

# E Series Scroll

## Small Parallel Racks



| Working Conditions      | Copeland Scroll Parallel Racks |                 |
|-------------------------|--------------------------------|-----------------|
|                         | Medium Temperature             | Low Temperature |
| Refrigerant             | R404A                          |                 |
| Evaporating Temperature | - 20 ~ +7                      | - 40 ~ -18      |

### Customer Value

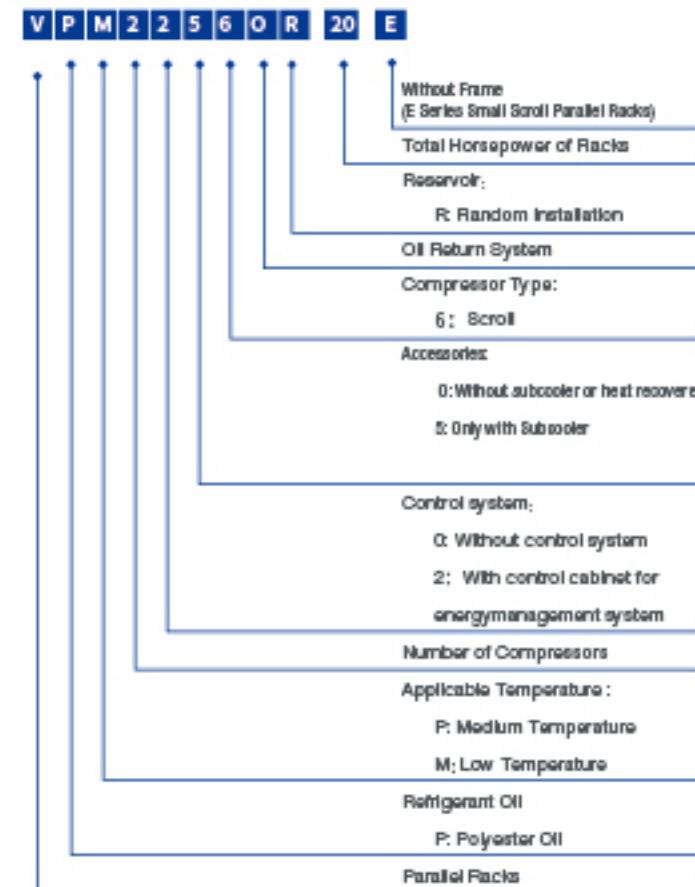
- Small cold storage and small and medium-sized supermarkets suitable for evaporating temperature range -20°C ~ +7°C
- Small cold storage and small and medium-sized supermarkets suitable for evaporating temperature range -40 ° C ~ -18 ° C
- Mute unit, reducing noise by ~ 10dba
- Low temperature unit energy saving by ~ 15%
- Complete standard accessories, with high reliability, constant temperature
- Small footprint
- Easy to operate and unattended control, reducing operator related costs
- Quality assurance of parts and components

### Product Features

- Cooling capacity 34.5kW-74.7kW \* (MT), refrigerant R404A
- Cooling capacity 12.0kW-41.0kW (LT), refrigerant R404A
- The high-efficiency silent Copeland Full-sealed Scroll compressor is designed in parallel, two compressors and three compressors in parallel. Small vibration, the noise of the two-head and three-head scroll units is 8dB-10dB lower than that of the same head scroll unit
- The low temperature unit adopts the design of Enhanced Vapor Injection + subcooler, with the cooling capacity increased by ~ 30%, energy saving and high efficiency.
- The unit capacity adjustment range is the lowest 27%-100%, energy saving and high efficient
- Frameless structure design with compact structure for solid and durable use
- Adopting Emerson Electronic Oil Level Equalizer for ensuring oil return reliable
- Check valve equipped at each exhaust by-pass to avoid blow-by; low vibration for ensuring the reliability of system
- Adjusting the on/off of controller equally and by turns for ensuring the service life
- Full-automatic controlling system for remote surveillance

\*Comparison of compressor units with the same number and head in the range of 1m

### Naming Rule of Scroll Parallel Racks



### E Series MT Small Scroll Parallel Racks Parameters

| Model                   |                          | VPP2206OR-20E                                       | VPP2206OR-26E | VPP2206OR-30E | VPP3206OR-39E | VPP3206OR-45E |      |
|-------------------------|--------------------------|---|---------------|---------------|---------------|---------------|------|
| Refrigerant             |                          | R404A   |               |               |               |               |      |
| Water Cooling Condition | Maximum Cooling Capacity | kW  | 37.7          | 48.4          | 55.0          | 60.8          | 82.5 |
|                         | Maximum Power            | kW  | 14.8          | 19.0          | 22.6          | 28.5          | 33.0 |
|                         | COP                      | W/W   | 2.6           | 2.4           | 2.4           | 2.4           | 2.4  |
|                         | Nominal Running Current  | A   | 28.3          | 35.5          | 45.6          | 53.3          | 68.4 |
| Air Cooling Condition   | Maximum Cooling Capacity | kW  | 34.5          | 42.2          | 46.8          | 63.3          | 74.7 |
|                         | Maximum Power            | kW  | 16.4          | 21.2          | 25.3          | 31.8          | 38.0 |
|                         | COP                      | W/W   | 2.1           | 2.0           | 2.0           | 2.0           | 2.0  |
|                         | Nominal Running Current  | A   | 30.4          | 38.7          | 46.0          | 58.1          | 73.5 |
| Noise @1m               | dB(A)                    | 60.0  | 71.0          | 75.0          | 72.8          | 76.8          |      |
| Maximum Running Current | A                        | 40.8  | 62.0          | 67.0          | 93.0          | 100.5         |      |
| Power Type              |                          | 380V - 3 - - 50Hz                                   |               |               |               |               |      |
| Compressor              | Type                     | Silent, efficient, fully enclosed scroll compressor |               |               |               |               |      |
|                         | Model                    | 2ZB76   | 2ZB95         | 2ZB114        | 3ZB95         | 3ZB114        |      |
|                         | Quantity                 | 2   | 2             | 2             | 3             | 3             |      |
| Minimum Load Percentage | %                        | 50  | 50            | 50            | 33            | 33            |      |
| Reservoir               | Type                     | Horizontal  |               | Horizontal    |               |               |      |
|                         | Volume                   | L   | 72            |               | 100           |               |      |
| Dimensions              | mm                       | 1480x750x1180                                       |               |               | 2050x950x1200 |               |      |
| Weight                  | kg                       | 360   |               |               | 500           |               |      |

Note:  
 Water cooling condition: condensation temperature 40°C, evaporation temperature - 10°C, subcooling 0°C, suction temperature 10°C.  
 Air cooling condition: condensing temperature 45°C, evaporation temperature - 10°C, subcooling 0°C, suction temperature 10°C.

## E Series LT Small Scroll Parallel Racks Parameters

| Model                   |                          |      | VPM2258OR-12E                                      | VPM2258OR-15E           | VPM2258OR-20E           | VPM2258OR-25E           | VPM2258OR-30E                                     | VPM2258OR-35E                      | VPM2258OR-40E           | VPM2258OR-45E           |
|-------------------------|--------------------------|------|--|-------------------------|-------------------------|-------------------------|---|------------------------------------|-------------------------|-------------------------|
| Refrigerant             |                          |      | R404A  |                         |                         |                         |   |                                    |                         |                         |
| Water Cooling Condition | Maximum Cooling Capacity | kW   | 12.2   | 15.3                    | 20.4                    | 26.1                    | 30.6  | 34.5                               | 38.3                    | 42.2                    |
|                         | Maximum Power            | kW   | 8.0  | 9.4                     | 12.8                    | 16.1                    | 19.1  | 21.8                               | 24.5                    | 27.2                    |
|                         | COP                      | W/W  | 1.52   | 1.63                    | 1.60                    | 1.55                    | 1.60  | 1.58                               | 1.58                    | 1.55                    |
|                         | Nominal Running Current  | A    | 14.7   | 16.9                    | 22.2                    | 33.6                    | 40.9  | 44.0                               | 47.2                    | 50.5                    |
| Air Cooling Condition   | Maximum Cooling Capacity | kW   | 12.0   | 15.0                    | 19.8                    | 27.3                    | 29.7  | 33.5                               | 37.2                    | 41.0                    |
|                         | Maximum Power            | kW   | 8.8  | 10.2                    | 14.0                    | 19.8                    | 21.0  | 23.9                               | 26.8                    | 29.7                    |
|                         | COP                      | W/W  | 1.36   | 1.47                    | 1.42                    | 1.38                    | 1.42  | 1.40                               | 1.39                    | 1.36                    |
|                         | Nominal Running Current  | A    | 15.8   | 18.0                    | 28.3                    | 36.0                    | 42.4  | 46.3                               | 50.1                    | 54.0                    |
| Noise @1m               | dB (A)                   | 70.0 | 73.0   | 71.0                    | 74.0                    | 72.8                    | 74.0  | 75.0                               | 75.8                    |                         |
| Maximum Running Current | A                        | 27.4 | 32.0   | 50.0                    | 60.0                    | 75.0                    | 80.0  | 85.0                               | 90.0                    |                         |
| Power Type              |                          |      | 380V - 3 - - 50Hz                                  |                         |                         |                         |   |                                    |                         |                         |
| Type                    |                          |      | Blent, efficient, fully enclosed scroll compressor |                         |                         |                         |   |                                    |                         |                         |
| Compressor              | Model                    |      | 2 <sup>#</sup> ZFR28KOE                            | 2 <sup>#</sup> ZFR38KOE | 2 <sup>#</sup> ZFR50KOE | 2 <sup>#</sup> ZFR68KOE | 3 <sup>#</sup> ZFR50KOE                           | 2 <sup>#</sup> ZFR60KOE + ZFR88KOE | ZFR60KOE + ZFR88KOE 1/2 | 3 <sup>#</sup> ZFR88KOE |
|                         | Quantity                 |      | 2  | 2                       | 2                       | 2                       | 3   | 3                                  | 3                       | 3                       |
| Subcooler               |                          |      | Plate heat exchanger + electronic expansion valve  |                         |                         |                         | Plate heat exchanger + electronic expansion valve |                                    |                         |                         |
| Minimum Load Percentage | %                        |      | 50   | 50                      | 50                      | 50                      | 33  | 30                                 | 27                      | 33                      |
| Reservoir               | Type                     |      | Horizontal   |                         |                         |                         | Horizontal  |                                    |                         |                         |
|                         | Volume                   | L    | 72   |                         |                         |                         | 100   |                                    |                         |                         |
| Dimensions              | mm                       |      | 1500*650*1180                                      |                         |                         |                         | 2050*900*1200                                     |                                    |                         |                         |
| Weight                  | kg                       |      | 350  |                         |                         |                         | 400   |                                    |                         |                         |

Note:  
 Water cooling condition: condensation temperature 40°C, evaporation temperature -35°C, suction temperature 0°C.  
 Air cooling condition: condensation temperature 40°C, evaporation temperature -35°C, suction temperature 0°C.

## E Series MT Small Scroll Parallel Racks - Air Cooling

| MT Air Cooling Racks Model No. | Compressor Model x Quantity | Evaporating Temperature |                          |                         |                          |                         |                          |                         |                          |
|--------------------------------|-----------------------------|-------------------------|--------------------------|-------------------------|--------------------------|-------------------------|--------------------------|-------------------------|--------------------------|
|                                |                             | 10: -15°C               |                          | 10: -10°C               |                          | 10: -5°C                |                          | 10: 0°C                 |                          |
|                                |                             | Cooling Capacity Q (kW) | Power Consumption P (kW) | Cooling Capacity Q (kW) | Power Consumption P (kW) | Cooling Capacity Q (kW) | Power Consumption P (kW) | Cooling Capacity Q (kW) | Power Consumption P (kW) |
| VPP2208OR-20E                  | 2 <sup>#</sup> B78          | 28.3                    | 16.3                     | 34.5                    | 18.4                     | 41.8                    | 16.6                     | 49.4                    | 18.7                     |
| VPP2208OR-28E                  | 2 <sup>#</sup> B06          | 34.3                    | 21.2                     | 42.2                    | 21.2                     | 51.0                    | 21.4                     | 60.6                    | 21.5                     |
| VPP2208OR-30E                  | 2 <sup>#</sup> B114         | 40.2                    | 25.3                     | 49.8                    | 25.3                     | 60.6                    | 25.3                     | 73.2                    | 25.4                     |
| VPP3208OR-30E                  | 3 <sup>#</sup> B06          | 51.5                    | 31.8                     | 63.3                    | 31.8                     | 76.5                    | 32.1                     | 90.9                    | 32.0                     |
| VPP3208OR-45E                  | 3 <sup>#</sup> B114         | 60.3                    | 38.0                     | 74.7                    | 38.0                     | 90.9                    | 38.0                     | 109.8                   | 38.1                     |

Notes:  
 1) Cooling capacity and input power listed are based on condensing temperature at 45°C, suction temperature at 10°C, without liquid subcooling.  
 2) The power wire for the compressor racks is three-phase 380V/50Hz, the power for the control operation is one-phase 220V/50Hz.  
 3) If the compressor racks are to operate with different evaporating temperature or with too high/too low ambient temperature, please contact us.

## E Series MT Small Scroll Parallel Racks - Water Cooling

| MT Water Cooling Racks Model No. | Compressor Model x Quantity | Evaporating Temperature |                          |                         |                          |                         |                          |                         |                          |
|----------------------------------|-----------------------------|-------------------------|--------------------------|-------------------------|--------------------------|-------------------------|--------------------------|-------------------------|--------------------------|
|                                  |                             | 10: -15°C               |                          | 10: -10°C               |                          | 10: -5°C                |                          | 10: 0°C                 |                          |
|                                  |                             | Cooling Capacity Q (kW) | Power Consumption P (kW) | Cooling Capacity Q (kW) | Power Consumption P (kW) | Cooling Capacity Q (kW) | Power Consumption P (kW) | Cooling Capacity Q (kW) | Power Consumption P (kW) |
| VPP2208OR-20E                    | 2 <sup>#</sup> B78          | 31.0                    | 14.6                     | 37.7                    | 14.8                     | 45.2                    | 15.0                     | 54.0                    | 15.1                     |
| VPP2208OR-28E                    | 2 <sup>#</sup> B06          | 38.1                    | 18.9                     | 46.4                    | 19.0                     | 55.8                    | 19.2                     | 66.2                    | 19.4                     |
| VPP2208OR-30E                    | 2 <sup>#</sup> B114         | 44.8                    | 22.5                     | 55.0                    | 22.8                     | 66.8                    | 22.8                     | 79.4                    | 22.9                     |
| VPP3208OR-30E                    | 3 <sup>#</sup> B06          | 57.2                    | 28.3                     | 69.8                    | 28.5                     | 83.4                    | 28.8                     | 99.3                    | 29.1                     |
| VPP3208OR-45E                    | 3 <sup>#</sup> B114         | 67.2                    | 33.8                     | 82.5                    | 33.9                     | 99.9                    | 34.2                     | 119.1                   | 34.4                     |

Notes:  
 1) Cooling capacity and input power listed are based on condensing temperature at 45°C, suction temperature at 10°C, without liquid subcooling.  
 2) The power wire for the compressor racks is three-phase 380V/50Hz, the power for the control operation is one-phase 220V/50Hz.  
 3) If the compressor racks are to operate with different evaporating temperature or with too high/too low ambient temperature, please contact us.

## + E Series LT Small Scroll Parallel Racks - Air Cooling

| LT Air Cooling Racks Model No. | Compressor        | Evaporating Temperature |                          |                         |                          |                         |                          |                         |                          |
|--------------------------------|-------------------|-------------------------|--------------------------|-------------------------|--------------------------|-------------------------|--------------------------|-------------------------|--------------------------|
|                                |                   | 10: -37°C               |                          | 10: -35°C               |                          | 10: -32°C               |                          | 10: -30°C               |                          |
|                                |                   | Cooling Capacity Q (kW) | Power Consumption P (kW) | Cooling Capacity Q (kW) | Power Consumption P (kW) | Cooling Capacity Q (kW) | Power Consumption P (kW) | Cooling Capacity Q (kW) | Power Consumption P (kW) |
| VPP2208OR-20E                  | 2ZF18KOE          | 11.2                    | 8.7                      | 12.0                    | 8.8                      | 13.3                    | 9.1                      | 14.3                    | 9.3                      |
| VPP2208OR-28E                  | 2ZF18KOE          | 13.9                    | 9.9                      | 15.0                    | 10.2                     | 16.7                    | 10.7                     | 17.9                    | 11.0                     |
| VPP2208OR-30E                  | 2ZF18KOE          | 18.4                    | 13.6                     | 19.8                    | 14.0                     | 22.1                    | 14.3                     | 23.9                    | 14.8                     |
| VPP2208OR-39E                  | 2ZF18KOE          | 25.4                    | 19.3                     | 27.3                    | 19.8                     | 30.5                    | 20.5                     | 32.9                    | 21.0                     |
| VPP2208OR-45E                  | 3ZF18KOE          | 27.7                    | 20.4                     | 29.7                    | 21.0                     | 33.2                    | 21.7                     | 35.9                    | 22.2                     |
| VPP2208OR-45E                  | 2ZF18KOE+ZF18KOE  | 31.1                    | 23.3                     | 33.5                    | 23.9                     | 37.4                    | 24.7                     | 40.4                    | 25.3                     |
| VPP2208OR-45E                  | ZF18KOE+ZF18KOE*2 | 34.8                    | 26.1                     | 37.2                    | 26.8                     | 41.6                    | 27.7                     | 44.9                    | 28.4                     |
| VPP2208OR-45E                  | 3ZF18KOE          | 38.1                    | 29.0                     | 41.0                    | 29.7                     | 45.8                    | 30.8                     | 49.4                    | 31.5                     |

Notes:

- Cooling capacity and input power listed are based on condensing temperature at 45°C, suction temperature at 0°C, without liquid subcooling.
- The power wire for the compressor racks is three-phase 380V/50Hz, the power for the control operation is one-phase 220V/50Hz.
- If the compressor racks are to operate with different evaporating temperature or with too high/too low ambient temperature, please contact us.

## + E Series LT Small Scroll Parallel Racks - Water Cooling

| LT Water Cooling Racks Model No. | Compressor        | Evaporating Temperature |                          |                         |                          |                         |                          |                         |                          |
|----------------------------------|-------------------|-------------------------|--------------------------|-------------------------|--------------------------|-------------------------|--------------------------|-------------------------|--------------------------|
|                                  |                   | 10: -37°C               |                          | 10: -35°C               |                          | 10: -32°C               |                          | 10: -30°C               |                          |
|                                  |                   | Cooling Capacity Q (kW) | Power Consumption P (kW) | Cooling Capacity Q (kW) | Power Consumption P (kW) | Cooling Capacity Q (kW) | Power Consumption P (kW) | Cooling Capacity Q (kW) | Power Consumption P (kW) |
| VPM2258OR-12E                    | 2ZF18KOE          | 11.3                    | 7.8                      | 12.2                    | 8.0                      | 13.6                    | 8.3                      | 14.8                    | 8.4                      |
| VPM2258OR-15E                    | 2ZF18KOE          | 14.1                    | 9.1                      | 15.3                    | 9.4                      | 17.1                    | 9.8                      | 18.4                    | 10.1                     |
| VPM2258OR-20E                    | 2ZF18KOE          | 19.0                    | 12.4                     | 20.4                    | 12.8                     | 22.2                    | 13.2                     | 24.6                    | 13.8                     |
| VPM2258OR-30E                    | 2ZF18KOE          | 26.2                    | 17.6                     | 28.1                    | 18.1                     | 31.4                    | 18.8                     | 33.8                    | 19.2                     |
| VPM3258OR-30E                    | 3ZF18KOE          | 28.8                    | 18.6                     | 30.8                    | 19.1                     | 33.3                    | 19.9                     | 36.9                    | 20.3                     |
| VPM3258OR-35E                    | 2ZF18KOE+ZF18KOE  | 32.1                    | 21.2                     | 34.5                    | 21.8                     | 37.9                    | 22.6                     | 41.5                    | 23.2                     |
| VPM3258OR-40E                    | ZF18KOE+ZF18KOE*2 | 35.7                    | 23.8                     | 38.3                    | 24.5                     | 42.5                    | 25.4                     | 46.1                    | 26.0                     |
| VPM3258OR-45E                    | 3ZF18KOE          | 39.3                    | 26.4                     | 42.2                    | 27.2                     | 47.1                    | 28.2                     | 50.7                    | 28.8                     |

Notes:

- Cooling capacity and input power listed are based on condensing temperature at 40°C, suction temperature at 0°C, without liquid subcooling.
- The power wire for the compressor racks is three-phase 380V/50Hz, the power for the control operation is one-phase 220V/50Hz.
- If the compressor racks are to operate with different evaporating temperature or with too high/too low ambient temperature, please contact us.

## + E Series Parallel Scroll Compressor Racks Technical Parameters

| Racks Model No. | Dimension of Racks' External Pipes |               |                      |                      | External Dimensions |      |      | Max. Working Current | Weight | Machine Room Ventilation Rate | Reference Drawing |
|-----------------|------------------------------------|---------------|----------------------|----------------------|---------------------|------|------|----------------------|--------|-------------------------------|-------------------|
|                 | Discharge DL mm                    | Suction SL mm | Liquid Pipe Lsize mm | Liquid Pipe Osize mm | L mm                | W mm | H mm |                      |        |                               |                   |
|                 |                                    |               |                      |                      |                     |      |      |                      |        |                               |                   |
| VPP2208OR-20E   | 28                                 | 54            | 28                   | 22                   | 1490                | 750  | 1180 | 40.8                 | 360    | 3400                          |                   |
| VPP2208OR-28E   | 28                                 | 54            | 28                   | 22                   | 1490                | 750  | 1180 | 62                   | 360    | 3800                          |                   |
| VPP2208OR-30E   | 28                                 | 54            | 28                   | 22                   | 1490                | 750  | 1180 | 67                   | 360    | 3800                          |                   |
| VPP2208OR-39E   | 35                                 | 54            | 35                   | 28                   | 2050                | 850  | 1180 | 93                   | 500    | 4300                          |                   |
| VPP2208OR-45E   | 35                                 | 54            | 35                   | 28                   | 2050                | 850  | 1180 | 100.5                | 500    | 4500                          |                   |
| VPM2258OR-12E   | 28                                 | 54            | 28                   | 22                   | 1490                | 850  | 1180 | 27.4                 | 350    | 3400                          |                   |
| VPM2258OR-15E   | 28                                 | 54            | 28                   | 22                   | 1490                | 850  | 1180 | 32                   | 350    | 3800                          |                   |
| VPM2258OR-20E   | 28                                 | 54            | 28                   | 22                   | 1490                | 850  | 1180 | 50                   | 400    | 4000                          |                   |
| VPM2258OR-30E   | 28                                 | 54            | 28                   | 22                   | 1490                | 850  | 1180 | 60                   | 400    | 4400                          |                   |
| VPM3258OR-30E   | 35                                 | 54            | 35                   | 28                   | 2050                | 900  | 1180 | 75                   | 550    | 4900                          |                   |
| VPM3258OR-35E   | 35                                 | 54            | 35                   | 28                   | 2050                | 900  | 1180 | 80                   | 550    | 5100                          |                   |
| VPM3258OR-40E   | 35                                 | 54            | 35                   | 28                   | 2050                | 900  | 1180 | 85                   | 550    | 5300                          |                   |
| VPM3258OR-45E   | 35                                 | 54            | 35                   | 28                   | 2050                | 900  | 1180 | 90                   | 550    | 5500                          |                   |

Notes:

- The dimensions of the racks' external pipes are for standard racks.
- If more than one Parallel racks are used in the machine room, it is necessary to calculate the total ventilation rate.

## + E Series MT Small Scroll Parallel Racks Configuration (R404A)

| No. | Type                        | Standard Options   | Non-standard Options   | Optional Customer Value  |
|-----|-----------------------------|--|--|--|
| 1   | Control system              | Control Panel Box with Dual Controller   | x  | Standard controller, easy to operate with higher reliability       |
| 2   | Racks external pipes        | One for each liquid head, room air, liquid supply and exhaust<br>Note: Inlet branch with angle valve | x  |  |
| 3   | Oil return system           | High pressure oil return system+ Electronic oil equalizer  | x  | Stable return oil and high reliability                             |
| 4   | Reservoir                   | Horizontal reservoir   | x  |  |
| 5   | Condensing pressure control | Non  | Optional condensing pressure switches according to the number of heads, 2 heads with 2 condensing pressure switches, and 3 heads with 3 condensing pressure switches | Be able to control multiple condensing fans or cooling towers      |
| 6   | Filter                      | Room air filter  | x  | Self-contained room air filter, with stable and reliable operation |

## + E Series LT Small Scroll Parallel Racks Configuration (R404A)

| No. | Type                        | Standard Options   | Non-standard Options   | Optional Customer Value   |
|-----|-----------------------------|--|--|---|
| 1   | Subcooler                   | √  | x  | Improve the supercooling of liquid supply to meet the special demands of customers. |
| 2   | Control system              | Control Panel Box with Dual Controller   | x  | Standard controller, easy to operate with higher reliability                        |
| 3   | Racks external pipes        | One for each liquid head, room air, liquid supply and exhaust<br>Note: Inlet branch with angle valve | x  |   |
| 4   | Oil return system           | High pressure oil return system+ Electronic oil equalizer  | x  | Stable return oil and high reliability  |
| 5   | Reservoir                   | Horizontal reservoir   | x  |   |
| 6   | Condensing pressure control | Non  | Optional condensing pressure switches according to the number of heads, 2 heads with 2 condensing pressure switches, and 3 heads with 3 condensing pressure switches | Be able to control multiple condensing fans or cooling towers                       |
| 7   | Filter                      | Room air filter  | x  | Self-contained room air filter, with stable and reliable operation                  |