

**VRC S4M**

Heat Recovery Outdoor Units | 575V | **R-410A** | 60Hz

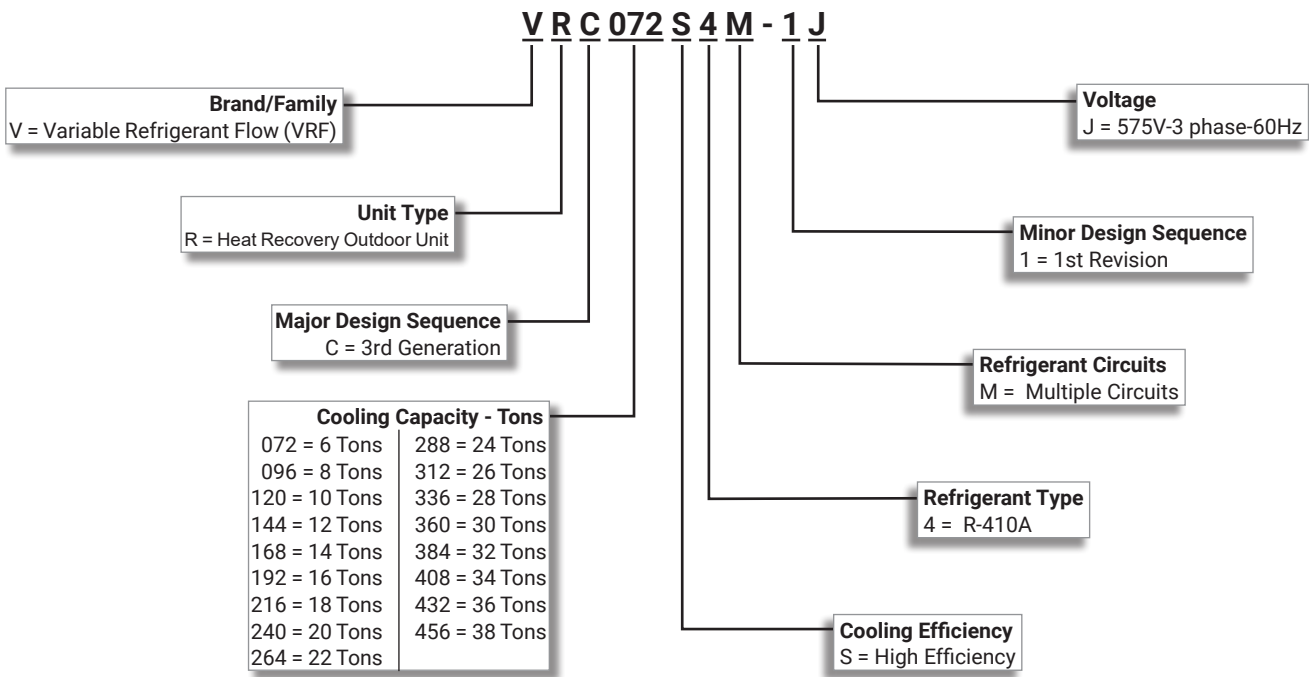
6 to 38 tons

**COMMERCIAL  
PRODUCT SPECIFICATIONS (EHB)**



ASHRAE  
Standard  
**90.1**

**MODEL NUMBER IDENTIFICATION**



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# Combination Table : Outdoor units

## 575V

| System Model |              |                                    | Capacity (Ton)                                                                    |                                                                                   |    |    |    |                                                                                     |    |    |
|--------------|--------------|------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----|----|----|-------------------------------------------------------------------------------------|----|----|
| Capa (Ton)   | Model Name   | Number of individual outdoor units |  |  |    |    |    |  |    |    |
|              |              |                                    | 6                                                                                 | 8                                                                                 | 10 | 12 | 14 | 16                                                                                  | 18 | 20 |
| 6            | VRC072S4M-4J | 1                                  | 1                                                                                 |                                                                                   |    |    |    |                                                                                     |    |    |
| 8            | VRC096S4M-4J | 1                                  |                                                                                   | 1                                                                                 |    |    |    |                                                                                     |    |    |
| 10           | VRC120S4M-4J | 1                                  |                                                                                   |                                                                                   | 1  |    |    |                                                                                     |    |    |
| 12           | VRC144S4M-4J | 1                                  |                                                                                   |                                                                                   |    | 1  |    |                                                                                     |    |    |
| 14           | VRC168S4M-4J | 1                                  |                                                                                   |                                                                                   |    |    | 1  |                                                                                     |    |    |
| 16           | VRC192S4M-4J | 1                                  |                                                                                   |                                                                                   |    |    |    | 1                                                                                   |    |    |
| 18           | VRC216S4M-4J | 1                                  |                                                                                   |                                                                                   |    |    |    |                                                                                     | 1  |    |
| 20           | VRC240S4M-4J | 1                                  |                                                                                   |                                                                                   |    |    |    |                                                                                     |    | 1  |
| 22           | VRC264S4M-4J | 2                                  |                                                                                   | 1                                                                                 |    |    | 1  |                                                                                     |    |    |
| 24           | VRC288S4M-4J | 2                                  |                                                                                   | 1                                                                                 |    |    |    | 1                                                                                   |    |    |
| 26           | VRC312S4M-4J | 2                                  |                                                                                   | 1                                                                                 |    |    |    |                                                                                     | 1  |    |
| 28           | VRC336S4M-4J | 2                                  |                                                                                   | 1                                                                                 |    |    |    |                                                                                     |    | 1  |
| 30           | VRC360S4M-4J | 2                                  |                                                                                   |                                                                                   | 1  |    |    |                                                                                     |    | 1  |
| 32           | VRC384S4M-4J | 2                                  |                                                                                   |                                                                                   |    |    |    | 2                                                                                   |    |    |
| 34           | VRC408S4M-4J | 2                                  |                                                                                   |                                                                                   |    |    |    | 1                                                                                   | 1  |    |
| 36           | VRC432S4M-4J | 3                                  |                                                                                   |                                                                                   | 2  |    |    | 1                                                                                   |    |    |
| 38           | VRC456S4M-4J | 3                                  |                                                                                   |                                                                                   | 1  | 1  |    | 1                                                                                   |    |    |

### NOTE

- Make sure to use an indoor unit that is compatible with VRC outdoor unit.
- Indoor units can be connected within the range indicated in following table.
- If the total capacity of the connected indoor units exceeds the indicated maximum capacity, cooling and heating capacity of the indoor unit may decrease.
- The standard allowed combination ratio of the total rated indoor unit capacity over the rated outdoor unit capacity is 50~130%.  
Combination ratio of up to 184% is allowed depending on operation mode, minimum operation ratio and connected indoor unit models. LVSS 2.0 design software supports designing over 130% based on system design. Refer to the "Design Procedure & Combination Ratio" section of this document for details
- ※ You can connect maximum 64 indoor units to the outdoor unit. Maximum quantity of connectable indoor unit is set to 64 since outdoor unit only support up to 64 communication address. Indoor unit address can be assigned from 0~63. If the indoor unit address was assigned from 64~79, E201 error will occur.
- ※ Maximum 32 Wall-mount type indoor units with EEV can be connected.

# Combination Table : Outdoor units

## External Appearance

(575V)

| Capa<br>[TON]       | Model Name                                                   | Model                                                                               | Capa<br>[TON]        | Model Name                                                   | Model                                                                                |
|---------------------|--------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------|--------------------------------------------------------------|--------------------------------------------------------------------------------------|
| 6                   | VRC072S4M-4J                                                 |    | 24<br>26<br>28<br>30 | VRC288S4M-4J<br>VRC312S4M-4J<br>VRC336S4M-4J<br>VRC360S4M-4J |   |
|                     |                                                              |                                                                                     |                      |                                                              |                                                                                      |
|                     |                                                              |                                                                                     |                      |                                                              |                                                                                      |
|                     |                                                              |                                                                                     |                      |                                                              |                                                                                      |
| 8<br>10<br>12<br>14 | VRC096S4M-4J<br>VRC120S4M-4J<br>VRC144S4M-4J<br>VRC168S4M-4J |    | 32<br>34             | VRC384S4M-4J<br>VRC408S4M-4J                                 |   |
| 16<br>18<br>20      | VRC192S4M-4J<br>VRC216S4M-4J<br>VRC240S4M-4J                 |    |                      |                                                              |                                                                                      |
| 22                  | VRC264S4M-4J                                                 |  | 36<br>38             | VRC432S4M-4J<br>VRC456S4M-4J                                 |  |

# Design Procedure & Combination Ratio

## Combination Ratio (Connection Ratio)

### Definition of Combination Ratio, CR

$$CR = \frac{\text{Sum of Nominal Cooling Capacity of Indoor units}}{\text{Nominal Cooling Capacity of Outdoor unit}} * 100\%$$

### Constraints of Allowable Combination Ratio

VRC systems are normally designed to utilize a CR 50% to 130% to ensure effective load balancing between indoor units and outdoor unit. As buildings have become more insulated, and usage and occupancy of buildings are highly variable, more buildings can realize a higher load balancing between IDUs and ODU, thus higher CR (>130%) is often required. If a system design exceeds 130%, risks associated to increased indoor sound level and reduced comfort levels should be considered. Therefore, when it is necessary to design a combination ratio exceeding 130%, the following conditions must be complied with: -

### Design & Selection Procedure

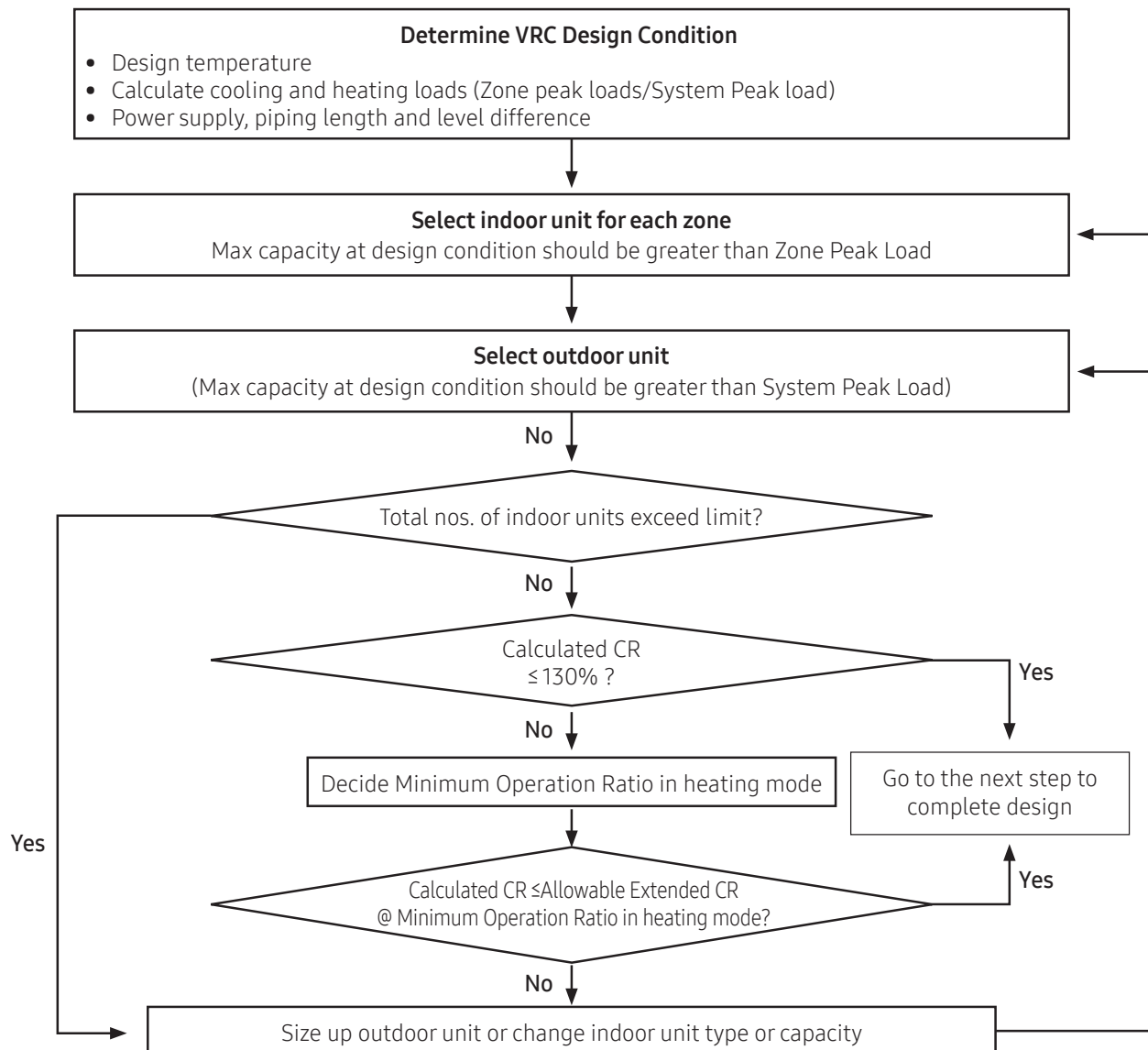


Fig.1 Design & Selection Procedure for Extended Combination Ratio

# Design Procedure & Combination Ratio

## Combination Ratio (Connection Ratio)

### Satisfying cooling & heating comfort

The Maximum Capacity of outdoor unit at design condition calculated from Lennox capacity data table or design tool (LVSS 2.0) should always be the same or greater than System Peak Load (Block Load) defined in table 1.

| Time  | Room A     | Room B     | Room C     | Room D     | Room E     | Room F     | Total |
|-------|------------|------------|------------|------------|------------|------------|-------|
|       | Music Room | Class room | Class room | Class room | Class room | Class room |       |
| 09:00 | 8.4        | 8.0        | 8.4        | 8.0        | 8.4        | 8.6        | 49.8  |
| 12:00 | 9.2        | 8.8        | 10.8       | 8.6        | 10.8       | 9.8        | 58.0  |
| 14:00 | 10.0       | 9.6        | 9.6        | 9.6        | 11.4       | 10.8       | 61.0  |
| 16:00 | 11.0       | 10.6       | 8.8        | 10.8       | 9.6        | 9.6        | 60.4  |
| 18:00 | 9.4        | 9.0        | 8.8        | 9.0        | 9.0        | 8.4        | 53.6  |

Table 1. Example of System Peak loads

- ▶ Zone Peak Loads ( ): To satisfy the demand for each room any time
  - Sum of Zone peak Loads = 65.4kW (11.0 + 10.6 + 10.8 + 10.8 + 11.4 + 10.8)
- ▶ Block load ( ): Total peak load at a given time of day.
  - Sum of Zone Peak Loads at 14:00 = 61.0kW



#### NOTE

- When a system combination ratio is over 130%, a max system capacity is the same as the published capacity in TDB capacity table at the combination ratio of 130%

### Cooling Operation Only

When only cooling operation is used, CR is allowed up to 180% if the Max Capacity of outdoor unit is greater than System Peak Load (Block load) as shown table 2.

|                     |                                   |
|---------------------|-----------------------------------|
| Outdoor unit        | All capacities of H/P & H/R model |
| Indoor unit         | All indoor unit types             |
| Operation Condition | Cooling mode only                 |
| Allowable CR        | 180%                              |

Table 2. Allowable CR in only cooling operation



#### NOTE

- Table 2 shows a standard for allowable CR of cooling only model. Lennox is not responsible for any problem caused by using a heating mode at the site with a system designed by table 2. If heating operation is required, extended CR design must follow section "Allowable CR limit to avoid abnormal sound level risks in heating operation."

# Design Procedure & Combination Ratio

## Combination Ratio (Connection Ratio)

### Allowable CR limit to avoid abnormal sound level risks in heating operation

- If the CR exceeds 130%, in a specific case of heating operation, an indoor unit may have higher sound level than the level specified in the technical documents.
- In order to minimize the sound level, the system minimum operation ratio needs to be verified and considered as follows:

※ Operation Ratio(%), OR

- Heat Pump system, H/P

$$OR_{(H/P)} (\%) = \frac{\text{Sum of nominal capacity of indoor units running in heating mode}}{\text{Sum of nominal capacity of indoor units}} * 100\%$$

- Heat Recovery system, H/R

$$OR_{(H/R)} (\%) = \frac{\text{Sum of nominal capacity of indoor units running in both cooling & heating mode}}{\text{Sum of nominal capacity of indoor units}} * 100\%$$

The Minimum Operation Ratio should be determined during the project design stage using Fig. 2.

| Outdoor unit    | All capacities of H/P & H/R (Single, Dual and Triple Module Systems) |                             |                |
|-----------------|----------------------------------------------------------------------|-----------------------------|----------------|
| Indoor unit     | All indoor unit types' except Wall-Mounted                           |                             | Wall-Mounted   |
| Operation Ratio | Nominal Capacity ≤ 18kBtu/h                                          | Nominal capacity > 18kBtu/h | All capacities |
| 10%             | 150%                                                                 | 158%                        | 141%           |
| 20%             | 161%                                                                 | 170%                        | 155%           |
| 30%             | 171%                                                                 | 184%                        | 173%           |

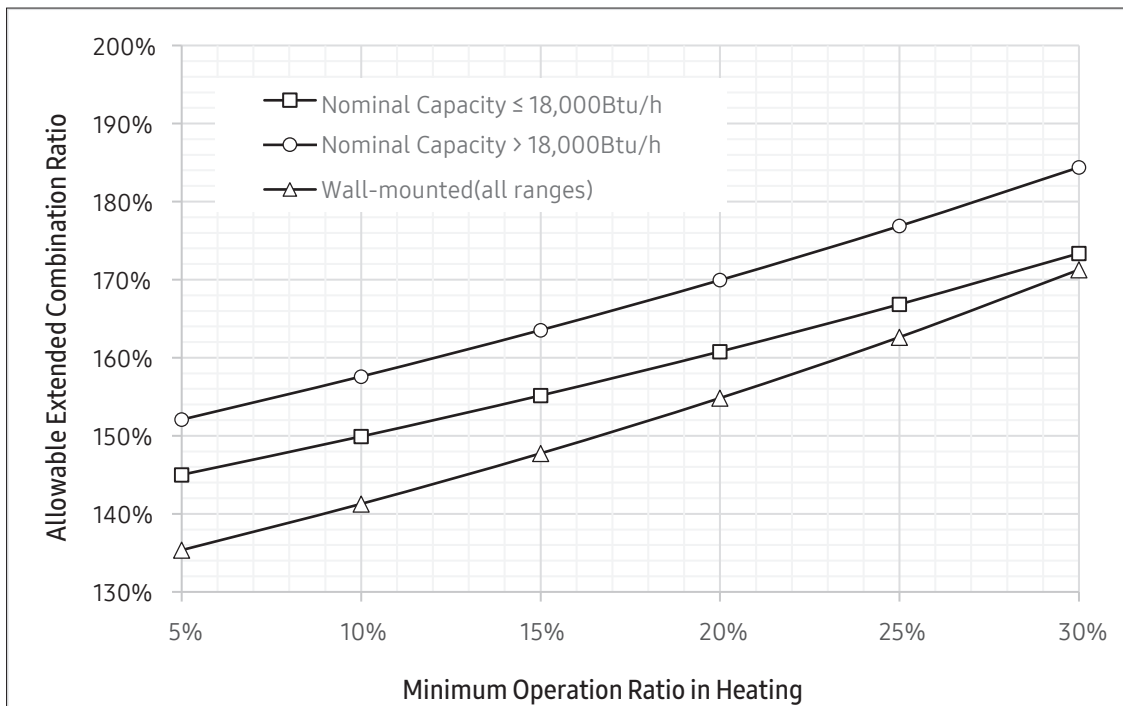


Fig. 2 Allowable CR with respect to indoor unit type as operation ratio increases

# Design Procedure & Combination Ratio

## Combination Ratio (Connection Ratio)

- The minimum operation ratio should be considered during the design stage.
- If a system has a mix of unit types or capacity, the lowest extended connection ratio curve must be utilized.
- In case that a designed Minimum Operation Ratio is less than 5% or more than 30%, the Allowable Extended CR must be considered as the value at 5% and 30%, respectively.
- \*If one of following indoor unit types is included in a system, the CR cannot be extended beyond 130%.

| Type of indoor unit                       | Limited by CR 130% |
|-------------------------------------------|--------------------|
| 1Way Cassette / 4Way Cassette (600 x 600) | 9kBtu/h or below   |
| 360 Cassette / Slim Duct (LSP duct)       | 12kBtu/h or below  |
| 4Way Cassette                             | 18kBtu/h or below  |
| Floor Standing (Exposed or Concealed)     | 18kBtu/h only      |
| Ceiling Suspended                         | 24kBtu/h only      |
| Hydro unit (HE/HT)                        | All capacities     |



### NOTE

- Lennox is not responsible for any issue, including abnormal noise that arises during heating operation due solely to the operation rate being lower than the designated combination ratio shown in Fig. 2. Please contact your local Lennox representative for further details if the project requires you to design the project with a connection ratio greater than 130%.

# Specification

(575V)

| Model Name                                      |                                            |                |              | VRC072S4M-4J              | VRC096S4M-4J              | VRC120S4M-4J              |
|-------------------------------------------------|--------------------------------------------|----------------|--------------|---------------------------|---------------------------|---------------------------|
| Outdoor unit module 1                           |                                            |                |              | -                         | -                         | -                         |
| Outdoor unit module 2                           |                                            |                |              | -                         | -                         | -                         |
| Outdoor unit module 3                           |                                            |                |              | -                         | -                         | -                         |
| Power Supply                                    |                                            |                | Ø, #, V, Hz  | 3, 3, 575, 60             | 3, 3, 575, 60             | 3, 3, 575, 60             |
| Mode                                            |                                            |                | -            | Heat Recovery             | Heat Recovery             | Heat Recovery             |
| Performance                                     | TON                                        |                | TON          | 6                         | 8                         | 10                        |
|                                                 | 1) Capacity (Nominal)                      | Cooling        | Btu/h        | 72,000                    | 96,000                    | 120,000                   |
|                                                 |                                            | Heating        | Btu/h        | 81,000                    | 108,000                   | 135,000                   |
|                                                 | Capacity (Rated)                           | Cooling        | Btu/h        | 69,000                    | 92,000                    | 114,000                   |
|                                                 |                                            | Heating        | Btu/h        | 77,000                    | 103,000                   | 129,000                   |
| Maximum number of connectable indoor units      |                                            |                | EA           | 12                        | 16                        | 20                        |
| 2) Total capacity of the connected Indoor Units |                                            | Min.           | Btu/h        | 36,000                    | 48,000                    | 60,000                    |
|                                                 |                                            | Max.           | Btu/h        | 93,600                    | 124,800                   | 156,000                   |
| Power                                           | Current                                    | MCA            | A            | 13.4                      | 16.1                      | 17.4                      |
|                                                 |                                            | MOP            | A            | 20                        | 20                        | 20                        |
| Casing                                          | Material                                   | Body           | -            | GI Steel Plate            | GI Steel Plate            | GI Steel Plate            |
|                                                 |                                            | Base           | -            | GI Steel Plate            | GI Steel Plate            | GI Steel Plate            |
| Heat Exchanger                                  | Type                                       |                | -            | Fin & Tube                | Fin & Tube                | Fin & Tube                |
|                                                 | Material                                   | Fin            | -            | Al                        | Al                        | Al                        |
|                                                 |                                            | Tube           | -            | Cu                        | Cu                        | Cu                        |
| Fin Treatment                                   |                                            |                | -            | Anti-corrosion            | Anti-corrosion            | Anti-corrosion            |
| Compressor                                      | Type                                       |                | -            | Inverter Scroll x 1       | Inverter Scroll x 2       | Inverter Scroll x 2       |
|                                                 | Output                                     |                | kW x n       | 4.39 x 1                  | 4.39 x 2                  | 4.39 x 2                  |
|                                                 | Model Name                                 |                | -            | DS2GR7046FV* x 1          | DS2GR7046FV* x 2          | DS2GR7046FV* x 2          |
|                                                 | Oil                                        | Type           | -            | PVE                       | PVE                       | PVE                       |
|                                                 |                                            | Initial charge | cc x n       | 900 x 1                   | 900 x 2                   | 900 x 2                   |
|                                                 |                                            |                | fl oz x n    | 30.4 x 1                  | 30.4 x 2                  | 30.4 x 2                  |
| Fan                                             | Type                                       |                | -            | Propeller                 | Propeller                 | Propeller                 |
|                                                 | Discharge direction                        |                | -            | Top                       | Top                       | Top                       |
|                                                 | Quantity                                   |                | EA           | 1                         | 2                         | 2                         |
|                                                 | Air Flow Rate                              |                | CFM (m³/min) | 5,580 (158)               | 9,924 (281)               | 9,924 (281)               |
|                                                 | External Static Pressure                   | Max.           | mmAq         | 11                        | 11                        | 11                        |
|                                                 |                                            |                | Pa           | 110                       | 110                       | 110                       |
|                                                 |                                            |                | in Wg (Pa)   | 0.43 (107.87)             | 0.43 (107.87)             | 0.43 (107.87)             |
| Fan Motor                                       | Type                                       |                | -            | BLDC Motor                | BLDC Motor                | BLDC Motor                |
|                                                 | Output                                     |                | W x n        | 630 x 1                   | 630 x 2                   | 630 x 2                   |
| 3) Piping Connections                           | Liquid Pipe                                |                | Type         | Braze connection          | Braze connection          | Braze connection          |
|                                                 |                                            |                | Φ, inch (mm) | 3/8 (9.52)                | 3/8 (9.52)                | 1/2 (12.70)               |
|                                                 | Gas Pipe                                   |                | Type         | Braze connection          | Braze connection          | Braze connection          |
|                                                 |                                            |                | Φ, inch (mm) | 3/4 (19.05)               | 7/8 (22.22)               | 1-1/8 (28.58)             |
|                                                 | High pressure Gas Pipe (HR Only)           |                | Type         | Braze connection          | Braze connection          | Braze connection          |
|                                                 |                                            |                | Φ, inch (mm) | 5/8 (15.88)               | 3/4 (19.05)               | 3/4 (19.05)               |
|                                                 | Heat Insulation                            |                | -            | Both liquid and gas pipes | Both liquid and gas pipes | Both liquid and gas pipes |
|                                                 | Piping length (ODU-IDU)                    | Max. [Equiv.]  | ft           | 656[722]                  | 656[722]                  | 656[722]                  |
|                                                 | Piping length (1st Branch-IDU)             | Max.           | ft           | 295                       | 295                       | 295                       |
|                                                 | Total piping length (System)               | Max.           | ft           | 3,281                     | 3,281                     | 3,281                     |
|                                                 | Level difference (ODU in highest position) | Max.           | ft           | 361                       | 361                       | 361                       |
|                                                 | Level difference (IDU in highest position) | Max.           | ft           | 361                       | 361                       | 361                       |
|                                                 | Level difference (IDU-IDU)                 | Max.           | ft           | 131                       | 131                       | 131                       |

# Specification

(575V)

| Model Name               |                             |         |          | VRC072S4M-4J                 | VRC096S4M-4J                  | VRC120S4M-4J                  |
|--------------------------|-----------------------------|---------|----------|------------------------------|-------------------------------|-------------------------------|
| Outdoor unit module 1    |                             |         |          | -                            | -                             | -                             |
|                          |                             |         |          | -                            | -                             | -                             |
|                          |                             |         |          | -                            | -                             | -                             |
|                          |                             |         |          | -                            | -                             | -                             |
| Wiring Connections       | Transmission Cable          | Min.    | AWG      | 18                           | 18                            | 18                            |
|                          |                             | Remark  | -        | F1, F2                       | F1, F2                        | F1, F2                        |
|                          | Power supply intake         |         | -        | Both indoor and outdoor unit | Both indoor and outdoor unit  | Both indoor and outdoor unit  |
| Refrigerant              | 4) Type                     |         | -        | R410A                        | R410A                         | R410A                         |
|                          | Factory Charging            |         | lbs (kg) | 13.7 (6.2)                   | 17.6 (8.0)                    | 17.6 (8.0)                    |
| Sound                    | 5) Sound Pressure           | Cooling | dB(A)    | 54.0                         | 57.0                          | 57.0                          |
|                          |                             | Heating | dB(A)    | 58.0                         | 59.0                          | 60.0                          |
|                          | 6) Sound Power              |         | dB(A)    | 75.0                         | 79.0                          | 79.0                          |
| External Dimension       | Net Weight                  |         | lbs (kg) | 428 (194)                    | 617 (280)                     | 617 (280)                     |
|                          | Shipping Weight             |         | lbs (kg) | 459 (208)                    | 655 (297)                     | 655 (297)                     |
|                          | Net Dimensions (WxHxD)      |         | mm       | 930 x 1,695 x 765            | 1,295 x 1,695 x 765           | 1,295 x 1,695 x 765           |
|                          |                             |         | inch     | 36-5/8 x 66-3/4 x 30-1/8     | 51 x 66-3/4 x 30-1/8          | 51 x 66-3/4 x 30-1/8          |
|                          | Shipping Dimensions (WxHxD) |         | mm       | 998 x 1,887 x 829            | 1,363 x 1,887 x 829           | 1,363 x 1,887 x 829           |
|                          |                             |         | inch     | 39-5/16 x 74-5/16 x 32-11/16 | 53-11/16 x 74-5/16 x 32-11/16 | 53-11/16 x 74-5/16 x 32-11/16 |
| 7) Operating Temp. Range | Cooling                     |         | °F (°C)  | 5 ~ 122 (-15 ~ 50)           | 5 ~ 122 (-15 ~ 50)            | 5 ~ 122 (-15 ~ 50)            |
|                          | Heating                     |         | °F (°C)  | -22 ~ 75 (-30 ~ 24)          | -22 ~ 75 (-30 ~ 24)           | -22 ~ 75 (-30 ~ 24)           |

## NOTE

- Specification may be subject to change without prior notice.
- Specification comply with EN14511.
- 1) Nominal capacities are based on (Equivalent refrigerant piping : 25ft, Level differences : 0ft);
  - Cooling : Indoor temperature 80°F DB, 67°F WB / Outdoor temperature 95°F DB, 75°F WB
  - Heating : Indoor temperature 70°F DB, 60°F WB / Outdoor temperature 47°F DB, 43°F WB
- 2) The standard allowed combination ratio of the total rated indoor unit capacity over the rated outdoor unit capacity is 50~130%. Combination ratio of up to 184% is allowed depending on operation mode, minimum operation ratio and connected indoor unit models. LVSS 2.0 design software supports designing over 130% based on system design. Refer to the "Design Procedure & Combination Ratio" section of this document for details
- 3) If outdoor unit is located in a higher position than indoor unit, level difference is 361ft or under.  
(If the level difference is higher than 164ft, the PDM kit should be installed)  
\*PDM kit: Pressure Drop Modulation kit
- 4) These products contain R410A which is fluorinated greenhouse gas.
- 5) Sound pressure was acquired in a dead room. Thus actual noise level may be different depending on the installation conditions.
- 6) Sound power level is an absolute value that a sound source generates.  
Sound pressure level is a relative value, depending on the distance and acoustic environment.  
Sound values are obtained in an anechoic room.  
Sound values of multi combination are theoretical values based on sound results of individual installed units.
- 7) Cooling operation is possible at -15°C(5°F) or higher if satisfied following conditions.  
(If the outdoor temperature below -5°C(23°F), wind(snow) protection duct must be installed on the suction side of the heat exchanger and at least 50%capacity of the connected indoor units must be operated.) However, if the outdoor unit is installed below the indoor unit, cooling operation is possible only at -5°C(23°F) or higher.
- For more information regarding capacity correction, please refer to capacity tables.

# Specification

(575V)

| Model Name                                      |                                            |                |              | VRC144S4M-4J              | VRC168S4M-4J              | VRC192S4M-4J              |
|-------------------------------------------------|--------------------------------------------|----------------|--------------|---------------------------|---------------------------|---------------------------|
| Outdoor unit module 1                           |                                            |                |              | -                         | -                         | -                         |
| Outdoor unit module 2                           |                                            |                |              | -                         | -                         | -                         |
| Outdoor unit module 3                           |                                            |                |              | -                         | -                         | -                         |
| Power Supply                                    |                                            |                | Ø, #, V, Hz  | 3, 3, 575, 60             | 3, 3, 575, 60             | 3, 3, 575, 60             |
| Mode                                            |                                            |                | -            | Heat Recovery             | Heat Recovery             | Heat Recovery             |
| Performance                                     | TON                                        |                | TON          | 12                        | 14                        | 16                        |
|                                                 | 1) Capacity (Nominal)                      | Cooling        | Btu/h        | 144,000                   | 168,000                   | 192,000                   |
|                                                 |                                            | Heating        | Btu/h        | 162,000                   | 189,000                   | 216,000                   |
|                                                 | Capacity (Rated)                           | Cooling        | Btu/h        | 138,000                   | 160,000                   | 184,000                   |
|                                                 |                                            | Heating        | Btu/h        | 154,000                   | 180,000                   | 206,000                   |
| Maximum number of connectable indoor units      |                                            |                | EA           | 25                        | 29                        | 33                        |
| 2) Total capacity of the connected Indoor Units |                                            | Min.           | Btu/h        | 72,000                    | 84,000                    | 96,000                    |
|                                                 |                                            | Max.           | Btu/h        | 187,200                   | 218,400                   | 249,600                   |
| Power                                           | Current                                    | MCA            | A            | 22.2                      | 24.8                      | 30.5                      |
|                                                 |                                            | MOP            | A            | 25                        | 30                        | 40                        |
| Casing                                          | Material                                   | Body           | -            | GI Steel Plate            | GI Steel Plate            | GI Steel Plate            |
|                                                 |                                            | Base           | -            | GI Steel Plate            | GI Steel Plate            | GI Steel Plate            |
| Heat Exchanger                                  | Type                                       |                | -            | Fin & Tube                | Fin & Tube                | Fin & Tube                |
|                                                 | Material                                   | Fin            | -            | Al                        | Al                        | Al                        |
|                                                 |                                            | Tube           | -            | Cu                        | Cu                        | Cu                        |
| Fin Treatment                                   |                                            |                | -            | Anti-corrosion            | Anti-corrosion            | Anti-corrosion            |
| Compressor                                      | Type                                       |                | -            | Inverter Scroll x 2       | Inverter Scroll x 2       | Inverter Scroll x 2       |
|                                                 | Output                                     |                | kW x n       | 4.39 x 2                  | 6.67 x 2                  | 6.67 x 2                  |
|                                                 | Model Name                                 |                | -            | DS2GR7046FV* x 2          | DS4GR7066FV* x 2          | DS4GR7066FV* x 2          |
|                                                 | Oil                                        | Type           | -            | PVE                       | PVE                       | PVE                       |
|                                                 |                                            | Initial charge | cc x n       | 900 x 2                   | 1,100 x 2                 | 1,100 x 2                 |
|                                                 |                                            |                | fl oz x n    | 30.4 x 2                  | 37.2 x 2                  | 37.2 x 2                  |
| Fan                                             | Type                                       |                | -            | Propeller                 | Propeller                 | Propeller                 |
|                                                 | Discharge direction                        |                | -            | Top                       | Top                       | Top                       |
|                                                 | Quantity                                   |                | EA           | 2                         | 2                         | 2                         |
|                                                 | Air Flow Rate                              |                | CFM (m³/min) | 10,171 (288)              | 10,665 (302)              | 12,855 (364)              |
|                                                 | External Static Pressure                   | Max.           | mmAq         | 11                        | 11                        | 8                         |
|                                                 |                                            |                | Pa           | 110                       | 110                       | 80                        |
|                                                 |                                            |                | in Wg (Pa)   | 0.43 (107.87)             | 0.43 (107.87)             | 0.31 (78.45)              |
| Fan Motor                                       | Type                                       |                | -            | BLDC Motor                | BLDC Motor                | BLDC Motor                |
|                                                 | Output                                     |                | W x n        | 630 x 2                   | 630 x 2                   | 630 x 2                   |
| 3) Piping Connections                           | Liquid Pipe                                |                | Type         | Braze connection          | Braze connection          | Braze connection          |
|                                                 |                                            |                | Φ, inch (mm) | 1/2 (12.70)               | 5/8 (15.88)               | 5/8 (15.88)               |
|                                                 | Gas Pipe                                   |                | Type         | Braze connection          | Braze connection          | Braze connection          |
|                                                 |                                            |                | Φ, inch (mm) | 1-1/8 (28.58)             | 1-1/8 (28.58)             | 1-1/8 (28.58)             |
|                                                 | High pressure Gas Pipe (HR Only)           |                | Type         | Braze connection          | Braze connection          | Braze connection          |
|                                                 |                                            |                | Φ, inch (mm) | 7/8 (22.22)               | 7/8 (22.22)               | 1-1/8 (28.58)             |
|                                                 | Heat Insulation                            |                | -            | Both liquid and gas pipes | Both liquid and gas pipes | Both liquid and gas pipes |
|                                                 | Piping length (ODU-IDU)                    | Max. [Equiv.]  | ft           | 656[722]                  | 656[722]                  | 656[722]                  |
|                                                 | Piping length (1st Branch-IDU)             | Max.           | ft           | 295                       | 295                       | 295                       |
|                                                 | Total piping length (System)               | Max.           | ft           | 3,281                     | 3,281                     | 3,281                     |
|                                                 | Level difference (ODU in highest position) | Max.           | ft           | 361                       | 361                       | 361                       |
|                                                 | Level difference (IDU in highest position) | Max.           | ft           | 361                       | 361                       | 361                       |
|                                                 | Level difference (IDU-IDU)                 | Max.           | ft           | 131                       | 131                       | 131                       |

# Specification

(575V)

| Model Name               |                             |         |          | VRC144S4M-4J                  | VRC168S4M-4J                  | VRC192S4M-4J                  |
|--------------------------|-----------------------------|---------|----------|-------------------------------|-------------------------------|-------------------------------|
| Outdoor unit module 1    |                             |         |          | -                             | -                             | -                             |
|                          |                             |         |          | -                             | -                             | -                             |
|                          |                             |         |          | -                             | -                             | -                             |
|                          |                             |         |          | -                             | -                             | -                             |
| Wiring Connections       | Transmission Cable          | Min.    | AWG      | 18                            | 18                            | 18                            |
|                          |                             | Remark  | -        | F1, F2                        | F1, F2                        | F1, F2                        |
|                          | Power supply intake         |         | -        | Both indoor and outdoor unit  | Both indoor and outdoor unit  | Both indoor and outdoor unit  |
| Refrigerant              | 4) Type                     |         | -        | R410A                         | R410A                         | R410A                         |
|                          | Factory Charging            |         | lbs (kg) | 23.1 (10.5)                   | 23.1 (10.5)                   | 27.6 (12.5)                   |
| Sound                    | 5) Sound Pressure           | Cooling | dB(A)    | 60.0                          | 60.0                          | 63.0                          |
|                          |                             | Heating | dB(A)    | 63.0                          | 63.0                          | 66.0                          |
|                          | 6) Sound Power              |         | dB(A)    | 81.0                          | 83.0                          | 85.0                          |
| External Dimension       | Net Weight                  |         | lbs (kg) | 659 (299)                     | 710 (322)                     | 866 (393)                     |
|                          | Shipping Weight             |         | lbs (kg) | 697 (316)                     | 747 (339)                     | 924 (419)                     |
|                          | Net Dimensions (WxHxD)      |         | mm       | 1,295 x 1,695 x 765           | 1,295 x 1,695 x 765           | 1,860 x 1,695 x 765           |
|                          |                             |         | inch     | 51 x 66-3/4 x 30-1/8          | 51 x 66-3/4 x 30-1/8          | 73-1/4 x 66-3/4 x 30-1/8      |
|                          | Shipping Dimensions (WxHxD) |         | mm       | 1,363 x 1,887 x 829           | 1,363 x 1,887 x 829           | 1,928 x 1,887 x 829           |
|                          |                             |         | inch     | 53-11/16 x 74-5/16 x 32-11/16 | 53-11/16 x 74-5/16 x 32-11/16 | 75-15/16 x 74-5/16 x 32-11/16 |
| 7) Operating Temp. Range | Cooling                     |         | °F (°C)  | 5 ~ 122 (-15 ~ 50)            | 5 ~ 122 (-15 ~ 50)            | 5 ~ 122 (-15 ~ 50)            |
|                          | Heating                     |         | °F (°C)  | -22 ~ 75 (-30 ~ 24)           | -22 ~ 75 (-30 ~ 24)           | -22 ~ 75 (-30 ~ 24)           |

## NOTE

- Specification may be subject to change without prior notice.
- Specification comply with EN14511.
- 1) Nominal capacities are based on (Equivalent refrigerant piping : 25ft, Level differences : 0ft);
  - Cooling : Indoor temperature 80°F DB, 67°F WB / Outdoor temperature 95°F DB, 75°F WB
  - Heating : Indoor temperature 70°F DB, 60°F WB / Outdoor temperature 47°F DB, 43°F WB
- 2) The standard allowed combination ratio of the total rated indoor unit capacity over the rated outdoor unit capacity is 50~130%. Combination ratio of up to 184% is allowed depending on operation mode, minimum operation ratio and connected indoor unit models. LVSS 2.0 design software supports designing over 130% based on system design. Refer to the "Design Procedure & Combination Ratio" section of this document for details
- 3) If outdoor unit is located in a higher position than indoor unit, level difference is 361ft or under.  
(If the level difference is higher than 164ft, the PDM kit should be installed)  
\*PDM kit: Pressure Drop Modulation kit
- 4) These products contain R410A which is fluorinated greenhouse gas.
- 5) Sound pressure was acquired in a dead room. Thus actual noise level may be different depending on the installation conditions.
- 6) Sound power level is an absolute value that a sound source generates.  
Sound pressure level is a relative value, depending on the distance and acoustic environment.  
Sound values are obtained in an anechoic room.  
Sound values of multi combination are theoretical values based on sound results of individual installed units.
- 7) Cooling operation is possible at -15°C(5°F) or higher if satisfied following conditions.  
(If the outdoor temperature below -5°C(23°F), wind(snow) protection duct must be installed on the suction side of the heat exchanger and at least 50% capacity of the connected indoor units must be operated.) However, if the outdoor unit is installed below the indoor unit, cooling operation is possible only at -5°C(23°F) or higher.
- For more information regarding capacity correction, please refer to capacity tables.

# Specification

(575V)

| Model Name                                      |                                            |                |                | VRC216S4M-4J                    | VRC240S4M-4J              | VRC264S4M-4J                                    |
|-------------------------------------------------|--------------------------------------------|----------------|----------------|---------------------------------|---------------------------|-------------------------------------------------|
|                                                 |                                            |                |                | -                               | -                         | VRC096S4M-4J                                    |
|                                                 |                                            |                |                | -                               | -                         | VRC168S4M-4J                                    |
|                                                 |                                            |                |                | -                               | -                         | -                                               |
| Power Supply                                    |                                            |                | Ø, #, V, Hz    | 3, 3, 575, 60                   | 3, 3, 575, 60             | 3, 3, 575, 60                                   |
| Mode                                            |                                            |                | -              | Heat Recovery                   | Heat Recovery             | Heat Recovery                                   |
| Performance                                     | TON                                        |                | TON            | 18                              | 20                        | 22                                              |
|                                                 | 1) Capacity (Nominal)                      | Cooling        | Btu/h          | 216,000                         | 240,000                   | 264,000                                         |
|                                                 |                                            | Heating        | Btu/h          | 243,000                         | 270,000                   | 297,000                                         |
|                                                 | Capacity (Rated)                           | Cooling        | Btu/h          | 206,000                         | 228,000                   | 252,000                                         |
|                                                 |                                            | Heating        | Btu/h          | 232,000                         | 258,000                   | 282,000                                         |
| Maximum number of connectable indoor units      |                                            |                | EA             | 37                              | 41                        | 45                                              |
| 2) Total capacity of the connected Indoor Units |                                            | Min.           | Btu/h          | 108,000                         | 120,000                   | 132,000                                         |
|                                                 |                                            | Max.           | Btu/h          | 280,800                         | 312,000                   | 343,200                                         |
| Power                                           | Current                                    | MCA            | A              | 34.0                            | 35.8                      | -                                               |
|                                                 |                                            | MOP            | A              | 45                              | 45                        | -                                               |
| Casing                                          | Material                                   | Body           | -              | GI Steel Plate                  | GI Steel Plate            | GI Steel Plate                                  |
|                                                 |                                            | Base           | -              | GI Steel Plate                  | GI Steel Plate            | GI Steel Plate                                  |
| Heat Exchanger                                  | Type                                       |                | -              | Fin & Tube                      | Fin & Tube                | Fin & Tube                                      |
|                                                 | Material                                   | Fin            | -              | Al                              | Al                        | Al                                              |
|                                                 |                                            | Tube           | -              | Cu                              | Cu                        | Cu                                              |
| Fin Treatment                                   |                                            | -              | Anti-corrosion | Anti-corrosion                  | Anti-corrosion            |                                                 |
| Compressor                                      | Type                                       |                | -              | Inverter Scroll x 2             | Inverter Scroll x 2       | Inverter Scroll x 4                             |
|                                                 | Output                                     |                | kW x n         | 6.67 x 2                        | 6.67 x 2                  | (4.39 x 2) x 1 + (6.67 x 2) x 1                 |
|                                                 | Model Name                                 |                | -              | DS4GR7066FV* x 2                | DS4GR7066FV* x 2          | (DS2GR7046FV* x 2) x 1 + (DS4GR7066FV* x 2) x 1 |
|                                                 | Oil                                        | Type           | -              | PVE                             | PVE                       | PVE                                             |
|                                                 |                                            | Initial charge | cc x n         | 1,100 x 2                       | 1,100 x 2                 | (900 x 2) x 1 + (1,100 x 2) x 1                 |
| fl oz x n                                       | 37.2 x 2                                   |                | 37.2 x 2       | (30.4 x 2) x 1 + (37.2 x 2) x 1 |                           |                                                 |
| Fan                                             | Type                                       |                | -              | Propeller                       | Propeller                 | Propeller                                       |
|                                                 | Discharge direction                        |                | -              | Top                             | Top                       | Top                                             |
|                                                 | Quantity                                   |                | EA             | 2                               | 2                         | 4                                               |
|                                                 | Air Flow Rate                              |                | CFM (m³/min)   | 13,314 (377)                    | 13,773 (390)              | 9,924 x 1 + 10,665 x 1 (281 x 1 + 302 x 1)      |
|                                                 | External Static Pressure                   | Max.           | mmAq           | 8                               | 8                         | -                                               |
|                                                 |                                            |                | Pa             | 80                              | 80                        | -                                               |
|                                                 |                                            |                | in Wg (Pa)     | 0.31 (78.45)                    | 0.31 (78.45)              | -                                               |
| Fan Motor                                       | Type                                       |                | -              | BLDC Motor                      | BLDC Motor                | BLDC Motor                                      |
|                                                 | Output                                     |                | W x n          | 630 x 2                         | 630 x 2                   | (630 x 2) x 2                                   |
| 3) Piping Connections                           | Liquid Pipe                                |                | Type           | Braze connection                | Braze connection          | Braze connection                                |
|                                                 |                                            |                | Φ, inch (mm)   | 5/8 (15.88)                     | 5/8 (15.88)               | 3/4 (19.05)                                     |
|                                                 | Gas Pipe                                   |                | Type           | Braze connection                | Braze connection          | Braze connection                                |
|                                                 |                                            |                | Φ, inch (mm)   | 1-1/8 (28.58)                   | 1-3/8 (34.92)             | 1-3/8 (34.92)                                   |
|                                                 | High pressure Gas Pipe (HR Only)           |                | Type           | Braze connection                | Braze connection          | Braze connection                                |
|                                                 |                                            |                | Φ, inch (mm)   | 1-1/8 (28.58)                   | 1-1/8 (28.58)             | 1-1/8 (28.58)                                   |
|                                                 | Heat Insulation                            |                | -              | Both liquid and gas pipes       | Both liquid and gas pipes | Both liquid and gas pipes                       |
|                                                 | Piping length (ODU-IDU)                    | Max. [Equiv.]  | ft             | 656[722]                        | 656[722]                  | 656[722]                                        |
|                                                 | Piping length (1st Branch-IDU)             | Max.           | ft             | 295                             | 295                       | 295                                             |
|                                                 | Total piping length (System)               | Max.           | ft             | 3,281                           | 3,281                     | 3,281                                           |
|                                                 | Level difference (ODU in highest position) | Max.           | ft             | 361                             | 361                       | 361                                             |
|                                                 | Level difference (IDU in highest position) | Max.           | ft             | 361                             | 361                       | 361                                             |
|                                                 | Level difference (IDU-IDU)                 | Max.           | ft             | 131                             | 131                       | 131                                             |

# Specification

(575V)

| Model Name               |                             |         |          | VRC216S4M-4J                  | VRC240S4M-4J                  | VRC264S4M-4J                                |
|--------------------------|-----------------------------|---------|----------|-------------------------------|-------------------------------|---------------------------------------------|
| Outdoor unit module 1    |                             |         |          | -                             | -                             | VRC096S4M-4J                                |
|                          |                             |         |          | -                             | -                             | VRC168S4M-4J                                |
|                          |                             |         |          | -                             | -                             | -                                           |
|                          |                             |         |          | -                             | -                             | -                                           |
| Wiring Connections       | Transmission Cable          | Min.    | AWG      | 18                            | 18                            | 18                                          |
|                          |                             | Remark  | -        | F1, F2                        | F1, F2                        | F1, F2                                      |
|                          | Power supply intake         |         | -        | Both indoor and outdoor unit  | Both indoor and outdoor unit  | Both indoor and outdoor unit                |
| Refrigerant              | 4) Type                     |         | -        | R410A                         | R410A                         | R410A                                       |
|                          | Factory Charging            |         | lbs (kg) | 34.2 (15.5)                   | 34.2 (15.5)                   | 17.6 x 1 + 23.1 x 1<br>(8.0 x 1 + 10.5 x 1) |
| Sound                    | 5) Sound Pressure           | Cooling | dB(A)    | 64.0                          | 66.0                          | 61.8                                        |
|                          |                             | Heating | dB(A)    | 67.0                          | 68.0                          | 64.5                                        |
|                          | 6) Sound Power              |         | dB(A)    | 85.0                          | 86.5                          | 84.5                                        |
| External Dimension       | Net Weight                  |         | lbs (kg) | 886 (402)                     | 886 (402)                     | 617 x 1 + 710 x 1<br>(280 x 1 + 322 x 1)    |
|                          | Shipping Weight             |         | lbs (kg) | 944 (428)                     | 944 (428)                     | 655 x 1 + 747 x 1<br>(297 x 1 + 339 x 1)    |
|                          | Net Dimensions (WxHxD)      |         | mm       | 1,860x 1,695 x 765            | 1,860x 1,695 x 765            | (1,295 x 1,695 x 765) x 2                   |
|                          |                             |         | inch     | 73-1/4 x 66-3/4 x 30-1/8      | 73-1/4 x 66-3/4 x 30-1/8      | (51 x 66-3/4 x 30-1/8) x 2                  |
|                          | Shipping Dimensions (WxHxD) |         | mm       | 1,928 x 1,887x 829            | 1,928 x 1,887x 829            | (1,363 x 1,887 x 829) x 2                   |
|                          |                             |         | inch     | 75-15/16 x 74-5/16 x 32-11/16 | 75-15/16 x 74-5/16 x 32-11/16 | (53-11/16 x 74-5/16 x 32-11/16) x 2         |
| 7) Operating Temp. Range | Cooling                     |         | °F (°C)  | 5 ~ 122 (-15 ~ 50)            | 5 ~ 122 (-15 ~ 50)            | 5 ~ 122 (-15 ~ 50)                          |
|                          | Heating                     |         | °F (°C)  | -22 ~ 75 (-30 ~ 24)           | -22 ~ 75 (-30 ~ 24)           | -22 ~ 75 (-30 ~ 24)                         |

## NOTE

- Specification may be subject to change without prior notice.
- Specification comply with EN14511.
- 1) Nominal capacities are based on (Equivalent refrigerant piping : 25ft, Level differences : 0ft);
  - Cooling : Indoor temperature 80°F DB, 67°F WB / Outdoor temperature 95°F DB, 75°F WB
  - Heating : Indoor temperature 70°F DB, 60°F WB / Outdoor temperature 47°F DB, 43°F WB
- 2) The standard allowed combination ratio of the total rated indoor unit capacity over the rated outdoor unit capacity is 50~130%. Combination ratio of up to 184% is allowed depending on operation mode, minimum operation ratio and connected indoor unit models. LVSS 2.0 design software supports designing over 130% based on system design. Refer to the "Design Procedure & Combination Ratio" section of this document for details
- 3) If outdoor unit is located in a higher position than indoor unit, level difference is 361ft or under.  
(If the level difference is higher than 164ft, the PDM kit should be installed)  
\*PDM kit: Pressure Drop Modulation kit
- 4) These products contain R410A which is fluorinated greenhouse gas.
- 5) Sound pressure was acquired in a dead room. Thus actual noise level may be different depending on the installation conditions.
- 6) Sound power level is an absolute value that a sound source generates.  
Sound pressure level is a relative value, depending on the distance and acoustic environment.  
Sound values are obtained in an anechoic room.  
Sound values of multi combination are theoretical values based on sound results of individual installed units.
- 7) Cooling operation is possible at -15°C(5°F) or higher if satisfied following conditions.  
(If the outdoor temperature below -5°C(23°F), wind(snow) protection duct must be installed on the suction side of the heat exchanger and at least 50%capacity of the connected indoor units must be operated.) However, if the outdoor unit is installed below the indoor unit, cooling operation is possible only at -5°C(23°F) or higher.
- For more information regarding capacity correction, please refer to capacity tables.

# Specification

(575V)

| Model Name                                      |                                            |                |                | VRC288S4M-4J                                    | VRC312S4M-4J                                    | VRC336S4M-4J                                    |
|-------------------------------------------------|--------------------------------------------|----------------|----------------|-------------------------------------------------|-------------------------------------------------|-------------------------------------------------|
|                                                 |                                            |                |                | VRC096S4M-4J                                    | VRC096S4M-4J                                    | VRC096S4M-4J                                    |
|                                                 |                                            |                |                | VRC192S4M-4J                                    | VRC216S4M-4J                                    | VRC240S4M-4J                                    |
|                                                 |                                            |                |                | -                                               | -                                               | -                                               |
| Power Supply                                    |                                            |                | Ø, #, V, Hz    | 3, 3, 575, 60                                   | 3, 3, 575, 60                                   | 3, 3, 575, 60                                   |
| Mode                                            |                                            |                | -              | Heat Recovery                                   | Heat Recovery                                   | Heat Recovery                                   |
| Performance                                     | TON                                        |                | TON            | 24                                              | 26                                              | 28                                              |
|                                                 | 1) Capacity (Nominal)                      | Cooling        | Btu/h          | 288,000                                         | 312,000                                         | 336,000                                         |
|                                                 |                                            | Heating        | Btu/h          | 324,000                                         | 351,000                                         | 378,000                                         |
|                                                 | Capacity (Rated)                           | Cooling        | Btu/h          | 274,000                                         | 298,000                                         | 320,000                                         |
|                                                 |                                            | Heating        | Btu/h          | 308,000                                         | 334,000                                         | 360,000                                         |
| Maximum number of connectable indoor units      |                                            |                | EA             | 49                                              | 54                                              | 58                                              |
| 2) Total capacity of the connected Indoor Units |                                            | Min.           | Btu/h          | 144,000                                         | 156,000                                         | 168,000                                         |
|                                                 |                                            | Max.           | Btu/h          | 374,400                                         | 405,600                                         | 436,800                                         |
| Power                                           | Current                                    | MCA            | A              | -                                               | -                                               | -                                               |
|                                                 |                                            | MOP            | A              | -                                               | -                                               | -                                               |
| Casing                                          | Material                                   | Body           | -              | GI Steel Plate                                  | GI Steel Plate                                  | GI Steel Plate                                  |
|                                                 |                                            | Base           | -              | GI Steel Plate                                  | GI Steel Plate                                  | GI Steel Plate                                  |
| Heat Exchanger                                  | Type                                       |                | -              | Fin & Tube                                      | Fin & Tube                                      | Fin & Tube                                      |
|                                                 | Material                                   | Fin            | -              | Al                                              | Al                                              | Al                                              |
|                                                 |                                            | Tube           | -              | Cu                                              | Cu                                              | Cu                                              |
| Fin Treatment                                   |                                            | -              | Anti-corrosion | Anti-corrosion                                  | Anti-corrosion                                  |                                                 |
| Compressor                                      | Type                                       |                | -              | Inverter Scroll x 4                             | Inverter Scroll x 4                             | Inverter Scroll x 4                             |
|                                                 | Output                                     |                | kW x n         | (4.39 x 2) x 1 + (6.67 x 2) x 1                 | (4.39 x 2) x 1 + (6.67 x 2) x 1                 | (4.39 x 2) x 1 + (6.67 x 2) x 1                 |
|                                                 | Model Name                                 |                | -              | (DS2GR7046FV* x 2) x 1 + (DS4GR7066FV* x 2) x 1 | (DS2GR7046FV* x 2) x 1 + (DS4GR7066FV* x 2) x 1 | (DS2GR7046FV* x 2) x 1 + (DS4GR7066FV* x 2) x 1 |
|                                                 | Oil                                        | Type           | -              | PVE                                             | PVE                                             | PVE                                             |
|                                                 |                                            | Initial charge | cc x n         | (900 x 2) x 1 + (1,100 x 2) x 1                 | (900 x 2) x 1 + (1,100 x 2) x 1                 | (900 x 2) x 1 + (1,100 x 2) x 1                 |
|                                                 |                                            |                | fl oz x n      | (30.4 x 2) x 1 + (37.2 x 2) x 1                 | (30.4 x 2) x 1 + (37.2 x 2) x 1                 | (30.4 x 2) x 1 + (37.2 x 2) x 1                 |
| Fan                                             | Type                                       |                | -              | Propeller                                       | Propeller                                       | Propeller                                       |
|                                                 | Discharge direction                        |                | -              | Top                                             | Top                                             | Top                                             |
|                                                 | Quantity                                   |                | EA             | 4                                               | 4                                               | 4                                               |
|                                                 | Air Flow Rate                              |                | CFM (m³/min)   | 9,924 x 1 + 12,855 x 1 (281 x 1 + 364 x 1)      | 9,924 x 1 + 13,314 x 1 (281 x 1 + 377 x 1)      | 9,924 x 1 + 13,773 x 1 (281 x 1 + 390 x 1)      |
|                                                 | External Static Pressure                   | Max.           | mmAq           | -                                               | -                                               | -                                               |
|                                                 |                                            |                | Pa             | -                                               | -                                               | -                                               |
|                                                 |                                            |                | in Wg (Pa)     | -                                               | -                                               | -                                               |
| Fan Motor                                       | Type                                       |                | -              | BLDC Motor                                      | BLDC Motor                                      | BLDC Motor                                      |
|                                                 | Output                                     |                | W x n          | (630 x 2) x 1 + (630 x 2) x 1                   | (630 x 2) x 1 + (630 x 2) x 1                   | (630 x 2) x 1 + (630 x 2) x 1                   |
| 3) Piping Connections                           | Liquid Pipe                                |                | Type           | Braze connection                                | Braze connection                                | Braze connection                                |
|                                                 |                                            |                | Φ, inch (mm)   | 3/4 (19.05)                                     | 3/4 (19.05)                                     | 3/4 (19.05)                                     |
|                                                 | Gas Pipe                                   |                | Type           | Braze connection                                | Braze connection                                | Braze connection                                |
|                                                 |                                            |                | Φ, inch (mm)   | 1-3/8 (34.92)                                   | 1-3/8 (34.92)                                   | 1-3/8 (34.92)                                   |
|                                                 | High pressure Gas Pipe (HR Only)           |                | Type           | Braze connection                                | Braze connection                                | Braze connection                                |
|                                                 |                                            |                | Φ, inch (mm)   | 1-1/8 (28.58)                                   | 1-1/8 (28.58)                                   | 1-1/8 (28.58)                                   |
|                                                 | Heat Insulation                            |                | -              | Both liquid and gas pipes                       | Both liquid and gas pipes                       | Both liquid and gas pipes                       |
|                                                 | Piping length (ODU-IDU)                    | Max. [Equiv.]  | ft             | 656[722]                                        | 656[722]                                        | 656[722]                                        |
|                                                 | Piping length (1st Branch-IDU)             | Max.           | ft             | 295                                             | 295                                             | 295                                             |
|                                                 | Total piping length (System)               | Max.           | ft             | 3,281                                           | 3,281                                           | 3,281                                           |
|                                                 | Level difference (ODU in highest position) | Max.           | ft             | 361                                             | 361                                             | 361                                             |
|                                                 | Level difference (IDU in highest position) | Max.           | ft             | 361                                             | 361                                             | 361                                             |
|                                                 | Level difference (IDU-IDU)                 | Max.           | ft             | 131                                             | 131                                             | 131                                             |

# Specification

(575V)

| Model Name               |                             |         |          | VRC288S4M-4J                                                                 | VRC312S4M-4J                                                                 | VRC336S4M-4J                                                                 |                                             |
|--------------------------|-----------------------------|---------|----------|------------------------------------------------------------------------------|------------------------------------------------------------------------------|------------------------------------------------------------------------------|---------------------------------------------|
|                          | Outdoor unit module 1       |         |          | VRC096S4M-4J                                                                 | VRC096S4M-4J                                                                 | VRC096S4M-4J                                                                 |                                             |
|                          | Outdoor unit module 2       |         |          | VRC192S4M-4J                                                                 | VRC216S4M-4J                                                                 | VRC240S4M-4J                                                                 |                                             |
|                          | Outdoor unit module 3       |         |          | -                                                                            | -                                                                            | -                                                                            |                                             |
| Wiring Connections       | Transmission Cable          | Min.    | AWG      | 18                                                                           | 18                                                                           | 18                                                                           |                                             |
|                          |                             | Remark  | -        | F1, F2                                                                       | F1, F2                                                                       | F1, F2                                                                       |                                             |
|                          | Power supply intake         |         |          | -                                                                            | Both indoor and outdoor unit                                                 | Both indoor and outdoor unit                                                 | Both indoor and outdoor unit                |
| Refrigerant              | 4) Type                     |         |          | -                                                                            | R410A                                                                        | R410A                                                                        | R410A                                       |
|                          | Factory Charging            |         |          | lbs (kg)                                                                     | 17.6 x 1 + 27.6 x 1<br>(8.0 x 1 + 12.5 x 1)                                  | 17.6 x 1 + 34.2 x 1<br>(8.0 x 1 + 15.5 x 1)                                  | 17.6 x 1 + 34.2 x 1<br>(8.0 x 1 + 15.5 x 1) |
| Sound                    | 5) Sound Pressure           | Cooling | dB(A)    | 64.0                                                                         | 64.8                                                                         | 66.5                                                                         |                                             |
|                          |                             | Heating | dB(A)    | 66.8                                                                         | 67.6                                                                         | 68.5                                                                         |                                             |
|                          | 6) Sound Power              |         |          | dB(A)                                                                        | 86.0                                                                         | 86.0                                                                         | 87.2                                        |
| External Dimension       | Net Weight                  |         | lbs (kg) | 617 x 1 + 866 x 1<br>(280 x 1 + 393 x 1)                                     | 617 x 1 + 886 x 1<br>(280 x 1 + 402 x 1)                                     | 617 x 1 + 886 x 1<br>(280 x 1 + 402 x 1)                                     |                                             |
|                          | Shipping Weight             |         | lbs (kg) | 655 x 1 + 924 x 1<br>(297 x 1 + 419 x 1)                                     | 655 x 1 + 944 x 1<br>(297 x 1 + 428 x 1)                                     | 655 x 1 + 944 x 1<br>(297 x 1 + 428 x 1)                                     |                                             |
|                          | Net Dimensions (WxHxD)      | mm      |          | (1,295 x 1,695 x 765) x 1<br>+ (1,860 x 1,695 x 765) x                       | (1,295 x 1,695 x 765) x 1<br>+ (1,860 x 1,695 x 765) x                       | (1,295 x 1,695 x 765) x 1<br>+ (1,860 x 1,695 x 765) x                       |                                             |
|                          |                             | inch    |          | (51 x 66-3/4 x 30-1/8) x 1 +<br>(73-1/4 x 66-3/4 x 30-1/8) x 1               | (51 x 66-3/4 x 30-1/8) x 1 +<br>(73-1/4 x 66-3/4 x 30-1/8) x 1               | (51 x 66-3/4 x 30-1/8) x 1 +<br>(73-1/4 x 66-3/4 x 30-1/8) x 1               |                                             |
|                          | Shipping Dimensions (WxHxD) | mm      |          | (1,363 x 1,887 x 829) x 1<br>+ (1,928 x 1,887 x 829) x 1                     | (1,363 x 1,887 x 829) x 1<br>+ (1,928 x 1,887 x 829) x 1                     | (1,363 x 1,887 x 829) x 1<br>+ (1,928 x 1,887 x 829) x 1                     |                                             |
|                          |                             | inch    |          | (53-11/16 x 74-5/16 x 32-11/16) x 1 +<br>(75-15/16 x 74-5/16 x 32-11/16) x 1 | (53-11/16 x 74-5/16 x 32-11/16) x 1 +<br>(75-15/16 x 74-5/16 x 32-11/16) x 1 | (53-11/16 x 74-5/16 x 32-11/16) x 1 +<br>(75-15/16 x 74-5/16 x 32-11/16) x 1 |                                             |
| 7) Operating Temp. Range | Cooling                     |         | °F (°C)  | 5 ~ 122 (-15 ~ 50)                                                           | 5 ~ 122 (-15 ~ 50)                                                           | 5 ~ 122 (-15 ~ 50)                                                           |                                             |
|                          | Heating                     |         | °F (°C)  | -22 ~ 75 (-30 ~ 24)                                                          | -22 ~ 75 (-30 ~ 24)                                                          | -22 ~ 75 (-30 ~ 24)                                                          |                                             |

## NOTE

- Specification may be subject to change without prior notice.
- Specification comply with EN14511.
- 1) Nominal capacities are based on (Equivalent refrigerant piping : 25ft, Level differences : 0ft);
  - Cooling : Indoor temperature 80°F DB, 67°F WB / Outdoor temperature 95°F DB, 75°F WB
  - Heating : Indoor temperature 70°F DB, 60°F WB / Outdoor temperature 47°F DB, 43°F WB
- 2) The standard allowed combination ratio of the total rated indoor unit capacity over the rated outdoor unit capacity is 50~130%. Combination ratio of up to 184% is allowed depending on operation mode, minimum operation ratio and connected indoor unit models. LVSS 2.0 design software supports designing over 130% based on system design. Refer to the "Design Procedure & Combination Ratio" section of this document for details
- 3) If outdoor unit is located in a higher position than indoor unit, level difference is 361ft or under.  
(If the level difference is higher than 164ft, the PDM kit should be installed)  
\*PDM kit: Pressure Drop Modulation kit
- 4) These products contain R410A which is fluorinated greenhouse gas.
- 5) Sound pressure was acquired in a dead room. Thus actual noise level may be different depending on the installation conditions.
- 6) Sound power level is an absolute value that a sound source generates.  
Sound pressure level is a relative value, depending on the distance and acoustic environment.  
Sound values are obtained in an anechoic room.  
Sound values of multi combination are theoretical values based on sound results of individual installed units.
- 7) Cooling operation is possible at -15°C(5°F) or higher if satisfied following conditions.  
(If the outdoor temperature below -5°C(23°F), wind(snow) protection duct must be installed on the suction side of the heat exchanger and at least 50%capacity of the connected indoor units must be operated.) However, if the outdoor unit is installed below the indoor unit, cooling operation is possible only at -5°C(23°F) or higher.
- For more information regarding capacity correction, please refer to capacity tables.

# Specification

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| Model Name                                      |                                            |                |                | VRC360S4M-4J                                    | VRC384S4M-4J              | VRC408S4M-4J                                |
|-------------------------------------------------|--------------------------------------------|----------------|----------------|-------------------------------------------------|---------------------------|---------------------------------------------|
|                                                 |                                            |                |                | VRC120S4M-4J                                    | VRC192S4M-4J              | VRC192S4M-4J                                |
|                                                 |                                            |                |                | VRC240S4M-4J                                    | VRC192S4M-4J              | VRC216S4M-4J                                |
|                                                 |                                            |                |                | -                                               | -                         | -                                           |
| Power Supply                                    |                                            |                | Ø, #, V, Hz    | 3, 3, 575, 60                                   | 3, 3, 575, 60             | 3, 3, 575, 60                               |
| Mode                                            |                                            |                | -              | Heat Recovery                                   | Heat Recovery             | Heat Recovery                               |
| Performance                                     | TON                                        |                | TON            | 30                                              | 32                        | 34                                          |
|                                                 | 1) Capacity (Nominal)                      | Cooling        | Btu/h          | 360,000                                         | 384,000                   | 408,000                                     |
|                                                 |                                            | Heating        | Btu/h          | 405,000                                         | 432,000                   | 459,000                                     |
|                                                 | Capacity (Rated)                           | Cooling        | Btu/h          | 342,000                                         | 366,000                   | 388,000                                     |
|                                                 |                                            | Heating        | Btu/h          | 386,000                                         | 412,000                   | 438,000                                     |
| Maximum number of connectable indoor units      |                                            |                | EA             | 62                                              | 64                        | 64                                          |
| 2) Total capacity of the connected Indoor Units |                                            | Min.           | Btu/h          | 180,000                                         | 192,000                   | 204,000                                     |
|                                                 |                                            | Max.           | Btu/h          | 468,000                                         | 499,200                   | 530,400                                     |
| Power                                           | Current                                    | MCA            | A              | -                                               | -                         | -                                           |
|                                                 |                                            | MOP            | A              | -                                               | -                         | -                                           |
| Casing                                          | Material                                   | Body           | -              | GI Steel Plate                                  | GI Steel Plate            | GI Steel Plate                              |
|                                                 |                                            | Base           | -              | GI Steel Plate                                  | GI Steel Plate            | GI Steel Plate                              |
| Heat Exchanger                                  | Type                                       |                | -              | Fin & Tube                                      | Fin & Tube                | Fin & Tube                                  |
|                                                 | Material                                   | Fin            | -              | Al                                              | Al                        | Al                                          |
|                                                 |                                            | Tube           | -              | Cu                                              | Cu                        | Cu                                          |
| Fin Treatment                                   |                                            | -              | Anti-corrosion | Anti-corrosion                                  | Anti-corrosion            |                                             |
| Compressor                                      | Type                                       |                | -              | Inverter Scroll x 4                             | Inverter Scroll x 4       | Inverter Scroll x 4                         |
|                                                 | Output                                     |                | kW x n         | (4.39 x 2) x 1 + (6.67 x 2) x 1                 | (6.67 x 2) x 2            | (6.67 x 2) x 2                              |
|                                                 | Model Name                                 |                | -              | (DS2GR7046FV* x 2) x 1 + (DS4GR7066FV* x 2) x 1 | (DS4GR7066FV* x 2) x 2    | (DS4GR7066FV* x 2) x 2                      |
|                                                 | Oil                                        | Type           | -              | PVE                                             | PVE                       | PVE                                         |
|                                                 |                                            | Initial charge | cc x n         | (900 x 2) x 1 + (1,100 x 2) x 1                 | (1,100 x 2) x 2           | (1,100 x 2) x 2                             |
|                                                 |                                            |                | fl oz x n      | (30.4 x 2) x 1 + (37.2 x 2) x 1                 | (37.2 x 2) x 2            | (37.2 x 2) x 2                              |
| Fan                                             | Type                                       |                | -              | Propeller                                       | Propeller                 | Propeller                                   |
|                                                 | Discharge direction                        |                | -              | Top                                             | Top                       | Top                                         |
|                                                 | Quantity                                   |                | EA             | 4                                               | 4                         | 4                                           |
|                                                 | Air Flow Rate                              |                | CFM (m³/min)   | 9,924 x 1 + 13,773 x 1 (281 x 1 + 390 x 1)      | 12,855 x 2 (364 x 2)      | 12,855 x 1 + 13,314 x 1 (364 x 1 + 377 x 1) |
|                                                 | External Static Pressure                   | Max.           | mmAq           | -                                               | -                         | -                                           |
|                                                 |                                            |                | Pa             | -                                               | -                         | -                                           |
|                                                 |                                            |                | in Wg (Pa)     | -                                               | -                         | -                                           |
| Fan Motor                                       | Type                                       |                | -              | BLDC Motor                                      | BLDC Motor                | BLDC Motor                                  |
|                                                 | Output                                     |                | W x n          | (630 x 2) x 1 + (630 x 2) x 1                   | (630 x 2) x 2             | (630 x 2) x 2                               |
| 3) Piping Connections                           | Liquid Pipe                                |                | Type           | Braze connection                                | Braze connection          | Braze connection                            |
|                                                 |                                            |                | Φ, inch (mm)   | 3/4 (19.05)                                     | 3/4 (19.05)               | 3/4 (19.05)                                 |
|                                                 | Gas Pipe                                   |                | Type           | Braze connection                                | Braze connection          | Braze connection                            |
|                                                 |                                            |                | Φ, inch (mm)   | 1-5/8 (41.28)                                   | 1-5/8 (41.28)             | 1-5/8 (41.28)                               |
|                                                 | High pressure Gas Pipe (HR Only)           |                | Type           | Braze connection                                | Braze connection          | Braze connection                            |
|                                                 |                                            |                | Φ, inch (mm)   | 1-3/8 (34.92)                                   | 1-3/8 (34.92)             | 1-3/8 (34.92)                               |
|                                                 | Heat Insulation                            |                | -              | Both liquid and gas pipes                       | Both liquid and gas pipes | Both liquid and gas pipes                   |
|                                                 | Piping length (ODU-IDU)                    | Max. [Equiv.]  | ft             | 656[722]                                        | 656[722]                  | 656[722]                                    |
|                                                 | Piping length (1st Branch-IDU)             | Max.           | ft             | 295                                             | 295                       | 295                                         |
|                                                 | Total piping length (System)               | Max.           | ft             | 3,281                                           | 3,281                     | 3,281                                       |
|                                                 | Level difference (ODU in highest position) | Max.           | ft             | 361                                             | 361                       | 361                                         |
|                                                 | Level difference (IDU in highest position) | Max.           | ft             | 361                                             | 361                       | 361                                         |
|                                                 | Level difference (IDU-IDU)                 | Max.           | ft             | 131                                             | 131                       | 131                                         |

# Specification

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|                          |                             |         |       |              |                                                                              |                                     |                                              |
|--------------------------|-----------------------------|---------|-------|--------------|------------------------------------------------------------------------------|-------------------------------------|----------------------------------------------|
| Model Name               |                             |         |       | VRC360S4M-4J | VRC384S4M-4J                                                                 | VRC408S4M-4J                        |                                              |
|                          | Outdoor unit module 1       |         |       | VRC120S4M-4J | VRC192S4M-4J                                                                 | VRC192S4M-4J                        |                                              |
|                          | Outdoor unit module 2       |         |       | VRC240S4M-4J | VRC192S4M-4J                                                                 | VRC216S4M-4J                        |                                              |
|                          | Outdoor unit module 3       |         |       | -            | -                                                                            | -                                   |                                              |
| Wiring Connections       | Transmission Cable          | Min.    | AWG   | 18           | 18                                                                           | 18                                  |                                              |
|                          |                             | Remark  | -     | F1, F2       | F1, F2                                                                       | F1, F2                              |                                              |
|                          | Power supply intake         |         |       | -            | Both indoor and outdoor unit                                                 | Both indoor and outdoor unit        | Both indoor and outdoor unit                 |
| Refrigerant              | 4) Type                     |         |       | -            | R410A                                                                        | R410A                               | R410A                                        |
|                          | Factory Charging            |         |       | lbs (kg)     | 17.6 x 1 + 34.2 x 1<br>(8.0 x 1 + 15.5 x 1)                                  | 27.6 x 2<br>(12.5 x 2)              | 27.6 x 1 + 34.2 x 1<br>(12.5 x 1 + 15.5 x 1) |
| Sound                    | 5) Sound Pressure           | Cooling | dB(A) | 66.5         | 66.0                                                                         | 66.5                                |                                              |
|                          |                             | Heating | dB(A) | 68.6         | 69.0                                                                         | 69.5                                |                                              |
|                          | 6) Sound Power              |         |       | dB(A)        | 87.2                                                                         | 88.0                                | 88.0                                         |
| External Dimension       | Net Weight                  |         |       | lbs (kg)     | 617 x 1 + 886 x 1<br>(280 x 1 + 402 x 1)                                     | 866 x 2<br>(393 x 2)                | 866 x 1 + 886 x 1<br>(393 x 1 + 402 x 1)     |
|                          | Shipping Weight             |         |       | lbs (kg)     | 655 x 1 + 944 x 1<br>(297 x 1 + 428 x 1)                                     | 924 x 2<br>(419 x 2)                | 924 x 1 + 944 x 1<br>(419 x 1 + 428 x 1)     |
|                          | Net Dimensions (WxHxD)      |         |       | mm           | (1,295 x 1,695 x 765) x 1<br>+ (1,860 x 1,695 x 765) x 1                     | (1,860 x 1,695 x 765) x 2           | (1,860 x 1,695 x 765) x 2                    |
|                          |                             |         |       | inch         | (51 x 66-3/4 x 30-1/8) x 1 +<br>(73-1/4 x 66-3/4 x 30-1/8) x 1               | (73-1/4 x 66-3/4 x 30-1/8) x 2      | (73-1/4 x 66-3/4 x 30-1/8) x 2               |
|                          | Shipping Dimensions (WxHxD) |         |       | mm           | (1,363 x 1,887 x 829) x 1<br>+ (1,928 x 1,887 x 829) x 1                     | (1,928 x 1,887 x 829) x 2           | (1,928 x 1,887 x 829) x 2                    |
|                          |                             |         |       | inch         | (53-11/16 x 74-5/16 x 32-11/16) x 1 +<br>(75-15/16 x 74-5/16 x 32-11/16) x 1 | (75-15/16 x 74-5/16 x 32-11/16) x 2 | (75-15/16 x 74-5/16 x 32-11/16) x 2          |
| 7) Operating Temp. Range | Cooling                     |         |       | °F (°C)      | 5 ~ 122 (-15 ~ 50)                                                           | 5 ~ 122 (-15 ~ 50)                  | 5 ~ 122 (-15 ~ 50)                           |
|                          | Heating                     |         |       | °F (°C)      | -22 ~ 75 (-30 ~ 24)                                                          | -22 ~ 75 (-30 ~ 24)                 | -22 ~ 75 (-30 ~ 24)                          |

## NOTE

- Specification may be subject to change without prior notice.
- Specification comply with EN14511.
- 1) Nominal capacities are based on (Equivalent refrigerant piping : 25ft, Level differences : 0ft);
  - Cooling : Indoor temperature 80°F DB, 67°F WB / Outdoor temperature 95°F DB, 75°F WB
  - Heating : Indoor temperature 70°F DB, 60°F WB / Outdoor temperature 47°F DB, 43°F WB
- 2) The standard allowed combination ratio of the total rated indoor unit capacity over the rated outdoor unit capacity is 50~130%. Combination ratio of up to 184% is allowed depending on operation mode, minimum operation ratio and connected indoor unit models. LVSS 2.0 design software supports designing over 130% based on system design. Refer to the "Design Procedure & Combination Ratio" section of this document for details
- 3) If outdoor unit is located in a higher position than indoor unit, level difference is 361ft or under.  
(If the level difference is higher than 164ft, the PDM kit should be installed)  
\*PDM kit: Pressure Drop Modulation kit
- 4) These products contain R410A which is fluorinated greenhouse gas.
- 5) Sound pressure was acquired in a dead room. Thus actual noise level may be different depending on the installation conditions.
- 6) Sound power level is an absolute value that a sound source generates.  
Sound pressure level is a relative value, depending on the distance and acoustic environment.  
Sound values are obtained in an anechoic room.  
Sound values of multi combination are theoretical values based on sound results of individual installed units.
- 7) Cooling operation is possible at -15°C(5°F) or higher if satisfied following conditions.  
(If the outdoor temperature below -5°C(23°F), wind(snow) protection duct must be installed on the suction side of the heat exchanger and at least 50%capacity of the connected indoor units must be operated.) However, if the outdoor unit is installed below the indoor unit, cooling operation is possible only at -5°C(23°F) or higher.
- For more information regarding capacity correction, please refer to capacity tables.

# Specification

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| Model Name                                      |                                            |                |                | VRC432S4M-4J                                    |                | VRC456S4M-4J                                                      |  |
|-------------------------------------------------|--------------------------------------------|----------------|----------------|-------------------------------------------------|----------------|-------------------------------------------------------------------|--|
|                                                 |                                            |                |                | VRC120S4M-4J                                    |                | VRC120S4M-4J                                                      |  |
|                                                 |                                            |                |                | VRC120S4M-4J                                    |                | VRC144S4M-4J                                                      |  |
|                                                 |                                            |                |                | VRC192S4M-4J                                    |                | VRC192S4M-4J                                                      |  |
| Power Supply                                    |                                            |                | Ø, #, V, Hz    | 3, 3, 575, 60                                   |                | 3, 3, 575, 60                                                     |  |
| Mode                                            |                                            |                | -              | Heat Recovery                                   |                | Heat Recovery                                                     |  |
| Performance                                     | TON                                        |                | TON            | 36                                              |                | 38                                                                |  |
|                                                 | 1) Capacity (Nominal)                      | Cooling        | Btu/h          | 432,000                                         |                | 456,000                                                           |  |
|                                                 |                                            | Heating        | Btu/h          | 486,000                                         |                | 513,000                                                           |  |
|                                                 | Capacity (Rated)                           | Cooling        | Btu/h          | 412,000                                         |                | 436,000                                                           |  |
|                                                 |                                            | Heating        | Btu/h          | 462,000                                         |                | 488,000                                                           |  |
| Maximum number of connectable indoor units      |                                            |                | EA             | 64                                              |                | 64                                                                |  |
| 2) Total capacity of the connected Indoor Units |                                            | Min.           | Btu/h          | 216,000                                         |                | 228,000                                                           |  |
|                                                 |                                            | Max.           | Btu/h          | 561,600                                         |                | 592,800                                                           |  |
| Power                                           | Current                                    | MCA            | A              | -                                               |                | -                                                                 |  |
|                                                 |                                            | MOP            | A              | -                                               |                | -                                                                 |  |
| Casing                                          | Material                                   | Body           | -              | GI Steel Plate                                  |                | GI Steel Plate                                                    |  |
|                                                 |                                            | Base           | -              | GI Steel Plate                                  |                | GI Steel Plate                                                    |  |
| Heat Exchanger                                  | Type                                       |                | -              | Fin & Tube                                      |                | Fin & Tube                                                        |  |
|                                                 | Material                                   | Fin            | -              | Al                                              |                | Al                                                                |  |
|                                                 |                                            | Tube           | -              | Cu                                              |                | Cu                                                                |  |
| Fin Treatment                                   |                                            | -              | Anti-corrosion |                                                 | Anti-corrosion |                                                                   |  |
| Compressor                                      | Type                                       |                | -              | Inverter Scroll x 6                             |                | Inverter Scroll x 6                                               |  |
|                                                 | Output                                     |                | kW x n         | (4.39 x 2) x 2 + (6.67 x 2) x 1                 |                | (4.39 x 2) x 2 + (6.67 x 2) x 1                                   |  |
|                                                 | Model Name                                 |                | -              | (DS2GR7046FV* x 2) x 2 + (DS4GR7066FV* x 2) x 1 |                | (DS2GR7046FV* x 2) x 2 + (DS4GR7066FV* x 2) x 1                   |  |
|                                                 | Oil                                        | Type           | -              | PVE                                             |                | PVE                                                               |  |
|                                                 |                                            | Initial charge | cc x n         | (900 x 2) x 2 + (1,100 x 2) x 1                 |                | (900 x 2) x 2 + (1,100 x 2) x 1                                   |  |
|                                                 |                                            |                | fl oz x n      | (30.4 x 2) x 2 + (37.2 x 2) x 1                 |                | (30.4 x 2) x 2 + (37.2 x 2) x 1                                   |  |
| Fan                                             | Type                                       |                | -              | Propeller                                       |                | Propeller                                                         |  |
|                                                 | Discharge direction                        |                | -              | Top                                             |                | Top                                                               |  |
|                                                 | Quantity                                   |                | EA             | 6                                               |                | 6                                                                 |  |
|                                                 | Air Flow Rate                              |                | CFM (m³/min)   | 9,924 x 2 + 12,855 x 1 (281 x 2 + 364 x 1)      |                | 9,924 x 1 + 10,171 x 1 + 12,855 x 1 (281 x 1 + 288 x 1 + 364 x 1) |  |
|                                                 | External Static Pressure                   | Max.           | mmAq           | -                                               |                | -                                                                 |  |
|                                                 |                                            |                | Pa             | -                                               |                | -                                                                 |  |
|                                                 |                                            |                | in Wg (Pa)     | -                                               |                | -                                                                 |  |
| Fan Motor                                       | Type                                       |                | -              | BLDC Motor                                      |                | BLDC Motor                                                        |  |
|                                                 | Output                                     |                | W x n          | (630 x 2) x 2 + (630 x 2) x 1                   |                | (630 x 2) x 2 + (630 x 2) x 1                                     |  |
| 3) Piping Connections                           | Liquid Pipe                                |                | Type           | Braze connection                                |                | Braze connection                                                  |  |
|                                                 |                                            |                | Φ, inch (mm)   | 3/4 (19.05)                                     |                | 3/4 (19.05)                                                       |  |
|                                                 | Gas Pipe                                   |                | Type           | Braze connection                                |                | Braze connection                                                  |  |
|                                                 |                                            |                | Φ, inch (mm)   | 1-5/8 (41.28)                                   |                | 1-5/8 (41.28)                                                     |  |
|                                                 | High pressure Gas Pipe (HR Only)           |                | Type           | Braze connection                                |                | Braze connection                                                  |  |
|                                                 |                                            |                | Φ, inch (mm)   | 1-3/8 (34.92)                                   |                | 1-3/8 (34.92)                                                     |  |
|                                                 | Heat Insulation                            |                | -              | Both liquid and gas pipes                       |                | Both liquid and gas pipes                                         |  |
|                                                 | Piping length (ODU-IDU)                    | Max. [Equiv.]  | ft             | 656[722]                                        |                | 656[722]                                                          |  |
|                                                 | Piping length (1st Branch-IDU)             | Max.           | ft             | 295                                             |                | 295                                                               |  |
|                                                 | Total piping length (System)               | Max.           | ft             | 3,281                                           |                | 3,281                                                             |  |
|                                                 | Level difference (ODU in highest position) | Max.           | ft             | 361                                             |                | 361                                                               |  |
|                                                 | Level difference (IDU in highest position) | Max.           | ft             | 361                                             |                | 361                                                               |  |
|                                                 | Level difference (IDU-IDU)                 | Max.           | ft             | 131                                             |                | 131                                                               |  |

# Specification

(575V)

| Model Name               |                             |         |                                                                              | VRC432S4M-4J                                                                 | VRC456S4M-4J                                                      |
|--------------------------|-----------------------------|---------|------------------------------------------------------------------------------|------------------------------------------------------------------------------|-------------------------------------------------------------------|
|                          | Outdoor unit module 1       |         |                                                                              | VRC120S4M-4J                                                                 | VRC120S4M-4J                                                      |
|                          | Outdoor unit module 2       |         |                                                                              | VRC120S4M-4J                                                                 | VRC144S4M-4J                                                      |
|                          | Outdoor unit module 3       |         |                                                                              | VRC192S4M-4J                                                                 | VRC192S4M-4J                                                      |
| Wiring Connections       | Transmission Cable          | Min.    | AWG                                                                          | 18                                                                           | 18                                                                |
|                          |                             | Remark  | -                                                                            | F1, F2                                                                       | F1, F2                                                            |
|                          | Power supply intake         |         |                                                                              | -                                                                            | Both indoor and outdoor unit                                      |
| Refrigerant              | 4) Type                     |         | -                                                                            | R410A                                                                        | R410A                                                             |
|                          | Factory Charging            |         | lbs (kg)                                                                     | 17.6 x 2 + 27.6 x 1<br>(8.0 x 2 + 12.5 x 1)                                  | 17.6 x 1 + 23.1 x 1 + 27.6 x 1<br>(8.0 x 1 + 10.5 x 1 + 12.5 x 1) |
| Sound                    | 5) Sound Pressure           | Cooling | dB(A)                                                                        | 64.8                                                                         | 65.4                                                              |
|                          |                             | Heating | dB(A)                                                                        | 67.8                                                                         | 68.4                                                              |
|                          | 6) Sound Power              |         | dB(A)                                                                        | 86.8                                                                         | 87.2                                                              |
| External Dimension       | Net Weight                  |         | lbs (kg)                                                                     | 617 x 2 + 866 x 1<br>(280 x 2 + 393 x 1)                                     | 617 x 1 + 659 x 1 + 866 x 1<br>(280 x 1 + 299 x 1 + 393 x 1)      |
|                          | Shipping Weight             |         | lbs (kg)                                                                     | 655 x 2 + 924 x 1<br>(297 x 2 + 419 x 1)                                     | 655 x 1 + 697 x 1 + 924 x 1<br>(297 x 1 + 316 x 1 + 419 x 1)      |
|                          | Net Dimensions (WxHxD)      | mm      | (1,295 x 1,695 x 765) x 2 +<br>(1,860 x 1,695 x 765) x 1                     | (1,295 x 1,695 x 765) x 2 +<br>(1,860 x 1,695 x 765) x 1                     |                                                                   |
|                          |                             | inch    | (51 x 66-3/4 x 30-1/8) x 2 +<br>(73-1/4 x 66-3/4 x 30-1/8) x 1               | (51 x 66-3/4 x 30-1/8) x 2 +<br>(73-1/4 x 66-3/4 x 30-1/8) x 1               |                                                                   |
|                          | Shipping Dimensions (WxHxD) | mm      | (1,363 x 1,887 x 829) x 2 +<br>(1,928 x 1,887 x 829) x 1                     | (1,363 x 1,887 x 829) x 2 +<br>(1,928 x 1,887 x 829) x 1                     |                                                                   |
|                          |                             | inch    | (53-11/16 x 74-5/16 x 32-11/16) x 2 +<br>(75-15/16 x 74-5/16 x 32-11/16) x 1 | (53-11/16 x 74-5/16 x 32-11/16) x 2 +<br>(75-15/16 x 74-5/16 x 32-11/16) x 1 |                                                                   |
| 7) Operating Temp. Range | Cooling                     |         | °F (°C)                                                                      | 5 ~ 122 (-15 ~ 50)                                                           | 5 ~ 122 (-15 ~ 50)                                                |
|                          | Heating                     |         | °F (°C)                                                                      | -22 ~ 75 (-30 ~ 24)                                                          | -22 ~ 75 (-30 ~ 24)                                               |

## NOTE

- Specification may be subject to change without prior notice.
- Specification comply with EN14511.
- 1) Nominal capacities are based on (Equivalent refrigerant piping : 25ft, Level differences : 0ft);
  - Cooling : Indoor temperature 80°F DB, 67°F WB / Outdoor temperature 95°F DB, 75°F WB
  - Heating : Indoor temperature 70°F DB, 60°F WB / Outdoor temperature 47°F DB, 43°F WB
- 2) The standard allowed combination ratio of the total rated indoor unit capacity over the rated outdoor unit capacity is 50~130%. Combination ratio of up to 184% is allowed depending on operation mode, minimum operation ratio and connected indoor unit models. LVSS 2.0 design software supports designing over 130% based on system design. Refer to the "Design Procedure & Combination Ratio" section of this document for details
- 3) If outdoor unit is located in a higher position than indoor unit, level difference is 361ft or under.  
(If the level difference is higher than 164ft, the PDM kit should be installed)  
\*PDM kit: Pressure Drop Modulation kit
- 4) These products contain R410A which is fluorinated greenhouse gas.
- 5) Sound pressure was acquired in a dead room. Thus actual noise level may be different depending on the installation conditions.
- 6) Sound power level is an absolute value that a sound source generates.  
Sound pressure level is a relative value, depending on the distance and acoustic environment.  
Sound values are obtained in an anechoic room.  
Sound values of multi combination are theoretical values based on sound results of individual installed units.
- 7) Cooling operation is possible at -15°C(5°F) or higher if satisfied following conditions.  
(If the outdoor temperature below -5°C(23°F), wind(snow) protection duct must be installed on the suction side of the heat exchanger and at least 50%capacity of the connected indoor units must be operated.) However, if the outdoor unit is installed below the indoor unit, cooling operation is possible only at -5°C(23°F) or higher.
- For more information regarding capacity correction, please refer to capacity tables.

# Electric Characteristics

(575V)

| Capacity<br>TON | Model Name   | Power Supply |         | Module #1 |      |            |            | Module #2 |      |            |            | Module #3 |      |            |            |
|-----------------|--------------|--------------|---------|-----------|------|------------|------------|-----------|------|------------|------------|-----------|------|------------|------------|
|                 |              |              |         | FLA[A]    |      | MCA<br>[A] | MOP<br>[A] | FLA[A]    |      | MCA<br>[A] | MOP<br>[A] | FLA[A]    |      | MCA<br>[A] | MOP<br>[A] |
|                 |              | Hz           | Voltage | FAN1      | FAN2 |            |            | FAN1      | FAN2 |            |            | FAN1      | FAN2 |            |            |
| 6               | VRC072S4M-4J | 60           | 575     | 2.3       | -    | 13.4       | 20         | -         | -    | -          | -          | -         | -    | -          | -          |
| 8               | VRC096S4M-4J | 60           | 575     | 2.3       | 2.3  | 16.1       | 20         | -         | -    | -          | -          | -         | -    | -          | -          |
| 10              | VRC120S4M-4J | 60           | 575     | 2.3       | 2.3  | 17.4       | 20         | -         | -    | -          | -          | -         | -    | -          | -          |
| 12              | VRC144S4M-4J | 60           | 575     | 2.3       | 2.3  | 22.2       | 25         | -         | -    | -          | -          | -         | -    | -          | -          |
| 14              | VRC168S4M-4J | 60           | 575     | 2.3       | 2.3  | 24.8       | 30         | -         | -    | -          | -          | -         | -    | -          | -          |
| 16              | VRC192S4M-4J | 60           | 575     | 2.3       | 2.3  | 30.5       | 40         | -         | -    | -          | -          | -         | -    | -          | -          |
| 18              | VRC216S4M-4J | 60           | 575     | 2.3       | 2.3  | 34.0       | 45         | -         | -    | -          | -          | -         | -    | -          | -          |
| 20              | VRC240S4M-4J | 60           | 575     | 2.3       | 2.3  | 35.8       | 45         | -         | -    | -          | -          | -         | -    | -          | -          |
| 22              | VRC264S4M-4J | 60           | 575     | 2.3       | 2.3  | 16.1       | 20         | 2.3       | 2.3  | 24.8       | 30         | -         | -    | -          | -          |
| 24              | VRC288S4M-4J | 60           | 575     | 2.3       | 2.3  | 16.1       | 20         | 2.3       | 2.3  | 30.5       | 40         | -         | -    | -          | -          |
| 26              | VRC312S4M-4J | 60           | 575     | 2.3       | 2.3  | 16.1       | 20         | 2.3       | 2.3  | 34.0       | 45         | -         | -    | -          | -          |
| 28              | VRC336S4M-4J | 60           | 575     | 2.3       | 2.3  | 16.1       | 20         | 2.3       | 2.3  | 35.8       | 45         | -         | -    | -          | -          |
| 30              | VRC360S4M-4J | 60           | 575     | 2.3       | 2.3  | 17.4       | 20         | 2.3       | 2.3  | 35.8       | 45         | -         | -    | -          | -          |
| 32              | VRC384S4M-4J | 60           | 575     | 2.3       | 2.3  | 30.5       | 40         | 2.3       | 2.3  | 30.5       | 40         | -         | -    | -          | -          |
| 34              | VRC408S4M-4J | 60           | 575     | 2.3       | 2.3  | 30.5       | 40         | 2.3       | 2.3  | 34.0       | 45         | -         | -    | -          | -          |
| 36              | VRC432S4M-4J | 60           | 575     | 2.3       | 2.3  | 17.4       | 20         | 2.3       | 2.3  | 17.4       | 20         | 2.3       | 2.3  | 30.5       | 40         |
| 38              | VRC456S4M-4J | 60           | 575     | 2.3       | 2.3  | 17.4       | 20         | 2.3       | 2.3  | 22.2       | 25         | 2.3       | 2.3  | 30.5       | 40         |



## NOTE

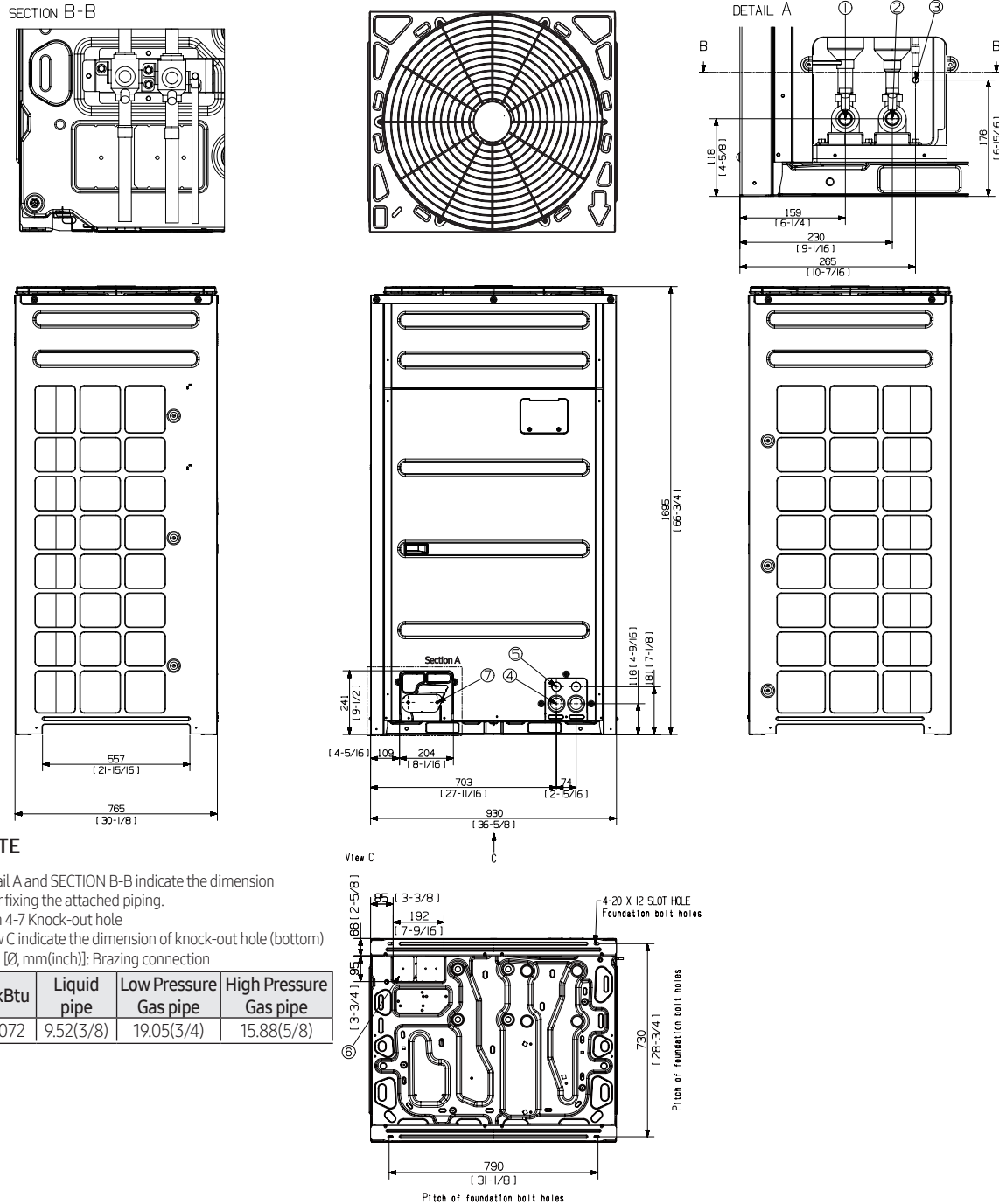
- Voltage Tolerance is  $\pm 10\%$
- Maximum allowable voltage between phases is 2%
- Refer to module combination table for independent units information
- FLA : Full Load Ampere
- MCA : Minimum Circuit Ampere (A)
- MOP : Maximum Overcurrent Protective Device (A)

# Dimensional Drawing

## Outdoor unit

• VRC072S4M-4J

Unit: mm (inches)



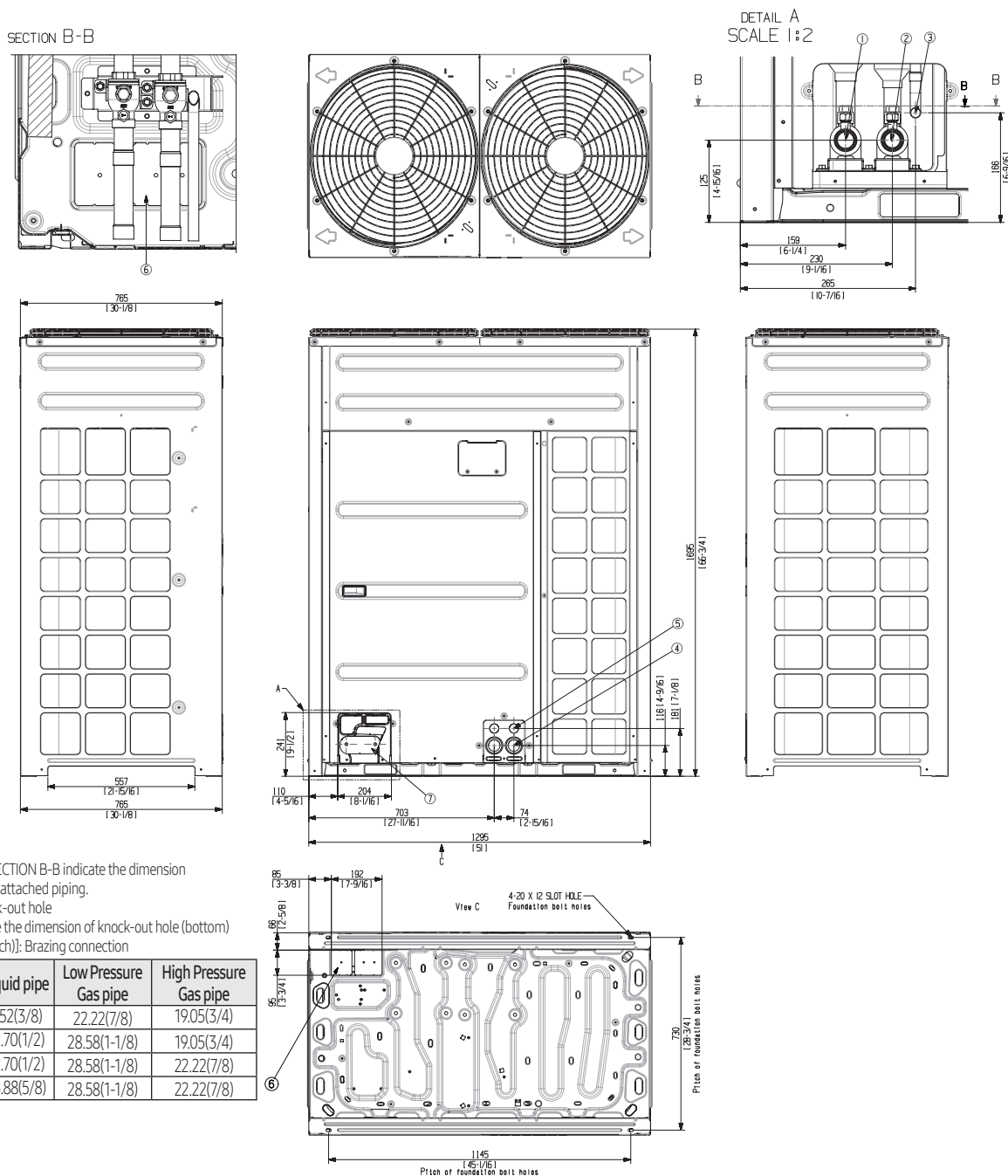
| NO | Table of descriptions     | Remark      | NO | Table of descriptions                  | Remark |
|----|---------------------------|-------------|----|----------------------------------------|--------|
| 1  | Low Pressure Gas Ref.pipe | See NOTE 4. | 5  | Communication wiring conduit           | Ø34    |
| 2  | High Pressure Ref.pipe    | See NOTE 4. | 6  | Knock-out Hole for Ref.Piping (bottom) |        |
| 3  | Liquid Ref.pipe           | See NOTE 4. | 7  | Knock-out Hole for Ref.Piping (front)  |        |
| 4  | Power wiring conduit      | Ø44         |    |                                        |        |

# Dimensional Drawing

## Outdoor unit

• VRC096/120/144/168S4M-4J

Unit: mm (inches)



| NO | Table of descriptions     | Remark      | NO | Table of descriptions                  | Remark |
|----|---------------------------|-------------|----|----------------------------------------|--------|
| 1  | Low Pressure Gas Ref.pipe | See NOTE 4. | 5  | Communication wiring conduit           | Ø34    |
| 2  | High Pressure Ref.pipe    | See NOTE 4. | 6  | Knock-out Hole for Ref.Piping (bottom) |        |
| 3  | Liquid Ref.pipe           | See NOTE 4. | 7  | Knock-out Hole for Ref.Piping (front)  |        |
| 4  | Power wiring conduit      | Ø44         |    |                                        |        |

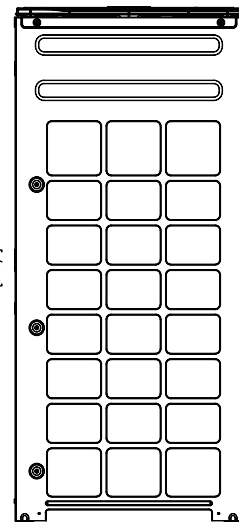
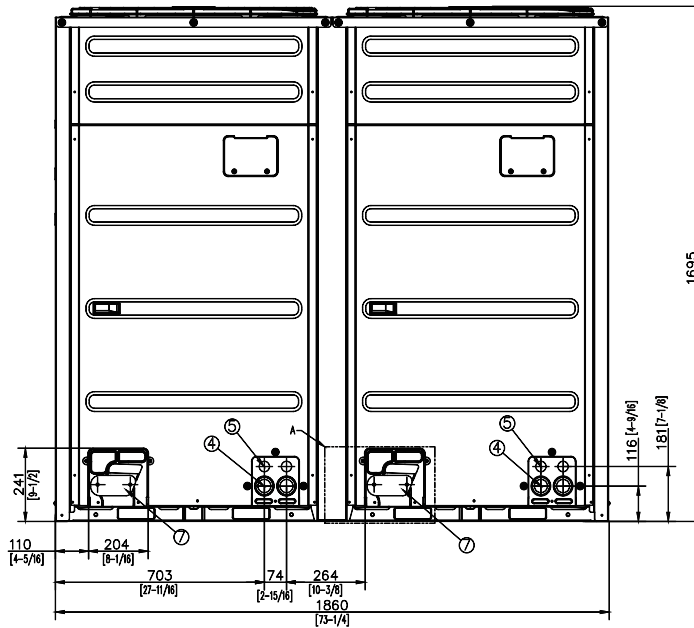
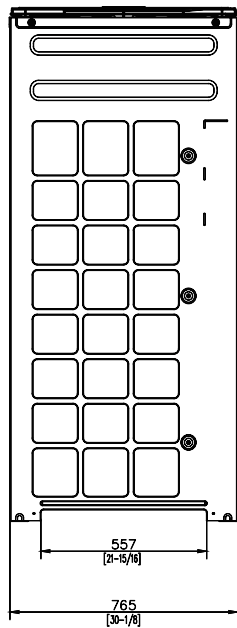
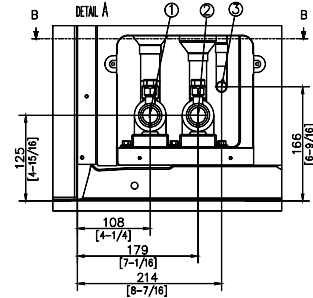
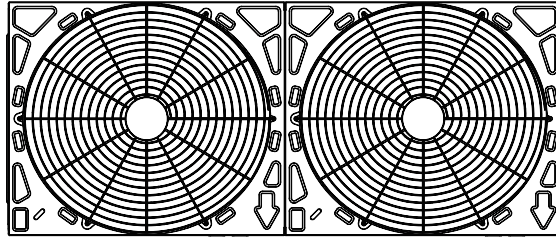
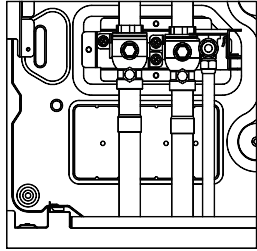
# Dimensional Drawing

## Outdoor unit

• VRC192/216/240S4M-4J

Unit: mm (inches)

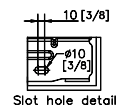
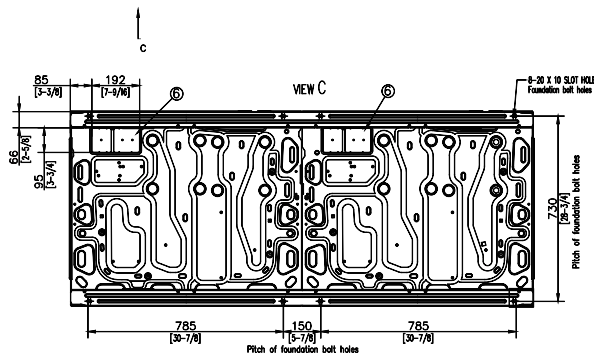
SECTION B-B



### NOTE

- Detail A and SECTION B-B indicate the dimension after fixing the attached piping.
- Item 4-7 Knock-out hole
- View C indicate the dimension of knock-out hole (bottom)
- Pipe [Ø, mm(inch)]: Brazing connection

| kBtu | Liquid pipe | Low Pressure Gas pipe | High Pressure Gas pipe |
|------|-------------|-----------------------|------------------------|
| 192  | 15.88(5/8)  | 28.58(1-1/8)          | 28.58(1-1/8)           |
| 216  | 15.88(5/8)  | 28.58(1-1/8)          | 28.58(1-1/8)           |
| 240  | 15.88(5/8)  | 34.92(1-3/8)          | 28.58(1-1/8)           |

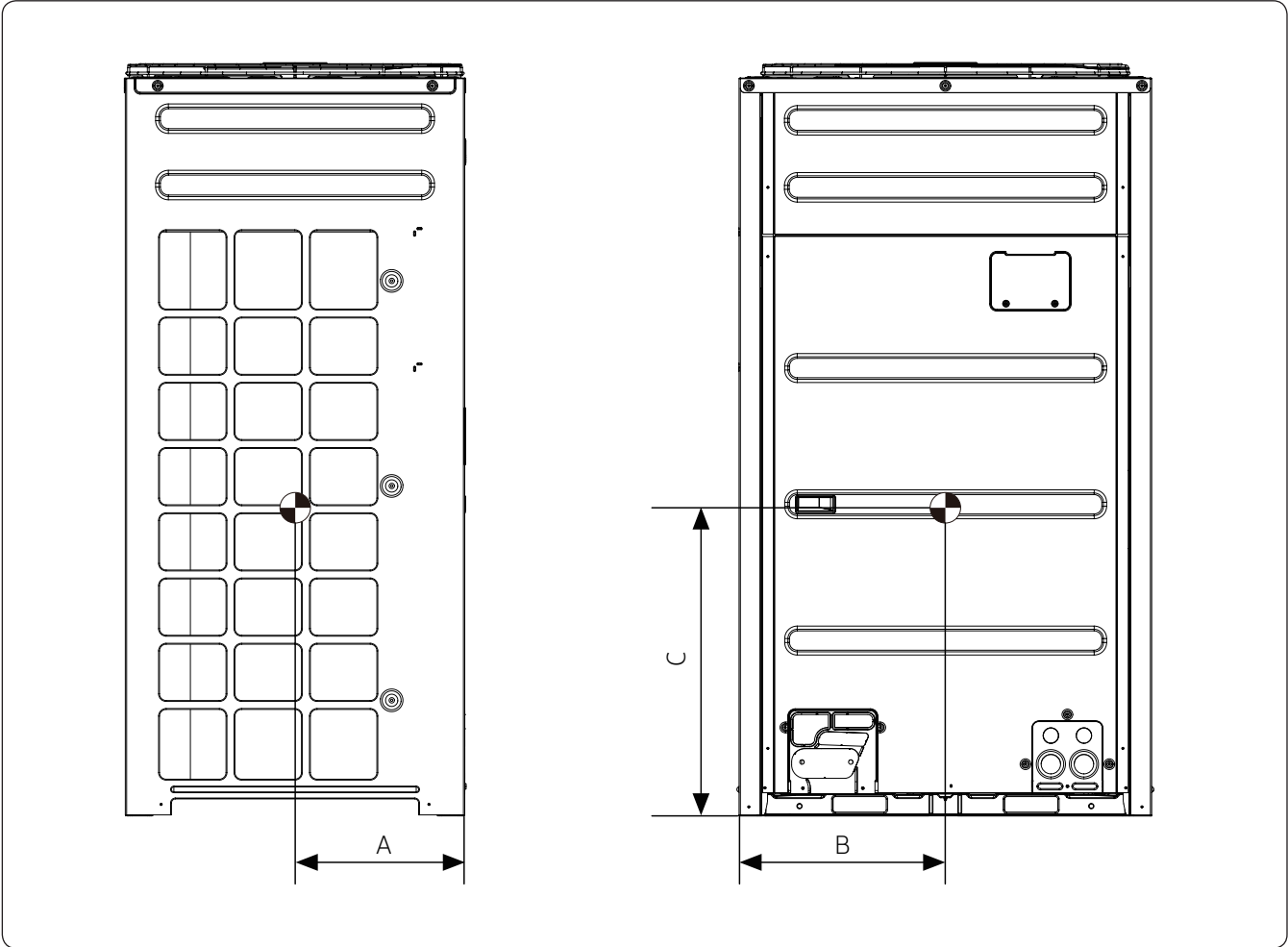


| NO | Table of descriptions     | Remark      | NO | Table of descriptions                  | Remark |
|----|---------------------------|-------------|----|----------------------------------------|--------|
| 1  | Low Pressure Gas Ref.pipe | See NOTE 4. | 5  | Communication wiring conduit           | Ø34    |
| 2  | High Pressure Ref.pipe    | See NOTE 4. | 6  | Knock-out Hole for Ref.Piping (bottom) |        |
| 3  | Liquid Ref.pipe           | See NOTE 4. | 7  | Knock-out Hole for Ref.Piping (front)  |        |
| 4  | Power wiring conduit      | Ø44         |    |                                        |        |

# Center of Gravity

## Outdoor unit

Unit: mm (inches)

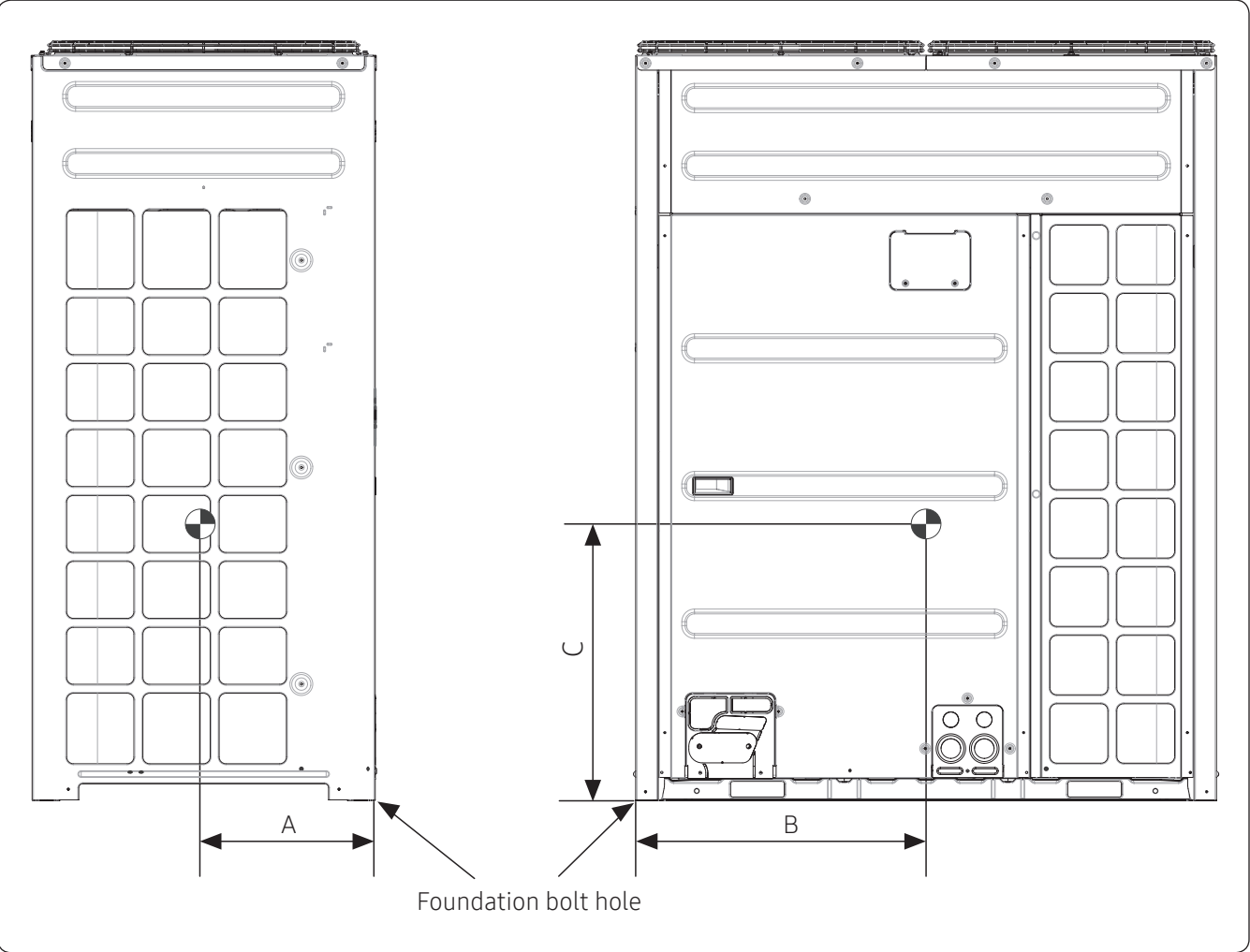


| Model        | A              | B              | C              |
|--------------|----------------|----------------|----------------|
| VRC072S4M-4J | 358 [14 - 1/8] | 463 [18 - 1/4] | 715 [28 - 1/8] |

# Center of Gravity

## Outdoor unit

Unit: mm (inches)

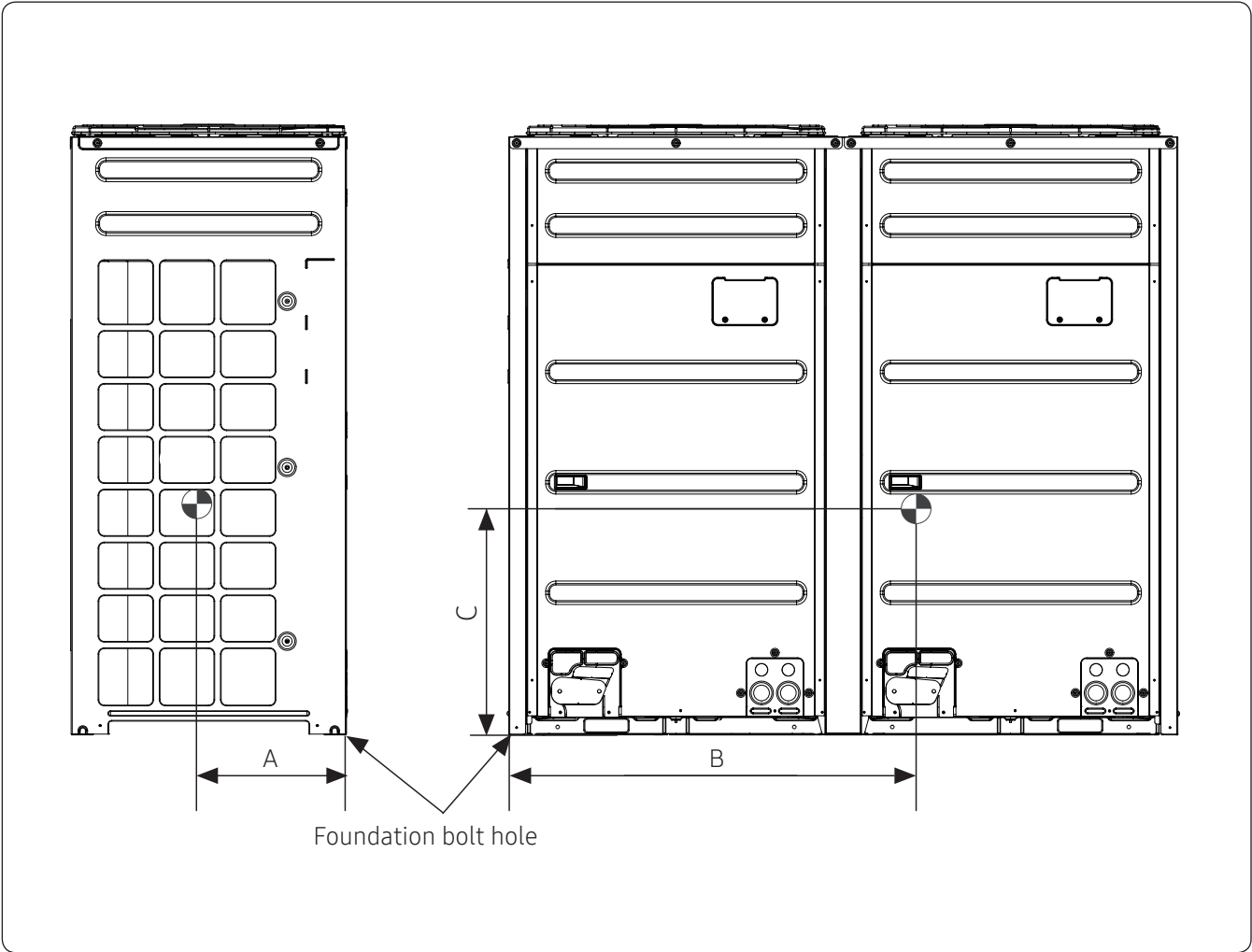


| Model                                                        | A              | B              | C                |
|--------------------------------------------------------------|----------------|----------------|------------------|
| VRC096S4M-4J<br>VRC120S4M-4J<br>VRC144S4M-4J<br>VRC168S4M-4J | 324 [12 - 3/4] | 520 [20 - 1/2] | 678 [26 - 11/16] |

# Center of Gravity

## Outdoor unit

Units : mm [inches]



| Model                                        | A              | B                | C               |
|----------------------------------------------|----------------|------------------|-----------------|
| VRC192S4M-4J<br>VRC216S4M-4J<br>VRC240S4M-4J | 350 [13 - 3/4] | 1,130 [44 - 1/2] | 688 [27 - 1/16] |

# Installation Clearances

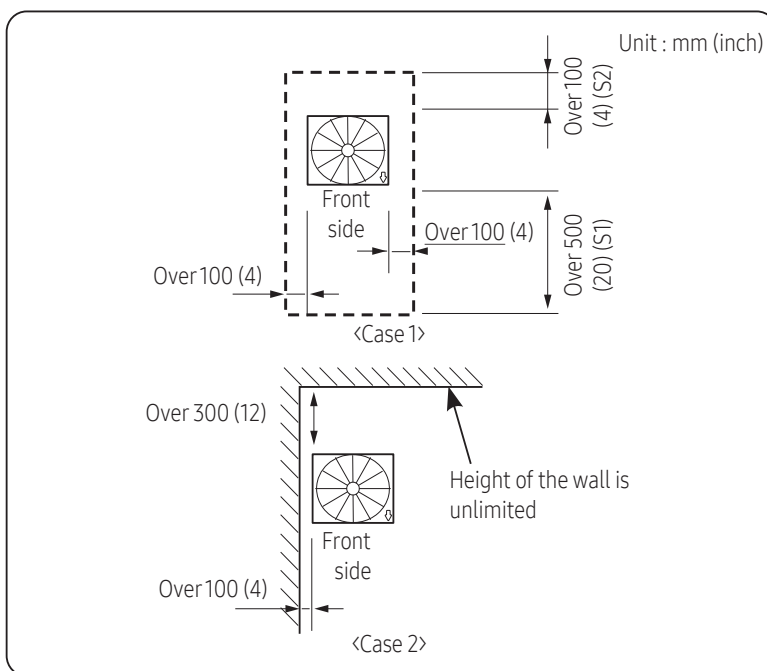
## Choosing the installation location

- Do not install the product in places where corrosive gases such as sulfur oxides, ammonia, and sulfurous gas are produced. (e.g. Toilet outlet, ventilation opening, sewage works, dyeing complex, cattle shed, sulfuric hot spring, nuclear power plant, ship etc.) When installing the product in those places, contact an installation specialty store as the copper pipe and brazing part will need additional corrosion proof or anti-rust additive to prevent corrosion.
- Make sure not to keep any inflammable materials (such as wooden materials, oil etc.) around the outdoor unit. When there's fire, those inflammable material will easily catch the fire and may pass it on to the product.
- Depending on the condition of power supply, unstable power or voltage may cause malfunction of the parts or control system. (At the ship or places using power supply from electric generator...etc)
- Make sure to install MCU when using HR products.
- When you select the location to install the MCU, the location is far away from indoor rooms because the refrigerant running of MCU may create noise.

## Outdoor unit space requirements

- Space requirement was decided based on following conditions; Cooling mode, outdoor temperature of 35°C (95 °F). Larger space is required if the outdoor temperature is higher than 35°C (95 °F) or if the place is heated easily by quantity of solar radiation.
- When you secure installation space, consider path for people and the direction of the wind.
- Secure installation space as shown in the below illustration, considering ventilation and the service space.
- If the installation space is narrow, installer or other worker may get injured during work and may also cause problem to the product.
- If you install multiple number of outdoor units in one space, make sure to secure enough ventilation space if there's any walls around the product that may disturb the air flow. If enough ventilation space is not secured, product may malfunction.
- You may install the outdoor units with 20mm (0.78inch) of space between the product, but product's performance may decrease depending on the installation environment.

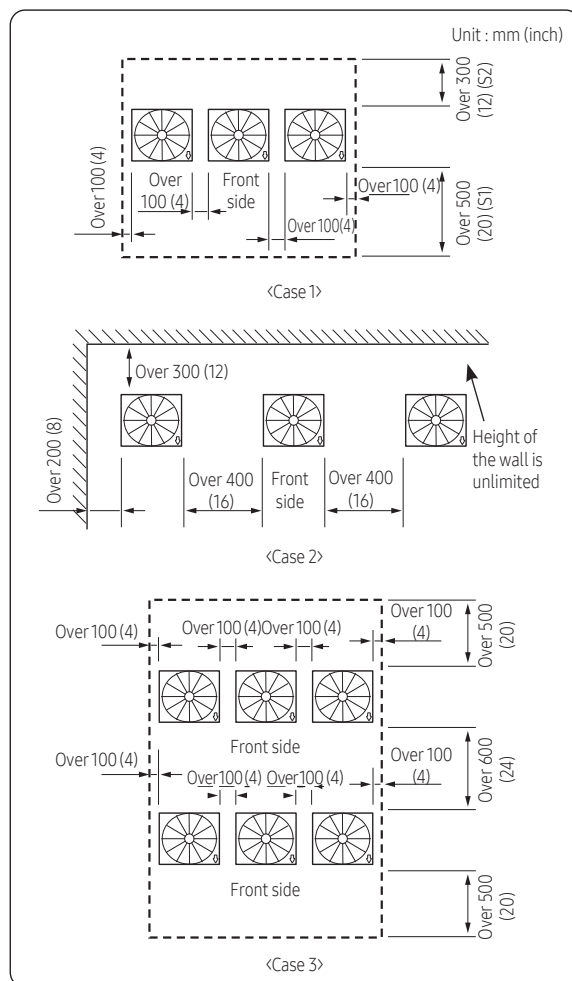
## Single installation



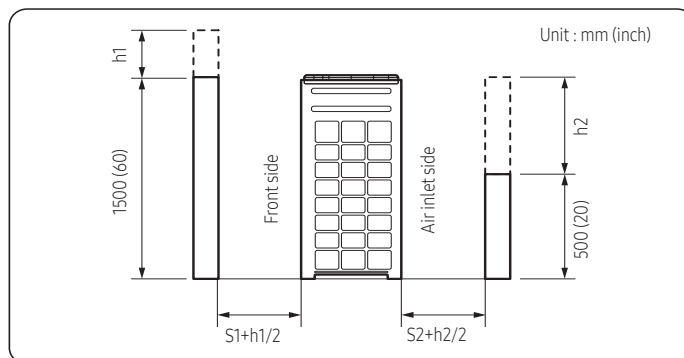
# Installation Clearances

## Choosing the installation location

### Module installation



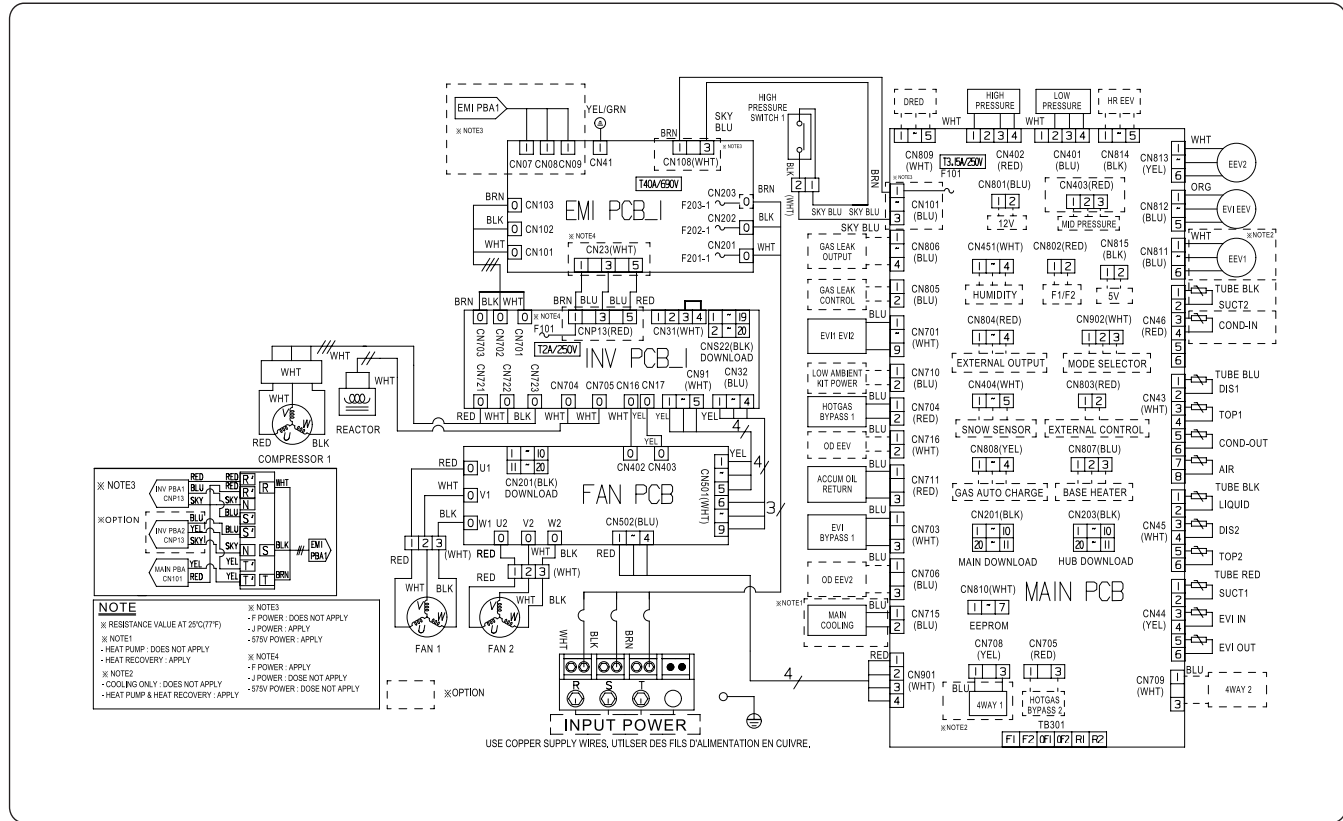
- For <Case 1> or <Case 3>
  - Height of the wall on the front side should not be higher than 1500mm (60inch).
  - Height of the wall on the air inlet side should not be higher than 500mm (20inch).
  - Height of the wall on the side is not limited.
  - If the height of the wall exceeds by certain value ( $h_1$ ,  $h_2$ ), additional clearance  $[(h_1)/2, (h_2)/2]$  : Half of the exceeded height] should be added to the service space ( $S_1$ ,  $S_2$ ).



# Electrical Wiring Diagrams

## Outdoor unit

VRC072S4M-4J



|             |                                   |              |                                       |                      |                                                 |
|-------------|-----------------------------------|--------------|---------------------------------------|----------------------|-------------------------------------------------|
| INV PCB1    | Printed circuit board (inverter1) | SNOW SENSOR  | SNOW SENSOR                           | HOTGAS1 BYPASS V/V   | Solenoid valve (Hot Gas Bypass1)                |
| EMI PCB1    | Printed circuit board (emi1)      | EVI-OUT(10K) | Thermistor (EVI-out_10kohm)           | EVI BYPASS1 V/V      | Solenoid valve (EVI BYPASS)                     |
| FAN PCB     | Printed circuit board (fan motor) | EVI-IN(10K)  | Thermistor (EVI-in_10kohm)            | ACCUM OIL RETURN V/V | Solenoid valve (Accumulator Oil Return)         |
| MAIN PCB    | Printed circuit board (main)      | SUCT1(10K)   | Thermistor (Suction Temp.1_10Kohm)    | MAIN COOLING         | Solenoid valve (Main cooling)                   |
| COMPRESSOR1 | Motor (compressor1)               | SUCT2(10K)   | Thermistor (Suction Temp.2_10Kohm)    | HOTGAS2 BYPASS V/V   | Solenoid valve (Hot Gas Bypass2)                |
| FAN1        | Motor (fan1)                      | COND IN(10K) | Thermistor (Cond In Temp._10Kohm)     | OD EEV V/V           | Electronic expansion valve (Outdoor EEV)        |
| EVI V/V1    | Solenoid valve (EVI1)             | AIR(10K)     | Thermistor (Ambient Temp._10Kohm)     | F101                 | FUSE (INV PCB)                                  |
| EVI V/V2    | Solenoid valve (EVI2)             | COND(10K)    | Thermistor (Cond Out Temp._10Kohm)    | 690V/40A             | FUSE (EMI PCB)                                  |
| EVI EEV     | Electronic expansion valve (EVI)  | TOP1(200K)   | Thermistor (Compressor Top 1_200Kohm) | MODE SELECTOR        | Connector (Remote switching cool/heat selector) |
| EEV1        | Electronic expansion valve 1      | TOP2(200K)   | Thermistor (Compressor Top 2_200Kohm) | EXTERNAL CONTROL     | Connector (Output EXTERNAL CONTROL)             |
| EEV2        | Electronic expansion valve 2      | DIS1(200K)   | Thermistor (Discharge Temp.1_200Kohm) | EXTERNAL OUTPUT      | Connector (Output EXTERNAL)                     |
| 4WAY1 V/V   | Solenoid valve (4 Way valve1)     | DIS2(200K)   | Thermistor (Discharge Temp.2_200Kohm) |                      |                                                 |
| 4WAY2 V/V   | Solenoid valve (4 Way valve2)     | LIQUID(10K)  | Thermistor (Liquid Tube Temp._10Kohm) |                      |                                                 |

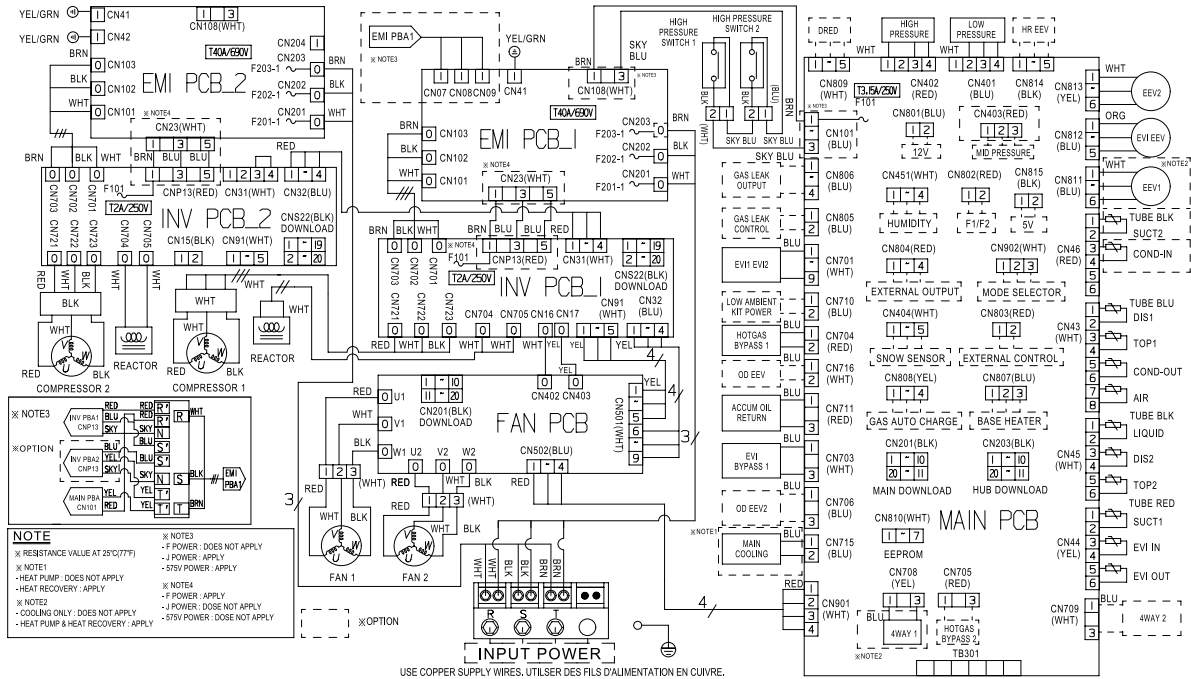
### NOTE

- This wiring diagram applies only to the outdoor unit.
- Colors BLK: black, RED: red, BLU: blue, WHT: white, YEL: yellow, BRN: brown, SKY: skyblue
- When operating, don't shortcircuit the protection device (High Pressure switch)
- For connection wiring indoor-outdoor transmission F1-F2, outdoor\_outdoor transmission OF1-OF2, refer to the installation manual.
- ⚡ Protective earth(screw), □ : connector,  $\swarrow$  : The wire quantity

# Electrical Wiring Diagrams

## Outdoor unit

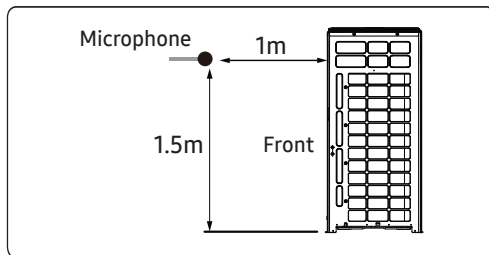
VRC096/120/144/168/192/216/240S4M-4J



# Sound Data

## Sound Pressure level

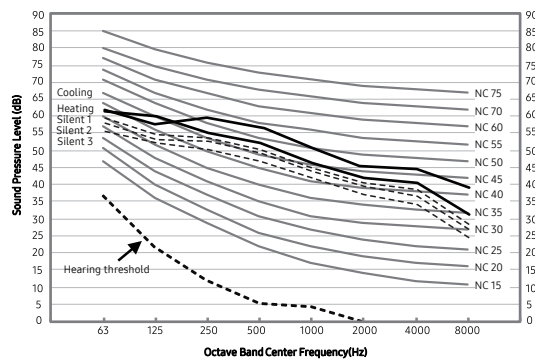
Unit: dB(A)



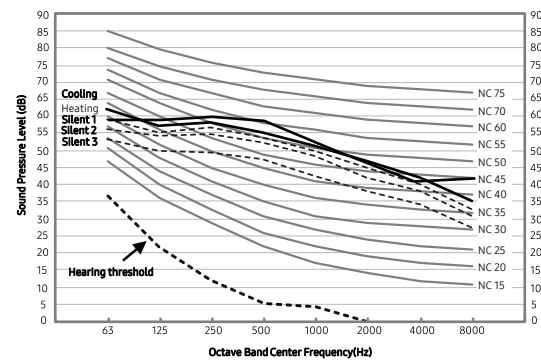
| Model        | Cooling | Heating  |          |          |
|--------------|---------|----------|----------|----------|
|              |         | Silent 1 | Silent 2 | Silent 3 |
| VRC072S4M-4J | 54      | 52       | 51       | 49       |
| VRC096S4M-4J | 57      | 56       | 54       | 49       |
| VRC120S4M-4J | 57      | 56       | 54       | 49       |
| VRC144S4M-4J | 60      | 56       | 54       | 49       |

### • NC Curve

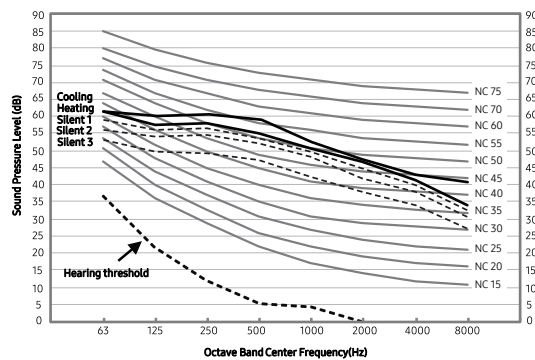
1) VRC072S4M-4J



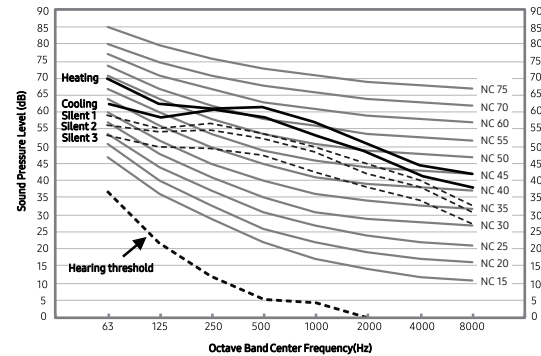
2) VRC096S4M-4J



3) VRC120S4M-4J



4) VRC144S4M-4J



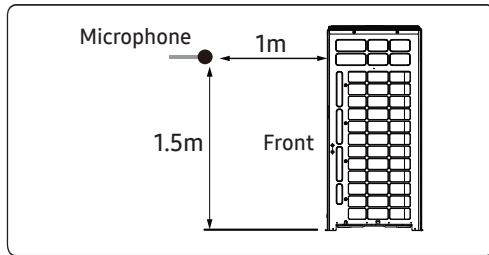
### NOTE

- Specifications may be subject to change without prior notice.
  - Sound pressure level is obtained in an anechoic room.
  - Sound pressure level is a relative value, depending on the distance and acoustic environment.
  - Sound pressure level may differ depending on operation condition.
  - dBA = A-weighted sound pressure level
  - Reference acoustic pressure 0 dB = 20μPa

# Sound Data

## Sound Pressure level

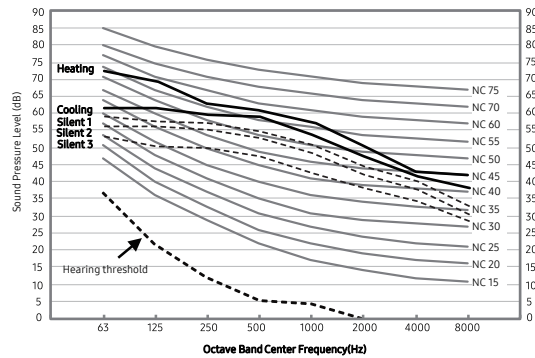
Unit: dB(A)



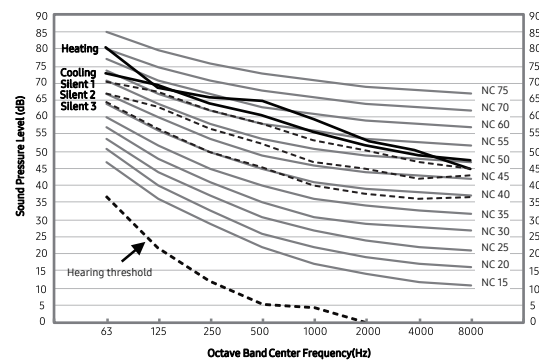
| Model        | Cooling | Heating  |          |          |
|--------------|---------|----------|----------|----------|
|              |         | Silent 1 | Silent 2 | Silent 3 |
| VRC168S4M-4J | 60      | 57       | 55       | 49       |
| VRC192S4M-4J | 63      | 61       | 56       | 49       |
| VRC216S4M-4J | 64      | 61       | 56       | 49       |
| VRC240S4M-4J | 66      | 61       | 56       | 49       |

### • NC Curve

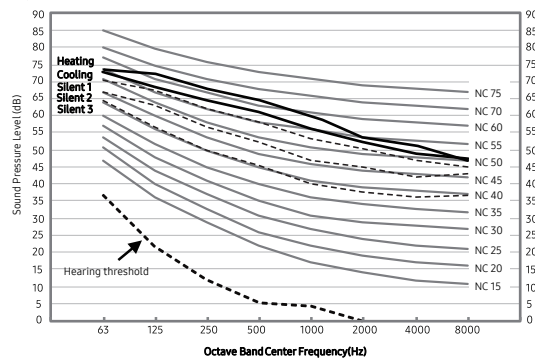
5) VRC168S4M-4J



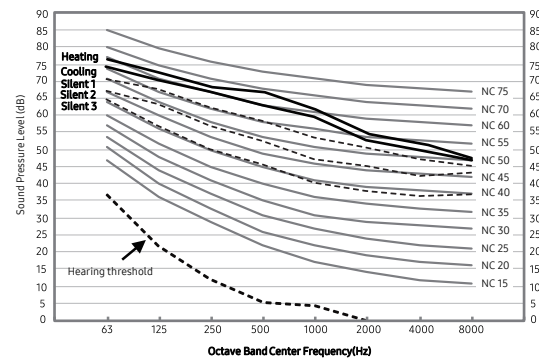
6) VRC192S4M-4J



7) VRC216S4M-4J



8) VRC240S4M-4J



### NOTE

- Specifications may be subject to change without prior notice.
  - Sound pressure level is obtained in an anechoic room.
  - Sound pressure level is a relative value, depending on the distance and acoustic environment.
  - Sound pressure level may differ depending on operation condition.
  - dBA = A-weighted sound pressure level
  - Reference acoustic pressure 0 dB = 20μPa

# Sound Data

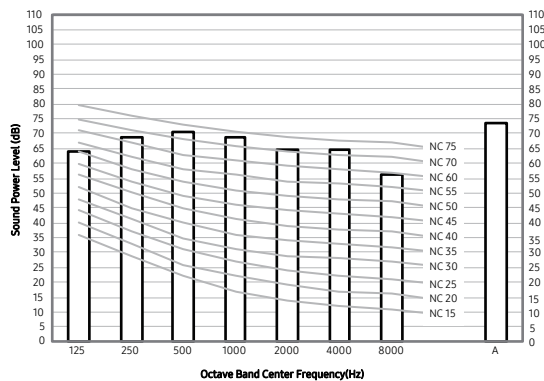
## Sound Power level

Unit: dB(A)

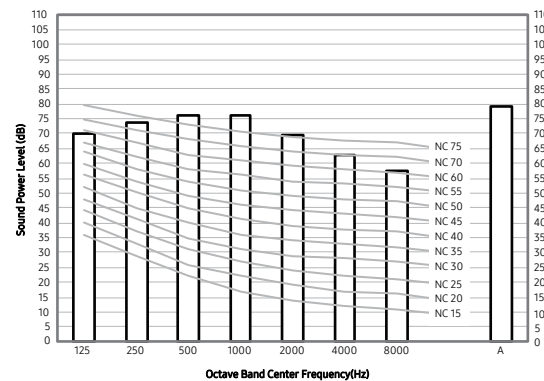
| Model        | Power |
|--------------|-------|
| VRC072S4M-4J | 75    |
| VRC096S4M-4J | 79    |
| VRC120S4M-4J | 79    |
| VRC144S4M-4J | 81    |

### • NC Curve

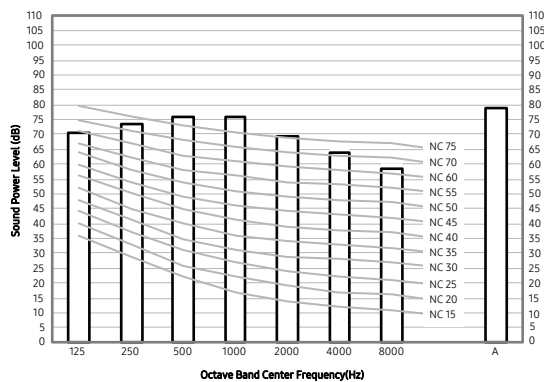
9) VRC072S4M-4J



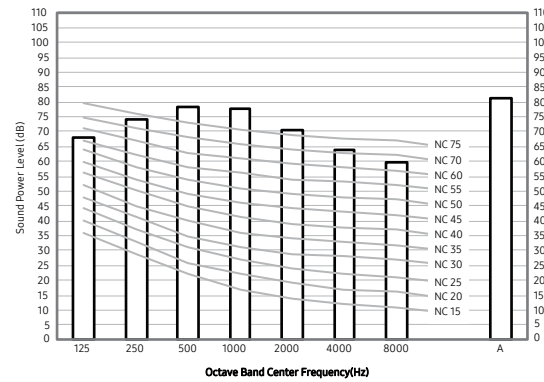
10) VRC096S4M-4J



11) VRC120S4M-4J



12) VRC144S4M-4J



### NOTE

- Specifications may be subject to change without prior notice.
  - Sound power level is an absolute value that a sound source generates.
  - dBA = A-weighted sound power level.
  - Reference power : 1pW.
  - Measured according to ISO 3741.

# Sound Data

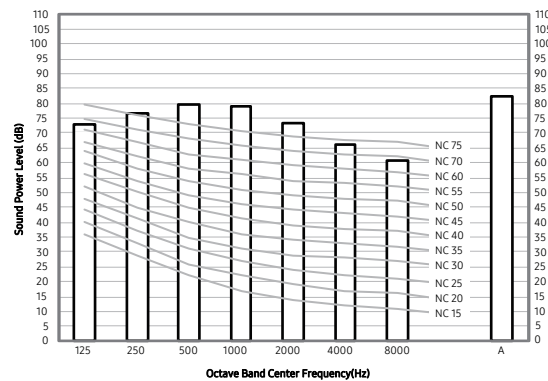
## Sound Power level

Unit: dB(A)

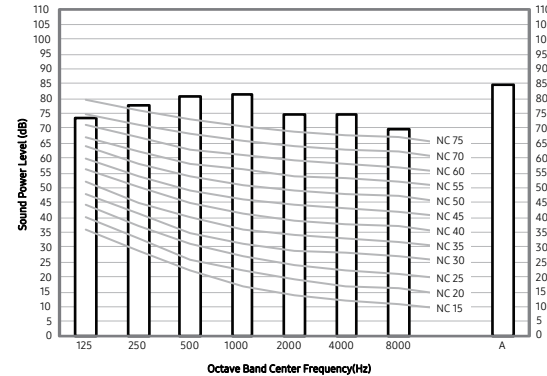
| Model        | Power |
|--------------|-------|
| VRC168S4M-4J | 83    |
| VRC192S4M-4J | 85    |
| VRC216S4M-4J | 85    |
| VRC240S4M-4J | 86.5  |

### • NC Curve

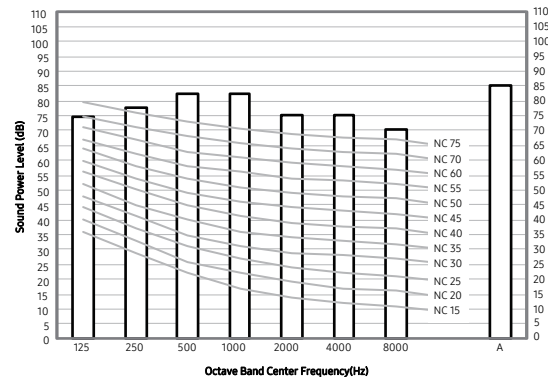
13) VRC168S4M-4J



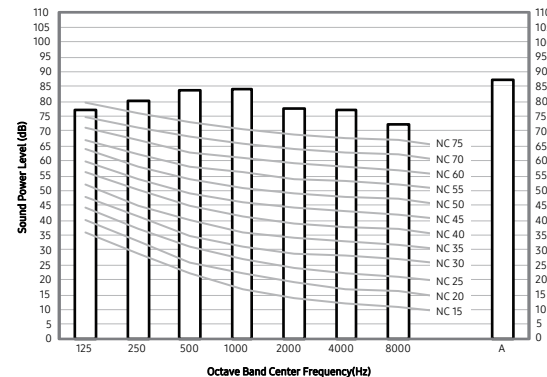
14) VRC192S4M-4J



15) VRC216S4M-4J



16) VRC240S4M-4J



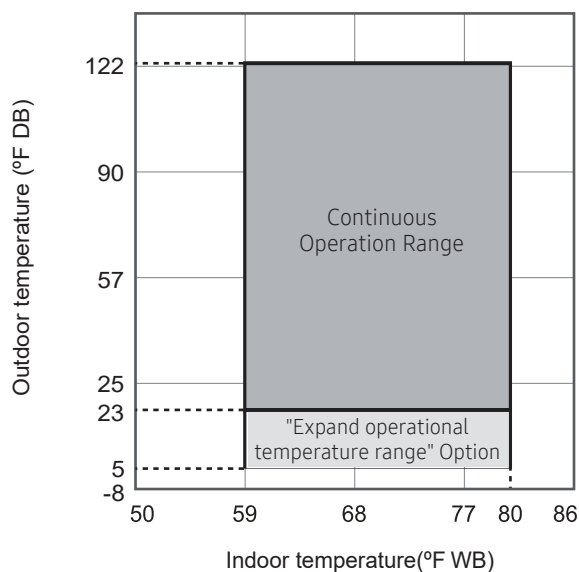
### NOTE

- Specifications may be subject to change without prior notice.
  - Sound power level is an absolute value that a sound source generates.
  - dBA = A-weighted sound power level.
  - Reference power : 1pW.
  - Measured according to ISO 3741.

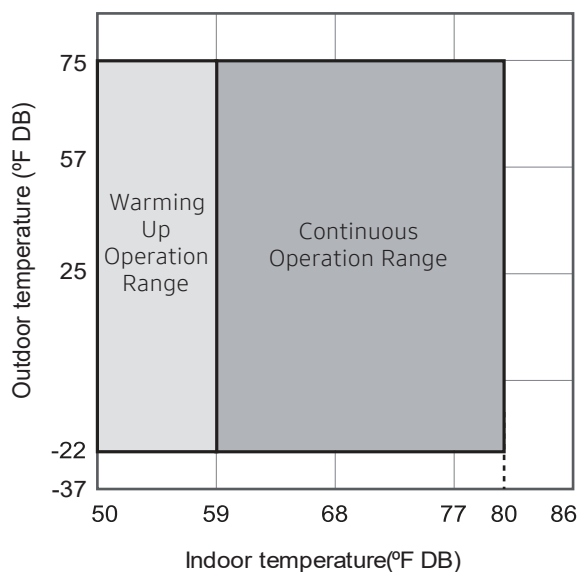
# Operation Range

## Outdoor unit

### Cooling



### Heating



- (1) The operating range is shown in these figures
- (2) The assumed installation conditions are as follows
  - Outdoor units and indoor units combination
  - The Pipe length(including elbow) is 5m (16.4ft)
  - The Level difference is 0m
- (3) In the low temperature expansion option application, the cooling operating is possible under expand operational range only for HR system
- (4) In case of heating mode, operating is possible under warming up operation range. However continuous operating is impossible due to a protection control

# Operation Range

## Outdoor unit

### Defrosting correction factor

The heating capacity tables do not take account of the reduction in capacity, when frost has accumulated or while the defrosting operation is in progress.

The capacity values, which take these factors into account, in other words, the integrated heating capacity values, can be calculated as follows :

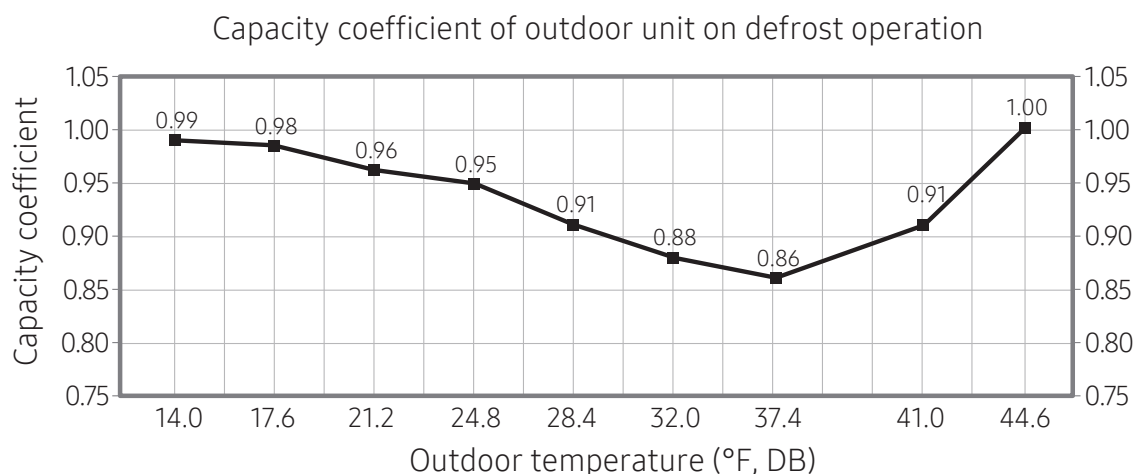
Formula :  $A = B \times C$

Integrated heating capacity = A

Value given in table of capacity characteristics = B

Integrating correction factor for frost accumulation (kW) = C

| Outdoor temperature (°F, DB) | 14   | 17.6 | 21.2 | 24.8 | 28.4 | 32   | 37.4 | 41   | 44.6 |
|------------------------------|------|------|------|------|------|------|------|------|------|
| Capacity coefficient         | 0.99 | 0.98 | 0.96 | 0.95 | 0.91 | 0.88 | 0.86 | 0.91 | 1.00 |



On heating operation, frost can be formed on heat exchanger according to outdoor temperature.

(Frost on heat exchanger results in decreasing the performance.)

To remove frost on heat exchanger of outdoor unit, defrost operation is carried out periodically.

During defrost operation, capacity of outdoor unit may decrease.

The decrement is not considered to the individual capacity tables.

This figure shows an effect of intelligence defrost operation

It is actually the frost occurrence section from 0 °C(32 °F) or less.

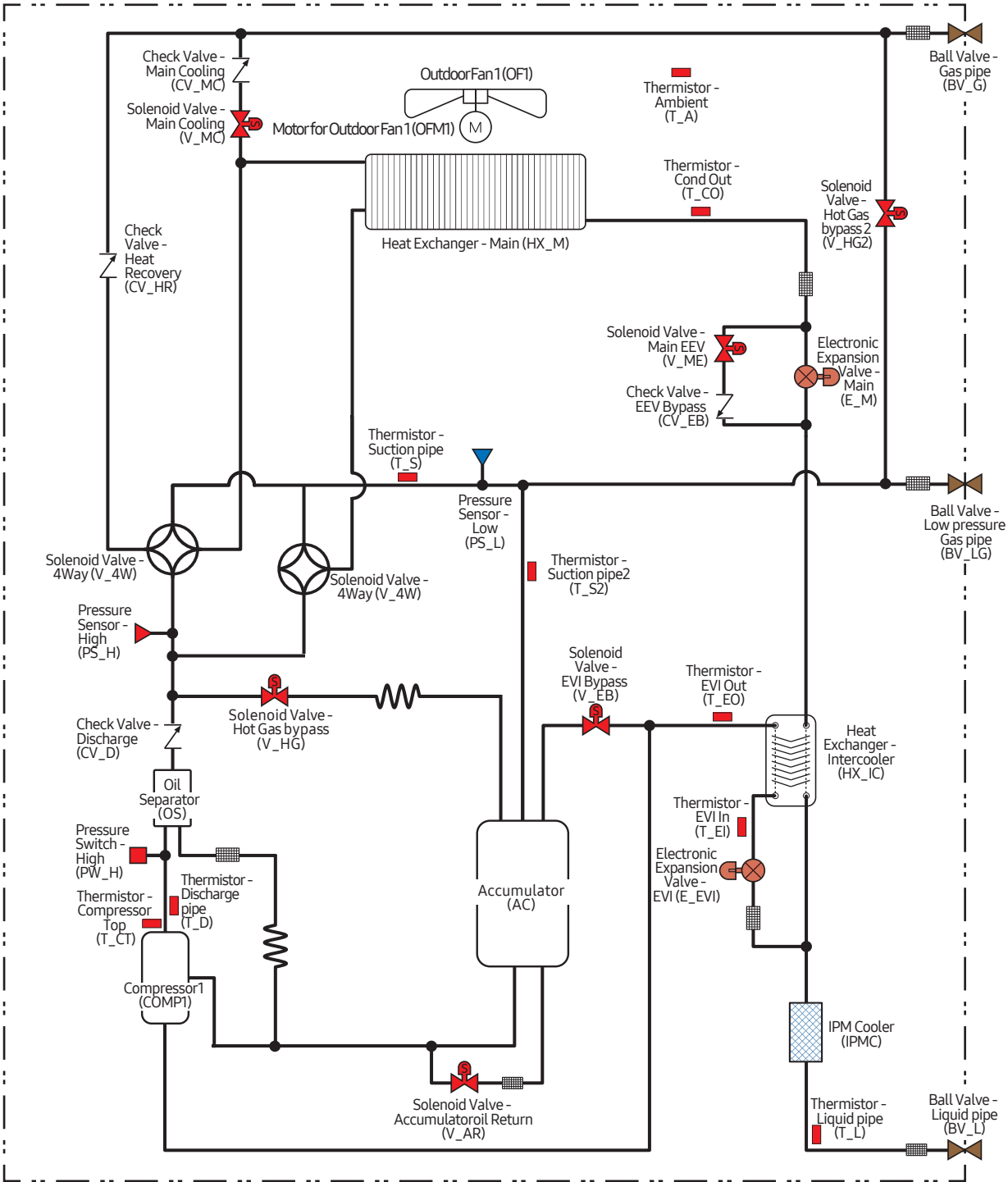
Since the outdoor temperature over 0 °C(32 °F), the heating performance is the same before and after applying intelligence defrost operation

In outdoor conditions below 0 °C(32 °F), frost conditions reflect the actual entering the defrost operation because heating performance is improved

# Piping Diagram

## Outdoor unit

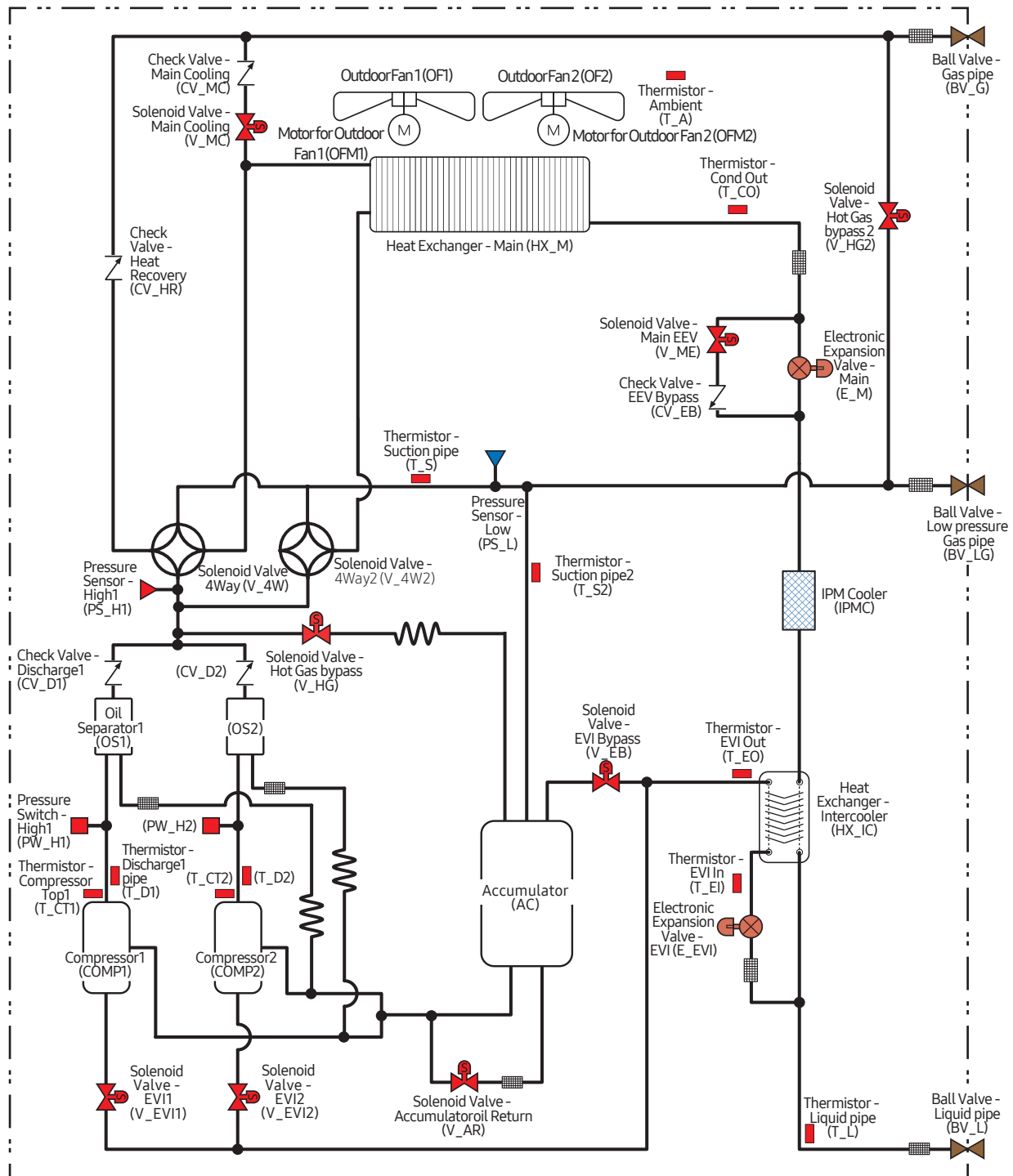
(1) VRC072S4M-4J



# Piping Diagram

## Outdoor unit

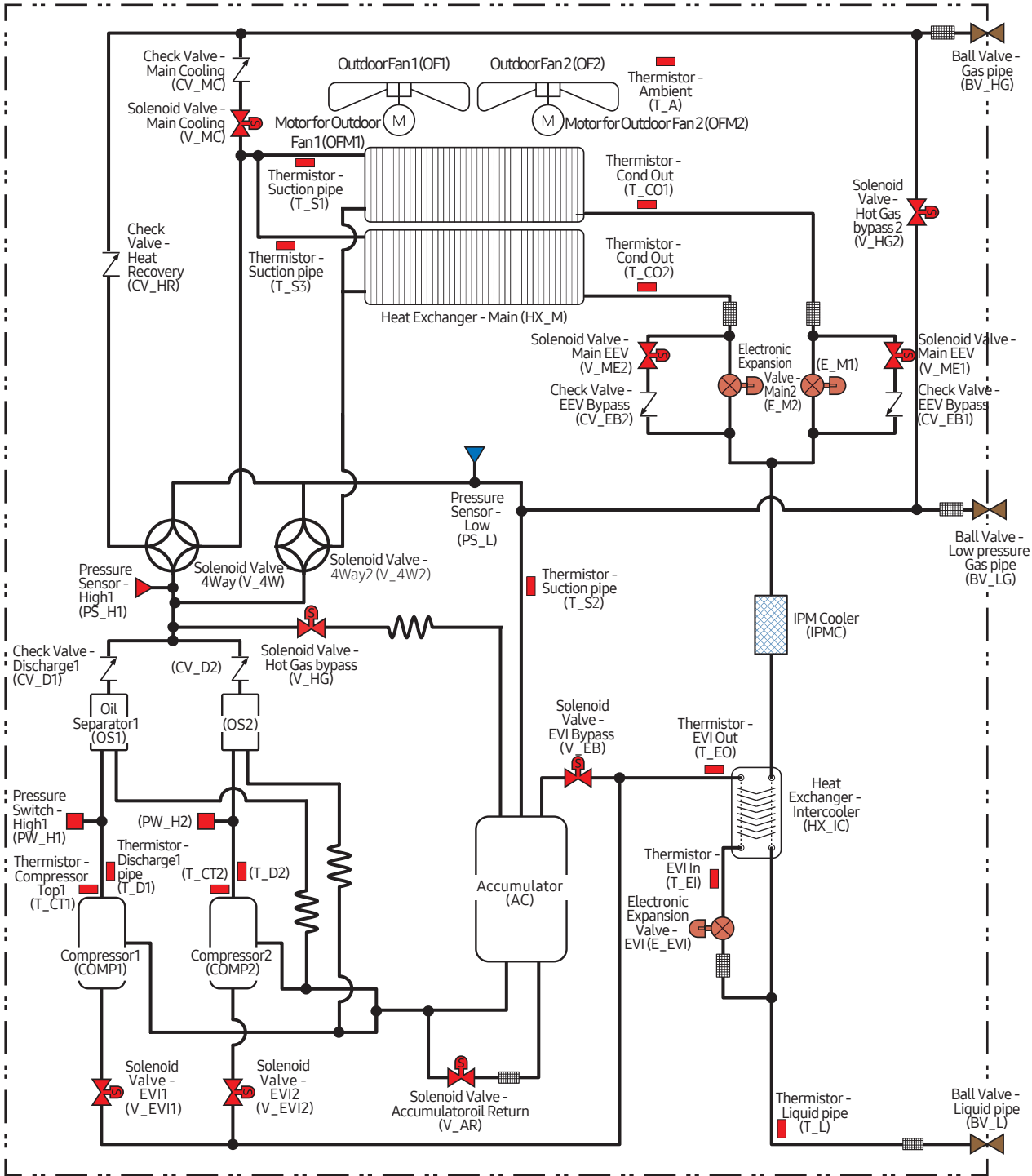
(2) VRC096/120/144/168S4M-4J



# Piping Diagram

## Outdoor unit

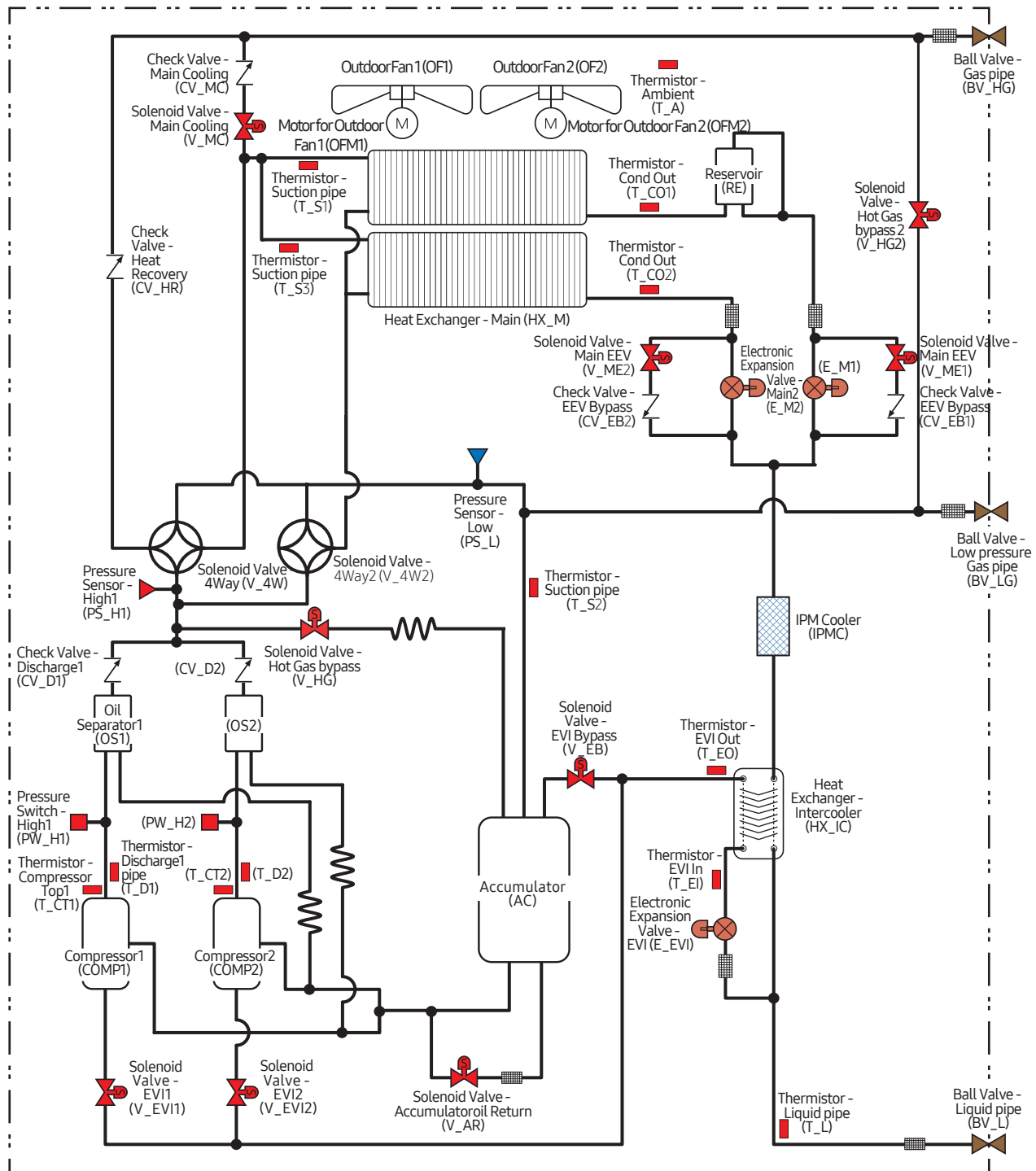
(3) VRC192S4M-4J



# Piping Diagram

## Outdoor unit

(4) VRC216/240S4M-4J



# AHRI Data

| Model Code   | Rated Capacity<br>(Btu/h) |         | EER<br>(Btu/Wh) |        | IEER<br>(Btu/Wh) |        |       | High COP(47F)<br>(W/W) |        |       | Low COP(17F)<br>(W/W) |        | SCHE<br>(Btu/Wh) |        |
|--------------|---------------------------|---------|-----------------|--------|------------------|--------|-------|------------------------|--------|-------|-----------------------|--------|------------------|--------|
|              | Cooling                   | Heating | Non-Ducted      | Ducted | Non-Ducted       | Ducted | Mixed | Non-Ducted             | Ducted | Mixed | Non-Ducted            | Ducted | Non-Ducted       | Ducted |
| VRC072S4M-4J | 69,000                    | 77,000  | 12.20           | 11.50  | 28.00            | 23.00  | 25.50 | 3.93                   | 3.80   | 3.86  | 2.50                  | 2.55   | 27.17            | 25.08  |
| VRC096S4M-4J | 92,000                    | 103,000 | 13.10           | 12.40  | 27.90            | 24.10  | 26.00 | 4.13                   | 3.83   | 3.98  | 2.82                  | 2.73   | 30.50            | 25.84  |
| VRC120S4M-4J | 114,000                   | 129,000 | 11.80           | 12.00  | 25.30            | 22.60  | 23.95 | 3.85                   | 3.80   | 3.82  | 2.81                  | 2.80   | 29.55            | 25.18  |
| VRC144S4M-4J | 138,000                   | 154,000 | 10.70           | 12.10  | 22.60            | 24.40  | 23.50 | 3.52                   | 3.68   | 3.60  | 2.58                  | 2.70   | 26.41            | 24.70  |
| VRC168S4M-4J | 160,000                   | 180,000 | 10.10           | 11.10  | 25.40            | 23.30  | 24.35 | 3.28                   | 3.65   | 3.46  | 2.35                  | 2.55   | 25.94            | 24.23  |
| VRC192S4M-4J | 184,000                   | 206,000 | 10.20           | 11.80  | 22.50            | 24.10  | 23.30 | 3.20                   | 3.55   | 3.37  | 2.22                  | 2.65   | 25.65            | 24.04  |
| VRC216S4M-4J | 206,000                   | 232,000 | 10.00           | 10.90  | 21.50            | 22.30  | 21.90 | 3.20                   | 3.45   | 3.32  | 2.18                  | 2.60   | 25.08            | 22.71  |
| VRC240S4M-4J | 228,000                   | 258,000 | 9.90            | 10.60  | 20.70            | 22.00  | 21.35 | 3.20                   | 3.25   | 3.22  | 2.10                  | 2.45   | 25.08            | 22.52  |
| VRC264S4M-4J | 252,000                   | 282,000 | 10.90           | 11.10  | 22.40            | 19.70  | 21.05 | 3.32                   | 3.55   | 3.43  | 2.32                  | 2.40   | 24.42            | 23.56  |
| VRC288S4M-4J | 274,000                   | 308,000 | 10.60           | 11.10  | 21.90            | 20.50  | 21.20 | 3.30                   | 3.50   | 3.40  | 2.22                  | 2.40   | 23.28            | 22.52  |
| VRC312S4M-4J | 298,000                   | 334,000 | 10.10           | 10.80  | 20.50            | 20.00  | 20.25 | 3.28                   | 3.45   | 3.36  | 2.28                  | 2.35   | 23.18            | 20.14  |
| VRC336S4M-4J | 320,000                   | 360,000 | 10.00           | 10.50  | 20.90            | 19.80  | 20.35 | 3.25                   | 3.40   | 3.32  | 2.26                  | 2.30   | 22.42            | 19.67  |
| VRC360S4M-4J | 342,000                   | 386,000 | 9.70            | 10.00  | 20.60            | 19.30  | 19.95 | 3.22                   | 3.40   | 3.31  | 2.18                  | 2.30   | 22.23            | 19.38  |
| VRC384S4M-4J | 366,000                   | 412,000 | 9.60            | 10.20  | 18.90            | 18.90  | 18.90 | 3.30                   | 3.30   | 3.30  | 2.20                  | 2.35   | 22.04            | 18.72  |
| VRC408S4M-4J | 388,000                   | 438,000 | 9.50            | 9.50   | 18.70            | 18.60  | 18.65 | 3.25                   | 3.30   | 3.27  | 2.15                  | 2.35   | 21.28            | 18.24  |
| VRC432S4M-4J | 412,000                   | 462,000 | 9.20            | 9.30   | 17.40            | 17.90  | 17.65 | 3.30                   | 3.25   | 3.27  | 2.17                  | 2.35   | 21.28            | 18.62  |
| VRC456S4M-4J | 436,000                   | 488,000 | 9.10            | 9.20   | 16.40            | 17.90  | 17.15 | 3.25                   | 3.20   | 3.22  | 2.07                  | 2.25   | 21.19            | 18.53  |



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