

# Engineering Data

## Fresh Air Processing VRF IDU



MIH200FAHN18

MIH335FAHN18

MIH224FAHN18

MIH400FAHN18

MIH252FAHN18

MIH450FAHN18

MIH280FAHN18

MIH560FAHN18

# Fresh Air Processing Unit

|   |                                  |    |
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# Indoor Units



## 1 Specifications

### MIH200FAHN18 / MIH224FAHN18/ MIH252FAHN18

Table 1.1: MIH200(224, 252)FAHN18 specifications

| Model name                            |                                     |                   | MIH200FAHN18                       | MIH224FAHN18                       | MIH252FAHN18                       |
|---------------------------------------|-------------------------------------|-------------------|------------------------------------|------------------------------------|------------------------------------|
| Power supply                          |                                     |                   | 1-phase, 220-240V, 50/60Hz         |                                    |                                    |
| Cooling <sup>1</sup>                  | Capacity                            | kW                | 20.0                               | 22.4                               | 25.2                               |
|                                       |                                     | kBut/h            | 68.3                               | 76.5                               | 86.0                               |
|                                       | Input                               | W                 | 425                                | 425                                | 480                                |
| Heating <sup>2</sup>                  | Capacity                            | kW                | 12.0                               | 13.7                               | 16.0                               |
|                                       |                                     | kBut/h            | 41.0                               | 46.8                               | 54.6                               |
|                                       | Input                               | W                 | 425                                | 425                                | 480                                |
| Fan motor                             | Model                               |                   | ZKSN-920-8-12-3L                   | ZKSN-920-8-12-3L                   | ZKSN-920-8-12-3L                   |
|                                       | Type                                |                   | DC                                 |                                    |                                    |
|                                       | Brand                               |                   | NIDECE                             |                                    |                                    |
|                                       | Speed (H/M/L)                       | r/min             | 640/610/580/550/520/490/460        | 640/610/580/550/520/490/460        | 640/610/580/550/520/490/460        |
| Coil                                  | Number of rows                      |                   | 3                                  | 3                                  | 3                                  |
|                                       | Tube pitch × row pitch              | mm                | 18×10.72                           | 18×10.72                           | 18×10.72                           |
|                                       | Fin spacing                         | mm                | 1.35                               | 1.35                               | 1.35                               |
|                                       | Fin type                            |                   | Hydrophilic aluminum               |                                    |                                    |
|                                       | Tube OD and type                    | mm                | Φ5Inner groove                     |                                    |                                    |
|                                       | Dimensions (L×H ×W)                 | mm                | 1050×32.16×504                     | 1050×32.16×504                     | 1050×32.16×504                     |
|                                       | Number of circuits                  |                   | 14                                 | 14                                 | 14                                 |
| Airflow rate <sup>3</sup>             |                                     | m <sup>3</sup> /h | 2500/2417/2333/2250/2167/2083/2000 | 2500/2417/2333/2250/2167/2083/2000 | 2800/2667/2533/2400/2267/2133/2000 |
| External static pressure <sup>4</sup> |                                     | Pa                | 220 (0-400)                        |                                    |                                    |
| Sound pressure level <sup>5</sup>     |                                     | dB(A)             | 47/46/46/45/44/43/42               | 47/46/46/45/44/43/42               | 48/47/47/46/45/44/43               |
| Sound power level                     |                                     | dB(A)             | 70/69/68/67/66/65/64               | 70/69/68/67/66/65/64               | 71/70/69/68/66/65/63               |
| Unit                                  | Net dimensions <sup>6</sup> (W×H×D) | mm                | 1300×550×900                       |                                    |                                    |
|                                       | Packed dimensions (W×H×D)           | mm                | 1530×730×1060                      |                                    |                                    |
|                                       | Net/Gross weight                    | kg                | 117/142                            | 117/142                            | 117/142                            |
| Refrigerant type                      |                                     |                   | R410A/R32                          |                                    |                                    |
| Throttle                              |                                     | Type              | Electronic expansion valve         |                                    |                                    |
|                                       |                                     | Model             | D32MISZ-1R                         |                                    |                                    |
| Design pressure (H/L)                 |                                     | MPa               | 4.4/2.6                            |                                    |                                    |
| Refriger                              | Liquid/Gas side                     | mm                | Φ9.52/Φ19.1                        |                                    | Φ12.7/Φ22.2                        |
| Drain piping                          |                                     | mm                | OD Φ32                             |                                    |                                    |

Notes:

- Indoor temperature 33°C DB, 28°C WB; outdoor temperature 33°C DB; equivalent refrigerant piping length 7.5m with zero level difference.
- Indoor temperature 0°C DB; outdoor temperature 0°C DB, -2.9°C WB; equivalent refrigerant piping length 7.5m with zero level difference.
- Fan motor speed and air flow rate are from the highest speed to the lowest speed, total 7 rates for each model.
- Stable operation external static pressure range. (Note: setting external static pressure outside the unit's optimal static pressure range may lead to higher noise levels and lower airflow rate. For the optimal external static pressure range refer to the unit's installation manual.)
- Sound pressure level is from highest level to lowest level, total 7 levels for each model. Sound pressure level is measured 1.5m below the unit in a semi-anechoic chamber.
- Unit body dimensions given are the largest external dimensions of the unit, including hanger attachments.
- All specifications are measured at standard external static pressure.
- When fresh air processing units are installed together with standard indoor units, the total capacity of the fresh air processing units must not exceed 30% of the total capacity of the outdoor units and the total combination ratio must not exceed 100%.
- When there are only fresh air processing units in the system, the combination ratio is 50-100%.

**MIH280FAHN18 / MIH335FAHN18/ MIH400FAHN18**
*Table 1.2: MIH280(335, 400)FAHN18 specifications*

| Model name                            |                                     |                   | MIH280FAHN18                       | MIH335FAHN18                       | MIH400FAHN18                       |               |
|---------------------------------------|-------------------------------------|-------------------|------------------------------------|------------------------------------|------------------------------------|---------------|
| Power supply                          |                                     |                   | 1-phase, 220-240V, 50/60Hz         |                                    |                                    |               |
| Cooling <sup>1</sup>                  | Capacity                            | kW                | 28.0                               | 33.5                               | 40.0                               |               |
|                                       |                                     | kBut/h            | 95.6                               | 114.3                              | 136.5                              |               |
|                                       | Input                               | W                 | 540                                | 550                                | 900                                |               |
| Heating <sup>2</sup>                  | Capacity                            | kW                | 18.0                               | 22.0                               | 26.5                               |               |
|                                       |                                     | kBut/h            | 61.4                               | 75.1                               | 90.4                               |               |
|                                       | Input                               | W                 | 540                                | 550                                | 900                                |               |
| Fan motor                             | Model                               |                   | ZKSN-920-8-12-3L                   | ZKSN-920-8-12-3L                   | ZKSN-2300-8-2                      |               |
|                                       | Type                                |                   | DC                                 |                                    |                                    |               |
|                                       | Brand                               |                   | NIDEC                              |                                    | Shangqi                            |               |
|                                       | Speed (H/M/L)                       | r/min             | 640/610/580/550/520/490/460        | 700/665/630/595/560/525/490        | 1040/985/930/875/820/765/710       |               |
| Coil                                  | Number of rows                      |                   | 3                                  | 4                                  | 3                                  |               |
|                                       | Tube pitch × row pitch              | mm                | 18×10.72                           | 18×10.72                           | 18×10.72                           |               |
|                                       | Fin spacing                         | mm                | 1.35                               | 1.35                               | 1.35                               |               |
|                                       | Fin type                            |                   | Hydrophilic aluminum               |                                    |                                    |               |
|                                       | Tube OD and type                    | mm                | Φ5Inner groove                     |                                    |                                    |               |
|                                       | Dimensions (L×H ×W)                 | mm                | 1050×32.16×504                     | 1050×42.88×504                     | 1600×32.16×504                     |               |
|                                       | Number of circuits                  |                   | 14                                 | 14                                 | 14                                 |               |
| Airflow rate <sup>3</sup>             |                                     | m <sup>3</sup> /h | 3000/2833/2667/2500/2333/2167/2000 | 3200/3000/2800/2600/2400/2200/2000 | 4500/4217/3933/3650/3367/3083/2800 |               |
| External static pressure <sup>4</sup> |                                     | Pa                | 220（0-400）                         |                                    | 300（0-400）                         |               |
| Sound pressure level <sup>5</sup>     |                                     | dB(A)             | 49/48/48/47/46/45/44               | 51/50/49/48/47/46/45               | 53/52/52/51/50/49/48               |               |
| Sound power level                     |                                     | dB(A)             | 72/71/69/68/66/64/63               | 74/73/71/69/67/65/63               | 76/75/73/72/70/68/65               |               |
| Unit                                  | Net dimensions <sup>6</sup> (W×H×D) |                   | mm                                 | 1300×550×900                       |                                    | 1850×550×900  |
|                                       | Packed dimensions (W×H×D)           |                   | mm                                 | 1530×730×1060                      |                                    | 2080×730×1060 |
|                                       | Net/Gross weight                    |                   | kg                                 | 117/142                            | 121/146                            | 161/198       |
| Refrigerant type                      |                                     |                   | R410A/R32                          |                                    |                                    |               |
| Throttle                              |                                     | Type              | Electronic expansion valve         |                                    |                                    |               |
|                                       |                                     | Model             | D32MISZ-1R                         |                                    | DPF(TS2)4.5C-02                    |               |
| Design pressure (H/L)                 |                                     | MPa               | 4.4/2.6                            |                                    |                                    |               |
| Refriger                              | Liquid/Gas side                     | mm                | Φ12.7/Φ22.2                        | Φ12.7/Φ25.4                        |                                    |               |
| Drain piping                          |                                     | mm                | OD Φ32                             |                                    |                                    |               |

**Notes:**

- Indoor temperature 33°C DB, 28°C WB; outdoor temperature 33°C DB; equivalent refrigerant piping length 7.5m with zero level difference.
- Indoor temperature 0°C DB; outdoor temperature 0°C DB, -2.9°C WB; equivalent refrigerant piping length 7.5m with zero level difference.
- Fan motor speed and air flow rate are from the highest speed to the lowest speed, total 7 rates for each model.
- Stable operation external static pressure range. (Note: setting external static pressure outside the unit's optimal static pressure range may lead to higher noise levels and lower airflow rate. For the optimal external static pressure range refer to the unit's installation manual.)
- Sound pressure level is from highest level to lowest level, total 7 levels for each model. Sound pressure level is measured 1.5m below the unit in a semi-anechoic chamber.
- Unit body dimensions given are the largest external dimensions of the unit, including hanger attachments.
- All specifications are measured at standard external static pressure.
- When fresh air processing units are installed together with standard indoor units, the total capacity of the fresh air processing units must not exceed 30% of the total capacity of the outdoor units and the total combination ratio must not exceed 100%.
- When there are only fresh air processing units in the system, the combination ratio is 50-100%.

## Indoor Units



## MIH450FAHN18 / MIH560FAHN18

Table 1.3: MIH450(560)FAHN18 specifications

| Model name                            |                                     |                   | MIH450FAHN18                           | MIH560FAHN18                           |
|---------------------------------------|-------------------------------------|-------------------|----------------------------------------|----------------------------------------|
| Power supply                          |                                     |                   | 1-phase, 220-240V, 50/60Hz             |                                        |
| Cooling <sup>1</sup>                  | Capacity                            | kW                | 45.0                                   | 56.0                                   |
|                                       |                                     | kBut/h            | 153.6                                  | 191.1                                  |
|                                       | Input                               | W                 | 900                                    | 1300                                   |
| Heating <sup>2</sup>                  | Capacity                            | kW                | 27.8                                   | 39.0                                   |
|                                       |                                     | kBut/h            | 94.9                                   | 133.1                                  |
|                                       | Input                               | W                 | 900                                    | 1300                                   |
| Fan motor                             | Model                               |                   | ZKSN-2300-8-2                          | ZKSN-2300-8-2                          |
|                                       | Type                                |                   | DC                                     |                                        |
|                                       | Brand                               |                   | Shangqi                                |                                        |
|                                       | Speed (H/M/L)                       | r/min             | 1040/985/930/875/820/765/<br>710       | 1175/1115/1055/995/935/87<br>5/815     |
| Coil                                  | Number of rows                      |                   | 3                                      | 4                                      |
|                                       | Tube pitch × row pitch              | mm                | 18×10.72                               | 18×10.72                               |
|                                       | Fin spacing                         | mm                | 1.35                                   | 1.35                                   |
|                                       | Fin type                            |                   | Hydrophilic aluminum                   |                                        |
|                                       | Tube OD and type                    | mm                | Φ5Inner groove                         |                                        |
|                                       | Dimensions (L×H ×W)                 | mm                | 1600×32.16×504                         | 1600×42.88×504                         |
|                                       | Number of circuits                  |                   | 14                                     | 14                                     |
| Airflow rate <sup>3</sup>             |                                     | m <sup>3</sup> /h | 4500/4217/3933/3650/3367<br>/3083/2800 | 6200/5833/5467/5100/4733/<br>4367/4000 |
| External static pressure <sup>4</sup> |                                     | Pa                | 300 (0-400)                            |                                        |
| Sound pressure level <sup>5</sup>     |                                     | dB(A)             | 53/52/52/51/50/49/48                   | 56/55/55/54/53/52/51                   |
| Sound power level                     |                                     | dB(A)             | 76/75/73/72/70/68/65                   | 78/77/76/74/73/71/69                   |
| Unit                                  | Net dimensions <sup>6</sup> (W×H×D) | mm                | 1850×550×900                           |                                        |
|                                       | Packed dimensions (W×H×D)           | mm                | 2080×730×1060                          |                                        |
|                                       | Net/Gross weight                    | kg                | 161/198                                | 164/201                                |
| Refrigerant type                      |                                     |                   | R410A/R32                              |                                        |
| Throttle                              | Type                                |                   | Electronic expansion valve             |                                        |
|                                       | Model                               |                   | DPF(TS2)4.5C-02                        |                                        |
| Design pressure (H/L)                 |                                     | MPa               | 4.4/2.6                                |                                        |
| Refrigerant piping                    | Liquid/Gas side                     | mm                | Φ16/Φ28.6                              |                                        |
| Drain piping                          |                                     | mm                | OD Φ32                                 |                                        |

## Notes:

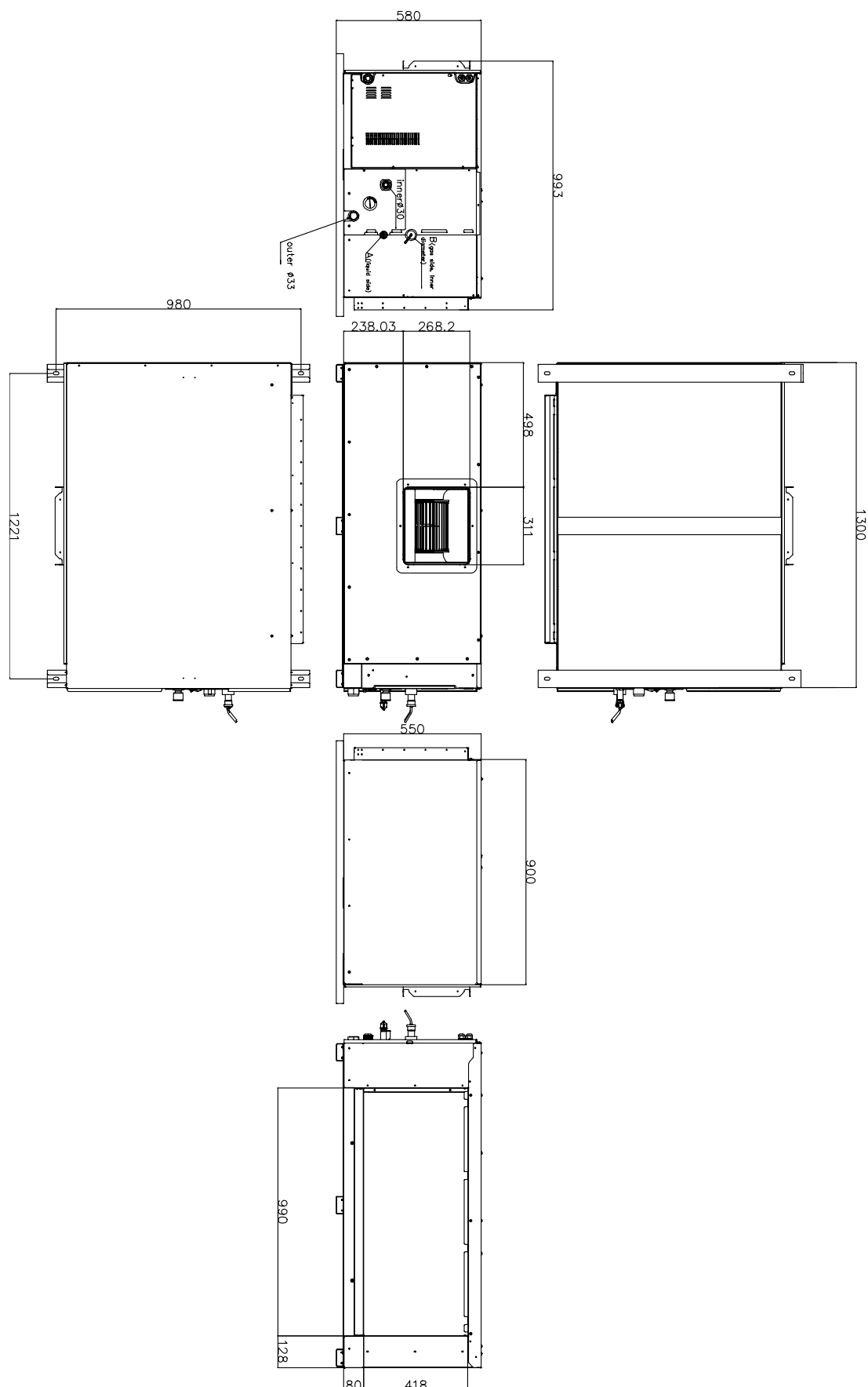
- Indoor temperature 33°C DB, 28°C WB; outdoor temperature 33°C DB; equivalent refrigerant piping length 7.5m with zero level difference.
- Indoor temperature 0°C DB; outdoor temperature 0°C DB, -2.9°C WB; equivalent refrigerant piping length 7.5m with zero level difference.
- Fan motor speed and air flow rate are from the highest speed to the lowest speed, total 7 rates for each model.
- Stable operation external static pressure range. (Note: setting external static pressure outside the unit's optimal static pressure range may lead to higher noise levels and lower airflow rate. For the optimal external static pressure range refer to the unit's installation manual.)
- Sound pressure level is from highest level to lowest level, total 7 levels for each model. Sound pressure level is measured 1.5m below the unit in a semi-anechoic chamber.
- Unit body dimensions given are the largest external dimensions of the unit, including hanger attachments.
- All specifications are measured at standard external static pressure.
- When fresh air processing units are installed together with standard indoor units, the total capacity of the fresh air processing units must not exceed 30% of the total capacity of the outdoor units and the total combination ratio must not exceed 100%.
- When there are only fresh air processing units in the system, the combination ratio is 50-100%.

## 2 Dimensions

### 2.1 Unit Dimensions

**MIH200FAHN18 / MIH224FAHN18/ MIH252FAHN18/ MIH280FAHN18 / MIH335FAHN18**

Figure 2.1: MIH200(224, 252, 280, 335)FAHN18 dimensions (unit: mm)

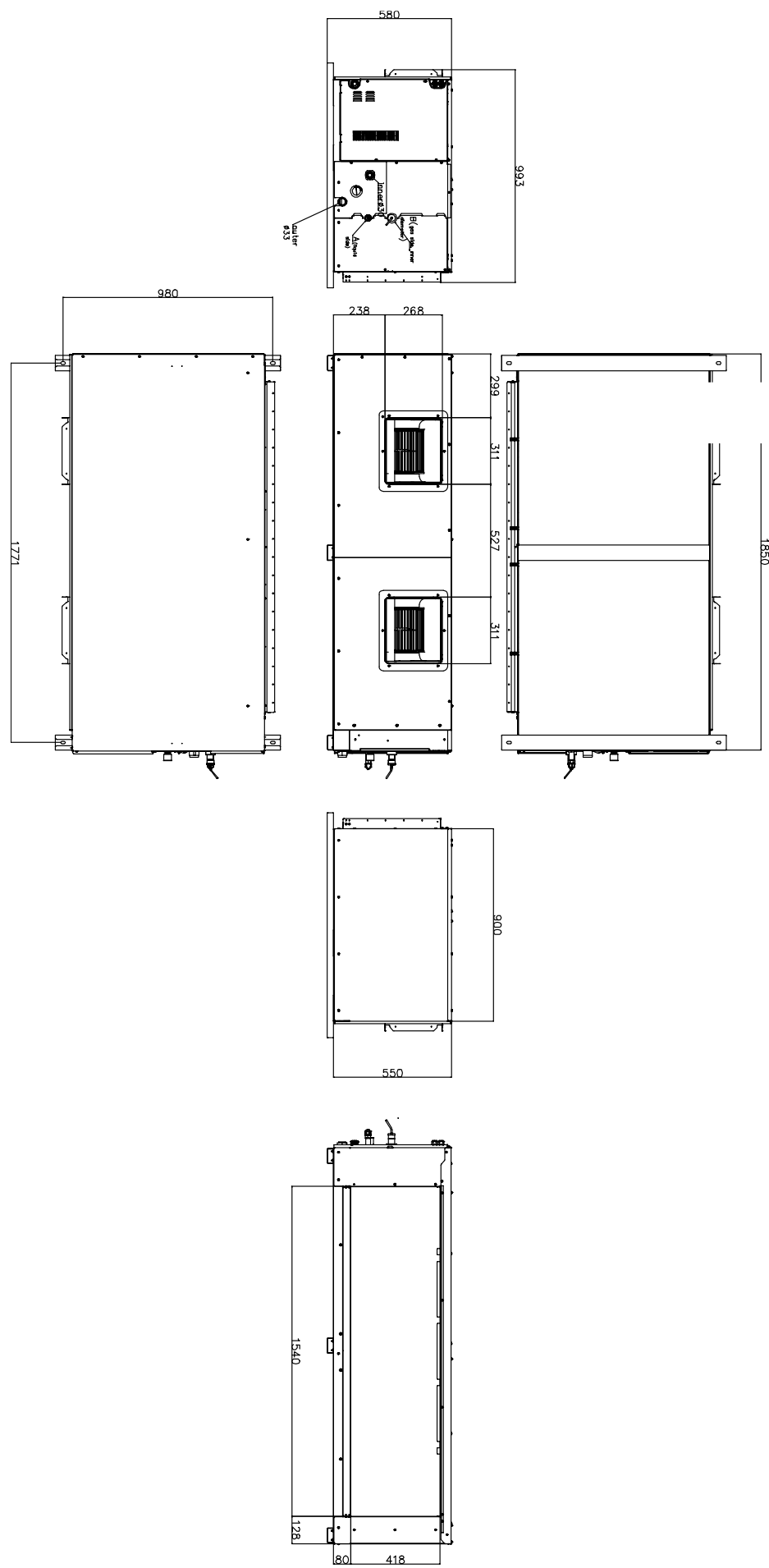


# Indoor Units



## MIH400FAHN18 MIH450FAHN18 / MIH560FAHN18

Figure 2.1: MIH400(450, 560)FAHN18 dimensions (unit: mm)



### 3 Unit Placement

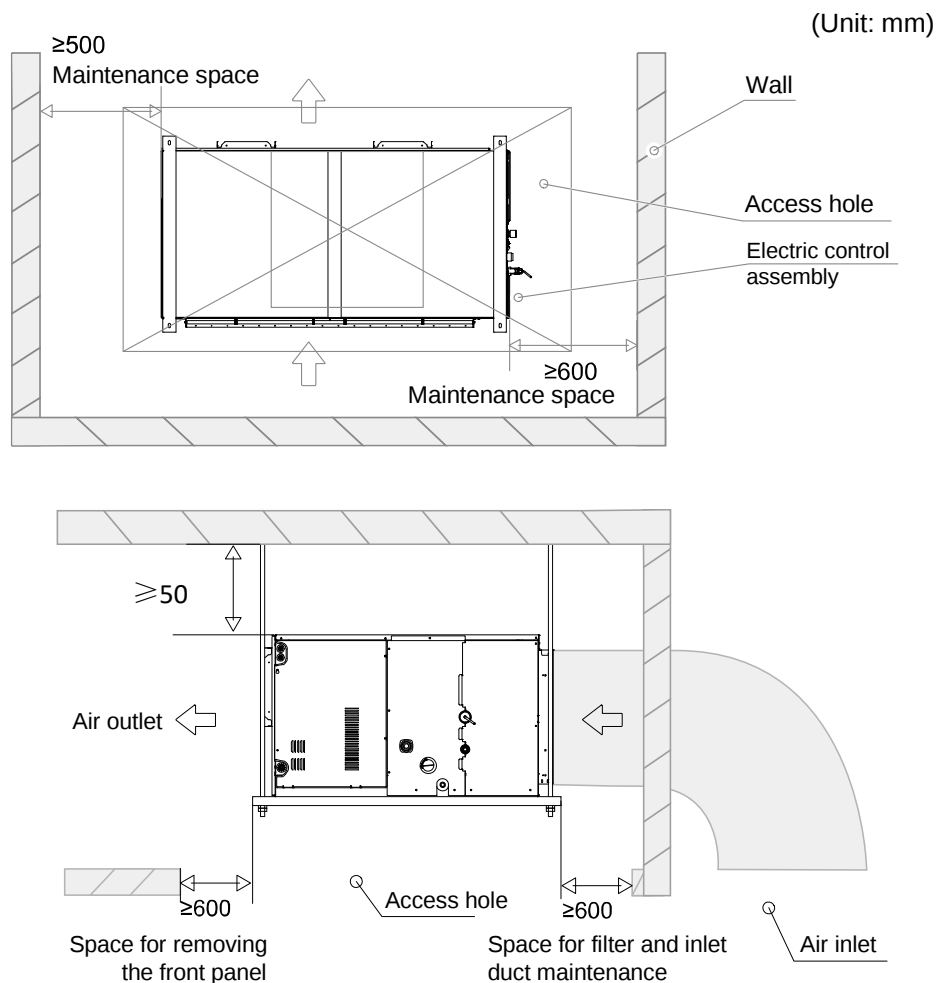
#### 3.1 Placement Considerations

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: Fresh Air Processing Unit space requirements (unit: mm)

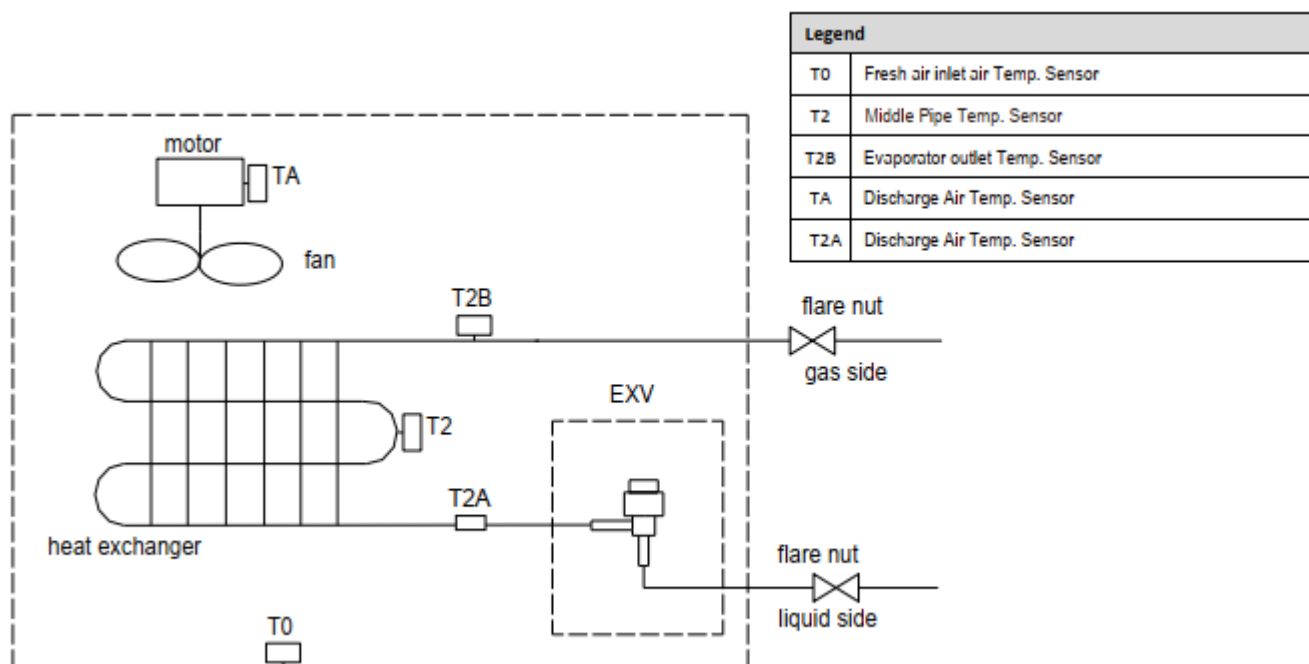


## Indoor Units

### 4 Piping Diagram

MIH200FAHN18 / MIH224FAHN18/ MIH252FAHN18/ MIH280FAHN18 /  
MIH335FAHN18/ MIH400FAHN18 MIH450FAHN18 / MIH560FAHN18

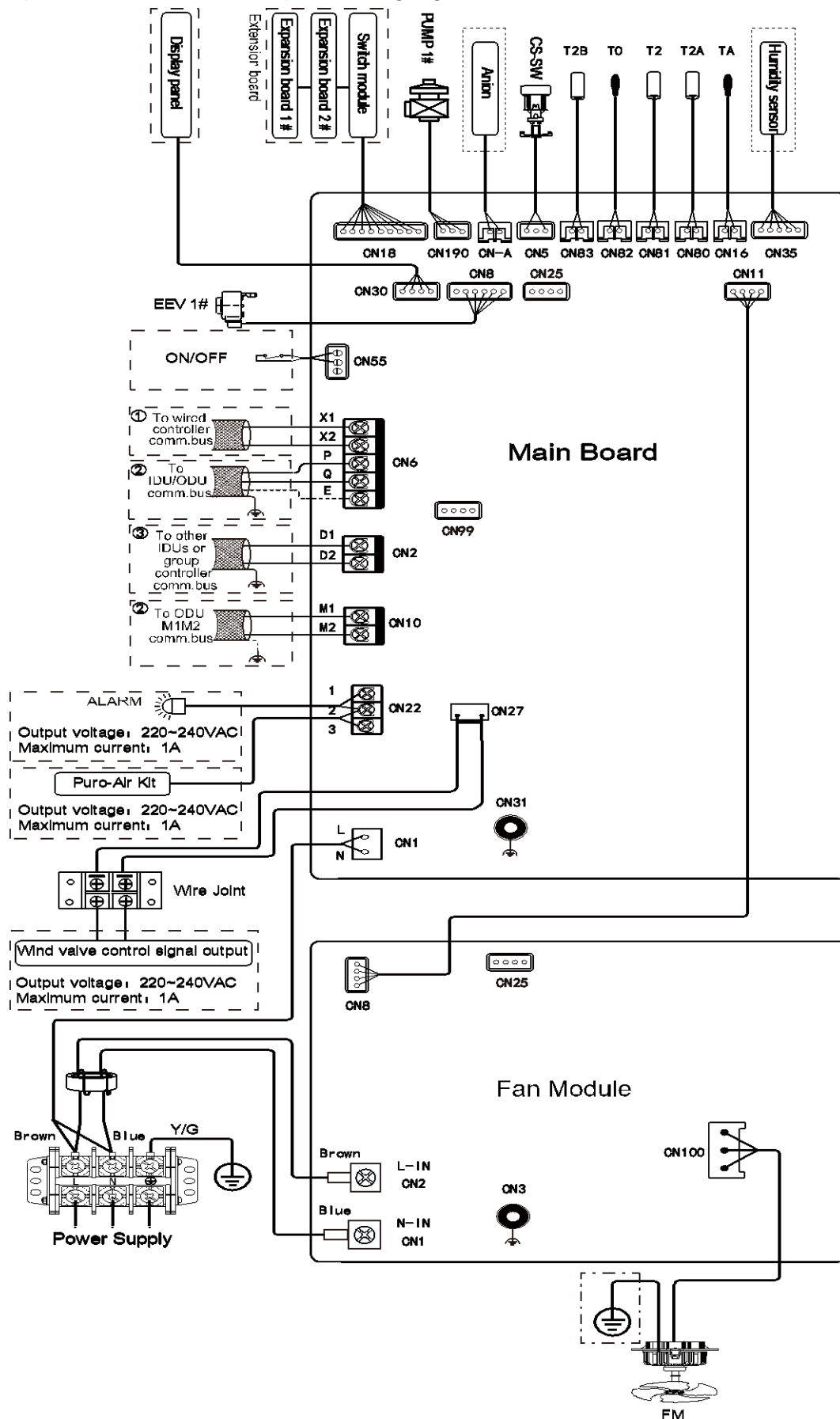
Figure 4.1: MIH200(224, 252, 280, 335, 400, 450, 560)FAHN18 piping diagram



## 5 Wiring Diagrams

MIH200FAHN18 / MIH224FAHN18/ MIH252FAHN18/ MIH280FAHN18 /  
MIH335FAHN18/ MIH400FAHN18 MIH450FAHN18 / MIH560FAHN18

Figure 5.1: MIH200(224, 252, 280, 335, 400, 450, 560)FAHN18 wiring diagram



## 6 Fan Performance

Figure 6.1: MIH200(224)FAHN18 fan performance

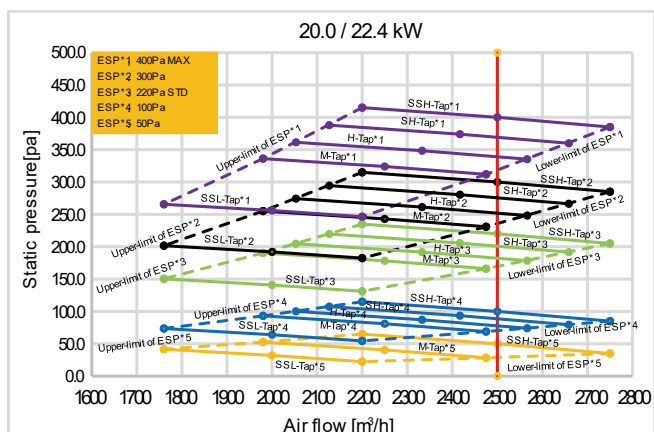


Figure 6.2: MIH252FAHN18 fan performance

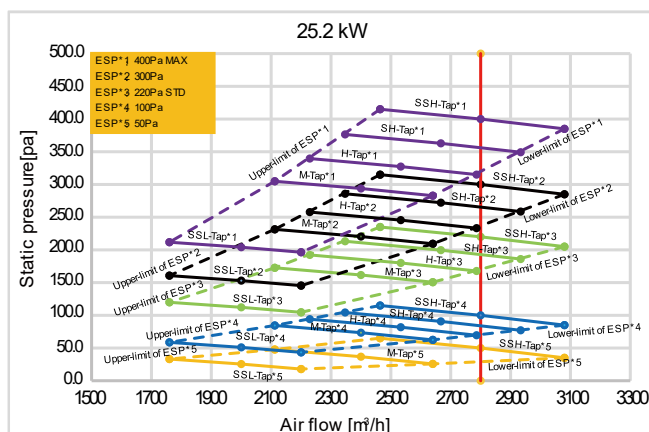


Figure 6.3: MIH280FAHN18 fan performance

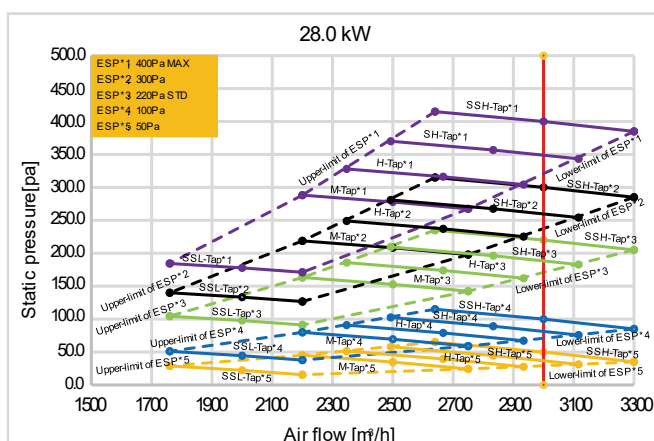


Figure 6.4: MIH335FAHN18 fan performance

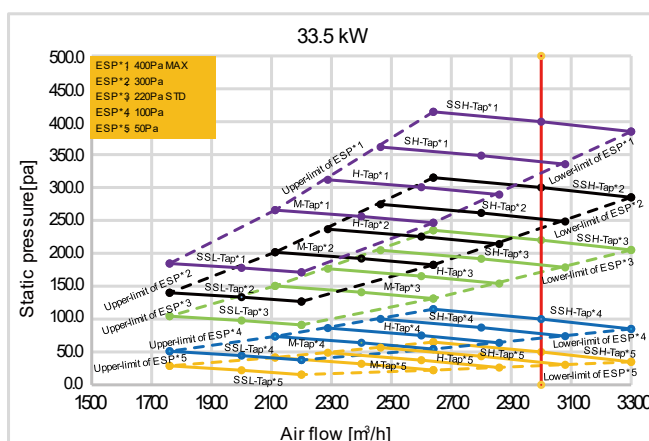


Figure 6.5: MIH400(450)FAHN18 fan performance

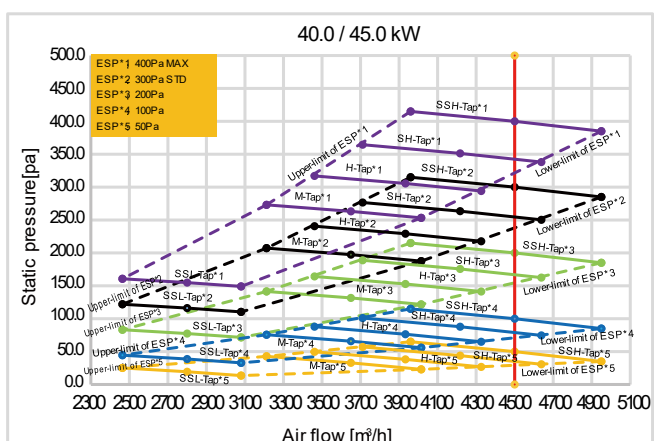


Figure 6.6: MIH560FAHN18 fan performance

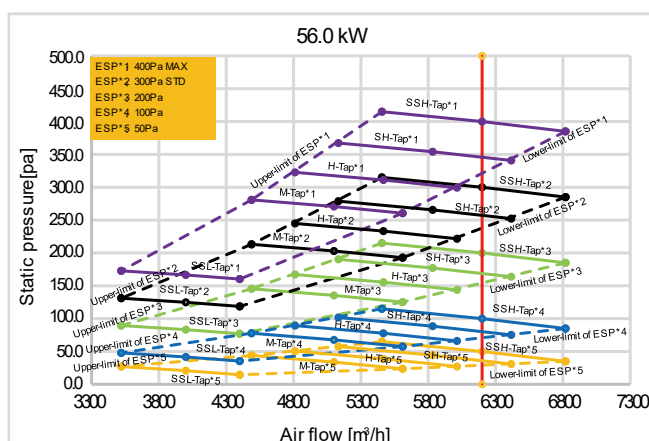


Table 6.7: Static pressure setting parameter table

| Capacity    | 00    | 01    | 02    | 03    | 04    | 05    | 06    | 07    | 08    | 09    |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 20.0-56.0kW | 0Pa   | 10Pa  | 20Pa  | 30Pa  | 40Pa  | 50Pa  | 60Pa  | 70Pa  | 80Pa  | 90Pa  |
| Capacity    | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    |
| 20.0-56.0kW | 100Pa | 120Pa | 140Pa | 170Pa | 200Pa | 240Pa | 280Pa | 300Pa | 360Pa | 400Pa |

## 7 Capacity Tables

### 7.1 Cooling Capacity Table

Table 7.1: Fresh Air Processing Unit cooling capacity

| Capacity<br>(kW) | Outdoor air temperature<br>(°C DB) | Outdoor air temperature (°C WB) |      |      |      |      |      |      |      |      |
|------------------|------------------------------------|---------------------------------|------|------|------|------|------|------|------|------|
|                  |                                    | 15.0                            | 17.0 | 20.0 | 23.0 | 26.0 | 28.0 | 30.0 | 32.0 | 35   |
|                  |                                    | TC                              | TC   | TC   | TC   | TC   | TC   | TC   | TC   | TC   |
|                  |                                    | kW                              | kW   | kW   | kW   | kW   | kW   | kW   | kW   | kW   |
| 20.0             | 20                                 | 7.6                             | 10.1 |      |      |      |      |      |      |      |
|                  | 22                                 | 7.5                             | 10.1 | 14.2 |      |      |      |      |      |      |
|                  | 25                                 | 7.3                             | 10.1 | 14.1 |      |      |      |      |      |      |
|                  | 27                                 |                                 | 10.1 | 14.0 | 16.5 |      |      |      |      |      |
|                  | 29                                 |                                 |      | 14.0 | 16.4 | 19.3 |      |      |      |      |
|                  | 31                                 |                                 |      | 13.9 | 16.3 | 19.1 | 20.2 |      |      |      |
|                  | 33                                 |                                 |      | 13.9 | 16.2 | 19.0 | 20.0 | 22.1 |      |      |
|                  | 35                                 |                                 |      |      | 16.1 | 18.9 | 19.9 | 21.9 | 23.6 |      |
|                  | 37                                 |                                 |      |      | 16.1 | 18.8 | 19.1 | 19.5 | 23.5 | 27.5 |
|                  | 39                                 |                                 |      |      |      | 16.8 | 17.3 | 19.4 | 20.9 | 27.4 |
|                  | 41                                 |                                 |      |      |      | 16.7 | 16.7 | 16.7 | 20.8 | 27.3 |
|                  | 43                                 |                                 |      |      |      | 16.6 | 16.6 | 16.7 | 20.6 | 27.1 |
| 22.4             | 20                                 | 8.5                             | 11.3 |      |      |      |      |      |      |      |
|                  | 22                                 | 8.4                             | 11.3 | 15.9 |      |      |      |      |      |      |
|                  | 25                                 | 8.2                             | 11.3 | 15.8 |      |      |      |      |      |      |
|                  | 27                                 |                                 | 11.3 | 15.7 | 18.4 |      |      |      |      |      |
|                  | 29                                 |                                 |      | 15.6 | 18.3 | 21.6 |      |      |      |      |
|                  | 31                                 |                                 |      | 15.6 | 18.2 | 21.4 | 22.6 |      |      |      |
|                  | 33                                 |                                 |      | 15.5 | 18.1 | 21.3 | 22.4 | 24.7 |      |      |
|                  | 35                                 |                                 |      |      | 18.1 | 21.2 | 22.3 | 24.6 | 26.5 |      |
|                  | 37                                 |                                 |      |      | 18.0 | 21.1 | 21.4 | 21.8 | 26.3 | 30.8 |
|                  | 39                                 |                                 |      |      |      | 18.8 | 19.4 | 21.7 | 23.4 | 30.7 |
|                  | 41                                 |                                 |      |      |      | 18.7 | 18.7 | 18.8 | 23.2 | 30.5 |
|                  | 43                                 |                                 |      |      |      | 18.6 | 18.6 | 18.7 | 23.1 | 30.4 |
| 25.2             | 20                                 | 9.7                             | 12.9 |      |      |      |      |      |      |      |
|                  | 22                                 | 9.8                             | 12.9 | 18.0 |      |      |      |      |      |      |
|                  | 25                                 | 9.5                             | 12.9 | 17.8 |      |      |      |      |      |      |
|                  | 27                                 |                                 | 12.8 | 17.7 | 20.8 |      |      |      |      |      |
|                  | 29                                 |                                 |      | 17.7 | 20.7 | 24.3 |      |      |      |      |
|                  | 31                                 |                                 |      | 17.6 | 20.6 | 24.1 | 25.4 |      |      |      |
|                  | 33                                 |                                 |      | 17.5 | 20.5 | 24.0 | 25.2 | 27.7 |      |      |
|                  | 35                                 |                                 |      |      | 20.4 | 23.9 | 25.1 | 27.6 | 29.7 |      |
|                  | 37                                 |                                 |      |      | 20.3 | 23.8 | 24.1 | 24.5 | 29.5 | 34.6 |
|                  | 39                                 |                                 |      |      |      | 21.2 | 21.9 | 24.4 | 26.3 | 34.4 |
|                  | 41                                 |                                 |      |      |      | 21.1 | 21.1 | 21.1 | 26.1 | 34.2 |
|                  | 43                                 |                                 |      |      |      | 21.0 | 21.0 | 21.1 | 26.0 | 34.0 |

Abbreviations:  
TC: Total capacity

Notes:

1. Shaded cells indicate rating condition.

Table continued on next page ...

## Indoor Units



Table 7.2: Fresh Air Processing Unit cooling capacity

| Capacity<br>(kW) | Outdoor air temperature<br>(°C DB) | Outdoor air temperature (°C WB) |      |      |      |      |      |      |      |      |
|------------------|------------------------------------|---------------------------------|------|------|------|------|------|------|------|------|
|                  |                                    | 15.0                            | 17.0 | 20.0 | 23.0 | 26.0 | 28.0 | 30.0 | 32.0 | 35   |
|                  |                                    | TC                              | TC   | TC   | TC   | TC   | TC   | TC   | TC   | TC   |
|                  |                                    | kW                              | kW   | kW   | kW   | kW   | kW   | kW   | kW   | kW   |
| 28.0             | 20                                 | 10.8                            | 14.4 |      |      |      |      |      |      |      |
|                  | 22                                 | 10.8                            | 14.4 | 20.0 |      |      |      |      |      |      |
|                  | 25                                 | 10.7                            | 14.4 | 19.8 |      |      |      |      |      |      |
|                  | 27                                 |                                 | 14.4 | 19.7 | 23.1 |      |      |      |      |      |
|                  | 29                                 |                                 |      | 19.7 | 23.0 | 27.0 |      |      |      |      |
|                  | 31                                 |                                 |      | 19.6 | 22.9 | 26.8 | 28.5 |      |      |      |
|                  | 33                                 |                                 |      | 19.5 | 22.8 | 26.7 | 28.0 | 30.8 |      |      |
|                  | 35                                 |                                 |      |      | 22.7 | 26.5 | 27.9 | 30.6 | 32.9 |      |
|                  | 37                                 |                                 |      |      | 22.6 | 26.4 | 26.9 | 27.2 | 32.8 | 38.3 |
|                  | 39                                 |                                 |      |      |      | 23.5 | 24.3 | 27.1 | 29.1 | 38.1 |
|                  | 41                                 |                                 |      |      |      | 23.4 | 23.4 | 23.5 | 29.0 | 37.9 |
|                  | 43                                 |                                 |      |      |      | 23.4 | 23.4 | 23.4 | 28.9 | 37.7 |
| 33.5             | 20                                 | 13.3                            | 17.3 |      |      |      |      |      |      |      |
|                  | 22                                 | 13.2                            | 17.3 | 23.9 |      |      |      |      |      |      |
|                  | 25                                 | 13.1                            | 17.3 | 23.7 |      |      |      |      |      |      |
|                  | 27                                 |                                 | 17.3 | 23.7 | 27.7 |      |      |      |      |      |
|                  | 29                                 |                                 |      | 23.5 | 27.5 | 32.4 |      |      |      |      |
|                  | 31                                 |                                 |      | 23.4 | 27.4 | 32.2 | 33.6 |      |      |      |
|                  | 33                                 |                                 |      | 23.4 | 27.3 | 32.0 | 33.5 | 37.0 |      |      |
|                  | 35                                 |                                 |      |      | 27.2 | 31.8 | 33.3 | 36.8 | 39.6 |      |
|                  | 37                                 |                                 |      |      | 27.0 | 31.7 | 32.0 | 32.6 | 39.4 | 46.2 |
|                  | 39                                 |                                 |      |      |      | 28.1 | 29.1 | 32.4 | 34.9 | 46.1 |
|                  | 41                                 |                                 |      |      |      | 28.0 | 28.1 | 28.1 | 34.7 | 45.8 |
|                  | 43                                 |                                 |      |      |      | 27.9 | 28.0 | 28.0 | 34.6 | 45.6 |
| 40.0             | 20                                 | 16.3                            | 21.0 |      |      |      |      |      |      |      |
|                  | 22                                 | 16.3                            | 20.9 | 28.7 |      |      |      |      |      |      |
|                  | 25                                 | 16.2                            | 20.9 | 28.4 |      |      |      |      |      |      |
|                  | 27                                 |                                 | 20.8 | 28.3 | 33.1 |      |      |      |      |      |
|                  | 29                                 |                                 |      | 28.2 | 32.9 | 38.6 |      |      |      |      |
|                  | 31                                 |                                 |      | 28.1 | 32.7 | 38.4 | 40.1 |      |      |      |
|                  | 33                                 |                                 |      | 28.0 | 32.6 | 38.2 | 40.0 | 44.0 |      |      |
|                  | 35                                 |                                 |      |      | 32.5 | 37.9 | 39.8 | 43.8 | 47.0 |      |
|                  | 37                                 |                                 |      |      | 32.3 | 37.8 | 38.3 | 38.9 | 46.8 | 54.8 |
|                  | 39                                 |                                 |      |      |      | 33.6 | 34.7 | 38.6 | 41.5 | 54.5 |
|                  | 41                                 |                                 |      |      |      | 33.5 | 33.5 | 33.5 | 41.3 | 54.2 |
|                  | 43                                 |                                 |      |      |      | 33.4 | 33.4 | 33.4 | 41.1 | 54.0 |

Abbreviations:  
TC: Total capacity

Notes:  
1. Shaded cells indicate rating condition.

Table continued on next page ...

Table 7.3: Fresh Air Processing Unit cooling capacity

| Capacity<br>(kW) | Outdoor air temperature<br>(°C DB) | Outdoor air temperature (°C WB) |      |      |      |      |      |      |      |      |
|------------------|------------------------------------|---------------------------------|------|------|------|------|------|------|------|------|
|                  |                                    | 15.0                            | 17.0 | 20.0 | 23.0 | 26.0 | 28.0 | 30.0 | 32.0 | 35   |
|                  |                                    | TC                              | TC   | TC   | TC   | TC   | TC   | TC   | TC   | TC   |
|                  |                                    | kW                              | kW   | kW   | kW   | kW   | kW   | kW   | kW   | kW   |
| 45.0             | 20                                 | 18.3                            | 23.6 |      |      |      |      |      |      |      |
|                  | 22                                 | 18.3                            | 23.5 | 32.3 |      |      |      |      |      |      |
|                  | 25                                 | 18.2                            | 23.5 | 32.0 |      |      |      |      |      |      |
|                  | 27                                 |                                 | 23.4 | 31.8 | 37.2 |      |      |      |      |      |
|                  | 29                                 |                                 |      | 31.7 | 37.0 | 43.4 |      |      |      |      |
|                  | 31                                 |                                 |      | 31.6 | 36.8 | 43.2 | 45.1 |      |      |      |
|                  | 33                                 |                                 |      | 31.5 | 36.7 | 42.9 | 45.0 | 49.5 |      |      |
|                  | 35                                 |                                 |      |      | 36.5 | 42.7 | 44.8 | 49.2 | 52.9 |      |
|                  | 37                                 |                                 |      |      | 36.4 | 42.5 | 43.1 | 43.7 | 52.6 | 61.6 |
|                  | 39                                 |                                 |      |      |      | 37.8 | 39.1 | 43.5 | 46.7 | 61.3 |
|                  | 41                                 |                                 |      |      |      | 37.7 | 37.7 | 37.7 | 46.5 | 61.0 |
|                  | 43                                 |                                 |      |      |      | 37.6 | 37.6 | 37.6 | 46.3 | 60.7 |
| 56.0             | 20                                 | 23.0                            | 29.6 |      |      |      |      |      |      |      |
|                  | 22                                 | 23.0                            | 29.5 | 40.3 |      |      |      |      |      |      |
|                  | 25                                 | 23.0                            | 29.4 | 40.0 |      |      |      |      |      |      |
|                  | 27                                 |                                 | 29.4 | 39.8 | 46.4 |      |      |      |      |      |
|                  | 29                                 |                                 |      | 39.6 | 46.2 | 54.1 |      |      |      |      |
|                  | 31                                 |                                 |      | 39.5 | 45.9 | 53.7 | 56.4 |      |      |      |
|                  | 33                                 |                                 |      | 39.4 | 45.7 | 53.5 | 56.0 | 61.6 |      |      |
|                  | 35                                 |                                 |      |      | 45.5 | 53.2 | 55.7 | 61.3 | 65.8 |      |
|                  | 37                                 |                                 |      |      | 45.3 | 53.0 | 54.0 | 54.6 | 65.5 | 76.4 |
|                  | 39                                 |                                 |      |      |      | 47.2 | 49.0 | 54.3 | 58.4 | 76.1 |
|                  | 41                                 |                                 |      |      |      | 47.1 | 47.2 | 47.3 | 58.1 | 75.7 |
|                  | 43                                 |                                 |      |      |      | 46.9 | 47.0 | 47.1 | 57.8 | 75.3 |

Abbreviations:  
TC: Total capacity

Notes:  
1. Shaded cells indicate rating condition.

## Indoor Units



### 7.2 Heating Capacity Table

Table 7.4: Fresh Air Processing Unit heating capacity

| Capacity<br>(kW) | Outdoor air temperature<br>(°C DB) | Outdoor air temperature (°C WB) |      |      |      |      |      |      |      |      |
|------------------|------------------------------------|---------------------------------|------|------|------|------|------|------|------|------|
|                  |                                    | -7.0                            | -5.2 | -2.9 | 0.0  | 2.0  | 4.0  | 6.0  | 10.0 | 14.0 |
|                  |                                    | TC                              | TC   | TC   | TC   | TC   | TC   | TC   | TC   | TC   |
|                  |                                    | kW                              | kW   | kW   | kW   | kW   | kW   | kW   | kW   | kW   |
| 20.0             | -5.0                               | 13.6                            | 13.6 |      |      |      |      |      |      |      |
|                  | 0.0                                |                                 |      | 12.0 |      |      |      |      |      |      |
|                  | 3.0                                |                                 |      | 10.3 | 10.3 | 9.9  |      |      |      |      |
|                  | 7.0                                |                                 |      |      |      | 8.2  | 8.2  | 8.2  |      |      |
|                  | 11.0                               |                                 |      |      |      |      | 7.1  | 7.1  | 7.1  |      |
|                  | 16.0                               |                                 |      |      |      |      |      | 4.9  | 4.9  | 4.9  |
| 22.4             | -5.0                               | 15.6                            | 15.6 |      |      |      |      |      |      |      |
|                  | 0.0                                |                                 |      | 13.7 |      |      |      |      |      |      |
|                  | 3.0                                |                                 |      | 11.8 | 11.8 | 11.8 |      |      |      |      |
|                  | 7.0                                |                                 |      |      |      | 9.3  | 9.3  | 9.3  |      |      |
|                  | 11.0                               |                                 |      |      |      |      | 8.1  | 8.1  | 8.1  |      |
|                  | 16.0                               |                                 |      |      |      |      |      | 5.6  | 5.6  | 5.6  |
| 25.2             | -5.0                               | 18.2                            | 18.2 |      |      |      |      |      |      |      |
|                  | 0.0                                |                                 |      | 16.0 |      |      |      |      |      |      |
|                  | 3.0                                |                                 |      | 13.8 | 13.8 | 13.8 |      |      |      |      |
|                  | 7.0                                |                                 |      |      |      | 10.9 | 10.9 | 10.9 |      |      |
|                  | 11.0                               |                                 |      |      |      |      | 9.5  | 9.5  | 9.5  |      |
|                  | 16.0                               |                                 |      |      |      |      |      | 6.5  | 6.5  | 6.5  |
| 28.0             | -5.0                               | 20.4                            | 20.4 |      |      |      |      |      |      |      |
|                  | 0.0                                |                                 |      | 18.0 |      |      |      |      |      |      |
|                  | 3.0                                |                                 |      | 15.5 | 15.5 | 15.5 |      |      |      |      |
|                  | 7.0                                |                                 |      |      |      | 12.3 | 12.3 | 12.3 |      |      |
|                  | 11.0                               |                                 |      |      |      |      | 10.6 | 10.6 | 10.6 |      |
|                  | 16.0                               |                                 |      |      |      |      |      | 7.4  | 7.4  | 7.4  |
| 33.5             | -5.0                               | 25.0                            | 25.0 |      |      |      |      |      |      |      |
|                  | 0.0                                |                                 |      | 22.0 |      |      |      |      |      |      |
|                  | 3.0                                |                                 |      | 19.0 | 19.0 | 19.0 |      |      |      |      |
|                  | 7.0                                |                                 |      |      |      | 15.0 | 15.0 | 15.0 |      |      |
|                  | 11.0                               |                                 |      |      |      |      | 13.0 | 13.0 | 13.0 |      |
|                  | 16.0                               |                                 |      |      |      |      |      | 9.0  | 9.0  | 9.0  |
| 40.0             | -5.0                               | 30.1                            | 30.1 |      |      |      |      |      |      |      |
|                  | 0.0                                |                                 |      | 26.5 |      |      |      |      |      |      |
|                  | 3.0                                |                                 |      | 22.8 | 22.8 | 22.8 |      |      |      |      |
|                  | 7.0                                |                                 |      |      |      | 18.1 | 18.1 | 18.1 |      |      |
|                  | 11.0                               |                                 |      |      |      |      | 15.7 | 15.7 | 15.7 |      |
|                  | 16.0                               |                                 |      |      |      |      |      | 10.8 | 10.8 | 10.8 |
| 45.0             | -5.0                               | 31.6                            | 31.6 |      |      |      |      |      |      |      |
|                  | 0.0                                |                                 |      | 27.8 |      |      |      |      |      |      |
|                  | 3.0                                |                                 |      | 24.0 | 24.0 | 24.0 |      |      |      |      |
|                  | 7.0                                |                                 |      |      |      | 19.0 | 19.0 | 19.0 |      |      |
|                  | 11.0                               |                                 |      |      |      |      | 16.4 | 16.4 | 16.4 |      |
|                  | 16.0                               |                                 |      |      |      |      |      | 11.4 | 11.4 | 11.4 |

Abbreviations:

TC: Total capacity

Notes:

Shaded cells indicate rating condition.

Table 7.5: Fresh Air Processing Unit heating capacity

| Capacity<br>(kW) | Outdoor air temperature<br>(°C DB) | Outdoor air temperature (°C WB) |      |      |      |      |      |      |      |      |
|------------------|------------------------------------|---------------------------------|------|------|------|------|------|------|------|------|
|                  |                                    | -7.0                            | -5.2 | -2.9 | 0.0  | 2.0  | 4.0  | 6.0  | 10.0 | 14.0 |
|                  |                                    | TC                              | TC   | TC   | TC   | TC   | TC   | TC   | TC   | TC   |
|                  |                                    | kW                              | kW   | kW   | kW   | kW   | kW   | kW   | kW   | kW   |
| 56.0             | -5.0                               | 44.2                            | 44.2 |      |      |      |      |      |      |      |
|                  | 0.0                                |                                 |      | 39.0 |      |      |      |      |      |      |
|                  | 3.0                                |                                 |      | 33.6 | 33.6 | 33.6 |      |      |      |      |
|                  | 7.0                                |                                 |      |      |      | 26.6 | 26.6 | 26.6 |      |      |
|                  | 11.0                               |                                 |      |      |      |      | 23.1 | 23.1 | 23.1 |      |
|                  | 16.0                               |                                 |      |      |      |      |      | 16.0 | 16.0 | 16.0 |

Abbreviations:

TC: Total capacity

Notes:

Shaded cells indicate rating condition.

# 8 Electrical Characteristics

Table 8.1: Fresh Air Processing Unit electrical characteristics

| Model name   | Power supply |         |            |            |       |     | Indoor fan motors       |      |
|--------------|--------------|---------|------------|------------|-------|-----|-------------------------|------|
|              | Hz           | Volts   | Min. volts | Max. volts | MCA   | MFA | Rated motor output (kW) | FLA  |
| MIH200FAHN18 | 50/60        | 220-240 | 198        | 242        | 3.68  | 15  | 0.92                    | 2.94 |
| MIH224FAHN18 | 50/60        | 220-240 | 198        | 242        | 3.68  | 15  | 0.92                    | 2.94 |
| MIH252FAHN18 | 50/60        | 220-240 | 198        | 242        | 4.20  | 15  | 0.92                    | 3.36 |
| MIH280FAHN18 | 50/60        | 220-240 | 198        | 242        | 4.59  | 15  | 0.92                    | 3.68 |
| MIH335FAHN18 | 50/60        | 220-240 | 198        | 242        | 4.73  | 15  | 0.92                    | 3.78 |
| MIH400FAHN18 | 50/60        | 220-240 | 198        | 242        | 6.56  | 15  | 2.30                    | 5.25 |
| MIH450FAHN18 | 50/60        | 220-240 | 198        | 242        | 6.56  | 15  | 2.30                    | 5.25 |
| MIH560FAHN18 | 50/60        | 220-240 | 198        | 242        | 10.37 | 15  | 2.30                    | 8.30 |

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

## 9 Sound Levels

### 9.1 Overall

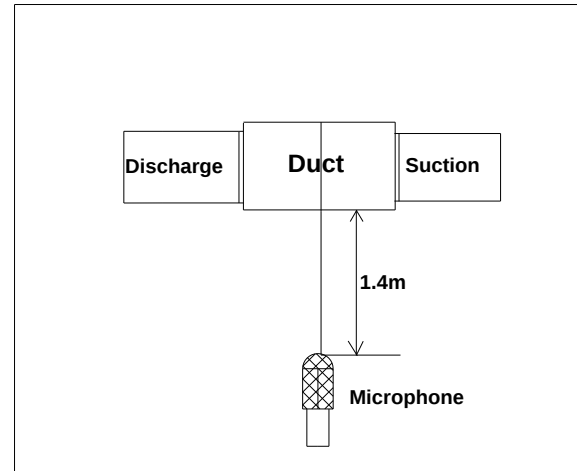
Table 9.1: Fresh Air Processing Unit sound pressure levels

| Model name   | Sound pressure levels dB(A) |    |    |    |    |    |     |
|--------------|-----------------------------|----|----|----|----|----|-----|
|              | SSH                         | SH | H  | M  | L  | SL | SSL |
| MIH200FAHN18 | 47                          | 46 | 46 | 45 | 44 | 43 | 42  |
| MIH224FAHN18 | 47                          | 46 | 46 | 45 | 44 | 43 | 42  |
| MIH252FAHN18 | 48                          | 47 | 47 | 46 | 45 | 44 | 43  |
| MIH280FAHN18 | 49                          | 48 | 48 | 47 | 46 | 45 | 44  |
| MIH335FAHN18 | 51                          | 50 | 49 | 48 | 47 | 46 | 45  |
| MIH400FAHN18 | 53                          | 52 | 52 | 51 | 50 | 49 | 48  |
| MIH450FAHN18 | 53                          | 52 | 52 | 51 | 50 | 49 | 48  |
| MIH560FAHN18 | 56                          | 55 | 55 | 54 | 53 | 52 | 51  |

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 9.1: Fresh Air Processing Unit sound pressure level measurement



### 9.2 Octave Band Levels

Figure 9.2: MIH200(224)FAHN18 octave band levels

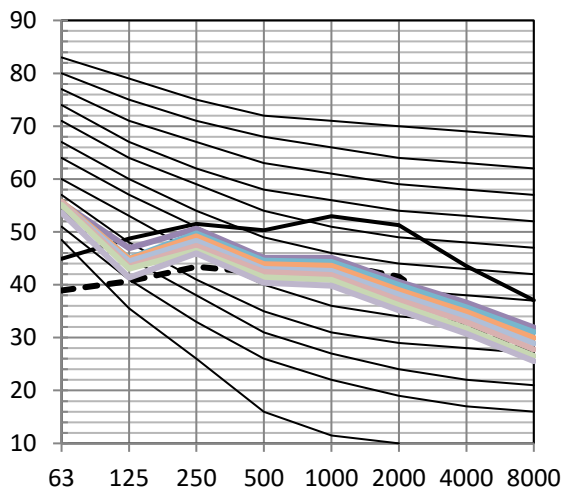


Figure 9.3: MIH252FAHN18 octave band levels

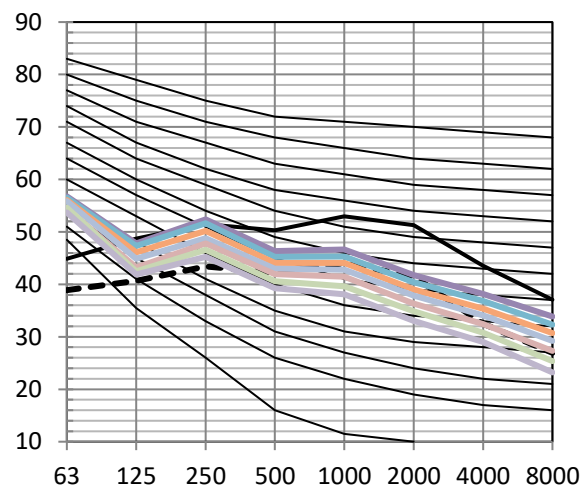


Figure 9.4: MIH280FAHN18 octave band levels

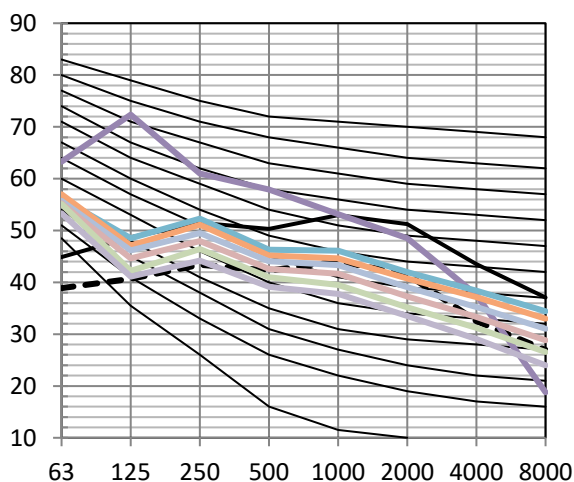
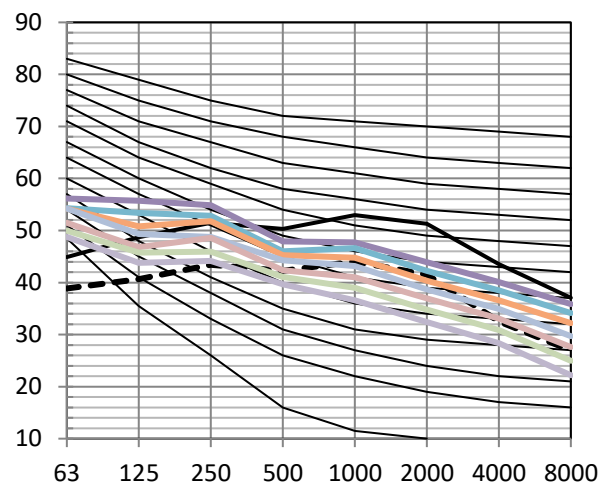


Figure 9.5: MIH335FAHN18 octave band levels



Indoor Units



Figure 9.6: MIH400(450)FAHN18 octave band levels

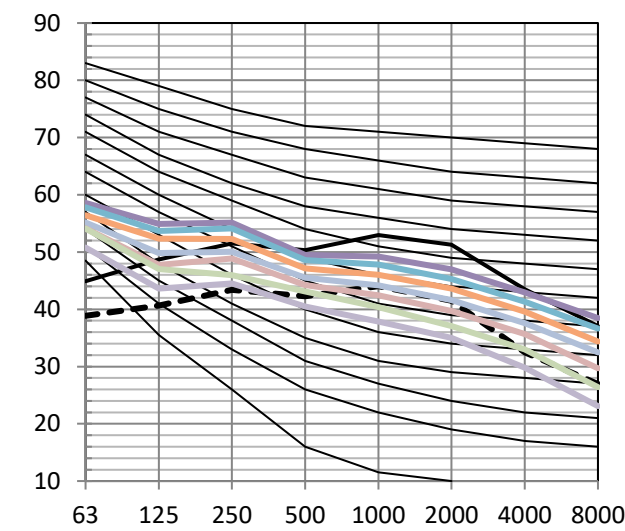
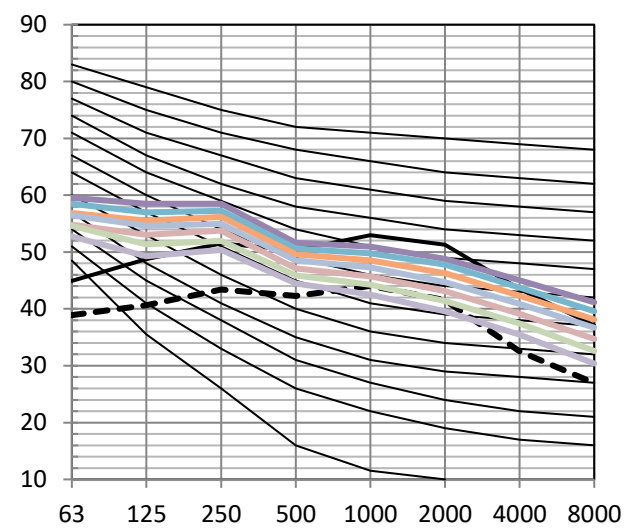


Figure 9.7: MIH560FAHN18 octave band levels





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Note: Product specifications change from time to time as product improvements and developments are released and may vary from those in this document.

