



# ROOFTOP

## AIR CONDITIONING UNIT

Colossal Series



Cooling Capacity: 142-462kW  
Heating Capacity: 130-440kW




## Features

### General Description

The ZPRC Series with new features is suitable for hotel, office, hospital, school, factory and supermarket applications. The low noise and compact series are completely leak tested, evacuated, dehydrated and charged with refrigerant prior to shipment. The units are rated in accordance with AHRI standards 340/360.

### Products Line-Up

Nominal Ton	40	45	50	60	70	80	85	90	110	130
	•	•	•	•	•	•	•	•	•	•

- \* Nominal ton only for reference;
- Cooling or heating capacity as per specifications.

### Wide Capacity Range

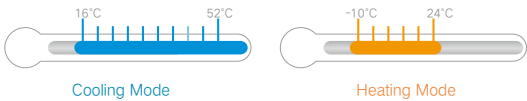
Wide cooling capacity range from 40 to 130 tons. Heat pump and cooling only products are available.



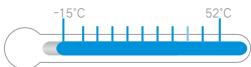
40 - 130 Tons      Cooling Only & Heat Pump

### Wide Operation Range

ZPRC series HP operate from 16° C to 52° C in cooling mode and from -10° C to 24° C in heating mode.



Standard Cooling only model operate from 16° C to 52° C, low ambient kit can be added to make the unit operate from -15° C to 52° C.



### Hermetic Scroll Compressor(s)

#### Reliability

No contact scroll design that minimizes friction, increases volumetric efficiency and reduces vibration, thus longer service life. Compact, light-weight, and fewer moving parts design.

By cycling off compressor operation to match building load, no energy is being wasted when room load requires lesser cooling capacity. No total shut down when servicing or repairing a faulty compressor.



### Environmentally Friendly Refrigerant

ZPRC Series uses the environmentally friendly refrigerant, R410A in each system. Zero ozone depletion potential.



### Casing

Constructed from heavy gauge galvanized steel. Panels are painted with epoxy powder paint for excellent finish, weatherability and corrosion resistance. Evaporator section is insulated with closed cell Polyethylene (PE) foam.

### Safety Control

High-low pressure cutout to protect compressor from high discharge pressure and system leakage.

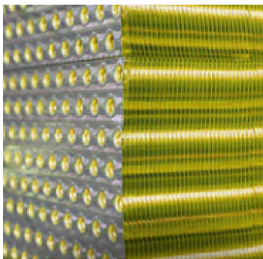
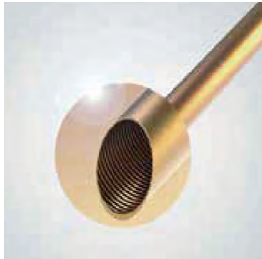
### Standard Electronic Expansion Valve

Standard electronic expansion valve realizes automatic adjustment of refrigerant flow, enables the system to operate under the best working conditions, and achieves the goals of rapid cooling or heating, precise temperature control and energy saving.



### High Efficient Condenser Coil

Staggered row of inner groove tubes with 25 to 30% more surface area guarantee better heat transfer. Mechanically expanded into die-formed corrugated aluminum louver fins with increase the heat exchange surface which is high heat exchange efficiency. Leak and pressure tested to 650 psig.



### Fully Leak Tested Refrigerant Circuit

Compressors, condenser coil, filter drier, thermo-expansion valve, distributor and evaporator coil is brazed in complete sealed loop. Leak and pressure tested at 650 psig. Pressure ports are provided on the discharge and suction line. Evacuated, dehydrated and charge with refrigerant gas prior to shipment.

### Drive Package And Blowers

Belt driven drive package offers flexibility on various air flow rate and various static pressure applications.

Single large diameter double inlet double width blowers (AMCA certified) reduce the noise level and eliminates the need for common transition and eliminates air unbalance.

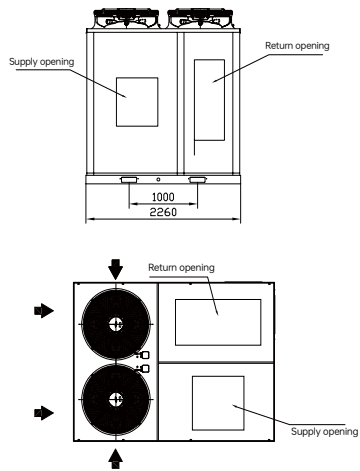


### Long Life & Washable Filter



Multiple Air Supply Directions

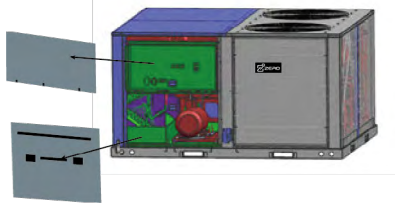
Both horizontal air supply and bottom air supply are available for different application scenarios.



Easy Installation

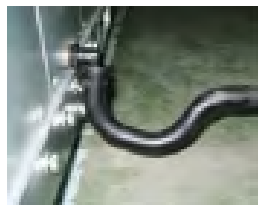
Convenient For Wires Connection

Removable access door on the electric box. It is easy to move the cover of the electric box. Only connect the wires of power supply, and no need to connect any signal wires.



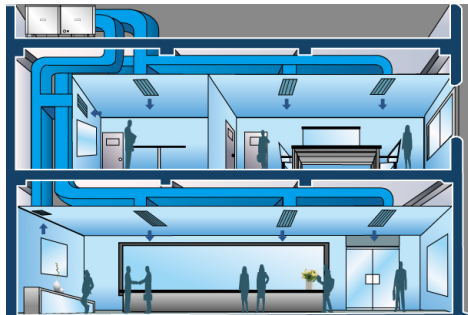
Easily Connect The Drainage Pipe

Reserved external drainage port, quickly and accurately connect the rubber drainage pipe.



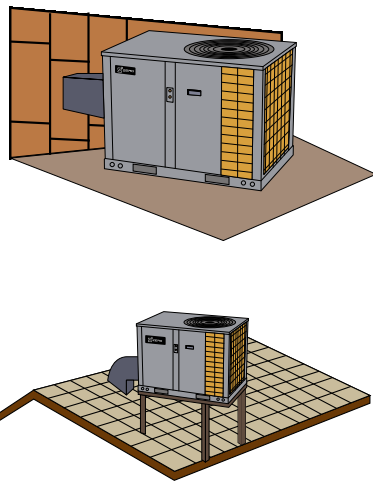
High ESP Design

The external static pressure (ESP) range is from 80Pa~430Pa, which ensures the longer delivery distance for the air and provide the powerful cooling.



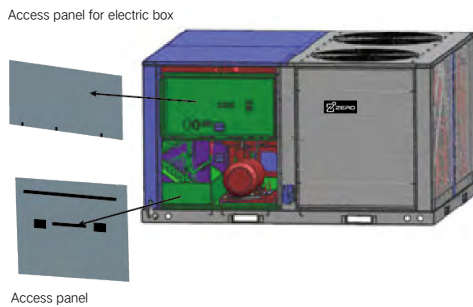
Design Flexibility

Vertical side-discharge structure design.  
Flanges of air flow inlet and outlet as standard.  
It is suitable for installation on rooftop and ground.



Easy Access Doors Design

Removable the access doors on the filter, fan motor, and electricbox sections. Provide convenient access to system components for maintenance and service.



Controllers

Factory mounted thermostat as standard, can be unit mounted or remoted controlled(within 30M as standard , consult ZERO Eng. Team if longer distance is required. Other brand thermostat can be matched as optional solution.

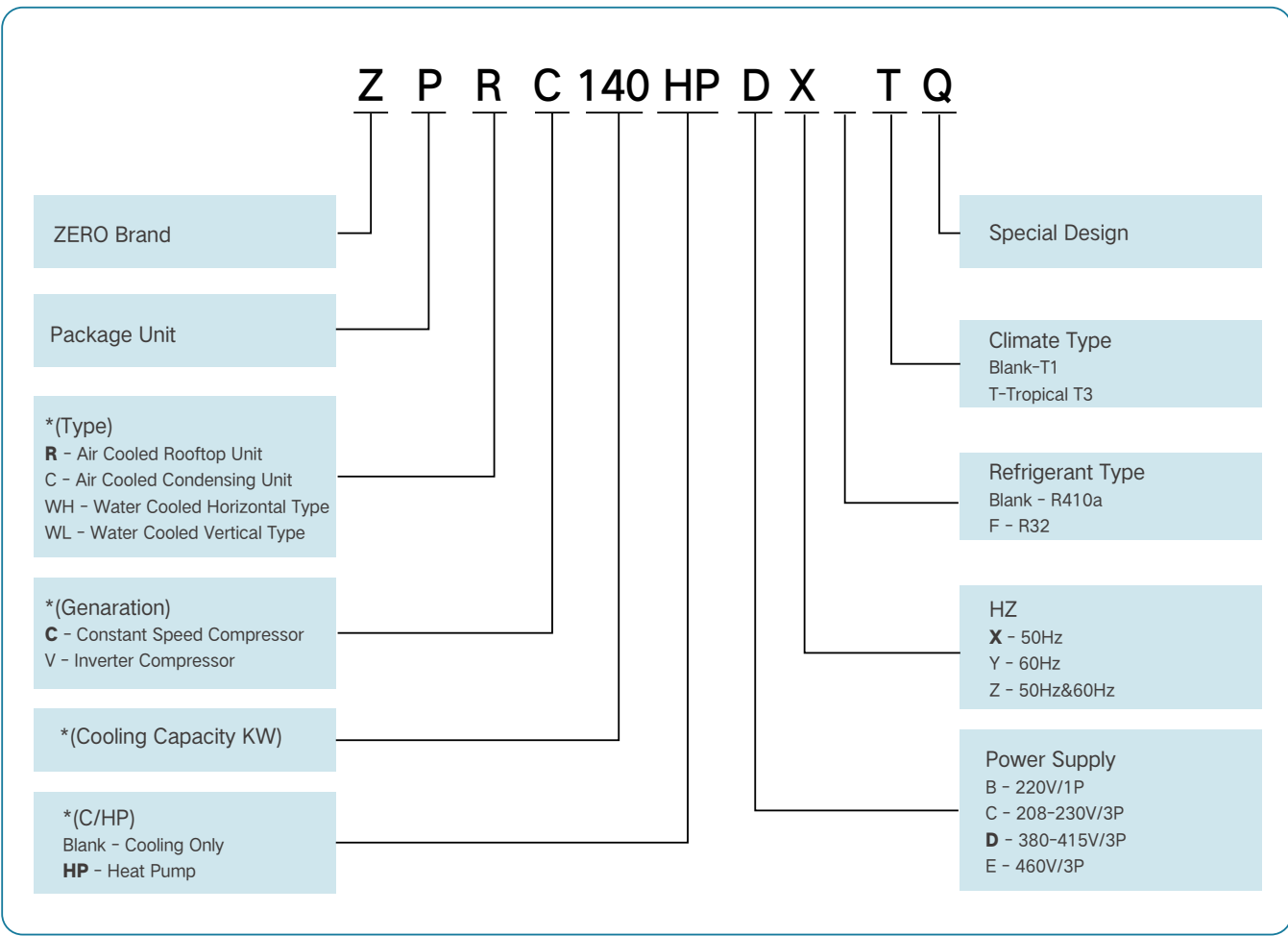
Centralized control function can be achieved through the centralized controller as optional.



Optional Accessories With Varoius Customized Design

- Evaporator & Condenser Coil Corrosion Protection
- Stainless Steel Drain Pan
- Stainless Steel Fasteners
- Hot Water Heating Coil
- Pressure Gauges
- Replaceable Core Filter Drier
- Liquid Line Solenoid Valve (LLSV)
- Dirty Filter Relay & Indicating Light
- Closed Cell Elastomer Insulation
- Double Skin Panel For Evaporator
- C-Channel Structural Steel Base
- Comperssor Soft Starter
- Star-Delta Starter for Evaporator Fan Motor
- VFD for Evaporator Fan Motor
- Main Incoming Isolator with Door Interlock
- Main Power Supply Monitoring Module (Safety)
- Voltmeter and Ammeter with Phase Selector Switch
- Indicating Lights
- Lock Out Stop
- 24VAC Fire Interlock Relay with Transformer (Detector)
- Service Valve
- Hot Gas Bypass
- 24Vac Control Transformer (Step Down)
- Start/Stop Button for Evaporator Blower Fan
- Electric Heater and Starter
- Low Ambient Kit
- Crankcase Heater
- Economizer
- 10% or 30% Fresh Air Intake
- EC Evaporator Blower
- EC Condenser Axial Fan
- BMS Communication
- VFD for Condenser Fan
- CO<sub>2</sub> Sensor
- PLC Controller
- Touch Screen controller

Nomenclature



Nominal ton		(Ton)	40	45	50	60	70
ZERO MODEL			ZPRC140HPDXT	ZPRC160HPDXT	ZPRC180HPDXT	ZPRC210HPDXT	ZPRC240HPDXT
Power Supply		(Ton)	380~415V,3Ph,50Hz	380~415V,3Ph,50Hz	380~415V,3Ph,50Hz	380~415V,3Ph,50Hz	380~415V,3Ph,50Hz
Cooling 1	Cooling Capacity	Btu/h	485000	553000	614000	727000	829000
		kW	142	162	180	213	243
	Power Input	kW	44	54.9	60.5	66.4	82.6
Cooling 2	Cooling Capacity	Btu/h	430000	471000	512000	645000	706000
		kW	126	138	150	189	207
	Power Input	kW	51.4	64.2	70.9	76.9	96.7
Heating	Heating Capacity	Btu/h	444000	539000	580000	665000	787000
		kW	130	158	170	195	230.7
	Power Input	kW	41.8	51.2	56.7	63.1	77.2
Max. input consumption		kW	61.6	76.9	84.7	93	115.6
Max. current		A	120.1	150	165.2	181.4	225.4
Performance	Indoor fan air flow	CFM	15900	15900	23800	23800	23800
	ESP	Pa	400	400	450	450	450
	EER 1	Btu/h/W	11	10.1	10.2	10.9	10
	EER 2	Btu/h/W	8.4	7.3	7.2	8.4	7.3
	COP	Btu/h/W	10.6	10.5	10.2	10.5	10.2
Indoor fan	Type		FC Centrifugal	FC Centrifugal	FC Centrifugal	FC Centrifugal	FC Centrifugal
	Quantity		1	1	1	1	1
	Drive type		Belt	Belt	Belt	Belt	Belt
	Motors quantity		1	1	1	1	1
Compressor	Type		Scroll	Scroll	Scroll	Scroll	Scroll
	Quantity		2	2	2	3	3
Outdoor Fan	Type		Propeller	Propeller	Propeller	Propeller	Propeller
	Quantity		2	2	4	4	4
	Drive type		Direct	Direct	Direct	Direct	Direct
	Motors quantity		2	2	4	4	4
Refrigerant	Type		R410A	R410A	R410A	R410A	R410A
	Refrigerant volume	kg	15.2+15.2	15.2+15.2	21+21	3*14	3*14
	Refrigerant Control		electronic expansion valve	electronic expansion valve	electronic expansion valve	electronic expansion valve	electronic expansion valve
Sound pressure level		dB(A)	78	78	79	79	79
Ambient temperature		Cooling	16° C-52° C	16° C-52° C	16° C-52° C	16° C-52° C	16° C-52° C
		Heating	-10° C-24° C	-10° C-24° C	-10° C-24° C	-10° C-24° C	-10° C-24° C
Net Weight		kg	1290	1320	2180	2310	2370
Gross Weight		kg	1320	1350	2200	2330	2390
Net Dimension	WxHxD	mm	2260x2464x2980	2260x2464x2980	2277x2461x4600	2277x2461x4600	2277x2461x4600
Packing	WxHxD	mm	2280x2484x3000	2280x2484x3000	2297x2281x4640	2297x2281x4640	2297x2281x4640
Shipping	Qty/Per 40'HQ		4	4	2	2	2

Notes:  
1. Cooling capacity test condition (1): Outdoor ambient temperature: 35℃ , indoor temperature 27℃ DB/19℃ WB;  
Cooling capacity test condition (2): Outdoor ambient temperature: 46℃ , indoor temperature: 27° CDB, 19℃ WB;  
Heating capacity test condition : Outdoor ambient temperature: 7 °C DB/6℃ WB, indoor temperature 20℃ DB/ 15° C WB;  
2. Units are suitable for operation to ± 20% of nominal CFM;  
3. Sound values are measured in a semi-anechoic room, at a positon 1 meter in front ofthe unit and (1 meter+Height of unit)/2 above the floor.  
4. Specifications are subject to change without prior notice for product improvement.  
5. \* Nominal ton only for reference.  
6. Cooling or heating capacity as per specifications.

Nominal ton		(Ton)	80	85	90	110	130
ZERO MODEL			ZPRC280HPDXT	ZPRC300HPDXT	ZPRC320HPDXT	ZPRC390HPDXT	ZPRC460HPDXT
Power Supply		(Ton)	380~415V,3Ph,50Hz	380~415V,3Ph,50Hz	380~415V,3Ph,50Hz	380~415V,3Ph,50Hz	380~415V,3Ph,50Hz
Cooling 1	Cooling Capacity	Btu/h	969000	1037000	1105000	1341000	1576000
		kW	284	304	324	393	462
	Power Input	kW	89.6	100.4	111.2	131.4	152
Cooling 2	Cooling Capacity	Btu/h	860000	901000	942000	1136000	1331000
		kW	252	264	276	333	390
	Power Input	kW	103.6	116.8	130	152.8	176
Heating	Heating Capacity	Btu/h	887000	983000	1078000	1290000	1501000
		kW	260	288	316	378	440
	Power Input	kW	85.2	94.6	104	123.3	143
Max. input consumption		kW	125.4	140.6	155.7	184	212.8
Max. current		A	244.5	274.2	303.6	358.8	415
Performance	Indoor fan air flow	CFM	31800	31800	31800	40000	18000
	ESP	Pa	470	470	470	550	550
	EER 1	Btu/h/W	10.8	10.3	9.9	10.2	10.4
	EER 2	Btu/h/W	8.3	7.7	7.2	7.4	7.6
	COP	Btu/h/W	10.4	10.4	10.4	10.5	10.5
Indoor fan	Type		FC Centrifugal	FC Centrifugal	FC Centrifugal	FC Centrifugal	FC Centrifugal
	Quantity		1	1	1	1	1
	Drive type		Belt	Belt	Belt	Belt	Belt
	Motors quantity		2	2	2	2	2
Compressor	Type		Scroll	Scroll	Scroll	Scroll	Scroll
	Quantity		4	4	4	4	4
Outdoor Fan	Type		Propeller	Propeller	Propeller	Propeller	Propeller
	Quantity		4	4	4	4	4
	Drive type		Direct	Direct	Direct	Direct	Direct
	Motors quantity		4	4	4	6	6
Refrigerant	Type		R410A	R410A	R410A	R410A	R410A
	Refrigerant volume	kg	4*15.2	4*15.2	4*15.2	1*30.2+3*14	2*30.4+2*15.2
	Refrigerant Control		electronic expansion valve	electronic expansion valve	electronic expansion valve	electronic expansion valve	electronic expansion valve
Sound pressure level		dB(A)	80	80	80	81	82
Ambient temperature		Cooling	16° C-52° C	16° C-52° C	16° C-52° C	16° C-52° C	16° C-52° C
		Heating	-10° C-24° C	-10° C-24° C	-10° C-24° C	-10° C-24° C	-10° C-24° C
Net Weight		kg	2970	3080	3220	3560	3960
Gross Weight		kg	2990	3100	3240	3580	3980
Net Dimension	WxHxD	mm	2278x24841x5880	2278x24841x5880	2278x24841x5880	2280x2521x7520	2280x2508x8790
Packing	WxHxD	mm	2307x25041x5900	2307x25041x5900	2307x25041x5900	2300x2541x7540	2307x25281x8810
Shipping	Qty/Per 40'HQ		2	2	2	1	1

Notes:  
1. Cooling capacity test condition (1): Outdoor ambient temperature: 35℃ , indoor temperature 27℃ DB/19℃ WB;  
Cooling capacity test condition (2): Outdoor ambient temperature: 46℃ , indoor temperature: 27° CDB, 19℃ WB;  
Heating capacity test condition : Outdoor ambient temperature: 7 °C DB/6℃ WB, indoor temperature 20℃ DB/ 15° C WB;  
2. Units are suitable for operation to ± 20% of nominal CFM;  
3. Sound values are measured in a semi-anechoic room, at a positon 1 meter in front ofthe unit and (1 meter+Height of unit)/2 above the floor.  
4. Specifications are subject to change without prior notice for product improvement.  
5. \* Nominal ton only for reference.  
6. Cooling or heating capacity as per specifications.



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Technical drawings of the ECH 1500/2000 unit, showing front, side, and top views with dimensions and labels.

**Front View (Left):**

- Dimensions: 2351-2468 (height), 2172 (height), 1000 (width), 2260 (width), 2980 (width).
- Labels: "Maintain orifice for air supply motor", "Drain connection hole 15", "Supply air", "Return air".

**Side View (Middle):**

- Dimensions: 2260 (width).
- Label: "Outside service plate".

**Top View (Right):**

- Dimensions: 1400 (width), 550 (width), 2260 (width).
- Labels: "Electronic control maintenance panel", "Signal line hole Ø2", "Power inlet hole Ø45".

**Bottom View (Bottom):**

- Dimensions: 2220 (height), 80 (height), 660 (width), 1000 (width), 1160 (width).
- Labels: "Return opening", "Optional free cooling", "Supply opening", "Hole for bottom installation 8-15x20".

**Main view:**

- Maintain air for air supply motor
- Drain connection hole 15"
- Supply air
- Return air
- Dimensions: 2347~2461 (height), 2171 (height), 4600 (width)

**Side view:**

- Outside service plate
- Dimension: 2277 (width)

**Top view:**

- Electronic control maintenance panel
- Signal line hole φ22
- Power inlet hole φ40
- Return opening
- Optional free cooling
- Hole for bottom installation 8-φ16
- Dimensions: 2210 (height), 1800 (width), 600 (depth), 630 (spacing), 300 (offset), 1300 (offset), 1300 (offset), 1400 (offset)

Technical drawings of the ECH 2500 unit, showing dimensions and labels for various components.

**Front View (Left):**

- Supply opening: 650 (width), 740 (height)
- Drain connection hole 15"
- Return opening: 1400 (height), 550 (width)
- Base dimensions: 1000 (width), 2260 (total width)

**Side View (Middle):**

- Return air inlet: 2351-2468 (height)
- Main air filter: 2172 (height)
- Maintain orifice for air supply motor
- Base dimensions: 1000 (width), 2980 (total width)

**Side View (Right):**

- Outside service plate
- Base dimensions: 2260 (width)

**Top View (Bottom):**

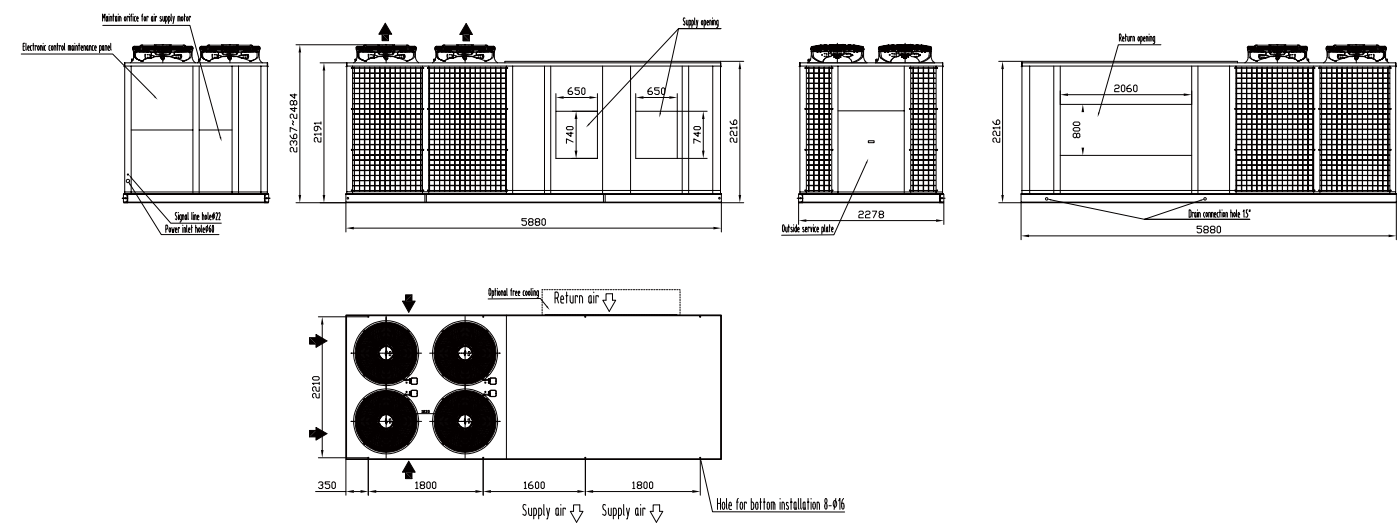
- Optional free cooling
- Return air (indicated by arrow)
- Supply air (indicated by arrow)
- Hole for bottom installation 8-15x20
- Base dimensions: 660 (width), 1000 (width), 1160 (width), 2220 (height), 80 (height)

**Side View (Far Right):**

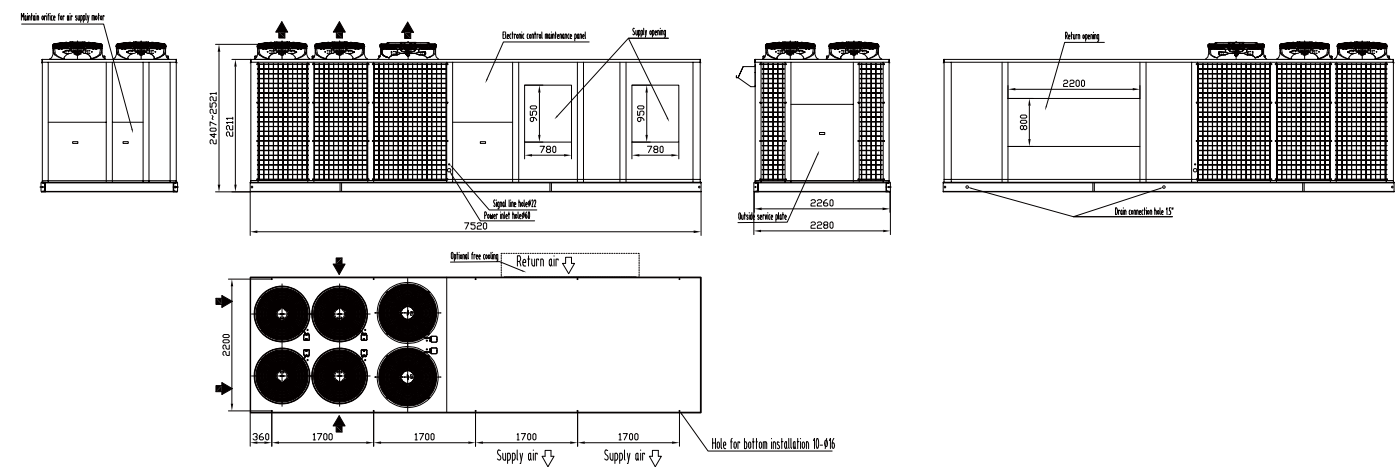
- Electronic control maintenance panel
- Signal line hole 9/2
- Power inlet hole 4/5
- Height: 2197

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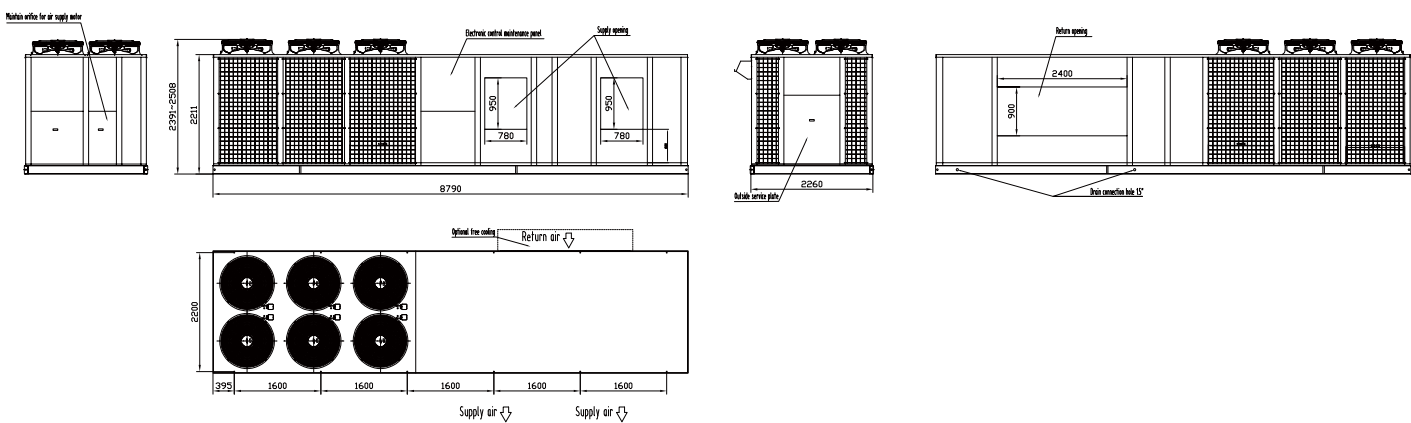
ZPRC280HPDXT, ZPRC300HPDXT, ZPRC320HPDXT



ZPRC390HPDXT



ZPRC460HPDXT



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Manufacturer reserves the right to change specifications without prior notice.