Configurable Packaged Air Handling Equipment

VPR SERIES
VPRX SERIES
VPRE SERIES
VPRP SERIES
VPRC SERIES
VRC SERIES
THE VALENT ADVANTAGE

Quality, reliability, flexibility, and support

Valent® manufactures highly configurable packaged air handling systems. At our core is a commitment to initial quality, long-term reliability, application flexibility, and dedicated product support.

QUALITY

Thorough factory run-testing. After assembly, every unit is energized and rigorously tested for an average time of 90 minutes. Testing verifies proper operation:

- **Refrigeration testing** at multiple conditions to evaluate superheat and subcooling performance
- **Heat testing** throughout heating operating range
- **Electrical testing** of component continuity and phasing
- **Supply and exhaust fan testing** for proper operation

RELIABILITY

Safe, consistent lifetime performance. Reliability is enhanced through:

- **Best-in-class components** including Digital Scroll™ and inverter scroll compressors, modulating direct-drive fans, and 2” foam injected double wall casings
- **Low maintenance requirements** including energy recovery options with no moving parts
- **Dependable controls** platforms

FLEXIBILITY

Five casing sizes and pre-engineered options fit a wide range of applications.

- **Multiple heating and cooling configurations** allow stand-alone operation or connection to a central system
- **Multiple energy recovery options**
- **Multiple duct connection options**

SUPPORT

Dedicated pre- and post-sale application engineering support. We are here to help you with:

- **Design decisions**
- **Installation guidance**
- **Ongoing operation and maintenance issues**

*VPR Series with 352 casing, EC-driven condenser fans, 10:1 turndown gas heat, and modulating hot gas reheat*

*On the cover: VPRC Series with 210 casing, enthalpic core heat exchanger, indirect gas heat, electric preheat, and modulating hot gas reheat*
PRODUCTS

Multiple preconfigured platforms and application-specific solutions

Valent’s highly configurable air handling systems are available in five casing sizes and include multiple cooling, dehumidification, heating, energy recovery, control, filtration, and duct connection options.

AIR HANDLERS

VPR AND VPRX SERIES
The VPR and VPRX are capable of cooling, heating, and dehumidifying a wide range of entering air loads up to 100% outdoor air. In applications requiring powered exhaust, the VPRX offers modulating exhaust fans for pressure relief and economizer control.

ENERGY RECOVERY AIR HANDLERS

Valent’s rotating enthalpy wheels recover up to 70% of return-air energy, and slide out for easy access.

Valent’s flat plate heat exchangers have no moving parts and require minimal maintenance. They both have extremely low airstream cross-contamination rates.

VPRE SERIES
The VPRE expands upon the VPR packaged platform to include an air-to-air enthalpy wheel and powered exhaust fan section. Two enthalpy wheel types are available: A lightweight polymer wheel with silica gel desiccant, and an aluminum wheel with molecular sieve desiccant.

VPRC SERIES
When recovering sensible and latent energy is a priority but the maintenance requirements of an enthalpy wheel are unwanted, the VPRC with its enthalpic core heat exchanger is an excellent alternative. The enthalpic core heat exchanger has a 0.5% exhaust air transfer ratio (EATR) as determined by AHRI 1060, and can safely handle accumulated condensate without sustaining frost damage.

VPRP SERIES
In applications where sensible-only energy recovery is desired, the VPRP delivers with an all-aluminum flat plate heat exchanger that has a low pressure drop and an extremely low cross-contamination rate. Although commonly used in dry climates, the VPRP is also effective in high humidity or polluted spaces where airstream cross-contamination is undesirable.

SPLIT CONDENSER

VRC SERIES
VRC remote condensers can be paired with select Valent air handlers. Compressors remain mounted in the indoor air handler for reliability and piping simplification, eliminating the need for a third refrigeration line on circuits with hot gas reheat.
HEATING, COOLING, DEHUMIDIFICATION OPTIONS

Multiple options for stand-alone operation or connection to a central system

COOLING AND DEHUMIDIFICATION

AIR COOLED DIRECT EXPANSION
- Available in packaged or split configurations
- Fully functional factory tested R-410A refrigeration system
- Two coil sets offered:
  - 6-row for greater dehumidification capacity in 100% outdoor air applications
  - 4-row for improved efficiency in mixed-air applications
- Capacity modulation options:
  - Digital Scroll™ compressor utilizing loading and unloading for modulation
  - Inverter scroll compressor utilizing variable speed modulation resulting in higher part-load performance
- Condensing fan options:
  - Staged AC condenser fans with one VFD-modulated fan for refrigerant pressure control
  - All modulating EC condenser fans with sound reducing blades for improved dehumidification performance, higher efficiency, and lower radiated sound
- Modulating hot gas reheat option recycles compressor exhaust energy to reheat cooled air

CHILLED WATER
- 6- or 4-row coil depth with variable fin spacing to match the application
- Internal piping routed to an internal vestibule or piped out the unit’s side

HEATING

INDIRECT GAS FURNACE
- Standard construction includes 409 stainless steel burner tubes appropriate for 100% outdoor air applications
- Modulation range:
  - 5:1 turndown standard
  - 10:1 turndown option

ELECTRIC
- SCR-modulated electric resistance heater

TEMPERATOR
- Hybrid heating system pairing a 5:1 modulating gas furnace with a small SCR electric heater for total capacity modulation
- On-board controls operate in one of three heating modes:
  - Modulating electric resistance
  - Modulating indirect gas furnace
  - Full-fire indirect gas furnace plus modulating electric resistance

HOT WATER
- Designed for connection to an existing hot water loop

STEAM
- Designed for connection to an existing steam boiler

WATER SOURCE HEAT PUMP

• Coaxial water-to-refrigerant coil (R-410A) condenses in cooling mode and evaporates in heating mode
• Heat, cool, and dehumidify up to 100% outdoor air at start-up temps to −5 °F
• Operates on boiler-tower or geothermal water loops
• Coaxial heat exchanger suitable for low entering geothermal water temperatures

AIR SOURCE HEAT PUMP

• Built on the same platform as Valent’s packaged air cooled DX system
• Heat pump reversing cycle moves heat from outdoor air to supply air
• Provides heating when outdoor temps are as low as 17 °F before switching to auxiliary heat
• Defrost cycles initiate based on low suction temperature and outdoor air dew point, not a timer, reducing the number of defrost cycles

Valent’s water source heat pumps have coaxial water-to-refrigerant coils that are more freeze tolerant than traditional brazed plate heat exchangers.
Components and Options

Pre-engineered components and multiple options provide application flexibility

A POWER/CONTROLS

Power
- 208, 230, 460, or 575 V
- 3-phase
- 60 Hz input
- Single-point power
- Phase and voltage monitoring

Controls

Full controls
- Microprocessor controls all internal components and sequences
- Set point communication via BAS
- Factory control sequences included

Controls Lite
- Microprocessor controls refrigeration components
- Heating and ventilation component control by others
- Ideal for control sequence customization

Options
- GFCI outlet
- Dual-point power
- Breaker disconnect
- Cabinet heater
- Supply fan, exhaust fan, and damper modulation sequences

B FANS

Direct drive plenum fans
- No belts, wheels, or pulleys resulting in reduced maintenance and increased efficiency
- Lightweight wheels with backward curved or airfoil blades
- Up to three fans in parallel to match airflow requirement

C HEATING

Standard VFD
- Simple airflow adjustment
- Soft start improves motor life
- Constant or variable volume flow

Options
- Inlet cone airflow monitoring
- Shaft grounding rings
- Vibration isolation

FILTRATION

Supply air
- 2” MERV 8
- 4” MERV 8, 11, or 14

Outdoor air
- VPR: Bottom or end
- VPRX: Bottom
- ERV: Bottom or side

Exhaust air
- VPR: End with hood
- ERV: One or both sides with backdraft damper

F GFT (Return air)
- VPR: Bottom or end
- VPRX: Bottom
- ERV: Bottom or side

D COOLING

- Packaged DX
- Split DX
- Air source heat pump
- Water source heat pump
- Chilled water

Options
- Hot gas reheat coil
- ElectroFin coil coating
- Stainless steel casing
- Compressor isolation valves
- Sight glasses

E DUCT CONNECTIONS

Supply air
- Bottom or side

Return air
- VPR: Bottom or end
- VPRX: Bottom
- ERV: Bottom or side

Outdoor air
- End, with hood or duct flange

Exhaust air
- VPR: End with hood
- ERV: One or both sides with backdraft damper

Design
- Exhaust and outdoor air filtration
- Wheel cassettes slide out for cleaning
- Access panels above and drain pans under heat exchangers for cleaning

Options
- Electric preheater
- VFD for enthalpy wheel speed modulation
- Bypass damper for heat exchangers in economizer mode

F ENERGY RECOVERY

Type and media
- Polymer enthalpy wheel with silica gel desiccant
- Aluminum enthalpy wheel with molecular sieve desiccant
- Aluminum sensible flat plate heat exchanger
- Polymer enthalpic core heat exchanger

G Filtration

Supply air
- 2” MERV 8
- 4” MERV 8, 11, or 14

Outdoor air (ERV)
- 2” aluminum or MERV 8

Exhaust air (ERV)
- 2” aluminum or MERV 8

Hood
- 1” aluminum

Options
- Filter pressure switch
- Filter pressure Magnehelic gage

H CONSTRUCTION

Casing
- 2” double wall R-12 foam insulation
- Pre-painted exterior
- Galvanized interior
- Hinged access doors with lockable handles

Dampers
- Low-leakage blades
- Dedicated modulating actuator
- Outdoor air standard on all units

Options
- Stainless steel interior
- Airfoil blades
- Aluminum or stainless steel damper construction
- Outdoor air measurement station
## PRODUCT DATA

<table>
<thead>
<tr>
<th>VPR, VPRX, VPRE, VPRP, VPRC CASING</th>
<th>V10</th>
<th>110</th>
<th>210</th>
<th>310</th>
<th>352</th>
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<td>4-row coil 30, 40, 50</td>
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<td>X</td>
<td>X</td>
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</tbody>
</table>

Refer to Valent CAPS® selection software or the Valent Mechanical IOM for additional detail.

* Modulation range based on Digital Scroll™ compressor(s). Inverter scroll modulation range may differ.

b Available upon request
c LP turndown: 3:1/6:1
### APPROXIMATE WEIGHTS (lbs)

#### 110 CASING

<table>
<thead>
<tr>
<th></th>
<th>Air-cooled DX</th>
<th>Split air-cooled DX</th>
<th>Air source heat pump</th>
<th>Water source heat pump</th>
<th>Chilled water</th>
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<tbody>
<tr>
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<td>8</td>
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<td>VPR</td>
<td>1,800</td>
<td>1,800</td>
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<td>VPRX</td>
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<td>2,200</td>
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<tr>
<td>VPRE</td>
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<td>VPRP</td>
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<tr>
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<td>VRC</td>
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</table>

Air-cooled and air source heat pump units estimated with 200 MBh indirect gas furnace. Chilled water units estimated with hot water coil.

#### 210 CASING

<table>
<thead>
<tr>
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<th>Air-cooled DX</th>
<th>Split air-cooled DX</th>
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<tr>
<td></td>
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<tr>
<td>VPRE</td>
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<tr>
<td>VPRP</td>
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<td>4,100</td>
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<tr>
<td>VPRC</td>
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<td>3,900</td>
</tr>
<tr>
<td>VRC</td>
<td>—</td>
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Air-cooled and air source heat pump units estimated with 400 MBh indirect gas furnace. Chilled water units estimated with hot water coil.

#### 310 CASING

<table>
<thead>
<tr>
<th></th>
<th>Air-cooled DX</th>
<th>Split air-cooled DX</th>
<th>Water source heat pump</th>
<th>Chilled water</th>
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<tr>
<td></td>
<td>25</td>
<td>30</td>
<td>35</td>
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<tr>
<td>VPR</td>
<td>4,100</td>
<td>4,300</td>
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<tr>
<td>VPRX</td>
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<td>4,800</td>
<td>5,000</td>
<td>5,100</td>
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<tr>
<td>VPRE</td>
<td>5,500</td>
<td>5,700</td>
<td>5,900</td>
<td>6,000</td>
</tr>
<tr>
<td>VPRP</td>
<td>6,300</td>
<td>6,500</td>
<td>6,700</td>
<td>6,700</td>
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<tr>
<td>VPRC</td>
<td>6,800</td>
<td>6,200</td>
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<tr>
<td>VRC</td>
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Air-cooled units estimated with 800 MBh indirect gas furnace. Chilled water units estimated with hot water coil.

#### V10 CASING

<table>
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<tr>
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<tr>
<td></td>
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<td>VPR</td>
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Estimated with 150 MBh indirect gas furnace.

#### 352 CASING

<table>
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<th>Air-cooled DX</th>
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<tr>
<td>VPRC</td>
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<td>11,750</td>
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Air-cooled units estimated with 1,200 MBh indirect gas furnace.
VPR SERIES

VALENT’S V10 CASING:
4 TO 7 TONS, SEERs OVER 18, IEERs OVER 20

Valent units now deliver cooling capacities from 4 to 70 nominal tons, with the V10 filling out the Valent product line at 4 to 7 nominal tons, increasing single-sourcing capability.

High efficiencies. Inverter scroll compressors and EC-driven fans deliver SEER ratings over 18 and IEER ratings over 20. Increased part-load efficiency reduces operating costs.

Technologically advanced. Precise cooling and dehumidification control are delivered with the latest compressor technology, an electronic expansion valve, and a modulating EC condenser fan backed by Unison Controls to optimize performance and efficiency.

Quiet. Inverter scrolls significantly reduce sound during compressor unloading. EC condenser fans with owlet blades reduce radiated sound throughout the operational range, allowing install location flexibility.

Unison Controls optimize performance and reduce risk. We understand best how to get the most out of our systems.

V10 AIR–COOLED DX

<table>
<thead>
<tr>
<th>DIMENSIONS (inches)</th>
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<tbody>
<tr>
<td>A</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>V10</td>
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</table>

1 Supply fan access door  
2 Condensate drain connection (1.0" dia.)  
3 Evaporator coil and supply air filter access door  
4 Outdoor air intake hood  
5 Gravity relief damper, if equipped  
6 Compressor, controls, and electrical access door  
7 Lifting lug (typ. quantity 4)  
8 Heater/furnace access panel

Valent VPR-V10
VPR | VPRX SERIES

110–210–310 AIR–COOLED DX | AIR SOURCE HEAT PUMP

PLAN

DIMENSIONS (inches)

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
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<td></td>
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<td>68.0</td>
<td>131.0</td>
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</table>

1 Supply fan access door
2 Evaporator and reheat coil access door
3 Supply air filter, return air damper, and outdoor air damper access door
4 Condensate drain connection (1.0" dia.)
5 Air-cooled condensing section
6 Compressor access door
7 Electrical and controls access door
8 Lifting lug (typ. quantity 4)
9 Heater access panel
10 Outdoor air intake hood
11 Exhaust fan hood (VPRX only)
12 VFD enclosure (inverter scroll only)

110–210–310 CHILLED WATER | WATER SOURCE HEAT PUMP | SPLIT DX

PLAN

DIMENSIONS (inches)

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<td>14.0</td>
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1 Supply fan access door
2 Evaporator and reheat coil access door
3 Supply air filter, return air damper, and outdoor air damper access door
4 Condensate drain connection (1.0" dia.)
5 Refrigeration access panels (water source heat pump or split DX only)
6 Compressor access door
7 Electrical and controls access door
8 Lifting lug (typ. quantity 4)
9 Heater access panel
10 Outdoor air intake hood
11 Exhaust fan hood (VPRX only)

* Not applicable for chilled water
VPR | VPRX SERIES

352 WATER SOURCE HEAT PUMP | CHILLED WATER

**DIMENSIONS (inches)**

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**PLAN**

**FRONT**

1. Coaxial coil access door (WSHP)
   - Heater access panel (CW)
2. Supply fan access door
3. Evaporator and reheat coil access door
4. Supply air filter, return air damper, and outdoor air damper access door
5. Gas connection (gas heat only) 1.0” dia. for 600 MBh, 2.0” dia. for 800-1,200 MBh
6. Condensate drain connection (1.0” dia.)
7. Lifting lug (typ. quantity 6)
8. Compressor access door
9. Electrical and controls access door
10. Outdoor air intake hood
11. Exhaust fan hood (VPRX only)
12. Evaporator and reheat coil access panel

**352 AIR-COOLED DX**

**DIMENSIONS (inches)**

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**PLAN**

**FRONT**

1. Heater access panel
2. Supply fan access door
3. Evaporator and reheat coil access door
4. Supply air filter, return air damper, and outdoor air damper access door
5. Gas connection (gas heat only) 1.0” dia. for 600 MBh, 2.0” dia. for 800-1,200 MBh
6. Condensate drain connection (1.0” dia.)
7. Lifting lug (typ. quantity 6)
8. Compressor access door
9. Electrical and controls access door
10. Outdoor air intake hood
11. Exhaust fan hood (VPRX only)
12. Evaporator and reheat coil access panel
**VPRE SERIES**

**110–210–310 AIR-COOLED DX | AIR SOURCE HEAT PUMP**

**DIMENSIONS (inches)**

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**PLAN**

1. Supply fan access door
2. Evaporator and reheat coil access door
3. Supply air filter and return air damper access door
4. Energy recovery wheel access door
5. Condensate drain connection (1.0” dia.)
6. Air-cooled condensing section
7. Compressor access door
8. Electrical and controls access door
9. Lifting lug (typ. quantity 6)
10. Heater access panel
11. Outdoor air intake hood
12. Exhaust fan access door
13. Outdoor air filter and outdoor air damper access door
14. VFD enclosure (inverter scroll only)

**110–210–310 CHILLED WATER | WATER SOURCE HEAT PUMP | SPLIT DX**

**DIMENSIONS (inches)**

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</table>

* Not applicable for chilled water

**PLAN**

1. Supply fan access door
2. Evaporator and reheat coil access door
3. Supply air filter and return air damper access door
4. Energy recovery wheel access door
5. Condensate drain connection (1.0” dia.)
6. Refrigeration access panels (water source heat pump or split DX only)
7. Compressor access door
8. Electrical and controls access door
9. Lifting lug (typ. quantity 6)
10. Heater access panel
11. Outdoor air intake hood
12. Exhaust fan access door
13. Outdoor air filter and outdoor air damper access door

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### VPRE SERIES

#### 352 WATER SOURCE HEAT PUMP | CHILLED WATER

**PLAN**

1. Coaxial coil access door (WSHP)
2. Heater access panel (CW)
3. Supply fan access door
4. Evaporator and reheat coil access door
5. Supply air filter and return air damper access door
6. Energy recovery wheel access door
7. Outdoor air filter and outdoor air damper access door
8. Gas connection (gas heat only) 1.0” dia. for 600 MBh, 2.0” dia. for 800-1,200 MBh
9. Condensate drain connection (1.0” dia.)
10. Lifting lug (typ. quantity 8)
11. Compressor access door
12. Electrical and controls access door
13. Outdoor air intake hood
14. Exhaust fan access door
15. Evaporator and reheat coil access panel

**DIMENSIONS (inches)**

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#### 352 AIR-COOLED DX

**PLAN**

1. Heater access panel
2. Supply fan access door
3. Evaporator and reheat coil access door
4. Supply air filter and return air damper access door
5. Energy recovery wheel access door
6. Outdoor air filter and outdoor air damper access door
7. Gas connection (gas heat only) 1.0” dia. for 600 MBh, 2.0” dia. for 800-1,200 MBh
8. Condensate drain connection (1.0” dia.)
9. Lifting lug (typ. quantity 8)
10. Compressor access door
11. Electrical and controls access door
12. Outdoor air intake hood
13. Exhaust fan access door
14. Evaporator and reheat coil access panel

**DIMENSIONS (inches)**

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## VPRP | VPRC SERIES

### 110–210–310 AIR–COOLED DX | AIR SOURCE HEAT PUMP

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### FRONT

1. Supply fan access door
2. Evaporator and reheat coil access door
3. Supply air filter and return air damper access door
4. Heat exchanger access door
5. Condensate drain connection (1.0” dia.)
6. Air-cooled condensing section
7. Compressor access door
8. Electrical and controls access door
9. Lifting lug (typ. quantity 8)
10. Heater access panel

### LEFT

11. Outdoor air intake hood
12. Exhaust fan access door
13. Outdoor air filter and outdoor air damper access door
14. VFD enclosure (inverter scroll only)

### BACK

**DIMENSIONS (inches)**

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* Not applicable for chilled water

### 110–210–310 CHILLED WATER | WATER SOURCE HEAT PUMP | SPLIT DX

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* Not applicable for chilled water

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* Not applicable for chilled water
VPRP | VPRC SERIES

352 WATER SOURCE HEAT PUMP | CHILLED WATER

PLAN

DIMENSIONS (inches)

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FRONT

1. Coaxial coil access door (WSHP)  
   Heater access panel (CW)
2. Supply fan access door
3. Evaporator and reheat coil access door
4. Supply air filter and return air damper access door
5. Heat exchanger access door
6. Outdoor air filter and outdoor air damper access
7. Gas connection (gas heat only) 1.0” dia. for 600 MBh, 2.0” dia. for 800-1,200 MBh
8. Condensate drain connection (1.0” dia.)
9. Lifting lug (typ. quantity 10)

LEFT

10. Compressor access door
11. Electrical and controls access door
12. Outdoor air intake hood
13. Exhaust fan access door
14. Evaporator and reheat coil access panel

BACK

HOOD

DIMENSIONS (inches)

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FRONT

1. Heater access panel
2. Supply fan access door
3. Evaporator and reheat coil access door
4. Supply air filter and return air damper access door
5. Heat exchanger access door
6. Outdoor air filter and outdoor air damper access
7. Gas connection (gas heat only) 1.0” dia. for 600 MBh, 2.0” dia. for 800-1,200 MBh
8. Condensate drain connection (1.0” dia.)
9. Lifting lug (typ. quantity 10)

LEFT

10. Compressor access door
11. Electrical and controls access door
12. Outdoor air intake hood
13. Exhaust fan access door
14. Evaporator and reheat coil access panel

BACK

DIMENSIONS (inches)

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|   | Bottom return | Side return |
VRC SERIES: AIR COOLED DX

110

PLAN

FRONT

LEFT

BACK

210

PLAN

FRONT

LEFT

BACK

310

PLAN

FRONT

LEFT

BACK

DIMENSIONS (inches)

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1: Condensing fan
2: Lifting lug (typ. quantity 4)
3: Nonfused disconnect / electrical access

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All VPRE and VPRC Series air handlers are AHRI 1060 Certified as packaged energy recovery ventilators.

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