

GENERAL UNIT DATA

MINI IVX

| Model                     |              |          | RAM-112FPSQB        | RAM-125FPSQB    | RAM-140FPSQB    | RAM-160FPSQB    |
|---------------------------|--------------|----------|---------------------|-----------------|-----------------|-----------------|
| Indoor Unit               |              |          | 2                   |                 |                 |                 |
| Power Supply              |              |          | AC 1phase 230V 60Hz |                 |                 |                 |
| Outer Dimensions (WxDxH)  | mm           |          | 1,060x370x940       | 1,060x370x940   | 1,060x370x940   | 1,060x370x940   |
| Nominal Cooling Capacity  | kW           |          | 11.2                | 12.5            | 14.0            | 16.0            |
| Cooling Power Consumption | kW           |          | 2.66                | 3.20            | 3.96            | 5.16            |
| EER                       | W/W          |          | 4.20                | 3.90            | 3.53            | 3.10            |
| Running Current           | 230V         | A        | 12.9                | 15.5            | 19.1            | 25.0            |
| Starting Current          | 230V         | A        | 13.0                | 13.0            | 13.0            | 13.0            |
| Compressor Motor Output   |              | kW       | 3.0                 | 3.0             | 3.0             | 3.0             |
| Condenser Fan             | Air Flow     | m3/min   | 60                  | 66              | 72              | 74              |
|                           | Motor Output | kW(pole) | 0.183(8)            | 0.183(8)        | 0.183(8)        | 0.183(8)        |
| Main Refrigerant Piping   | Gas Line     | mm       | 15.88(with nut)     | 15.88(with nut) | 15.88(with nut) | 15.88(with nut) |
|                           | Liquid Line  | mm       | 9.53(with nut)      | 9.53(with nut)  | 9.53(with nut)  | 9.53(with nut)  |
| Net Weight                |              | kg       | 76                  | 76              | 76              | 76              |
| Sound Pressure Level      |              | dB(A)    | 52                  | 55              | 57              | 58              |
| Refrigerant               |              | ---      | R410A               | R410A           | R410A           | R410A           |

- Notes:
- The above data is based on 100% capacity combination of the indoor units and the following conditions:
    - Indoor Temperature: 27°C(DB)/19°C(WB)
    - Outdoor Temperature: 35°C(DB)
    - Piping Length: 7.5 Meters Piping Lift: 0 Meter
    - Combined capacity range is up to 110%
  - The sound pressure level is based on the following conditions:
    - 1 Meter from the unit service cover surface and 1.5 meters from floor level.
    - During heating mode, the sound pressure level increases by approximately 1-2dB.
  - The sound pressure is measured in anechoic chamber so that reflected sound should be taken into consideration in the field.
  - The \* represents the starting current of the last compressor while other compressors are in operation.
  - For a comfortable environment, the compressor speed may be increased. The current of the above data is at normal operating conditions, not the maximum current.
  - Choose the field-supplied ELB, power switch, fuse and power cable according to the service manual or technical catalog.

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HITACHI

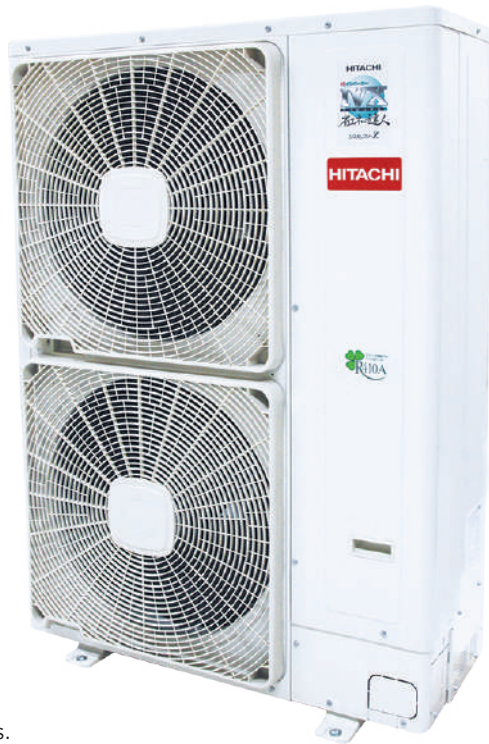
Installation Flexibility.  
Outstanding Cooling Efficiency  
For Commercial Spaces.



IVX/MINI IVX INVERTER VRF  
AIRCONDITIONING SYSTEM

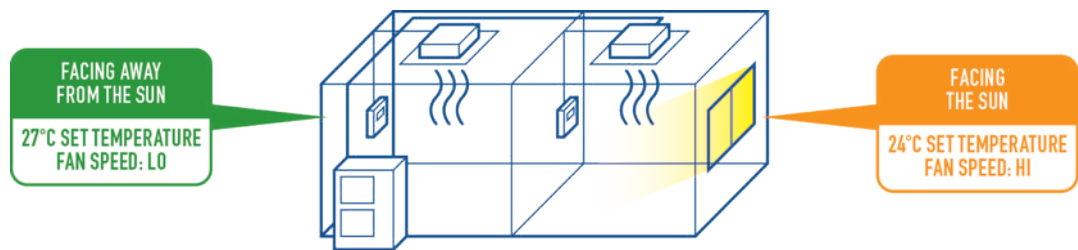
IVX WITH FULL DC INVERTER TECHNOLOGY

- Comes equipped with our revolutionary FULL DC Inverter Technology featuring three DC Inverter components (Compressor, PCB and Fan Motor) that lower power consumption and work more efficiently than AC motors.
- Uses R410A refrigerant that has low ozone depletion potential also allowing the air conditioner to consume less energy.
- Optimized for long installations up to 120 meters



INDIVIDUAL OPERATIONS FOR INDOOR UNITS

Each indoor unit can operate independently based on different room conditions.



COMPATIBLE INDOOR UNITS

The IVX with Full DC Inverter Technology (DUAL FAN) can connect up to five (5) indoor units.



GENERAL UNIT DATA

IVX

| Model                     |              |                     | RAM-125FPS (B)  | RAM-140FPS (B)      | RAM-200FPS (D)  | RAM-250FPS (D)       | RAM-270FPS(D)        |
|---------------------------|--------------|---------------------|---|---------------------|---|----------------------|----------------------|
| Power Supply              |              |                     | FPSB Model: AC 1phase 230V 60Hz<br>FPS Model: AC 3phase 230V 60Hz |                     | FPS Model: AC 3phase 230V 60Hz<br>FPS(D) Model: AC 3phase 380V 60Hz |                      |                      |
| Outer Dimensions (WxDxH)  |              | mm                  | 950 x 370 x 1,380   | 950 x 370 x 1,380   | 1,100 x 390 x 1,650   | 1,100 x 390 x 1,650  | 1,100 x 390 x 1,650  |
| Nominal Cooling Capacity  |              | kW                  | 12.5  | 14.0                | 20.0  | 25.0                 | 27.0                 |
| Cooling Power Consumption |              | kW                  | 2.91  | 3.92                | 4.77  | 6.94                 | 7.80                 |
| Energy Efficiency Ratio   |              | W/W                 | 4.30  | 3.57                | 4.19  | 3.60                 | 3.46                 |
| Running Current           | 230V         | A                   | 13.8 / 7.9  | 18.5 / 10.7         | 13.3  | 19.4                 | 21.8                 |
|                           | 380V         | A                   | -   | -                   | 7.8   | 11.4                 | 12.8                 |
| Starting Current          | 230V         | A                   | 14 / 8  | 14 / 8              | 7   | 7                    | 7                    |
|                           | 380V         | A                   | -   | -                   | 4   | 4                    | 4                    |
| Compressor Motor Output   |              | kW                  | 3.0   | 3.0                 | 4.8   | 4.8                  | 4.8                  |
| Condenser Fan             | Fan Speed    | m <sup>3</sup> /min | 90  | 100                 | 121   | 150                  | 163                  |
|                           | Motor Output | kW (pole)           | 0.074(8) + 0.074(8)   | 0.074(8) + 0.074(8) | 0.138(8) + 0.11(6)  | 0.138(8) + 0.12(6)   | 0.138(8) + 0.24(6)   |
| Main Refrigerant Piping   | Gas Line     | mm                  | Ø 15.88 (with nut)  | Ø 15.88 (with nut)  | Ø 25.4 (with flange)  | Ø 25.4 (with flange) | Ø 28.6 (with flange) |
|                           | Liquid Line  | mm                  | Ø 9.53 (with nut)   | Ø 9.53 (with nut)   | Ø 9.53 (with nut)   | Ø 12.7 (with nut)    | Ø 12.7 (with nut)    |
| Net Weight                |              | kg                  | 96  | 96                  | 170   | 170                  | 173                  |
| Sound Pressure Level      |              | dB(a)               | 46  | 48                  | 56  | 58                   | 60                   |
| Refrigerant               |              | -                   | R410A   | R410A               | R410A   | R410A                | R410A                |

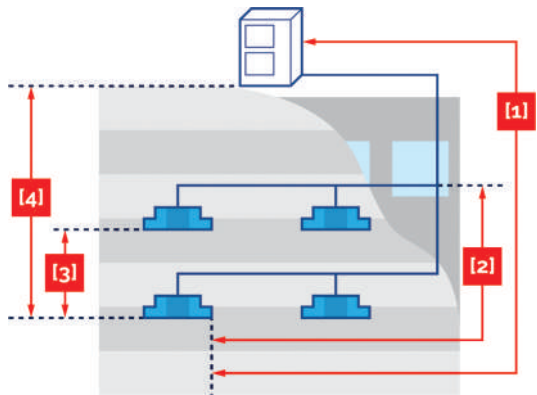
- Notes:
- The above data is based on 100% capacity combination of the indoor units and the following conditions:
    - Indoor Temperature: 27°C(DB)/19°C(WB)
    - Outdoor Temperature: 35°C(DB)
    - Piping Length: 7.5 Meters     Piping Lift: 0 Meter
    - Combined capacity range is 100-130%.
  - The sound pressure level is based on the following conditions:
    - 1 Meter from the unit service cover surface and 1.5 meters from floor level.
    - During heating mode, the sound pressure level increases by approximately 1-2dB.
  - The sound pressure is measured in anechoic chamber so that reflected sound should be taken into consideration in the field.
  - The \* represents the starting current of the last compressor while other compressors are in operation.
  - For a comfortable environment, the compressor speed may be increased. The current of the above data is at normal operating conditions, not the maximum current.
  - Choose the field-supplied ELB, power switch, fuse, power cable according to the service manual or technical catalog.





FLEXIBLE INSTALLATION

The IVX series air conditioner is optimized for long installations up to 120 meters.



|                       |   | RAM-125FPS(B) | RAM-140FPS(B) | RAM-200FPS(D) | RAM-250FPS(D) | RAM-270FPS(D) |
|-----------------------|---|---------------|---------------|---------------|---------------|---------------|
| Maximum Piping Length | Maximum Piping Length [1]               | 75 m          | 75 m          | 100 m         | 100 m         | 100 m         |
|                       | Equivalent Length [1]                   | 95 m          | 95 m          | 120 m         | 120 m         | 120 m         |
|                       | Multi-kit to Indoor Unit [2]            | 10 m          | 10 m          | 40 m          | 40 m          | 40 m          |
| Maximum Piping Lift   | Between Indoor Units [3]                | 3 m           | 3 m           | 15 m          | 15 m          | 15 m          |
|                       | Indoor Unit to Outdoor Unit (Upper) [4] | 30 m          | 30 m          | 40 m          | 40 m          | 40 m          |
|                       | Indoor Unit to Outdoor Unit (Lower) [4] | 20 m          | 20 m          | 30 m          | 30 m          | 30 m          |
|                       | Maximum Indoor Units                    | 4             | 4             | 5             | 5             | 5             |



OVERVOLTAGE PROTECTION RELAY (BUILT-IN)

Additional feature that protects the unit from damage caused by overvoltage. Abnormal overvoltage may be caused by various reasons including sudden power interruptions, lightning impulses, switching impulses, etc. (applicable to IVX Dual Fan only).

MINI IVX WITH FULL DC INVERTER TECHNOLOGY (Single Fan)

- Same DC technology now in a more compact size that is 21% lighter
- DC fan motors work more efficiently compared to AC motors, therefore use less energy.



SINGLE REFRIGERANT PIPING SYSTEM

The single refrigerant piping system can reduce your use of refrigerants. The pipelines are streamlined for easy installation and less space consumption. The outdoor unit can be used for pipe connections compatible with all directions: from the front, back and bottom of the installation. Long refrigerant piping can be installed.

ENERGY SAVING

Hitachi's frequency inverter reduces energy loss (which is common in traditional start cycle operations). The unit utilizes a lower electrical load, reducing power consumption during operation.

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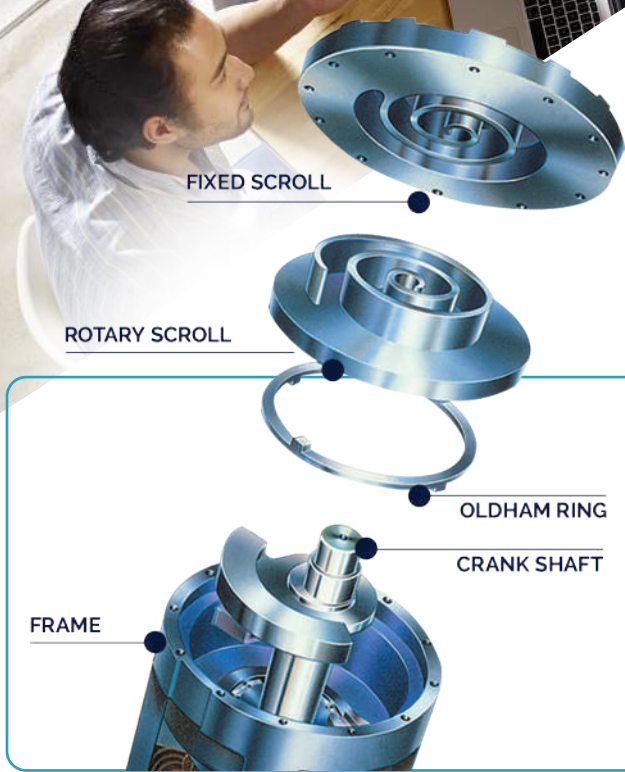






QUIET OPERATION

The unit features a dynamically balanced fan optimally shaped to minimize noise.

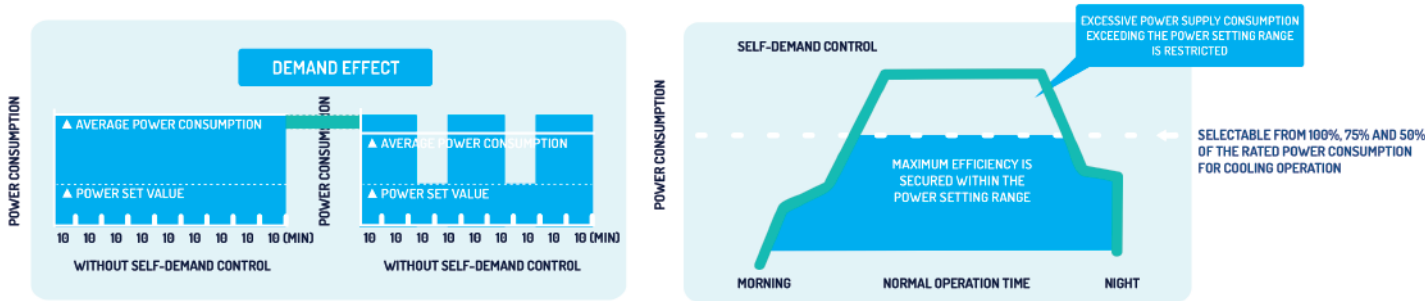


HIGH EFFICIENCY SCROLL COMPRESSOR

Hitachi's patented scroll compressor generates quick cooling, less vibrations and lower energy for virtually uninterrupted cooling operation.

SELF-DEMAND CONTROL

With self-demand control feature, the unit can detect the current by power rationing. It automatically controls power consumption by detecting current and controls its original external signals to select multiple operation modes ideal for different requirements.

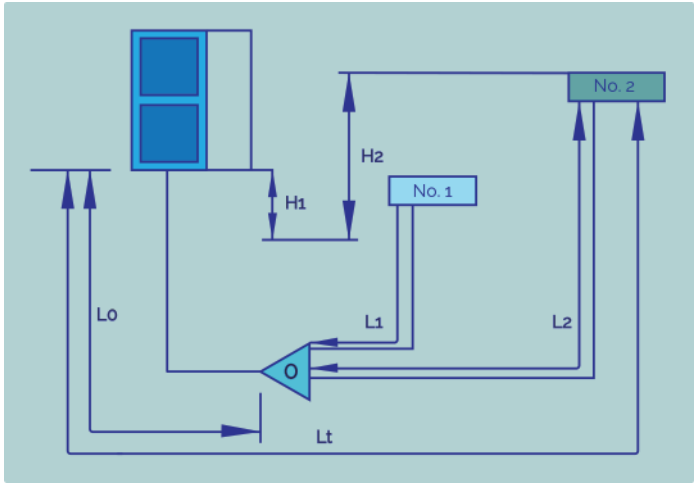


CENTRAL SUPERVISION NETWORK SYSTEM (CS-NET)

CS-NET controls your whole air conditioning system or use the signal converter to access the control system online (LONWORKS-BACnet) for easy monitoring.

COMPATIBLE INDOOR UNITS

The Mini IVX with Full DC Inverter Technology (SINGLE FAN) can connect up to two (2) indoor units.



FLEXIBLE INSTALLATION

The Mini IVX series air conditioner is optimized for long installations up to 95 meters.

(In this example, only one refrigerant pipe is used. In actual installation, however, separate pipes should be used for refrigerant and refrigeration oil.)

| Outdoor Unit Model  |  |         | RAM-112FPSQB | RAM-125FPSQB | RAM-140FPSQB | RAM-160FPSQB |
|---|--|---------|--------------|--------------|--------------|--------------|
| Total Pipe Length: L0+L1+L2                                     |  |         | 70           | 75           | 75           | 75           |
| Max. Pipe Length (Actual): Lt                                   | Pipe length from the outdoor unit to each indoor unit. |         | 90 (70)      | 95 (75)      | 95 (75)      | 95 (75)      |
| Max. Lapse Height between the outdoor unit and indoor units: H1 | When the outdoor unit is higher than the indoor unit.  |         | 30           | 30           | 30           | 30           |
|   | When the outdoor unit is lower than the indoor unit.   |         | 20           | 20           | 20           | 20           |
| Max. Lapse Height between indoor units: H2                      |  |         | 3            | 3            | 3            | 3            |
| Max. Pipe Length between branch pipes and indoor units: L1, L2  |  |         | 10           | 10           | 10           | 10           |
| Refrigerant Pipe Size   | Gas  | Indoor  | 15.88        | 15.88        | 15.88        | 15.88        |
|   |  | Outdoor | 15.88        | 15.88        | 15.88        | 15.88        |
|   | Liquid   | Indoor  | 6.35         | 6.35         | 6.35         | 6.35         |
|   |  |         | 9.53         | 9.53         | 9.53         | 9.53         |
|   |  | Outdoor | 9.53         | 9.53         | 9.53         | 9.53         |