

# Console MVD DC

## Service manual



## Content

|                                            |           |
|--------------------------------------------|-----------|
| <b>1. Features .....</b>                   | <b>2</b>  |
| <b>2. Specifications .....</b>             | <b>4</b>  |
| <b>3. Dimensions .....</b>                 | <b>5</b>  |
| <b>4. Service Spaces .....</b>             | <b>6</b>  |
| <b>5. Piping Diagrams .....</b>            | <b>7</b>  |
| <b>6. Wiring Diagrams .....</b>            | <b>8</b>  |
| <b>7. Capacity Tables .....</b>            | <b>9</b>  |
| <b>8. Electrical Characteristics .....</b> | <b>13</b> |
| <b>9. Sound Levels .....</b>               | <b>14</b> |
| <b>10. Accessories .....</b>               | <b>15</b> |

## 1. Features

### 1.1 Console type



### 1.2 Compact unit body, space saving, nice-looking appearance

1.2.1. this unit body is very thin and harmonious with room. It is elegant and space saving.

1.2.2. The EXV is fixed inside of the indoor unit, Compact unit body.

### 1.3 Flexible installation.

1.3.1. Can be used for floor standing or lower wall applications

1.3.2. As a floor standing type, it can be semi or fully recessed without loss of capacity.

### 1.4 High efficiency filter

1.4.1. Built in formaldehyde nemesis filter

1.4.2. Active-carbon and biological anti-virus filter is optional

### 1.5 High Comfort

1.5.1. Flexible air blow: vertical auto swing and wide angle louvers ensure that warm air reaches the furthest corners of the room and increase the air flow coverage

1.5.2. Indoor unit adopts DC motor which has five level fan speed meet different requirements.

1.5.3. Low noise operation, lowest to 26dB(A)

1.5.4. Adoption of the Fujikoki brand mechanical expansion valve which has 2000 stages element positioning, ensures precise flow control, as well as lower modulation noise when EXV operating.

### 1.6 Powerful mode can be selected for rapid cooling or heating.

#### COOLING MODE



Quick cooling



to maintain temp.

#### HEATING MODE



anti-cold air



normal operation

**Air outlet from 2 optional directions:**

Quick cooling mode: air supplying from both top and bottom

Normal cooling mode: from top only

Normal heating mode: air supplying from both top and bottom

Anti-cold fan mode: from top only

**Air inlet from 4 directions:**

Bottom, Top, and right/left side, for better ventilation.

**1.7 Easy cleaning grille and convenient maintenance****1.8 Auto restart**

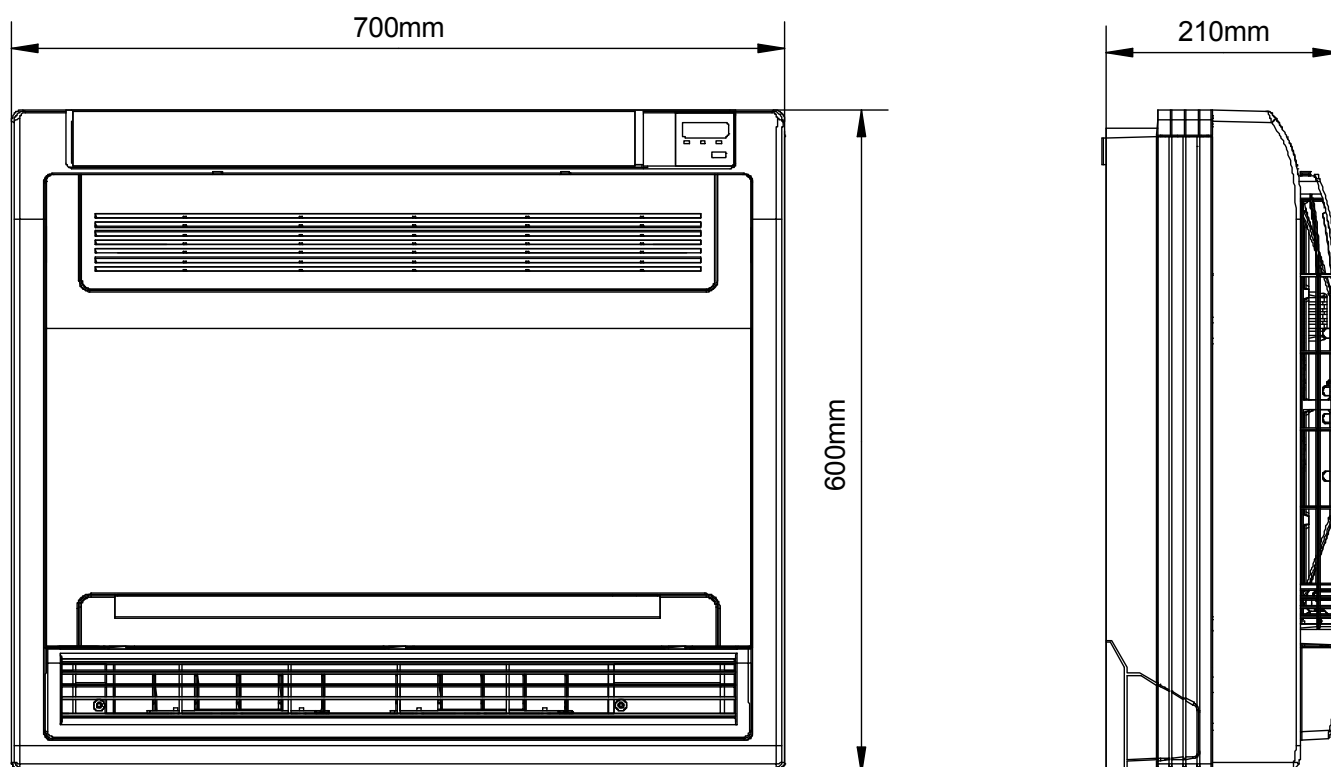
When the indoor unit is powered off, it will auto restart when powered on again after 3 minutes and operate in the original state.

## 2. Specifications

| Model                        |                                |                   | MVD-22Z/DHN1-B                                                   | MVD-28Z/DHN1-B | MVD-36Z/DHN1-B | MVD-45Z/DHN1-B |
|------------------------------|--------------------------------|-------------------|------------------------------------------------------------------|----------------|----------------|----------------|
| Power supply                 |                                | V- Ph-Hz          | 220-240V~, 1Ph, 50Hz                                             |                |                |                |
| Cooling                      | Capacity                       | kW                | 2.2                                                              | 2.8            | 3.6            | 4.5            |
|                              | Input                          | W                 | 20                                                               | 25             | 25             | 45             |
|                              | Rated current                  | A                 | 0.09                                                             | 0.11           | 0.11           | 0.20           |
| Heating                      | Capacity                       | kW                | 2.6                                                              | 3.2            | 4.0            | 5.0            |
|                              | Input                          | W                 | 20                                                               | 25             | 25             | 45             |
|                              | Rated current                  | A                 | 0.09                                                             | 0.11           | 0.11           | 0.20           |
| Indoor fan motor             | Model                          |                   | RD-280-20-8A                                                     | RD-280-20-8A   | RD-280-20-8A   | RD-280-20-8A   |
|                              | Type                           |                   | DC brushless motor                                               |                |                |                |
|                              | Brand                          |                   | Welling                                                          |                |                |                |
|                              | Input                          | W                 | 16.8                                                             | 19.5           | 19.5           | 30.5           |
|                              | Speed (h/m/l)                  | r/min             | 560/530/460                                                      | 610/560/460    | 610/560/460    | 780/680/530    |
| Indoor coil                  | Number of rows                 |                   | 1                                                                | 1.5            | 2              | 2              |
|                              | Tube pitch(a) × row pitch(b)   | mm                | 21×13.37                                                         | 21×13.37       | 21×13.37       | 21×13.37       |
|                              | Fin spacing                    | mm                | 1.3                                                              | 1.3            | 1.3            | 1.3            |
|                              | Fin type                       |                   | Hydrophilic aluminum                                             |                |                |                |
|                              | Tube outside diameter and type | mm                | Φ7<br>Inner groove tube                                          |                |                |                |
|                              | Coil length× height× width     | mm                | 512×318×22                                                       | 512×318×44     | 512×318×44     | 512×318×44     |
|                              | Number of circuits             |                   | 1                                                                | 2              | 2              | 2              |
| Indoor air flow (H/M/L)      |                                | m <sup>3</sup> /h | 430/345/229                                                      | 510/430/229    | 510/430/229    | 660/512/400    |
| Indoor noise level           |                                | dB(A)             | 38/32/26                                                         | 39/33/27       | 39/33/27       | 42/39/36       |
| Indoor unit                  | Dimension (W×H×D)              | mm                | 700×600×210                                                      |                |                |                |
|                              | Packing (W×H×D)                | mm                | 810×710×305                                                      |                |                |                |
|                              | Net/Gross weight               | kg                | 14/19                                                            | 15/20          | 15/20          | 15/20          |
| Refrigerant type             |                                |                   | R410A                                                            |                |                |                |
| Throttle                     | Type                           |                   | EXV (Mechanical gear modulation, Integrated with the evaporator) |                |                |                |
|                              | Model                          |                   | EFM-25YGMISZ-6M-A (Fujikoki)                                     |                |                |                |
| Design pressure              |                                | MPa               | 4.4/2.6                                                          |                |                |                |
| Refrigerant piping           | Liquid side/ Gas side          | mm                | Φ6.35/Φ12.7                                                      | Φ6.35/Φ12.7    | Φ6.35/Φ12.7    | Φ6.35/Φ12.7    |
| Connecting wiring            | Power wiring                   | mm <sup>2</sup>   | 3×2.5                                                            |                |                |                |
|                              | Signal wiring                  | mm <sup>2</sup>   | 4×0.75                                                           |                |                |                |
| Drainage water pipe diameter |                                |                   | OD Φ16                                                           |                |                |                |
| Controller                   |                                |                   | Wireless remote controller (RM05/BG(T)E-A) (Standard)            |                |                |                |

- Notes:**
1. Nominal cooling capacities are based on the following conditions: return air temperature: 27°CDB, 19°CWB, outdoor temperature: 35°CDB, equivalent ref. Piping: 8m(horizontal)
  2. Nominal heating capacities are based on the following conditions: return air temperature: 20°CDB, outdoor temperature: 7°CDB, 6°CWB, equivalent ref. Piping: 8m(horizontal)

### 3. Dimensions

**Main dimension:**

Outer Length: 700mm, Height: 600mm, Depth: 210mm

Filter length: 550mm

Gas tube:  $\Phi 12.7\text{mm}$

Liquid tube:  $\Phi 6.35\text{mm}$

## 4. Service Spaces

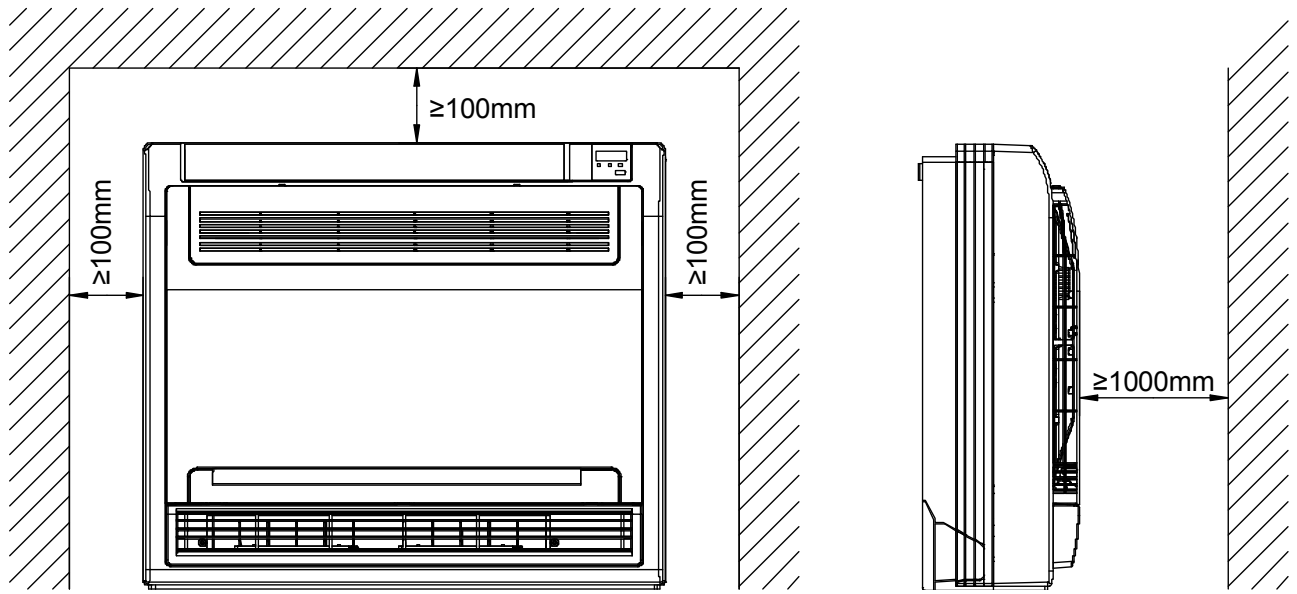
There is enough room for installation and maintenance.

The outlet and the inlet are not impeded, and the influence of external air is the least.

The air flow can reach throughout the room.

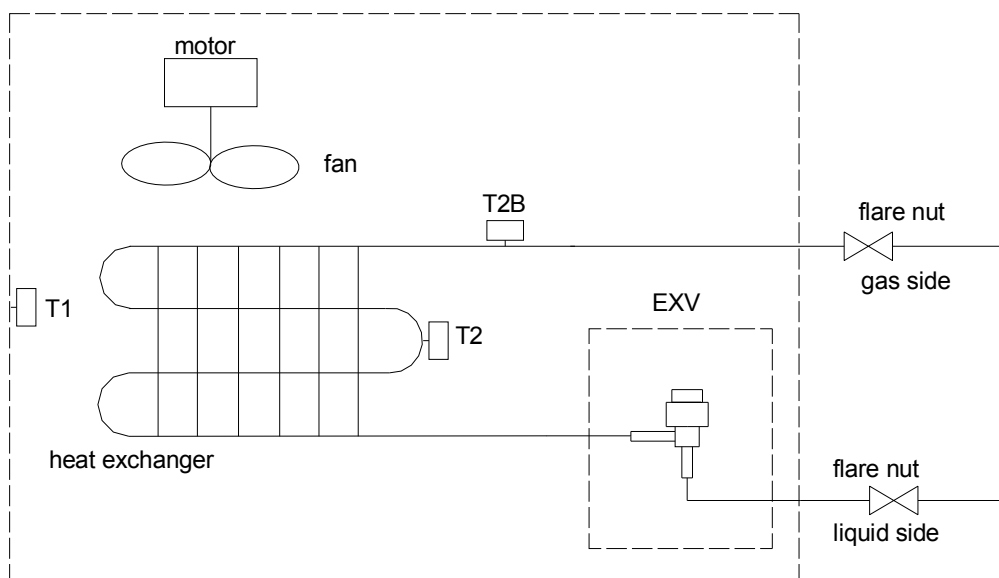
The connecting pipe and drainpipe could be extracted out easily.

There is no direct radiation from heaters.



Additionally, it is required to keep 20mm between the rear and wall, 1700mm vertical distance between the top of unit(outlet) and the upper obstacle.

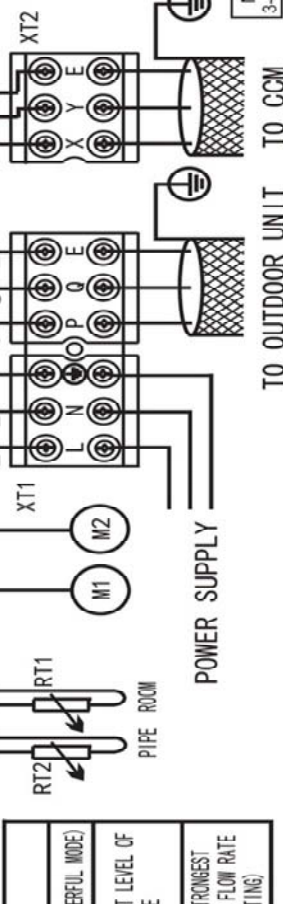
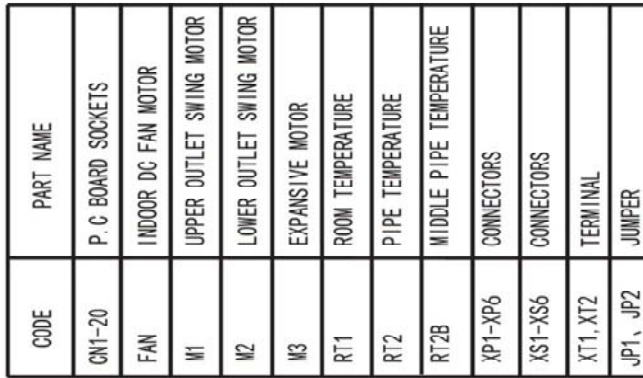
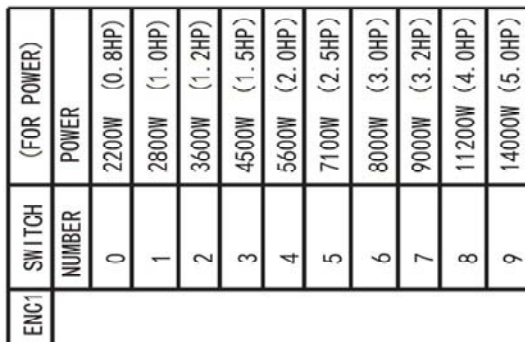
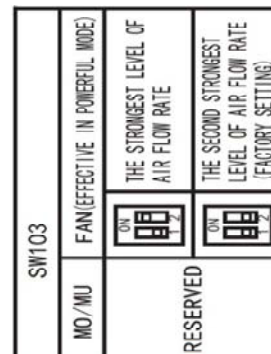
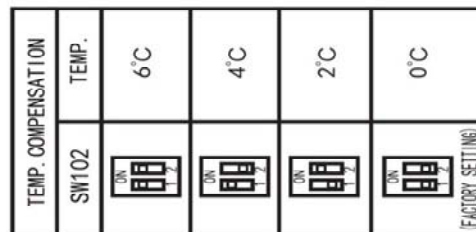
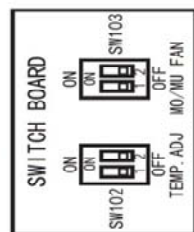
## 5. Piping Diagrams





## 6. Wiring Diagrams

**WIRING DIAGRAM**  
**INDOOR UNIT**



**NOTE: PLEASE USE  
3-CORE SHIELDED WIRE**

TO OUTDOOR UNIT TO CCM

POWER SUPPLY

202080590672

## 7. Capacity Tables

7.1 Cooling TC: total capacity SC: sensible capacity

WB: wet-bulb temperature DB: dry-bulb temperature

| Indoor Unit size (kW) | Outdoor temperature (°C DB) | Indoor temperature (°C WB/DB) |     |       |     |       |     |       |     |       |     |       |     |       |     |
|-----------------------|-----------------------------|-------------------------------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|
|                       |                             | 14/20                         |     | 16/23 |     | 18/26 |     | 19/27 |     | 20/28 |     | 22/30 |     | 24/32 |     |
|                       |                             | TC                            | SC  | TC    | SC  | TC    | SC  | TC    | SC  | TC    | SC  | TC    | SC  | TC    | SC  |
|                       |                             | kW                            | kW  | kW    | kW  | kW    | kW  | kW    | kW  | kW    | kW  | kW    | kW  | kW    | kW  |
| 2.2                   | 10.0                        | 1.5                           | 1.3 | 1.8   | 1.4 | 2.1   | 1.5 | 2.2   | 1.5 | 2.3   | 1.6 | 2.6   | 1.6 | 2.9   | 1.5 |
|                       | 12.0                        | 1.5                           | 1.3 | 1.8   | 1.4 | 2.1   | 1.5 | 2.2   | 1.5 | 2.3   | 1.6 | 2.6   | 1.6 | 2.8   | 1.5 |
|                       | 14.0                        | 1.5                           | 1.3 | 1.8   | 1.4 | 2.1   | 1.5 | 2.2   | 1.5 | 2.3   | 1.6 | 2.6   | 1.6 | 2.8   | 1.5 |
|                       | 16.0                        | 1.5                           | 1.3 | 1.8   | 1.4 | 2.1   | 1.5 | 2.2   | 1.5 | 2.3   | 1.6 | 2.6   | 1.6 | 2.8   | 1.5 |
|                       | 18.0                        | 1.5                           | 1.3 | 1.8   | 1.4 | 2.1   | 1.5 | 2.2   | 1.5 | 2.3   | 1.6 | 2.6   | 1.6 | 2.8   | 1.4 |
|                       | 20.0                        | 1.5                           | 1.3 | 1.8   | 1.4 | 2.1   | 1.5 | 2.2   | 1.5 | 2.3   | 1.6 | 2.6   | 1.6 | 2.7   | 1.4 |
|                       | 21.0                        | 1.5                           | 1.3 | 1.8   | 1.4 | 2.1   | 1.5 | 2.2   | 1.5 | 2.3   | 1.6 | 2.6   | 1.6 | 2.7   | 1.4 |
|                       | 23.0                        | 1.5                           | 1.3 | 1.8   | 1.4 | 2.1   | 1.5 | 2.2   | 1.5 | 2.3   | 1.6 | 2.5   | 1.5 | 2.7   | 1.4 |
|                       | 25.0                        | 1.5                           | 1.3 | 1.8   | 1.4 | 2.1   | 1.5 | 2.2   | 1.5 | 2.3   | 1.6 | 2.5   | 1.5 | 2.6   | 1.4 |
|                       | 27.0                        | 1.5                           | 1.3 | 1.8   | 1.4 | 2.1   | 1.5 | 2.2   | 1.5 | 2.3   | 1.6 | 2.5   | 1.5 | 2.6   | 1.4 |
|                       | 29.0                        | 1.5                           | 1.3 | 1.8   | 1.4 | 2.1   | 1.5 | 2.2   | 1.5 | 2.3   | 1.6 | 2.4   | 1.4 | 2.5   | 1.4 |
|                       | 31.0                        | 1.5                           | 1.3 | 1.8   | 1.4 | 2.1   | 1.5 | 2.2   | 1.5 | 2.3   | 1.6 | 2.4   | 1.4 | 2.5   | 1.4 |
|                       | 33.0                        | 1.5                           | 1.3 | 1.8   | 1.4 | 2.1   | 1.5 | 2.2   | 1.5 | 2.3   | 1.6 | 2.4   | 1.4 | 2.4   | 1.4 |
|                       | 35.0                        | 1.5                           | 1.3 | 1.8   | 1.4 | 2.1   | 1.5 | 2.2   | 1.5 | 2.3   | 1.6 | 2.3   | 1.3 | 2.4   | 1.4 |
|                       | 37.0                        | 1.5                           | 1.3 | 1.8   | 1.4 | 2.1   | 1.5 | 2.2   | 1.5 | 2.3   | 1.6 | 2.3   | 1.3 | 2.3   | 1.4 |
|                       | 39.0                        | 1.5                           | 1.3 | 1.8   | 1.4 | 2.1   | 1.5 | 2.2   | 1.5 | 2.2   | 1.5 | 2.3   | 1.3 | 2.3   | 1.4 |
| 2.8                   | 10.0                        | 1.9                           | 1.6 | 2.3   | 1.8 | 2.6   | 1.9 | 2.8   | 1.9 | 3.0   | 1.9 | 3.3   | 2.0 | 3.7   | 2.0 |
|                       | 12.0                        | 1.9                           | 1.6 | 2.3   | 1.8 | 2.6   | 1.9 | 2.8   | 1.9 | 3.0   | 1.9 | 3.3   | 2.0 | 3.6   | 2.0 |
|                       | 14.0                        | 1.9                           | 1.6 | 2.3   | 1.8 | 2.6   | 1.9 | 2.8   | 1.9 | 3.0   | 1.9 | 3.3   | 2.0 | 3.6   | 2.0 |
|                       | 16.0                        | 1.9                           | 1.6 | 2.3   | 1.8 | 2.6   | 1.9 | 2.8   | 1.9 | 3.0   | 1.9 | 3.3   | 2.0 | 3.5   | 1.9 |
|                       | 18.0                        | 1.9                           | 1.6 | 2.3   | 1.8 | 2.6   | 1.9 | 2.8   | 1.9 | 3.0   | 1.9 | 3.3   | 2.0 | 3.5   | 1.9 |
|                       | 20.0                        | 1.9                           | 1.6 | 2.3   | 1.8 | 2.6   | 1.9 | 2.8   | 1.9 | 3.0   | 1.9 | 3.3   | 2.0 | 3.4   | 1.9 |
|                       | 21.0                        | 1.9                           | 1.6 | 2.3   | 1.8 | 2.6   | 1.9 | 2.8   | 1.9 | 3.0   | 1.9 | 3.3   | 2.0 | 3.4   | 1.9 |
|                       | 23.0                        | 1.9                           | 1.6 | 2.3   | 1.8 | 2.6   | 1.9 | 2.8   | 1.9 | 3.0   | 1.9 | 3.3   | 2.0 | 3.4   | 1.9 |
|                       | 25.0                        | 1.9                           | 1.6 | 2.3   | 1.8 | 2.6   | 1.9 | 2.8   | 1.9 | 3.0   | 1.9 | 3.2   | 1.9 | 3.3   | 1.9 |
|                       | 27.0                        | 1.9                           | 1.6 | 2.3   | 1.8 | 2.6   | 1.9 | 2.8   | 1.9 | 3.0   | 1.9 | 3.2   | 1.9 | 3.3   | 1.9 |
|                       | 29.0                        | 1.9                           | 1.6 | 2.3   | 1.8 | 2.6   | 1.9 | 2.8   | 1.9 | 3.0   | 1.9 | 3.1   | 1.8 | 3.2   | 1.8 |
|                       | 31.0                        | 1.9                           | 1.6 | 2.3   | 1.8 | 2.6   | 1.9 | 2.8   | 1.9 | 3.0   | 1.9 | 3.1   | 1.8 | 3.2   | 1.7 |
|                       | 33.0                        | 1.9                           | 1.6 | 2.3   | 1.8 | 2.6   | 1.9 | 2.8   | 1.9 | 3.0   | 1.9 | 3.1   | 1.8 | 3.1   | 1.7 |
|                       | 35.0                        | 1.9                           | 1.6 | 2.3   | 1.8 | 2.6   | 1.9 | 2.8   | 1.9 | 2.9   | 1.9 | 3.0   | 1.8 | 3.1   | 1.7 |
|                       | 37.0                        | 1.9                           | 1.6 | 2.3   | 1.8 | 2.6   | 1.9 | 2.8   | 1.9 | 2.9   | 1.9 | 3.0   | 1.8 | 3.0   | 1.7 |
|                       | 39.0                        | 1.9                           | 1.6 | 2.3   | 1.8 | 2.6   | 1.9 | 2.8   | 1.9 | 2.9   | 1.9 | 3.0   | 1.9 | 3.0   | 1.7 |
| 3.6                   | 10.0                        | 2.5                           | 1.9 | 2.9   | 2.1 | 3.4   | 2.3 | 3.6   | 2.4 | 3.8   | 2.5 | 4.3   | 2.4 | 4.7   | 2.5 |
|                       | 12.0                        | 2.5                           | 1.9 | 2.9   | 2.1 | 3.4   | 2.3 | 3.6   | 2.4 | 3.8   | 2.5 | 4.3   | 2.4 | 4.7   | 2.5 |
|                       | 14.0                        | 2.5                           | 1.9 | 2.9   | 2.1 | 3.4   | 2.3 | 3.6   | 2.4 | 3.8   | 2.5 | 4.3   | 2.4 | 4.6   | 2.4 |
|                       | 16.0                        | 2.5                           | 1.9 | 2.9   | 2.1 | 3.4   | 2.3 | 3.6   | 2.4 | 3.8   | 2.5 | 4.3   | 2.4 | 4.5   | 2.4 |
|                       | 18.0                        | 2.5                           | 1.9 | 2.9   | 2.1 | 3.4   | 2.3 | 3.6   | 2.4 | 3.8   | 2.5 | 4.3   | 2.4 | 4.5   | 2.4 |
|                       | 20.0                        | 2.5                           | 1.9 | 2.9   | 2.1 | 3.4   | 2.3 | 3.6   | 2.4 | 3.8   | 2.5 | 4.3   | 2.4 | 4.4   | 2.3 |
|                       | 21.0                        | 2.5                           | 1.9 | 2.9   | 2.1 | 3.4   | 2.3 | 3.6   | 2.4 | 3.8   | 2.5 | 4.3   | 2.4 | 4.4   | 2.3 |
|                       | 23.0                        | 2.5                           | 1.9 | 2.9   | 2.1 | 3.4   | 2.3 | 3.6   | 2.4 | 3.8   | 2.5 | 4.1   | 2.3 | 4.3   | 2.2 |
|                       | 25.0                        | 2.5                           | 1.9 | 2.9   | 2.1 | 3.4   | 2.3 | 3.6   | 2.4 | 3.8   | 2.5 | 4.1   | 2.3 | 4.2   | 2.2 |
|                       | 27.0                        | 2.5                           | 1.9 | 2.9   | 2.1 | 3.4   | 2.3 | 3.6   | 2.4 | 3.8   | 2.5 | 4.0   | 2.2 | 4.2   | 2.2 |
|                       | 29.0                        | 2.5                           | 1.9 | 2.9   | 2.1 | 3.4   | 2.3 | 3.6   | 2.4 | 3.8   | 2.5 | 4.0   | 2.2 | 4.1   | 2.2 |
|                       | 31.0                        | 2.5                           | 1.9 | 2.9   | 2.1 | 3.4   | 2.3 | 3.6   | 2.4 | 3.8   | 2.5 | 4.2   | 2.6 | 4.1   | 2.2 |
|                       | 33.0                        | 2.5                           | 1.9 | 2.9   | 2.1 | 3.4   | 2.3 | 3.6   | 2.4 | 3.8   | 2.5 | 4.2   | 2.6 | 3.9   | 2.1 |
|                       | 35.0                        | 2.5                           | 1.9 | 2.9   | 2.1 | 3.4   | 2.3 | 3.6   | 2.4 | 3.8   | 2.5 | 4.2   | 2.6 | 3.9   | 2.1 |
|                       | 37.0                        | 2.5                           | 1.9 | 2.9   | 2.1 | 3.4   | 2.3 | 3.6   | 2.4 | 3.7   | 2.4 | 3.8   | 2.3 | 3.9   | 2.1 |
|                       | 39.0                        | 2.5                           | 1.9 | 2.9   | 2.1 | 3.4   | 2.3 | 3.6   | 2.4 | 3.7   | 2.4 | 3.8   | 2.3 | 3.8   | 2.1 |
| 4.5                   | 10.0                        | 3.1                           | 2.4 | 3.7   | 2.6 | 4.2   | 2.8 | 4.5   | 2.9 | 4.8   | 3.0 | 5.3   | 3.4 | 5.9   | 3.0 |

|  |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|--|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|  | 12.0 | 3.1 | 2.4 | 3.7 | 2.6 | 4.2 | 2.8 | 4.5 | 2.9 | 4.8 | 3.0 | 5.3 | 3.4 | 5.9 | 3.0 |
|  | 14.0 | 3.1 | 2.4 | 3.7 | 2.6 | 4.2 | 2.8 | 4.5 | 2.9 | 4.8 | 3.0 | 5.3 | 3.4 | 5.8 | 3.0 |
|  | 16.0 | 3.1 | 2.4 | 3.7 | 2.6 | 4.2 | 2.8 | 4.5 | 2.9 | 4.8 | 3.0 | 5.3 | 3.4 | 5.6 | 2.9 |
|  | 18.0 | 3.1 | 2.4 | 3.7 | 2.6 | 4.2 | 2.8 | 4.5 | 2.9 | 4.8 | 3.0 | 5.3 | 3.4 | 5.7 | 3.0 |
|  | 20.0 | 3.1 | 2.4 | 3.7 | 2.6 | 4.2 | 2.8 | 4.5 | 2.9 | 4.8 | 3.0 | 5.3 | 3.4 | 5.7 | 3.0 |
|  | 21.0 | 3.1 | 2.4 | 3.7 | 2.6 | 4.2 | 2.8 | 4.5 | 2.9 | 4.8 | 3.0 | 5.3 | 3.4 | 5.6 | 3.0 |
|  | 23.0 | 3.1 | 2.4 | 3.7 | 2.6 | 4.2 | 2.8 | 4.5 | 2.9 | 4.8 | 3.0 | 5.3 | 3.4 | 5.5 | 3.0 |
|  | 25.0 | 3.1 | 2.4 | 3.7 | 2.6 | 4.2 | 2.8 | 4.5 | 2.9 | 4.8 | 3.0 | 5.2 | 3.0 | 5.4 | 2.9 |
|  | 27.0 | 3.1 | 2.4 | 3.7 | 2.6 | 4.2 | 2.8 | 4.5 | 2.9 | 4.8 | 3.0 | 5.1 | 3.0 | 5.2 | 2.8 |
|  | 29.0 | 3.1 | 2.4 | 3.7 | 2.6 | 4.2 | 2.8 | 4.5 | 2.9 | 4.8 | 3.0 | 5.1 | 2.9 | 5.2 | 2.8 |
|  | 31.0 | 3.1 | 2.4 | 3.7 | 2.6 | 4.2 | 2.8 | 4.5 | 2.9 | 4.8 | 3.0 | 5.0 | 2.9 | 5.1 | 2.7 |
|  | 33.0 | 3.1 | 2.4 | 3.7 | 2.6 | 4.2 | 2.8 | 4.5 | 2.9 | 4.8 | 3.0 | 4.9 | 2.8 | 5.1 | 2.7 |
|  | 35.0 | 3.1 | 2.4 | 3.7 | 2.6 | 4.2 | 2.8 | 4.5 | 2.9 | 4.8 | 3.0 | 4.8 | 2.8 | 5.0 | 2.7 |
|  | 37.0 | 3.1 | 2.4 | 3.7 | 2.6 | 4.2 | 2.8 | 4.5 | 2.9 | 4.8 | 3.0 | 4.8 | 2.9 | 4.9 | 2.6 |
|  | 39.0 | 3.1 | 2.4 | 3.7 | 2.6 | 4.2 | 2.8 | 4.5 | 2.9 | 4.6 | 2.8 | 4.7 | 2.8 | 4.8 | 2.6 |
|  | 42.0 | 3.1 | 2.4 | 3.7 | 2.6 | 4.2 | 2.8 | 4.5 | 2.9 | 4.6 | 2.8 | 4.7 | 2.8 | 4.8 | 2.6 |
|  | 44.0 | 3.1 | 2.4 | 3.7 | 2.6 | 4.2 | 2.8 | 4.5 | 2.9 | 4.6 | 2.8 | 4.7 | 2.8 | 4.8 | 2.6 |
|  | 46.0 | 3.1 | 2.4 | 3.7 | 2.6 | 4.2 | 2.8 | 4.5 | 2.9 | 4.6 | 2.8 | 4.7 | 3.1 | 4.8 | 2.6 |

## 7.2 Heating

**TC:** total capacity **WB:** wet-bulb temperature **DB:** dry-bulb temperature

| Indoor Unit size<br>(kW) | Outdoor temperature<br>(°C) |        | Indoor temperature (°C DB) |       |       |       |       |       |
|--------------------------|-----------------------------|--------|----------------------------|-------|-------|-------|-------|-------|
|                          |                             |        | 16.00                      | 18.00 | 20.00 | 21.00 | 22.00 | 24.00 |
|                          | WB                          | DB     | TC                         | TC    | TC    | TC    | TC    | TC    |
| 2.2                      | WB                          | DB     | kW                         | kW    | kW    | kW    | kW    | kW    |
|                          | -20                         | -19.8  | 1.46                       | 1.46  | 1.46  | 1.46  | 1.46  | 1.46  |
|                          | -19                         | -18.8  | 1.56                       | 1.56  | 1.56  | 1.56  | 1.56  | 1.56  |
|                          | -17                         | -16.7  | 1.64                       | 1.64  | 1.64  | 1.64  | 1.64  | 1.64  |
|                          | -15                         | -14.7  | 1.69                       | 1.69  | 1.69  | 1.69  | 1.69  | 1.69  |
|                          | -13.00                      | -12.60 | 1.79                       | 1.79  | 1.79  | 1.79  | 1.79  | 1.79  |
|                          | -11.00                      | -10.50 | 1.82                       | 1.85  | 1.85  | 1.85  | 1.85  | 1.85  |
|                          | -10.00                      | -9.50  | 1.90                       | 1.90  | 1.90  | 1.90  | 1.90  | 1.90  |
|                          | -9.10                       | -8.50  | 1.95                       | 1.95  | 1.95  | 1.95  | 1.95  | 1.95  |
|                          | -7.60                       | -7.00  | 1.98                       | 1.98  | 1.98  | 1.98  | 1.98  | 1.98  |
|                          | -5.60                       | -5.00  | 2.05                       | 2.05  | 2.05  | 2.05  | 2.05  | 2.05  |
|                          | -3.70                       | -3.00  | 2.16                       | 2.16  | 2.16  | 2.16  | 2.16  | 2.16  |
|                          | -0.70                       | 0.00   | 2.31                       | 2.31  | 2.31  | 2.31  | 2.31  | 2.18  |
|                          | 2.20                        | 3.00   | 2.44                       | 2.44  | 2.44  | 2.44  | 2.39  | 2.18  |
|                          | 4.10                        | 5.00   | 2.52                       | 2.52  | 2.52  | 2.52  | 2.39  | 2.18  |
|                          | 6.00                        | 7.00   | 2.60                       | 2.60  | 2.60  | 2.52  | 2.39  | 2.18  |
|                          | 7.90                        | 9.00   | 2.68                       | 2.68  | 2.60  | 2.52  | 2.39  | 2.18  |
|                          | 9.80                        | 11.00  | 2.76                       | 2.76  | 2.60  | 2.52  | 2.39  | 2.18  |
|                          | 11.80                       | 13.00  | 2.86                       | 2.81  | 2.60  | 2.52  | 2.39  | 2.18  |
|                          | 13.70                       | 15.00  | 2.94                       | 2.81  | 2.60  | 2.52  | 2.39  | 2.18  |
| 2.8                      | -20                         | -19.8  | 1.79                       | 1.79  | 1.79  | 1.79  | 1.79  | 1.79  |
|                          | -19                         | -18.8  | 1.92                       | 1.92  | 1.92  | 1.92  | 1.92  | 1.92  |
|                          | -17                         | -16.7  | 2.02                       | 2.02  | 2.02  | 2.02  | 2.02  | 2.02  |
|                          | -15                         | -14.7  | 2.02                       | 2.02  | 2.02  | 2.02  | 2.02  | 2.02  |
|                          | -13.00                      | -12.60 | 2.14                       | 2.14  | 2.14  | 2.14  | 2.14  | 2.14  |
|                          | -11.00                      | -10.50 | 2.24                       | 2.24  | 2.24  | 2.24  | 2.24  | 2.24  |
|                          | -10.00                      | -9.50  | 2.34                       | 2.34  | 2.34  | 2.34  | 2.34  | 2.34  |
|                          | -9.10                       | -8.50  | 2.40                       | 2.40  | 2.40  | 2.40  | 2.40  | 2.40  |
|                          | -7.60                       | -7.00  | 2.43                       | 2.43  | 2.43  | 2.43  | 2.43  | 2.43  |
|                          | -5.60                       | -5.00  | 2.53                       | 2.53  | 2.53  | 2.53  | 2.53  | 2.53  |
|                          | -3.70                       | -3.00  | 2.66                       | 2.66  | 2.66  | 2.66  | 2.66  | 2.66  |
|                          | -0.70                       | 0.00   | 2.85                       | 2.85  | 2.85  | 2.85  | 2.85  | 2.69  |
|                          | 2.20                        | 3.00   | 3.01                       | 3.01  | 3.01  | 3.01  | 2.94  | 2.69  |
|                          | 4.10                        | 5.00   | 3.10                       | 3.10  | 3.10  | 3.10  | 2.94  | 2.69  |
|                          | 6.00                        | 7.00   | 3.20                       | 3.20  | 3.20  | 3.10  | 2.94  | 2.69  |
|                          | 7.90                        | 9.00   | 3.30                       | 3.30  | 3.20  | 3.10  | 2.94  | 2.69  |
|                          | 9.80                        | 11.00  | 3.39                       | 3.39  | 3.20  | 3.10  | 2.94  | 2.69  |
|                          | 11.80                       | 13.00  | 3.52                       | 3.46  | 3.20  | 3.10  | 2.94  | 2.69  |
|                          | 13.70                       | 15.00  | 3.62                       | 3.46  | 3.20  | 3.10  | 2.94  | 2.69  |
| 3.6                      | -20                         | -19.8  | 2.24                       | 2.24  | 2.24  | 2.24  | 2.24  | 2.24  |
|                          | -19                         | -18.8  | 2.40                       | 2.40  | 2.40  | 2.40  | 2.40  | 2.40  |
|                          | -17                         | -16.7  | 2.52                       | 2.52  | 2.52  | 2.52  | 2.52  | 2.52  |
|                          | -15                         | -14.7  | 2.60                       | 2.60  | 2.60  | 2.60  | 2.60  | 2.60  |
|                          | -13.00                      | -12.60 | 2.68                       | 2.68  | 2.68  | 2.68  | 2.68  | 2.68  |
|                          | -11.00                      | -10.50 | 2.80                       | 2.80  | 2.80  | 2.80  | 2.80  | 2.80  |
|                          | -10.00                      | -9.50  | 2.92                       | 2.92  | 2.92  | 2.92  | 2.92  | 2.92  |
|                          | -9.10                       | -8.50  | 3.00                       | 3.00  | 3.00  | 3.00  | 3.00  | 3.00  |
|                          | -7.60                       | -7.00  | 3.04                       | 3.04  | 3.04  | 3.04  | 3.04  | 3.04  |
|                          | -5.60                       | -5.00  | 3.16                       | 3.16  | 3.16  | 3.16  | 3.16  | 3.16  |
|                          | -3.70                       | -3.00  | 3.32                       | 3.32  | 3.32  | 3.32  | 3.32  | 3.32  |
|                          | -0.70                       | 0.00   | 3.56                       | 3.56  | 3.56  | 3.56  | 3.56  | 3.36  |
|                          | 2.20                        | 3.00   | 3.76                       | 3.76  | 3.76  | 3.76  | 3.68  | 3.36  |
|                          | 4.10                        | 5.00   | 3.88                       | 3.88  | 3.88  | 3.88  | 3.68  | 3.36  |
|                          | 6.00                        | 7.00   | 4.00                       | 4.00  | 4.00  | 3.88  | 3.68  | 3.36  |
|                          | 7.90                        | 9.00   | 4.12                       | 4.12  | 4.00  | 3.88  | 3.68  | 3.36  |
|                          | 9.80                        | 11.00  | 4.24                       | 4.24  | 4.00  | 3.88  | 3.68  | 3.36  |
|                          | 11.80                       | 13.00  | 4.40                       | 4.32  | 4.00  | 3.88  | 3.68  | 3.36  |
|                          | 13.70                       | 15.00  | 4.52                       | 4.32  | 4.00  | 3.88  | 3.68  | 3.36  |
| 4.5                      | -20                         | -19.8  | 2.80                       | 2.80  | 2.80  | 2.80  | 2.80  | 2.80  |
|                          | -19                         | -18.8  | 3.00                       | 3.00  | 3.00  | 3.00  | 3.00  | 3.00  |

|  |        |        |      |      |      |      |      |      |
|--|--------|--------|------|------|------|------|------|------|
|  | -17    | -16.7  | 3.15 | 3.15 | 3.15 | 3.15 | 3.15 | 3.15 |
|  | -15    | -14.7  | 3.25 | 3.25 | 3.25 | 3.25 | 3.25 | 3.25 |
|  | -13.00 | -12.60 | 3.35 | 3.35 | 3.35 | 3.35 | 3.35 | 3.35 |
|  | -11.00 | -10.50 | 3.50 | 3.50 | 3.50 | 3.50 | 3.50 | 3.50 |
|  | -10.00 | -9.50  | 3.65 | 3.65 | 3.65 | 3.65 | 3.65 | 3.65 |
|  | -9.10  | -8.50  | 3.75 | 3.75 | 3.75 | 3.75 | 3.75 | 3.75 |
|  | -7.60  | -7.00  | 3.80 | 3.80 | 3.80 | 3.80 | 3.80 | 3.80 |
|  | -5.60  | -5.00  | 3.95 | 3.95 | 3.95 | 3.95 | 3.95 | 3.95 |
|  | -3.70  | -3.00  | 4.15 | 4.15 | 4.15 | 4.15 | 4.15 | 4.15 |
|  | -0.70  | 0.00   | 4.45 | 4.45 | 4.45 | 4.45 | 4.45 | 4.20 |
|  | 2.20   | 3.00   | 4.70 | 4.70 | 4.70 | 4.70 | 4.60 | 4.20 |
|  | 4.10   | 5.00   | 4.85 | 4.85 | 4.85 | 4.85 | 4.60 | 4.20 |
|  | 6.00   | 7.00   | 5.00 | 5.00 | 5.00 | 4.85 | 4.60 | 4.20 |
|  | 7.90   | 9.00   | 5.15 | 5.15 | 5.00 | 4.85 | 4.60 | 4.20 |
|  | 9.80   | 11.00  | 5.30 | 5.30 | 5.00 | 4.85 | 4.60 | 4.20 |
|  | 11.80  | 13.00  | 5.50 | 5.40 | 5.00 | 4.85 | 4.60 | 4.20 |
|  | 13.70  | 15.00  | 5.65 | 5.40 | 5.00 | 4.85 | 4.60 | 4.20 |

## 8. Electrical Characteristics

| Model                 | Indoor Unit |         |      |      | Power Supply |     | IFM   |        |
|-----------------------|-------------|---------|------|------|--------------|-----|-------|--------|
|                       | Hz          | Voltage | Min. | Max. | MCA          | MFA | KW    | FLA    |
| <b>MVD-22Z/DHN1-B</b> | 50          | 220-240 | 198  | 254  | 0.25         | 5   | 0.012 | 0.0135 |
| <b>MVD-28Z/DHN1-B</b> | 50          | 220-240 | 198  | 254  | 0.25         | 5   | 0.015 | 0.0158 |
| <b>MVD-36Z/DHN1-B</b> | 50          | 220-240 | 198  | 254  | 0.25         | 5   | 0.015 | 0.0158 |
| <b>MVD-45Z/DHN1-B</b> | 50          | 220-240 | 198  | 254  | 0.25         | 5   | 0.030 | 0.0296 |

**Remark:**

MCA: Min. Current Amps. (A)

MFA: Max. Fuse Amps. (A)

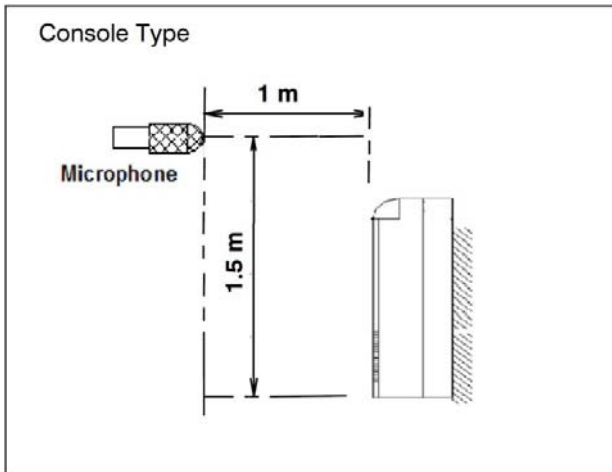
KW: Fan Motor Rated Output (kW)

FLA: Full Load Amps. (A)

IFM:Indoor Fan Motor

## 9. Sound Levels

### 9.1 Test condition



Note:

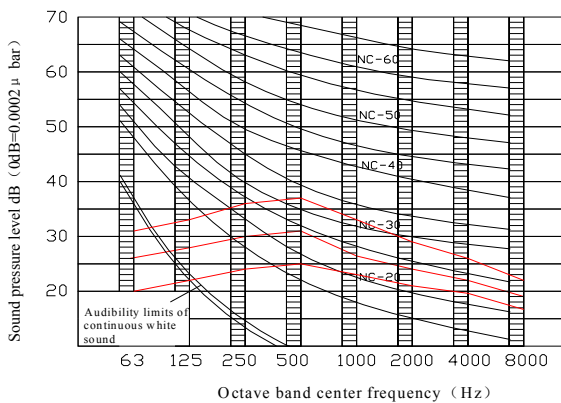
- 1, During actual operation, these values are normally somewhat higher as a result of ambient conditions.
- 2, Semi-anechoic chamber conversion value, measured at a point which is 1m in front of the unit and 1.5m under the unit.

### 9.2 Test value

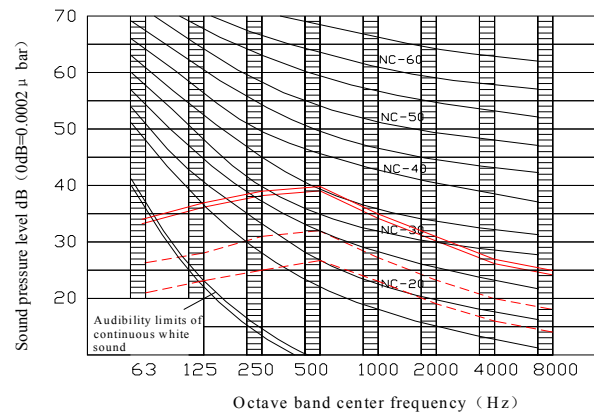
| Model          | SH | HH | H  | M  | L  |
|----------------|----|----|----|----|----|
| MVD-22Z/DHN1-B | 38 | 38 | 38 | 32 | 26 |
| MVD-28Z/DHN1-B | 40 | 40 | 39 | 33 | 27 |
| MVD-36Z/DHN1-B | 41 | 41 | 39 | 33 | 27 |
| MVD-45Z/DHN1-B | 42 | 42 | 42 | 38 | 30 |

### 9.3 Octave Band Level

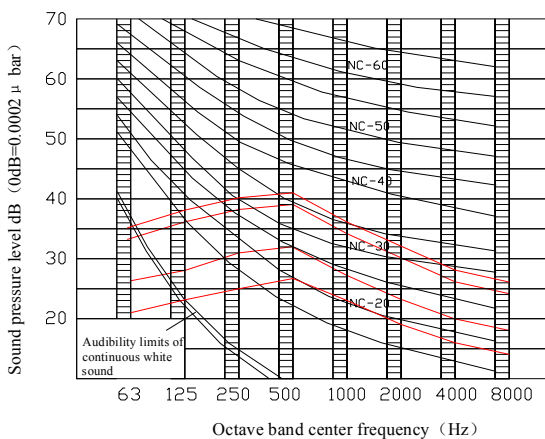
MVD-22Z/DHN1-B



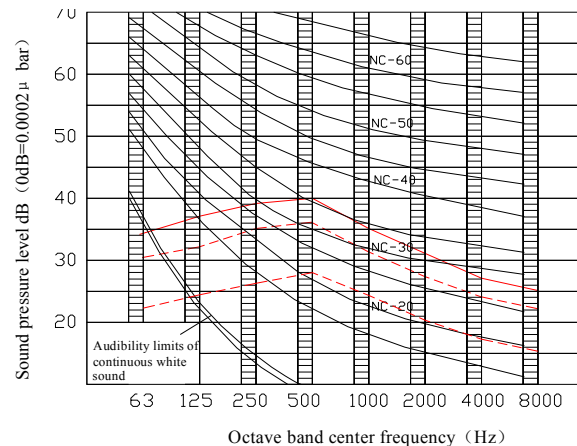
MVD-28Z/DHN1-B



MVD-36Z/DHN1-B

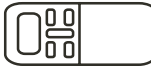
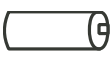


MVD-45Z/DHN1-B



## 10. Accessories

### 10.1 Standard accessories

| Name                          | Quantity | Shape                                                                             | Usage                                   |
|-------------------------------|----------|-----------------------------------------------------------------------------------|-----------------------------------------|
| Owner's manual                | 1        | /                                                                                 | /                                       |
| Installation manual           | 1        | /                                                                                 | /                                       |
| Pipe insulation material      | 2        |  | Heat insulation                         |
| Flexible hose tube            | 1        |  | For drain water pipe connection         |
| Hook                          | 2        |  | Fittings for installing the indoor unit |
| Mounting screw(ST3.9x12-C-H)  | 4        |  | /                                       |
| Remote controller             | 1        |  | Control the indoor units                |
| Remote controller holder      | 1        |  | For holding the remote controller       |
| Mounting screw (ST2.9x10-C-H) | 2        |  | /                                       |
| Alkaline dry batteries(AM4)   | 2        |  | /                                       |





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