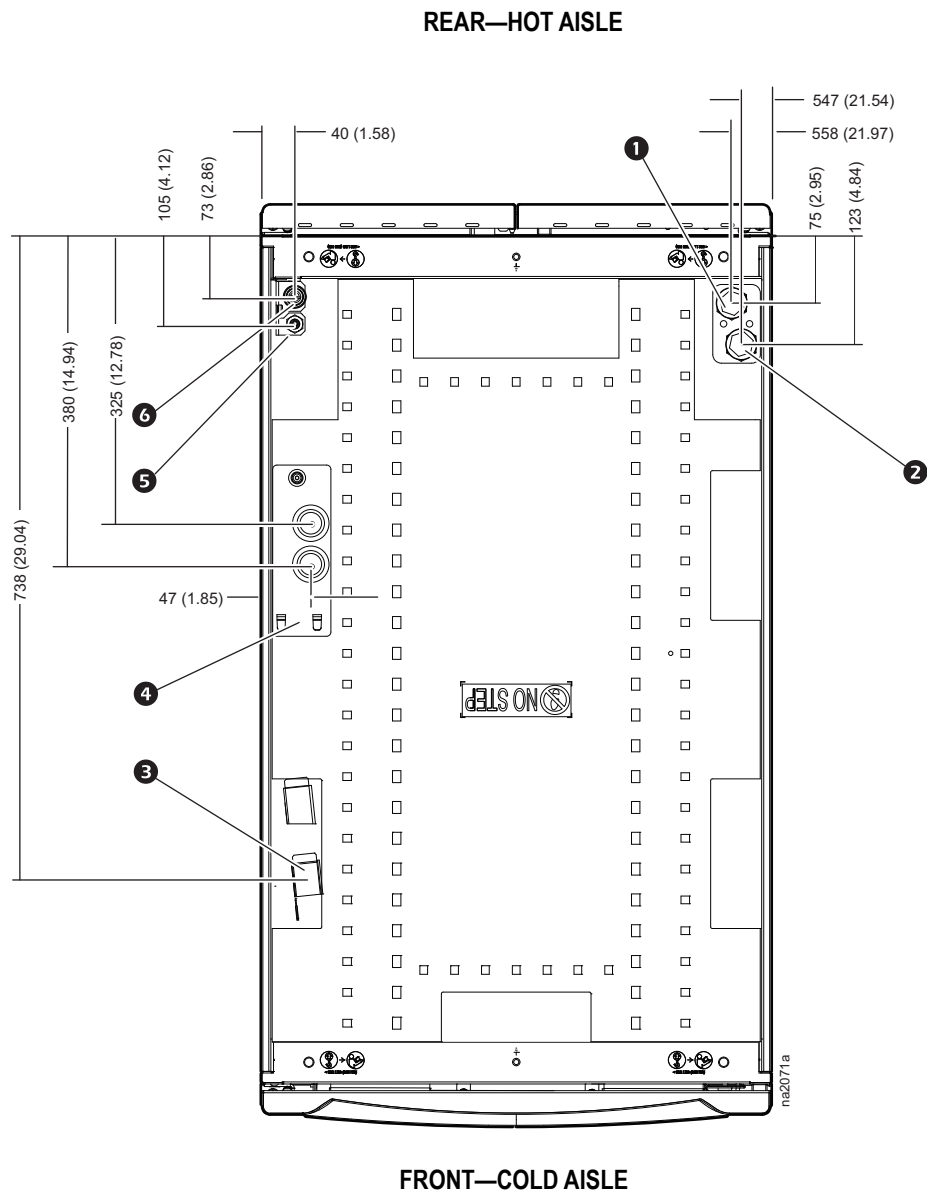
Bottom piping and power access locations–looking up (ACRD100/ACRD200 series)



Dimensions are shown in mm (in.).

Item	Description
1	Electrical input
2	Low voltage wiring input
3	Liquid line (ACRD100 series) Water/glycol in (ACRD200 series)
4	Condensate pump outlet
5	Hot discharge gas line (ACRD100 series) Water/glycol out (ACRD200 series)

Air-cooled piping access—top view, looking down (ACRD500/ACRP100 series)

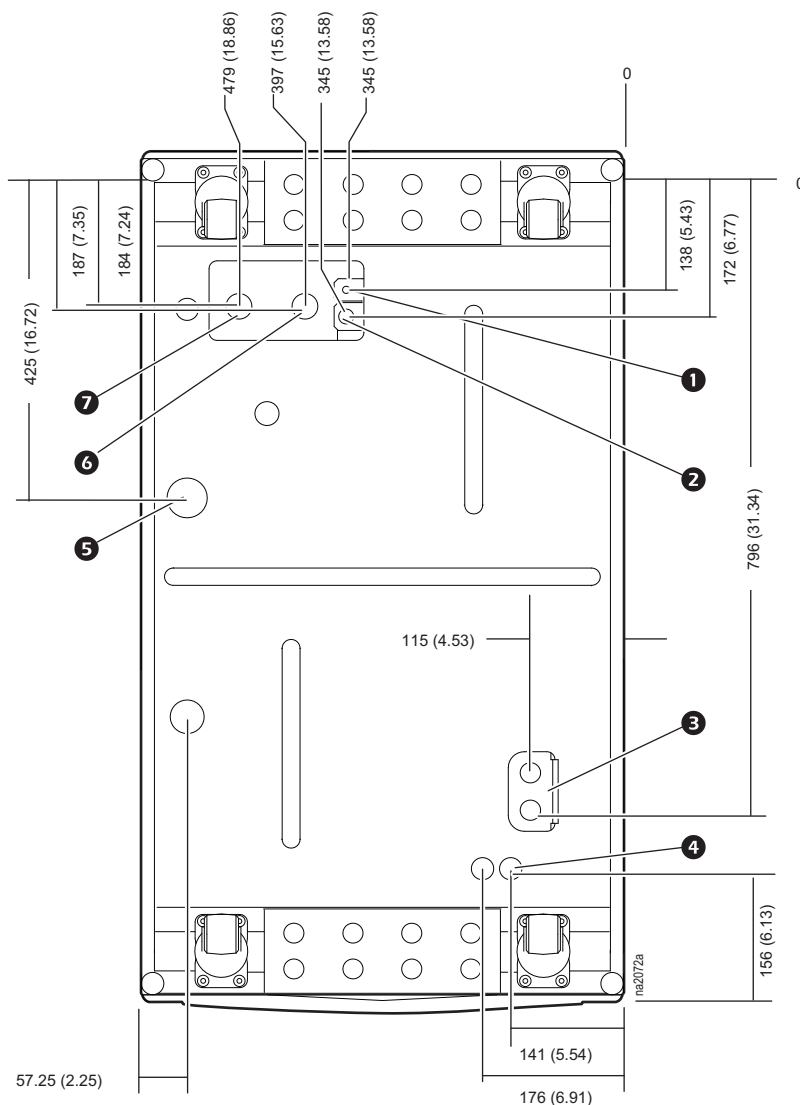


Item	Description
1	Refrigerant discharge line
2	Refrigerant liquid line
3	Trough for communication cables
4	Power connections
5	Humidifier water supply (ACRP100 only)
6	Condensate drain

Note: Dimensions are shown in mm (in.).

Air-cooled piping access – bottom view, looking up (ACRD500/ACRP100 series)

REAR—HOT AISLE



FRONT—COLD AISLE

Item	Description
①	Humidifier water supply (ACRP100 series)
②	Condensate drain
③	Power connections
④	Communication connections
⑤	Condensate overflow
⑥	Refrigerant discharge line
⑦	Refrigerant liquid line

Note: Dimensions are shown in mm (in.).

Outdoor Heat Exchangers

Air-cooled condensers – mechanical data (ACRD100 series)

Model	Ambient Temp °C (°F)	Sound Pressure *	Air Quantity	Fan	Unit	Connection Size		Weight Kg (lbs)	Capacity	
			l/s (CFM)	Qty.		Hot Gas	Liquid		MBH/1F TD	kW/1C TD
ACCD75214	35 (95) / 40 (104)	65	2380 (5050)	1	1.1	1 1/8 in.	7/8 in.	82 (180)	2.43	1.28
ACCD75215	46 (115)	66	3040 (6450)	1	1.1	1 1/8 in.	7/8 in.	118 (260)	4.00	2.11
ACCD75216	35 (95) / 40 (104)	59	2140 (4530)	1	0.8	22 mm	18 mm	48 (105.8)	2.35	1.24
ACCD75217	46 (115)	62	4280 (9060)	2	1.6	28 mm	22 mm	89 (196.2)	4.30	2.27
ACCD75218	35 (95) / 40 (104)	59	2140 (4530)	1	0.6	22 mm	18 mm	48 (105.8)	2.35	1.24
ACCD75219	46 (115)	62	4280 (9060)	2	1.3	28 mm	22 mm	89 (196.2)	4.30	2.27
ACCD75220 **	35 (95) / 40 (104)	59	2140 (4530)	1	0.6	22 mm	18 mm	48 (105.8)	2.35	1.24

* (dbA) at 10 ft and 100% Fan Speed
 ** ACCD75220 is CCC certified for use in China.

Air-cooled condensers - mechanical data (ACRD500/ACRP100 series)

Model	Ambient Temp °C (°F)	Sound Pressure *	Sound Pressure **	Air Quantity	Fan	Unit	Connection Size (inches)		Weight Kg (lbs)	Capacity	
				l/s (CFM)	Qty.		Hot Gas	Liquid		MBH/1F TD	kW/1C TD
ACCD75201	95 (35)	67	62	4955 (10500)	1	2.2	1 3/8 in.	1 3/8 in.	163 (360)	8.8	4.6
ACCD75202	105 (40)	70	65	10383 (22000)	2	4.4	1 5/8 in.	1 5/8 in.	290 (640)	14.6	7.7
ACCD75203	115 (46)	72	68	14819 (31400)	3	6.6	2 1/8 in.	2 1/8 in.	458 (1010)	25.8	13.6
ACCD75204	95 (35)	67	62	4955 (10500)	1	2.2	1 3/8 in.	1 3/8 in.	163 (360)	8.8	4.6
ACCD75205	105 (40)	70	65	10383 (22000)	2	4.4	1 5/8 in.	1 5/8 in.	290 (640)	14.6	7.7
ACCD75206	115 (46)	72	68	14819 (31400)	3	6.6	2 1/8 in.	2 1/8 in.	458 (1010)	25.8	13.6
ACCD75207	95 (35)	54	51	5711 (12100)	1	2.2	42 mm	22 mm	173 (381)	17.6	9.3
ACCD75208	105 (40)	57	54	11940 (25300)	2	4.4	42 mm	28 mm	307 (677)	27.1	14.3
ACCD75209	115 (46)	57	55	11374 (24100)	2	4.4	54 mm	35 mm	360 (792)	48.2	25.4

* (dbA) at 10 ft and 100% Fan Speed
 ** (dbA) at 10 ft set area level, and Max Compressor Speed Selected Ambient Temp
 Specifications given for conditions at sea level.

Fluid coolers – mechanical data (ACRD200 Series)

Model	Ambient Temp °C (°F)	Sound Pressure *	Air Quantity	Fan	Unit	Connection Size (inches)	Weight Kg (lbs)	Capacity	
			l/s (CFM)	Qty.				MBH/1F TD	kW/1C TD
ACFC75210	40 (105)	68	4760 (10100)	2	2.0	1 3/8	205 (450)	3.20	1.69
ACFC75255	35 (95)	65	2380 (5050)	1	1.0	1 1/8	150 (330)	2.36	1.24
ACFC75256	35 (95)	62	4220 (8950)	2	1.6	1 1/2	90 (198)	2.50	1.32
ACFC75257	40 (105)	56	5500 (11650)	2	1.4	2	151 (333)	3.30	1.74

* (dbA) at 10 ft and 100% Fan Speed

Air-cooled condensers – electrical data (ACRD100 series)

Model	Voltage Phase Frequency	Receiver Model	Receiver Qty	FLA***	MCA***	MOP***
ACCD75214	208-240V, 1 ph, 60 Hz	ACAC75009	1	4.8	15	15
ACCD75215	208-240V, 1 ph, 60 Hz	ACAC75009	2	4.8	15	15
ACCD75216	380-415V, 3 ph, 50 Hz	ACAC75009	1	1.35	N/A	N/A
ACCD75217	380-415V, 3 ph, 50 Hz	ACAC75009	1	2.7	N/A	N/A
ACCD75218	220-240V, 1 ph, 50 Hz	ACAC75009	1	3.0	N/A	N/A
ACCD75219	220-240V, 1 ph, 50 Hz	ACAC75009	1	6.0	N/A	N/A
ACCD75220*	220-240V, 1 ph, 50 Hz	ACAC75009	1	3.0	N/A	N/A
*ACCD75220 is CCC certified for use in China. **Receiver model is ACAC75009 ***Cells marked N/A indicate that this information is not required because of regional differences in electrical codes.						

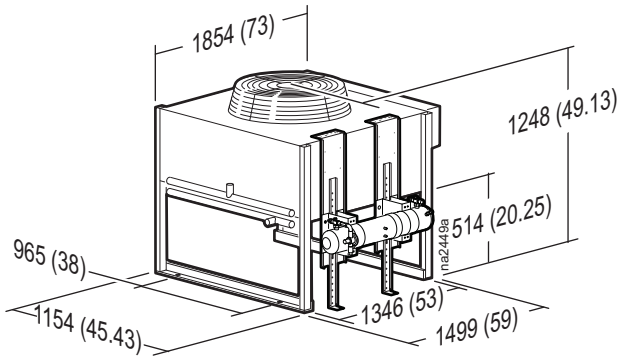
Air-cooled condensers - electrical data (ACRD500/ACRP100 series)

Model	Voltage Phase Frequency	Receiver Model	Receiver Qty	FLA*	MCA*	MOP*
ACCD75201	200–240V 3 ph 60 Hz	ACAC75004	1	7.0	15.0	25
ACCD75202	200–240V 3 ph 60 Hz	ACAC75005	1	14.0	20.0	35
ACCD75203	200–240V 3 ph 60 Hz	ACAC75007	1	21.0	22.8	40
ACCD75204	460–480V 3 ph 60 Hz	ACAC75004	1	3.5	15.0	15
ACCD75205	460–480V 3 ph 60 Hz	ACAC75005	1	7.0	15.0	15
ACCD75206	460–480V 3 ph 60 Hz	ACAC75007	1	10.5	15.0	20
ACCD75207	380–415V 3 ph 50 Hz	Included with condenser	1	2.85	N/A	N/A
ACCD75208	380–415V 3 ph 50 Hz	Included with condenser	1	5.7	N/A	N/A
ACCD75209	380–415V 3 ph 50 Hz	Included with condenser	1	5.7	N/A	N/A
*Cells marked N/A indicate that this information is not required because of regional differences in electrical codes.						

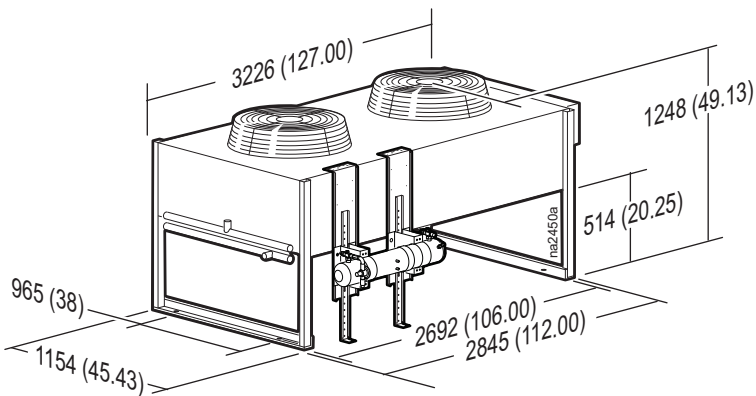
Fluid coolers - electrical data (ACRD200 series)

Model	Voltage Phase Frequency	FLA*	MCA*	MOP*
ACFC75210	460V 3 ph 60 Hz	2.6	15	15
ACFC75255	480V 3 ph 60 Hz	1.3	15	15
ACFC75256	380-415V 3 ph 50 Hz	2.7	N/A	N/A
ACFC75257	380-415V 3 ph 50 Hz	2.7	N/A	N/A
*Cells marked N/A indicate that this information is not required because of regional differences in electrical codes.				

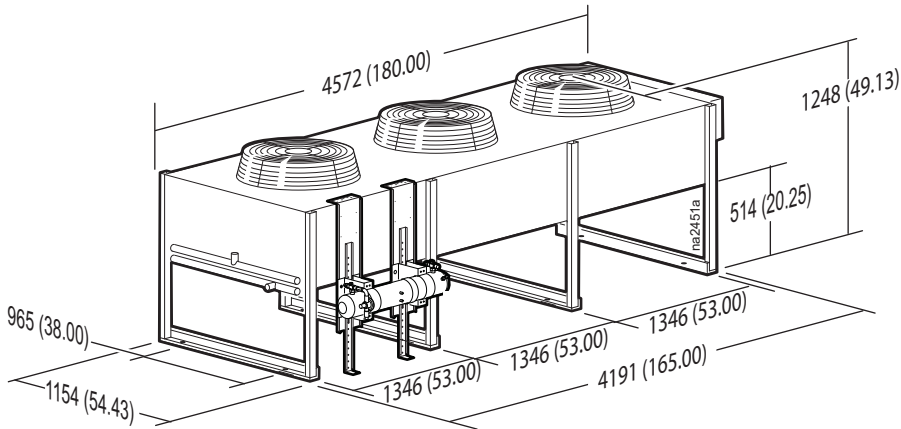
ACCD75201 and ACCD75204



ACCD75202 and ACCD75205

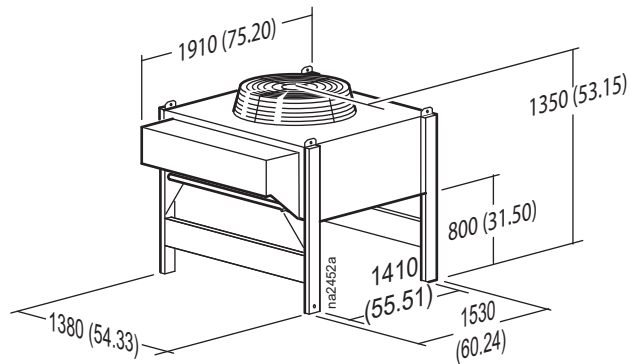


ACCD75203 and ACCD75206

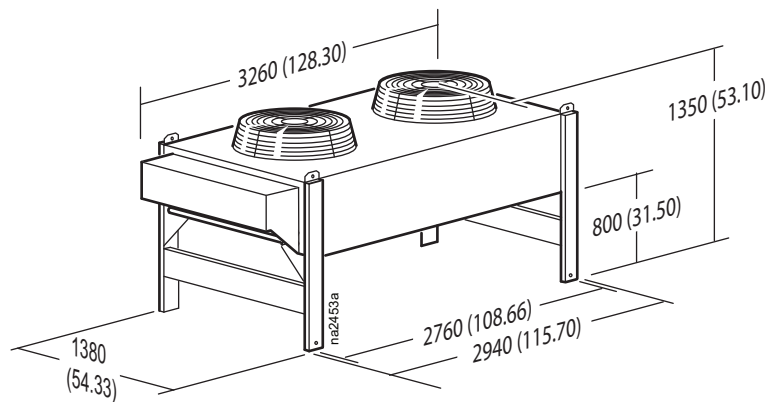


Dimensions are shown in mm (in.).
Note: Condensers shown above have eight 22 mm (0.875 in.) mounting holes on their lower rails.

ACCD75207

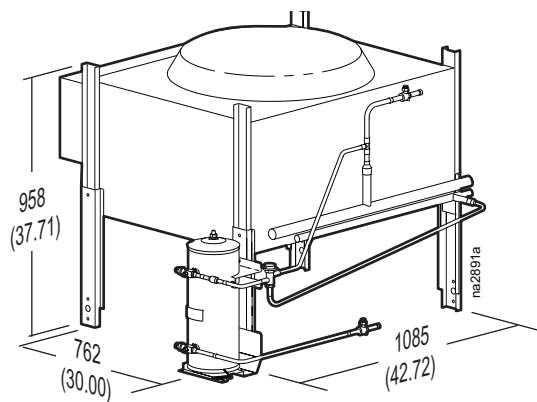


ACCD75208 and ACCD75209

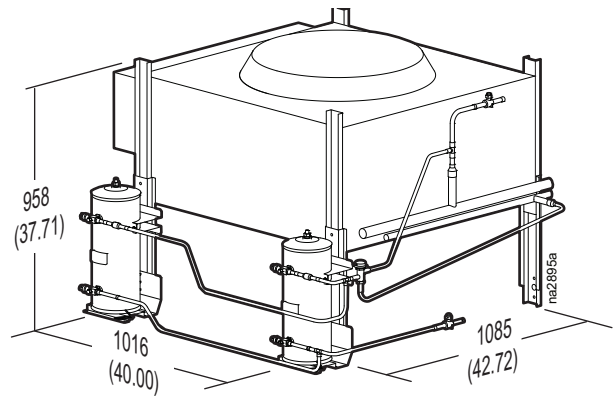


Condensers shown above have 16 mm (0.63 in.) mounting holes on each of their lower legs.

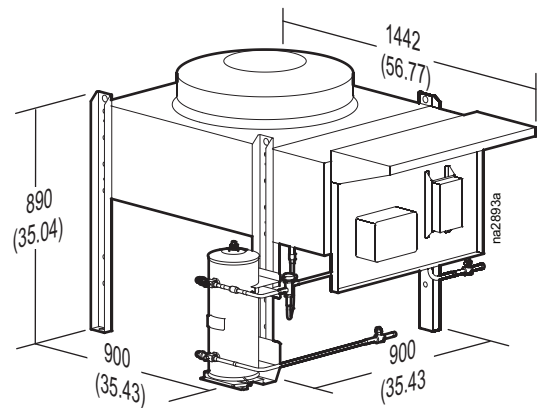
ACCD75214



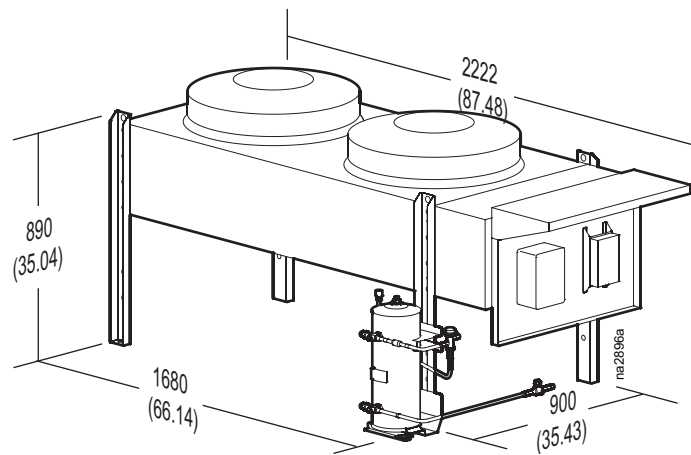
ACCD75215



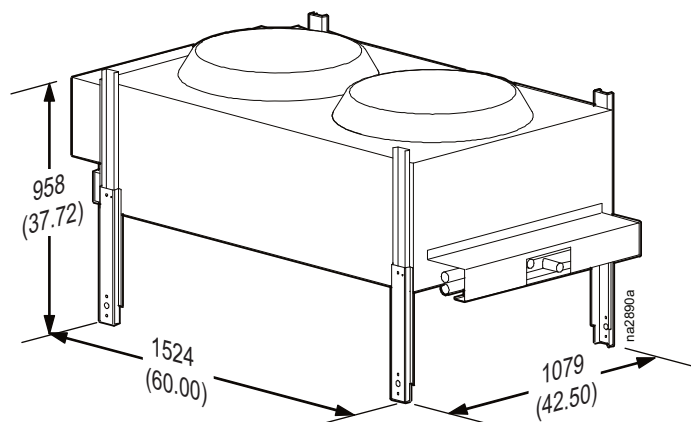
ACCD75216, ACCD75218, and ACCD75220



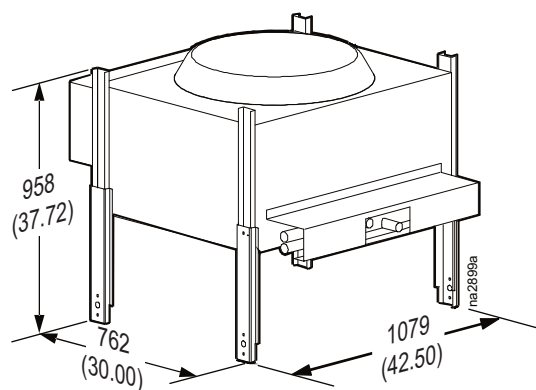
ACCD75217 and ACCD75219



ACFC75210

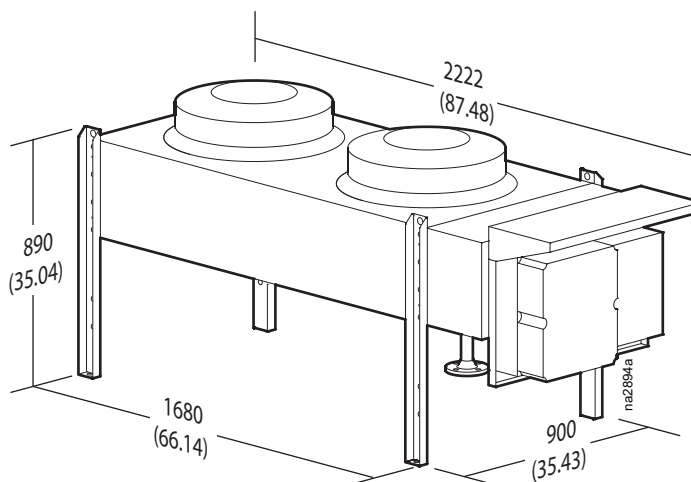


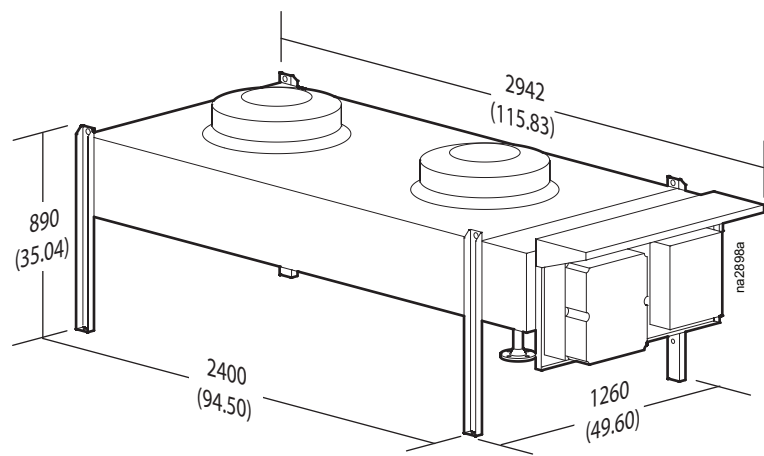
ACFC75255



Dimensions are shown in mm (in.).

ACFC75256





Dimensions are shown in mm (in.).

Facility Planning

Model	Air-Cooled					Fluid-Cooled	
	ACRD100	ACRD101	ACRD500/ ACRP100	ACRD501 ACRP101	ACRD502 ACRP102	ACRD200	ACRD201
Input Voltage	208–230	220–240	200–400	460–480	380–415	208–230	220–240
Phases	1	1	3	3	3	1	1
Frequency	60	50	50/60	60	50/60	60	50
Total NET Capacity – kW (BTU/hr)	9.9 (33800)	9.69 (33100)	29 (99000)	29 (99000)	29 (99000)	9.9 (33800) 10.92 (37300)*	9.69 (33100) 10.98 (37500)*
Sensible NET Capacity – kW (BTU/hr)	9.9 (33800)	9.69 (33100)	29 (99000)	29 (99000)	29 (99000)	9.9 (33800) 10.92 (37300)*	9.69 (33100) 10.98 (37500)*
Cabinet Width mm (in.)	300 (11.81)	300 (11.81)	600 (23.62)	600 (23.62)	600 (23.62)	300 (11.81)	300 (11.81)
Net Weight – kg (lbs)	183 (404)	183 (404)	367 (808)/ 378 (833)	367 (808)/ 378 (833)	367 (808)/ 378 (833)	199 (438)	199 (438)
Operating Weight – kg (lbs)	183 (404)	183 (404)	367 (808)/ 378 (833)	367 (808)/ 378 (833)	367 (808)/ 378 (833)	199 (438)	199 (438)
Cabinet Height – mm (in.)	1991 (78.9)	1991 (78.9)	1991 (78.9)	1991 (78.9)	1991 (78.9)	1991 (78.9)	1991 (78.9)
Cabinet Depth – mm (in.)	1070 (42.13)	1070 (42.13)	1070 (42.13)	1070 (42.13)	1070 (42.13)	1070 (42.13)	1070 (42.13)
Power Connection Type	Hardwired	Hardwired	Hardwired	Hardwired	Hardwired	Hardwired	Hardwired
Full Load Amps**	N/A	21.0	N/A	N/A	26.0/32.0	N/A	21.0
Minimum Circuit Ampacity**	25.0	N/A	54/80.1	27/39.9	N/A	25.0	N/A
Maximum Overcurrent Protection**	40.0	N/A	90/100	40.0/50.0	N/A	40.0	N/A
Power Connection Quantity	1	1	1	1	1	1	1
Features/Options:							
Fan Type	DC Axial	DC Axial	BI ECM	BI ECM	BI ECM	DC Axial	DC Axial
Maximum Airflow – l/s (CFM)	1080 (2290)	1080 (2290)	2171 (4600)	2171 (4600)	2171 (4600)	1080 (2290)	1080 (2290)
Fan Control	Variable Speed	Variable Speed	Variable Speed	Variable Speed	Variable Speed	Variable Speed	Variable Speed
Fan Quantity	6	6	2	2	2	6	6
Hot Swappable Fans	Yes	Yes	No	No	No	Yes	Yes
Hot Aisle Containment Compatible	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Rack Air Containment Compatible	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Refrigerant Type	R410A	R410A	R407C	R407C	R407C	R410A	R410A
Compressor Type	Scroll	Scroll	Reciprocating	Reciprocating	Reciprocating	Scroll	Scroll
Compressor Capacity Control Type	Hot Gas Bypass	Hot Gas Bypass	VFD	VFD	VFD	Hot Gas Bypass	Hot Gas Bypass
Condenser/Glycol Control Valve	N/A	N/A	N/A	N/A	N/A	2-way/3-way	2-way/3-way
Network Management Card	Included	Included	Included	Included	Included	Included	Included
Standard Filter Type	1/2-in. washable	1/2-in. washable	4-in. pleated	4-in. pleated	4-in. pleated	1/2-in. washable	1/2-in. washable
Standard Filter Efficiency	<20%	<20%	30%	30%	30%	<20%	<20%
Optional Filter Type	2-in. pleated	2-in. pleated	4-in. pleated	4-in. pleated	4-in. pleated	2-in. pleated	2-in. pleated
Optional Filter Efficiency	30%	30%	85%	85%	85%	30%	30%
Condensate Pump	Included	Included	Included	Included	Included	Included	Included
Humidifier Type	N/A	N/A	Steam Canister	Steam Canister	Steam Canister	N/A	N/A

	Air-Cooled					Fluid-Cooled	
Model	ACRD100	ACRD101	ACRD500/ ACRP100	ACRD501 ACRP101	ACRD502 ACRP102	ACRD200	ACRD201
Reheat Type	N/A	N/A	S/S Finned Tubular	S/S Finned Tubular	S/S Finned Tubular	N/A	N/A
Rack Inlet T/H Sensor Quantity	1	1	3	3	3	1	1
Piping Connections	Top or Bottom	Top or Bottom	Top or Bottom	Top or Bottom	Top or Bottom	Top or Bottom	Top or Bottom
Electrical Connections	Top or Bottom	Top or Bottom	Top or Bottom	Top or Bottom	Top or Bottom	Top or Bottom	Top or Bottom
Cable Type Water Detector	Optional	Optional	Optional	Optional	Optional	Optional	Optional
Capacity rated at the following conditions: Entering Air Conditions: 85°F DB / 64.5°F WB (29.4°C DB/ 18.1°C WB) *Higher rating reflects: Water-Cooled capacity (i.e. Cooling Tower application) vs. Glycol-Cooled capacity (i.e., Drycooler application) **Cells marked N/A indicate that this information is not required because of regional differences in electrical codes.							

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