R410A

Commercial Air Conditioners

# Engineering Data

## Compact Four-way Cassette VRF IDU

MDI2-22Q4CDHN1

MDI2-28Q4CDHN1

MDI2-36Q4CDHN1

MDI2-45Q4CDHN1

# Compact Four-way Cassette

# The 2nd Generation DC Series VRF Indoor Units

## 1 Specifications

*Table 1.1: MI2-22(28,36,45)Q4CDHN1 specifications*

| Model | | | MDI2-22Q4CDHN1 | MDI2-28Q4CDHN1 | MDI2-36Q4CDHN1 | MDI2-45Q4CDHN1 |
|---|---|---|---|---|---|---|
| Power supply | | | 1-phase, 220-240V, 50/60Hz | | | |
| Cooling[1] | Capacity | kW | 2.2 | 2.8 | 3.6 | 4.5 |
| | | kBtu/h | 7.5 | 9.6 | 12.3 | 15.4 |
| | Power input | W | 35 | 35 | 40 | 50 |
| Heating[2] | Capacity | kW | 2.4 | 3.2 | 4.0 | 5.0 |
| | | kBtu/h | 8.2 | 10.9 | 13.6 | 17.1 |
| | Power input | W | 35 | 35 | 40 | 50 |
| Fan motor type | | | DC | | | |
| Indoor coil | Number of rows | | 1 | | 2 | |
| | Tube pitch × row pitch | mm | 21×13.37 | | 21×13.37 | |
| | Fin spacing | mm | 1.3 | | 1.3 | |
| | Fin type | | Hydrophilic aluminum | | | |
| | Tube OD and type | mm | Φ7 Inner-groove | | | |
| | Dimensions (L×H×W) | mm | 1310×210×13.37 | | 1310×210×26.74 | |
| | Number of circuits | | 2 | | 4 | |
| Air flow rate[3] | | $m^3/h$ | 414/380/345/313/288/268/238 | | 521/485/450/409/380/350/314 | |
| Sound pressure level[4] | | dB(A) | 35/34/33/29/26/23/22 | | 41/38/35/32/30/29/28 | |
| Main body | Net dimensions[5] (W×H×D) | mm | 630×260×570 | | | |
| | Packed dimensions (W×H×D) | mm | 700×345×660 | | | |
| | Net/Gross weight | kg | 18/23.8 | | 19.2/25.0 | |
| Panel | Net dimensions (W×H×D) | mm | 647×50×647 | | | |
| | Packed dimensions (W×H×D) | mm | 715×123×715 | | | |
| | Net/Gross weight | kg | 2.5/4.5 | | | |
| Refrigerant type | | | R410A | | | |
| Design pressure (H/L) | | MPa | 4.4/2.6 | | | |
| Pipe connections | Liquid/Gas pipe | mm | Φ6.35/Φ12.7 | | | |
| | Drain pipe | mm | OD Φ25 | | | |

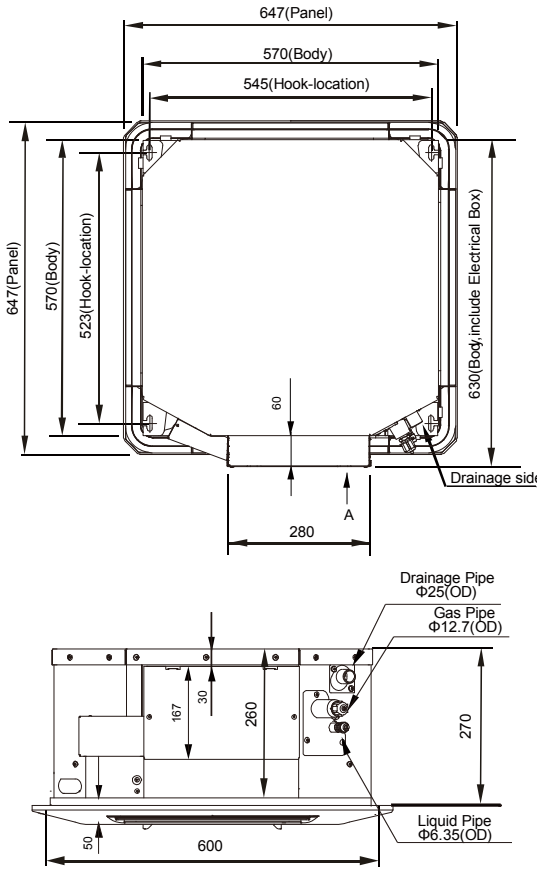
Notes:

1. Indoor temperature 27°C DB, 19°C WB; outdoor temperature 35°C DB; equivalent refrigerant piping length 7.5m with zero level difference.
2. Indoor temperature 20°C DB; outdoor temperature 7°C DB, 6°C WB; equivalent refrigerant piping length 7.5m with zero level difference.
3. Air flow rate are from the highest speed to the lowest speed, total 7 rates for each model.
4. Sound pressure level is from highest level to lowest level, total 7 levels for each model. Sound pressure level is measured 1.4m below the unit in a semi-anechoic chamber.
5. Unit body dimensions given are the largest external dimensions of the unit, including hanger attachments.

# 2 Dimensions

## 2.1 Unit Dimensions

*Figure 2.1: Compact Four-way Cassette dimensions (unit: mm)*



# 3 Unit Placement

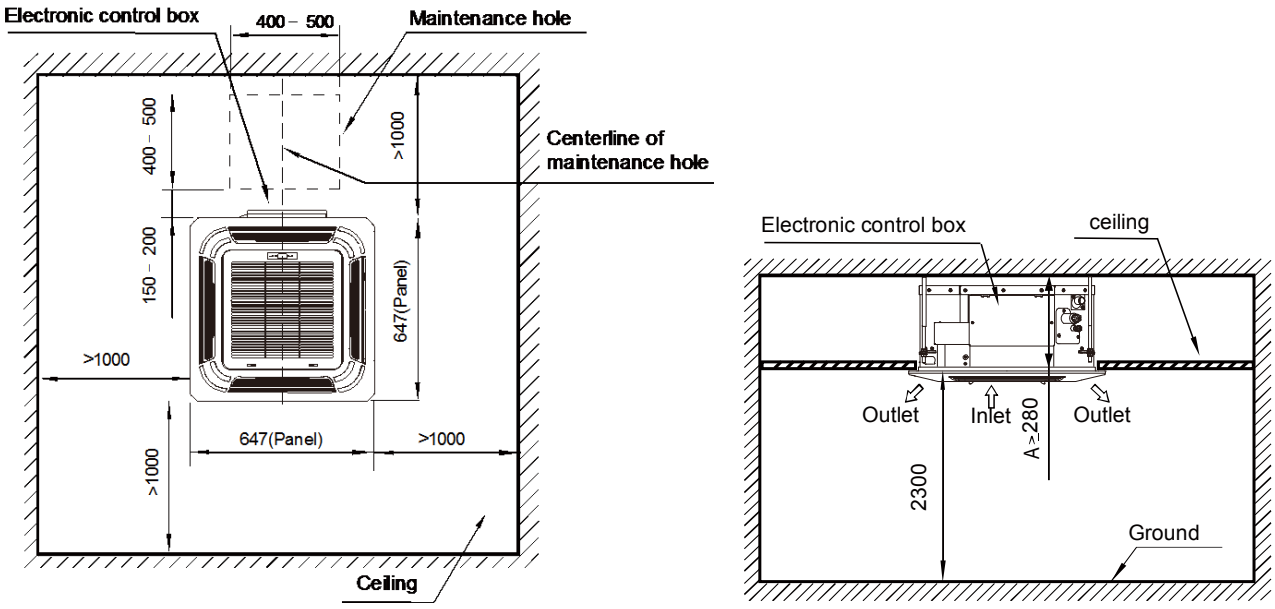
## 3.1 Placement Considerations

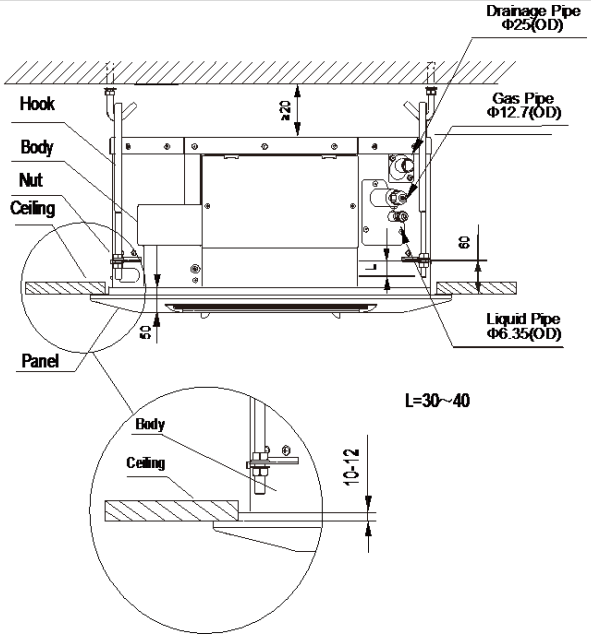
Unit placement should take account of the following considerations:

- Units should not be installed in the following locations:
  - Where exposure to direct radiation from a high-temperature heat source or to interference from a source of electromagnetic radiation may occur.
  - Where dust or dirt may affect heat exchangers.
  - Where exposure to oil or to corrosive or harmful gases, such as acidic or alkaline gases, may occur.
  - Where exposure to salinity may occur, such as seaside locations.
  - Where highly flammable materials are present.
  - Where exposure to oily air may occur, such as a kitchen.
  - Where exposure to very high humidity may occur, such as a laundry.
- Units should be installed in positions where:
  - The ceiling is horizontal and is able to bear the unit's weight.
  - There are no obstructions that could impede the airflow into and out of the unit.
  - The airflow out of the unit can reach throughout the room.
  - There is sufficient space for access during installation, servicing and maintenance.
  - The refrigerant piping and drain piping can be easily connected to the refrigerant piping and drain piping systems.
  - Short-circuit ventilation (where outlet air returns quickly to a unit's air inlet) will not occur.

## 3.2 Space Requirements

*Figure 3.1: Compact Four-way Cassette space requirements (unit: mm)*



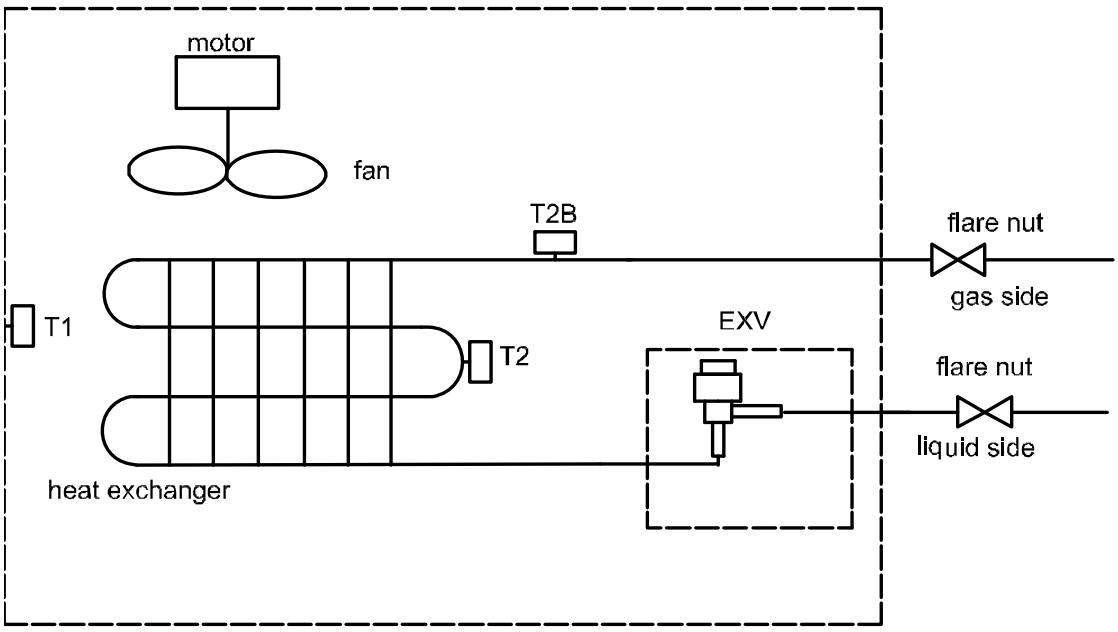



Notes:

1. The centerline of the maintenance hole should be in the same position as the centerline of the indoor unit.

## 4 Piping Diagram

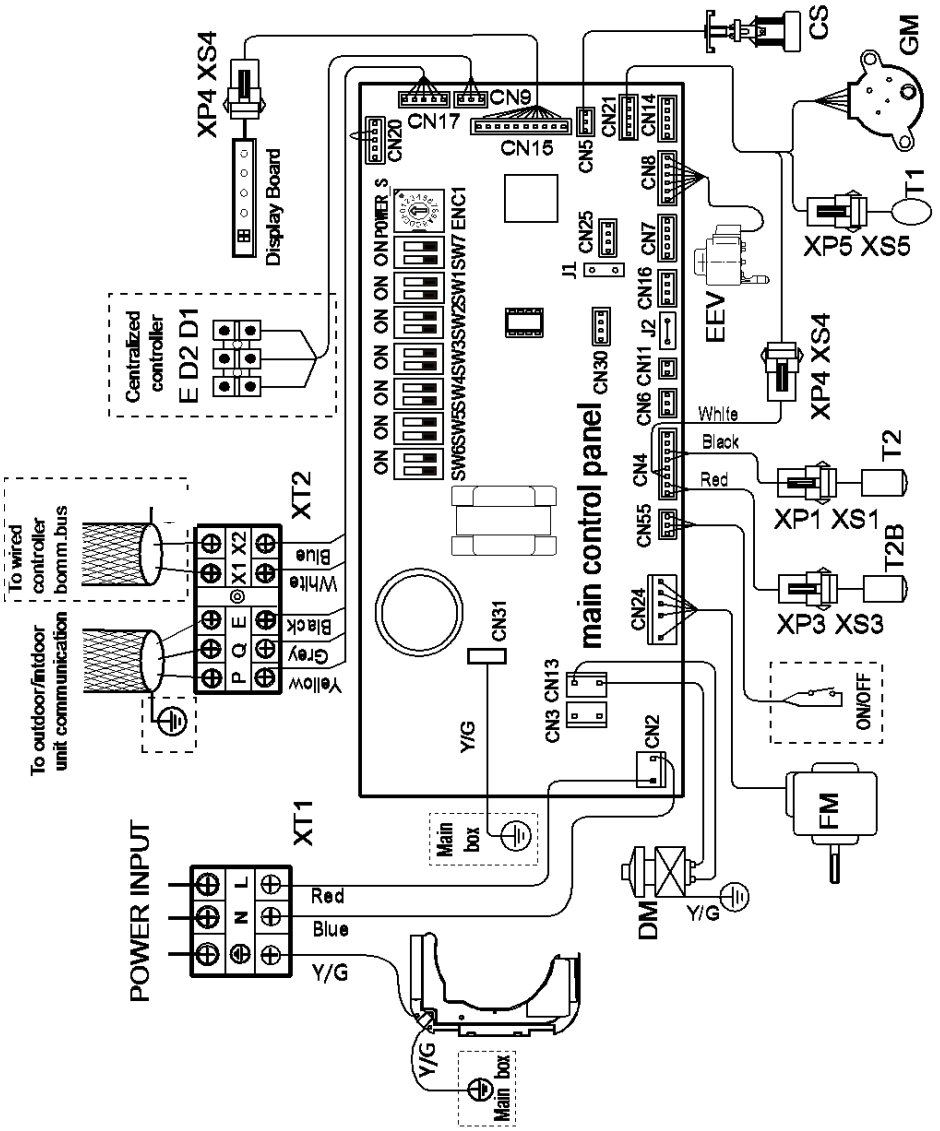
*Figure 4.1: Compact Four-way Cassette piping diagram*




| Legend | |
|---|---|
| T1 | Indoor ambient temperature sensor |
| T2 | Indoor heat exchanger mid-point temperature sensor |
| T2B | Indoor heat exchanger outlet temperature sensor |

# 5 Wiring Diagram

*Figure 5.1: Compact Four-way Cassette piping diagram wiring diagram*




| Code | Name |
|---|---|
| FM | Fan motor |
| EEV | Electronic expansion valve |
| GM | Swinging motor |
| DM | Water drainage pump |
| CS | Water level sensor |
| T1 | Indoor temp. sensor |
| T2 | Mid-pipe temp. sensor of evaporator |
| T2B | Outlet temp. sensor of evaporator |
| XP1-5 | Connectors |
| XS1-5 | Connectors |
| XT1-2 | Connectors |

| ENC1 | Toggle Switch | Set horsepower |
|---|---|---|
| | Code | Capacity |
| | 0 | 2200W |
| | 1 | 2800W |
| | 2 | 3600W |
| | 3 | 4500W |

## Notes for installers and service engineers

**Caution**

- All installation, servicing and maintenance must be carried out by competent and suitably qualified, certified and accredited professionals and in accordance with all applicable legislation.
- Units should be grounded in accordance with all applicable legislation. Metal and other conductive components should be insulated in accordance with all applicable legislation.
- Power supply wiring should be securely fastened at the power supply terminals – loose power supply wiring would represent a fire risk.
- After installation, servicing or maintenance, the electric control box cover should be closed. Failing to close the electric control box cover risks fire or electric shock.
- Switch ENC1 (indoor unit capacity setting) is factory-set and its setting should normally not be changed. The only circumstances in which a switch ENC1 might need to be set in the field is when replacing a main PCB. When replacing a main PCB, ensure that the capacity setting on switch ENC1 on the new PCB is consistent with the unit capacity given on the unit's nameplate.

# 6 Capacity Tables

## 6.1 Cooling Capacity Table

*Table 6.1: Four-way Cassette cooling capacity*

| Capacity (kW) | Outdoor air temperature (°C DB) | Indoor air 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 |
| | 42.0 | 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 |
| | 44.0 | 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 |
| | 46.0 | 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 |
| | 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 |

Abbreviations:
TC: Total capacity
SC: Sensible capacity

Notes:
1. Shaded cells indicate rating condition.

*Table continued on next page …*

*Table 6.1: Four-way Cassette cooling capacity (continued)*

| Capacity (kW) | Outdoor air temperature (°C DB) | Indoor air 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 |
| 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 |

Abbreviations:
TC: Total capacity
SC: Sensible capacity

Notes:
1. Shaded cells indicate rating condition.

## 6.2 Heating Capacity Table

*Table 6.2: Four-way Cassette heating capacity*

| Capacity (kW) | Outdoor air temperature (°C) | | Indoor air temperature (°C DB) | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 16 | 18 | 20 | 21 | 22 | 24 |
| | | | TC | TC | TC | TC | TC | TC |
| | WB | DB | kW | kW | kW | kW | kW | kW |
| 2.2 | -20 | -19.8 | 1.34 | 1.34 | 1.34 | 1.34 | 1.34 | 1.34 |
| | -19 | -18.8 | 1.44 | 1.44 | 1.44 | 1.44 | 1.44 | 1.44 |
| | -17 | -16.7 | 1.51 | 1.51 | 1.51 | 1.51 | 1.51 | 1.51 |
| | -15 | -14.7 | 1.56 | 1.56 | 1.56 | 1.56 | 1.56 | 1.56 |
| | -13.00 | -12.60 | 1.66 | 1.66 | 1.66 | 1.66 | 1.66 | 1.66 |
| | -11.00 | -10.50 | 1.68 | 1.70 | 1.70 | 1.70 | 1.70 | 1.70 |
| | -10.00 | -9.50 | 1.75 | 1.75 | 1.75 | 1.75 | 1.75 | 1.75 |
| | -9.10 | -8.50 | 1.80 | 1.80 | 1.80 | 1.80 | 1.80 | 1.80 |
| | -7.60 | -7.00 | 1.82 | 1.82 | 1.82 | 1.82 | 1.82 | 1.82 |
| | -5.60 | -5.00 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 |
| | -3.70 | -3.00 | 1.99 | 1.99 | 1.99 | 1.99 | 1.99 | 1.99 |
| | -0.70 | 0.00 | 2.14 | 2.14 | 2.14 | 2.14 | 2.14 | 2.02 |
| | 2.20 | 3.00 | 2.26 | 2.26 | 2.26 | 2.26 | 2.21 | 2.02 |
| | 4.10 | 5.00 | 2.33 | 2.33 | 2.33 | 2.33 | 2.21 | 2.02 |
| | 6.00 | 7.00 | 2.40 | 2.40 | **2.40** | 2.33 | 2.21 | 2.02 |
| | 7.90 | 9.00 | 2.47 | 2.47 | 2.40 | 2.33 | 2.21 | 2.02 |
| | 9.80 | 11.00 | 2.54 | 2.54 | 2.40 | 2.33 | 2.21 | 2.02 |
| | 11.80 | 13.00 | 2.64 | 2.59 | 2.40 | 2.33 | 2.21 | 2.02 |
| | 13.70 | 15.00 | 2.71 | 2.59 | 2.40 | 2.33 | 2.21 | 2.02 |
| 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 |

Abbreviations:
TC: Total capacity

Notes:
1. Shaded cells indicate rating condition.

*Table continued on next page …*

*Table 6.2: Four-way Cassette heating capacity (continued)*

| Capacity (kW) | Outdoor air temperature (°C) | | Indoor air temperature (°C DB) | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 16 | 18 | 20 | 21 | 22 | 24 |
| | | | TC | TC | TC | TC | TC | TC |
| | WB | DB | kW | kW | kW | kW | kW | kW |
| 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 |

Abbreviations:
TC: Total capacity

Notes:
1. Shaded cells indicate rating condition.

# 7 Electrical Characteristics

*Table 7.1: Compact Four-way Cassette electrical characteristics*

| Model name | Power supply | | | | | | Indoor fan motors | |
|---|---|---|---|---|---|---|---|---|
| | Hz | Volts | Min. volts | Max. volts | MCA | MFA | Rated motor output (kW) | FLA |
| MDI2-22Q4CDHN1 | 50/60 | 220-240 | 198 | 264 | 0.43 | 15 | 0.037 | 0.344 |
| MDI2-28Q4CDHN1 | 50/60 | 220-240 | 198 | 264 | 0.43 | 15 | 0.037 | 0.344 |
| MDI2-36Q4CDHN1 | 50/60 | 220-240 | 198 | 264 | 0.48 | 15 | 0.037 | 0.344 |
| MDI2-45Q4CDHN1 | 50/60 | 220-240 | 198 | 264 | 0.48 | 15 | 0.037 | 0.384 |

Abbreviations:
MCA: Minimum Circuit Amps
MFA: Maximum Fuse Amps
FLA: Full Load Amps

# 8 Sound Levels

## 8.1 Overall

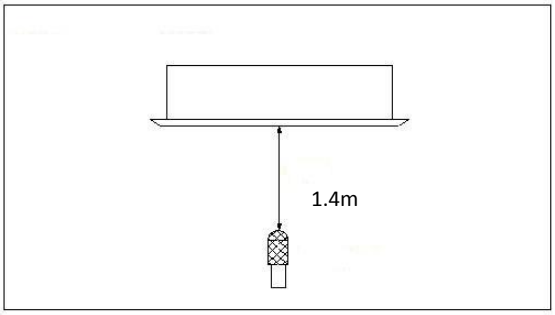
*Table 8.1: Compact Four-way Cassette sound pressure levels[1]*

| Model name | Sound pressure levels dB(A) | | | | | | |
|---|---|---|---|---|---|---|---|
| | SSH | SH | H | M | L | SL | SSL |
| MDI2-22Q4CDHN1 | 35 | 34 | 33 | 29 | 26 | 23 | 22 |
| MDI2-28Q4CDHN1 | 35 | 34 | 33 | 29 | 26 | 23 | 22 |
| MDI2-36Q4CDHN1 | 41 | 38 | 35 | 32 | 30 | 29 | 28 |
| MDI2-45Q4CDHN1 | 41 | 38 | 35 | 32 | 30 | 29 | 28 |

Notes:

1. Sound pressure levels are measured 1.4m below the unit in a semi-anechoic chamber. During in-situ operation, sound pressure levels may be higher as a result of ambient noise.

*Figure 8.1: Compact Four-way Cassette sound pressure level measurement*




## 8.2 Octave Band Levels

*Figure 8.2: MDI2-22(28)Q4CDHN1 octave band levels*

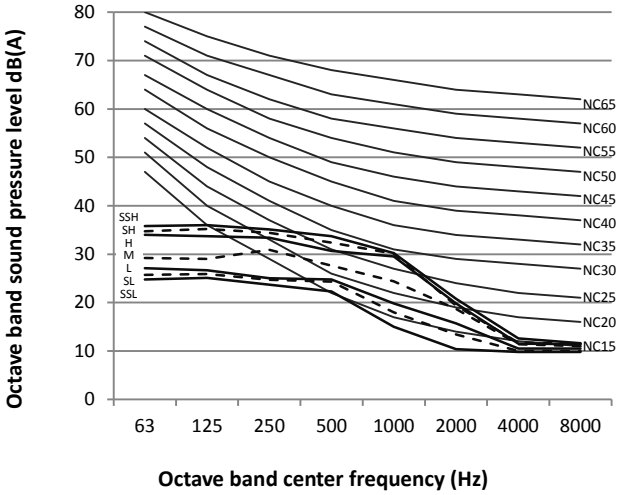
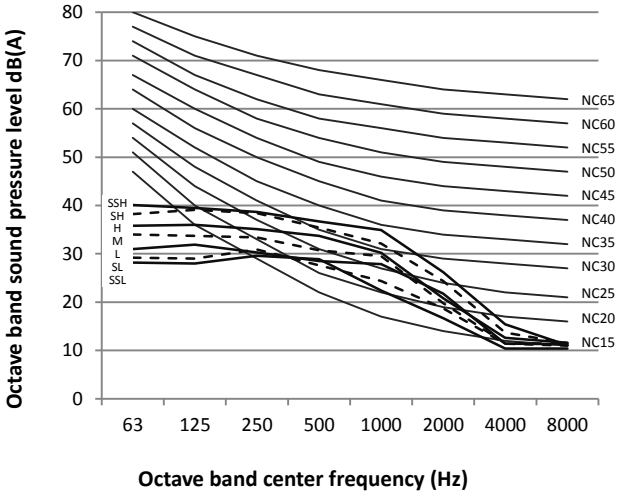



*Figure 8.3: MDI2-36(45)Q4CDHN1 octave band levels*



# 9 Temperature and Airflow Distributions

## 9.1 Simulate condition

*Table 9.1: Compact Four-way Cassette simulate condition*

| Model name | Room size (m) | Ceiling height (m) | Flow angle (Cooling/Heating) | Placing |
|---|---|---|---|---|
| MDI2-22Q4CDHN1 | 5*5 | 2.7 | 15° /50° | Center |
| MDI2-28Q4CDHN1 | 6*6 | 2.7 | 15° /50° | Center |
| MDI2-36Q4CDHN1 | 6*6 | 2.7 | 15° /50° | Center |
| MDI2-45Q4CDHN1 | 8*8 | 2.7 | 15° /50° | Center |

Note:

1. These figures and videos are based on software simulation. They show typical temperature and airflow distributions in the conditions above. In the actual installation, they may differ from these figures and videos under the influence of air temperature conditions, ceiling height, cooling/heating load, obstacles, etc.

## 9.2 Airflow distributions

*Figure 9.1: MDI2-22Q4CDHN1 cooling at 120S*

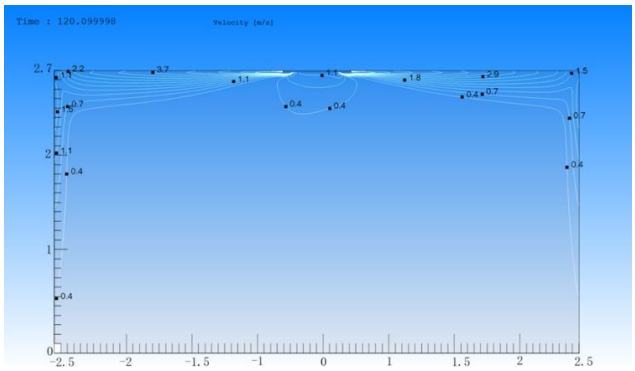


*Figure 9.2: MDI2-22Q4CDHN1 heating at 120S*

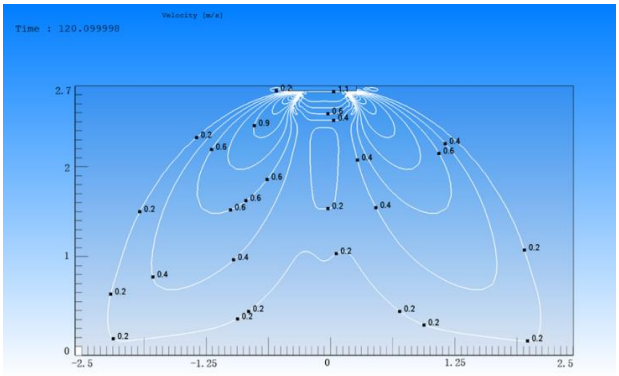


*Figure 9.3: MDI2-28Q4CDHN1 cooling at 120S*

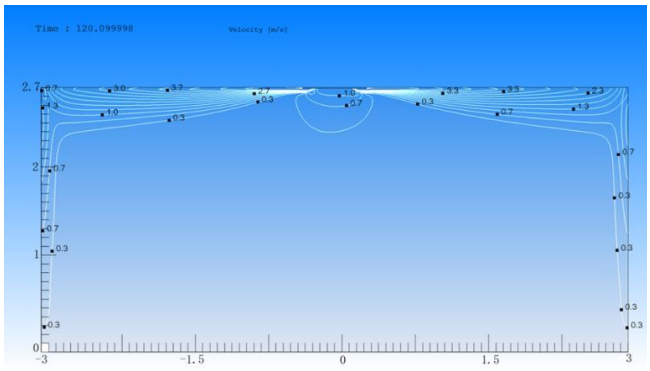


*Figure 9.4: MDI2-28Q4CDHN1 heating at 120S*

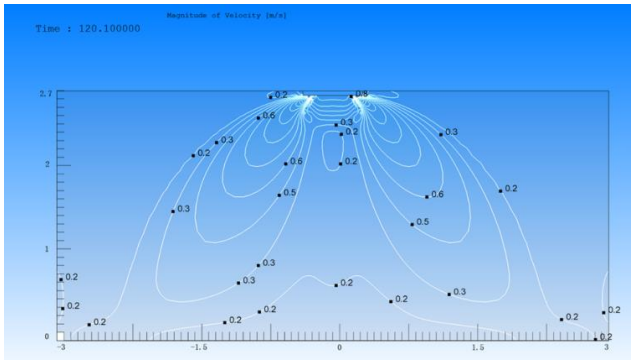


*Figure 9.5: MDI2-36Q4CDHN1 cooling at 120S*



*Figure 9.6: MDI2-36Q4CDHN1 heating at 120S*

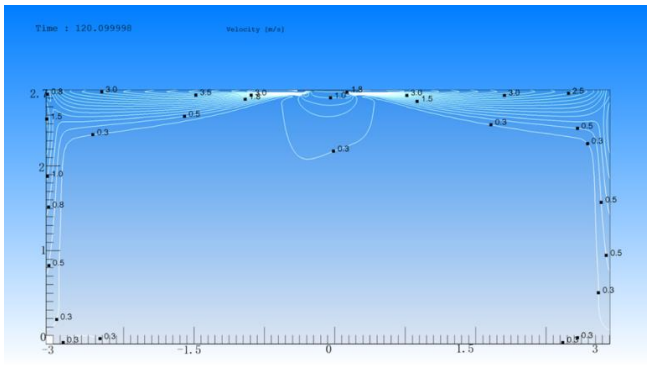


*Figure 9.7: MDI2-45Q4CDHN1 cooling at 120S*

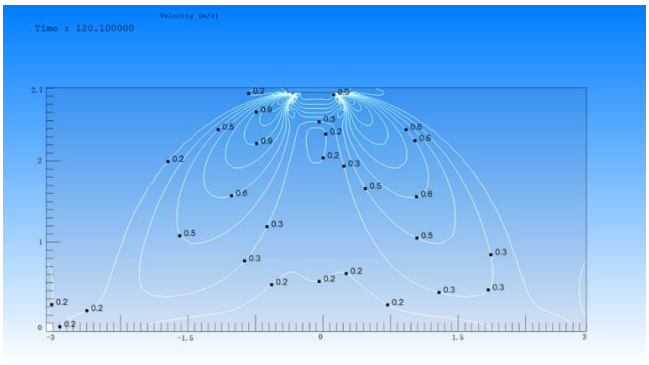


*Figure 9.8: MDI2-45Q4CDHN1 heating at 120S*

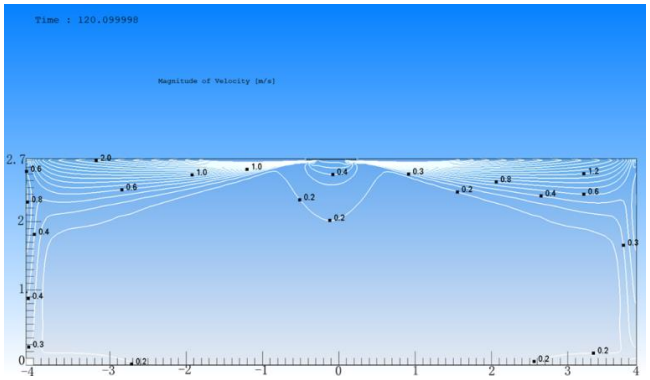


*Figure 9.9: MDI2-22Q4CDHN1 cooling at 120S*

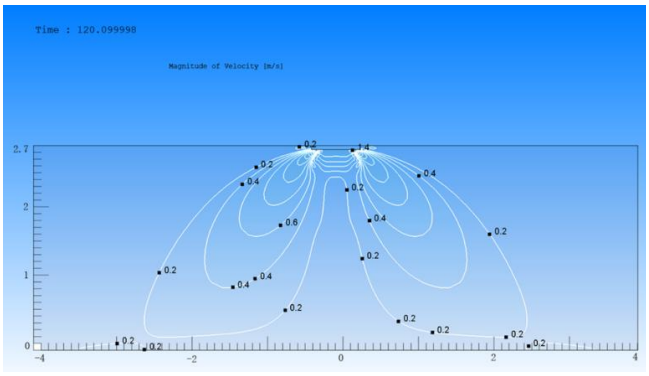


*Figure 9.10: MDI2-22Q4CDHN1 heating at 120S*

## 9.3 Temperature distributions

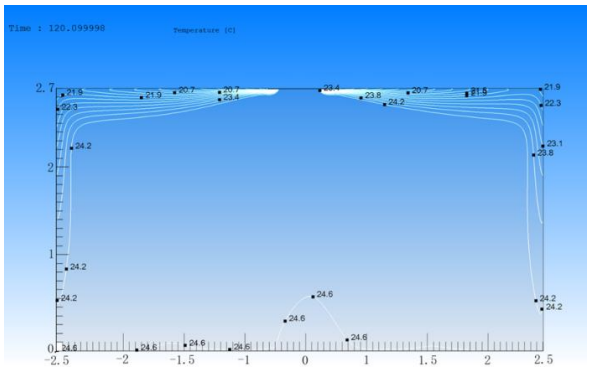


*Figure 9.11: MDI2-28Q4CDHN1 cooling at 120S*

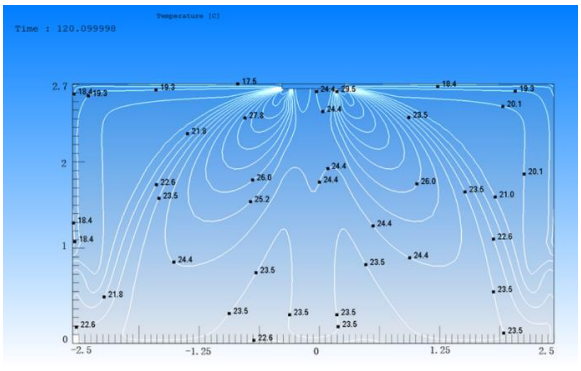
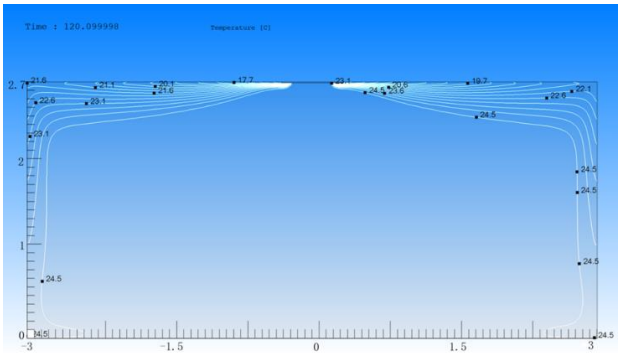


*Figure 9.12: MDI2-28Q4CDHN1 heating at 120S*



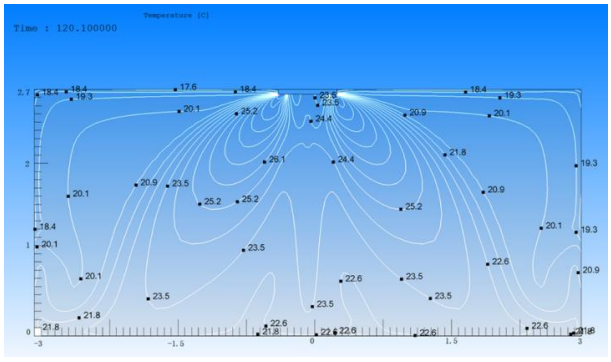


*Figure 9.13: MDI2-36Q4CDHN1 cooling at 120S*

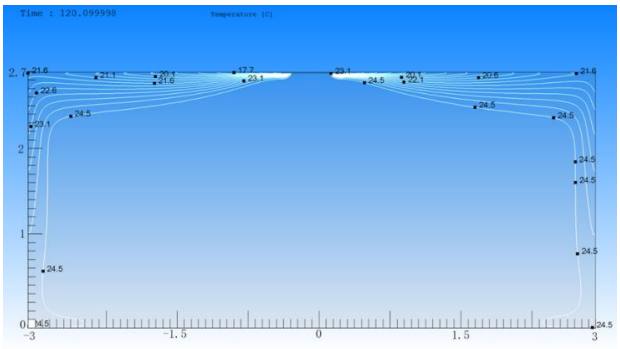



*Figure 9.14: MDI2-36Q4CDHN1 heating at 120S*

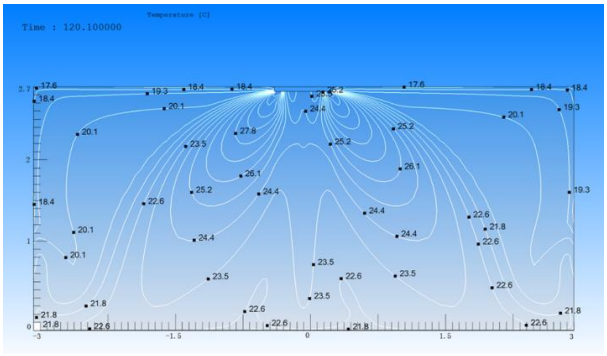



*Figure 9.15: MDI2-45Q4CDHN1 cooling at 120S*

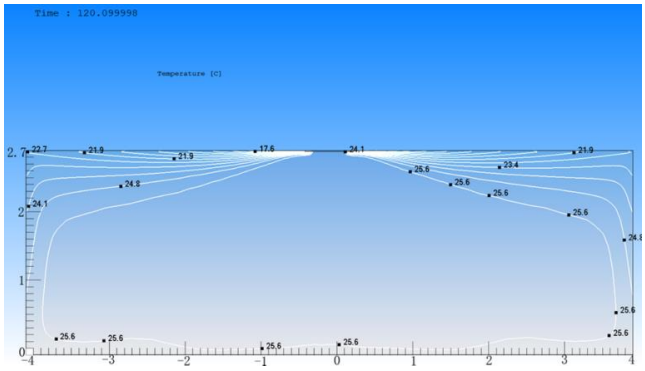
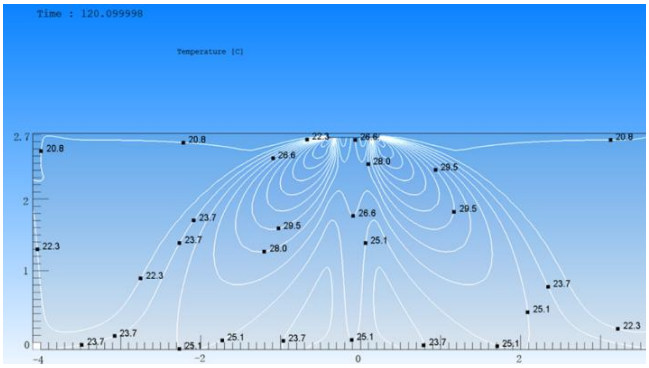



*Figure 9.16: MDI2-45Q4CDHN1 heating at 120S*



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