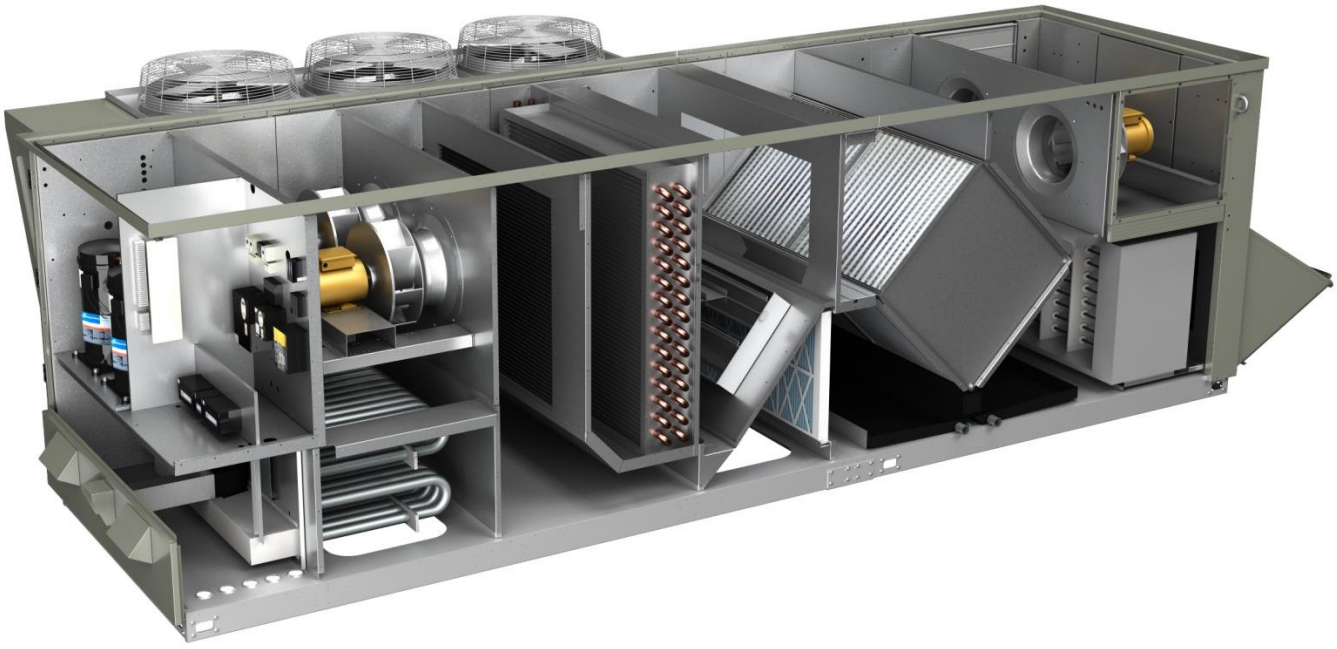
PRODUCT SERIES

valent

AIR MANAGEMENT SYSTEMS



VPR Series
VPRX Series
VPRE Series
VPRP Series
VPRC Series

Valent Air Management Products

Valent® Air Management Systems designs and manufactures reliable, high-outdoor-air ventilators. Our business focuses on responding to the needs of our customers — consulting engineers, contractors, and building owners. With dedicated pre- and post-sale application engineering support, we are here to help you with the design, installation, ongoing operation, and maintenance of our products.

RELIABILITY

When it comes to our products, reliability is key. To deliver on this promise, Valent invests in the following areas:

- Best-in-class components including Digital Scroll™ compressors, modulating direct-drive plenum fans, and 2″ foam-injected, double-wall casing construction
- Factory-provided microprocessor controls and proven sequences of control
- Comprehensive, system-focused, operation run testing prior to shipment

PRODUCT SERIES

VPR / VPRX Series

These comprehensive, packaged rooftops are capable of handling up to 100% outdoor air in heating, cooling, or dehumidification mode. VPRX series includes a powered exhaust fan module to relieve space pressure.

VPRE Series

VPRE packaged rooftops provide air-to-air sensible and latent energy recovery through an integral enthalpy wheel. With onboard heating and cooling, the VPRE is capable of delivering neutral air or responding directly to the needs of the space.

VPRP Series

Sensible energy recovery is accomplished using an air-to-air, flat-plate heat exchanger. This platform also provides cooling and heating for total ventilation capability. The all-aluminum heat exchanger has extremely low leakage between airstreams and is well-suited toward process applications.

VPRC Series

Sensible and latent energy recovery is achieved through an air-to-air flat-plate heat exchanger paired with heating and cooling. Elimination of moving parts in the heat exchanger reduces maintenance requirements compared to a traditional enthalpy wheel.

COOLING & REFRIGERATION

Packaged Air-Cooled Direct Expansion

Each fully-functional, factory tested R-410A refrigeration system includes Digital Scroll compressors for capacity modulation and an air-cooled condensing section. Capable of up to 100% outdoor air, the air-cooled DX system can be selected at airflows as low as 130 cfm/ton. Available options include:

- Modulating hot gas reheat
- Active head-pressure control
- Compressor isolation valves
- Sightglasses

Packaged Air Source Heat Pump

ASHP units utilize a packaged air-cooled direct expansion platform but include reversing valve(s) for heating as low as 17°F ambient. An integral defrost sequence removes frost from the outdoor coil as needed.

Packaged Water Source Heat Pump

WSHP units include an R-410A refrigeration system with a coaxial water-to-refrigerant coil for condensing in cooling mode and evaporation in heating mode. These units can heat, cool, and dehumidify up to 100% outdoor air as cold as -5°F and are suitable for both boiler-tower and geothermal water loops.

Chilled Water

A six- or four-row chilled water coil is used for cooling and dehumidification in place of a standard evaporator coil. Internal piping is routed back to an internal vestibule or piped out the side of the unit.

HEATING

Indirect Gas-Fired Furnace

Fully-modulating indirect gas heat systems provide 4:1 turndown through the 310 casing and 15:1 turndown in the 350 and 450 casings. Standard construction includes 409 SS burner tubes appropriate for 100% outdoor air ventilation.

Temperator

This hybrid heating option pairs 4:1 modulating indirect gas heat in series with a supplemental SCR electric resistance heater. Matched to the compressor electrical loads, the electric heater has no effect on the overall MCA or MOP of the ventilator. Onboard controls operate in one of three heating modes:

- Modulating electric resistance
- Modulating indirect gas furnace
- Full-fire indirect gas furnace + modulating electric resistance

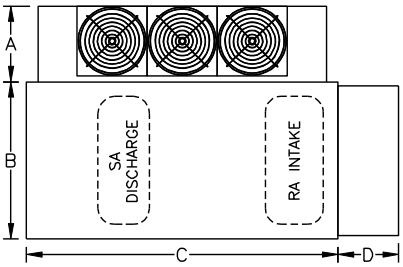
Hot Water Coil

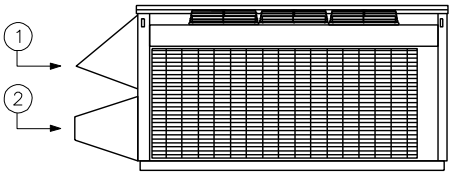
A traditional hot water coil with copper tubing and aluminum fins is mounted in the heating section of the unit. The controller provides 24VAC ~~enable~~ plus 0-10 VDC signal to control the hot water flow. The valve is not supplied with or powered by the unit.

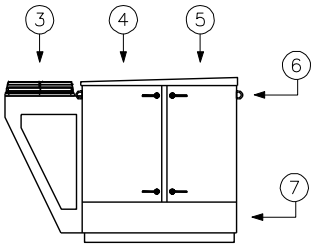
110/210/310 Air-Cooled DX / Air Source Heat Pump

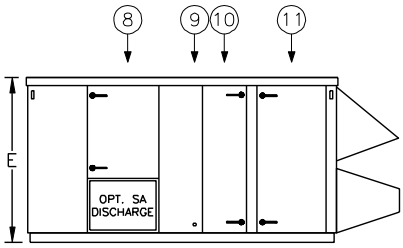
Dimensions

	A	B	C	D	E
110	30.0	49.0	119.0	21.5	57.0
210	30.0	61.0	121.0	23.5	64.0
310	30.0	68.0	131.0	33.5	84.0







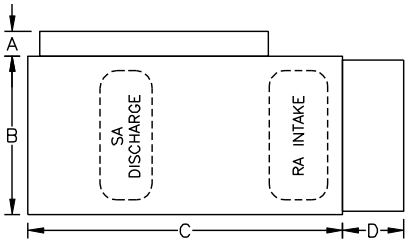


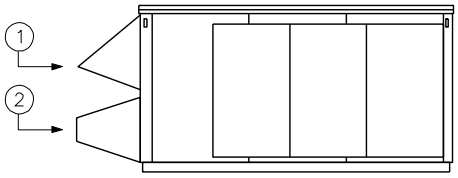
1. Outdoor air intake hood
2. Exhaust fan hood (VPRX only)
3. Air-cooled condensing section
4. Compressor access door
5. Electrical and controls access door
6. Lifting lug (typical quantity 4)
7. Heater access panel
8. Supply fan access door
9. Condensate drain connection (1.125" dia.)
10. Evaporator and reheat coil access door
11. Supply air filter, return air damper, and outdoor air damper access door

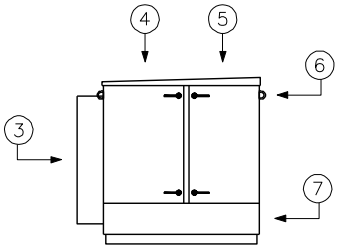
110/210/310 Chilled Water / Water Source Heat Pump

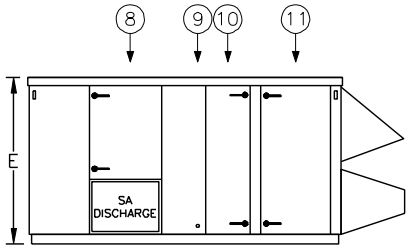
Dimensions

	A	B	C	D	E
110	30.0	49.0	119.0	21.5	57.0
210	30.0	61.0	121.0	23.5	64.0
310	30.0	68.0	131.0	33.5	84.0







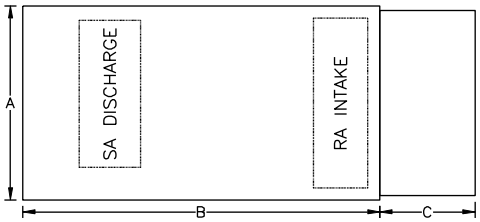


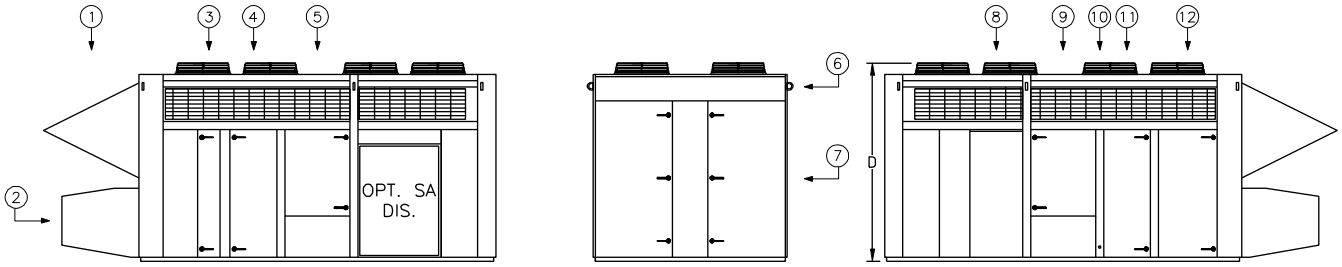
1. Outdoor air intake hood
2. Exhaust fan hood (VPRX only)
3. Refrigeration access panels (WSHP only)
4. Compressor or chilled water connection access door
5. Electrical and controls access door
6. Lifting lug (typical quantity 4)
7. Coaxial heat exchanger access panel (WSHP only)
8. Supply fan access door
9. Condensate drain connection (1.125" dia.)
10. Evaporator and reheat coil access door
11. Supply air filter, return air damper, and outdoor air damper access door

350 Air-Cooled DX

Dimensions

	A	B	C	D
350	96.0	176.0	47.0	99.0



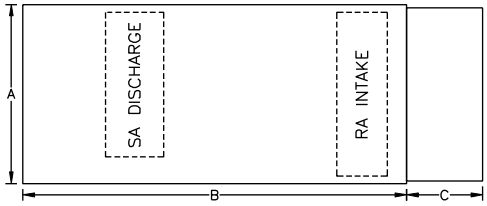


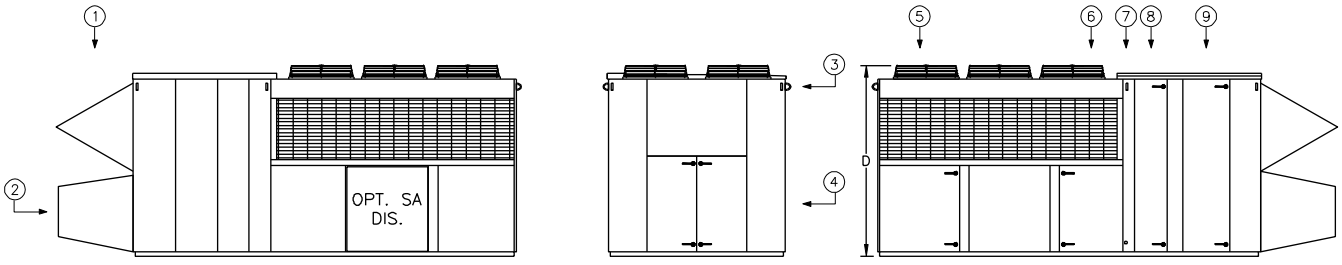
1. Outdoor air intake hood
2. Exhaust fan hood (VPRX only)
3. Supply air filter access door
4. Evaporator coil access door
5. Supply fan access door
6. Lifting lug (typical quantity 6)
7. Compressor and electrical access doors
8. Heater access panel
9. Supply fan access door
10. Condensate drain connection (1.125" dia.)
11. Evaporator coil access door
12. Supply air filter, return air damper, and outdoor air damper access door

450 Air-Cooled DX

Dimensions

	A	B	C	D
450	92.0	199.0	40.0	99.0





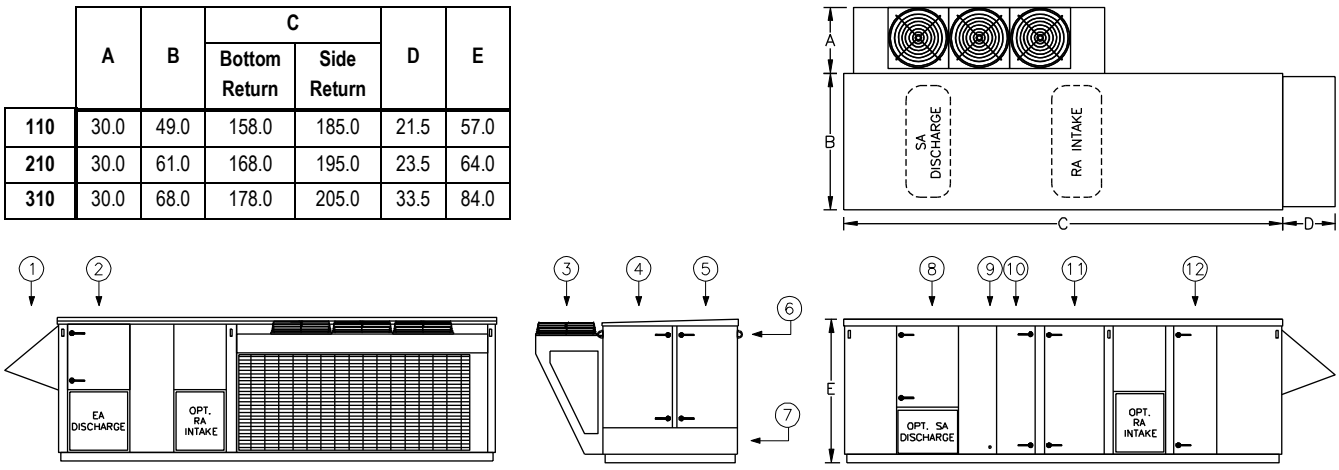
1. Outdoor air intake hood
2. Exhaust fan hood (VPRX only)
3. Lifting lug (typical quantity 6)
4. Compressor access doors
5. Electrical and controls access door
6. Supply fan access door
7. Condensate drain connection (1.625" dia.)
8. Evaporator coil access door
9. Supply air filter, return air damper, and outdoor air damper access door

Refer to inside back cover for cooling capacities and unit weights.

110/210/310 Air-Cooled DX / Air Source Heat Pump

Dimensions

	A	B	C		D	E
			Bottom Return	Side Return		
110	30.0	49.0	158.0	185.0	21.5	57.0
210	30.0	61.0	168.0	195.0	23.5	64.0
310	30.0	68.0	178.0	205.0	33.5	84.0

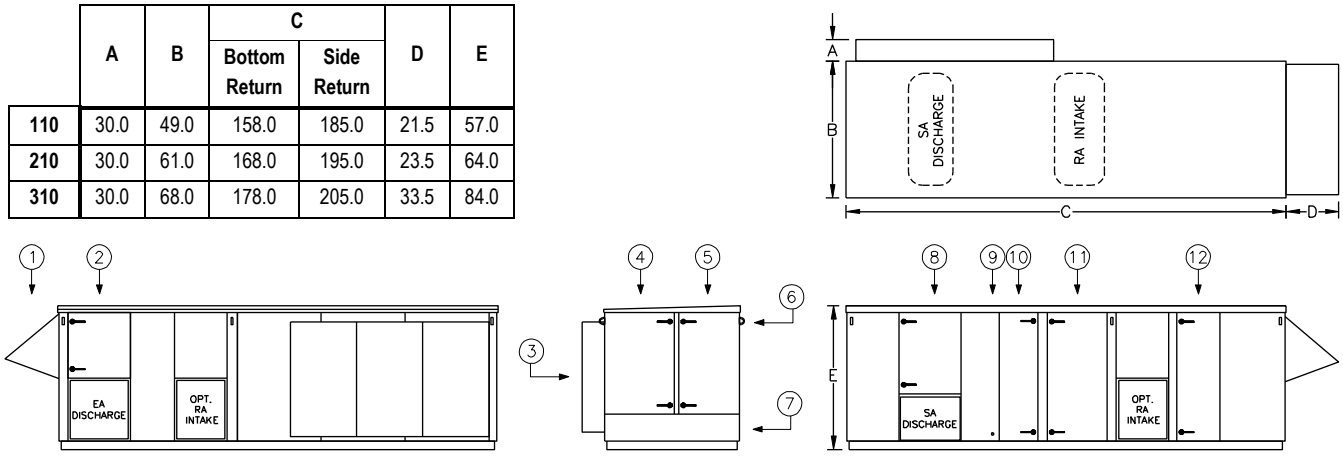


1. Outdoor air intake hood
2. Outdoor air filter and outdoor air damper access door
3. Air-cooled condensing section
4. Compressor access door
5. Electrical and controls access door
6. Lifting lug (typical quantity 6)
7. Heater access panel
8. Supply fan access door
9. Condensate drain connection (1.125" dia.)
10. Evaporator and reheat coil access door
11. Supply air filter and return air damper access door
12. Energy recovery wheel access door

110/210/310 Chilled Water / Water Source Heat Pump

Dimensions

	A	B	C		D	E
			Bottom Return	Side Return		
110	30.0	49.0	158.0	185.0	21.5	57.0
210	30.0	61.0	168.0	195.0	23.5	64.0
310	30.0	68.0	178.0	205.0	33.5	84.0

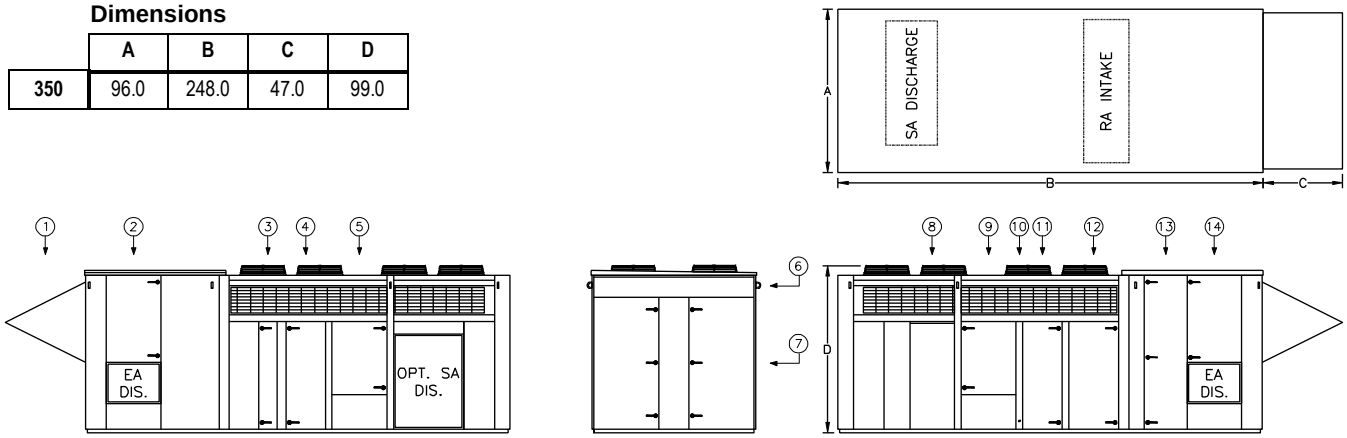


1. Outdoor air intake hood
2. Outdoor air filter and outdoor air damper access door
3. Refrigeration access panels (WSHP only)
4. Compressor or chilled water connection access door
5. Electrical and controls access door
6. Lifting lug (typical quantity 6)
7. Coaxial heat exchanger access panel (WSHP only)
8. Supply fan access door
9. Condensate drain connection (1.125" dia.)
10. Evaporator and reheat coil access door
11. Supply air filter and return air damper access door
12. Energy recovery wheel access door

350 Air-Cooled DX

Dimensions

	A	B	C	D
350	96.0	248.0	47.0	99.0



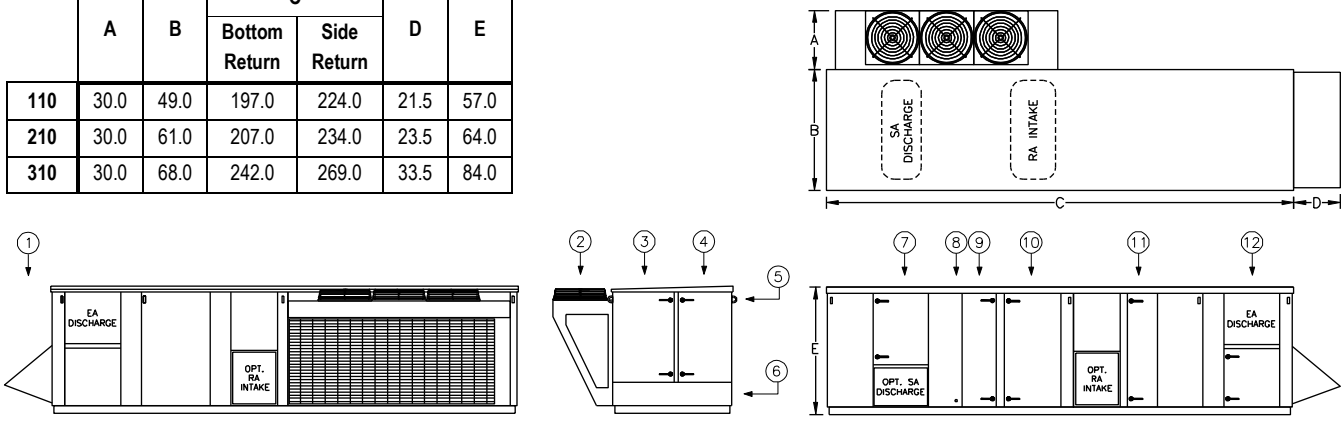
1. Outdoor air intake hood
2. Outdoor air filter and outdoor air damper access door
3. Supply air filter access door
4. Evaporator coil access door
5. Supply fan access door
6. Lifting lug (typical quantity 8)
7. Compressor and electrical access doors
8. Heater access panel
9. Supply fan access door
10. Condensate drain connection (1.125" dia.)
11. Evaporator coil access door
12. Supply air filter and return air damper access door
13. Energy recovery wheel access door
14. Outdoor air filter and outdoor air damper access door

Refer to inside back cover for cooling capacities and unit weights.

110/210/310 Air-Cooled DX / Air Source Heat Pump

Dimensions

	A	B	C		D	E
			Bottom Return	Side Return		
110	30.0	49.0	197.0	224.0	21.5	57.0
210	30.0	61.0	207.0	234.0	23.5	64.0
310	30.0	68.0	242.0	269.0	33.5	84.0

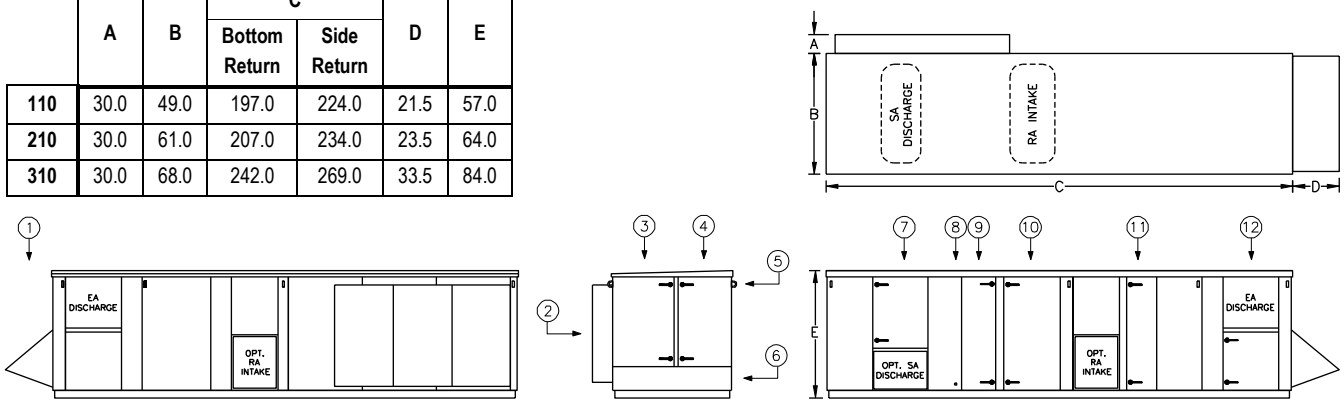


1. Outdoor air intake hood
2. Air-cooled condensing section
3. Compressor access door
4. Electrical and controls access door
5. Lifting lug (typical quantity 8)
6. Heater access panel
7. Supply fan access door
8. Condensate drain connection (1.125" dia.)
9. Evaporator and reheat coil access door
10. Supply air filter and return air damper access door
11. Heat exchanger access door
12. Outdoor air filter and outdoor air damper access door

110/210/310 Chilled Water / Water Source Heat Pump

Dimensions

	A	B	C		D	E
			Bottom Return	Side Return		
110	30.0	49.0	197.0	224.0	21.5	57.0
210	30.0	61.0	207.0	234.0	23.5	64.0
310	30.0	68.0	242.0	269.0	33.5	84.0

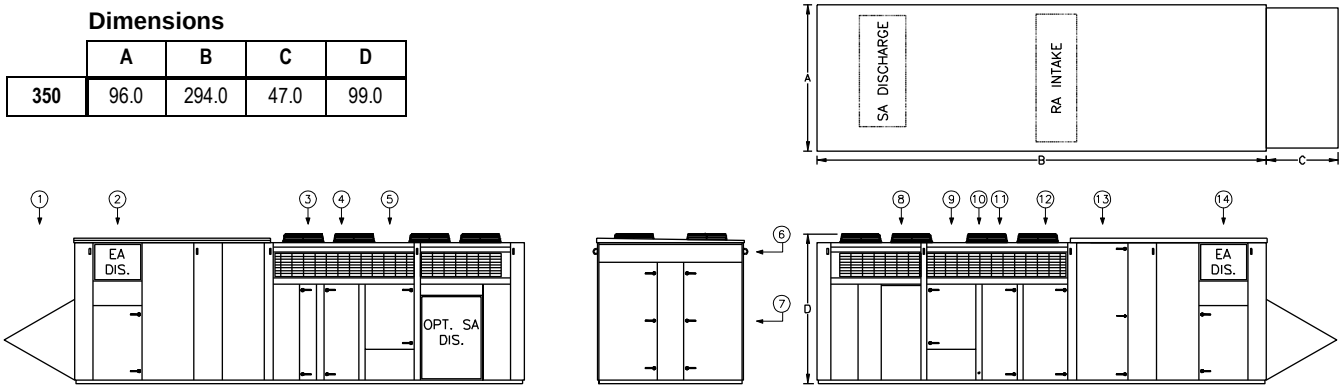


1. Outdoor air intake hood
2. Refrigeration access panels (WSHP only)
3. Compressor or chilled water connection access door
4. Electrical and controls access door
5. Lifting lug (typical quantity 8)
6. Coaxial heat exchanger access panel (WSHP only)
7. Supply fan access door
8. Condensate drain connection (1.125" dia.)
9. Evaporator and reheat coil access door
10. Supply air filter and return air damper access door
11. Heat exchanger access door
12. Outdoor air filter and outdoor air damper access door

350 Air-Cooled DX

Dimensions

	A	B	C	D
350	96.0	294.0	47.0	99.0



1. Outdoor air intake hood
2. Outdoor air filter and outdoor air damper access door
3. Supply air filter access door
4. Evaporator coil access door
5. Supply fan access door
6. Lifting lug (typical quantity 8)
7. Compressors and electrical access doors
8. Heater access panel
9. Supply fan access door
10. Condensate drain connection (1.125" dia.)
11. Evaporator coil access door
12. Supply air filter and return air damper access door
13. Heat exchanger access door
14. Outdoor air filter and outdoor air damper access door

Refer to inside back cover for cooling capacities and unit weights.

Air Cooling Capacities

		Casing				
		110	210	310	350	450
Airflow (cfm)	Minimum	650	1,300	3,250	3,900	6,500
	Maximum	4,000	7,500	12,000	18,000	24,000
Nominal Cooling (tons)		5, 8, 10	10, 13, 16, 18, 20, 25	25, 30, 35, 40	30, 40, 50, 60	50, 60, 70, 80
Configuration	Supply Air	Bottom or Side	Bottom or Side	Bottom or Side	Bottom or Side	Bottom or Side
	Return Air	Bottom or Side ①	Bottom or Side ①	Bottom or Side ①	Bottom or Side ①	Bottom or Side ①
Refrigeration	Circuits	1	2	2	2	2
	Stages Per Circuit	1	1	2	2	2
	Total Stages	1	2	4	4	4
	Digital Scroll	Standard	Standard	Standard	Standard	Standard ②
	Modulating HGRH	Optional	Optional	Optional	Optional	Optional
	Staged Condensing Fans	Standard	Standard	Standard	Standard	Standard
	AHPC 1.0	Optional	Optional	Optional	Optional	Optional
	AHPC 2.0	Optional	Optional	Optional	Optional	N/A
IG Furnace	Minimum (mbh)	100	200	400	600	800
	Maximum (mbh)	200	400	800	1,200	1,100
	Turndown	4:1	4:1	4:1	7.5:1	7.5:1
Electric Heat	Minimum (kW)	10	10	40	50	50
	Maximum (kW)	50	60	150	200	200
	SCR Modulation	Standard	Standard	Standard	Standard	Standard

① Side return air intake is not available on VPRX series.

② Digital Scroll is not available on 450 casing at 70 or 80 tons.

Unit Weights

Weights are shown with options as listed. Actual unit weight may vary +/- 10% based on airflow and options.

110 CASING

	Air-Cooled DX			Air Source Heat Pump			Water Source Heat Pump			Chilled Water	
	5	8	10	5	8	10	5	8	10	S	L
VPR	1,800	1,800	1,900	1,900	1,900	2,000	1,500	1,600	1,700	1,500	1,600
VPRX	2,100	2,100	2,200	2,200	2,200	2,300	1,800	1,900	2,000	1,800	1,900
VPRE	2,500	2,600	2,700	2,600	2,700	2,800	2,200	2,400	2,500	2,200	2,400
VPRP	2,900	3,000	3,100	3,000	3,100	3,200	2,600	2,800	2,900	2,600	2,800
VPRC	2,700	2,800	2,900	2,800	2,900	3,000	2,400	2,600	2,700	2,400	2,600

AC and ASHP units estimated with 200 MBH IG furnace. CW units estimated with HW coil.

210 CASING

	Air-Cooled DX						Air Source Heat Pump					
	10	13	16	18	20	25	10	13	16	18	20	25
VPR	2,600	2,700	2,900	2,900	3,200	3,300	2,700	2,800	3,000	3,000	3,300	3,400
VPRX	3,000	3,100	3,200	3,300	3,700	3,800	3,100	3,200	3,300	3,400	3,800	3,900
VPRE	3,700	3,700	3,900	4,000	4,300	4,500	3,800	3,800	4,000	4,100	4,400	4,600
VPRP	4,000	4,100	4,200	4,300	4,700	4,800	4,100	4,200	4,300	4,400	4,800	4,900
VPRC	3,800	3,900	4,000	4,100	4,500	4,700	3,900	4,000	4,100	4,200	4,600	4,800

AC and ASHP units estimated with 400 MBH IG furnace.

	Water Source Heat Pump						Chilled Water		
	10	13	16	18	20	25	S	M	L
VPR	2,100	2,100	2,200	2,300	2,400	2,400	2,000	2,100	2,200
VPRX	2,500	2,500	2,500	2,700	2,900	2,900	2,400	2,500	2,700
VPRE	3,600	3,500	3,500	3,800	4,000	4,100	3,100	3,200	3,300
VPRP	5,000	4,900	4,800	5,200	5,500	5,600	3,400	3,500	3,700
VPRC	6,200	6,100	5,900	6,400	6,800	7,000	3,200	3,300	3,500

CW units estimated with HW coil.

310 CASING

	Air-Cooled DX				Chilled Water	
	25	30	35	40	S	L
VPR	4,100	4,300	4,500	4,500	3,200	3,300
VPRX	4,600	4,800	5,000	5,100	3,700	3,800
VPRE	5,500	5,700	5,900	5,900	4,600	4,700
VPRP	6,300	6,500	6,700	6,700	5,400	5,500
VPRC	6,000	6,200	6,400	6,400	5,100	5,200

AC units estimated with 800 MBH IG furnace.
CW units estimated with HW coil.

350 CASING

	Air-Cooled DX			
	30	40	50	60
VPR	6,900	7,300	7,600	7,900
VPRX	7,700	8,100	8,400	8,700
VPRE	9,500	9,800	10,200	10,400
VPRP	11,400	11,700	12,100	12,300
VPRC	11,000	11,400	11,700	12,000

AC units estimated with 1200 MBH IG furnace.

450 CASING

	Air-Cooled DX			
	50	60	70	80
VPR	7,300	7,700	8,000	8,100
VPRX	8,200	8,600	8,900	9,000

AC units estimated with 1100 MBH IG furnace.

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