

*Sustainable Comfort*

AMENITY™

# Ceiling Packaged Air Handling Unit

MFC-S Series

1500~20000 m<sup>3</sup>/h



 **CLIMAVENETA**

# Ceiling Packaged Air Handling Unit

## Product Overview

The AMENITY MFC-S series ceiling packaged air handling units are another brand-new high quality product with the energy conservation technology from Europe and are very suitable for the centre air condition application. The units are designed to deliver airflow with different temperature continuously or intermittently to maintain the heat and moisture balance making them quite fit for hotels, apartments, villas, office buildings, hospitals, factory buildings and other applications. At the same time, MFC-S ceiling packaged air handling units shall be very suitable for tight space with compact design considering operation efficiency, noise level, and installation servicing convenience.

The units have a wide range of models with the airflow rate from 1500 m<sup>3</sup>/h to 20000 m<sup>3</sup>/h and cooling capacity in the range of 7.8-324.1kW.

## Features and Benefits

### Compact Design and Easy of Servicing

- The units shall be compactly designed with characters of low height and low weight fitting for strict limitation of horizontal space.
- The units shall be equipped with half-buried lifting beam, front-load electric control box, removable panels and filters with the considering of easy installation and maintenance.

### Elegant Feature and Durable Construction

- Unit panels shall be manufactured with high-grade galvanized steel sheet for elegant feature. And polyethylene materials shall be attached to the interior surface of panels preventing condensation occurs and assuring the predictable and reliable operation through units' life.

### Low Noise Level and Excellent Condensate Management

- The fan shall be direct-drive, external-rotor motor or belt-drive double-inlet centrifugal fan designed resulting in high efficient driving, stable operation and considerable vibration isolation.
- The units shall consist of oversized drain pans to prevent the leakage of condensate.

### Versatile Application and Optimal Accessory

- Wide range of airflow rate: The units can offer nominal airflow rates in the range of 1500-20000 m<sup>3</sup>/h supplying for wide selection in all situations, eventually involving investment saving of air condition projects.
- Filters: The units shall equipped with removable filters with side extracting type and down extracting type according to space limitation on site.
- Cooling coils: The copper tubes and aluminum fins are bonded together tightly and with optimum flow paths to balance the water resistance inside tubes, and resulting in well heat transfer performance.
- Heating coils: Because of the above mentioned characteristics, the rust shall be restrained efficiently inside copper tubes even heat water is forced going through the coils.
- Humidifiers: The units shall be fixed with wet film humidifiers with film thicknesses of 50-150mm guaranteeing the high efficient performance.

## Model Nomenclature

|            |           |          |          |          |          |           |          |          |          |
|------------|-----------|----------|----------|----------|----------|-----------|----------|----------|----------|
| <u>MFC</u> | <u>04</u> | <u>X</u> | <u>S</u> | <u>F</u> | <u>L</u> | <u>00</u> | <u>0</u> | <u>S</u> | <u>L</u> |
| 1          | 2         | 3        | 4        | 5        | 6        | 7         | 8        | 9        | 10       |

**1** --Packaged air handling unit

**2** --Unit model (air flow)

**3** --X: 6-row coil

--None: 4-row coil

**4** --S: Suspended packaged air handling unit

**5** --F: Fresh air condition

--R: Return air condition

**6** --ESP:

U: Super low ESP

V: Medium low ESP

L: Low ESP

M: Medium ESP

H: High ESP

**7** --00: No hot water coil or wet film humidifier

01: 1 row hot water coil (behind cooling coil)

02: 2 rows hot water coil (behind cooling coil)

03: 1 row hot water coil (in front of cooling coil)

04: 2 rows hot water coil (in front of cooling coil)

05: 50mm wet film humidifier

**8** --0: No controller

**9** --Filter extraction:

S: Side withdraw; D: Down withdraw

**10** --Connection type:

L: Left R: Right

## Connection type

The left-hand water connection type is defined as the cooling water in coils coming from the left side while standing in front of the air-inlet side. And the right-hand water connection is the cooling water coming from the right side while standing in front of the air-inlet side.



# Ceiling Packaged Air Handling Unit

## General Data

| Model   | Nominal airflow rate (m <sup>3</sup> /h) | Fan/ motor number | ESP Level | Exterior static pressure |            | Total exterior pressure |            | Supply power (kW-Phase) | Noise dB(A) | Weight     |          | Weight of heating coils |          |
|---------|------------------------------------------|-------------------|-----------|--------------------------|------------|-------------------------|------------|-------------------------|-------------|------------|----------|-------------------------|----------|
|         |                                          |                   |           | 4-row (Pa)               | 6-row (Pa) | 4-row (Pa)              | 6-row (Pa) |                         |             | 4-row (kg) | 6-row kg | 4-row (kg)              | 6-row kg |
| MFC1.5S | 1500                                     | 1/1               | L         | 150                      | 100        | 180                     | 130        | 0.25kw-4P               | 56.5        | 73         | 76       | 7                       | 10       |
|         |                                          |                   | H         | 231                      | 180        | 260                     | 210        | 0.32kw-4P               | 58          | 73         | 76       |                         |          |
| MFC02S  | 2000                                     | 1/1               | L         | 150                      | 100        | 180                     | 130        | 0.32kw-4P               | 58.5        | 83         | 87       | 8                       | 11       |
|         |                                          |                   | H         | 231                      | 181        | 260                     | 212        | 0.55kw-4P               | 58.5        | 84         | 88       |                         |          |
| MFC2.5S | 2500                                     | 1/1               | L         | 150                      | 100        | 200                     | 150        | 0.45kw-4P               | 60          | 93         | 98       | 9                       | 12       |
|         |                                          |                   | H         | 213                      | 183        | 261                     | 211        | 0.55kw-4P               | 60.5        | 94         | 99       |                         |          |
| MFC03S  | 3000                                     | 1/1               | L         | 170                      | 120        | 270                     | 220        | 0.55kw-4P               | 61.5        | 105        | 110      | 9                       | 14       |
|         |                                          |                   | H         | 200                      | 150        | 300                     | 250        | 0.55kw-4P               | 62.5        | 107        | 112      |                         |          |
| MFC04S  | 4000                                     | 2/2               | L         | 215                      | 165        | 255                     | 205        | 0.32kw-4P               | 61.5        | 135        | 142      | 11                      | 18       |
|         |                                          |                   | H         | 295                      | 245        | 340                     | 290        | 0.45kw-4P               | 62          | 144        | 151      |                         |          |
| MFC05S  | 5000                                     | 2/2               | L         | 210                      | 160        | 281                     | 231        | 0.45kw-4P               | 63.5        | 153        | 162      | 12                      | 20       |
|         |                                          |                   | H         | 287                      | 237        | 346                     | 296        | 0.55kw-4P               | 64          | 156        | 165      |                         |          |
| MFC06S  | 6000                                     | 2/2               | L         | 176                      | 126        | 270                     | 220        | 0.55kw-4P               | 64.5        | 172        | 182      | 14                      | 22       |
|         |                                          |                   | H         | 220                      | 170        | 315                     | 260        | 0.55kw-4P               | 64          | 181        | 191      |                         |          |
| MFC08S  | 8000                                     | 2/1               | U         | 150                      | 100        | 216                     | 166        | 2.2kw-4P                | 62          | 227        | 240      | 17                      | 27       |
|         |                                          |                   | V         | 200                      | 150        | 266                     | 216        | 2.2kw-4P                | 63          | 227        | 240      |                         |          |
|         |                                          |                   | L         | 250                      | 200        | 316                     | 266        | 2.2kw-4P                | 64          | 227        | 240      |                         |          |
|         |                                          |                   | M         | 300                      | 250        | 366                     | 316        | 2.2kw-4P                | 65          | 227        | 240      |                         |          |
|         |                                          |                   | H         | 350                      | 300        | 416                     | 366        | 3kw-4P                  | 65.5        | 230        | 243      |                         |          |
| MFC10S  | 10000                                    | 2/1               | U         | 150                      | 100        | 214                     | 164        | 2.2kw-4P                | 63          | 259        | 274      | 19                      | 31       |
|         |                                          |                   | V         | 200                      | 150        | 264                     | 214        | 2.2kw-4P                | 64          | 259        | 274      |                         |          |
|         |                                          |                   | L         | 250                      | 200        | 314                     | 264        | 3kw-4P                  | 65          | 262        | 277      |                         |          |
|         |                                          |                   | M         | 300                      | 250        | 364                     | 314        | 3kw-4P                  | 66          | 262        | 277      |                         |          |
|         |                                          |                   | H         | 350                      | 300        | 414                     | 364        | 3kw-4P                  | 67          | 281        | 297      |                         |          |
| MFC12S  | 12000                                    | 2/1               | U         | 200                      | 150        | 274                     | 224        | 3kw-4P                  | 64          | 308        | 330      | 24                      | 39       |
|         |                                          |                   | V         | 250                      | 200        | 324                     | 274        | 3kw-4P                  | 65          | 308        | 330      |                         |          |
|         |                                          |                   | L         | 300                      | 250        | 374                     | 324        | 3kw-4P                  | 65.5        | 308        | 330      |                         |          |
|         |                                          |                   | M         | 350                      | 300        | 424                     | 374        | 4kw-4P                  | 66          | 327        | 350      |                         |          |
|         |                                          |                   | H         | 400                      | 350        | 474                     | 424        | 4kw-4P                  | 67          | 327        | 350      |                         |          |
| MFC15S  | 15000                                    | 2/1               | U         | 200                      | 150        | 281                     | 231        | 4kw-4P                  | 63          | 361        | 388      | 27                      | 44       |
|         |                                          |                   | V         | 250                      | 200        | 331                     | 281        | 4kw-4P                  | 64          | 361        | 388      |                         |          |
|         |                                          |                   | L         | 300                      | 250        | 381                     | 331        | 4kw-4P                  | 64.5        | 361        | 388      |                         |          |
|         |                                          |                   | M         | 350                      | 300        | 431                     | 381        | 5.5kw-4P                | 65          | 370        | 396      |                         |          |
|         |                                          |                   | H         | 400                      | 350        | 481                     | 431        | 5.5kw-4P                | 66          | 370        | 396      |                         |          |
| MFC18S  | 18000                                    | 2/1               | U         | 250                      | 200        | 339                     | 289        | 5.5kw-4P                | 65          | 411        | 447      | 30                      | 46       |
|         |                                          |                   | V         | 300                      | 250        | 389                     | 339        | 5.5kw-4P                | 66          | 411        | 447      |                         |          |
|         |                                          |                   | L         | 350                      | 300        | 439                     | 389        | 5.5kw-4P                | 66.5        | 411        | 447      |                         |          |
|         |                                          |                   | M         | 400                      | 350        | 489                     | 439        | 5.5kw-4P                | 67          | 411        | 447      |                         |          |
|         |                                          |                   | H         | 450                      | 400        | 539                     | 489        | 7.5kw-4P                | 67.5        | 426        | 462      |                         |          |
| MFC20S  | 20000                                    | 2/1               | U         | 250                      | 200        | 359                     | 309        | 5.5kw-4P                | 67          | 434        | 474      | 34                      | 51       |
|         |                                          |                   | V         | 300                      | 250        | 409                     | 359        | 5.5kw-4P                | 67.5        | 434        | 474      |                         |          |
|         |                                          |                   | L         | 350                      | 300        | 459                     | 409        | 7.5kw-4P                | 68          | 449        | 489      |                         |          |
|         |                                          |                   | M         | 400                      | 350        | 509                     | 459        | 7.5kw-4P                | 68.5        | 449        | 489      |                         |          |
|         |                                          |                   | H         | 450                      | 400        | 559                     | 509        | 7.5kw-4P                | 69          | 449        | 489      |                         |          |

Note: Exterior static pressure will decrease 25 Pa, while 1-row heating coils are added into the unit;  
Exterior static pressure will decrease 50 Pa, while 2-row heating coils are added into the unit.

### Cooling /heating Coils Performance Data

#### 4-row coils performance data in air return condition

| Model   | Nominal airflow (m <sup>3</sup> /h) | Cooling capacity (kW) | Water flow rate (L/M) | Water resistance (kPa) | Heating capacity (kW) | Water flow rate (L/M) | Water resistance (kPa) |
|---------|-------------------------------------|-----------------------|-----------------------|------------------------|-----------------------|-----------------------|------------------------|
| MFC1.5S | 1500                                | 7.8                   | 22.3                  | 5                      | 16.8                  | 23.6                  | 6                      |
| MFC02S  | 2000                                | 11.0                  | 31.5                  | 11                     | 22.1                  | 31.7                  | 11                     |
| MFC2.5S | 2500                                | 14.3                  | 41.1                  | 18                     | 27.9                  | 39.9                  | 18                     |
| MFC03S  | 3000                                | 17.2                  | 49.4                  | 20                     | 33.4                  | 47.9                  | 19                     |
| MFC04S  | 4000                                | 23.9                  | 68.5                  | 30                     | 45.0                  | 64.5                  | 28                     |
| MFC05S  | 5000                                | 26.9                  | 77.3                  | 14                     | 55.1                  | 79.0                  | 12                     |
| MFC06S  | 6000                                | 33.1                  | 95.0                  | 17                     | 66.5                  | 95.3                  | 15                     |
| MFC08S  | 8000                                | 44.8                  | 128.5                 | 22                     | 88.9                  | 127.4                 | 20                     |
| MFC10S  | 10000                               | 57.8                  | 165.8                 | 28                     | 111.4                 | 159.7                 | 27                     |
| MFC12S  | 12000                               | 67.5                  | 193.7                 | 32                     | 134.4                 | 192.6                 | 31                     |
| MFC15S  | 15000                               | 84.5                  | 242.5                 | 35                     | 167.5                 | 240.1                 | 34                     |
| MFC18S  | 18000                               | 100.9                 | 289.5                 | 28                     | 195.0                 | 279.5                 | 27                     |
| MFC20S  | 20000                               | 113.8                 | 326.5                 | 30                     | 216.7                 | 310.6                 | 29                     |

Note:

Rated cooling capacities are based on following conditions : Return air: EDB 27°C/EWB 19.5°C ; Cooling water: EWT 7°C/LWT 12°C ;

Rated heating capacities are based on following conditions : Return air: EDB 15°C ; Heating water: EWT 60°C/LWT 50°C .

#### 6-row coils performance data in air return condition

| Model    | Nominal airflow (m <sup>3</sup> /h) | Cooling capacity (kW) | Water flow rate (L/M) | Water resistance (kPa) | Heating capacity (kW) | Water flow rate (L/M) | Water resistance (kPa) |
|----------|-------------------------------------|-----------------------|-----------------------|------------------------|-----------------------|-----------------------|------------------------|
| MFC1.5XS | 1500                                | 10.5                  | 30.2                  | 11                     | 19.3                  | 27.6                  | 8                      |
| MFC02XS  | 2000                                | 12.9                  | 37.0                  | 5                      | 25.4                  | 36.4                  | 4                      |
| MFC2.5XS | 2500                                | 17.3                  | 49.5                  | 8                      | 32.0                  | 45.8                  | 7                      |
| MFC03XS  | 3000                                | 20.4                  | 58.6                  | 9                      | 38.4                  | 55.0                  | 8                      |
| MFC04XS  | 4000                                | 28.4                  | 81.5                  | 14                     | 51.5                  | 73.8                  | 11                     |
| MFC05XS  | 5000                                | 35.8                  | 102.8                 | 35                     | 64.2                  | 92.1                  | 18                     |
| MFC06XS  | 6000                                | 41.2                  | 118.1                 | 13                     | 76.8                  | 110.1                 | 12                     |
| MFC08XS  | 8000                                | 55.7                  | 159.9                 | 19                     | 102.6                 | 147.1                 | 18                     |
| MFC10XS  | 10000                               | 71.7                  | 205.7                 | 27                     | 128.5                 | 184.3                 | 26                     |
| MFC12XS  | 12000                               | 83.9                  | 240.8                 | 31                     | 154.7                 | 221.7                 | 29                     |
| MFC15XS  | 15000                               | 105.1                 | 301.6                 | 38                     | 193.2                 | 277.0                 | 35                     |
| MFC18XS  | 18000                               | 125.4                 | 359.8                 | 29                     | 224.9                 | 322.4                 | 27                     |
| MFC20XS  | 20000                               | 141.2                 | 405.1                 | 32                     | 249.9                 | 358.2                 | 30                     |

Note:

Rated cooling capacities are based on following conditions : Return air: EDB 27°C/EWB 19.5°C ; Cooling water: EWT 7°C/LWT 12°C ;

Rated heating capacities are based on following conditions : Return air: EDB 15°C ; Heating water: EWT 60°C/LWT 50°C .

# Ceiling Packaged Air Handling Unit

## 4-row coils performance data in fresh Air condition

| Model   | Nominal airflow (m³/h) | Cooling capacity (kW) | Water flow rate (L/M) | Water resistance (kPa) | Heating capacity (kW) | Water flow rate (L/M) | Water resistance (kPa) |
|---------|------------------------|-----------------------|-----------------------|------------------------|-----------------------|-----------------------|------------------------|
| MFC1.5S | 1500                   | 19.0                  | 54.4                  | 19                     | 19.7                  | 28.2                  | 5                      |
| MFC02S  | 2000                   | 26.1                  | 74.9                  | 37                     | 26.4                  | 37.8                  | 14                     |
| MFC2.5S | 2500                   | 33.2                  | 95.2                  | 57                     | 33.1                  | 47.5                  | 23                     |
| MFC03S  | 3000                   | 39.7                  | 113.8                 | 59                     | 39.8                  | 57.1                  | 25                     |
| MFC04S  | 4000                   | 52.7                  | 151.3                 | 67                     | 53.6                  | 76.8                  | 36                     |
| MFC05S  | 5000                   | 64.6                  | 185.3                 | 33                     | 65.8                  | 94.3                  | 16                     |
| MFC06S  | 6000                   | 78.8                  | 226.0                 | 53                     | 79.3                  | 113.7                 | 20                     |
| MFC08S  | 8000                   | 105.8                 | 303.7                 | 56                     | 105.9                 | 151.8                 | 26                     |
| MFC10S  | 10000                  | 131.2                 | 376.5                 | 69                     | 132.7                 | 190.2                 | 33                     |
| MFC12S  | 12000                  | 159.1                 | 456.5                 | 83                     | 161.0                 | 230.7                 | 39                     |
| MFC15S  | 15000                  | 194.7*                | 507.9                 | 79                     | 204.7                 | 293.4                 | 43                     |
| MFC18S  | 18000                  | 231.8*                | 604.7                 | 83                     | 238.2                 | 341.5                 | 44                     |
| MFC20S  | 20000                  | 262.1*                | 683.7                 | 88                     | 264.7                 | 379.4                 | 46                     |

Note:

Rated fresh air cooling capacities are based on following conditions :

1) Fresh air: EDB 35 °C / EWB 28 °C ; Cooling water: EWT 7 °C / LWT 12 °C ;

2) The parameters with "\*" mark mean the water difference is 5.5 °C ;

Rated fresh air heating capacities are based on following conditions : Fresh air: EDB 7 °C ; Heating water: EWT 60 °C / LWT 50 °C .

## 6-row coils performance data in fresh air condition

| Model    | Nominal airflow (m³/h) | Cooling capacity (kW) | Water flow rate (L/M) | Water resistance (kPa) | Heating capacity (kW) | Water flow rate (L/M) | Water resistance (kPa) |
|----------|------------------------|-----------------------|-----------------------|------------------------|-----------------------|-----------------------|------------------------|
| MFC1.5XS | 1500                   | 24.1                  | 69.3                  | 36                     | 22.9                  | 32.8                  | 5                      |
| MFC02XS  | 2000                   | 30.7                  | 88.2                  | 16                     | 30.2                  | 43.3                  | 5                      |
| MFC2.5XS | 2500                   | 39.6                  | 113.8                 | 27                     | 38.0                  | 54.4                  | 9                      |
| MFC03XS  | 3000                   | 47.6                  | 136.5                 | 30                     | 45.6                  | 65.3                  | 10                     |
| MFC04XS  | 4000                   | 65.0                  | 186.5                 | 48                     | 61.1                  | 87.6                  | 15                     |
| MFC05XS  | 5000                   | 81.5                  | 233.8                 | 60                     | 76.2                  | 109.3                 | 23                     |
| MFC06XS  | 6000                   | 95.7                  | 274.6                 | 53                     | 91.2                  | 130.7                 | 16                     |
| MFC08XS  | 8000                   | 128.5                 | 368.9                 | 46                     | 126.0                 | 180.7                 | 24                     |
| MFC10XS  | 10000                  | 163.3                 | 468.4                 | 67                     | 157.8                 | 226.1                 | 30                     |
| MFC12XS  | 12000                  | 192.6                 | 552.5                 | 78                     | 184.5                 | 264.4                 | 34                     |
| MFC15XS  | 15000                  | 240.6                 | 690.4                 | 89                     | 235.0                 | 336.8                 | 40                     |
| MFC18XS  | 18000                  | 288.1                 | 826.7                 | 72                     | 273.5                 | 392.0                 | 31                     |
| MFC20XS  | 20000                  | 324.1                 | 930.0                 | 80                     | 303.9                 | 435.6                 | 35                     |

Note:

Rated fresh air cooling capacities are based on following conditions : Fresh air: EDB 35 °C / EWB 28 °C ; Cooling water: EWT 7 °C / LWT 12 °C ;

Rated fresh air heating capacities are based on following conditions : Fresh air: EDB 7 °C ; Heating water: EWT 60 °C / LWT 50 °C .

## Heating Coils Performance Data

### 1-row coils

| Model   | Nominal<br>airflow rate<br>(m <sup>3</sup> /h) | Air return condition        |                             |                              | Fresh air condition         |                             |                              |
|---------|------------------------------------------------|-----------------------------|-----------------------------|------------------------------|-----------------------------|-----------------------------|------------------------------|
|         |                                                | Heating<br>capacity<br>(kW) | Water flow<br>rate<br>(L/M) | Water<br>resistance<br>(kPa) | Heating<br>capacity<br>(kW) | Water flow<br>rate<br>(L/M) | Water<br>resistance<br>(kPa) |
| MFC1.5S | 1500                                           | 8.4                         | 12.1                        | 2                            | 10.3                        | 14.7                        | 2                            |
| MFC02S  | 2000                                           | 11.5                        | 16.4                        | 3                            | 13.8                        | 19.8                        | 4                            |
| MFC2.5S | 2500                                           | 14.6                        | 20.9                        | 5                            | 17.6                        | 25.2                        | 7                            |
| MFC03S  | 3000                                           | 17.5                        | 25.0                        | 5                            | 21.1                        | 30.2                        | 7                            |
| MFC04S  | 4000                                           | 23.7                        | 34.0                        | 8                            | 28.6                        | 41.0                        | 11                           |
| MFC05S  | 5000                                           | 29.4                        | 42.1                        | 12                           | 35.4                        | 50.7                        | 16                           |
| MFC06S  | 6000                                           | 35.6                        | 51.0                        | 15                           | 42.8                        | 61.3                        | 20                           |
| MFC08S  | 8000                                           | 47.6                        | 68.2                        | 19                           | 57.2                        | 82.0                        | 25                           |
| MFC10S  | 10000                                          | 59.7                        | 85.5                        | 30                           | 71.6                        | 102.7                       | 40                           |
| MFC12S  | 12000                                          | 72.8                        | 104.3                       | 36                           | 87.9                        | 125.9                       | 47                           |
| MFC15S  | 15000                                          | 90.4                        | 129.6                       | 41                           | 111.3                       | 159.6                       | 53                           |
| MFC18S  | 18000                                          | 105.3                       | 150.9                       | 31                           | 129.6                       | 185.7                       | 39                           |
| MFC20S  | 20000                                          | 116.9                       | 167.6                       | 35                           | 144.0                       | 206.4                       | 39                           |

Note:

Parameters of rated air return condition are based on following situation: Return air: EDB 15°C; Heating water: EWT 60°C/LWT 50°C;

Parameters of rated fresh air condition are based on following situation: Fresh air: EDB 7°C; Heating water: EWT 60°C/LWT 50°C;

### 2-row coils

| Model   | Nominal<br>airflow rate<br>(m <sup>3</sup> /h) | Air return condition        |                             |                              | Fresh air condition         |                             |                              |
|---------|------------------------------------------------|-----------------------------|-----------------------------|------------------------------|-----------------------------|-----------------------------|------------------------------|
|         |                                                | Heating<br>capacity<br>(kW) | Water flow<br>rate<br>(L/M) | Water<br>resistance<br>(kPa) | Heating<br>capacity<br>(kW) | Water flow<br>rate<br>(L/M) | Water<br>resistance<br>(kPa) |
| MFC1.5S | 1500                                           | 10.7                        | 15.4                        | 2                            | 13.1                        | 18.7                        | 3                            |
| MFC02S  | 2000                                           | 14.6                        | 20.9                        | 4                            | 17.6                        | 25.2                        | 6                            |
| MFC2.5S | 2500                                           | 18.5                        | 26.5                        | 7                            | 22.3                        | 32.0                        | 9                            |
| MFC03S  | 3000                                           | 22.2                        | 31.9                        | 7                            | 26.8                        | 38.4                        | 10                           |
| MFC04S  | 4000                                           | 30.2                        | 43.3                        | 11                           | 36.4                        | 52.1                        | 15                           |
| MFC05S  | 5000                                           | 37.4                        | 53.6                        | 17                           | 45.0                        | 64.5                        | 22                           |
| MFC06S  | 6000                                           | 45.3                        | 64.9                        | 20                           | 54.4                        | 78.0                        | 27                           |
| MFC08S  | 8000                                           | 60.5                        | 86.7                        | 26                           | 72.8                        | 104.3                       | 34                           |
| MFC10S  | 10000                                          | 75.9                        | 108.8                       | 42                           | 91.2                        | 130.7                       | 55                           |
| MFC12S  | 12000                                          | 92.6                        | 132.8                       | 49                           | 111.8                       | 160.3                       | 60                           |
| MFC15S  | 15000                                          | 115.1                       | 165.0                       | 57                           | 141.7                       | 203.1                       | 72                           |
| MFC18S  | 18000                                          | 134.0                       | 192.0                       | 43                           | 164.9                       | 236.4                       | 60                           |
| MFC20S  | 20000                                          | 148.8                       | 213.3                       | 46                           | 183.2                       | 262.6                       | 63                           |

Note:

Parameters of rated air return condition are based on following situation: Return air: EDB 15°C; Heating water: EWT 60°C/LWT 50°C;

Parameters of rated fresh air condition are based on following situation: Fresh air: EDB 7°C; Heating water: EWT 60°C/LWT 50°C.

# Ceiling Packaged Air Handling Unit

## Wet-film Humidifiers Performance Data

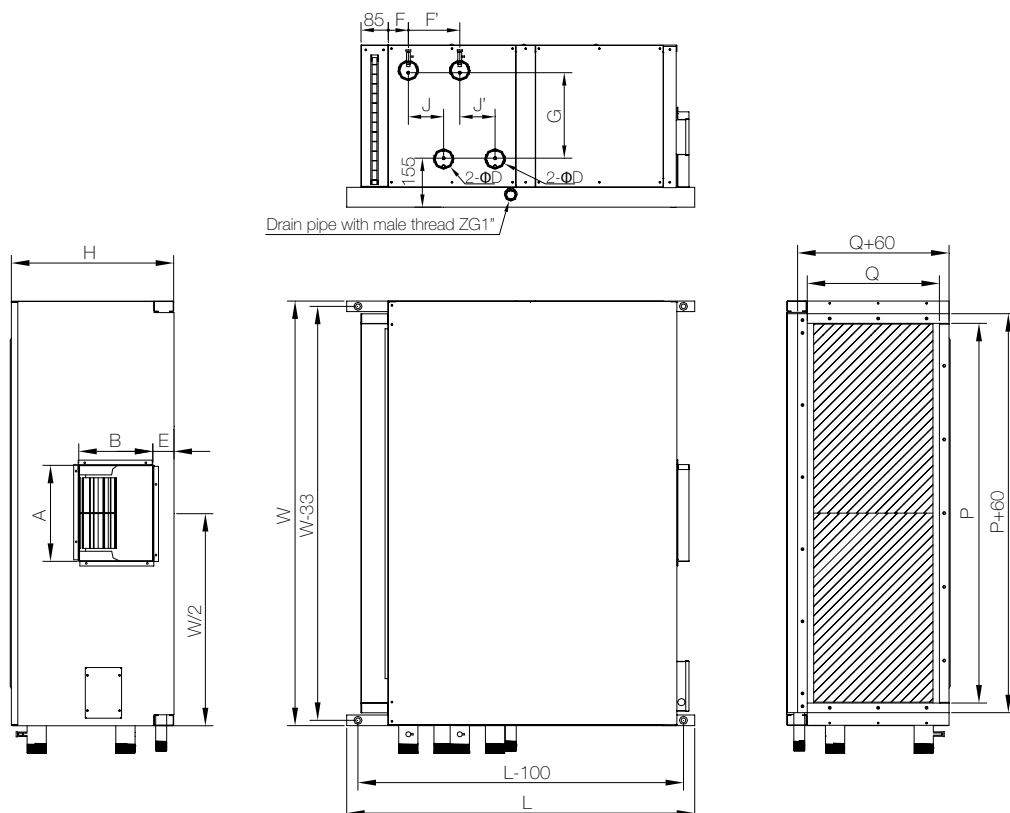
| Model   | Nominal<br>airflow rate<br>(m <sup>3</sup> /h) | Humidification rate in fresh air condition<br>(kg/h) |       |       | Humidification rate in air return condition<br>(kg/h) |       |       |
|---------|------------------------------------------------|------------------------------------------------------|-------|-------|-------------------------------------------------------|-------|-------|
|         |                                                | Wet-film thickness                                   |       |       | Wet-film thickness                                    |       |       |
|         |                                                | 50mm                                                 | 100mm | 150mm | 50mm                                                  | 100mm | 150mm |
| MFC1.5S | 1500                                           | 3.2                                                  | 6.1   | 7.8   | 2.8                                                   | 4.7   | 6.4   |
| MFC02S  | 2000                                           | 4.2                                                  | 8.2   | 10.4  | 3.7                                                   | 6.3   | 8.5   |
| MFC2.5S | 2500                                           | 5.3                                                  | 10.2  | 13.0  | 4.6                                                   | 7.9   | 10.7  |
| MFC03S  | 3000                                           | 6.4                                                  | 12.2  | 15.6  | 5.6                                                   | 9.4   | 12.8  |
| MFC04S  | 4000                                           | 8.5                                                  | 16.3  | 20.8  | 7.4                                                   | 12.6  | 17.1  |
| MFC05S  | 5000                                           | 10.6                                                 | 20.4  | 25.9  | 9.3                                                   | 15.7  | 21.3  |
| MFC06S  | 6000                                           | 12.7                                                 | 24.5  | 31.1  | 11.1                                                  | 18.8  | 25.6  |
| MFC08S  | 8000                                           | 17.0                                                 | 32.6  | 41.5  | 14.8                                                  | 25.1  | 34.1  |
| MFC10S  | 10000                                          | 21.2                                                 | 40.8  | 51.9  | 18.5                                                  | 31.4  | 42.7  |
| MFC12S  | 12000                                          | 25.5                                                 | 48.9  | 62.3  | 22.2                                                  | 37.7  | 51.2  |
| MFC15S  | 15000                                          | 31.8                                                 | 61.1  | 77.8  | 27.8                                                  | 47.1  | 64.0  |
| MFC18S  | 18000                                          | 38.2                                                 | 73.4  | 93.4  | 33.4                                                  | 56.5  | 76.8  |
| MFC20S  | 20000                                          | 42.4                                                 | 81.5  | 103.8 | 37.1                                                  | 62.8  | 85.3  |

Note:

- 1.The thickness of wet-film humidifier shall consist of 4 types: 50mm, 100mm, 150mm and 200mm. And their humidification efficiencies are 40%, 60%, 75% and 85% separately;
- 2.Parameters of humidification in the fresh air condition are based on: EDB28 °C and RH10%;
- 3.Parameters of humidification in the air return condition are based on: EDB28 °C and RH25%;
- 4.The air resistances of wet-film humidifier:50mm:23Pa; 100mm:38Pa; 150mm:57Pa.

## Dimension Data

1.5(X)S, 02(X)S, 2.5(X)S, 03(X)S



mm

| Model      | L    | W    | H   | Airflow outlet connection size |                      |                     |                      |                     |                      | Airflow inlet connection size |     |
|------------|------|------|-----|--------------------------------|----------------------|---------------------|----------------------|---------------------|----------------------|-------------------------------|-----|
|            |      |      |     | A                              |                      | B                   |                      | E                   |                      | P                             | Q   |
|            |      |      |     | Low static pressure            | High static pressure | Low static pressure | High static pressure | Low static pressure | High static pressure |                               |     |
| MFC1.5(X)S | 1035 | 785  | 416 | 234                            |                      | 264                 |                      | 75                  | 75                   | 645                           | 322 |
| MFC02(X)S  | 1035 | 945  | 426 | 300                            |                      | 264                 |                      | 75                  | 75                   | 805                           | 332 |
| MFC2.5(X)S | 1035 | 1125 | 426 | 300                            |                      | 264                 |                      | 75                  | 75                   | 985                           | 332 |
| MFC03(X)S  | 1085 | 1145 | 508 | 302                            |                      | 222                 |                      | 80                  | 80                   | 1005                          | 415 |

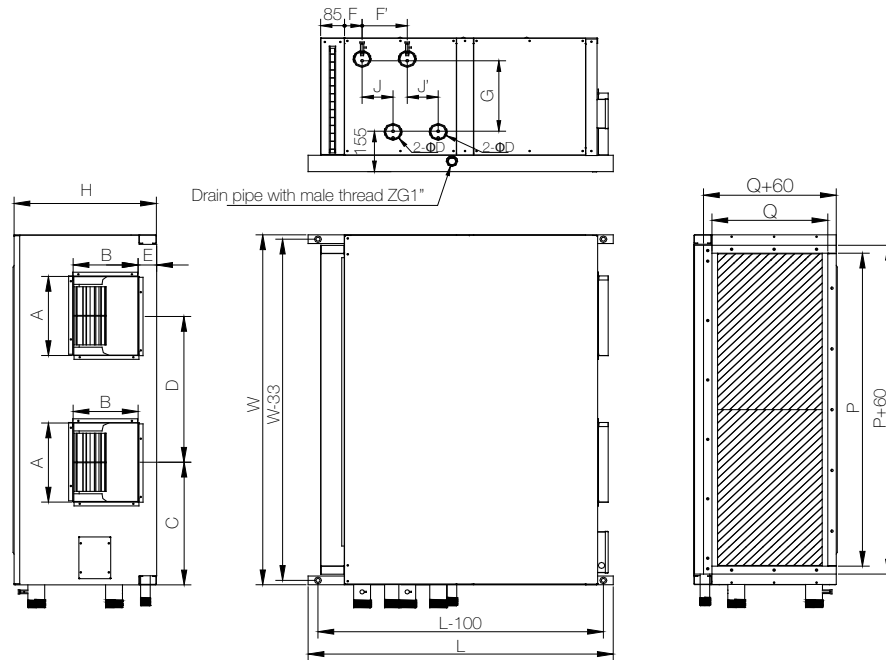
mm

| Model      | Pipe connection size         |     |                              |     |    |      |         |         |     |    |     |
|------------|------------------------------|-----|------------------------------|-----|----|------|---------|---------|-----|----|-----|
|            | Inlet/outlet<br>pipe size ΦD |     | Inlet/outlet<br>pipe size Φd |     | F  |      | F'      |         | G   | J  |     |
|            | 4R                           | 6R  | 1R                           | 2R  | 4R | 6R   | 4+1(2)R | 6+1(2)R |     | 4R | 6R  |
| MFC1.5(X)S | Φ34                          | Φ34 | Φ34                          | Φ34 | 78 | 85.5 | 146     | 198     | 175 | 66 | 110 |
| MFC02(X)S  | Φ34                          | Φ48 | Φ34                          | Φ34 | 78 | 85.5 | 146     | 198     | 175 | 66 | 110 |
| MFC2.5(X)S | Φ48                          | Φ48 | Φ34                          | Φ34 | 78 | 85.5 | 146     | 198     | 175 | 66 | 110 |
| MFC03(X)S  | Φ48                          | Φ48 | Φ34                          | Φ34 | 78 | 85.5 | 146     | 198     | 226 | 66 | 110 |

# Ceiling Packaged Air Handling Unit

## Dimension Data

04(X)S,05(X)S,06(X)S,08(X)S,10(X)S,12(X)S,15(X)S,18(X)S,20(X)S



mm

| Model     | L    | W    | H    | Airflow outlet connection size |                      |                     |                      |      |     |     | Airflow inlet connection size |     |
|-----------|------|------|------|--------------------------------|----------------------|---------------------|----------------------|------|-----|-----|-------------------------------|-----|
|           |      |      |      | A                              |                      | B                   |                      | C    | D   | E   | P                             | Q   |
|           |      |      |      | Low static pressure            | High static pressure | Low static pressure | High static pressure |      |     |     |                               |     |
| MFC04(X)S | 1085 | 1325 | 508  | 302                            | 302                  | 224                 | 236                  | 467  | 550 | 75  | 1185                          | 415 |
| MFC05(X)S | 1085 | 1525 | 508  | 302                            | 302                  | 224                 | 236                  | 567  | 560 | 75  | 1385                          | 415 |
| MFC06(X)S | 1123 | 1635 | 558  | 302                            | 302                  | 224                 | 236                  | 517  | 600 | 75  | 1495                          | 465 |
| MFC08(X)S | 1218 | 1755 | 660  | 311                            | 311                  | 345                 | 345                  | 790  | 553 | 105 | 1615                          | 566 |
| MFC10(X)S | 1218 | 2125 | 660  | 397                            | 397                  | 345                 | 345                  | 851  | 719 | 105 | 1985                          | 566 |
| MFC12(X)S | 1270 | 2225 | 736  | 375                            | 375                  | 406                 | 406                  | 668  | 914 | 105 | 2085                          | 642 |
| MFC15(X)S | 1310 | 2378 | 812  | 447                            | 447                  | 406                 | 406                  | 1010 | 739 | 105 | 2238                          | 718 |
| MFC18(X)S | 1379 | 2378 | 927  | 432                            | 432                  | 480                 | 480                  | 983  | 773 | 110 | 2238                          | 833 |
| MFC20(X)S | 1379 | 2378 | 1054 | 432                            | 432                  | 480                 | 480                  | 983  | 773 | 110 | 2238                          | 960 |

mm

| Model     | Pipe connection size         |     |                              |     |    |      |         |         |     |      |     |
|-----------|------------------------------|-----|------------------------------|-----|----|------|---------|---------|-----|------|-----|
|           | Inlet/outlet<br>pipe size ΦD |     | Inlet/outlet<br>pipe size Φd |     | F  |      | F'      |         | G   | J    |     |
|           | 4R                           | 6R  | 1R                           | 2R  | 4R | 6R   | 4+1(2)R | 6+1(2)R |     | 4R   | 6R  |
| MFC04(X)S | Φ48                          | Φ48 | Φ48                          | Φ48 | 78 | 85.5 | 146     | 198     | 276 | 66   | 110 |
| MFC05(X)S | Φ48                          | Φ60 | Φ48                          | Φ48 | 78 | 85.5 | 146     | 198     | 276 | 66   | 110 |
| MFC06(X)S | Φ48                          | Φ60 | Φ48                          | Φ48 | 78 | 85.5 | 146     | 198     | 327 | 66   | 110 |
| MFC08(X)S | Φ48                          | Φ60 | Φ48                          | Φ48 | 78 | 85.5 | 146     | 198     | 429 | 66   | 110 |
| MFC10(X)S | Φ60                          | Φ76 | Φ48                          | Φ48 | 78 | 85.5 | 146     | 198     | 429 | 66   | 110 |
| MFC12(X)S | Φ60                          | Φ76 | Φ48                          | Φ48 | 78 | 85.5 | 146     | 198     | 480 | 66   | 110 |
| MFC15(X)S | Φ60                          | Φ76 | Φ48                          | Φ48 | 78 | 85.5 | 146     | 198     | 581 | 66   | 110 |
| MFC18(X)S | Φ60                          | Φ89 | Φ48                          | Φ48 | 78 | 84.5 | 162     | 224     | 696 | 82.5 | 138 |
| MFC20(X)S | Φ60                          | Φ89 | Φ48                          | Φ48 | 78 | 84.5 | 162     | 224     | 823 | 82.5 | 138 |

## Control Options

### Option A: Single-speed Control System (Starting Cabinet + Supply Air Temperature Sensor + Wireless LCD Thermostat)



#### System Features:

- Compact and delicate starting cabinet to install on the side or front of the unit
- Cascade control of return air and supply air temperature with accurate temperature adjustment and energy conservation
- Valve on-off or analog control
- Thermal, current protection and thermoswitch, PTC, NTC interface available
- Wireless control, LCD touch screen, easy installation and maintenance
- Reserved access of electric heating, sterilization lamp and wet film
- Fault self-diagnosis

### Option B: 3-speed Control System (Inverter Cabinet + Supply Air Temperature Sensor + Wireless LCD Thermostat)



#### System Features:

- Compact and delicate starting cabinet to install on the side or front of the unit
- 3-speed adjustment, suitable for system resistance change, noise reduction and water-proof
- Cascade control of return air and supply air temperature with accurate temperature adjustment and energy conservation
- Valve on-off or analog control
- Thermal, current protection and thermoswitch, PTC, NTC interface available
- Wireless control, LCD touch screen, easy installation and maintenance
- Reserved access of electric heating, sterilization lamp and wet film
- Fault self-diagnosis

#### Note:

1. You can consult with CLIMAVENETA local office for the demand of remote central control system.
2. Before installation and operation of the unit, please refer to the unit attached manual "Installation, Operation and Maintenance Instructions".



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