

10EER 7.5 Ton Vertical Wall Mount Air Conditioners Model AVHDA90 (Dual Compressor)



AVHDA90 Reverse Flow w/Economizer

General Description

Marvair's AVHDA ComPac air conditioners are used primarily to cool electronic and mechanical equipment shelters (E-Houses). Due to the high internal heat load, these shelters require cooling even when outside temperatures are 60°F (15°C) and below. The ICE air conditioners have the necessary controls and components for operation during these temperatures. All models feature dual compressors and have a minimum 10 EER and use the non-ozone depleting R-410A refrigerant.

The AVHDA ComPac air conditioners are installed on the exterior of the building – no interior space is required. Two openings in the wall allow for the conditioned (supply) air to be discharged into the building and for the indoor air to return to the air conditioner in top supply or reverse flow configurations.

A sealed condenser fan motor permits operation in hot, dusty environments.

The direct drive backward inclined motorized impeller evaporator motor provides high aerodynamic efficiency in a compact design. The optimized blade geometry provides excellent air flow at a minimum of sound. Direct drive eliminates all belts and pulleys. Dual scroll compressors with R-410A refrigerant ensures years of efficient and dependable service, even in the harshest of operating conditions. When outside air is required to provide pressurization or cooling, an economizer or fresh air dampers can be used.

Safety Listed and Energy Certified

All ComPac air conditioners are built to UL standard 1995, 4th edition and CAN/CSA C22.2, No. 236-11. For energy efficiency and performance, the units are tested and rated in accordance to the ANSI/ARI (Air-Conditioning and Refrigeration Institute) Standard 390- 2003 (Single Package Vertical Units). All units meet or exceed the efficiency requirements of ANSI/ASHRAE/IESNA 90.1.2016. ComPac air conditioners are commercial units and are not intended for use in residential applications.



Features and Benefits

High Efficiency

- Dual Compressors to Match Heat Loads
- Available Top Supply or Reverse Flow Configurations
- Thermal Expansion Valve Improves Efficiency
- High Efficiency Scroll Compressor

Built-In Reliability

- High and Low Pressure Switch with Lockout
- Adjustable Short Cycle Protection
- Phase Monitor
- High Compressor Temperature Switch
- Internal Motor Overload Protection

Rugged Construction

- Copper Tube, Aluminum Fin Evaporator & Condenser Coil
- Field Or Factory Installed Heaters On Discharge Side of Evaporator Coil
- Baked On Finish Over Galvanneal Steel

Standard Features

► Dual Compressors

The AVHDA is factory wired for maximum cooling operation utilizing both compressors. A factory installed jumper can be removed for 2-stage compressor operation.

► Designed for Operation in High and Low Ambient Conditions

- Low ambient control cycles the condenser fan to maintain proper refrigerant pressures.
- Hot gas bypass valve provides for precise capacity control in the cooling mode and to protect against coil freeze up during low load conditions.
- Three minute by-pass of the low pressure switch for start-up of compressor when outdoor temperatures are below 55°F (13°C).
- Designed for operation up to 131°F (55°C).

► High Efficiency

- Thermal Expansion Valve improves efficiency and cooling capacity at both high and low ambient temperatures.
- High efficiency scroll compressor.
- Lanced fins on the evaporator and condenser coils improve heat transfer.

► Remote Alarm Capability

- Dry contacts can be used for remote alarm or notification upon air conditioner lockout.

► Rugged Construction

- Copper tube, aluminum fin evaporator & condenser coils.
- Field or factory installed heaters on discharge side of evaporator coil (optional)

- Baked on neutral gray finish over galvanneal steel for maximum cabinet life. (Other finishes are available.)

► Ease of Installation

- Sloped top with flashing eliminates need of rainhood.
- Built-in mounting flanges facilitate installation and minimize chance of water leaks.
- Supply and air return openings match many competitive models.
- Factory installed disconnect on all units.
- Single Point Power Entry complies with latest edition of U.L. Standard 1995.
- Stainless Steel side plates with lifting eyes provide safe and secure method for moving the unit.

► Built-in Reliability

- High pressure switch and low pressure switch with lockout protects refrigerant circuit.
- Adjustable .03 to ten minute delay on make for short cycle protection.
- Phase Monitor - Continuously measures the voltage of each of the three phases. The monitor separately senses low and high voltage, voltage unbalance including phase loss and phase reversal. A red LED glows to indicate a fault. When all voltages are acceptable, a green LED glows. Automatically resets when voltages and phases are within operating tolerances.

Note: Not required on 1ø units.

- High temperature switch on the compressor discharge line protects the compressor in the event of a complete loss of refrigerant.

- Internal motor overloads on the evaporator motor, the condenser motor and the compressor.

► Ease of Service

- The upper panel opens to the left or the right to facilitate access to the control box and the evaporator motor and coil. This panel can also be easily removed. As an option, these panels can be locked. Stainless steel hinges on the right side of the lower panel allow access to the compressor compartment.
- Service access valves are standard.
- Standard 2" (50 mm) pleated filter with a MERV rating of 8 changeable from outside.
- All major components are readily accessible.
- Front Control Panel allows easy access and complies with NEC clearance codes on redundant side-by-side systems.
- LEDs indicate operational status and fault conditions.
- Foiled backed insulation on the indoor air path.
- Sight glass indicates proper refrigerant charge and, if ever required, facilitates charging the unit in the field.

A Marvair® First – Factory Installed Economizer

Marvair's ComPac® II air conditioner has been the industry standard since its introduction in 1986. Tens of thousands of ComPac II air conditioners are in operation from the metropolitan areas of North America to the deserts of the Mid-East to the Siberian tundra. Here's how the economizer works:

On a signal from the wall mounted indoor thermostat that cooling is required, either mechanical cooling with the compressor or free cooling with the economizer is provided. A factory installed enthalpy controller determines whether the outside air is sufficiently cool and dry to be used for cooling. If suitable, the compressor is locked out and the economizer damper opens to bring in outside air. Integral pressure relief allows the interior air to exit the shelter, permitting outside air to enter the shelter. The temperature at which the economizer opens is factory set to 70°F (21°C) but is adjustable from 35°F (1.6°C) to 86°F (30°C).

After the dry bulb control has activated and outside air is being brought into the building, the supply air sensor measures the temperature of the air entering the building and then modulates the economizer damper to mix the right proportion of cool outside air with warm indoor air to maintain the factory setting of 55°F (12.7°C) air being delivered to the

building. The supply air temperature is adjustable from 38°F - 70°F (3.3°C - 21°C). This prevents shocking the electronic components with cold outside air. The compressor is not permitted to operate when the economizer is functioning.

If the outside air becomes too hot or humid, the economizer damper closes completely, or to a field selectable minimum open position, and mechanical cooling is activated.

In all ComPac II air conditioners, the supply air flow in the economizer mode is the same or greater than the rated air flow. (The rated air flow is the AHRI certified air flow when the unit is in mechanical cooling.) The “full flow” economizer reduces electrical costs by maximizing the use of outside air for cooling.

Savings with an Economizer

The following table shows the annual electrical cost of cooling a 10 ft. x 20 ft. x 9 ft. (3m x 6m x 2.7m) shelter in twelve cities in the US. Costs are shown for an air conditioner without an economizer (ComPac I units), for an air conditioner with an economizer (ComPac II units) and the savings. The savings do not include any demand charges. The savings are based on the electrical usage of a five ton air conditioner and an electric rate of 10¢ per kilowatt-hour, the approximate average commercial rate in the US.

Hours of Operation	Atlanta, GA	Boston, MA	Chicago, IL	Dallas, TX	Denver, CO	Houston, TX
Annual Compressor & Condenser Motor Run Time without Economizer (Hrs.)	4,032	3,916	3,914	4,110	3,921	4,133
Annual Compressor & Condenser Motor Run Time with Economizer (Hrs.)	2,487	1,509	1,688	2,895	1654	3,243
Run Time Savings with the Economizer (Hrs.)	1,544	2,407	2,227	1,215	2,268	890
Annual Costs Saving (\$) of 10.0 EER unit with an Economizer (ComPac II)						
Annual Operating Cost 10.0 EER Unit without Economizer (\$)	\$4,437.98	\$4,141.35	\$4,192.64	\$4,867.57	\$4,312.37	\$4,732.07
Annual Operating Cost 10.0 EER with Economizer	\$2,893.65	\$1,813.19	\$1,994.74	\$3,553.41	\$2,016.03	\$3,810.12
Annual Savings using 10.0 EER Unit with Economizer	\$1,544.33	\$2,328.16	\$2,197.90	\$1,314.16	\$2,296.34	\$921.95

Hours of Operation	Los Angeles, CA	Miami, FL	Phoenix, AZ	Pittsburgh, PA	Kellog, ID	St. Louis, MO
Annual Compressor & Condenser Motor Run Time without Economizer (Hrs.)	4,047	4,225	4,200	3,907	3,849	3,960
Annual Compressor & Condenser Motor Run Time with Economizer (Hrs.)	2,859	4,099	2,431	1,566	862	2,004
Run Time Savings with the Economizer (Hrs.)	1,189	126	1,768	2,341	2,987	1,956
Annual Costs Saving (\$) of 10.0 EER unit with an Economizer (ComPac II)						
Annual Operating Cost 10.0 EER Unit without Economizer (\$)	\$4,423.32	\$4,617.36	\$5,365.92	\$4,040.71	\$3,923.75	\$4,359.32
Annual Operating Cost 10.0 EER with Economizer	\$3,273.85	\$4,495.30	\$3,389.47	\$1,825.68	\$1,132.29	\$2,378.18
Annual Savings using 10.0 EER Unit with Economizer	\$1,149.47	\$122.06	\$1,976.45	\$2,215.03	\$2,791.46	\$1,981.14

Shelter Metrics:

- 10' x 20' x 9' building
- Internal heat gain (electronics load): 12,000 watts.
- Building surface area (excluding floor area): 740 ft²
- R-Value of walls and ceiling: R-12
- Internal shelter temperature (Thermostat set point): 75°F

Air Conditioner Metrics:

- ComPac II Economizer setting: 57°F (dry bulb or enthalpy sensor)
- A/C unit capacity: 60,000 BTUH (5 tons) with 1-stage compressor
- Nominal EER (unit efficiency): 9.0 (models AVPA)
- Cost of power: 10¢ per KWH

Controllers and Thermostats

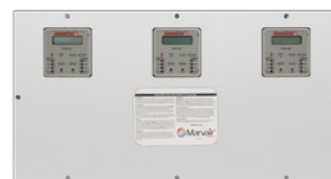
► Controllers

CommStat 6 2/4 Telecom HVAC Controller.....P/N 70705

CommStat 6 4/8 Telecom HVAC Controller.....P/N S/12087-04

CommStat 6 6/12 Telecom HVAC Controller.....P/N S/12087-06

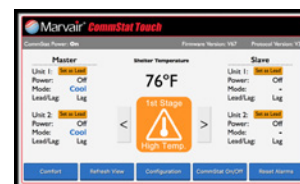
The CommStat 6 is an HVAC controller, is available in three configurations, and is designed specifically for controlling up to six redundant air conditioners with two stage compressors in a telecommunications shelter or enclosure. The **CommStat 6 2/4** controls up to two single or 2-stage air conditioners (4 Stages max.), the **CommStat 6 4/8** controls up to four single or 2-stage air conditioners (8 Stages max.) and the **CommStat 6 6/12** controls up to six single or 2-stage air conditioners (12 Stages max.)



In addition to the control of the air conditioners, the CommStat 6 has multiple configurable outputs for remote alarms or notification. The CommStat 6 is factory programmed with standard industry set points, but can be configured on site. Settings are retained indefinitely in the event of a power loss.

CommStat Touch HVAC Controller NEW!.....P/N K/10439

The CommStat Touch telecom controller with a touch screen interface is designed to allow remote control and monitoring of Marvair air conditioners and heat pumps with single or 2-stage compressors in a shelter or enclosure and is certified by ETL for HVAC UL60950-1 and FCC47CFR compliance. In addition to the control of HVAC equipment, CommStat Touch includes the Marvair RemoteLink IPv4/IPv6 communication module to provide status information, alarm notifications, set point adjustment, and remote HVAC configuration.



CommStat 4 Telecom HVAC Controller.....P/N S/7846

The CommStat 4 HVAC controller is designed specifically for controlling two redundant air conditioners, heat pumps or air conditioners with 2-stage compressors. The CommStat 4 has seven outputs for remote alarms or notification. Status LED's indicate HEAT, COOL, POWER and the LEAD unit. When a fault is detected, an alarm LED flashes and the LCD screen displays the fault.

The CommStat 4 uses RS-485 communications via a RJ11 jack. It can be daisy chained with a second CommStat 4 controllers for controlling up to four air conditioners in one shelter.



CommStat 4 ModBus Adapter.....P/N 03272

The self-contained Marvair® Modbus Interface Adapter provides an Ethernet gateway to the Marvair CommStat™ 4 HVAC controller through which an external host can read and write information from the CommStat 4 as if it were a device on a Modbus TCP network. It is powered by 24VDC or 48VDC. The external host located, for example, within a Network Operations Center (NOC), can then monitor and control the operation of the HVAC units connected to the CommStat 4 controller. The adapter supports CommStat 4 controllers with protocol version 3 or later with software revision 67 or later.

CommStat3™ Lead/Lag Microprocessor Controller.....P/N S/04581

Solid state controller designed to operate a fully or partially redundant air conditioning system. Ensures equal wear on both air conditioners while allowing the lag unit to assist upon demand. Lead/ lag changeover is factory set at 7 days, but is field programmable in 1/2 day increments from 1/2 to 7 days. The CommStat 3™ Controller has LED's to indicate status & function, digital display of temperature, a comfort override button for energy savings, five alarm relays, a built in temperature sensor and is fully programmable.



► **Thermostats & Thermostat Guards**

Note: All air conditioners with 2-stage compressors (models HVESA) require a 2-stage cooling thermostat.

ThermostatP/N 50123

Digital thermostat. 1-stage heat, 1-stage cooling. 7 day programmable. Fan switch: Auto & On. Auto-change over. Keypad lockout. Non-volatile program memory.

ThermostatP/N 50107

Digital thermostat. 2-stage heat, 2-stage cooling. 7 day programmable. Fan switch: Auto & On. Auto-change over. Status LED's. Backlit display. Programmable fan. Non-volatile program memory.

Thermostat Guard.....P/N 50092

Thermostat guard for use with the 50123 and 50107 thermostats.

Thermostat.....P/N 50218

Digital, non-programmable thermostat. 1-stage cooling and 1-stage heat. Auto-changeover.

Digital Humidistat.....P/N 50254

To be used with units with hot gas or electric reheat. Programmable dehumidistat and ventilation controller. Permanent memory retention of set points. Humidity sensor can be field calibrated. High & low dehumidification set points. Outdoor temperature and humidity sensor included. °F or °C selectable.

Thermostat.....P/N 50252

Non-programmable digital thermostat with backlit display. 2 stage heat and 2-stage cooling. Auto changeover.

Accessories

► **Supply Grille**

For AVHDA90.....P/N 93189
42½" x 15¼" (1,080 mm x 387 mm)

► **Return Grille**

For AVHDA90.....P/N 93188
42½" x 21½" (1,080 mm x 546 mm)

Options

ComPac® air conditioners were designed and are built to stringent requirements of the communications/electronic shelter. Applications occur that have special requirements. Numerous options are available for ComPac air conditioners that meet these special needs.

► Protective Coating Packages

Coated Coils: Either the condenser or evaporator coil can be coated. For harsh conditions, e.g., power plants, paper mills or sites where the unit will be exposed to salt water, the coils should be coated. **Note:** Cooling capacity may be reduced by up to 5% on units with coated coils.

Coastal Environmental Package: This package includes:

- Corrosion resistant fasteners,
- Sealed or partially sealed condenser fan motor,
- Insitu coating applied to all exposed internal copper and metal in the condenser section, and
- A protective coating on the condenser coil.

All Coat Package: Includes the same features as the Coastal Environmental Package and adds an impregnated polyurethane on the evaporator coil and the Insitu coating on all exterior and interior components and sheet metal. (**Note:** the insulated internal sheet metal and the internal control box are not coated).

► Color

ICE air conditioners are available in two cabinet colors -the standard gray and beige. The standard cabinet's sides, top and front panels are constructed of 16 gauge painted steel. Contact your sales representative for color chips, custom colors and 316 stainless steel cabinets.

► Dirty Filter Indicator

A factory installed option that measures the difference in pressure across the internal filter and illuminates an LED when the pressure exceeds the desired difference.

► Fresh Air Damper

Fresh Air Damper..... P/N K/04657-xxx

Allows introduction of outside air into the building to provide positive pressurization. Field installed on either the left or right hand side of the unit. "xxx" designates the color (200 = Grey (standard). 100 = Beige. 500 = Stainless Steel)

► Filter Access From Return Air Grille

Factory or field installed filter bracket allows changing and access to the filters from the return air grille. See model ID, special option code "I".

► Freeze Sensor

Prevents frost on the indoor coil caused by a loss of air flow or restrictive duct work.

► Reverse Air Flow Configuration

Location of Supply and Return openings are reversed. See dimensional drawings.

► Economizer

The factory installed economizer saves energy and reduces the run time on the compressor and condenser fan motor by using outside air – when suitable – to cool the shelter.

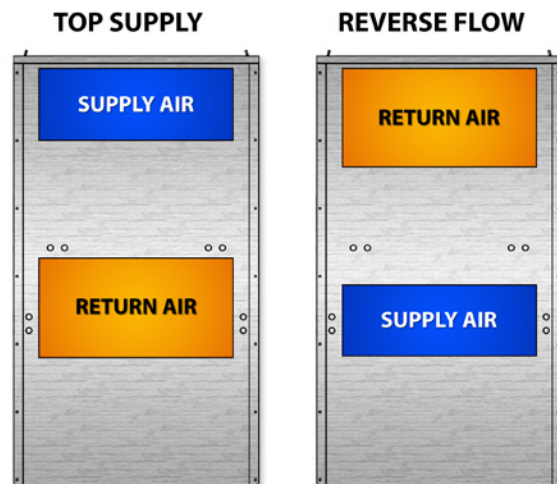
On a signal from the wall mounted indoor thermostat that cooling is required, either mechanical cooling with the compressor or free cooling with the economizer is provided. A factory installed enthalpy controller determines whether the outside air is sufficiently cool and dry to be used for cooling. If suitable, the compressor is locked out and the economizer damper opens to bring in outside air through fresh air hoods located on each side of the air conditioner. The outside air is filtered with filters in each of the outside air hoods. Integral pressure relief allows the interior air to exit the shelter, permitting outside air to enter the shelter. The temperature at which the economizer opens is adjustable from 63°F (17°C) at 50% Relative Humidity to 73°F (23°C) at 50% Relative Humidity.

After the enthalpy control has activated and outside air is being brought into the building, the mixed air sensor measures the temperature of the air entering the indoor blower and then modulates the economizer damper to mix the right proportion of cool outside air with warm indoor air to maintain 50°-63°F (10° - 17°C) air being delivered to the building. This prevents shocking the electronic components with cold outside air.

The compressor is not permitted to operate when the economizer is functioning.

If the outside air becomes too hot or humid, the economizer damper closes completely, or to a field selectable minimum open position, and mechanical cooling is activated.

Fresh air hoods with prefilters are field installed on each side of the air conditioner.



Remote Access Data Points

Through the Ethernet connection, the network operations center can monitor and change various data points in the HVAC system and the shelter.

Data Points which can be monitored **and** changed:

- First Stage Cooling Set Point Temperature
- Second Stage Cooling Set Point Differential Temperature
- First Stage Heating Set Point Temperature
- Second Stage Heating Set Point Differential Temperature

Data points which can only be monitored:

- Inside Temperature - Current
- Outside Temperature - Current
- Outside Humidity - Current
- Dew point - Current
- Inside Temperature - Average Last Hour
- Outside Temperature - Average Last Hour
- Outside Humidity - Average Last Hour
- Dew point - Average Last Hour
- Unit 1 & Unit 2 Mechanical Cooling Time - Last Hour
- Unit 1 & Unit 2 Mechanical Cooling Requests - Last Hour
- Unit 1 & Unit 2 Free Air Cooling Time - Last Hour
- Unit 1 & Unit 2 Free Air Cooling Requests - Last Hour
- Unit 1 & Unit 2 Heating Time - Last Hour
- Unit 1 & Unit 2 Heating Requests - Last Hour

Control Box

The internal control board in the air conditioners simplifies wiring, consolidates several of the electrical functions onto one device and improves the reliability of the air conditioner. In addition, the control board has LED's that indicate operational status and fault conditions.

LED Indicator Lights

COLOR	TYPE	STATUS	DESCRIPTION
Green	Power	Constant On	24 VAC power has been applied
Red	Status	Constant On	Normal operation
		1 Blink	High pressure switch has opened twice
		2 Blinks	Low pressure switch has opened twice
		3 Blinks	Freeze stat (optional) - indoor coil temperature is below 35°F (1°C)

► Modes of Operation

Normal Start-up: On a call for cooling, and the with the high pressure switch closed, the cooling system (compressor, indoor blower motor and outdoor fan motor) will be energized. (Note: See the Delay on Make feature). The cooling system will remain energized during the three minute low pressure switch bypass cycle. If the low pressure is closed, the cooling system will continue to operate after the three-minute bypass. If the low pressure switch is open after the three-minute bypass, the cooling system will be de-energized.

Lockout Mode: If either the high or low pressure switch opens twice on the same call for cooling, the control board enters into and indicates the lockout mode. In the lockout mode, the compressor is turned off, the alarm output is energized and the status LED's will blink to indicate which fault has occurred. If there is a call for air flow, the indoor blower will remain energized. When the lockout condition has cleared, the unit will reset if the demand of the thermostat is removed or when power is reset. The lockout circuit is factory wired for normally open contacts. The user can select either normally closed or normally open remote alarm dry contacts.



Delay on Make: On initial power up or on resumption of power, the air conditioner will wait .03 to 10 minutes from a call for cooling before allowing the contactor to energize.

Model Identification

AVH	D	A	●●●	AC	● ●●●	● ●	U ●●	A5	●●●
Efficiency Rating EER 10+	Dual Compressors¹	Refrigerant A = R410A		System Type Air Conditioner	Electric Heat – kW 000 = No Heat 050 = 5 kW 090 = 9 kW 150 = 15 kW	Special Option Code F = Reverse Air Flow ²	Compressor U = Scroll Compressors	A5= Built in compliance with UL 1995, 4th edition	Cabinet Color 116 = Beige (standard) 216 = Gray 500 = Stainless Steel (Exterior panels only) 900 = Custom Color
			Nominal Cooling 090 = 90,000 BTUH		Power Supply A = 208/230V,1ø,60Hz C = 208/230V,3ø,60Hz D = 460V,3ø,60Hz (3 wire) E = 380V,3ø,50Hz (4 wire) F = 220V,1ø,50Hz Z = 575V,3ø,60Hz	Ventilation N = Non-Economizer C = Economizer		VZ = Verizon Specification	

Notes:

¹The standard configuration on the AVHDA90 is dual compressors.

²The standard configuration is with the supply (conditioned) air at the top of the unit and the return air below it. In the reverse air flow configuration, the return is at the top and the supply air below it.

AVHDA Efficiency and Capacity Ratings at ANSI/AHRI Standard 390

Basic Model	Cooling BTUH ¹	EER ²	Rated Air Flow (CFM) ³
AVHDA90	89,000	10	3,500

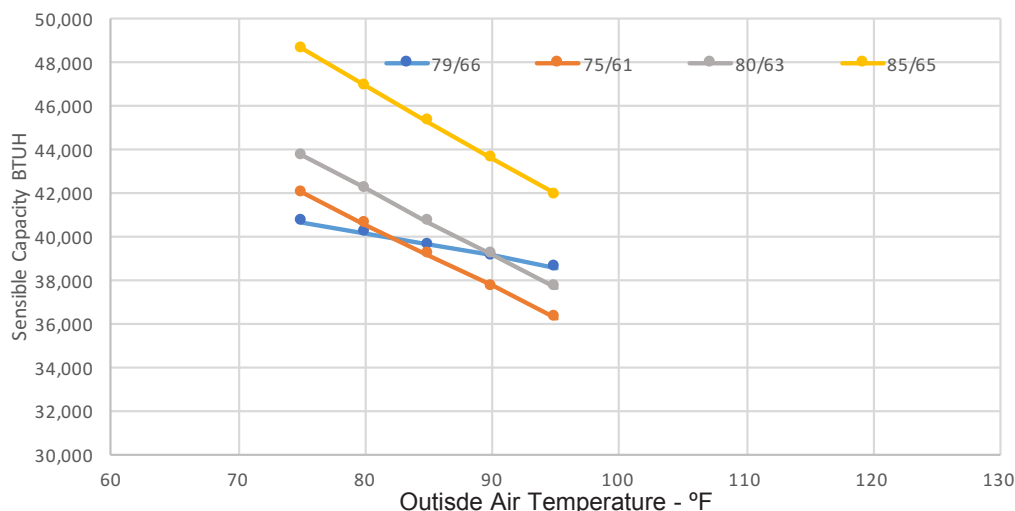
¹Cooling rated at 95°F (35°C) outdoor and 80°F DB/67° WB (26.5°C DB/19.5°C WB) return air. ²EER=Energy Efficiency Ratio ³CFM=Cubic Feet per Minute
Ratings are with no outside air. Performance will be affected by altitude.
Ratings are at 230 volts for 208/230 volt units ("A" & "C" models) and 460 volts for "D" models. Operation of units at a different voltage from that of the rating point will affect performance and air flow.

ComPac® AVHDA High Efficiency Air Conditioners

AVHDA90AC Sensible Capacities - Single Compressor Operation

Return Air DB/WB	Sensible Cooling Capacity	Outside Air Temperature °F (°C)				
		75 (24)	80 (27)	85 (30)	90 (32)	95 (35)
79/66	BTUH	40,671	40,148	39,613	39,093	38,561
75/61		42,039	40,581	39,164	37,706	36,248
80/63		43,700	42,201	40,662	39,164	37,665
85/65		48,641	46,940	45,279	43,578	41,918

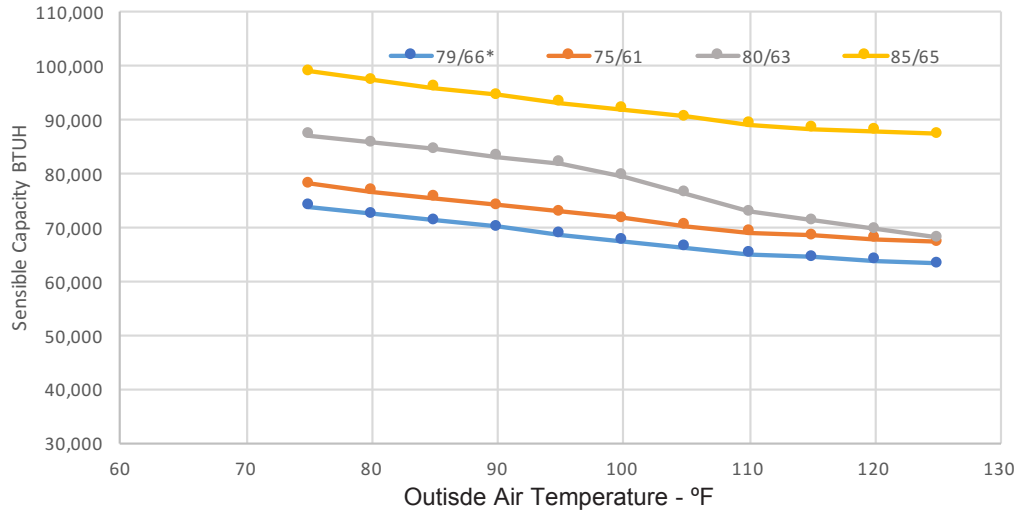
AVHDA90AC -Single Compressor Operation, per NSTD Shelter Conditions



AVHDA90AC Sensible Capacities - Dual Compressor Operation

Return Air DB/WB	Sensible Cooling Capacity	Outside Air Temperature °F (°C)										
		75 (24)	80 (27)	85 (30)	90 (32)	95 (35)	100 (38)	105 (41)	110 (43)	115 (46)	120 (49)	125 (52)
79/66*	BTUH	73,746	72,487	71,203	69,958	68,689	67,427	66,204	64,956	64,351	63,780	63,209
75/61		77,983	76,678	75,416	74,126	72,843	71,567	70,298	69,071	68,443	67,817	67,192
80/63		87,060	85,763	84,439	83,158	81,884	79,477	76,184	72,802	71,200	69,598	67,996
85/65		98,806	97,367	95,972	94,552	93,174	91,805	90,411	89,060	88,371	87,782	87,194

AVHDA90AC - Dual Compressor Operation, per NSTD Shelter Conditions



Single Compressor Cooling Performance (BTUH) at Various Outdoor Temperatures

Basic Model	Outdoor Temperature				
	75°F / 24°C	80°F / 26.5°C	85°F / 29°C	90°F / 32°C	95°F / 35°C
AVHDA90AC	46,980	45,360	43,740	42,120	40,500

¹Based upon ANSI/AHRI std. 390 return air conditions of 80°F DB/67° WB (26.5°C DB/19.5°C WB) at various outdoor temperatures.

Dual Compressor Cooling Performance (BTUH) at Various Outdoor Temperatures

Basic Model	Outdoor Temperature				
	75°F / 24°C	80°F / 26.5°C	85°F / 29°C	90°F / 32°C	95°F / 35°C
AVHDA90AC	103,240	99,680	96,120	92,560	89,000

¹Based upon ANSI/AHRI std. 390 return air conditions of 80°F DB/67° WB (26.5°C DB/19.5°C WB) at various outdoor temperatures.

Economizer Cooling Performance

Basic Model	Fan Watts	Fan CFM	EER @ 55 F OAT	Outside Air Temperature °F (°C)				
				50 (10)	55 (13)	60 (16)	65 (18)	70 (21)
AVHDA90AC	730	3500	125	110,128	91,140	72,153	53,165	34,178

Based upon indoor setpoint temperature of 79 (26).

Single Compressor Cooling Performance (BTUH) at Various Outdoor Temperatures

75°F / 24°C Outdoor Air Temperature

Indoor Wet Bulb	Cooling Capacity (Btu/Hr)	EER	Total Power (Watts)	Net Sensible Cooling Capacity (Btu/Hr) Indoor Dry Bulb °F (°C)								Pressures (psig)	
				72 (22)	75 (24)	76 (24)	79 (26)	80 (27)	82 (28)	84 (29)	85 (30)	Suction	Discharge
61	42,039	9.59	4,385	37,529								143	414
63	43,700	9.66	4,524	33,313	39,344	41,354						148	425
66	45,320	9.72	4,662	26,599	32,630	34,640	40,671	42,681				153	435
67	46,980	9.79	4,800	24,718	30,749	32,759	38,790	40,800	44,820			157	446
65	48,641	9.85	4,938	30,188	36,218	38,228	44,259	46,269				162	457
71	50,261	9.90	5,077	15,934	21,964	23,974	30,005	32,015	36,036	40,056	42,066	167	467
73	51,921	9.96	5,215	n/a	17,510	19,520	25,550	27,561	31,581	35,601	37,611	172	478

80°F / 27°C Outdoor Air Temperature

Indoor Wet Bulb	Cooling Capacity (Btu/Hr)	EER	Total Power (Watts)	Net Sensible Cooling Capacity (Btu/Hr) Indoor Dry Bulb °F (°C)								Pressures (psig)	
				72 (22)	75 (24)	76 (24)	79 (26)	80 (27)	82 (28)	84 (29)	85 (30)	Suction	Discharge
61	40,581	8.88	4,568	36,986								144	435
63	42,201	8.97	4,706	32,775	38,805	40,815						149	446
66	43,781	9.04	4,844	26,077	32,107	34,118	40,148	42,158				154	457
67	45,360	9.10	4,983	24,178	30,208	32,219	38,249	40,259	44,280			159	467
65	46,940	9.17	5,121	29,595	35,626	37,636	43,667	45,677				164	478
71	48,519	9.23	5,259	15,397	21,427	23,437	29,468	31,478	35,499	39,519	41,529	169	489
73	50,139	9.29	5,397	n/a	16,982	18,992	25,023	27,033	31,053	35,074	37,084	174	499

85°F / 30°C Outdoor Air Temperature

Indoor Wet Bulb	Cooling Capacity (Btu/Hr)	EER	Total Power (Watts)	Net Sensible Cooling Capacity (Btu/Hr) Indoor Dry Bulb °F (°C)								Pressures (psig)	
				72 (22)	75 (24)	76 (24)	79 (26)	80 (27)	82 (28)	84 (29)	85 (30)	Suction	Discharge
61	39,164	8.24	4,750	36,459								146	457
63	40,662	8.32	4,889	32,223	38,253	40,264						151	467
66	42,201	8.40	5,027	25,542	31,572	33,583	39,613	41,623				156	478
67	43,740	8.47	5,165	23,639	29,670	31,680	37,710	39,721	43,741			161	489
65	45,279	8.54	5,303	29,019	35,049	37,060	43,090	45,100				166	499
71	46,818	8.60	5,442	14,874	20,904	22,914	28,945	30,955	34,975	38,996	41,006	171	510
73	48,317	8.66	5,580	n/a	16,444	18,454	24,485	26,495	30,515	34,536	36,546	175	520

90°F / 32°C Outdoor Air Temperature

Indoor Wet Bulb	Cooling Capacity (Btu/Hr)	EER	Total Power (Watts)	Net Sensible Cooling Capacity (Btu/Hr) Indoor Dry Bulb °F (°C)								Pressures (psig)	
				72 (22)	75 (24)	76 (24)	79 (26)	80 (27)	82 (28)	84 (29)	85 (30)	Suction	Discharge
61	37,706	7.64	4,933	35,919								148	478
63	39,164	7.72	5,071	31,687	37,718							153	489
66	40,662	7.81	5,209	25,022	31,053	33,063	39,093					157	499
67	42,120	7.88	5,348	23,101	29,132	31,142	37,173	39,183				162	510
65	43,578	7.94	5,486	28,430	34,460	36,471	42,501					167	520
71	45,077	8.02	5,624	14,339	20,370	22,380	28,411	30,421	34,441	38,462	40,472	172	531
73	46,535	8.08	5,762	n/a	15,919	17,929	23,960	25,970	29,990	34,011	36,021	177	542

95°F / 35°C Outdoor Air Temperature

Indoor Wet Bulb	Cooling Capacity (Btu/Hr)	EER	Total Power (Watts)	Net Sensible Cooling Capacity (Btu/Hr) Indoor Dry Bulb °F (°C)								Pressures (psig)	
				72 (22)	75 (24)	76 (24)	79 (26)	80 (27)	82 (28)	84 (29)	85 (30)	Suction	Discharge
61	36,248	7.09	5,115	35,380								149	499
63	37,665	7.17	5,254	31,152	37,183							154	510
66	39,083	7.25	5,392	24,490	30,520	32,530	38,561					159	520
67	40,500	7.32	5,530	22,565	28,596	30,606	36,637	38,647				164	531
65	41,918	7.40	5,668	27,856	33,887	35,897	41,928					169	542
71	43,335	7.46	5,807	13,807	19,837	21,847	27,878	29,888	33,908	37,929	39,939	174	552
73	44,753	7.53	5,945	n/a	15,396	17,406	23,437	25,447	29,467	33,487	35,498	179	563

ARI Capacity = 40,500
Suction psig = 164

ARI Watts = 5,530
Discharge psig = 531

Indoor Air CFM = 3640
WBDR = 0.489

Dual Compressor Cooling Performance (BTUH) at Various Outdoor Temperatures

75°F / 24°C Outdoor Air Temperature

Indoor Wet Bulb	Cooling Capacity (Btu/Hr)	EER	Total Power (Watts)	Net Sensible Cooling Capacity (Btu/Hr) Indoor Dry Bulb °F (°C)								Pressures (psig)	
				72 (22)	75 (24)	76 (24)	79 (26)	80 (27)	82 (28)	84 (29)	85 (30)	Suction	Discharge
61	92,382	14.33	6,448	68,795	77,983	81,046	90,234					138	274
63	96,031	14.66	6,549	62,559	71,747	74,809	83,997	87,060	93,185			143	286
66	99,591	14.97	6,651	52,307	61,495	64,558	73,746	76,809	82,934	89,059	92,122	148	299
67	103,240	15.29	6,752	49,764	58,952	62,015	71,203	74,266	80,391	86,516	89,579	153	311
65	106,889	15.52	6,887	58,991	68,179	71,242	80,430	83,492	89,618	95,743	98,806	157	323
71	110,449	15.73	7,022	36,606	45,794	48,857	58,044	61,107	67,232	73,358	76,420	162	335
73	114,098	15.94	7,157	n/a	39,099	42,161	51,349	54,412	60,537	66,663	69,725	167	348

80°F / 27°C Outdoor Air Temperature

Indoor Wet Bulb	Cooling Capacity (Btu/Hr)	EER	Total Power (Watts)	Net Sensible Cooling Capacity (Btu/Hr) Indoor Dry Bulb °F (°C)								Pressures (psig)	
				72 (22)	75 (24)	76 (24)	79 (26)	80 (27)	82 (28)	84 (29)	85 (30)	Suction	Discharge
61	89,178	13.01	6,853	67,490	76,678	79,741	88,929					140	299
63	92,738	13.32	6,963	61,262	70,450	73,513	82,701	85,763	91,889			145	311
66	96,209	13.62	7,064	51,048	60,236	63,299	72,487	75,550	81,675	87,800	90,536	149	323
67	99,680	13.89	7,174	48,459	57,647	60,710	69,898	72,960	79,086	85,211	88,274	154	335
65	103,151	14.10	7,317	57,553	66,741	69,803	78,991	82,054	88,179	94,304	97,367	159	348
71	106,622	14.29	7,461	35,305	44,493	47,556	56,744	59,806	65,932	72,057	75,120	164	360
73	110,182	14.49	7,604	n/a	37,819	40,882	50,070	53,133	59,258	65,383	68,446	169	372

85°F / 30°C Outdoor Air Temperature

Indoor Wet Bulb	Cooling Capacity (Btu/Hr)	EER	Total Power (Watts)	Net Sensible Cooling Capacity (Btu/Hr) Indoor Dry Bulb °F (°C)								Pressures (psig)	
				72 (22)	75 (24)	76 (24)	79 (26)	80 (27)	82 (28)	84 (29)	85 (30)	Suction	Discharge
61	86,063	11.86	7,258	66,228	75,416	78,479						142	323
63	89,356	12.13	7,368	59,938	69,126	72,189	81,377	84,439				146	335
66	92,738	12.39	7,486	49,764	58,952	62,015	71,203	74,265	80,391	86,516		151	348
67	96,120	12.65	7,596	47,162	56,350	59,412	68,600	71,663	77,788	83,914	86,976	156	360
65	99,502	12.84	7,748	56,157	65,345	68,408	77,596	80,659	86,784	92,909	95,972	161	372
71	102,884	13.02	7,900	34,042	43,230	46,293	55,481	58,544	64,669	70,794	73,857	165	384
73	106,177	13.19	8,052	n/a	36,519	39,582	48,770	51,832	57,958	64,083	67,145	170	397

90°F / 32°C Outdoor Air Temperature

Indoor Wet Bulb	Cooling Capacity (Btu/Hr)	EER	Total Power (Watts)	Net Sensible Cooling Capacity (Btu/Hr) Indoor Dry Bulb °F (°C)								Pressures (psig)	
				72 (22)	75 (24)	76 (24)	79 (26)	80 (27)	82 (28)	84 (29)	85 (30)	Suction	Discharge
61	82,859	10.82	7,655	64,938	74,126	77,188						143	348
63	86,063	11.06	7,782	58,657	67,845	70,907	80,095	83,158				148	360
66	89,356	11.31	7,900	48,520	57,708	60,770	69,958	73,021	79,146	85,272		153	372
67	92,560	11.54	8,018	45,872	55,060	58,123	67,311	70,374	76,499	82,624	85,687	157	384
65	95,764	11.71	8,178	54,737	63,925	66,988	76,176	79,238	85,364	91,489	94,552	162	397
71	99,057	11.88	8,339	32,758	41,946	45,008	54,196	57,259	63,384	69,509	72,572	167	409
73	102,261	12.03	8,499	n/a	35,256	38,318	47,506	50,569	56,694	62,819	65,882	172	421

95°F / 35°C Outdoor Air Temperature

Indoor Wet Bulb	Cooling Capacity (Btu/Hr)	EER	Total Power (Watts)	Net Sensible Cooling Capacity (Btu/Hr) Indoor Dry Bulb °F (°C)								Pressures (psig)	
				72 (22)	75 (24)	76 (24)	79 (26)	80 (27)	82 (28)	84 (29)	85 (30)	Suction	Discharge
61	79,655	9.88	8,060	63,655	72,843	75,905						145	372
63	82,770	10.11	8,187	57,383	66,571	69,633	78,821	81,884				149	384
66	85,885	10.33	8,313	47,250	56,438	59,501	68,689	71,751	77,877			154	397
67	89,000	10.55	8,440	44,591	53,778	56,841	66,029	69,092	75,217	81,342	84,405	159	409
65	92,115	10.70	8,609	53,359	62,547	65,610	74,798	77,861	83,986	90,111	93,174	164	421
71	95,230	10.85	8,778	31,481	40,669	43,731	52,919	55,982	62,107	68,233	71,295	169	434
73	98,345	10.99	8,946	n/a	34,000	37,063	46,251	49,313	55,439	61,564	64,626	173	446

100°F / 38°C Outdoor Air Temperature

Indoor Wet Bulb	Cooling Capacity (Btu/Hr)	EER	Total Power (Watts)	Net Sensible Cooling Capacity (Btu/Hr) Indoor Dry Bulb °F (°C)								Pressures (psig)	
				72 (22)	75 (24)	76 (24)	79 (26)	80 (27)	82 (28)	84 (29)	85 (30)	Suction	Discharge
61	76,451	9.03	8,465	62,379	71,567	74,629						146	397
63	79,477	9.24	8,600	56,116	65,304	68,366	77,554					151	409
66	82,414	9.44	8,727	45,988	55,176	58,239	67,427	70,489	76,615			156	421
67	85,440	9.64	8,862	43,316	52,504	55,567	64,755	67,818	73,943	80,068	83,131	161	434
65	88,466	9.79	9,039	51,990	61,178	64,241	73,429	76,492	82,617	88,742	91,805	165	446
71	91,403	9.92	9,216	30,212	39,400	42,462	51,650	54,713	60,838	66,964	70,026	170	458
73	94,429	10.05	9,394	n/a	32,752	35,815	45,003	48,065	54,191	60,316	63,379	175	470

105°F / 41°C Outdoor Air Temperature

Indoor Wet Bulb	Cooling Capacity (Btu/Hr)	EER	Total Power (Watts)	Net Sensible Cooling Capacity (Btu/Hr) Indoor Dry Bulb °F (°C)								Pressures (psig)	
				72 (22)	75 (24)	76 (24)	79 (26)	80 (27)	82 (28)	84 (29)	85 (30)	Suction	Discharge
61	73,247	8.26	8,870	61,110	70,298	73,361						148	421
63	76,184	8.46	9,005	54,856	64,044	67,107						153	434
66	79,032	8.64	9,149	44,765	53,953	57,016	66,204	69,267	75,392			157	446
67	81,880	8.82	9,284	42,050	51,238	54,300	63,488	66,551	72,676	78,802		162	458
65	84,728	8.95	9,470	50,597	59,785	62,848	72,035	75,098	81,223	87,349	90,411	167	470
71	87,576	9.07	9,655	28,951	38,139	41,201	50,389	53,452	59,577	65,702	68,765	172	483
73	90,513	9.20	9,841	n/a	31,512	34,575	43,763	46,825	52,951	59,076	62,139	176	495

110°F / 43°C Outdoor Air Temperature

Indoor Wet Bulb	Cooling Capacity (Btu/Hr)	EER	Total Power (Watts)	Net Sensible Cooling Capacity (Btu/Hr) Indoor Dry Bulb °F (°C)								Pressures (psig)	
				72 (22)	75 (24)	76 (24)	79 (26)	80 (27)	82 (28)	84 (29)	85 (30)	Suction	Discharge
61	70,132	7.57	9,267	59,883	69,071							149	446
63	72,802	7.73	9,419	53,570	62,758	65,821	65,821					154	458
66	75,561	7.90	9,563	43,518	52,706	55,768	64,956	68,019				159	470
67	78,320	8.07	9,706	40,791	49,979	53,041	62,229	65,292	71,417	77,542		164	483
65	81,079	8.19	9,900	49,245	58,433	61,496	70,684	73,746	79,872	85,997	89,060	169	495
71	83,838	8.31	10,094	27,726	36,914	39,977	49,165	52,227	58,353	64,478	67,541	173	507
73	86,508	8.41	10,288	n/a	30,252	33,314	42,502	45,565	51,690	57,816	60,878	178	519

115°F / 46°C Outdoor Air Temperature

Indoor Wet Bulb	Cooling Capacity (Btu/Hr)	EER	Total Power (Watts)	Net Sensible Cooling Capacity (Btu/Hr) Indoor Dry Bulb °F (°C)								Pressures (psig)	
				72 (22)	75 (24)	76 (24)	79 (26)	80 (27)	82 (28)	84 (29)	85 (30)	Suction	Discharge
61	68,530	7.09	9,672	59,255	68,443							151	470
63	71,200	7.25	9,824	52,963	62,151	65,214						156	483
66	73,870	7.40	9,976	42,913	52,101	55,163	64,351	67,414				161	495
67	76,540	7.56	10,128	40,164	49,352	52,415	61,603	64,665	70,790	76,916		165	507
65	79,210	7.67	10,331	48,556	57,744	60,807	69,995	73,057	79,183	85,308	88,371	170	519
71	81,880	7.77	10,533	27,088	36,276	39,338	48,526	51,589	57,714	63,840	66,902	175	532
73	84,550	7.88	10,736	n/a	29,638	32,701	41,889	44,952	51,077	57,202	60,265	180	544

120°F / 49°C Outdoor Air Temperature

Indoor Wet Bulb	Cooling Capacity (Btu/Hr)	EER	Total Power (Watts)	Net Sensible Cooling Capacity (Btu/Hr) Indoor Dry Bulb °F (°C)								Pressures (psig)	
				72 (22)	75 (24)	76 (24)	79 (26)	80 (27)	82 (28)	84 (29)	85 (30)	Suction	Discharge
61	66,928	6.64	10,077	58,629	67,817							153	495
63	69,598	6.80	10,229	52,359	61,546	64,609						157	507
66	72,268	6.96	10,381	42,341	51,529	54,592	63,780	66,842				162	519
67	74,938	7.11	10,533	39,601	48,789	51,852	61,040	64,103	70,228			167	532
65	77,608	7.26	10,685	47,967	57,155	60,218	69,406	72,468	78,594	84,719	87,782	172	544
71	80,278	7.41	10,837	26,567	35,755	38,818	48,005	51,068	57,193	63,319	66,381	176	556
73	82,948	7.55	10,989	n/a	29,138	32,201	41,389	44,451	50,577	56,702	59,765	181	569

125°F / 52°C Outdoor Air Temperature

Indoor Wet Bulb	Cooling Capacity (Btu/Hr)	EER	Total Power (Watts)	Net Sensible Cooling Capacity (Btu/Hr) Indoor Dry Bulb °F (°C)								Pressures (psig)	
				72 (22)	75 (24)	76 (24)	79 (26)	80 (27)	82 (28)	84 (29)	85 (30)	Suction	Discharge
61	65,326	6.23	10,482	58,004	67,192							154	519
63	67,996	6.39	10,634	51,755	60,943	64,006						159	532
66	70,666	7.42	9,519	41,771	50,959	54,021	63,209	66,272				164	544
67	73,336	6.70	10,938	39,040	48,228	51,291	60,479	63,542	69,667			169	556
65	76,006	6.85	11,090	47,380	56,568	59,630	68,818	71,881	78,006	84,132	87,194	173	569
71	78,676	7.00	11,242	26,047	35,235	38,298	47,486	50,549	56,674	62,799	65,862	178	581
73	81,346	7.14	11,394	n/a	28,639	31,702	40,889	43,952	50,077	56,203	59,265	183	593

130°F / 54°C Outdoor Air Temperature

Indoor Wet Bulb	Cooling Capacity (Btu/Hr)	EER	Total Power (Watts)	Net Sensible Cooling Capacity (Btu/Hr) Indoor Dry Bulb °F (°C)								Pressures (psig)	
				72 (22)	75 (24)	76 (24)	79 (26)	80 (27)	82 (28)	84 (29)	85 (30)	Suction	Discharge
61	63,724	5.85	10,888	57,381	66,569							156	544
63	66,394	6.01	11,040	51,154	60,342	63,404						161	556
66	69,064	6.17	11,191	41,202	50,390	53,453	62,641	65,703				165	569
67	71,734	6.32	11,343	38,481	47,669	50,732	59,920	62,982	69,107			170	581
65	74,404	6.47	11,495	46,794	55,982	59,045	68,233	71,295				175	593
71	77,074	6.62	11,647	25,529	34,717	37,780	46,968	50,030	56,156	62,281	65,344	180	605
73	79,744	6.76	11,799	n/a	28,141	31,204	40,392	43,454	49,580	55,705	58,768	184	618

Electrical Characteristics - Compressor, Fan & Blower Motors

BASIC MODEL	COMPRESSOR			OUTDOOR FAN MOTOR		INDOOR BLOWER MOTOR	
	VOLTS / HZ / PH	RLA ¹	LRA ²	HP	FLA ³	HP	FLA ³
AVHDA90ACA	208/230-60-1	19.60 (39.20)	130.00	0.33	2.70 (5.40)	1.00	3.30
AVHDA90ACC	208/230-60-3	13.70 (27.40)	83.10	0.33	2.70 (5.40)	1.00	3.30
AVHDA90ACD	460-60-3	6.20 (12.40)	41.00	0.33	2.70 (5.40)	1.00	3.30
AVHDA90ACE	380-50-3	6.10 (12.20)	43.00	0.33	2.70 (5.40)	1.00	3.30
AVHDA90ACF	220-50-1	15.90 (31.80)	98.00	0.33	2.70 (5.40)	1.00	3.30
AVHDA90ACZ	575-60-3	4.80 (9.60)	33.00	0.33	2.70 (5.40)	1.00	3.30

¹RLA = Rated Load Amps ²LRA = Locked Rotor Amps ³FLA = Full Load Amps
Values in parentheses are for dual compressor air conditioners when both compressors are operating simultaneously.

Summary Electrical Ratings (Wire and Circuit Breaker Sizing)

ELECTRIC HEAT		000 = None		050 = 5 kw		090 = 9 kw		150 = 15 kw	
BASIC MODEL	VOLTAGE HZ / PHASE	SPPE ³		SPPE ³		SPPE ³		SPPE ³	
		MCA ¹	MFS ²	MCA ¹	MFS ²	MCA ¹	MFS ²	MCA ¹	MFS ²
AVHDA90ACA	208/230-60-1	58.0	90.0	58.0	90.0	58.0	90.0	65.8	90.0
AVHDA90ACC	208/230-60-3	43.0	70.0	43.0	70.0	43.0	70.0	43.0	70.0
AVHDA90ACD	460-60-3	24.0	35.0	24.0	35.0	24.0	35.0	24.0	35.0
AVHDA90ACE	380-50-3	24.0	35.0	24.0	35.0	24.0	35.0	24.0	35.0
AVHDA90ACF	220-50-1	48.5	80.0	48.5	80.0	48.5	80.0	60.6	80.0
AVHDA90ACZ	575-60-3	21.0	30.0	21.0	30.0	21.0	30.0	21.0	30.0

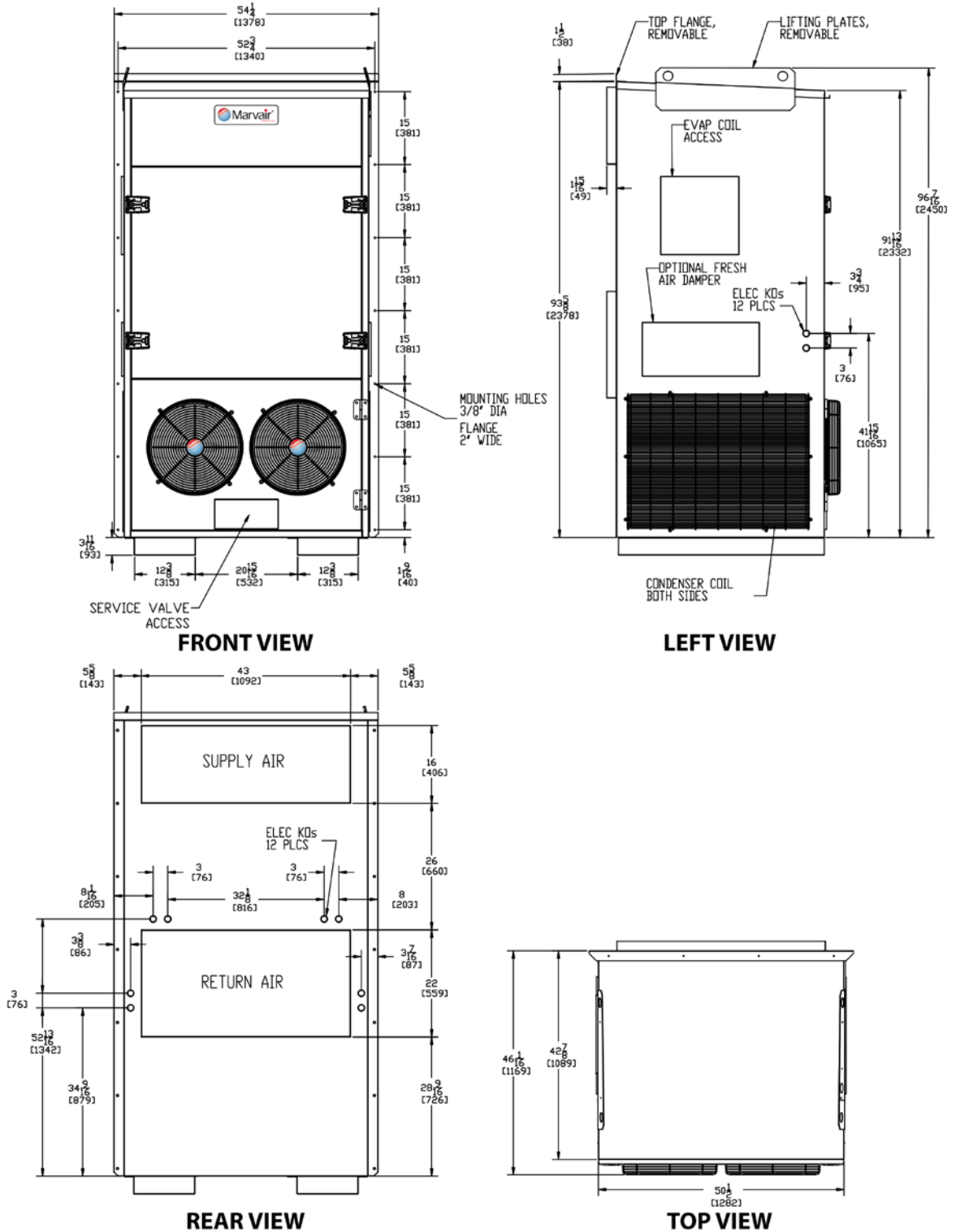
¹MCA = Minimum Circuit Ampacity (Wiring Size Amps) ²MFS = Maximum Fuse Size ³SPPE = Single Point Power Entry
This chart should only be used as a guideline for estimating conductor size and overcurrent protection.
For the requirements of specific units, always refer to the data label on the unit.

Unit Load Amps

BASIC MODEL NUMBER	VOLTAGE HZ / PHASE	CURRENT AMPS		LOAD OF RESISTIVE HEATING - ELEMENTS ONLY (AMPS) <i>Note: ALL HEATING ELEMENTS ARE ON A SEPARATE CIRCUIT</i>			TOTAL MAXIMUM HEATING AMPS <i>INCLUDES AMPS FROM MOTOR(S) THAT ARE LOCATED ON AN ELECTRICAL CIRCUIT THAT DOES NOT HAVE HEATERS</i>		
		AC ¹	IBM ²	5 kW	9 kW	15 kW	5 kW	9 kW	15 kW
AVHDA90ACA	208/230-60-1	47.90	3.30	20.80	37.50	62.50	24.10	40.80	65.80
AVHDA90ACC	208/230-60-3	36.10	3.30	12.00	21.70	36.10	15.30	25.00	39.40
AVHDA90ACD	460-60-3	21.10	3.30	6.00	10.80	18.00	9.30	14.10	21.30
AVHDA90ACE	380-50-3	20.90	3.30	4.80	8.60	14.30	8.10	11.90	17.60
AVHDA90ACF	220-50-1	40.50	3.30	19.10	34.40	57.30	22.40	37.70	60.60
AVHDA90ACZ	575-60-3	18.30	3.30	5.30	8.70	14.40	8.60	12.00	17.70

AC¹ = Air Conditioner Unit Amps IBM² = Indoor Blower Motor
Heating kW is rated at 230 volts on the ACA models, Derate heater by 25% for operation on 208v. Total heating and cooling amps includes all motors.

Dimensional Data - AVHDA90 ComPac® Air Conditioners - Top Supply



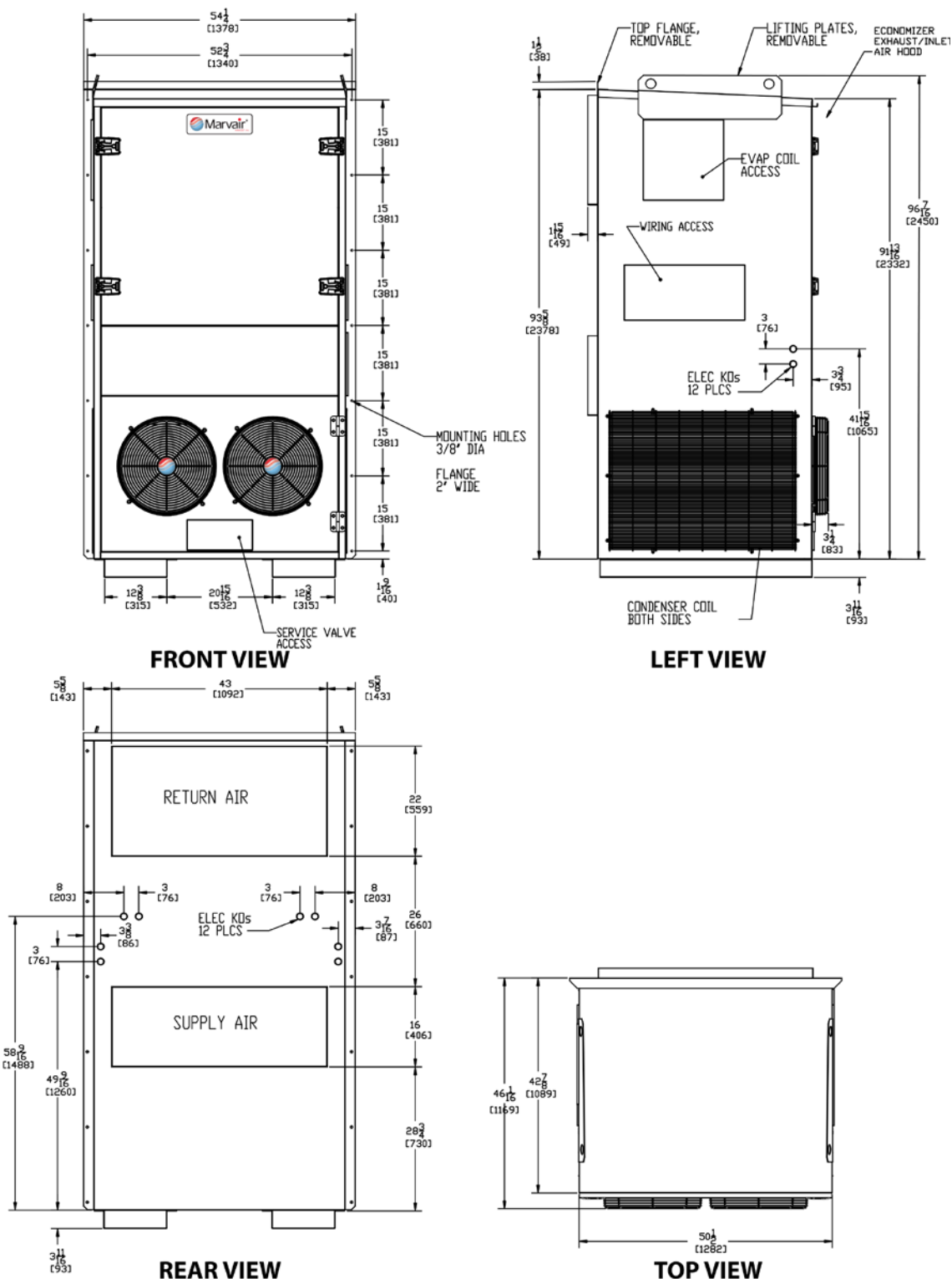
Weight (pounds/kilograms)

	LBS/KGS
AVHDA90 Top Supply	1160/527.3

Filter Size

AVHDA90	INCHES	MILLIMETERS	PART NUMBER	FILTERS PER UNIT	MERV RATING
Exterior Access Return Air Filter	25" x 16" x 2"	635 x 406 x 51	80137	3	8
Interior Access Return Air Filter	15" x 20" x 2"	381 x 508 x 51	92365	3	8

Dimensional Data - AVHDA90 ComPac® Air Conditioners - Reverse Air Flow



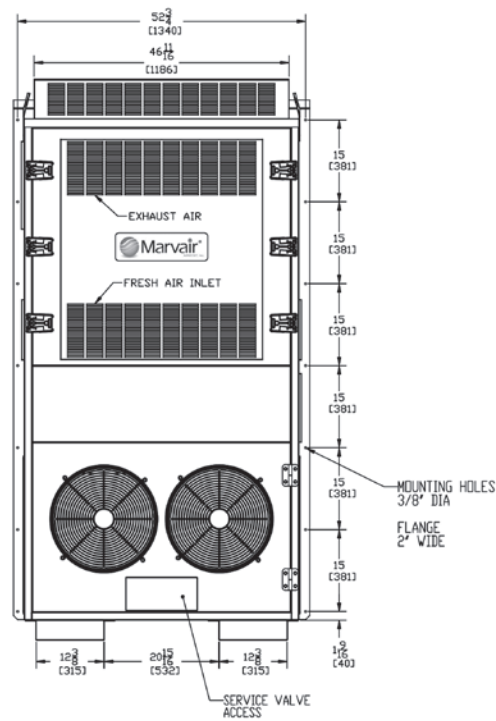
Weight (pounds/kilograms)

	LBS/KGS
AVHDA90 Reverse Flow	1160/527.3

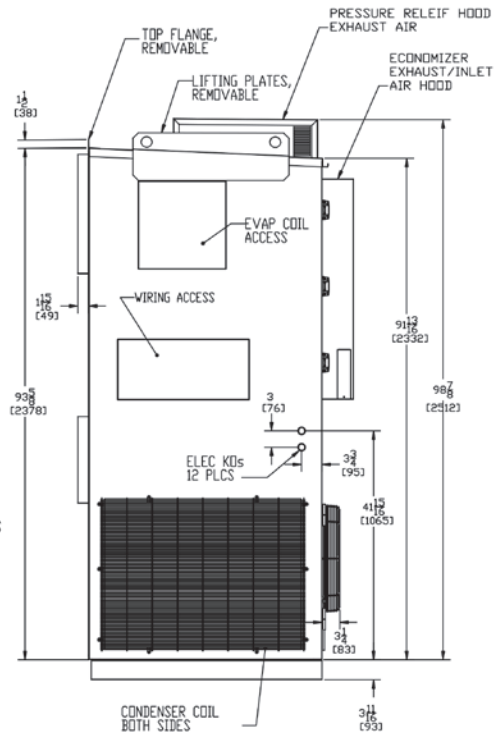
Filter Size

AVHDA90	INCHES	MILLIMETERS	PART NUMBER	FILTERS PER UNIT	MERV RATING
Exterior Access Return Air Filter	25" x 16" x 2"	635 x 406 x 51	80137	3	8
Interior Access Return Air Filter	15" x 20" x 2"	381 x 508 x 51	92365	3	8

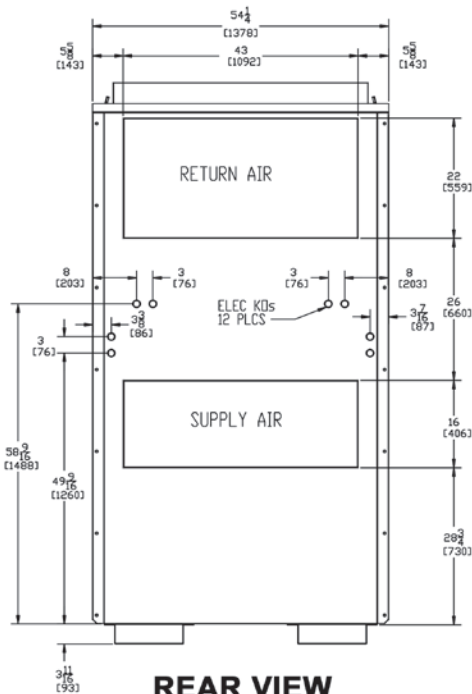
Dimensional Data - AVHDA90 ComPac® Air Conditioners -Reverse Flow w/Economizer



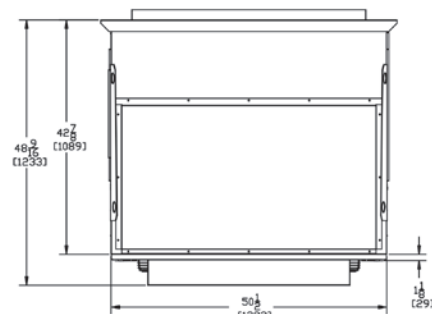
FRONT VIEW



LEFT VIEW



REAR VIEW



TOP VIEW

Weight (pounds/kilograms)

	LBS/KGS
AVHDA90 Reverse Flow with Economizer	1210/550

Filter Size

AVHDA90	INCHES	MILLIMETERS	PART NUMBER	FILTERS PER UNIT	MERV RATING
Exterior Access Return Air Filter	25" x 16" x 2"	635 x 406 x 51	80137	3	8
Interior Access Return Air Filter	15" x 20" x 2"	381 x 508 x 51	92365	3	8
Economizer Pre-filter	9.25" x 37" x .375"	235 x 940 x 10	92127	1	N/A

Notes



Please consult the Marvair® website at www.marvair.com for the latest product literature. Detailed dimensional data is available upon request. A complete warranty statement can be found in each product's Installation/Operation Manual, on our website or by contacting Marvair at 229-273-3636. As part of the Marvair continuous improvement program, specifications are subject to change without notice.



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