Библиотека СОК



# Four-way Cassette Type

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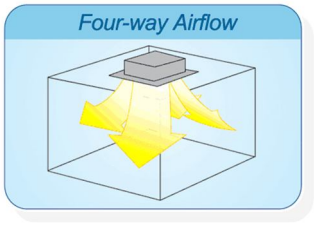
# 1. Features

**(1) Low operation noise**

—Streamline plate ensures quietness

—Creates natural and comfortable environment

**(2) Efficient cooling——Equal, fast and wide range cooling**




**(3) Excellent performance. Higher heat-exchanging efficiency and lower noise.**

The optimal evaporator & sufficient airflow volume guarantees the excellent capacity

**(4) The adoption of the most advanced 3- Dimensional Screw fan**

—Reduces the air resistance passing through

—Smoothes the air flow

—Makes air speed distribution to the heat exchanger uniform



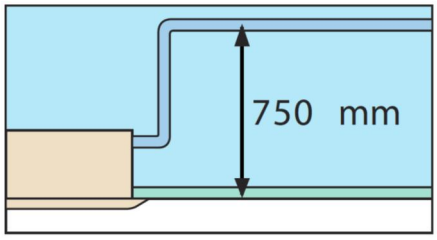

**(5) Adding digital tube displaying on the display board. LED can display the Error Code to make the malfunction checking easier.**



**(6) Fresh air makes life healthier and more comfortable.**

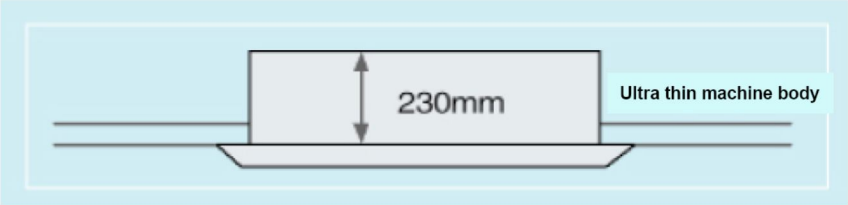



**(7) Drainage pump can take up the condenser water to 750mm.**




**(8) Ultra-thin machine body to easy installation and maintenance:**

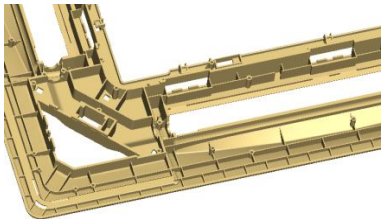
**2.8kW~8.0kW:230mm, 9.0kW~14kW:300mm.**




**(9) Swing angle of louver**

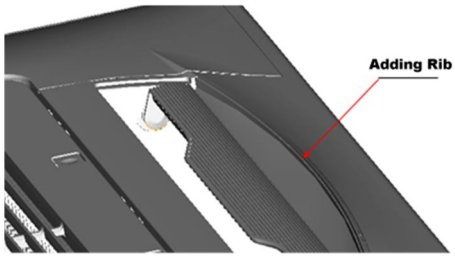
1) Add one more swing motor, one motor driving two louvers. Controlling the interspace of each part, minimizing the angle loss.
2) The swing angle of the first louver are 40~42 degrees and the second louver are 37~38 degrees. New evaporator and inner configuration designed can acquire high heat-exchanger effect.

**(10) More strengthening rib design around the panel, preventing the distortion for the panel**.

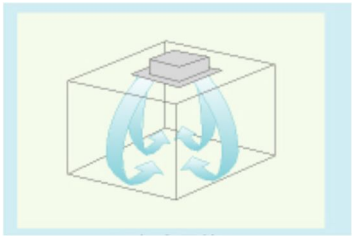


**(11) New outlet frame design to make the phenomena of coagulation great improvement: prevents the condensing water from damaging the air guide strip.**

**(12) Adding rib on the panel of fan outlet, can avoid the air outlet direct flow to people.**




**(13) 4 speeds available, optional super high fan speed design is suitable for the large building over 3m high.**



**(14) Optimal design, smaller Control Box, Space saving and convenient for wiring,**

Using fire resistance galvanized steel for E-box material. Metal box makes the control part more stable and prevents damaging

**(15) 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 | | | MDV-D28Q4/N1-D | MDV-D36Q4/N1-D | MDV-D45Q4/N1-D |
|---|---|---|---|---|---|
| Power supply | | V-Ph-Hz | 220-240V, 1Ph, 50Hz | | |
| Cooling | Capacity | kW | 2.8 | 3.6 | 4.5 |
| | Input | W | 80 | 80 | 90 |
| | Rated current | A | 0.4 | 0.4 | 0.4 |
| Heating | Capacity | kW | 3.2 | 4.0 | 5.0 |
| | Input | W | 80 | 80 | 90 |
| | Rated current | A | 0.4 | 0.4 | 0.4 |
| Indoor fan motor | Model | | YDK60-6F-3 | YDK60-6F-3 | YDK60-6F-3 |
| | Type | | AC motor | AC motor | AC motor |
| | Brand | | Welling | Welling | Welling |
| | Input | W | 98/85/75/70 | 98/85/75/70 | 98/85/75/70 |
| | Capacitor | uF | 2.5 | 2.5 | 3 |
| | Speed (h/m/l) | r/min | (782)/600/509/422 | (782)/600/509/422 | (808)/652/547/467 |
| Indoor coil | Number of rows | | 1 | 1 | 2 |
| | Tube pitch(a)x row pitch(b) | mm | 21x13.37 | 21x13.37 | 21x13.37 |
| | Fin spacing | mm | 1.5 | 1.5 | 1.5 |
| | Fin type | | Hydrophilic Aluminum | Hydrophilic Aluminum | Hydrophilic Aluminum |
| | Tube outside dia. and type | mm | Φ7,Innergroove Tube | | |
| | Coil length x height x width | mm | 1930x168x13.37 | 1930x168x13.37 | 1961x168x26.74 |
| | Number of circuits | | 4 | 4 | 8 |
| Indoor air flow (SH/H/M/L) | | $m^3/h$ | 1187/847/766/640 | 1187/847/766/640 | 1121/864/755/658 |
| Indoor noise level (H/M/L) | | dB(A) | 42/38/35 | 42/38/35 | 42/38/35 |
| Indoor unit | Dimension (W x H x D) | mm | 840x230x840 | 840x230x840 | 840x230x840 |
| | Packing (W x H x D) | mm | 955x260x955 | 955x260x955 | 955x260x955 |
| | Net/Gross weight | kg | 24/28 | 24/28 | 26/30 |
| Panel | Dimension (W x H x D) | mm | 950x46x950 | 950x46x950 | 950x46x950 |
| | Packing (W x H x D) | mm | 1000x60x1000 | 1000x60x1000 | 1000x60x1000 |
| | Net/Gross weight | kg | 6/9 | 6/9 | 6/9 |
| Refrigerant type | | | R410A | R410A | R410A |
| Throttle | | Type | Electrical expansive valve | | |
| | | Model | BD20FKS(L) | | |
| Design pressure(H/L) | | MPa | 4.2/2.0 | 4.2/2.0 | 4.2/2.0 |
| Refrigerant piping | Liquid side/ Gas side | mm | Φ6.35/Φ12.7 | Φ6.35/Φ12.7 | Φ6.35/Φ12.7 |
| Connecting wiring | Power wiring | $mm^2$ | 3×2.5(L≤20m)；3×3.5(L≤50m) | | |
| | Signal wiring | $mm^2$ | 3×0.75 | 3×0.75 | 3×0.75 |
| Drainage water pipe diameter | | mm | ODΦ32 | ODΦ32 | ODΦ32 |
| Controller | | | Wireless remote controller (RM05/BG(T)E-A) | | |

**Notes:**

1. Nominal cooling capacities are based on the following conditions: return air temperature: 27°CDB, 19°CWB, and 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, and equivalent ref. Piping: 8m (horizontal)

| Model | | | MDV-D56Q4/N1-D | MDV-D71Q4/N1-D | MDV-D80Q4/N1-D |
|---|---|---|---|---|---|
| Power supply | | V- Ph-Hz | 220-240V, 1Ph, 50Hz | | |
| Cooling | Capacity | kW | 5.6 | 7.1 | 8.0 |
| | Input | W | 75 | 82 | 97 |
| | Rated current | A | 0.4 | 0.5 | 0.5 |
| Heating | Capacity | kW | 6.3 | 8.0 | 9.0 |
| | Input | W | 75 | 82 | 97 |
| | Rated current | A | 0.4 | 0.5 | 0.5 |
| Indoor fan motor | Model | | YDK60-6F-3 | YDK80-6E-2 | YDK80-6E-2 |
| | Type | | AC motor | AC motor | AC motor |
| | Brand | | Welling | Welling | Welling |
| | Input | W | 98/85/75/70 | 120/110/100/90 | 120/110/100/90 |
| | Capacitor | uF | 3 | 3 | 3 |
| | Speed (h/m/l) | r/min | (808)/652/547/467 | (877)/755/627/490 | (800)/777/662/525 |
| Indoor coil | Number of rows | | 2 | 2 | 2 |
| | Tube pitch(a)x row pitch(b) | mm | 21x13.37 | 21x13.37 | 21x13.37 |
| | Fin spacing | mm | 1.5 | 1.5 | 1.5 |
| | Fin type | | Hydrophilic Aluminum | Hydrophilic Aluminum | Hydrophilic Aluminum |
| | Tube outside dia. and type | mm | Φ7, Inner groove Tube | | |
| | Coil length x height x width | mm | 1961x168x26.74 | 1961x168x26.74 | 1961x168x26.74 |
| | Number of circuits | | 8 | 8 | 8 |
| Indoor air flow (H/M/L) | | $m^3/h$ | 1121/864/755/658 | 1385/1157/955/749 | 1431/1236/973/729 |
| Indoor noise level (H/M/L) | | dB(A) | 42/38/35 | 45/42/39 | 45/42/39 |
| Indoor unit | Dimension (W x H x D) | mm | 840x230x840 | 840x230x840 | 840x230x840 |
| | Packing (W x H x D) | mm | 955x260x955 | 955x260x955 | 955x260x955 |
| | Net/Gross weight | kg | 26/30 | 26/30 | 26/30 |
| Panel | Dimension (W x H x D) | mm | 950x46x950 | 950x46x950 | 950x46x950 |
| | Packing (W x H x D) | mm | 1000x60x1000 | 1000x60x1000 | 1000x60x1000 |
| | Net/Gross weight | kg | 6/9 | 6/9 | 6/9 |
| Refrigerant type | | | R410A | R410A | R410A |
| Throttle | | Type | Electronical expansive valve | | |
| | | Model | BD20FKS(L) | | |
| Design pressure(H/L) | | MPa | 4.4/2.6 | 4.4/2.6 | 4.4/2.6 |
| Refrigerant piping | Liquid side/ Gas side | mm | Φ9.53/Φ15.9 | Φ9.53/Φ15.9 | Φ9.53/Φ15.9 |
| Connecting wiring | Power wiring | $mm^2$ | 3×2.5(L≤20m)；3×3.5(L≤50m) | | |
| | Signal wiring | $mm^2$ | 3×0.75 | 3×0.75 | 3×0.75 |
| Drainage water pipe diameter | | mm | ODΦ32 | ODΦ32 | ODΦ32 |
| Controller | | | Wireless remote controller (RM05/BG(T)E-A) | | |

**Notes:**

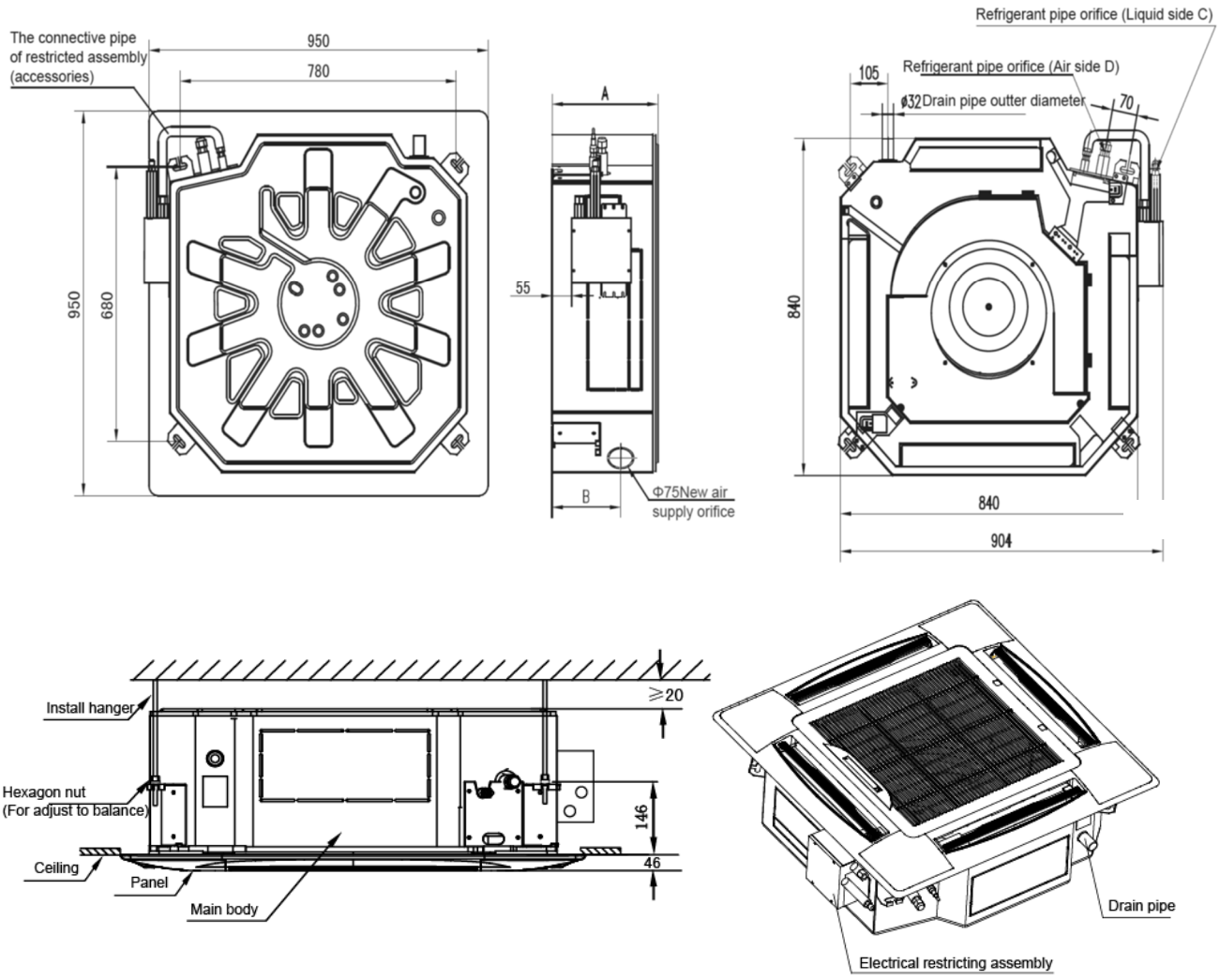
1. Nominal cooling capacities are based on the following conditions: return air temperature: 27°CDB, 19°CWB, and outdoor temperature:35°CDB, equivalent ref. piping: 8m (horizontal)
2. Nominal heating capacities are based on the following conditions: return air t temperature: 20°CDB, outdoor temperature: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

| Model | | | MDV-D90Q4/N1-D | MDV-D100Q4/N1-D | MDV-D112Q4/N1-D | MDV-D140Q4/N1-D |
|---|---|---|---|---|---|---|
| Power supply | | V- Ph-Hz | 220-240V, 1Ph, 50Hz | | | |
| Cooling | Capacity | kW | 9.0 | 10.0 | 11.2 | 14.0 |
| | Input | W | 160 | 160 | 160 | 170 |
| | Rated current | A | 0.7 | 0.7 | 0.7 | 0.8 |
| Heating | Capacity | kW | 10.0 | 11.0 | 12.5 | 15.0 |
| | Input | W | 160 | 160 | 160 | 170 |
| | Rated current | A | 0.7 | 0.7 | 0.7 | 0.8 |
| Indoor fan motor | Model | | YDK90-6E-1 | YDK90-6E-1 | YDK90-6E-1 | YDK90-6E-1 |
| | Type | | AC motor | AC motor | AC motor | AC motor |
| | Brand | | Welling | Welling | Welling | Welling |
| | Input | W | 165/143/114/93 | 165/143/114/93 | 165/143/114/93 | 204/175/140/120 |
| | Capacitor | uF | 3.5 | 3.5 | 3.5 | 4 |
| | Speed (h/m/l) | r/min | 770/640/550 | 770/640/550 | 770/640/550 | 820/750/620 |
| Indoor coil | Number of rows | | 2 | 2 | 2 | 3 |
| | Tube pitch(a)x row pitch(b) | mm | 21x13.37 | 21x13.37 | 21x13.37 | 21x13.37 |
| | Fin spacing | mm | 1.5 | 1.5 | 1.5 | 1.5 |
| | Fin type | | Hydrophilic Aluminum | | | |
| | Tube outside dia. and type | mm | Φ7, Inner groove Tube | | | |
| | Coil length x height x width | mm | 1955x252x26.74 | 1955x252x26.74 | 1955x252x26.74 | 1955x252x26.74 |
| | Number of circuits | | 8 | 8 | 8 | 12 |
| Indoor air flow (SH/H/M/L) | | $m^3/h$ | 1758/1540/1300/1120 | 1758/1540/1300/1120 | 1758/1540/1300/1120 | 1843/1800/1500/1280 |
| Indoor noise level (H/M/L) | | dB(A) | 48/45/43 | 48/45/43 | 48/45/43 | 50/47/44 |
| Indoor unit | Dimension (W x H x D) | mm | 840x300x840 | 840x300x840 | 840x300x840 | 840x300x840 |
| | Packing (W x H x D) | mm | 955x330x955 | 955x330x955 | 955x330x955 | 955x330x955 |
| | Net/Gross weight | kg | 32/37 | 32/37 | 32/37 | 32/37 |
| Panel | Dimension (W x H x D) | mm | 950x46x950 | 950x46x950 | 950x46x950 | 950x46x950 |
| | Packing (W x H x D) | mm | 1000x60x1000 | 1000x60x1000 | 1000x60x1000 | 1000x60x1000 |
| | Net/Gross weight | kg | 6/9 | 6/9 | 6/9 | 6/9 |
| Refrigerant type | | | R410A | | | |
| Throttle | | Type | Electronical expansive valve | | | |
| | | Model | BD20FKS(L) | | | |
| Design pressure(H/L) | | MPa | 4.4/2.6 | 4.4/2.6 | 4.4/2.6 | 4.4/2.6 |
| Refrigerant piping | Liquid side/ Gas side | mm | Φ9.53/Φ15.9 | Φ9.53/Φ15.9 | Φ9.53/Φ15.9 | Φ9.53/Φ15.9 |
| Connecting wiring | Power wiring | $mm^2$ | 3×2.5(L≤20m)；3×3.5(L≤50m) | | | |
| | Signal wiring | $mm^2$ | 3×0.75 | 3×0.75 | 3×0.75 | 3×0.75 |
| Drainage water pipe diameter | | mm | ODΦ32 | ODΦ32 | ODΦ32 | ODΦ32 |
| Controller | | | Wireless remote controller (RM05/BG(T)E-A) | | | |

**Notes:**

1. Nominal cooling capacities are based on the following conditions: return air temperature.: 27°CDB, 19°CWB, and 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 t temperature: 7°CDB, 6°CWB, and equivalent ref. Piping: 8m (horizontal)

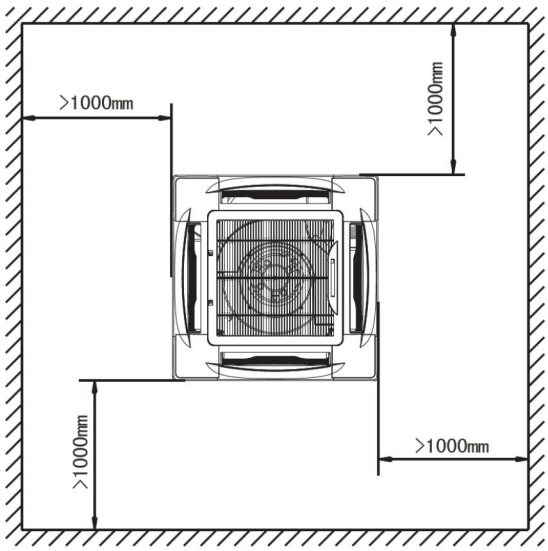
# 3. Dimensions

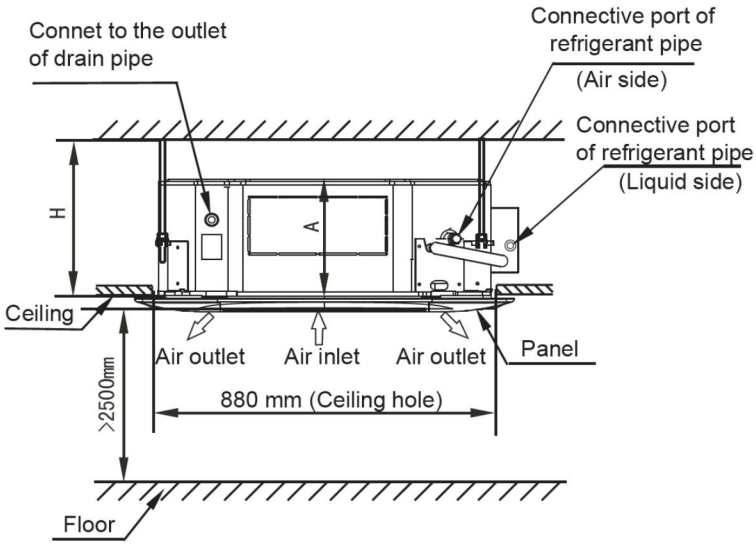


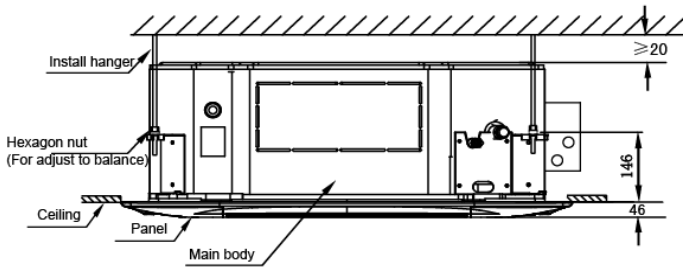

| Indoor unit model | A(mm) | B(mm) | C(mm) | D(mm) |
|---|---|---|---|---|
| MDV-D28Q4/N1-D ～ MDV-D45Q4/N1-D | 230 | 170 | Φ6.35 | Φ12.7 |
| MDV-D56Q4/N1-D ～ MDV-D80Q4/N1-D | 230 | 170 | Φ9.53 | Φ15.9 |
| MDV-D90Q4/N1-D ～ MDV-D140Q4/N1-D | 300 | 190 | Φ9.53 | Φ15.9 |

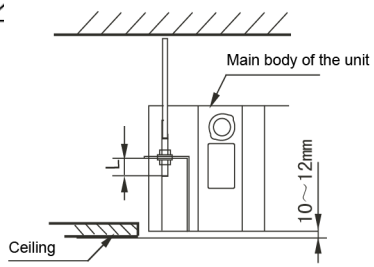
# 4. Service Spaces

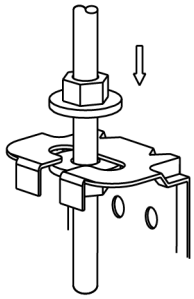
**1)** There is enough room for installation and maintenance.
**2)** The ceiling is horizontal, and its structure can endure the weight of the indoor unit.
**3)** The outlet and the inlet are not impeded, and the influence of external air is the least.
**4)** The air flow can reach throughout the room.
**5)** The connecting pipe and drainpipe could be extracted out easily.
**6)** There is no direct radiation from heaters.



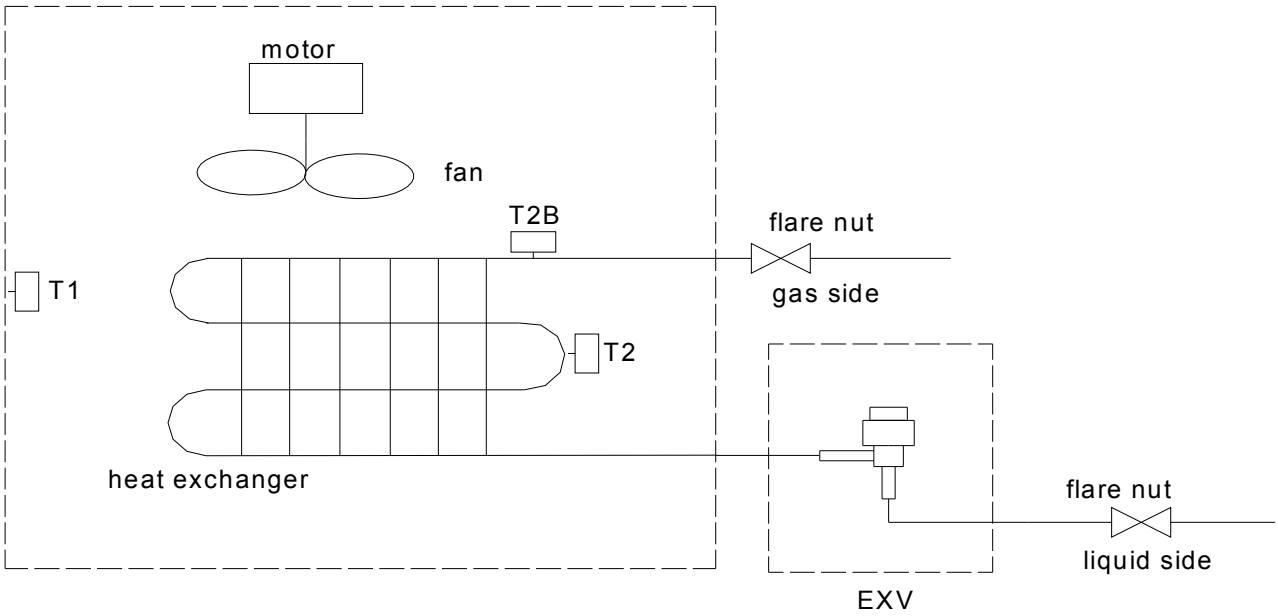



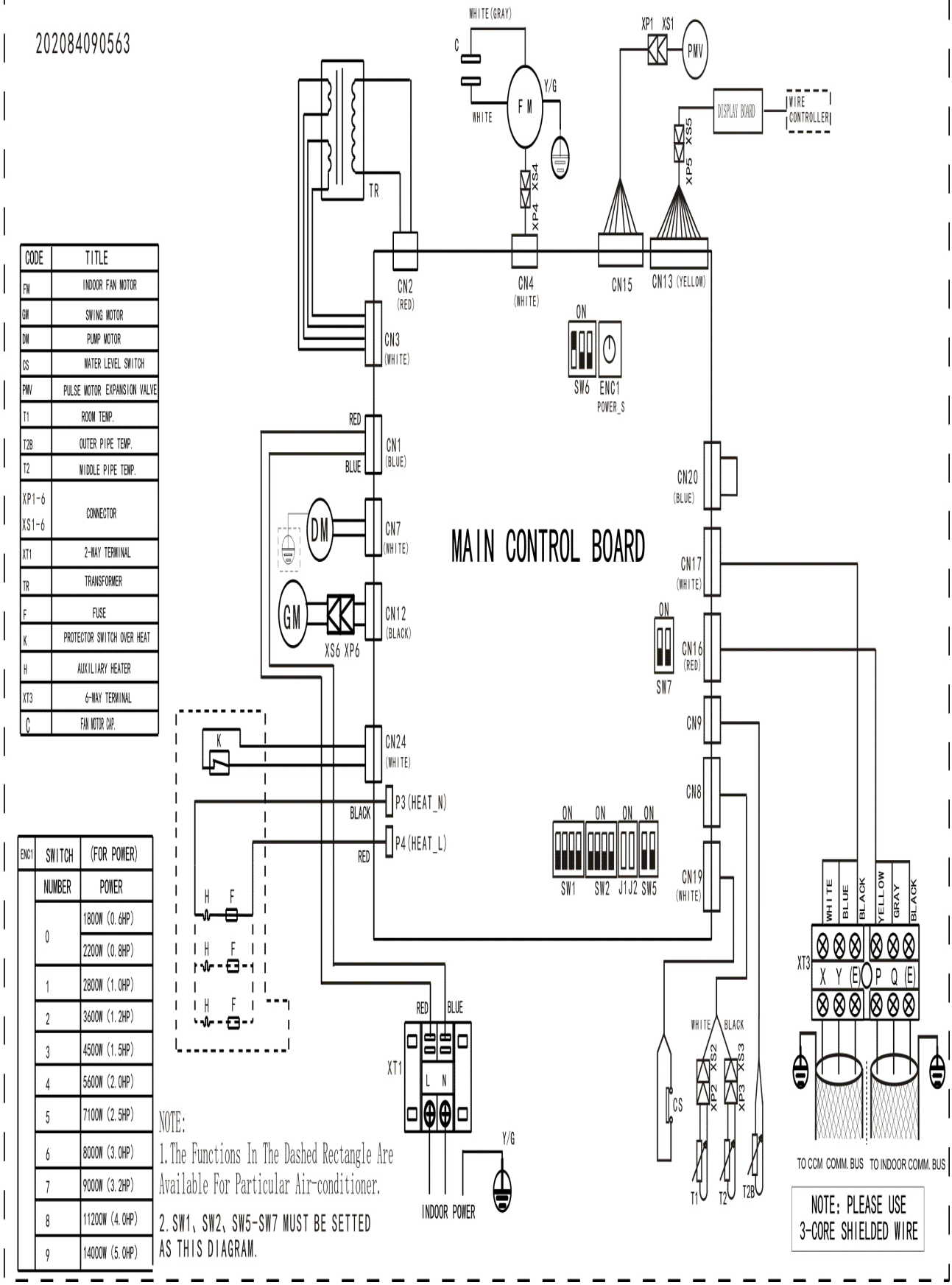
| Indoor unit | A(mm) | H(mm) |
|---|---|---|
| MDV-D28Q4/N1-D ～ MDV-D80Q4/N1-D | 230 | ≥260 |
| MDV-D90Q4/N1-D ～ MDV-D140Q4/N1-D | 300 | ≥330 |

# 5. Piping Diagrams



# 6. Wiring Diagrams

**MDV-D28Q4/N1-D MDV-D36Q4/N1-D MDV-D45Q4/N1-D MDV-D56Q4/N1-D MDV-D71Q4/N1-D**
**MDV-D80Q4/N1-D MDV-D90Q4/N1-D MDV-D100Q4/N1-D MDV-D112Q4/N1-D MDV-D140Q4/N1-D**




| CODE | TITLE |
|---|---|
| FM | INDOOR FAN MOTOR |
| GM | SWING MOTOR |
| DM | PUMP MOTOR |
| CS | WATER LEVEL SWITCH |
| PMV | PULSE MOTOR EXPANSION VALVE |
| T1 | ROOM TEMP. |
| T2B | OUTER PIPE TEMP. |
| T2 | MIDDLE PIPE TEMP. |
| XP1-6 XS1-6 | CONNECTOR |
| XT1 | 2-WAY TERMINAL |
| TR | TRANSFORMER |
| F | FUSE |
| K | PROTECTOR SWITCH OVER HEAT |
| H | AUXILIARY HEATER |
| XT3 | 6-WAY TERMINAL |
| C | FAN MOTOR CAP. |

| ENC1 SWITCH | (FOR POWER) |
|---|---|
| NUMBER | POWER |
| 0 | 1800W (0.6HP) |
| | 2200W (0.8HP) |
| 1 | 2800W (1.0HP) |
| 2 | 3600W (1.2HP) |
| 3 | 4500W (1.5HP) |
| 4 | 5600W (2.0HP) |
| 5 | 7100W (2.5HP) |
| 6 | 8000W (3.0HP) |
| 7 | 9000W (3.2HP) |
| 8 | 11200W (4.0HP) |
| 9 | 14000W (5.0HP) |

NOTE:
1. The Functions In The Dashed Rectangle Are Available For Particular Air-conditioner.
2. SW1、SW2、SW5-SW7 MUST BE SETTED AS THIS DIAGRAM.

# 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 (℃ DB) | Indoor temperature (℃ 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 |
| 2.8 | 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 |
| | 42.0 | 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 |
| | 44.0 | 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 |
| | 46.0 | 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 |
| | 42.0 | 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 |
| | 44.0 | 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 |
| | 46.0 | 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 |
| 5.6 | 10.0 | 3.9 | 2.7 | 4.6 | 3.0 | 5.3 | 3.3 | 5.6 | 3.4 | 5.9 | 3.5 | 6.6 | 3.6 | 7.3 | 3.5 |
| | 12.0 | 3.9 | 2.7 | 4.6 | 3.0 | 5.3 | 3.3 | 5.6 | 3.4 | 5.9 | 3.5 | 6.6 | 3.6 | 7.2 | 3.5 |
| | 14.0 | 3.9 | 2.7 | 4.6 | 3.0 | 5.3 | 3.3 | 5.6 | 3.4 | 5.9 | 3.5 | 6.6 | 3.6 | 7.1 | 3.5 |
| | 16.0 | 3.9 | 2.7 | 4.6 | 3.0 | 5.3 | 3.3 | 5.6 | 3.4 | 5.9 | 3.5 | 6.6 | 3.6 | 7.0 | 3.4 |
| | 18.0 | 3.9 | 2.7 | 4.6 | 3.0 | 5.3 | 3.3 | 5.6 | 3.4 | 5.9 | 3.5 | 6.6 | 3.6 | 6.8 | 3.4 |
| | 20.0 | 3.9 | 2.7 | 4.6 | 3.0 | 5.3 | 3.3 | 5.6 | 3.4 | 5.9 | 3.5 | 6.6 | 3.6 | 6.7 | 3.3 |
| | 21.0 | 3.9 | 2.7 | 4.6 | 3.0 | 5.3 | 3.3 | 5.6 | 3.4 | 5.9 | 3.5 | 6.6 | 3.6 | 6.6 | 3.3 |
| | 23.0 | 3.9 | 2.7 | 4.6 | 3.0 | 5.3 | 3.3 | 5.6 | 3.4 | 5.9 | 3.5 | 6.6 | 3.6 | 6.6 | 3.3 |
| | 25.0 | 3.9 | 2.7 | 4.6 | 3.0 | 5.3 | 3.3 | 5.6 | 3.4 | 5.9 | 3.5 | 6.6 | 3.6 | 6.5 | 3.2 |
| | 27.0 | 3.9 | 2.7 | 4.6 | 3.0 | 5.3 | 3.3 | 5.6 | 3.4 | 5.9 | 3.5 | 6.4 | 3.5 | 6.4 | 3.2 |
| | 29.0 | 3.9 | 2.7 | 4.6 | 3.0 | 5.3 | 3.3 | 5.6 | 3.4 | 5.9 | 3.5 | 6.3 | 3.5 | 6.4 | 3.3 |
| | 31.0 | 3.9 | 2.7 | 4.6 | 3.0 | 5.3 | 3.3 | 5.6 | 3.4 | 5.9 | 3.5 | 6.2 | 3.4 | 6.2 | 3.2 |
| | 33.0 | 3.9 | 2.7 | 4.6 | 3.0 | 5.3 | 3.3 | 5.6 | 3.4 | 5.9 | 3.5 | 6.2 | 3.4 | 6.2 | 3.2 |
| | 35.0 | 3.9 | 2.7 | 4.6 | 3.0 | 5.3 | 3.3 | 5.6 | 3.4 | 5.9 | 3.5 | 6.0 | 3.3 | 6.0 | 3.1 |
| | 37.0 | 3.9 | 2.7 | 4.6 | 3.0 | 5.3 | 3.3 | 5.6 | 3.4 | 5.9 | 3.5 | 5.9 | 3.2 | 6.0 | 3.1 |
| | 39.0 | 3.9 | 2.7 | 4.6 | 3.0 | 5.3 | 3.3 | 5.6 | 3.4 | 5.7 | 3.4 | 5.8 | 3.2 | 6.0 | 3.1 |
| | 42.0 | 3.9 | 2.7 | 4.6 | 3.0 | 5.3 | 3.3 | 5.6 | 3.4 | 5.7 | 3.4 | 5.8 | 3.2 | 6.0 | 3.1 |
| | 44.0 | 3.9 | 2.7 | 4.6 | 3.0 | 5.3 | 3.3 | 5.6 | 3.4 | 5.7 | 3.4 | 5.8 | 3.2 | 6.0 | 3.1 |
| | 46.0 | 3.9 | 2.7 | 4.6 | 3.0 | 5.3 | 3.3 | 5.6 | 3.4 | 5.7 | 3.7 | 5.8 | 3.2 | 6.0 | 3.1 |
| 7.1 | 10.0 | 4.9 | 3.6 | 5.8 | 4.0 | 6.7 | 4.3 | 7.1 | 4.5 | 7.5 | 4.4 | 8.4 | 4.5 | 9.2 | 4.6 |
| | 12.0 | 4.9 | 3.6 | 5.8 | 4.0 | 6.7 | 4.3 | 7.1 | 4.5 | 7.5 | 4.4 | 8.4 | 4.5 | 9.1 | 4.5 |
| | 14.0 | 4.9 | 3.6 | 5.8 | 4.0 | 6.7 | 4.3 | 7.1 | 4.5 | 7.5 | 4.4 | 8.4 | 4.5 | 9.0 | 4.5 |
| | 16.0 | 4.9 | 3.6 | 5.8 | 4.0 | 6.7 | 4.3 | 7.1 | 4.5 | 7.5 | 4.4 | 8.4 | 4.5 | 8.9 | 4.4 |
| | 18.0 | 4.9 | 3.6 | 5.8 | 4.0 | 6.7 | 4.3 | 7.1 | 4.5 | 7.5 | 4.4 | 8.4 | 4.5 | 8.7 | 4.3 |
| | 20.0 | 4.9 | 3.6 | 5.8 | 4.0 | 6.7 | 4.3 | 7.1 | 4.5 | 7.5 | 4.4 | 8.4 | 4.5 | 8.5 | 4.2 |
| | 21.0 | 4.9 | 3.6 | 5.8 | 4.0 | 6.7 | 4.3 | 7.1 | 4.5 | 7.5 | 4.4 | 8.4 | 4.5 | 8.4 | 4.2 |
| | 23.0 | 4.9 | 3.6 | 5.8 | 4.0 | 6.7 | 4.3 | 7.1 | 4.5 | 7.5 | 4.4 | 8.4 | 4.5 | 8.3 | 4.1 |
| | 25.0 | 4.9 | 3.6 | 5.8 | 4.0 | 6.7 | 4.3 | 7.1 | 4.5 | 7.5 | 4.4 | 8.4 | 4.5 | 8.2 | 4.1 |
| | 27.0 | 4.9 | 3.6 | 5.8 | 4.0 | 6.7 | 4.3 | 7.1 | 4.5 | 7.5 | 4.4 | 8.1 | 4.3 | 8.2 | 4.1 |
| | 29.0 | 4.9 | 3.6 | 5.8 | 4.0 | 6.7 | 4.3 | 7.1 | 4.5 | 7.5 | 4.5 | 8.0 | 4.3 | 8.1 | 4.1 |
| | 31.0 | 4.9 | 3.6 | 5.8 | 4.0 | 6.7 | 4.3 | 7.1 | 4.5 | 7.5 | 4.5 | 7.9 | 4.3 | 7.8 | 4.0 |
| | 33.0 | 4.9 | 3.6 | 5.8 | 4.0 | 6.7 | 4.3 | 7.1 | 4.5 | 7.5 | 4.5 | 7.8 | 4.2 | 7.8 | 4.0 |
| | 35.0 | 4.9 | 3.6 | 5.8 | 4.0 | 6.7 | 4.3 | 7.1 | 4.5 | 7.5 | 4.5 | 7.6 | 4.1 | 7.7 | 3.9 |
| | 37.0 | 4.9 | 3.6 | 5.8 | 4.0 | 6.7 | 4.3 | 7.1 | 4.5 | 7.4 | 4.4 | 7.5 | 4.1 | 7.6 | 4.0 |
| | 39.0 | 4.9 | 3.6 | 5.8 | 4.0 | 6.7 | 4.3 | 7.1 | 4.5 | 7.2 | 4.3 | 7.4 | 4.1 | 7.6 | 4.0 |
| | 42.0 | 4.9 | 3.6 | 5.8 | 4.0 | 6.7 | 4.3 | 7.1 | 4.5 | 7.2 | 4.3 | 7.4 | 4.1 | 7.6 | 4.0 |
| | 44.0 | 4.9 | 3.6 | 5.8 | 4.0 | 6.7 | 4.3 | 7.1 | 4.5 | 7.2 | 4.3 | 7.4 | 4.1 | 7.6 | 4.0 |
| | 46.0 | 4.9 | 3.6 | 5.8 | 4.0 | 6.7 | 4.3 | 7.1 | 4.5 | 7.2 | 4.3 | 7.4 | 4.1 | 7.6 | 4.0 |
| 8.0 | 10.0 | 5.5 | 4.4 | 6.6 | 4.9 | 7.5 | 5.3 | 8.0 | 5.5 | 8.4 | 5.4 | 9.4 | 5.5 | 10.4 | 5.6 |
| | 12.0 | 5.5 | 4.4 | 6.6 | 4.9 | 7.5 | 5.3 | 8.0 | 5.5 | 8.4 | 5.4 | 9.4 | 5.5 | 10.2 | 5.5 |
| | 14.0 | 5.5 | 4.4 | 6.6 | 4.9 | 7.5 | 5.3 | 8.0 | 5.5 | 8.4 | 5.4 | 9.4 | 5.5 | 10.2 | 5.5 |
| | 16.0 | 5.5 | 4.4 | 6.6 | 4.9 | 7.5 | 5.3 | 8.0 | 5.5 | 8.4 | 5.4 | 9.4 | 5.5 | 10.0 | 5.4 |
| | 18.0 | 5.5 | 4.4 | 6.6 | 4.9 | 7.5 | 5.3 | 8.0 | 5.5 | 8.4 | 5.4 | 9.4 | 5.5 | 9.8 | 5.3 |
| | 20.0 | 5.5 | 4.4 | 6.6 | 4.9 | 7.5 | 5.3 | 8.0 | 5.5 | 8.4 | 5.4 | 9.4 | 5.5 | 9.6 | 5.2 |
| | 21.0 | 5.5 | 4.4 | 6.6 | 4.9 | 7.5 | 5.3 | 8.0 | 5.5 | 8.4 | 5.4 | 9.4 | 5.5 | 9.4 | 5.1 |
| | 23.0 | 5.5 | 4.4 | 6.6 | 4.9 | 7.5 | 5.3 | 8.0 | 5.5 | 8.4 | 5.4 | 9.4 | 5.5 | 9.4 | 5.1 |
| | 25.0 | 5.5 | 4.4 | 6.6 | 4.9 | 7.5 | 5.3 | 8.0 | 5.5 | 8.4 | 5.4 | 9.4 | 5.5 | 9.3 | 5.0 |
| | 27.0 | 5.5 | 4.4 | 6.6 | 4.9 | 7.5 | 5.3 | 8.0 | 5.5 | 8.4 | 5.4 | 9.1 | 5.3 | 9.2 | 5.1 |
| | 29.0 | 5.5 | 4.4 | 6.6 | 4.9 | 7.5 | 5.3 | 8.0 | 5.5 | 8.4 | 5.5 | 9.0 | 5.3 | 9.1 | 5.0 |
| | 31.0 | 5.5 | 4.4 | 6.6 | 4.9 | 7.5 | 5.3 | 8.0 | 5.5 | 8.4 | 5.5 | 8.9 | 5.2 | 8.8 | 4.8 |
| | 33.0 | 5.5 | 4.4 | 6.6 | 4.9 | 7.5 | 5.3 | 8.0 | 5.5 | 8.4 | 5.5 | 8.8 | 5.2 | 8.8 | 4.8 |
| | 35.0 | 5.5 | 4.4 | 6.6 | 4.9 | 7.5 | 5.3 | 8.0 | 5.5 | 8.4 | 5.5 | 8.6 | 5.1 | 8.6 | 4.8 |
| | 37.0 | 5.5 | 4.4 | 6.6 | 4.9 | 7.5 | 5.3 | 8.0 | 5.5 | 8.3 | 5.4 | 8.4 | 5.0 | 8.6 | 4.9 |
| | 39.0 | 5.5 | 4.4 | 6.6 | 4.9 | 7.5 | 5.3 | 8.0 | 5.5 | 8.1 | 5.3 | 8.3 | 5.0 | 8.6 | 4.9 |
| | 42.0 | 5.5 | 4.4 | 6.6 | 4.9 | 7.5 | 5.3 | 8.0 | 5.5 | 8.1 | 5.3 | 8.3 | 5.0 | 8.6 | 4.9 |
| | 44.0 | 5.5 | 4.4 | 6.6 | 4.9 | 7.5 | 5.3 | 8.0 | 5.5 | 8.1 | 5.3 | 8.3 | 5.0 | 8.6 | 4.9 |
| | 46.0 | 5.5 | 4.4 | 6.6 | 4.9 | 7.5 | 5.3 | 8.0 | 5.5 | 8.1 | 5.3 | 8.3 | 5.0 | 8.6 | 4.9 |
| 9.0 | 10.0 | 6.2 | 4.9 | 7.3 | 5.3 | 8.4 | 5.8 | 9.0 | 5.9 | 9.6 | 6.0 | 10.6 | 6.1 | 11.7 | 6.0 |
| | 12.0 | 6.2 | 4.9 | 7.3 | 5.3 | 8.4 | 5.8 | 9.0 | 5.9 | 9.6 | 6.0 | 10.6 | 6.1 | 11.5 | 5.9 |
| | 14.0 | 6.2 | 4.9 | 7.3 | 5.3 | 8.4 | 5.8 | 9.0 | 5.9 | 9.6 | 6.0 | 10.6 | 6.1 | 11.4 | 5.9 |
| | 16.0 | 6.2 | 4.9 | 7.3 | 5.3 | 8.4 | 5.8 | 9.0 | 5.9 | 9.6 | 6.0 | 10.6 | 6.1 | 11.3 | 5.8 |
| | 18.0 | 6.2 | 4.9 | 7.3 | 5.3 | 8.4 | 5.8 | 9.0 | 5.9 | 9.6 | 6.0 | 10.6 | 6.1 | 11.0 | 5.8 |
| | 20.0 | 6.2 | 4.9 | 7.3 | 5.3 | 8.4 | 5.8 | 9.0 | 5.9 | 9.6 | 6.0 | 10.6 | 6.1 | 10.8 | 5.7 |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 21.0 | 6.2 | 4.9 | 7.3 | 5.3 | 8.4 | 5.8 | 9.0 | 5.9 | 9.6 | 6.0 | 10.6 | 6.1 | 10.6 | 5.6 |
| | 23.0 | 6.2 | 4.9 | 7.3 | 5.3 | 8.4 | 5.8 | 9.0 | 5.9 | 9.6 | 6.0 | 10.6 | 6.1 | 10.5 | 5.5 |
| | 25.0 | 6.2 | 4.9 | 7.3 | 5.3 | 8.4 | 5.8 | 9.0 | 5.9 | 9.6 | 6.0 | 10.6 | 6.1 | 10.4 | 5.5 |
| | 27.0 | 6.2 | 4.9 | 7.3 | 5.3 | 8.4 | 5.8 | 9.0 | 5.9 | 9.6 | 6.0 | 10.3 | 5.9 | 10.4 | 5.4 |
| | 29.0 | 6.2 | 4.9 | 7.3 | 5.3 | 8.4 | 5.8 | 9.0 | 5.9 | 9.6 | 6.0 | 10.1 | 5.7 | 10.3 | 5.4 |
| | 31.0 | 6.2 | 4.9 | 7.3 | 5.3 | 8.4 | 5.8 | 9.0 | 5.9 | 9.6 | 6.0 | 10.0 | 5.7 | 9.9 | 5.3 |
| | 33.0 | 6.2 | 4.9 | 7.3 | 5.3 | 8.4 | 5.8 | 9.0 | 5.9 | 9.6 | 6.0 | 9.9 | 5.6 | 9.9 | 5.3 |
| | 35.0 | 6.2 | 4.9 | 7.3 | 5.3 | 8.4 | 5.8 | 9.0 | 5.9 | 9.5 | 6.0 | 9.6 | 5.5 | 9.7 | 5.3 |
| | 37.0 | 6.2 | 4.9 | 7.3 | 5.3 | 8.4 | 5.8 | 9.0 | 5.9 | 9.3 | 5.8 | 9.5 | 5.4 | 9.6 | 5.3 |
| | 39.0 | 6.2 | 4.9 | 7.3 | 5.3 | 8.4 | 5.8 | 9.0 | 5.9 | 9.2 | 5.7 | 9.4 | 5.3 | 9.6 | 5.3 |
| | 42.0 | 6.2 | 4.9 | 7.3 | 5.3 | 8.4 | 5.8 | 9.0 | 5.9 | 9.2 | 5.7 | 9.4 | 5.3 | 9.6 | 5.3 |
| | 44.0 | 6.2 | 4.9 | 7.3 | 5.3 | 8.4 | 5.8 | 9.0 | 5.9 | 9.2 | 5.7 | 9.4 | 5.3 | 9.6 | 5.3 |
| | 46.0 | 6.2 | 4.9 | 7.3 | 5.3 | 8.4 | 5.8 | 9.0 | 5.9 | 9.2 | 5.7 | 9.4 | 5.3 | 9.6 | 5.3 |
| | 10.0 | 6.9 | 5.6 | 8.1 | 6.2 | 9.4 | 6.9 | 10.0 | 7.0 | 10.6 | 7.0 | 11.9 | 7.3 | 13.0 | 7.3 |
| | 12.0 | 6.9 | 5.6 | 8.1 | 6.2 | 9.4 | 6.9 | 10.0 | 7.0 | 10.6 | 7.0 | 11.9 | 7.3 | 12.8 | 7.2 |
| | 14.0 | 6.9 | 5.6 | 8.1 | 6.2 | 9.4 | 6.9 | 10.0 | 7.0 | 10.6 | 7.0 | 11.9 | 7.3 | 12.7 | 7.1 |
| | 16.0 | 6.9 | 5.6 | 8.1 | 6.2 | 9.4 | 6.9 | 10.0 | 7.0 | 10.6 | 7.0 | 11.9 | 7.3 | 12.5 | 7.0 |
| | 18.0 | 6.9 | 5.6 | 8.1 | 6.2 | 9.4 | 6.9 | 10.0 | 7.0 | 10.6 | 7.0 | 11.9 | 7.3 | 12.2 | 6.8 |
| | 20.0 | 6.9 | 5.6 | 8.1 | 6.2 | 9.4 | 6.9 | 10.0 | 7.0 | 10.6 | 7.0 | 11.9 | 7.3 | 12.0 | 6.7 |
| | 21.0 | 6.9 | 5.6 | 8.1 | 6.2 | 9.4 | 6.9 | 10.0 | 7.0 | 10.6 | 7.0 | 11.9 | 7.3 | 11.8 | 6.6 |
| | 23.0 | 6.9 | 5.6 | 8.1 | 6.2 | 9.4 | 6.9 | 10.0 | 7.0 | 10.6 | 7.0 | 11.7 | 7.3 | 11.7 | 6.6 |
| | 25.0 | 6.9 | 5.6 | 8.1 | 6.2 | 9.4 | 6.9 | 10.0 | 7.0 | 10.6 | 7.0 | 11.6 | 7.2 | 11.6 | 6.5 |
| 10.0 | 27.0 | 6.9 | 5.6 | 8.1 | 6.2 | 9.4 | 6.9 | 10.0 | 7.0 | 10.6 | 7.0 | 11.5 | 7.1 | 11.5 | 6.6 |
| | 29.0 | 6.9 | 5.6 | 8.1 | 6.2 | 9.4 | 6.9 | 10.0 | 7.0 | 10.6 | 7.0 | 11.4 | 7.1 | 11.4 | 6.5 |
| | 31.0 | 6.9 | 5.6 | 8.1 | 6.2 | 9.4 | 6.9 | 10.0 | 7.0 | 10.6 | 7.0 | 11.3 | 7.0 | 11.0 | 6.3 |
| | 33.0 | 6.9 | 5.6 | 8.1 | 6.2 | 9.4 | 6.9 | 10.0 | 7.0 | 10.6 | 7.0 | 11.2 | 6.9 | 11.0 | 6.3 |
| | 35.0 | 6.9 | 5.6 | 8.1 | 6.2 | 9.4 | 6.9 | 10.0 | 7.0 | 10.5 | 6.9 | 10.8 | 6.7 | 10.8 | 6.3 |
| | 37.0 | 6.9 | 5.6 | 8.1 | 6.2 | 9.4 | 6.9 | 10.0 | 7.0 | 10.4 | 6.9 | 10.8 | 6.7 | 10.7 | 6.2 |
| | 39.0 | 6.9 | 5.6 | 8.1 | 6.2 | 9.4 | 6.9 | 10.0 | 7.0 | 10.2 | 6.7 | 10.4 | 6.6 | 10.7 | 6.3 |
| | 42.0 | 6.9 | 5.6 | 8.1 | 6.2 | 9.4 | 6.9 | 10.0 | 7.0 | 10.2 | 6.7 | 10.4 | 6.6 | 10.7 | 6.3 |
| | 44.0 | 6.9 | 5.6 | 8.1 | 6.2 | 9.4 | 6.9 | 10.0 | 7.0 | 10.2 | 6.7 | 10.4 | 6.6 | 10.7 | 6.3 |
| | 46.0 | 6.9 | 5.6 | 8.1 | 6.2 | 9.4 | 6.9 | 10.0 | 7.0 | 10.2 | 6.7 | 10.4 | 6.6 | 10.7 | 6.3 |
| | 10.0 | 7.7 | 5.9 | 9.1 | 6.5 | 10.5 | 7.1 | 11.2 | 7.2 | 11.9 | 7.4 | 13.3 | 7.6 | 15.5 | 8.2 |
| | 12.0 | 7.7 | 5.9 | 9.1 | 6.5 | 10.5 | 7.1 | 11.2 | 7.2 | 11.9 | 7.4 | 13.3 | 7.6 | 14.4 | 7.7 |
| | 14.0 | 7.7 | 5.9 | 9.1 | 6.5 | 10.5 | 7.1 | 11.2 | 7.2 | 11.9 | 7.4 | 13.3 | 7.6 | 14.2 | 7.6 |
| | 16.0 | 7.7 | 5.9 | 9.1 | 6.5 | 10.5 | 7.1 | 11.2 | 7.2 | 11.9 | 7.4 | 13.3 | 7.6 | 14.1 | 7.5 |
| | 18.0 | 7.7 | 5.9 | 9.1 | 6.5 | 10.5 | 7.1 | 11.2 | 7.2 | 11.9 | 7.4 | 13.3 | 7.6 | 14.0 | 7.5 |
| | 20.0 | 7.7 | 5.9 | 9.1 | 6.5 | 10.5 | 7.1 | 11.2 | 7.2 | 11.9 | 7.4 | 13.3 | 7.6 | 13.9 | 7.4 |
| | 21.0 | 7.7 | 5.9 | 9.1 | 6.5 | 10.5 | 7.1 | 11.2 | 7.2 | 11.9 | 7.4 | 13.3 | 7.6 | 13.8 | 7.4 |
| | 23.0 | 7.7 | 5.9 | 9.1 | 6.5 | 10.5 | 7.1 | 11.2 | 7.2 | 11.9 | 7.4 | 13.1 | 7.5 | 13.7 | 7.3 |
| | 25.0 | 7.7 | 5.9 | 9.1 | 6.5 | 10.5 | 7.1 | 11.2 | 7.2 | 11.9 | 7.4 | 13.0 | 7.4 | 13.6 | 7.2 |
| 11.2 | 27.0 | 7.7 | 5.9 | 9.1 | 6.5 | 10.5 | 7.1 | 11.2 | 7.2 | 11.9 | 7.4 | 12.9 | 7.3 | 13.4 | 7.2 |
| | 29.0 | 7.7 | 5.9 | 9.1 | 6.5 | 10.5 | 7.1 | 11.2 | 7.2 | 11.9 | 7.4 | 12.8 | 7.3 | 13.3 | 7.2 |
| | 31.0 | 7.7 | 5.9 | 9.1 | 6.5 | 10.5 | 7.1 | 11.2 | 7.2 | 11.9 | 7.4 | 12.7 | 7.2 | 12.8 | 6.9 |
| | 33.0 | 7.7 | 5.9 | 9.1 | 6.5 | 10.5 | 7.1 | 11.2 | 7.2 | 11.9 | 7.4 | 12.5 | 7.2 | 12.5 | 6.8 |
| | 35.0 | 7.7 | 5.9 | 9.1 | 6.5 | 10.5 | 7.1 | 11.2 | 7.2 | 11.8 | 7.4 | 12.4 | 7.1 | 12.3 | 6.7 |
| | 37.0 | 7.7 | 5.9 | 9.1 | 6.5 | 10.5 | 7.1 | 11.2 | 7.2 | 11.6 | 7.3 | 12.3 | 7.0 | 12.1 | 6.6 |
| | 39.0 | 7.7 | 5.9 | 9.1 | 6.5 | 10.5 | 7.1 | 11.2 | 7.2 | 11.4 | 7.1 | 12.2 | 7.0 | 11.9 | 6.6 |
| | 42.0 | 7.7 | 6.0 | 9.1 | 6.6 | 10.4 | 7.2 | 11.2 | 7.3 | 11.4 | 7.1 | 11.6 | 6.6 | 12.0 | 6.6 |
| | 44.0 | 7.7 | 6.0 | 9.1 | 6.6 | 10.4 | 7.2 | 11.2 | 7.3 | 11.4 | 7.1 | 11.6 | 6.6 | 12.0 | 6.6 |
| | 46.0 | 7.7 | 6.0 | 9.1 | 6.6 | 10.4 | 7.2 | 11.2 | 7.3 | 11.4 | 7.1 | 11.6 | 6.6 | 12.0 | 6.6 |
| | 10.0 | 9.7 | 7.2 | 11.3 | 7.9 | 13.2 | 8.8 | 14.0 | 9.0 | 14.8 | 9.0 | 16.7 | 9.3 | 18.2 | 9.4 |
| | 12.0 | 9.7 | 7.2 | 11.3 | 7.9 | 13.2 | 8.8 | 14.0 | 9.0 | 14.8 | 9.0 | 16.7 | 9.3 | 17.9 | 9.2 |
| | 14.0 | 9.7 | 7.2 | 11.3 | 7.9 | 13.2 | 8.8 | 14.0 | 9.0 | 14.8 | 9.0 | 16.7 | 9.3 | 17.8 | 9.2 |
| | 16.0 | 9.7 | 7.2 | 11.3 | 7.9 | 13.2 | 8.8 | 14.0 | 9.0 | 14.8 | 9.0 | 16.7 | 9.3 | 17.5 | 9.0 |
| | 18.0 | 9.7 | 7.2 | 11.3 | 7.9 | 13.2 | 8.8 | 14.0 | 9.0 | 14.8 | 9.0 | 16.7 | 9.3 | 17.1 | 8.8 |
| | 20.0 | 9.7 | 7.2 | 11.3 | 7.9 | 13.2 | 8.8 | 14.0 | 9.0 | 14.8 | 9.0 | 16.7 | 9.3 | 16.8 | 8.7 |
| | 21.0 | 9.7 | 7.2 | 11.3 | 7.9 | 13.2 | 8.8 | 14.0 | 9.0 | 14.8 | 9.0 | 16.7 | 9.3 | 16.5 | 8.5 |
| 14.0 | 23.0 | 9.7 | 7.2 | 11.3 | 7.9 | 13.2 | 8.8 | 14.0 | 9.0 | 14.8 | 9.0 | 16.4 | 9.3 | 16.4 | 8.4 |
| | 25.0 | 9.7 | 7.2 | 11.3 | 7.9 | 13.2 | 8.8 | 14.0 | 9.0 | 14.8 | 9.0 | 16.2 | 9.3 | 16.2 | 8.4 |
| | 27.0 | 9.7 | 7.2 | 11.3 | 7.9 | 13.2 | 8.8 | 14.0 | 9.0 | 14.8 | 9.0 | 16.1 | 9.2 | 16.1 | 8.4 |
| | 29.0 | 9.7 | 7.2 | 11.3 | 7.9 | 13.2 | 8.8 | 14.0 | 9.0 | 14.8 | 9.0 | 16.0 | 9.1 | 16.0 | 8.4 |
| | 31.0 | 9.7 | 7.2 | 11.3 | 7.9 | 13.2 | 8.8 | 14.0 | 9.0 | 14.8 | 9.0 | 15.8 | 9.0 | 15.4 | 8.1 |
| | 33.0 | 9.7 | 7.2 | 11.3 | 7.9 | 13.2 | 8.8 | 14.0 | 9.0 | 14.8 | 9.0 | 15.7 | 8.9 | 15.4 | 8.1 |
| | 35.0 | 9.7 | 7.2 | 11.3 | 7.9 | 13.2 | 8.8 | 14.0 | 9.0 | 14.7 | 8.9 | 15.1 | 8.6 | 15.1 | 8.1 |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 37.0 | 9.7 | 7.2 | 11.3 | 7.9 | 13.2 | 8.8 | 14.0 | 9.0 | 14.6 | 8.8 | 15.1 | 8.6 | 15.0 | 8.0 |
| | 39.0 | 9.7 | 7.2 | 11.3 | 7.9 | 13.2 | 8.8 | 14.0 | 9.0 | 14.3 | 8.7 | 14.6 | 8.4 | 15.0 | 8.1 |
| | 42.0 | 9.7 | 7.2 | 11.3 | 7.9 | 13.2 | 8.8 | 14.0 | 9.0 | 14.3 | 8.7 | 14.6 | 8.4 | 15.0 | 8.1 |
| | 44.0 | 9.7 | 7.2 | 11.3 | 7.9 | 13.2 | 8.8 | 14.0 | 9.0 | 14.3 | 8.7 | 14.6 | 8.4 | 15.0 | 8.1 |
| | 46.0 | 9.7 | 7.2 | 11.3 | 7.9 | 13.2 | 8.8 | 14.0 | 9.0 | 14.3 | 8.7 | 14.6 | 8.4 | 15.0 | 8.1 |

## 7.2 Heating

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

| Indoor Unit size (kW) | Outdoor temperature (℃) | | Indoor temperature (℃ DB) | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 16.00 | 18.00 | 20.00 | 21.00 | 22.00 | 24.00 |
| | | | TC | TC | TC | TC | TC | TC |
| | WB | DB | kW | kW | kW | kW | kW | kW |
| 2.80 | -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 |
| 3.60 | -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 |
| 4.50 | -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 |
| | -20 | -19.8 | 3.53 | 3.53 | 3.53 | 3.53 | 3.53 | 3.53 |
| | -19 | -18.8 | 3.78 | 3.78 | 3.78 | 3.78 | 3.78 | 3.78 |
| | -17 | -16.7 | 3.97 | 3.97 | 3.97 | 3.97 | 3.97 | 3.97 |
| | -15 | -14.7 | 4.10 | 4.10 | 4.10 | 4.10 | 4.10 | 4.10 |
| | -13.00 | -12.60 | 4.22 | 4.22 | 4.22 | 4.22 | 4.22 | 4.22 |
| | -11.00 | -10.50 | 4.41 | 4.41 | 4.41 | 4.41 | 4.41 | 4.41 |
| | -10.00 | -9.50 | 4.60 | 4.60 | 4.60 | 4.60 | 4.60 | 4.60 |
| | -9.10 | -8.50 | 4.73 | 4.73 | 4.73 | 4.73 | 4.73 | 4.73 |
| | -7.60 | -7.00 | 4.79 | 4.79 | 4.79 | 4.79 | 4.79 | 4.79 |
| 5.60 | -5.60 | -5.00 | 4.98 | 4.98 | 4.98 | 4.98 | 4.98 | 4.98 |
| | -3.70 | -3.00 | 5.23 | 5.23 | 5.23 | 5.23 | 5.23 | 5.23 |
| | -0.70 | 0.00 | 5.61 | 5.61 | 5.61 | 5.61 | 5.61 | 5.29 |
| | 2.20 | 3.00 | 5.92 | 5.92 | 5.92 | 5.92 | 5.80 | 5.29 |
| | 4.10 | 5.00 | 6.11 | 6.11 | 6.11 | 6.11 | 5.80 | 5.29 |
| | 6.00 | 7.00 | 6.30 | 6.30 | 6.30 | 6.11 | 5.80 | 5.29 |
| | 7.90 | 9.00 | 6.49 | 6.49 | 6.30 | 6.11 | 5.80 | 5.29 |
| | 9.80 | 11.00 | 6.68 | 6.68 | 6.30 | 6.11 | 5.80 | 5.29 |
| | 11.80 | 13.00 | 6.93 | 6.80 | 6.30 | 6.11 | 5.80 | 5.29 |
| | 13.70 | 15.00 | 7.12 | 6.80 | 6.30 | 6.11 | 5.80 | 5.29 |
| | -20 | -19.8 | 4.48 | 4.48 | 4.48 | 4.48 | 4.48 | 4.48 |
| | -19 | -18.8 | 4.80 | 4.80 | 4.80 | 4.80 | 4.80 | 4.80 |
| | -17 | -16.7 | 5.04 | 5.04 | 5.04 | 5.04 | 5.04 | 5.04 |
| | -15 | -14.7 | 5.20 | 5.20 | 5.20 | 5.20 | 5.20 | 5.20 |
| | -13.00 | -12.60 | 5.36 | 5.36 | 5.36 | 5.36 | 5.36 | 5.36 |
| | -11.00 | -10.50 | 5.60 | 5.60 | 5.60 | 5.60 | 5.60 | 5.60 |
| | -10.00 | -9.50 | 5.84 | 5.84 | 5.84 | 5.84 | 5.84 | 5.84 |
| | -9.10 | -8.50 | 6.00 | 6.00 | 6.00 | 6.00 | 6.00 | 6.00 |
| | -7.60 | -7.00 | 6.08 | 6.08 | 6.08 | 6.08 | 6.08 | 6.08 |
| 7.10 | -5.60 | -5.00 | 6.32 | 6.32 | 6.32 | 6.32 | 6.32 | 6.32 |
| | -3.70 | -3.00 | 6.64 | 6.64 | 6.64 | 6.64 | 6.64 | 6.64 |
| | -0.70 | 0.00 | 7.12 | 7.12 | 7.12 | 7.12 | 7.12 | 6.72 |
| | 2.20 | 3.00 | 7.52 | 7.52 | 7.52 | 7.52 | 7.36 | 6.72 |
| | 4.10 | 5.00 | 7.76 | 7.76 | 7.76 | 7.76 | 7.36 | 6.72 |
| | 6.00 | 7.00 | 8.00 | 8.00 | 8.00 | 7.76 | 7.36 | 6.72 |
| | 7.90 | 9.00 | 8.24 | 8.24 | 8.00 | 7.76 | 7.36 | 6.72 |
| | 9.80 | 11.00 | 8.48 | 8.48 | 8.00 | 7.76 | 7.36 | 6.72 |
| | 11.80 | 13.00 | 8.80 | 8.64 | 8.00 | 7.76 | 7.36 | 6.72 |
| | 13.70 | 15.00 | 9.04 | 8.64 | 8.00 | 7.76 | 7.36 | 6.72 |
| | -20 | -19.8 | 5.04 | 5.04 | 5.04 | 5.04 | 5.04 | 5.04 |
| | -19 | -18.8 | 5.40 | 5.40 | 5.40 | 5.40 | 5.40 | 5.40 |
| | -17 | -16.7 | 5.67 | 5.67 | 5.67 | 5.67 | 5.67 | 5.67 |
| | -15 | -14.7 | 5.85 | 5.85 | 5.85 | 5.85 | 5.85 | 5.85 |
| | -13.00 | -12.60 | 6.03 | 6.03 | 6.03 | 6.03 | 6.03 | 6.03 |
| | -11.00 | -10.50 | 6.30 | 6.30 | 6.30 | 6.30 | 6.30 | 6.30 |
| | -10.00 | -9.50 | 6.57 | 6.57 | 6.57 | 6.57 | 6.57 | 6.57 |
| | -9.10 | -8.50 | 6.75 | 6.75 | 6.75 | 6.75 | 6.75 | 6.75 |
| | -7.60 | -7.00 | 6.84 | 6.84 | 6.84 | 6.84 | 6.84 | 6.84 |
| 8.00 | -5.60 | -5.00 | 7.11 | 7.11 | 7.11 | 7.11 | 7.11 | 7.11 |
| | -3.70 | -3.00 | 7.47 | 7.47 | 7.47 | 7.47 | 7.47 | 7.47 |
| | -0.70 | 0.00 | 8.01 | 8.01 | 8.01 | 8.01 | 8.01 | 7.56 |
| | 2.20 | 3.00 | 8.46 | 8.46 | 8.46 | 8.46 | 8.28 | 7.56 |
| | 4.10 | 5.00 | 8.73 | 8.73 | 8.73 | 8.73 | 8.28 | 7.56 |
| | 6.00 | 7.00 | 9.00 | 9.00 | 9.00 | 8.73 | 8.28 | 7.56 |
| | 7.90 | 9.00 | 9.27 | 9.27 | 9.00 | 8.73 | 8.28 | 7.56 |
| | 9.80 | 11.00 | 9.54 | 9.54 | 9.00 | 8.73 | 8.28 | 7.56 |
| | 11.80 | 13.00 | 9.90 | 9.72 | 9.00 | 8.73 | 8.28 | 7.56 |
| | 13.70 | 15.00 | 10.17 | 9.72 | 9.00 | 8.73 | 8.28 | 7.56 |
| | -20 | -19.8 | 5.60 | 5.04 | 5.60 | 5.60 | 5.60 | 5.60 |
| 9.00 | -19 | -18.8 | 6.00 | 5.40 | 6.00 | 6.00 | 6.00 | 6.00 |
| | -17 | -16.7 | 6.30 | 6.30 | 6.30 | 6.30 | 6.30 | 6.30 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | -15 | -14.7 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 |
| | -13.00 | -12.60 | 6.70 | 6.70 | 6.70 | 6.70 | 6.70 | 6.70 |
| | -11.00 | -10.50 | 7.00 | 7.00 | 7.00 | 7.00 | 7.00 | 7.00 |
| | -10.00 | -9.50 | 7.30 | 7.30 | 7.30 | 7.30 | 7.30 | 7.30 |
| | -9.10 | -8.50 | 7.50 | 7.50 | 7.50 | 7.50 | 7.50 | 7.50 |
| | -7.60 | -7.00 | 7.60 | 7.60 | 7.60 | 7.60 | 7.60 | 7.60 |
| | -5.60 | -5.00 | 7.90 | 7.90 | 7.90 | 7.90 | 7.90 | 7.90 |
| | -3.70 | -3.00 | 8.30 | 8.30 | 8.30 | 8.30 | 8.30 | 8.30 |
| | -0.70 | 0.00 | 8.90 | 8.90 | 8.90 | 8.90 | 8.90 | 8.40 |
| | 2.20 | 3.00 | 9.40 | 9.40 | 9.40 | 9.40 | 9.20 | 8.40 |
| | 4.10 | 5.00 | 9.70 | 9.70 | 9.70 | 9.70 | 9.20 | 8.40 |
| | 6.00 | 7.00 | 10.00 | 10.00 | 10.00 | 9.70 | 9.20 | 8.40 |
| | 7.90 | 9.00 | 10.30 | 10.30 | 10.00 | 9.70 | 9.20 | 8.40 |
| | 9.80 | 11.00 | 10.60 | 10.60 | 10.00 | 9.70 | 9.20 | 8.40 |
| | 11.80 | 13.00 | 11.00 | 10.80 | 10.00 | 9.70 | 9.20 | 8.40 |
| | 13.70 | 15.00 | 11.30 | 10.80 | 10.00 | 9.70 | 9.20 | 8.40 |
| 10.00 | -20 | -19.8 | 6.16 | 6.16 | 6.16 | 6.16 | 6.16 | 6.16 |
| | -19 | -18.8 | 6.60 | 6.60 | 6.60 | 6.60 | 6.60 | 6.60 |
| | -17 | -16.7 | 6.93 | 6.93 | 6.93 | 6.93 | 6.93 | 6.93 |
| | -15 | -14.7 | 7.15 | 7.15 | 7.15 | 7.15 | 7.15 | 7.15 |
| | -13.00 | -12.60 | 7.37 | 7.37 | 7.37 | 7.37 | 7.37 | 7.37 |
| | -11.00 | -10.50 | 7.70 | 7.70 | 7.70 | 7.70 | 7.70 | 7.70 |
| | -10.00 | -9.50 | 8.03 | 8.03 | 8.03 | 8.03 | 8.03 | 8.03 |
| | -9.10 | -8.50 | 8.25 | 8.25 | 8.25 | 8.25 | 8.25 | 8.25 |
| | -7.60 | -7.00 | 8.36 | 8.36 | 8.36 | 8.36 | 8.36 | 8.36 |
| | -5.60 | -5.00 | 8.69 | 8.69 | 8.69 | 8.69 | 8.69 | 8.69 |
| | -3.70 | -3.00 | 9.13 | 9.13 | 9.13 | 9.13 | 9.13 | 9.13 |
| | -0.70 | 0.00 | 9.79 | 9.79 | 9.79 | 9.79 | 9.79 | 9.24 |
| | 2.20 | 3.00 | 10.34 | 10.34 | 10.34 | 10.34 | 10.12 | 9.24 |
| | 4.10 | 5.00 | 10.67 | 10.67 | 10.67 | 10.67 | 10.12 | 9.24 |
| | 6.00 | 7.00 | 11.00 | 11.00 | 11.00 | 10.67 | 10.12 | 9.24 |
| | 7.90 | 9.00 | 11.33 | 11.33 | 11.00 | 10.67 | 10.12 | 9.24 |
| | 9.80 | 11.00 | 11.66 | 11.66 | 11.00 | 10.67 | 10.12 | 9.24 |
| | 11.80 | 13.00 | 12.10 | 11.88 | 11.00 | 10.67 | 10.12 | 9.24 |
| | 13.70 | 15.00 | 12.43 | 11.88 | 11.00 | 10.67 | 10.12 | 9.24 |
| 11.20 | -20 | -19.8 | 7.00 | 7.00 | 7.00 | 7.00 | 7.00 | 7.00 |
| | -19 | -18.8 | 7.50 | 7.50 | 7.50 | 7.50 | 7.50 | 7.50 |
| | -17 | -16.7 | 7.88 | 7.88 | 7.88 | 7.88 | 7.88 | 7.88 |
| | -15 | -14.7 | 8.13 | 8.13 | 8.13 | 8.13 | 8.13 | 8.13 |
| | -13.00 | -12.60 | 8.38 | 8.38 | 8.38 | 8.38 | 8.38 | 8.38 |
| | -11.00 | -10.50 | 8.75 | 8.75 | 8.75 | 8.75 | 8.75 | 8.75 |
| | -10.00 | -9.50 | 9.13 | 9.13 | 9.13 | 9.13 | 9.13 | 9.13 |
| | -9.10 | -8.50 | 9.38 | 9.38 | 9.38 | 9.38 | 9.38 | 9.38 |
| | -7.60 | -7.00 | 9.50 | 9.50 | 9.50 | 9.50 | 9.50 | 9.50 |
| | -5.60 | -5.00 | 9.88 | 9.88 | 9.88 | 9.88 | 9.88 | 9.88 |
| | -3.70 | -3.00 | 10.38 | 10.38 | 10.38 | 10.38 | 10.38 | 10.38 |
| | -0.70 | 0.00 | 11.13 | 11.13 | 11.13 | 11.13 | 11.13 | 10.50 |
| | 2.20 | 3.00 | 11.75 | 11.75 | 11.75 | 11.75 | 11.50 | 10.50 |
| | 4.10 | 5.00 | 12.13 | 12.13 | 12.13 | 12.13 | 11.50 | 10.50 |
| | 6.00 | 7.00 | 12.50 | 12.50 | 12.50 | 12.13 | 11.50 | 10.50 |
| | 7.90 | 9.00 | 12.88 | 12.88 | 12.50 | 12.13 | 11.50 | 10.50 |
| | 9.80 | 11.00 | 13.25 | 13.25 | 12.50 | 12.13 | 11.50 | 10.50 |
| | 11.80 | 13.00 | 13.75 | 13.50 | 12.50 | 12.13 | 11.50 | 10.50 |
| | 13.70 | 15.00 | 14.13 | 13.50 | 12.50 | 12.13 | 11.50 | 10.50 |
| 14.0 | -20 | -19.8 | 8.68 | 8.68 | 8.68 | 8.68 | 8.68 | 8.68 |
| | -19 | -18.8 | 9.30 | 9.30 | 9.30 | 9.30 | 9.30 | 9.30 |
| | -17 | -16.7 | 9.77 | 9.77 | 9.77 | 9.77 | 9.77 | 9.77 |
| | -15 | -14.7 | 10.08 | 10.08 | 10.08 | 10.08 | 10.08 | 10.08 |
| | -13.0 | -12.6 | 10.4 | 10.4 | 10.4 | 10.4 | 10.4 | 10.4 |
| | -11.0 | -10.5 | 10.9 | 10.9 | 10.9 | 10.9 | 10.9 | 10.9 |
| | -10.0 | -9.5 | 11.3 | 11.3 | 11.3 | 11.3 | 11.3 | 11.3 |
| | -9.1 | -8.5 | 11.6 | 11.6 | 11.6 | 11.6 | 11.6 | 11.6 |
| | -7.6 | -7.0 | 11.8 | 11.8 | 11.8 | 11.8 | 11.8 | 11.8 |
| | -5.6 | -5.0 | 12.3 | 12.3 | 12.3 | 12.3 | 12.3 | 12.3 |
| | -3.7 | -3.0 | 12.9 | 12.9 | 12.9 | 12.9 | 12.9 | 12.9 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | -0.7 | 0.0 | 13.8 | 13.8 | 13.8 | 13.8 | 13.8 | 13.0 |
| | 2.2 | 3.0 | 14.6 | 14.6 | 14.6 | 14.6 | 14.3 | 13.0 |
| | 4.1 | 5.0 | 15.0 | 15.0 | 15.0 | 15.0 | 14.3 | 13.0 |
| | 6.0 | 7.0 | 15.5 | 15.5 | 15.5 | 15.0 | 14.3 | 13.0 |
| | 7.9 | 9.0 | 16.0 | 16.0 | 15.5 | 15.0 | 14.3 | 13.0 |
| | 9.8 | 11.0 | 16.4 | 16.4 | 15.5 | 15.0 | 14.3 | 13.0 |
| | 11.8 | 13.0 | 17.1 | 16.7 | 15.5 | 15.0 | 14.3 | 13.0 |
| | 13.7 | 15.0 | 17.5 | 16.7 | 15.5 | 15.0 | 14.3 | 13.0 |

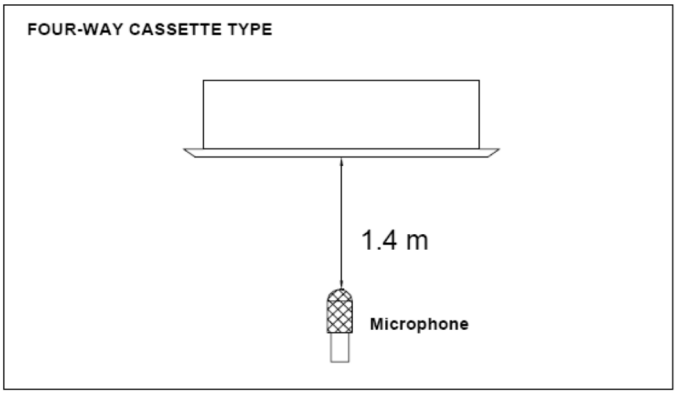
# 8. Electrical Characteristics

| Model | Indoor Unit | | | | Power Supply | | IFM | |
|---|---|---|---|---|---|---|---|---|
| | Hz | Voltage | Min. | Max. | MCA | MFA | kW | FLA |
| MDV-D28Q4/N1-D | 50Hz | 220-240V | 198V | 254V | 0.5 | 5 | 0.06 | 0.38 |
| MDV-D36Q4/N1-D | 50Hz | 220-240V | 198V | 254V | 0.5 | 5 | 0.06 | 0.38 |
| MDV-D45Q4/N1-D | 50Hz | 220-240V | 198V | 254V | 0.5 | 5 | 0.06 | 0.38 |
| MDV-D56Q4/N1-D | 50Hz | 220-240V | 198V | 254V | 0.5 | 5 | 0.06 | 0.38 |
| MDV-D71Q4/N1-D | 50Hz | 220-240V | 198V | 254V | 0.65 | 5 | 0.080 | 0.5 |
| MDV-D80Q4/N1-D | 50Hz | 220-240V | 198V | 254V | 0.65 | 5 | 0.080 | 0.5 |
| MDV-D90Q4/N1-D | 50Hz | 220-240V | 198V | 254V | 0.85 | 5 | 0.09 | 0.67 |
| MDV-D100Q4/N1-D | 50Hz | 220-240V | 198V | 254V | 0.85 | 5 | 0.09 | 0.67 |
| MDV-D112Q4/N1-D | 50Hz | 220-240V | 198V | 254V | 0.85 | 5 | 0.09 | 0.67 |
| MDV-D140Q4/N1-D | 50Hz | 220-240V | 198V | 254V | 0.85 | 5 | 0.09 | 0.67 |

**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



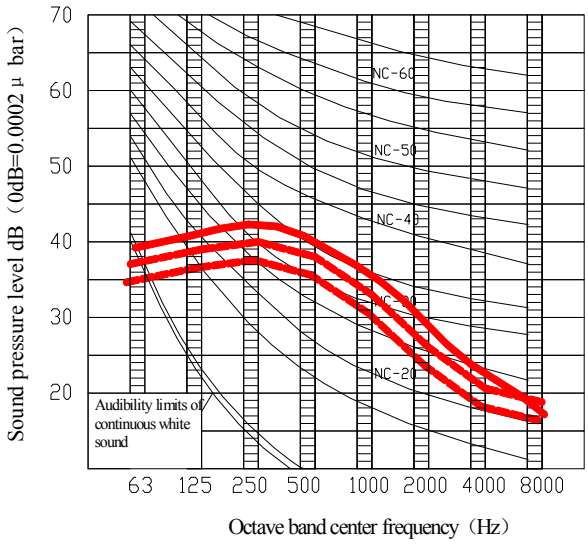

Note:
1, during actual operation, these values are normally somewhat higher as a result of ambient conditions.
2, Semi-anechoic chamber conversion value, measured at a point which is 1.4m under the unit.

## 9.2 Test data (Sound Pressure Levels)

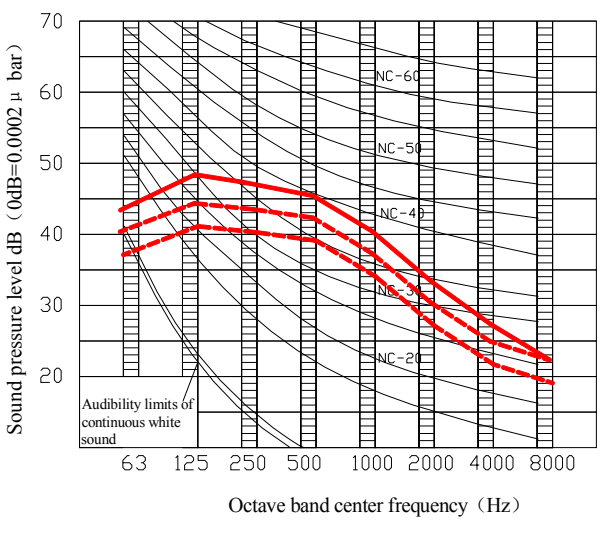
| Model | Sound level under three speeds of fan (dB(A)) | | |
|---|---|---|---|
| | H | M | L |
| MDV-D28Q4/N1-D | 42 | 38 | 35 |
| MDV-D36Q4/N1-D | 42 | 38 | 35 |
| MDV-D45Q4/N1-D | 42 | 38 | 35 |
| MDV-D56Q4/N1-D | 42 | 38 | 35 |
| MDV-D71Q4/N1-D | 45 | 42 | 39 |
| MDV-D80Q4/N1-D | 45 | 42 | 39 |
| MDV-D90Q4/N1-D | 48 | 45 | 43 |
| MDV-D100Q4/N1-D | 48 | 45 | 43 |
| MDV-D112Q4/N1-D | 48 | 45 | 43 |
| MDV-D140Q4/N1-D | 50 | 47 | 44 |

## 9.3 Octave Band Level

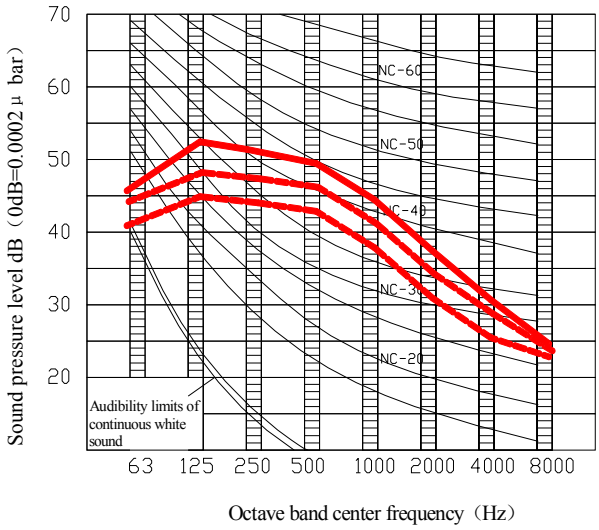
**MDV-D28(36,45,56) Q4/N1-D**



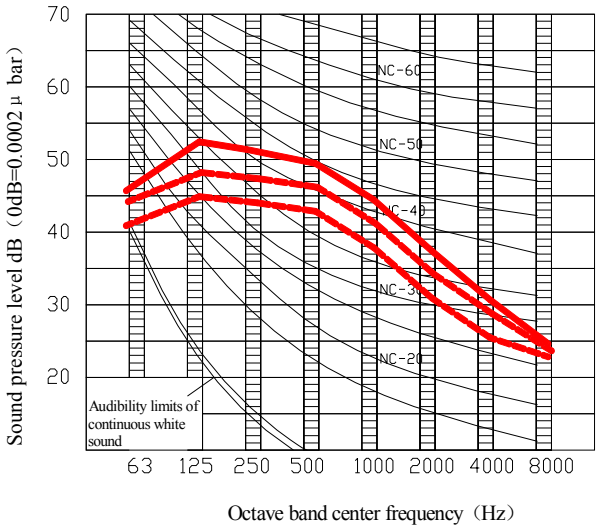

**MDV-D71(80) Q4/N1-D**



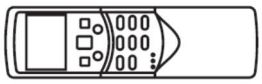
**MDV-D90 (100,112) Q4/N1-D**




**MDV-D140Q4/N1-D**



# 10. Accessories

| Name | Quantity | Shape | Purpose |
|---|---|---|---|
| Installation manual for indoor unit | 1 |  | Must deliver to the customer |
| Insulation sheath | 2 |  | Thermal insulation for the jointing part of piping |
| Installation paper board | 1 |  | For confirming the ceiling site and unit location |
| Installation gauge | 1 |  | For confirming the ceiling site (Integrated on installation paper board) |
| Installation screw for paper board | 4 |  | For installing paper board |
| Thermal insulated material | 1 |  | Thermal insulation for the jointing part of drain pipe |
| Bushing | 8 |  | Hanger assembly |
| Flexible hose tube | 1 |  | For drain pipe |
| Thermal insulation material | 1 |  | For sealing the jointing part of piping |
| Remote controller | 1 |  | For remove controlling the air conditioner |
| Mounting screw | 4 |  | For installing defrosting tray |
| Drain pipe clasp | 1 |  | For installing drain pipe |
| Connective pipe for restriction assembly | 1 |  | / |
| Tightening band | 5 |  | / |
| Electric throttle (that has been installed at the unit) | 1 |  | / |