Marvair®
ISO 9001:2015 REGISTERED COMPANY
AIRXCEL™, Inc.

ModPac
PRODUCT DATA SHEET

1 to 5 Ton Vertical Wall Mount Air Conditioners
Models AVPA12-20-24-30-36-42-48-60

General Description

The Marvair ModPac air conditioner is a cost-effective vertical, wall mounted air conditioner with an EER of 9.0 - 9.5 and is designed for a variety of building types and applications. The unit is manufactured in eight sizes from 1 to 5 tons. Electric heat may be field or factory installed. Disconnects are standard on all units including the 460v. models. Accessories include a full range of grilles and thermostats. Cabinet color choices are the standard Marvair beige, White, and Grey. Built-in mounting flanges simplify installation. The sloped top eliminates the need for a rainhood.

➤ **Outside Air for Ventilation or Free Cooling**
A full range of accessories and options allows ModPac air conditioners to be optimized for each application. For classrooms, a complete range of ventilation options are available to meet the fresh air requirements of the ASHRAE 62 standard. To insure proper operation and optimum performance, all outside air ventilation packages are non-removable and factory installed.

➤ **Dehumidification**
The introduction of outside air can cause humidity levels to rise to unacceptable levels. To reduce humidity, ModPac air conditioners can be ordered with electric resistance reheat.

➤ **Safety Listed & Energy Certified**
All ModPac 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 AVPA units meet or exceed the efficiency requirements of ANSI/ASHRAE/IESNA 90.1.2007.

Marvair ModPac air conditioners are commercial units and are not intended for use in residential applications.

ModPac AVPA24

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Features and Benefits

- R410A Refrigerant
- Twin Blowers Ready for Ducting
- Single Stage High Efficiency Scroll Compressor Available
- 1000-Hour Salt Spray, Baked On Polyester Finish
- Low /High Pressure Switches Standard
- Built In Circuit Breakers With Lockable Outside Access Door
- Phase Monitor Is Optional On 3-Phase Units
- Nationwide Network of Service Centers

Standard Features

➤ **Ease of Installation**

- Factory installed internal disconnect.
- Built-in mounting flanges eliminate need for side brackets.
- Sloped top sheds water and minimizes chance of water leaks.
- Designed for installation in a modular builder's facility.
- Single Point Power Entry complies with latest edition of U.L. Standard 1995.

➤ **Attractive and Built for Long Term Operation**

- Choice of colors - Beige (std), White or Grey.
- Decorative coil guard.
- High efficiency compressors provide reliable and quiet operation.

➤ **Ease of Service**

- Service access valves.
- All components accessible for field service.
- Nationwide network of service centers.
- Quiet
- Twin blowers sized to accept full duct system.
- High and low refrigerant switches
- High density, foil backed insulation complies with codes that require a cleanable surface for the indoor air path.

ModPac Model Identification

AVP — Air Source Vertical Package

A — A = R410 Refrigerant

• — Nominal Cooling
12 = 12,000 BTUH
20 = 20,000 BTUH
24 = 24,000 BTUH
30 = 29,000 BTUH
36 = 35,000 BTUH
42 = 42,000 BTUH
48 = 46,500 BTUH
60 = 56,000 BTUH

AC — System Type: Air Conditioner

• — Power Supply
A = 208/230V,1ø,60Hz
C = 208/230V,3ø,60Hz
D = 460V,3ø,60Hz

••• — Electric Heat – kW
000 = No Heat
036 = 3.6 kW
040 = 4 kW
050 = 5 kW
060 = 6 kW
080 = 8 kW
090 = 9 kW
100 = 10 kW
120 = 12 kW
150 = 15 kW

M5 — Configuration
M5 = PC Board & Square Cornered Cabinet

• — Ventilation Code
N = 0-15% fresh air with manual damper, no pressure relief) All Models
B = Motorized two position damper (open & closed) capable of 0 to 450 cfm (up to 40% of rated air flow) of outside air, includes pressure relief) Models AVPA30-60 only
Z = Manual damper, field adjustable with pressure relief
Y = Manual damper, field adjustable, no pressure relief

• — Special Option Code
U = Scroll Compressor
A1 = PC Board
K = Coastal Environmental Package
R = Electric Reheat

• — A5 = Built in compliance with UL 1995, 4th edition

••• — Brand Designation
Unused = Marvair ModPac
EUB = Eubank WalPac

••• — Color Code
100 = Beige (std)
200 = Grey
400 = White

M5 Configuration

The M5 configuration of the Marvair ModPac air conditioner features the following as standard.

➤ **PC Board**

Each ModPac air conditioner has a PC board that controls the operation of the indoor blower and the compressor while providing high refrigerant pressure and low refrigerant protection. User selectable pins and potentiometers permit multi-function control. LED's indicate operational status and fault conditions. A dedicated relay controls the two-position motorized fresh air damper (Ventilation Configuration "B").

➤ **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 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 a user-selected amount of time from a call for cooling before allowing the contactor to energize.

In addition to the PC board, the M5 configuration has high and low refrigerant pressure switches and foil backed insulation lines the indoor air path. A low ambient fan cycle control is available as an option.

Grilles & Thermostats

➤ Grilles

Grilles for the AVPA12

Description	Size	Marvair P/N
Double Deflection, Aluminum Supply Grille	17" x 5" (432mm x 127mm)	80682
Aluminum Return Grille	17" x 10" (432mm x 254mm)	92352
Return Filter Grille	17" x 10" (432mm x 254mm)	80683

Grilles for the AVPA20/24

Double Deflection, Aluminum Supply Grille	20" x 8" (509mm x 203mm)	80674
Aluminum Return Grille	20" x 12" (509mm x 305mm)	80677
Return Filter Grille	20" x 12" (509mm x 305mm)	80671

Grilles for AVPA30/36

Double Deflection, Aluminum Supply Grille	28" x 8" (711mm x 203mm)	80675
Aluminum Return Grille	28" x 14" (711mm x 356mm)	80678
Return Filter Grille	28" x 14" (711mm x 356mm	80672

Grilles for AVPA42/48/60

Double Deflection, Aluminum Supply Grille	30" x 10" (762mm x 254mm)	80676
Aluminum Return Grille	30" x 16" (762mm x 406mm)	80679
Return Filter Grille	30" x 16" (762mm x 406mm)	80673

Note: Return filter grilles should be used when the filter in the ModPac unit is not accessible from the exterior of the building.

➤ Thermostats

Thermostat..... *P/N 50121*
Digital thermostat. 1 stage heat, 1 stage cool. Non-programmable. Fan switch: Auto & On. Manual changeover system switch: Cool-Off-Heat. Low temperature protection. °F or °C selectable.

Thermostat..... *P/N 50123*
Digital thermostat. 1 stage heat, 1 stage cool. 7 day programmable. Fan switch: Auto & On. Auto-changeover. Keypad lockout. Non-volatile program memory. Title 24 compliant - no batteries needed.

Thermostat..... *P/N 50218*
Digital, non-programmable thermostat. One stage cool/One stage heat. Manual or auto changeover. Fan mode: Auto or On. Permanent retention of settings upon power loss. Field adjustable temperature calibration. Max heat and minimum cool set points. Adjustable temperature differential. Remote sensor capable. Keypad lock out. Status LED. °F or °C selectable.

Thermostat..... *P/N 50246*
Non-programmable, single stage heat, single stage cool. Manual changeover. Fan: Auto & On. 60 minute power back-up.

Thermostat..... *P/N 50289*
Programmable 2-stage heat, 2-stage cool. System settings: Heat, Cool, Off, Auto-changeover. Fan Auto & ON. 3-hour override and button lockout to prevent tampering.

Thermostat Guard..... *P/N 50092*
For use with 50121, 50123 thermostats.

Digital humidity controller ..... *P/N 50254*
To be used with units with Hot Gas or Electric reheat. Programmable dehumidistat, humidistat and ventilation control. Time of day can be set for dehumidifier, humidifier or ventilation to run. Auto-changeover for humidification or dehumidification. Permanent memory retention of set points. Humidity sensor can be field calibrated. High & low dehumidification set points. Outdoor temperature and humidity sensor included. ºF or ºC selectable.

Choice of Colors

Marvair Beige is the standard color with white and grey also available.

Outside Air for Ventilation

To meet ASHRAE standard 62, Marvair offers a variety of ventilation packages for every budget and requirement. Note: if an air conditioner with an energy recovery ventilator (ERV) is desired, please see the GreenPac Product Data Sheet. If an air conditioner with an economizer is desired, please see the ComPac Product Data Sheet.

Outside Air Ventilation Schedule

Ventilation Package Designator*	Description	Outside Air Capability	Pressure Relief	Models
B	Motorized, two position damper (open and closed) includes pressure relief. A 24-volt actuated motor controls the damper from an external input such as a time clock, CO2 sensor, energy management system or a manual switch	Up to 450 cfm, but not to exceed 40% of the rated air flow of the air conditioner.	Yes	AVPA30-60
Z	Manual damper, field adjustable	Up to 450 cfm, but not to exceed 40% of the rated air flow of the air conditioner.	Yes	AVPA30-60
Y	Manual damper, field adjustable.	Up to 450 cfm, but not to exceed 40% of the rated air flow of the air conditioner	No	AVPA30-60
N	Manual, fixed position damper	0-15% of rated air flow	No	All Models

*See Model Identification Chart

Dehumidification

➤ **Electric Reheat**
Allows the electric heat to operate simultaneously with cooling. See Dehumidification Application Bulletin for details. Note: The electrical characteristics and requirements of air conditioners with the dehumidification option are different from standard air conditioners. Refer to the appropriate Summary Rating Charts for the electrical characteristics of units with Electric Reheat. Electric Reheat requires a dehumidistat, in addition to a thermostat, for proper operation.

Factory Installed Accessories

- **Phase Monitor**
  Monitors 3Ø power supply and will turn the air conditioner off if power supply is not phased properly. Not required on 1Ø units.

- **Dirty Filter Indicator**
  Measures the pressure across the internal filter and illuminates a LED when the pressure exceeds the specified difference. Not available on the AVPA12.

- **Low ambient cooling** *(field installed)*
  Allows the ModPac unit to operate in the cooling mode down to 20°F (-7°C).

- **Wall mount adapter for the AVPA24**
  To be used when upgrading from the old AVP24 or AVPA24 cabinet with the chamfered corners to the new AVPA24 M5 cabinet. p/n K/03955

Special Application Packages and Coil Coatings

- **Coastal Environmental Package**
  Recommended for units to be installed near an ocean. Includes corrosion resistant fasteners, sealed or partially sealed condenser fan motor, protective coating applied to all exposed internal copper and metal in the condenser section and a protective coating on the condenser coil. See Coastal Environmental Technical Bulletin for more details. Note the AVPA12 does not have a sealed condenser fan motor.

- **Protective Coil Coatings**
  Either the condenser or evaporator coil can be coated; however, coating of the evaporator coil is not common. For harsh conditions, e.g., power plants, paper mills or sites were the unit will be exposed to salt water; the coil should be coated with an impregnated polyurethane coating. The coatings are sprayed on and pass 3,000 hours of B117 salt fog test. Note: Cooling capacity may be reduced by up to 5% on units with coated coils.

Certified Efficiency and Capacity Ratings at ANSI/AHRI Standard 390

Model Number	AVPA12	AVPA20	AVPA24			AVPA30			AVPA36			AVPA42			AVPA48			AVPA60		
	ACA	ACA	ACA	ACC	ACD	ACA	ACC	ACD	ACA	ACC	ACD	ACA	ACC	ACD	ACA	ACC	ACD	ACA	ACC	ACD
Cooling BTUH[1]	10,800	19,600	24,000			29,000			35,000			42,000			46,000			54,500		
EER[2]	9.00	9.00	9.25			9.25			9.25			9.25			9.50			9.25		
Rated Air Flow (CFM[3])	400	735	840			1,000			1,100			1,575			1,725			1,850		

[1]Cooling rated at 95°F (35°C) outdoor and 80°F DB/67° WB (26.5°C DB/19.5°C WB) return air.
[2]EER=Energy Efficiency Ratio [3]CFM=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.

Sensible Total Heat Ratio @ 95°F (35°C) Outside Air Dry Bulb

Model Number	AVPA12	AVPA20	AVPA24			AVPA30			AVPA36			AVPA42			AVPA48			AVPA60		
	ACA	ACA	ACA	ACC	ACD	ACA	ACC	ACD	ACA	ACC	ACD	ACA	ACC	ACD	ACA	ACC	ACD	ACA	ACC	ACD
Total Capacity	10,800	19,600	24,000			29,000			35,000			42,000			46,000			54,500		
Sensible Heat Ratio	0.74	0.76	0.71			0.75			0.69			0.75			0.76			0.72		
Sensible Capacity	7,982	14,837	16,950			21,740			24,155			31,640			34,940			39,000		
Rated Air Flow (CFM[1])	400	735	840			1,000			1,100			1,575			1,725			1,850		

[1]CFM=Cubic Feet per Minute. Sensible heat ratios based upon ANSI/AHRI std. 390 outdoor air conditions of 95°F (35°C) and 80°F DB/67° WB (26.5°C DB/19.5°C WB) return air.

Cooling Performance (BTUH) at Various Outdoor Temperatures

Model Number	Outdoor Temperature								
	75°F / 24°C	80°F / 26.5°C	85°F / 29°C	90°F / 32°C	95°F / 35°C	100°F / 38°C	105°F / 40.5°C	110°F / 43.3°C	115°F / 46°C
AVPA12AC	12,530	12,100	11,660	11,230	10,800	10,370	9,940	9,500	9,290
AVPA20AC	22,740	21,950	21,170	20,380	19,600	18,820	18,030	17,250	16,860
AVPA24AC	27,840	26,880	25,920	24,960	24,000	23,040	22,080	21,120	20,640
AVPA30AC	33,640	32,480	31,320	30,160	29,000	27,840	26,680	25,520	24,940
AVPA36AC	40,600	39,200	37,800	36,400	35,000	33,600	32,200	30,800	30,100
AVPA42AC	48,720	47,040	45,360	43,680	42,000	40,320	38,640	36,960	36,120
AVPA48AC	53,360	51,520	49,680	47,840	46,000	44,160	42,320	40,480	39,560
AVPA60AC	63,220	61,040	58,860	56,680	54,500	52,320	50,140	47,960	46,870

Based 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.

CFM[1] vs. External Static Pressure (Wet Coil)

MODEL	0.10	0.20	0.25	0.3	0.4	0.5
AVPA12	500	460	430	400	n/a	n/a
AVPA20	860	810	740	670	n/a	n/a
AVPA24	860	810	740	670	n/a	n/a
AVPA30	1,100	1,000	960	920	810	n/a
AVPA36	1,310	1,220	1,185	1,150	1,060	n/a
AVPA42	n/a	1,650	1,585	1,520	1,450	1,360
AVPA48	n/a	1,900	1,830	1,760	1,700	1,620
AVPA60	n/a	1,900	1,830	1,760	1,700	1,620

[1]CFM=Cubic Feet per Minute. Air flow ratings are at 230 volts. Operation of units at a different voltage will affect air flow.

Electrical Characteristics - Compressor, Fan & Blower Motors

BASIC MODEL	COMPRESSOR				OUTDOOR FAN MOTOR				INDOOR FAN MOTOR			
	Type	VOLTS-HZ-PH	RLA[1]	LRA[2]	VOLTS-HZ-PH	RPM[3]	FLA[4]	HP[5]	VOLTS-HZ-PH	RPM[3]	FLA[4]	HP[5]
AVPA12ACA	ROTARY	208/230-60-1	4.7	25.0	208/230-60-1	1630	0.65	1/6	208/230-60-1	1650	0.85	1/5
AVPA20ACA	RECIPROCATING	208/230-60-1	8.3	43.0	208/230-60-1	1075	1.5	1/5	208/230-60-1	1075	1.5	1/5
AVPA24ACA		208/230-60-1	10.6	54.0	208/230-60-1	1075	1.5	1/5	208/230-60-1	1075	1.5	1/5
AVPA30ACA		208/230-60-1	13.1	74.0	208/230-60-1	1075	1.8	1/4	208/230-60-1	1075	2.5	1/4
AVPA36ACA		208/230-60-1	14.7	84.0	208/230-60-1	1075	1.8	1/4	208/230-60-1	1075	2.5	1/4
AVPA42ACA		208/230-60-1	15.7	84.0	208/230-60-1	825	2.8	1/3	208/230-60-1	1075	3.1	1/2
AVPA48ACA		208/230-60-1	18.6	102.0	208/230-60-1	825	2.8	1/3	208/230-60-1	1075	3.1	1/2
AVPA60ACA		208/230-60-1	23.0	130.0	208/230-60-1	825	2.8	1/3	208/230-60-1	1075	5.2	3/4
AVPA24ACA	SCROLL	208/230-60-1	12.8	64.0	208/230-60-1	1075	1.5	1/5	208/230-60-1	1075	1.5	1/5
AVPA30ACA		208/230-60-1	14.1	77.0	208/230-60-1	1075	1.8	1/4	208/230-60-1	1075	2.5	1/4
AVPA36ACA		208/230-60-1	17.9	112.0	208/230-60-1	1075	1.8	1/4	208/230-60-1	1075	2.5	1/4
AVPA42ACA		208/230-60-1	19.8	109.0	208/230-60-1	825	2.8	1/3	208/230-60-1	1075	3.1	1/2
AVPA48ACA		208/230-60-1	21.8	117.0	208/230-60-1	825	2.8	1/3	208/230-60-1	1075	3.1	1/2
AVPA60ACA		208/230-60-1	26.2	134.0	208/230-60-1	825	2.8	1/3	208/230-60-1	1075	5.2	3/4
AVPA24ACC	SCROLL	208/230-60-3	8.3	61.0	208/230-60-1	1075	1.5	1/5	208/230-60-1	1075	1.5	1/5
AVPA30ACC		208/230-60-3	9.0	71.0	208/230-60-1	1075	1.8	1/4	208/230-60-1	1075	2.5	1/4
AVPA36ACC		208/230-60-3	13.2	88.0	208/230-60-1	1075	1.8	1/4	208/230-60-1	1075	2.5	1/4
AVPA42ACC		208/230-60-3	13.6	83.1	208/230-60-1	825	2.8	1/3	208/230-60-1	1075	3.1	1/2
AVPA48ACC		208/230-60-3	13.7	83.1	208/230-60-1	825	2.8	1/3	208/230-60-1	1075	3.1	1/2
AVPA60ACC		208/230-60-3	15.6	111.0	208/230-60-1	825	2.8	1/3	208/230-60-1	1075	5.2	3/4
AVPA24ACD	SCROLL	460-60-3	5.1	28.0	208/230-60-1	1075	1.5	1/5	208/230-60-1	1075	1.5	1/5
AVPA30ACD		460-60-3	5.6	38.0	208/230-60-1	1075	1.8	1/4	208/230-60-1	1075	2.5	1/4
AVPA36ACD		460-60-3	6.0	44.0	208/230-60-1	1075	1.8	1/4	208/230-60-1	1075	2.5	1/4
AVPA42ACD		460-60-3	6.1	41.0	208/230-60-1	825	2.8	1/3	208/230-60-1	1075	3.1	1/2
AVPA48ACD		460-60-3	6.2	41.0	208/230-60-1	825	2.8	1/3	208/230-60-1	1075	3.1	1/2
AVPA60ACD		460-60-3	7.7	52.0	208/230-60-1	825	2.8	1/3	208/230-60-1	1075	5.2	3/4

[1]RLA = Rated Load Amps [2]LRA = Locked Rotor Amps [3]RPM = Revolutions per Minute [4]FLA = Full Load Amps [5]HP = Horsepower
The 460 volt units have a step down transformer for the 230 volt motors.

Summary Electrical Ratings (Wire and Circuit Breaker Sizing)
AVPA Air Conditioners with Ventilation Configurations:

Manual Damper, up to 15% Outside Air ("N")
Motorized Damper, up to 450 CFM of Outside Air with Pressure Relief ("B")
Manual Damper, up to 450 CFM of Outside Air ("Y")
Manual Damper, up to 450 CFM of Outside Air with Pressure Relief ("Z")

ELECTRIC HEAT		000 = None		036 = 3.6 kw		040 = 4 kw		050 = 5 kw		060 = 6 kw		080 = 8 kw		090 = 9 kw		100 = 10 kw		120 = 12 kw		150 = 15 kw	
BASIC MODEL	VOLTAGE PHASE / HZ	SPPE[3]		SPPE[3]		SPPE[3]		SPPE[3]		SPPE[3]		SPPE[3]		SPPE[3]		SPPE[3]		SPPE[3]		SPPE[3]	
		MCA[1]	MFS[2]	MCA[1]	MFS[2]	MCA[1]	MFS[2]	MCA[1]	MFS[2]	MCA[1]	MFS[2]	MCA[1]	MFS[2]	MCA[1]	MFS[2]	MCA[1]	MFS[2]	MCA[1]	MFS[2]	MCA[1]	MFS[2]
AVPA12ACA	208/230-1-60	7.4	15	19.7	20			26.9	30												
AVPA20ACA	208/230-1-60	13.4	20			22.4	25	27.5	30	32.8	35	43.1	45			53.6	60				
AVPA24ACA	208/230-1-60	19.0	30			22.4	30	27.5	30	32.8	35	43.1	45			53.6	60				
AVPA30ACA	208/230-1-60	21.9	35			23.4	35	28.5	35	33.8	35	44.1	45			54.6	60	65.0	70	80.6	90
AVPA36ACA	208/230-1-60	26.7	40			26.7	40	28.5	40	33.8	40	44.1	45			54.6	60	65.0	70	80.6	90
AVPA42ACA	208/230-1-60	30.7	50					30.7	50							55.1	60	65.5	70	81.1	90
AVPA48ACA	208/230-1-60	33.2	50					33.2	50							55.1	60	65.5	70	81.1	90
AVPA60ACA	208/230-1-60	40.8	60					40.8	60							57.3	60	67.6	70	83.2	90
AVPA24ACC	208/230-3-60	13.4	20							19.5	20			28.6	30			37.6	40		
AVPA30ACC	208/230-3-60	15.6	20							20.5	20			29.6	30			38.6	40	47.6	50
AVPA36ACC	208/230-3-60	20.8	30							20.8	30			29.6	30			38.6	40	47.6	50
AVPA42ACC	208/230-3-60	22.9	35							22.9	35			30.1	35			39.1	40	48.1	50
AVPA48ACC	208/230-3-60	23.0	35							23.0	35			30.1	35			39.1	40	48.1	50
AVPA60ACC	208/230-3-60	27.5	40							27.5	40			32.2	40			41.3	50	50.2	60
AVPA24ACD	460-3-60	7.9	15							9.8	15			14.3	15			18.8	20	23.3	25
AVPA30ACD	460-3-60	9.2	15							10.3	15			14.8	15			19.3	20	23.8	25
AVPA36ACD	460-3-60	9.7	15							10.3	15			14.8	15			19.3	20	23.8	25
AVPA42ACD	460-3-60	10.6	15							10.9	15			15.1	20			19.6	20	24.1	25
AVPA48ACD	460-3-60	10.7	15							10.9	15			15.1	20			19.6	20	24.1	25
AVPA60ACD	460-3-60	13.6	20							13.6	20			16.1	20			20.6	25	25.1	30

[1]MCA = Minimum Circuit Ampacity (Wiring Size Amps) [2]MFS = Maximum Fuse Size [3]SPPE = Single Point Power Entry
MCA & MFS are calculated at 230 volts on the ACA & ACC models. The 460 volts ACD models are calculated at 460 volts. 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.

Summary Electrical Ratings (Wire and Circuit Breaker Sizing)
AVPA Air Conditioners with Electric Reheat ("R") and Ventilation Configurations:

Manual Damper, up to 15% Outside Air ("N")
Motorized Damper, up to 450 CFM of Outside Air with Pressure Relief ("B")
Manual Damper, up to 450 CFM of Outside Air ("Y")
Manual Damper, up to 450 CFM of Outside Air with Pressure Relief ("Z")

ELECTRIC HEAT		036 = 3.6 kw		040 = 4 kw		050 = 5 kw		060 = 6 kw		080 = 8 kw		090 = 9 kw		100 = 10 kw		120 = 12 kw		150 = 15 kw	
BASIC MODEL	VOLTAGE PHASE / HZ	SPPE[3]		SPPE[3]		SPPE[3]		SPPE[3]		SPPE[3]		SPPE[3]		SPPE[3]		SPPE[3]		SPPE[3]	
		MCA[1]	MFS[2]	MCA[1]	MFS[2]	MCA[1]	MFS[2]	MCA[1]	MFS[2]	MCA[1]	MFS[2]	MCA[1]	MFS[2]	MCA[1]	MFS[2]	MCA[1]	MFS[2]	MCA[1]	MFS[2]
AVPA12ACA	208/230-1-60	26.2	30																
AVPA20ACA	208/230-1-60			34.3	35														
AVPA24ACA	208/230-1-60					45.0	45												
AVPA30ACA	208/230-1-60							53.2	60										
AVPA36ACA	208/230-1-60							58.0	60										
AVPA42ACA	208/230-1-60													82.8	90				
AVPA48ACA	208/230-1-60													85.3	90				
AVPA60ACA	208/230-1-60															103.3	110		
AVPA24ACC	208/230-3-60							31.4	35										
AVPA30ACC	208/230-3-60							33.6	35										
AVPA36ACC	208/230-3-60							38.8	40										
AVPA42ACC	208/230-3-60											50.0	50						
AVPA48ACC	208/230-3-60											50.1	60						
AVPA60ACC	208/230-3-60															63.6	70		
AVPA24ACD	460-3-60							16.0	20										
AVPA30ACD	460-3-60							18.2	20										
AVPA36ACD	460-3-60							18.7	20										
AVPA42ACD	460-3-60											24.1	25						
AVPA48ACD	460-3-60											24.2	25						
AVPA60ACD	460-3-60															31.6	35		

[1]MCA = Minimum Circuit Ampacity (Wiring Size Amps) [2]MFS = Maximum Fuse Size [3]SPPE = Single Point Power Entry

MCA & MFS are calculated at 230 volts on the ACA & ACC models. The 460 volts ACD models are calculated at 460 volts. 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 - AVPA Air Conditioners with Ventilation Configurations:

Manual Damper, up to 15% Outside Air ("N")
Motorized Damper, up to 450 CFM of Outside Air with Pressure Relief ("B")
Manual Damper, up to 450 CFM of Outside Air ("Y")
Manual Damper, up to 450 CFM of Outside Air with Pressure Relief ("Z")

BASIC MODEL NUMBER	VOLTAGE PHASE / HZ	CURRENT AMPS		LOAD OF RESISTIVE HEATING-ELEMENTS ONLY (AMPS) *(1) ALL HEATING ELEMENTS ARE ON A SEPARATE CIRCUIT (2) SHADED VALUES (12 & 15 kW) UTILIZE TWO CIRCUITS*									TOTAL MAXIMUM HEATING AMPS *INCLUDES AMPS FROM MOTOR(S) THAT ARE LOCATED ON AN ELECTRICAL CIRCUIT THAT DOES NOT HAVE HEATERS*								
		AC[1]	IBM[2]	3.6 kW	04 kW	05 kW	06 kW	08 kW	09 kW	10 kW	12 kW	15 kW	3.6 Kw	04 Kw	05 Kw	06 Kw	08 Kw	09 Kw	10 Kw	12 Kw	15 Kw
AVPA12ACA	208/230-1-60	6.1	0.85	15.0		20.8							15.9		21.7						
AVPA20ACA	208/230-1-60	11.3	1.5		16.7	20.8	25.0	33.3		41.7				18.2	22.3	26.5	34.8		43.2		
AVPA24ACA	208/230-1-60	15.8	1.5		16.7	20.8	25.0	33.3		41.7				18.2	22.3	26.5	34.8		43.2		
AVPA30ACA	208/230-1-60	18.4	2.5		16.7	20.8	25.0	33.3		41.7	50.0	62.5		19.2	23.3	27.5	35.8		44.2	52.5	65.0
AVPA36ACA	208/230-1-60	22.2	2.5		16.7	20.8	25.0	33.3		41.7	50.0	62.5		19.2	23.3	27.5	35.8		44.2	52.5	65.0
AVPA42ACA	208/230-1-60	25.7	3.1			20.8				41.7	50.0	62.5			23.9				44.8	53.1	65.6
AVPA48ACA	208/230-1-60	27.7	3.1			20.8				41.7	50.0	62.5			23.9				44.8	53.1	65.6
AVPA60ACA	208/230-1-60	34.2	5.2			20.8				41.7	50.0	62.5			26.0				46.9	55.2	67.7
AVPA24ACC	208/230-3-60	11.2	1.5				14.4		21.7		28.9	36.1				15.9		23.2		30.4	37.6
AVPA30ACC	208/230-3-60	13.3	2.5				14.4		21.7		28.9	36.1				16.9		24.2		31.4	38.6
AVPA36ACC	208/230-3-60	17.5	2.5				14.4		21.7		28.9	36.1				16.9		24.2		31.4	38.6
AVPA42ACC	208/230-3-60	19.5	3.1				14.4		21.7		28.9	36.1				17.5		24.8		32.0	39.2
AVPA48ACC	208/230-3-60	19.6	3.1				14.4		21.7		28.9	36.1				17.5		24.8		32.0	39.2
AVPA60ACC	208/230-3-60	23.6	5.2				14.4		21.7		28.9	36.1				19.6		26.9		34.1	41.3
AVPA24ACD	460-3-60	6.6	0.8				7.2		10.8		14.4	18.0				8.0		11.6		15.2	18.8
AVPA30ACD	460-3-60	7.8	1.3				7.2		10.8		14.4	18.0				8.5		12.1		15.7	19.3
AVPA36ACD	460-3-60	8.2	1.3				7.2		10.8		14.4	18.0				8.5		12.1		15.7	19.3
AVPA42ACD	460-3-60	9.1	1.6				7.2		10.8		14.4	18.0				8.8		12.4		16.0	19.6
AVPA48ACD	460-3-60	9.2	1.6				7.2		10.8		14.4	18.0				8.8		12.4		16.0	19.6
AVPA60ACD	460-3-60	11.7	2.6				7.2		10.8		14.4	18.0				9.8		13.4		17.0	20.6

[1]AC = Air conditioner [2]IBM= Indoor Blower Motor

Heating kW is rated at 240 volts on the ACA & ACC models. Derate heater output by 25% for operation at 208 volts.

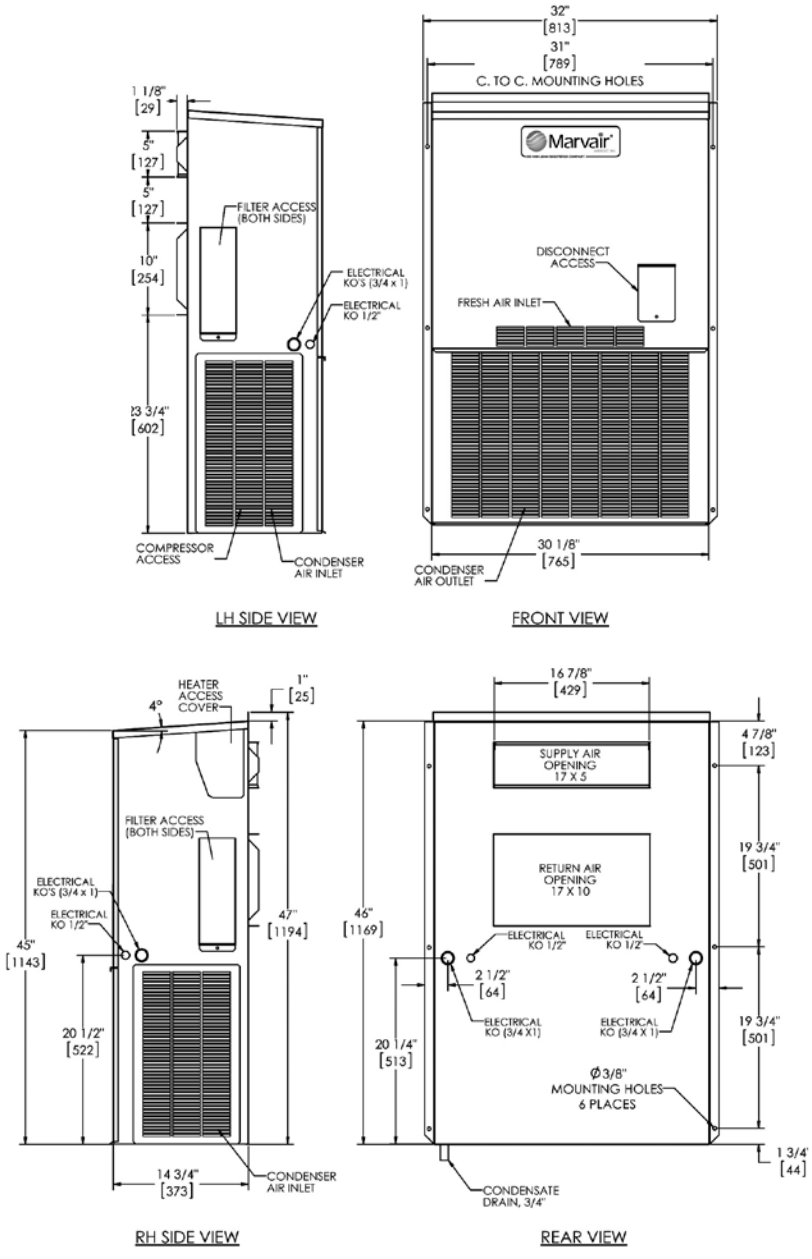
Heating kW is rated at 480 volts on the ACD models. Total heating and cooling amps includes all motors.

Three phase models contain single phase motor loads. Loads are not equally balanced on each phase and values shown are maximum phase loads.

ModPac Model & Cabinet Designation

MODEL	CABINET DESIGNATION			
	A	B	C	D
AVPA12 (M5 Configuration)	✓			
AVPA20 (M5 Configuration)		✓		
AVPA24 (M5 Configuration)		✓		
AVPA30			✓	
AVPA36			✓	
AVPA42				✓
AVPA48				✓
AVPA60				✓

Dimensional Data – Cabinet A



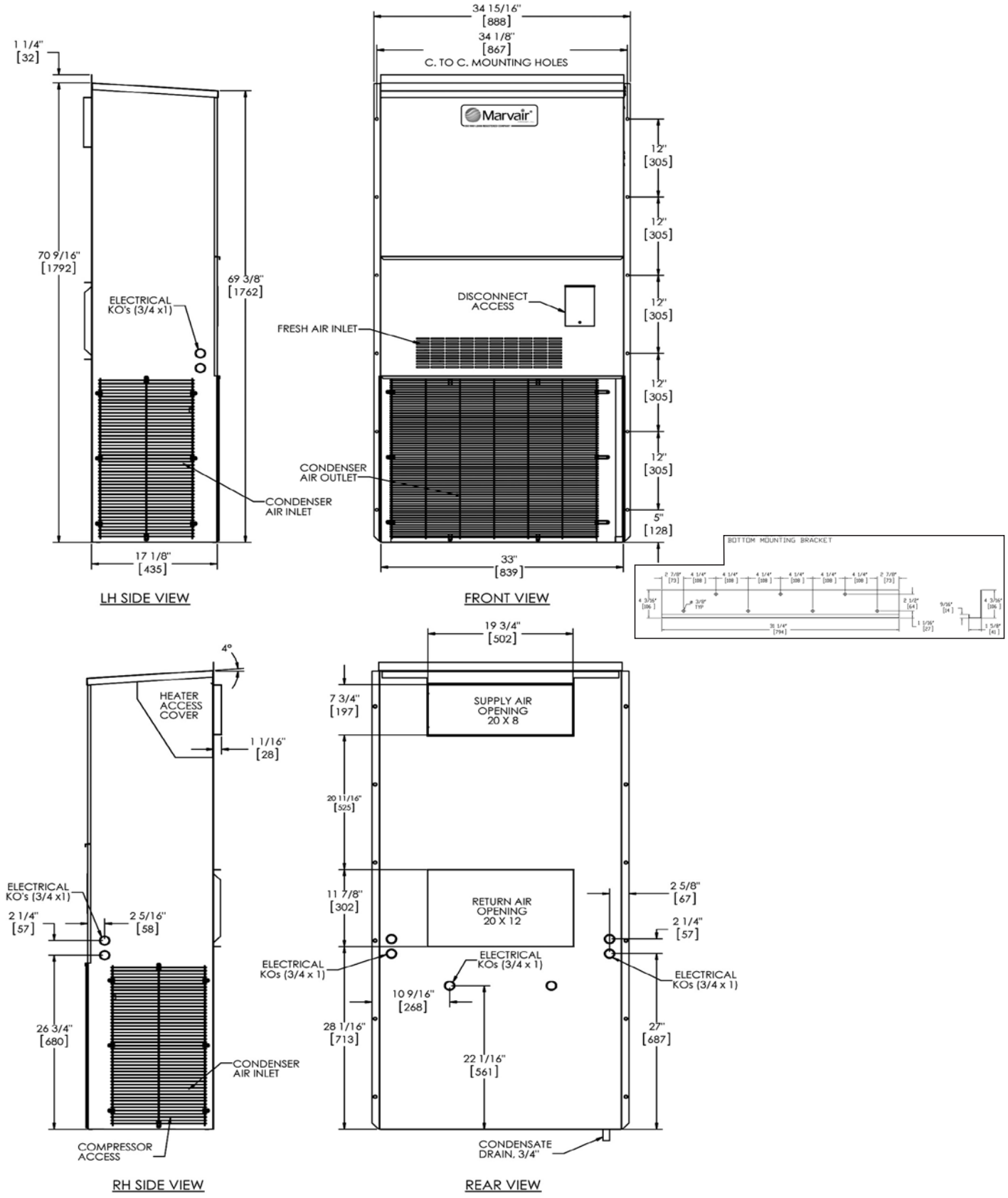
Ship Weight

Lbs	Kg
180	82

Return Air Filter Size

INCHES	MILLIMETERS	PART NUMBER	FILTERS PER UNIT	MERV RATING
20 x 10 x 1	508 x 254x 25	91913	1	7

Dimensional Data – Cabinet B



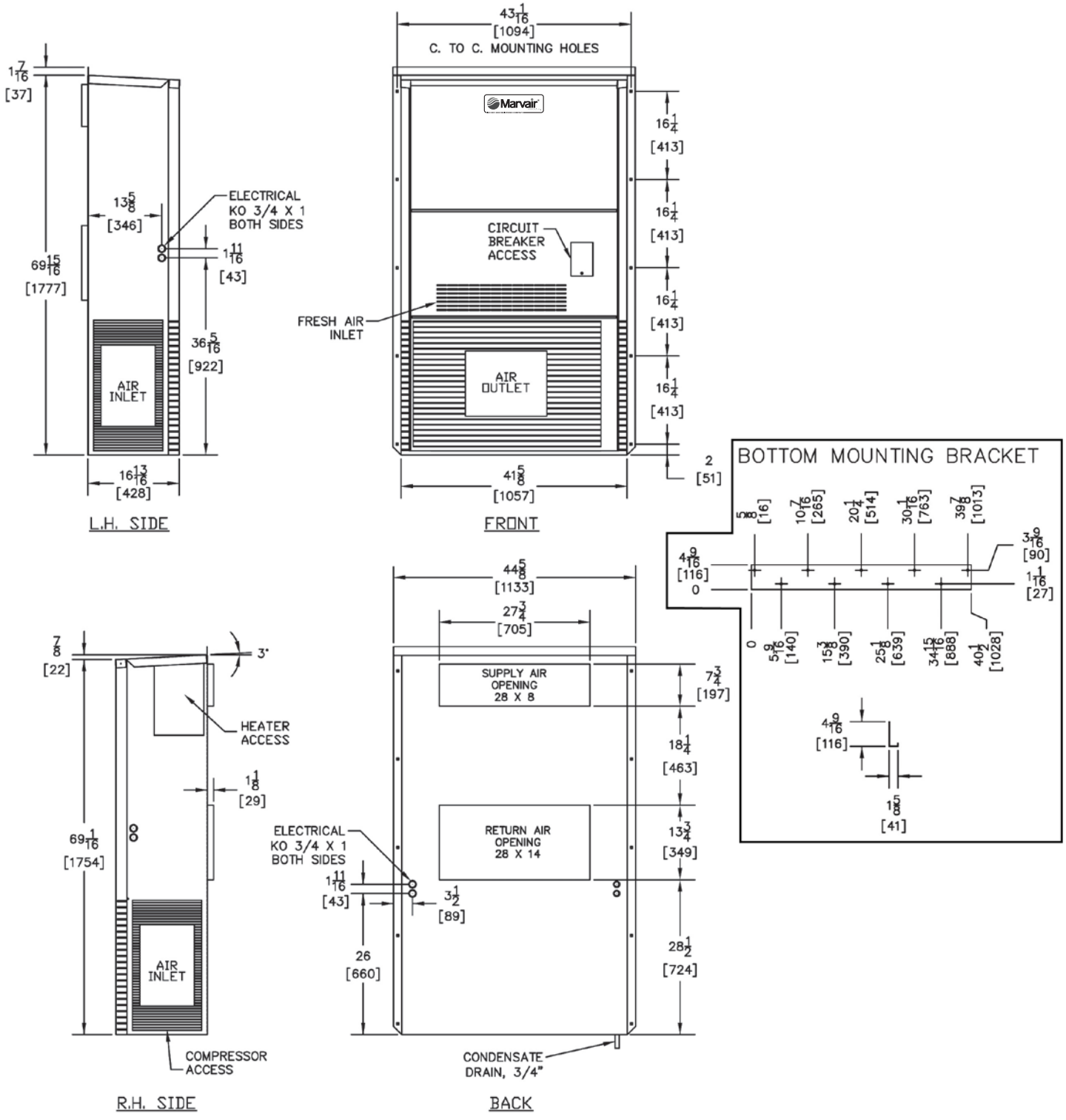
Ship Weight

Lbs	Kg
350	159

Return Air Filter Size

INCHES	MILLIMETERS	PART NUMBER	FILTERS PER UNIT	MERV RATING
25 x 16 x 1	635 x 406 x 25	80135	1	7

Dimensional Data – Cabinet C



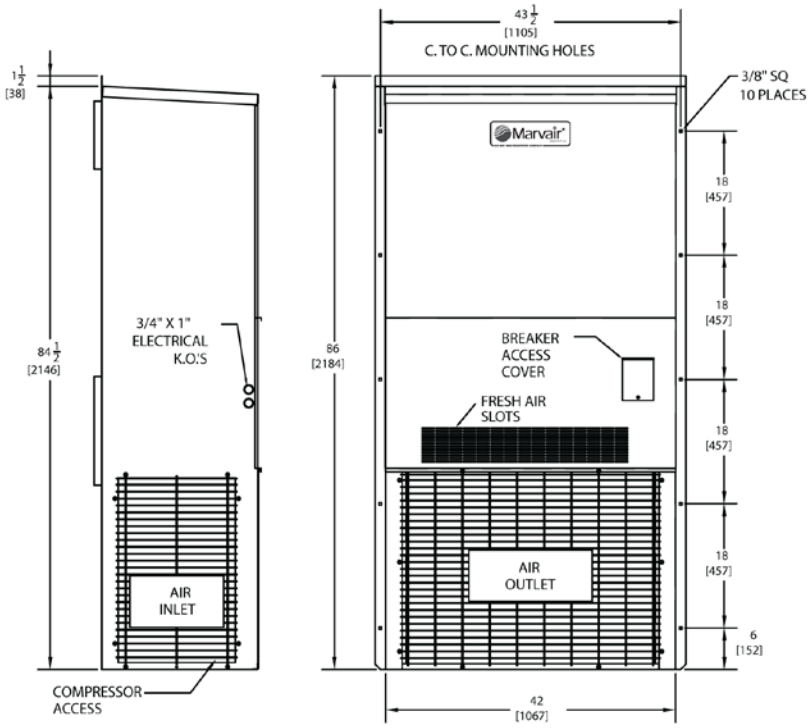
Ship Weight

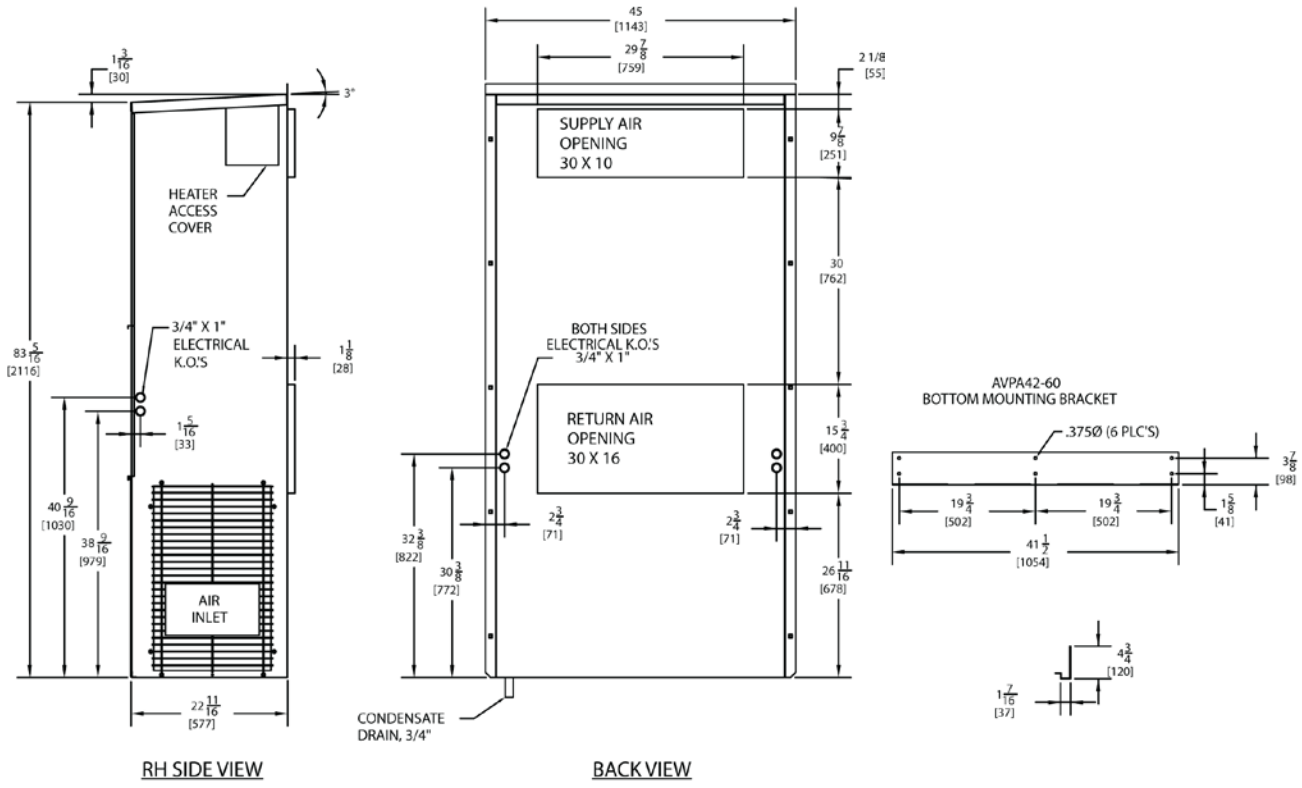
VENTILATION CONFIGURATION	Lbs	Kg
N	420	191
B, Y & Z	435	198

Return Air Filter Size

INCHES	MILLIMETERS	PART NUMBER	FILTERS PER UNIT	MERV RATING
30 x 16 x 1	762 x 406 x 25	80136	1	7

Dimensional Data – Cabinet D





Ship Weight

VENTILATION CONFIGURATION	Lbs	Kg
N	540	246
B, Y & Z	580	264

Return Air Filter Size

INCHES	MILLIMETERS	PART NUMBER	FILTERS PER UNIT	MERV RATING
36½ x 22 x 1	927 x 559 x 25	80139	1	7

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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