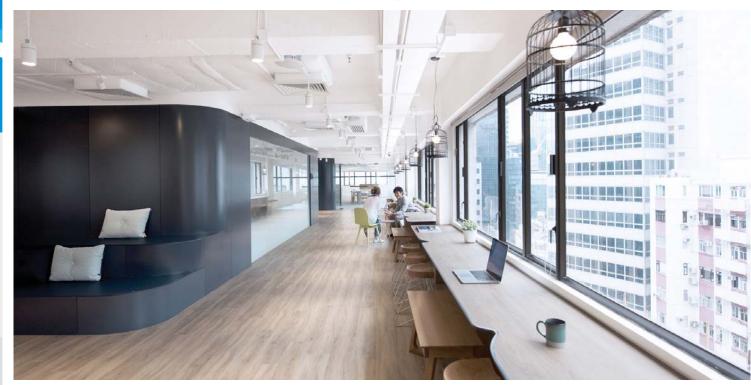


# COMMERCIAL AIR CONDITIONERS 2022

SPLIT COMMERCIAL AIR CONDITIONER R410A 50Hz

# General Features for Normal Conventional Split A/C Series



# Convenient for unit selection

## General

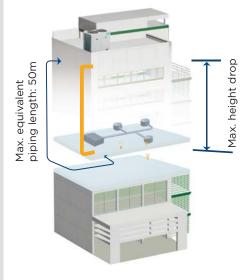
Features for Normal Conventional Split A/C Series

# Wide cooling capacity range

❖ Wide cooling capacity range. The duct type split A/C is from 76,000Btu/hr to 192,000Btu/hr.

# Long piping length

♦ Max. equivalent piping length is 50m. The outdoor unit can be installed at any ventilation locations. (Unavailable for AHU type)



|                                    |                   | Permitted value |
|------------------------------------|-------------------|-----------------|
| Max. Equivalent piping I           | 50 m              |                 |
| Max. height drop                   | Outdoor unit up   | 25 m            |
| between indoor<br>and outdoor unit | Outdoor unit down | 30 m            |

# Outstanding reliability

### **Durable construction**

- Pre-painted exterior cabinet panels passed 1000 hours Salt Spray Test for durability.
- ❖ Weather-resistant construction with capped steams and sloped top panels.
- ❖ G90 galvanized heavy gauge plate conforming to ASTM-A-653.





### Anti-corrosion treatment as optional

The large split air conditioners with special anti-corrosion treatment are suitable for seaside areas or the areas expose to acidic substances.



- Special anti-corrosion treatment of heat exchanger provides 5 to 6 times greater resistance against acid rain and salt corrosion.
- All PCB parts in the unit are coated with double-sided moisture proof paint. The outer side of electric box metal cover is spray-painted.
- All screws are anti-rust.
- Casings of the unit and motors are anti-rust.

### Reliable scroll compressor

- Famous brand compressor: Hitachi, Danfoss, etc. for more reliability.
- No complex internal suction and discharge valves for quieter operation and higher reliability.
- \* Compact, light-weight design, and fewer moving parts design.





# Multi-protection design

Multi-measurement to ensure units operate normally and reliably:

System current protection, High/low pressure switch protection, Temperature sensor on/off protection, etc.

\* Three-phase protector is optional.







Temperature sensor

# Easy for installation

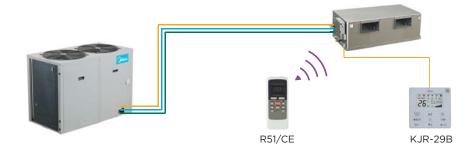
- · Units are completely assembled, internally wired, charged outdoor unit with refrigerant at the factory.
- The site work only needs to connect refrigerant pipes and communication wires between outdoor unit and indoor unit.



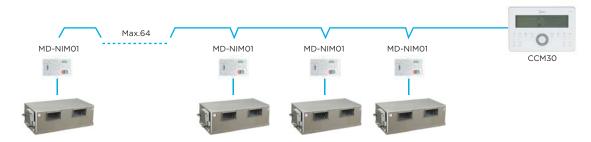
# Flexible choice of accessories

## Controllers

- ❖ Wireless remote controller is available for conventional split A/C series.
- ❖ Wired controller can be directly connected to indoor units.



Centralized control function can be achieved through the centralized controller as optional. MD-NIM01 should be connected between the indoor units and centralized controller.



 ${\it Notes: The new DC inverter series don't need the MD-NIMO1, connect to outdoor unit directly} \ .$ 

## Multi-accessories

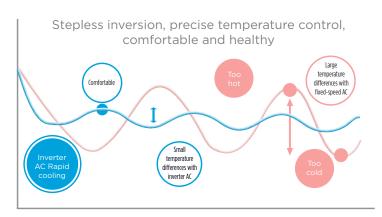
| Description                | Du       | ıct      | Ceiling Cassette |          | Floor Standing |          |
|----------------------------|----------|----------|------------------|----------|----------------|----------|
| Description                | Standard | Optional | Standard         | Optional | Standard       | Optional |
| Filter                     | √        |          | √                |          | √              |          |
| Outlet drainage            | V        |          | √                |          | √              |          |
| EHK (Electric Heater Kits) |          | √        |                  | V        |                | √        |
| Three-phase protector      |          | √        |                  | V        |                | √        |
| Wireless controller        |          | √        | √                |          | √              |          |
| Wired controller           | √        |          |                  | √        |                | √        |
| Centralized controller     |          | √        |                  | √        |                | √        |

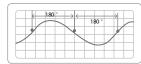
# General Features for Normal Conventional Split A/C Series

# **Outdoor Unit**

# DC inverter technology, precise temperature control

The DC inverter compressor system reaches full load rapidly providing less temperature fluctuation and improved living environment.





### DC inverter technology New generation 180° sine wave drive technology, higher energy efficiency



Compressor seamless inverted main board
Wider inverter range control.



High-precision EXVs
Each EXV part achieves 480
pulse rate to precisely adjust refrigerant flow.



**High-precision temperature sensor** It can react to temperature fluctuations with a precision of 0.5°C.

## Refrigerant cooling PCB

The outdoor unit uses refrigerant cooling technology to cool the electric control box guaranteeing the stable and safe running control system.

It improves the high temperature cooling capabilities, resulting in a system that can provide powerful cooling in 55°C environment with increased high temperature cooling efficiency of 15-20%, rapidly cools in high temperature environments, with a temperature drop rate that is 5-10% faster than conventional split A/C.



\* The above data was cited from a nationally accredited laboratory.



Liquid cooling is more efficient, allowing it to function in high temperature environments and making it more adaptable to high-temperature urban environments.

# Branded components, smart manufacturing, professionalism, and premium quality

Combines a variety of multi-core components such as branded DC inverter compressors, high efficiency heat exchanger, and a high functionality motor. This ensures that the system is high quality, energy-saving, quiet, and durable.



Compressor of renowned brand Utilizes branded high-efficiency DC inverter compressor for powerful operation that is more energy efficient and stable.



Efficient Heat Exchanger
Features an overlapping multipleoutlet route design, distributing the
flow of air more evenly, delivering
higher heat transfer and increased
efficiency.



High functionality motor Utilizes new manufacturing technology and materials to effectively mitigate wear and tear and improve operating efficiency.



Quiet fan blades
The structure of this unit's fan
blades has been optimized
using CFD technology, reducing
the electric motor's energy
consumption and operating noise.

# Silence technology ensures a quiet operating environment

To implement quieter running of IDU and ODU, we used advanced technologies such as CFD and FEM, researching the sources of component vibration in air conditioning systems and optimizing the fan's blades, resulting in an air conditioning unit that creates a more comfortable and harmonious work environment for customers





- Newly-designed air guide ring
- Newly-designed air outlet grille
- Motor mount features a vibration-reduction design



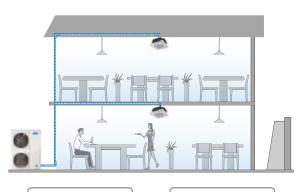
- New-generation DC inverter compressor with high performance and low noise Compressor soundproof enclosure processing
- Vibration-reduction design of 3D simulation pipe



- Large vibration-reduction axial fan
- Refrigerant flow muffling Vibration-reduction outer casing for outdoor unit

# A long-pipe high-drop design allows flexible installation and optimizes space

A long-pipe high-drop design allows users to flexibly select the installation location, optimizing the use of space.



Maximum pipe length 70m

Maximum level difference between IDU and ODU

# Creates a small footprint, saving installation space

The outdoor unit has a small footprint with only 0.333m2 for a 8/10HP cooling only unit, which can significantly save installation space.





# Matchable Table

# One drive one system

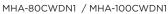


# One drive two system



# DC Inverter Duct







MOUC-80CDN1-R / MOUC-100CDN1-R













| Indoor Unit Model                     |                 |                              | MHA-80CWDN1             | MHA-100CWDN1            |
|---------------------------------------|-----------------|------------------------------|-------------------------|-------------------------|
| Indoor Unit Power Supp                | ly              |                              | 220-240V/1Ph/50Hz       | 220-240V/1Ph/50Hz       |
|                                       | Compoitu        | Btu/hr                       | 80,000                  | 100,000                 |
|                                       | Capacity        | kW                           | 23.50                   | 29.31                   |
| Cooling                               | Input           | kW                           | 11.5                    | 14.4                    |
|                                       |                 | W/W                          | 2.04                    | 2.04                    |
|                                       | EER             | Btu/hr/W                     | 6.96                    | 6.94                    |
| Max. Power Input W                    |                 |                              | 1,200                   | 1,200                   |
| Max. Current A                        |                 | Α                            | 5.46                    | 5.46                    |
| Air Flow                              |                 | CMH (CFM)                    | 4,600 (2,700)           | 4,600 (2,700)           |
| Standard External Statio              | Pressure        | Pa                           | 150 (50-196)            | 150 (50-196)            |
| Noise Level                           |                 | dB(A)                        | 55/53/51                | 55/53/51                |
|                                       | Туре            |                              | Centrifugal             | Centrifugal             |
| Fan                                   | Drive Type      |                              | Direct                  | Direct                  |
| Coil                                  |                 |                              | Copper tube ar          | nd aluminum fin         |
| Controller                            |                 |                              | Wired controller        | Wired controller        |
|                                       | Net (WxHxD)     | mm                           | 1,462×462×797           | 1,462x462x797           |
| Dimension                             | Packing (WxHxD) | mm                           | 1,555x500x875           | 1,555x500x875           |
| Net/Gross Weight                      |                 | kg                           | 90/99                   | 90/99                   |
| Outdoor Unit Model/Qu                 | antity          |                              | MOUC-80CDN1-R/1         | MOUC-100CDN1-R/1        |
| Outdoor Unit Power Sup                | pply            |                              | 380-415V/3Ph/50Hz       | 380-415V/3Ph/50Hz       |
| Max. Power Input                      |                 | kW                           | 14.0                    | 14.0                    |
| Max. Current                          |                 | Α                            | 32.0                    | 32.0                    |
| Air Flow Rate                         |                 | CMH (CFM)                    | 7,150 (4,200)           | 7,150 (4,200)           |
| Noise Level                           |                 | dB(A)                        | 62                      | 62                      |
|                                       | Туре            |                              | Rotary                  | Rotary                  |
| Compressor                            | Quantity        |                              | 1                       | 1                       |
|                                       | Туре            |                              | R410A                   | R410A                   |
| Refrigerant                           | Quantity        | Kg                           | 3.9                     | 3.9                     |
| Fan Type / Drive Type                 |                 |                              | Axial fan/Direct        | Axial fan/Direct        |
| ** *                                  |                 | Copper tube and aluminum fin |                         |                         |
| Coil                                  |                 |                              |                         |                         |
|                                       | Liquid          | mm                           | Ф9.53                   | Ф9.53                   |
| Coil<br>Refrigerant Pipe              | Liquid<br>Gas   | mm<br>mm                     |                         |                         |
| Refrigerant Pipe                      | _               |                              | Ф9.53                   | Ф9.53                   |
| Refrigerant Pipe  Ambient temperature | Gas             | mm                           | Ф9.53                   | Ф9.53<br>Ф22.2          |
|                                       | Gas<br>Cooling  | mm<br>°C                     | Φ9.53<br>Φ22.2<br>10-55 | Ф9.53<br>Ф22.2<br>10-55 |

Notes:
1. Cooling capacity test condition: Outdoor ambient temperature: 35°C, indoor temperature 27°C DB / 19°C WB; refrigerant pipe length between indoor unit and outdoor unit is 7.5m.
2. Specifications are subject to change without prior notice for product improvement.

# DC Inverter Floor Standing







MOUC-80CDN1-R / MOUC-100CDN1-R









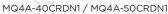


| Indoor Unit Model                     |                 |               | MFA-80CRDN1       | MFA-100CRDN1      |  |
|---------------------------------------|-----------------|---------------|-------------------|-------------------|--|
| Indoor Unit Power Suppl               | у               |               | 220-240V/1Ph/50Hz | 220-240V/1Ph/50Hz |  |
|                                       | Compatible.     | Btu/hr        | 80,000            | 100,000           |  |
|                                       | Capacity        | kW            | 23.50             | 29.50             |  |
| Cooling                               | Input           | kW            | 11.0              | 13.9              |  |
|                                       |                 | W/W           | 2.14              | 2.12              |  |
|                                       | EER             | Btu/hr/W      | 7.27              | 7.19              |  |
| Max. Power Input                      |                 | w             | 600               | 600               |  |
| Max. Current                          |                 | <b>A</b> 2.73 |                   | 2.73              |  |
| Air Flow                              |                 | CMH (CFM)     | 4,500 (2,650)     | 4,500 (2,650)     |  |
| Noise Level                           |                 | dB(A)         | 60/58/56          | 60/58/56          |  |
| _                                     | Туре            |               | Centrifugal       | Centrifugal       |  |
| Fan                                   | Drive type      |               | Direct            | Direct            |  |
| Coil                                  |                 |               | Copper tube ar    | nd aluminum fin   |  |
| Controller                            |                 |               | Remote controller | Remote controller |  |
|                                       | Net (WxHxD)     | mm            | 1,200x1,860x518   | 1,200x1,860x518   |  |
| Dimension                             | Packing (WxHxD) | mm            | 1,362x2,050x582   | 1,362x2,050x582   |  |
| Net/Gross Weight                      |                 | kg            | 140/155           | 140/155           |  |
| Outdoor Unit Model/Qua                | antity          |               | MOUC-80CDN1-R/1   | MOUC-100CDN1-R/1  |  |
| Outdoor Unit Power Sup                | ply             |               | 380-415V/3Ph/50Hz | 380-415V/3Ph/50Hz |  |
| Max. Power Input                      |                 | kW            | 14.0              | 14.0              |  |
| Max. Current                          |                 | Α             | 32.0              | 32.0              |  |
| Air Flow Rate                         |                 | CMH (CFM)     | 7,150 (4,200)     | 7,150 (4,200)     |  |
| Noise Level                           |                 | dB(A)         | 62                | 62                |  |
|                                       | Туре            |               | Rotary            | Rotary            |  |
| Compressor                            | Quantity        |               | 1                 | 1                 |  |
|                                       | Туре            |               | R410A             | R410A             |  |
| Refrigerant                           | Quantity        | kg            | 3.9               | 3.9               |  |
| Fan Type/Drive Type                   |                 |               | Axial fan/Direct  | Axial fan/Direct  |  |
|                                       |                 |               | Copper tube ar    | nd aluminum fin   |  |
| Coil                                  |                 |               | Ф9.53             | Φ9.53             |  |
|                                       | Liquid          | mm            |                   |                   |  |
|                                       | Liquid<br>Gas   | mm            | Ф22.2             | Ф22.2             |  |
| Refrigerant Pipe  Ambient Temperature |                 |               | Ф22.2<br>10-55    | Φ22.2<br>10-55    |  |
| Refrigerant Pipe  Ambient Temperature | Gas             | mm            |                   |                   |  |
| Refrigerant Pipe                      | Gas<br>Cooling  | mm<br>°C      | 10-55             | 10-55             |  |

Notes:
1. Cooling capacity test condition: Outdoor ambient temperature: 35°C, indoor temperature 27°C DB / 19°C WB; refrigerant pipe length between indoor unit and outdoor unit is 7.5m.
2. Specifications are subject to change without prior notice for product improvement.

# DC Inverter Four-way Cassette







MOUC-80CDN1-R / MOUC-100CDN1-R











| Indoor Unit Model/Quant   | ity             |           | MQ4A-40CRDN1/2                        | MQ4A-50CRDN1/2                        |
|---------------------------|-----------------|-----------|---------------------------------------|---------------------------------------|
| Panel/Quantity            |                 |           | T-MBQ-02C1/2                          | T-MBQ-02C1/2                          |
| Branch Joint/Quantity     |                 |           | FQZHN-02D/1                           | FQZHN-02D/1                           |
| Indoor Unit Power Supply  | У               |           | 220-240V/1Ph/50Hz                     | 220-240V/1Ph/50Hz                     |
|                           | Capacity        | Btu/hr    | 80,000                                | 100,000                               |
|                           | Capacity        | kW        | 23.5                                  | 29.31                                 |
| Cooling                   | Input           | kW        | 10.5                                  | 12.6                                  |
|                           | EER             | W/W       | 2.24                                  | 2.33                                  |
|                           | LER             | Btu/hr/W  | 7.62                                  | 7.94                                  |
| Max. Power Input          |                 | W         | 190                                   | 190                                   |
| Max. Current              |                 | A         | 1.01                                  | 1.01                                  |
| Air Flow                  |                 | CMH (CFM) | 1,800 (1,060)                         | 1,800 (1,060)                         |
| Noise Level (Single Unit) |                 | dB(A)     | 41/39/37                              | 41/39/37                              |
| Fan                       | Туре            |           | Centrifugal                           | Centrifugal                           |
| 1 dii                     | Drive type      |           | Direct                                | Direct                                |
| Coil                      |                 |           | Copper tube ar                        | nd aluminum fin                       |
| Controller                |                 |           | Remote controller                     | Remote controller                     |
| Dimension                 | Net (WxHxD)     | mm        | 840x300x840<br>950x950x46 (Panel)     | 840x300x840<br>950x950x46 (Panel)     |
|                           | Packing (WxHxD) | mm        | 955x317x955<br>1,035x1,035x90 (Panel) | 955x317x955<br>1,035x1,035x90 (Panel) |
| Net/Gross weight          |                 | kg        | 30.9/36.3<br>5/8 (Panel)              | 30.9/36.3<br>5/8 (Panel)              |
| Outdoor Unit Model/Qua    | ntity           |           | MOUC-80CDN1-R/1                       | MOUC-100CDN1-R/1                      |
| Outdoor Unit Power Supp   | oly             |           | 380-415V/3Ph/50Hz                     | 380-415V/3Ph/50Hz                     |
| Max. Power Input          |                 | kW        | 14.0                                  | 14.0                                  |
| Max. Current              |                 | Α         | 32.0                                  | 32.0                                  |
| Air Flow Rate             |                 | CMH (CFM) | 7,150 (4,200)                         | 7,150 (4,200)                         |
| Noise Level               |                 | dB(A)     | 62                                    | 62                                    |
|                           | Туре            |           | Rotary                                | Rotary                                |
| Compressor                | Quantity        |           | 1                                     | 1                                     |
|                           | Туре            |           | R410A                                 | R410A                                 |
| Refrigerant               | Quantity        | Kg        | 3.9                                   | 3.9                                   |
| Fan type / Drive type     |                 | 5         | Axial fan/Direct                      | Axial fan/Direct                      |
| Coil                      |                 |           | Copper tube ar                        |                                       |
|                           | Liquid          | mm        | Ф9.53                                 | Φ9.53                                 |
| Refrigerant Pipe          | -               |           | Φ22.2                                 | Ф22.2                                 |
| Ambient Terresenting      | Gas             | mm<br>°C  |                                       |                                       |
| Ambient Temperature       | Cooling         | °C        | 10-55                                 | 10-55                                 |
| Dimension                 | Net (WxHxD)     | mm        | 978x1,327x400                         | 978x1,327x400                         |
|                           | Packing (WxHxD) | mm        | 1,030x1,456x435                       | 1,030x1,456x435                       |
| Net / Gross weight        |                 | kg        | 115/125                               | 115/125                               |

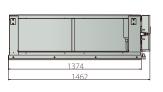
Notes:

1. Cooling capacity test condition: Outdoor ambient temperature: 35°C, indoor temperature 27°C DB / 19°C WB; refrigerant pipe length between indoor unit and outdoor unit is 7.5m.

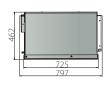
2. Specifications are subject to change without prior notice for product improvement.

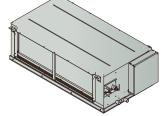
# **Dimensions**

DC Inverter Duct Indoor Unit: MHA-80CWDN1, MHA-100CWDN1 (Units: mm)



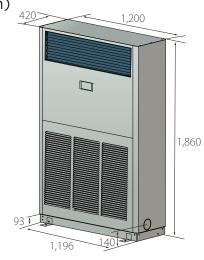


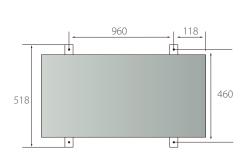




DC Inverter Floor-standing indoor unit: MFA-80CRDN1, MFA-100CRDN1

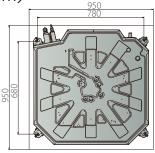
(Units: mm)

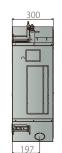


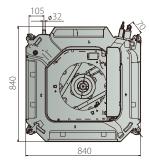


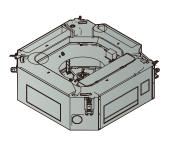
DC inverter four-way cassette unit: MQ4A-40CRDN1, MQ4A-50CRDN1

(Units: mm)

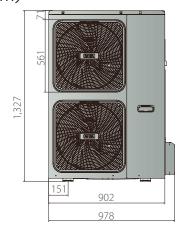


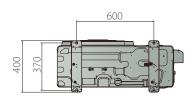






Outdoor unit: MOUC-80CDN1-R, MOUC-100CDN1-R (Units: mm)





# Non Inverter Duct











MTA-76CRN1 MTB1T-96CWN1 MTA-120CRN1

MOV-76CN1-C / MOVTA-96CN1-R

MOV-120CN1-C













| Indoor Unit Model         |                                  |           | MTA-76CRN1                   | MTB1T-96CWN1          | MTA-120CRN1       |  |
|---------------------------|----------------------------------|-----------|------------------------------|-----------------------|-------------------|--|
| Indoor Unit Power Supp    | ply                              |           | 220-240V/1Ph/50Hz            | 220-240V/1Ph/50Hz     | 220-240V/1Ph/50Hz |  |
|                           |                                  | Btu/hr    | 76,000                       | 96,000                | 120,000           |  |
|                           | Capacity                         | kW        | 22.27                        | 28.10                 | 35.17             |  |
| Cooling                   | Input                            | kW        | 7.5                          | 9.6                   | 12.0              |  |
| FED                       |                                  | W/W       | 2.97                         | 2.93                  | 2.93              |  |
|                           | EER                              | Btu/hr/W  | 10.13                        | 10.00                 | 10.00             |  |
| Max. power input W        |                                  | 1,732     | 1,400                        | 2,576                 |                   |  |
| Max. current              |                                  | Α         | 7.5                          | 5.8                   | 11.2              |  |
| Air flow (Hi)             |                                  | CMH (CFM) | 4,250 (2,500)                | 5,100 (3,000)         | 6,375 (3,750)     |  |
| Standard External Stati   | c Pressure                       | Pa        | 100 (20~180)                 | 100 (20~200)          | 150 (20~230)      |  |
| Noise level (Hi)          |                                  | dB(A)     | 58                           | 56                    | 63                |  |
| Fan                       | Туре                             |           | Centrifugal                  | Centrifugal           | Centrifugal       |  |
| rdii                      | Drive Type                       |           | Direct                       | Direct                | Direct            |  |
| Coil                      |                                  |           | Copper tube and aluminum fin |                       |                   |  |
| Controller                | Controller                       |           | Wired controller             | Wired controller      | Wired controller  |  |
| Dimonsion                 | Net (WxHxD)                      | mm        | 1,443x450x846                | 1,452x462x797         | 1,988x669x906     |  |
| Dimension Packing (WxHxD) |                                  | mm        | 1,549x476x917                | 1,555x500x875         | 2,095x800x964     |  |
| Net/Gross weight          |                                  | kg        | 105/120                      | 97/109                | 168/196           |  |
| Outdoor Unit Mode / Q     | uantity                          |           | MOV-76CN1-C / 1              | MOVTA-96CN1-R / 1     | MOV-120CN1-C / 1  |  |
| Outdoor Unit Power Su     | pply                             |           | 380-415V/3Ph/50Hz            | 380-415V/3Ph/50Hz     | 380-415V/3Ph/50Hz |  |
| Max. Power Input          |                                  | kW        | 11.2                         | 14.4                  | 15.6              |  |
| Max. Current              |                                  | Α         | 17.5                         | 23.7                  | 25.0              |  |
| Air Flow Rate             |                                  | CMH (CFM) | 12,500 (7,350)               | 12,500 (7,350)        | 13,000 (7,650)    |  |
| Noise Level               |                                  | dB(A)     | 65                           | 68                    | 69                |  |
| Compressor                | Туре                             |           | Scroll                       | Scroll                | Scroll            |  |
| Compressor                | Quantity                         |           | 1                            | 1                     | 1                 |  |
| Refrigerant               | Туре                             |           | R410A                        | R410A                 | R410A             |  |
| Kenigerant                | Quantity                         | kg        | 5.4                          | 6.0                   | 7.2               |  |
| Fan Type/Drive Type       |                                  |           | Axial fan/Direct             | Axial fan/Direct      | Axial fan/Direct  |  |
| Coil                      |                                  |           | Сор                          | per tube and aluminun | n fin             |  |
| Refrigerant Pipe          | Liquid                           | mm        | Ф9.53                        | Φ12.7                 | Ф12.7             |  |
|                           | Gas                              | mm        | Ф22.2                        | Ф25.4*                | Ф28.6             |  |
| Ambient Temperature       | Cooling                          | °C        | 17-52                        | 17-52                 | 17-52             |  |
| Dimension                 | Net (WxHxD)                      | mm        | 1,260x908x700                | 1,312x919x658         | 1,260x908x700     |  |
| iciisioii                 | Packing (WxHxD)                  | mm        | 1,320x1,060x730              | 1,320x1,060x730       | 1,320x1,060x730   |  |
| Net / Gross weight        | <b>kg</b> 171/190 168/183 199/21 |           |                              | 199/215               |                   |  |

Notes:

1. Cooling capacity test condition: Outdoor ambient temperature: 35°C, indoor temperature 27°C DB / 19°C WB; refrigerant pipe length between indoor unit and outdoor unit is 7.5m.

2. Specifications are subject to change without prior notice for product improvement.

"Connection piping diameter of outdoor unit is the stop valve diameter of the outdoor unit. When the length of the refrigerant pipe between indoor and outdoor is not more than 30m, please connect the straight pipe as the accessory in outdoor unit with high pressure st op valve to change the diameter of liquid pipe to Ф9.52. When the length of the refrigerant pipe is more than 30m and less than 50m, please connect the straight pipe (prepared in site) with low pressure stop valve to change the diameter of gas pipe to Ф2.8. 1.

# Non Inverter Duct



MHA-150HWN1 / MHA-192HWN1



MOV-150HN1-R



MOV-192HN1-R











| . * |                |
|-----|----------------|
|     | Independent    |
|     | Dehumidication |

| Indoor Unit Model       |                    |           | MHA-150HWN1                  | MHA-192HWN1                              |  |
|-------------------------|--------------------|-----------|------------------------------|--|--|
| Indoor Unit Power Supp  | ply                |           | 220-240V/1Ph/50Hz            | 220-240V/1Ph/50Hz                        |  |
|                         | Capacity           | Btu/hr    | 151,000                      | 192,000                                  |  |
|                         | Capacity           | kW        | 44.00                        | 56.30                                    |  |
| Cooling                 | Cooling Input  EER |           | 16.3                         | 22.0                                     |  |
|                         |                    |           | 2.70                         | 2.56                                     |  |
|                         |                    |           | 9.26                         | 8.73                                     |  |
|                         | Compolitus         | Btu/hr    | 160,300                      | 200,000                                  |  |
|                         | Capacity           | kW        | 47.0                         | 58.6                                     |  |
| Heating                 | Input              | kW        | 15.7                         | 19.3                                     |  |
|                         | con                | W/W       | 2.99                         | 3.04                                     |  |
|                         | СОР                | Btu/hr/W  | 10.21                        | 10.36                                    |  |
| Max. Power Input        |                    | W         | 2,370                        | 4,690                                    |  |
| Max. Current            |                    | Α         | 12.1                         | 20.9                                     |  |
| Air Flow                |                    | CMH (CFM) | 8,500 (5,000)                | 10,800 (6,350)                           |  |
| Standard External Stati | ic Pressure        | Pa        | 196 (50-280)                 | 196 (50-280)                             |  |
| Noise Level             |                    | dB(A)     | 63                           | 65                                       |  |
| _                       | Туре               |           | Centrifugal                  | Centrifugal                              |  |
| Fan Drive type          |                    |           | Direct                       | Direct                                   |  |
| Coil                    |                    |           | Copper tube and aluminum fin |  |  |
| Controller              |                    |           | Wired controller             | Wired controller                         |  |
|                         | Net (WxHxD)        | mm        | 1,988x669x906                | 1,988x669x906                            |  |
| Dimension               | Packing (WxHxD)    | mm        | 2,095x800x964                | 2,095x800x964                            |  |
| Net/Gross Weight        |                    | kg        | 208/220                      | 215/230                                  |  |
| Outdoor Unit Model / G  | Quantity           |           | MOV-150HN1-R/1               | MOV-192HN1-R/1                           |  |
| Outdoor Unit Power Su   | pply               |           | 380-415V/3Ph/50Hz            | 380-415V/3Ph/50Hz                        |  |
| Max. Power Input        |                    | kW        | 26.9                         | 32.2                                     |  |
| Max. Current            |                    | Α         | 47.9                         | 53.8                                     |  |
| Air Flow Rate           |                    | CMH (CFM) | 16000 (9412)                 | 16000 (9412)                             |  |
| Noise Level             |                    | dB(A)     | 70                           | 73                                       |  |
| _                       | Туре               |           | Scroll                       | Scroll                                   |  |
| Compressor              | Quantity           |           | 3                            | 3  |  |
|                         | Туре               |           | R410A                        | R410A                                    |  |
| Refrigerant             | Quantity           | kg        | 10.0                         | 11.8                                     |  |
| Fan Type/Drive Type     |                    |           | Axial fan/Direct             | Axial fan/Direct                         |  |
| Coil                    |                    |           | Copper tube ar               | nd aluminum fin                          |  |
|                         | Liquid             | mm        | Ф16.0                        | Ф16.0                                    |  |
| Refrigerant pipe        | Gas                | mm        | Ф32.0                        | Ф35.0*                                   |  |
| Ambient Temperature     | Cooling            | °C        | 17-46                        | 17-46                                    |  |
|                         | Net (WxHxD)        | mm        | 1,250x1,615x765              | 1,390x1,615x765                          |  |
| Dimension               |                    |           |                              | , ,, , , , , , , , , , , , , , , , , , , |  |
| Dimension               | Packing (WxHxD)    | mm        | 1,305x1,790x820              | 1,455x1,790x830                          |  |

Notes:
1. Cooling capacity test condition: Outdoor ambient temperature: 35°C, indoor temperature 27°C DB / 19°C WB; refrigerant pipe length between indoor unit and outdoor unit is 7.5m.
2. Specifications are subject to change without prior notice for product improvement.
\*The connection pipes between indoor unit and outdoor unit are Φ16/Φ35. The Φ32 stop valve of outdoor unit should be connected with the straight pipe packaged with outdoor unit to change to Φ35.

# Non Inverter Floor Standing







MOV-76CN1-C / MOVTA-96CN1-R



MOV-120CN1-C











| Indoor Unit Model   | door Unit Model                            |                    | MFA-76CRN1  | MFA3T-96CRN1  | MFAT-120CRN1   |
|---|--|--------------------|---|---|--|
| Indoor Unit Power Sup   | ply  |                    | 220-240V/1Ph/50Hz   | 220-240V/1Ph/50Hz   | 220-240V/1Ph/50Hz  |
|   | C !!                                       | Btu/hr             | 76,000  | 96,000  | 120,000  |
|   | Capacity                                   | kW                 | 22.27   | 28.10   | 35.17  |
| Cooling   | Input                                      | kW                 | 7.5   | 9.6   | 12.0   |
|   |  | W/W                | 2.97  | 2.93  | 2.93   |
|   | EER  | Btu/hr/W           | 10.13   | 10.00   | 10.00  |
| Max. Power Input W  |  | 805                | 700   | 1,070   |  |
| Max. Current  | lax. Current A                             |                    | 3.5   | 3.0   | 4.7  |
| Air Flow  |  | CMH (CFM)          | 4,250 (2,500)   | 5,100 (3,000)   | 6,060 (3,560)  |
| Noise Level   |  | dB(A)              | 58  | 56  | 65   |
| Fan   | Туре                                       |                    | Centrifugal   | Centrifugal   | Centrifugal  |
| Fan   | Drive Type                                 |                    | Direct  | Direct  | Direct   |
| Coil  |  |                    | Сор   | per tube and aluminun   | n fin  |
| Controller  |  |                    | Remote controller   | Remote controller   | Remote controller  |
| Dimension   | Net (WxHxD)                                | mm                 | 1,200x1,860x518   | 1,200x1,860x518   | 1,200x1,860x518  |
| Packing (WxHxD)   |  | mm                 | 1,362x2,050x582   | 1,362x2,050x582   | 1,362x2,050x582  |
| Net/Gross Weight kg   |  | 138/153            | 140/154   | 148/163   |  |
| Outdoor Unit Model/Q  | Outdoor Unit Model/Quantity                |                    | MOV-76CN1-C/1   | MOVTA-96CN1-R/1   | MOV-120CN1-C/1   |
| Outdoor Unit Power Supply   |  | 380-415V/3Ph/50Hz  | 380-415V/3Ph/50Hz   | 380-415V/3Ph/50Hz   |  |
| Max. Power Input  |  | kW                 | 11.2  | 14.4  | 15.6   |
|   |  |                    |   |   |  |
| Max. Current  |  | Α                  | 17.5  | 23.7  | 25.0   |
|   |  | A<br>CMH (CFM)     | 17.5<br>12,500 (7,350)  |   | 25.0<br>13,000 (7,650)   |
| Max. Current  |  |                    |   | 23.7  |  |
| Max. Current Air Flow Rate Noise Level  | Туре                                       | CMH (CFM)          | 12,500 (7,350)  | 23.7<br>12,500 (7,350)  | 13,000 (7,650)   |
| Max. Current Air Flow Rate  | Type<br>Quantity                           | CMH (CFM)          | 12,500 (7,350)<br>65  | 23.7<br>12,500 (7,350)<br>68  | 13,000 (7,650)<br>69   |
| Max. Current Air Flow Rate Noise Level Compressor   |  | CMH (CFM)          | 12,500 (7,350)<br>65<br>Scroll  | 23.7<br>12,500 (7,350)<br>68<br>Scroll  | 13,000 (7,650)<br>69<br>Scroll   |
| Max. Current Air Flow Rate Noise Level  | Quantity                                   | CMH (CFM)          | 12,500 (7,350)<br>65<br>Scroll  | 23.7<br>12,500 (7,350)<br>68<br>Scroll  | 13,000 (7,650)<br>69<br>Scroll   |
| Max. Current Air Flow Rate Noise Level Compressor   | Quantity Type                              | CMH (CFM)<br>dB(A) | 12,500 (7,350)<br>65<br>Scroll<br>1<br>R410A                                | 23.7<br>12,500 (7,350)<br>68<br>Scroll<br>1<br>R410A  | 13,000 (7,650)<br>69<br>Scroll<br>1<br>R410A                                   |
| Max. Current Air Flow Rate Noise Level Compressor Refrigerant   | Quantity Type                              | CMH (CFM)<br>dB(A) | 12,500 (7,350) 65 Scroll 1 R410A 5.4 Axial fan/Direct                       | 23.7<br>12,500 (7,350)<br>68<br>Scroll<br>1<br>R410A<br>6.0   | 13,000 (7,650) 69 Scroll 1 R410A 7.2 Axial fan/Direct                          |
| Max. Current Air Flow Rate Noise Level Compressor Refrigerant Fan Type/Drive Type Coil                                      | Quantity Type                              | CMH (CFM)<br>dB(A) | 12,500 (7,350) 65 Scroll 1 R410A 5.4 Axial fan/Direct                       | 23.7<br>12,500 (7,350)<br>68<br>Scroll<br>1<br>R410A<br>6.0<br>Axial fan/Direct                     | 13,000 (7,650) 69 Scroll 1 R410A 7.2 Axial fan/Direct                          |
| Max. Current Air Flow Rate Noise Level Compressor Refrigerant Fan Type/Drive Type   | Quantity Type Quantity                     | CMH (CFM)<br>dB(A) | 12,500 (7,350) 65 Scroll 1 R410A 5.4 Axial fan/Direct Cop                   | 23.7 12,500 (7,350) 68 Scroll 1 R410A 6.0 Axial fan/Direct per tube and aluminum                    | 13,000 (7,650) 69 Scroll 1 R410A 7.2 Axial fan/Direct                          |
| Max. Current Air Flow Rate Noise Level Compressor Refrigerant Fan Type/Drive Type Coil                                      | Quantity Type Quantity  Liquid Gas         | CMH (CFM) dB(A) kg | 12,500 (7,350) 65 Scroll 1 R410A 5.4 Axial fan/Direct Cop                   | 23.7 12,500 (7,350) 68 Scroll 1 R410A 6.0 Axial fan/Direct per tube and aluminum Φ12.7              | 13,000 (7,650) 69 Scroll 1 R410A 7.2 Axial fan/Direct n fin Ф12.7              |
| Max. Current Air Flow Rate Noise Level Compressor Refrigerant Fan Type/Drive Type Coil Refrigerant Pipe Ambient Temperature | Quantity Type Quantity  Liquid Gas         | kg mm              | 12,500 (7,350) 65 Scroll 1 R410A 5.4 Axial fan/Direct Cop Ф9.53 Ф22.2       | 23.7 12,500 (7,350) 68 Scroll 1 R410A 6.0 Axial fan/Direct per tube and aluminun Ф12.7 Ф25.4*       | 13,000 (7,650) 69 Scroll 1 R410A 7.2 Axial fan/Direct n fin  Ф12.7 Ф28.6       |
| Max. Current Air Flow Rate Noise Level Compressor Refrigerant Fan Type/Drive Type Coil Refrigerant Pipe                     | Quantity Type Quantity  Liquid Gas Cooling | kg mm mm °C        | 12,500 (7,350) 65 Scroll 1 R410A 5.4 Axial fan/Direct Cop Ф9.53 Ф22.2 17-52 | 23.7 12,500 (7,350) 68 Scroll 1 R410A 6.0 Axial fan/Direct per tube and aluminum Ф12.7 Ф25.4* 17-52 | 13,000 (7,650) 69 Scroll 1 R410A 7.2 Axial fan/Direct n fin  Ф12.7 Ф28.6 17-52 |

Notes:

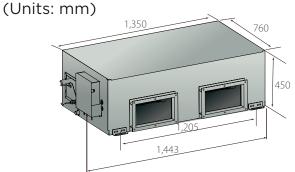
1. Cooling capacity test condition: Outdoor ambient temperature: 35°C, indoor temperature 27°C DB / 19°C WB; refrigerant pipe length between indoor unit and outdoor unit is 7.5m.

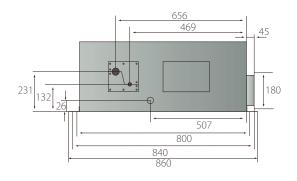
2. Specifications are subject to change without prior notice for product improvement.

\*Connection piping diameter of outdoor unit is the stop valve diameter of the outdoor unit. When the length of the refrigerant pipe between indoor and outdoor is not more than 30m, please connect the straight pipe as the accessory in outdoor unit with high pressure st op valve to change the diameter of liquid pipe to 49.52. When the length of the refrigerant pipe is more than 30m and less than 50m, please connect the straight pipe (prepared in site) with low pressure stop valve to change the diameter of gas pipe to 49.8.1.

# **Dimensions**

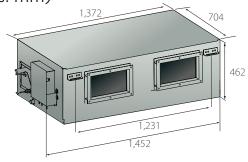
Duct indoor unit: MTA-76CRN1

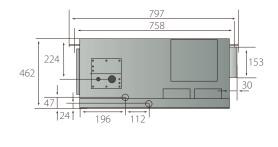




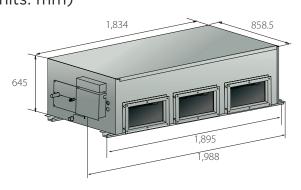
Duct indoor unit: MTB1T-96CWN1

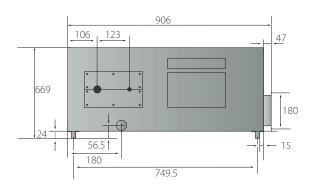






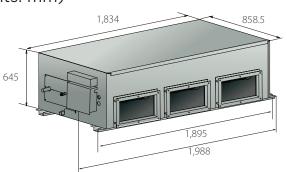
Duct indoor unit: MTA-120CRN1 (Units: mm)

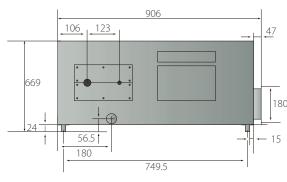




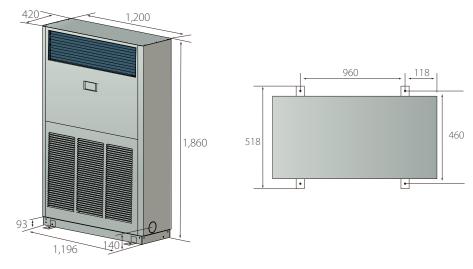
Duct indoor unit: MHA-150HWN1 / MHA-192HWN1

(Units: mm)

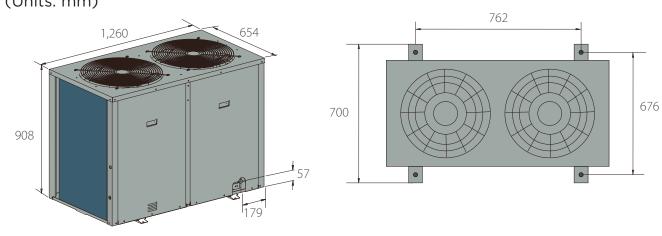




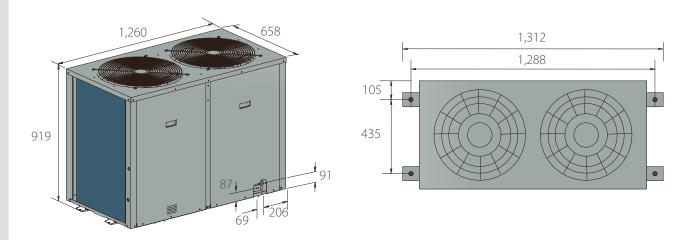
# Floor-standing indoor unit: MFA-76CRN1, MFA3T-96CRN1, MFAT-120CRN1 (Units: mm)



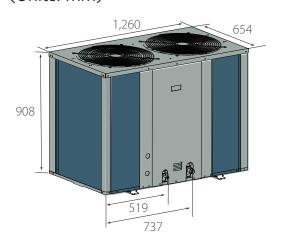
Outdoor unit: MOV-76CN1-C (Units: mm)

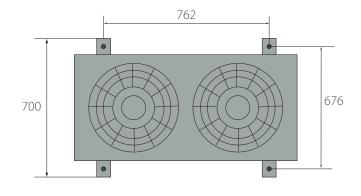


Outdoor unit: MOVTA-96CN1-R (Units: mm)

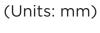


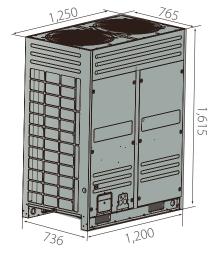
# Outdoor unit: MOV-120CN1-C (Units: mm)

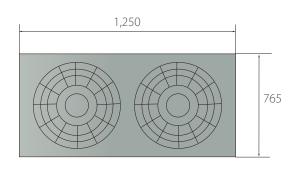




Outdoor unit: MOV-150HN1-R

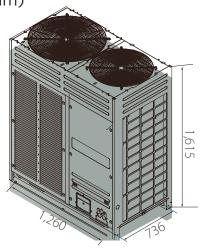


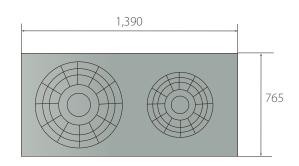




Outdoor unit: MOV-192HN1-R

(Units: mm)





# Controller



# Remote Controller - R51



### Parameter

Model: R51/CE (Cooling only type)
R51/E (Heat pump type)

Dimension (mm): 140×60×15 Power: 1.5V (LR03/AAA)×2

## **RM05**



### **Parameter**

Model: RM05

Dimension (mm): 150×65×20 Power: 1.5V (LR03/AAA)×2

### Standard features

- It provides a convenient way for users to control the air conditioners everywhere within a range up to 11m.
- Built-in daily timer offers the convenience of automatically starting and turning down the air conditioners according to the set time.

# Wired Controller - KJR-29B



### Parameter

Model: KJR-29B (Touch-style key) Dimension (mm): 120×120×20 Power: From the display panel, extra power is unnecessary.

### Standard features

- \* Keyboard locking function as standard, it can be used to prevent other people from using the controller.
- Built-in daily timer offers the convenience of automatically starting and turning down the air conditioners according to the set time.

# Remote signal receiving function

- ❖ KJR-29B provides a signal receiver to receive the signal from remote controller.
- The received signal can be directly sent to the indoor unit by wired controller to ease the control of the air conditioner.



### Silent mode

• When operating under the silent mode, the units can reduce the running noise through setting the fan speed to low automatically. It will help to provide a quieter environment.

# Centralized Controller - CCM30





### **Parameter**

Model: CCM30 + MD-NIM01

Dimension (mm): 180×122×78 (CCM30BKE-B)

180×122×68 (CCM30BKE-A)

81.8×46.8×15.5 (MD-NIM01)

Power: 198~242V, 50/60Hz (MD-CCM30)

DC+5V (MD-NIM01)

### Centralized control

- MD-CCM30, centralized controller, is a multifunctional device that can control up to 64 indoor units within a maximum connection length of 1200m.
- ❖ User can group control or individual control and the setting of each unit's temperature can be difference.
- ❖ The indoor units operating status and error codes can be displayed in the screen of CCM30. Via checking the error codes table in the user manual, user can easily find out the malfunction and contact service team.

### Three lock modes

Centralized controller provides a superior way to manage the indoor units. Users can be able to make their own choice from three locking mode: locking the wireless controller, locking the running mode or locking centralized controller keyboard as preferred.

### Access to network monitoring

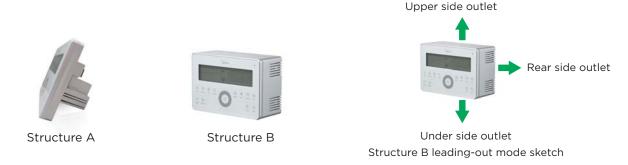
MD-CCM30 is able to bridge up to 64 indoor units to network monitoring system and building management system.



Note: The new DC inverter series connected to outdoor unit XYE port directly

### Easy installation

Two structures design, easy installation. Structure A (Model No. CCM30/BKE-A) requires be embedded into the wall while structure B (Model No. CCM30/BKE-B) doesn't require.





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### **JOHOR**

No. 25, Jalan Seri Impian 1, Taman Impian Emas, 81300 Skudai, Johor.

Tel: 07-562 4898 Fax: 07-557 7898

### **PERAK**

No. 38, Persiaran Perindustrian Pengkalan 10, Kawasan Perindustrian Pengkalan, 31500 Lahat, Perak. Tel: 05-323 2529 Fax: 05-323 2529

### **PAHANG**

No. 258, Ground Floor, Jalan Air Putih, Taman Air Putih Mewah, 25350 Kuantan, Pahang Darul Makmur. Tel: 09-560 6668 Fax: 09-09-560 5050

### **MALACCA**

No. 385-L, Taman Peringgit Jaya, 75400 Peringgit, Melaka. Tel: 06-292 1940 Fax: 06-286 7107

### **KOTA BHARU**

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Dealer's Stamp:





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