

PFD

PFD-P250VM-E
PFD-P500VM-E
PU(H)Y-P250YGM-A
PUHY-P500YGM-A



CLOSE CONTROL SYSTEM



MITSUBISHI ELECTRIC's Close Control System (PFD series) is specifically designed for computer rooms, laboratories etc, where strict control of humidity and temperature is a must. It possesses "High Reliability", "Energy Saving Technology", and "Easy Installation / Maintenance".

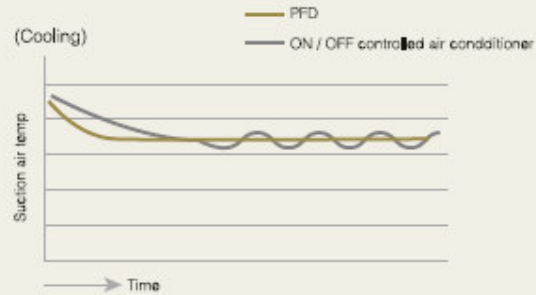
It is also able to be connected to a computer network using our G-50A controller, in order to monitor from a distance and provide remote email alarms.



High Reliability

Precise Room Temperature Control

PFD series maintain a nearly constant room temperature (within $\pm 1.0^{\circ}\text{C}$) without the typical temperature changes that occur with conventional ON/OFF control systems with inverter driven compressor.

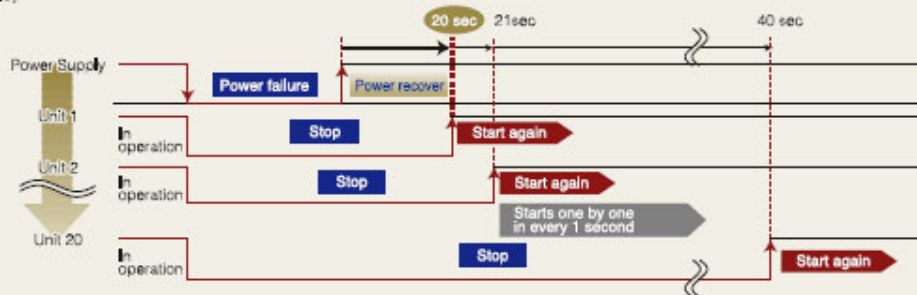


Quick Recovery from Power Failure

PFD series recover within 20 seconds after the power failure recovers.

To prevent the inrush current at the time of a power failure recovery, the system will restart one by one.

(example)



Protection of Confidential Information

As a compressor has been incorporated into the outdoor unit, the compressor can be serviced without entering a computer room. Our close control system can protect confidential information.

PFD series provide you with highly reliable computer room cooling system

CLOSE CONTROL SYSTEM



Energy Saving Technology

Low Running Cost

The inverter driven compressors can maximize the energy efficiency of PFD series, leading to reduction of power consumption.

PFD series coefficient of performance (COP) is 3.00 in cooling mode.

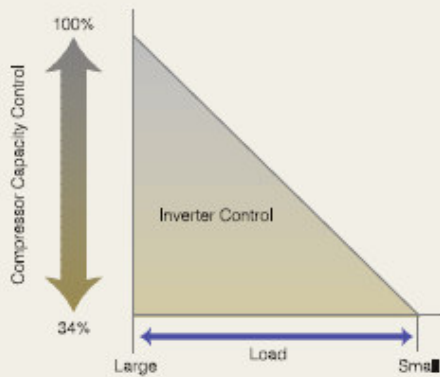
[Sensible heat factor (SHF) : 0.93]

Low Power Consumption

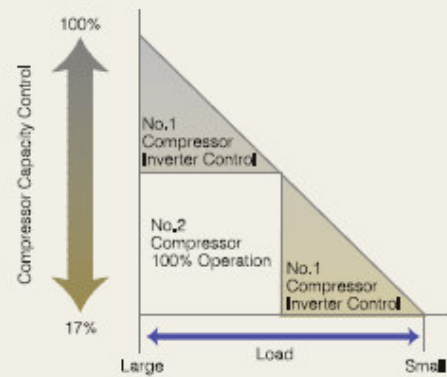
Plus, new PFD series adopt advanced R410A refrigeration and control technology to offer lower power consumption.

Inverter-driven capacity control

□ 10HP Outdoor Unit



□ 20HP Outdoor Unit

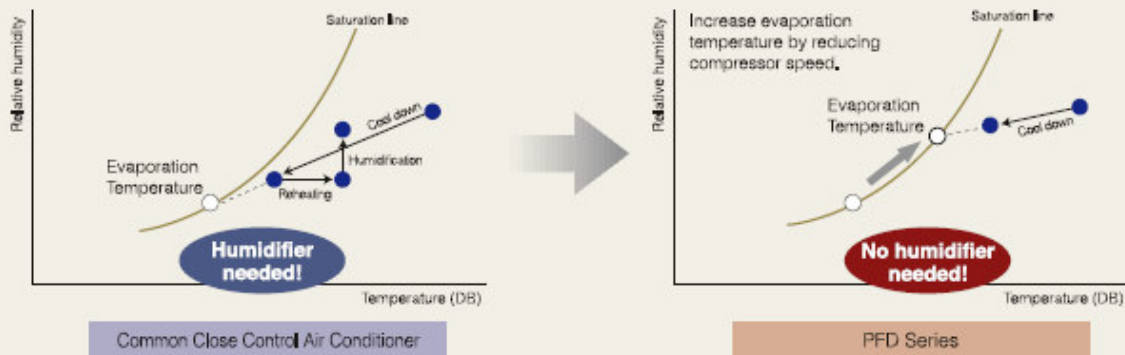


PFD series operates highly efficiently with using newly developed inverter compressor

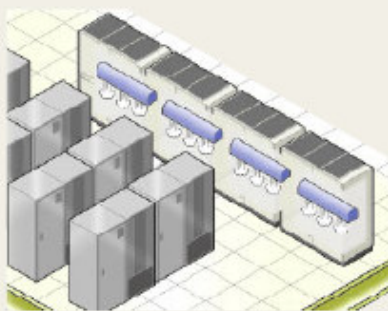
Energy Saving Technology

Minimum Humidifiers

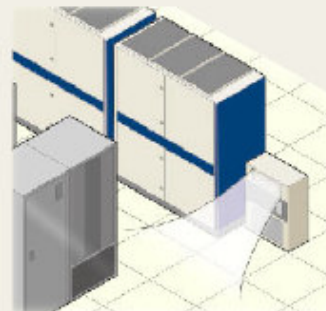
PFD series work without a humidifier in most specifications. Due to the use of an optimized inverter driven compressor, PFD series minimize the excessive dehumidification whereas other systems need a separate humidifier for each indoor unit.



This system will also help to minimize maintenance costs by removing the need for a humidifier and doing away with the need to install water pipes for individual units.



Common Close Control Air Conditioner



PFD Series

* A humidifier can be incorporated inside of the units. Consult our sales office in your area for more detailed information.

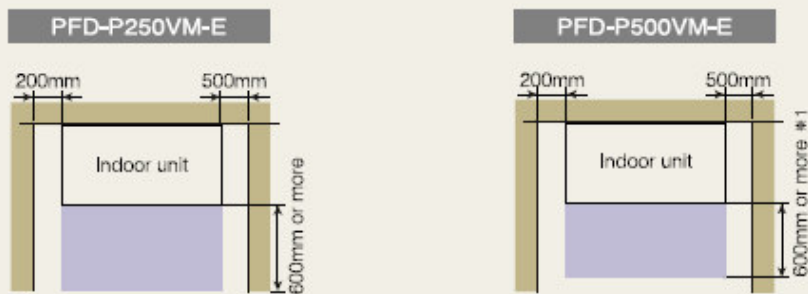
PFD series will not have excessive dehumidification

Easy Installation/Maintenance

Long Piping Length / Small Installation Space

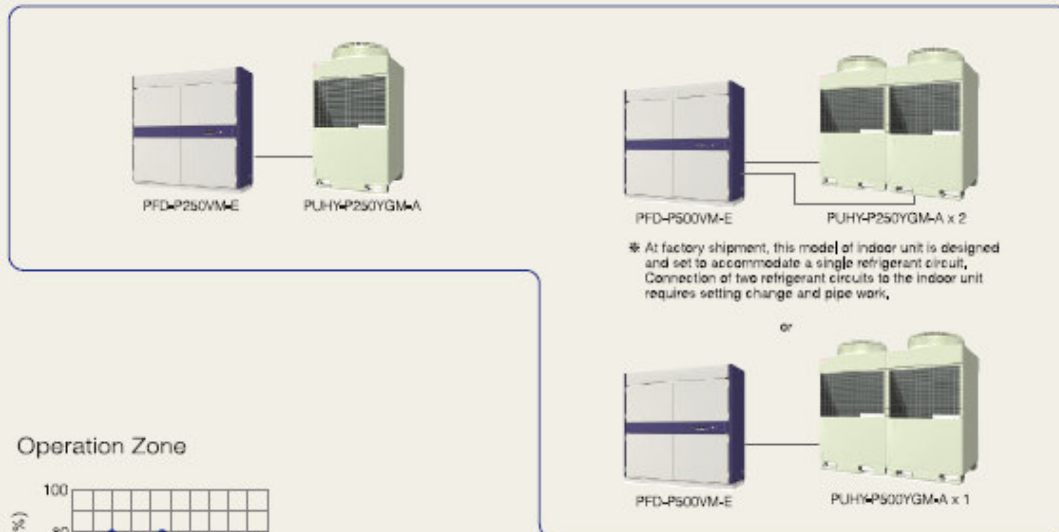
With long pipe-runs of up to 150m, PFD series are specifically designed to minimize the size of the indoor units and save on valuable computer room space.

Service Space (Indoor)

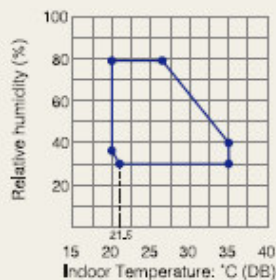


#1. To open the gate fold maintenance panel fully, space of 1000mm or more required.

Unit Combination



Operation Zone



Indoor Temperature:
12-24°C (WB)
Outdoor Temperature:
15-43°C (DB)

Piping Length

Total length 150m or less
Top-bottom differential 50m (40m if the outdoor unit is installed below the indoor unit, 15m if the outdoor temperature is under 10°C)

PFD series will be able to satisfy various installation conditions

CLOSE CONTROL SYSTEM



Outdoor Unit

High-capacity reluctance DC motor driven compressor

Motor efficiency greatly improved

+

Reduced suction refrigerant heating loss



First in Industry
Japan Machinery Federation
Executive Award-winning

Low Noise in All Directions



(10HP)

Night mode can reduce sound level by sensing ambient temperature condition.
(This function is available in setting at site.)

PFD series are made in Japan under a stringent quality control system of Mitsubishi Electric.

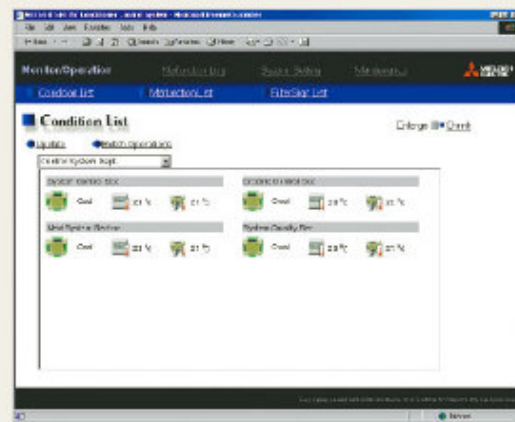
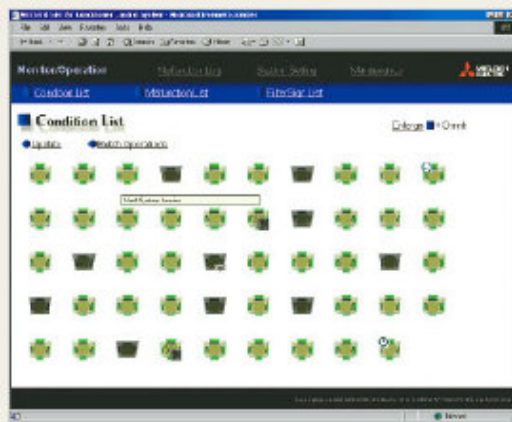
Remote Controller

Genius Controller " G-50A " with TG-2000A software, etc.

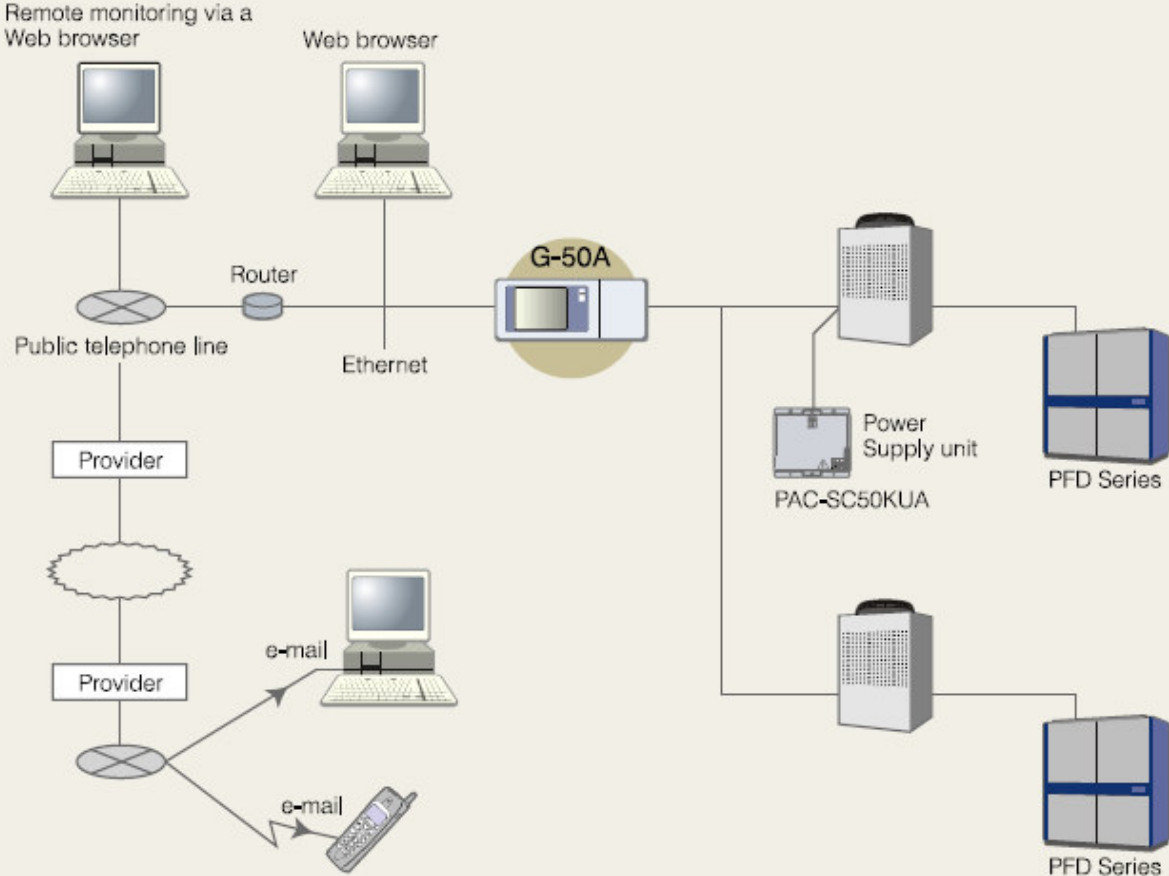
Industry First
Web Function

PFD Series control functions.

1. Monitoring up to 50 indoor units from PC via Web browser
2. Operation data output (operation, temperature setting, on/off, room temperature, abnormal record, etc., in CSV file)
3. E-mail auto alarm function
4. Condensing water, fire alarm detection
5. Duty cycling of outdoor units operation to prolong operation life cycle
6. Communication interface (XML, LonWorks, BACnet, Digital Output, Digital Input)



System Structure (example)



Indoor Unit

PFD-P250VM-E (down flow)



Specification

Model name		PFD-P250VM-E	
		Cooling	Heating
Capacity	kW	28.0	31.5
Sensible Heat Capacity	kW	26.0	—
Power source		3N~380 / 400 / 415V (50Hz) , 400 / 415V (60Hz)	
Power input	kW	2.5	
Current	A	5.2 / 5.0 / 4.8	
Fan	Type X Quantity	Sirocco fan X 1	
	Airflow rate	m ³ /min 160	
	Motor output	kW 2.2	
Refrigerant		R410A	
External finish		Galvanized steel plate (with polyester coating) <MUNSEL 2.9GY 8.6 / 0.3 (White) or similar> <MUNSEL 7.2PB 3.2 / 5.3 (Blue) or similar>	
External dimension	mm	1950(H) x 1380(W) X 780(D)	
Protection device	Fan	Thermal switch	
Refrigerant piping diameter	Liquid / Gas	ø 9.52 Brazed / ø 22.2 Brazed	
Noise level	dB (A)	59	
Net weight	kg	380	
Operating temperature range		Indoor : 12°CWB ~ 24°CWB (outdoor : -15°CWB~43°CWB)	Indoor : 0°CWB ~ 28°CWB (outdoor : -15°CWB~15.5°CWB)

Note: 1. Cooling / Heating capacity indicates the maximum value at operation under the following condition.

<Cooling> Indoor : 27°CDB / 19°CWB Outdoor : 35°CDB
 <Heating> Indoor : 20°CDB Outdoor : 7°CDB / 6°CWB
 Pipe length : 7.5m Height difference: 0m

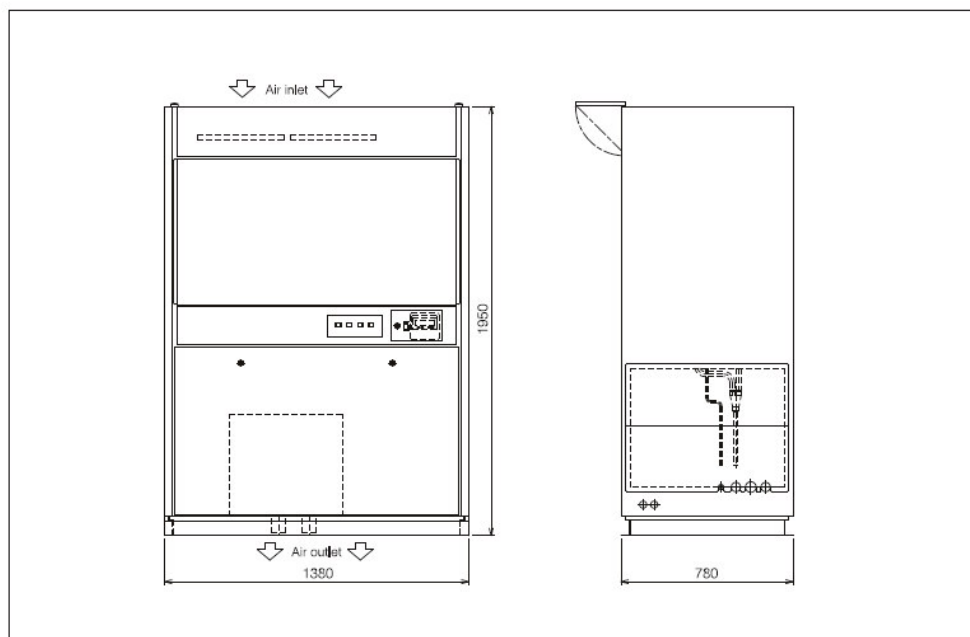
2. The noise level is measured in an anechoic room.

3. Heating can be used only by the indoor warming-up.

4. Works not included : Installation / foundation work, electric connection work, duct work, insulation work.
 The power source switch and other items are not specified in the specifications.

5. It is necessary to change pulley and v-belt when using it by the power supply frequency 60Hz.

External Dimensions



Indoor Unit

PFD-P500VM-E (down flow)



Specification

Model name		PFD-P500VM-E	
		Cooling	Heating
Capacity	kW	56,0	63,0
Sensible Heat Capacity	kW	52,0	—
Power source		3N-380 / 400 / 415V (50Hz) , 400 / 415V (60Hz)	
Power input	kW	5,0	
Current	A	9,5 / 9,0 / 8,7	
Fan	Type X Quantity	Sirocco fan X 2	
	Airflow rate	m ³ /min 320	
	Motor output	kW 4,4	
Refrigerant		R410A	
External finish		Galvanized steel plate (with polyester coating) <MUNSEL 2.9GY 8,6 / 0,3 (White) or similar> <MUNSEL 7.2PB 3,2 / 5,3 (Blue) or similar>	
External dimension	mm	1950(H) x 1980(W) X 780(D)	
Protection device	Fan	Thermal switch	
Refrigerant piping diameter	Liquid / Gas	ø 15,88 Brazed / ø 28,58 Brazed	
Noise level	dB (A)	63	
Net weight	kg	520	
Operating temperature range		Indoor : 12°CWB ~ 24°CWB (outdoor : -15°CWB-43°CWB)	Indoor : 0°CWB ~ 28°CWB (outdoor : -15°CWB-15,5°CWB)

Note: 1. Cooling / Heating capacity indicates the maximum value at operation under the following condition.

<Cooling> Indoor : 27°CDB / 19°CWB Outdoor : 35°CDB
 <Heating> Indoor : 20°CDB Outdoor : 7°CDB / 6°CWB
 Pipe length : 7.5m Height difference: 0m

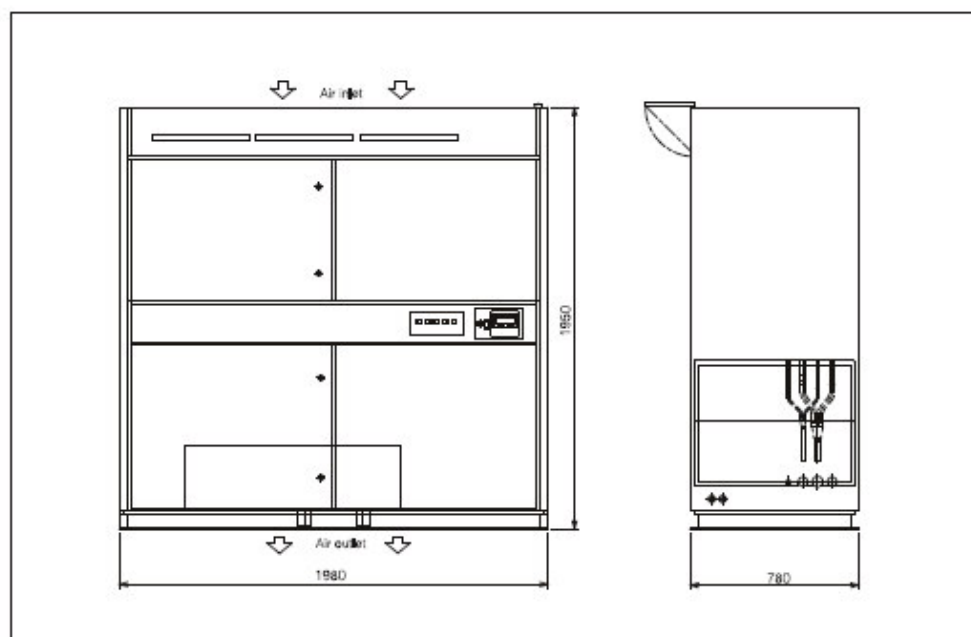
2. The noise level is measured in an anechoic room.

3. Heating can be used only by the indoor warming-up.

4. Works not included : Installation / foundation work, electric connection work, duct work, insulation work,
 The power source switch and other items are not specified in the specifications.

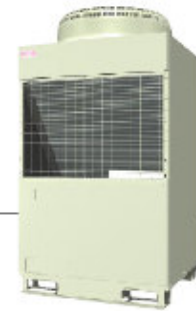
5. It is necessary to change pulley and v-belt when using it by the power supply frequency 60Hz.

External Dimensions



Outdoor Unit

PU(H)Y-P250YGM-A (connected with PFD series.)



Specification

Model name		PU(H)Y-P250YGM-A	
Capacity	kW	Cooling 28,0	(Heating) (31,5)
Power source		3N~380 / 400 / 415V (50Hz / 60Hz)	
Power input	kW	6,8	6,6
Current	A	11,4 / 10,9 / 10,5	11,1 / 10,5 / 10,2
Fan	Type X Quantity	Propeller fan X 1	
	Airflow rate	m ³ /min	200
	Motor output	kW	0,38
Refrigerant		R410A	
External finish		Pre-coated galvanized sheets + powder coating (for-BS type) <MUNSEL 5Y8 / 1 or similar>	
External dimension	mm	1840(H) x 990(W) X 840(D)	
Protection device	Fan	Thermal Switch	
Refrigerant piping diameter	Liquid / Gas	ø 9,52 Flare / ø 22,2 Brazed	
Noise level	dB (A)	57	
Net weight	kg	233	
Operating temperature range		Indoor : 12°CWB ~ 24°CWB (outdoor : -15°CWB~43°CWB)	Indoor : 0°CWB ~ 28°CWB (outdoor : -15°CWB~15,5°CWB)

Note: 1. Cooling / Heating capacity indicates the maximum value at operation under the following condition.

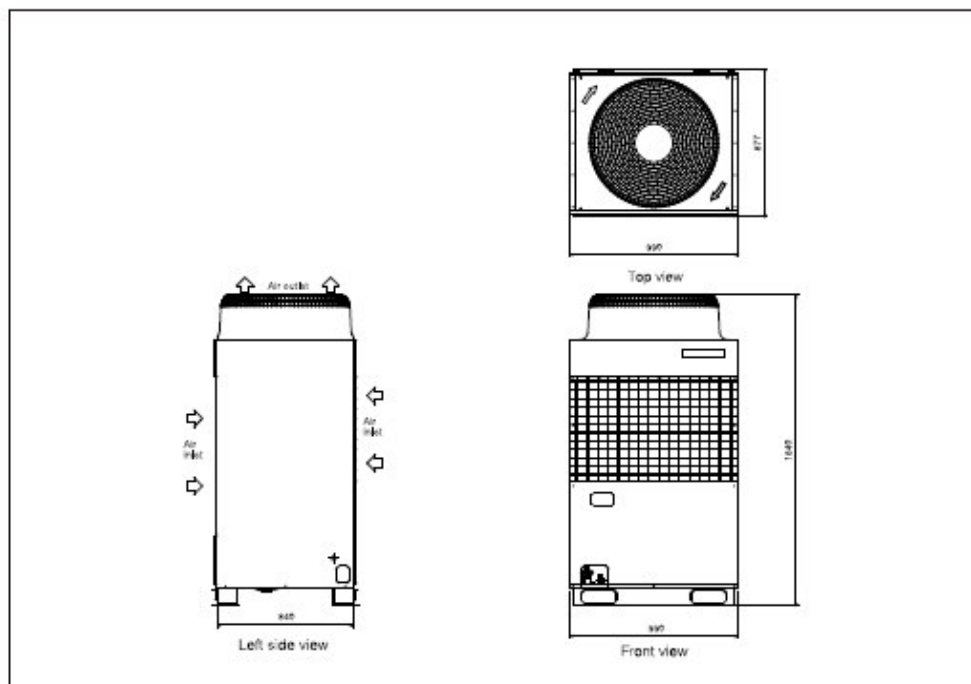
<Cooling> Indoor : 27°CDB / 19°CWB Outdoor : 35°CDB
<Heating> Indoor : 20°CDB Outdoor : 7°CDB / 6°CWB
Pipe length : 7,5m Height difference: 0m

2. The noise level is measured in an anechoic room.

3. Heating can be used only by the indoor warming-up.

4. Works not included : Installation / foundation work, electric connection work, duct work, insulation work.
The power source switch and other items are not specified in the specifications.

External Dimensions



Outdoor Unit

PUHY-P500YGM-A (connected with PFD series.)



Specification

Model name		PUHY-P500YGM-A	
		Cooling	Heating
Capacity	kW	56,0	63,0
Power source		3N~380 / 400 / 415V (50Hz / 60Hz)	
Power input	kW	13,6	13,2
Current	A	22,8 / 21,8 / 21,0	22,2 / 21,0 / 20,4
Fan	Type X Quantity	Propeller fan X 2	
	Airflow rate	m ³ /min 400	
	Motor output	kW 0,38 X 2	
Refrigerant		R410A	
External finish		Pre-coated galvanized sheets + powder coating (for-BS type) <MUNSEL 5Y8 / 1 or similar>	
External dimension	mm	1840(H) x 1990(W) X 840(D)	
Protection device	Fan	Thermal Switch	
Refrigerant piping diameter	Liquid / Gas	ø 15,88 Flare / ø 28,58 Brazed	
Noise level	dB (A)	60 / 61 (50Hz/60Hz)	
Net weight	kg	455	
Operating temperature range		Indoor : 12°CWB ~ 24°CWB (outdoor : -15°CWB~43°CWB)	Indoor : 0°CWB ~ 28°CWB (outdoor : -15°CWB~15,5°CWB)

Note: 1. Cooling / Heating capacity indicates the maximum value at operation under the following condition.

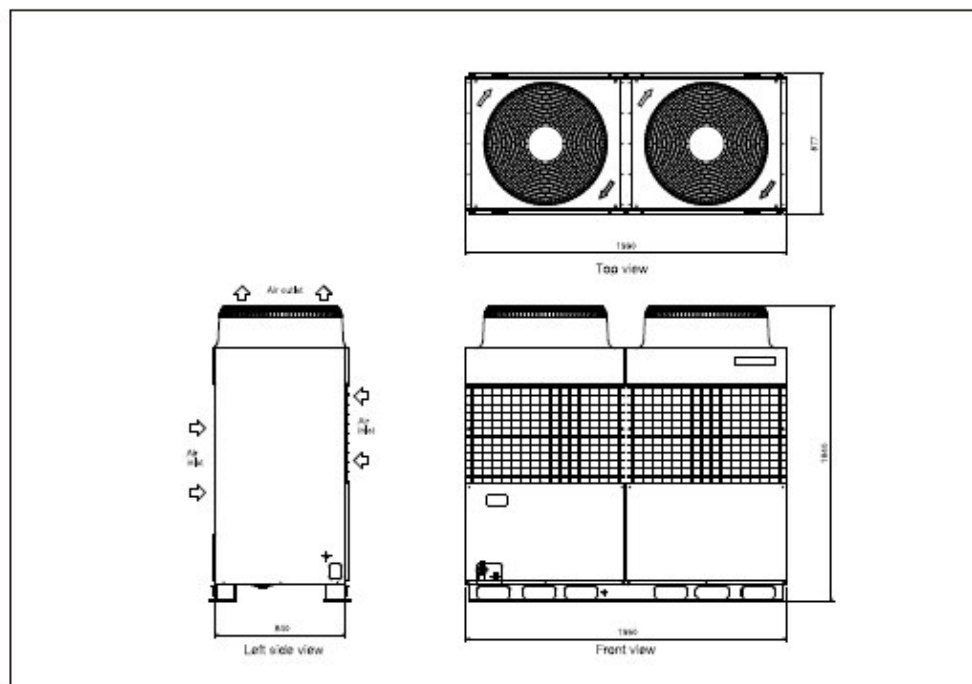
<Cooling> Indoor : 27°CDB / 19°CWB Outdoor : 35°CDB
 <Heating> Indoor : 20°CDB Outdoor : 7°CDB / 6°CWB
 Pipe length : 7,5m Height difference: 0m

2. The noise level is measured in an anechoic room.

3. Heating can be used only by the indoor warming-up.

4. Works not included : Installation / foundation work, electric connection work, duct work, insulation work,
 The power source switch and other items are not specified in the specifications.

External Dimensions





Certificate Number FM33568

The Air Conditioning & Refrigeration Systems Works acquired ISO 9001 certification under Series 9000 of the International Standard Organization (ISO) based on a review of Quality warranties for the production of refrigeration and air conditioning equipment.

ISO Authorization System

The ISO 9000 series is a plant authorization system relating to quality warranties as stipulated by the ISO. ISO 9001 certifies quality warranties based on the "design, development, production, installation and auxiliary services" for products built at an authorized plant.



Certificate Number EC97J1227

The Air Conditioning & Refrigeration Systems Works acquired environmental management system standard ISO 14001 certification.

The ISO 14000 series is a set of standards applying to environmental protection set by the International Standard Organization (ISO).

 **MITSUBISHI ELECTRIC CORPORATION**
<http://Global.MitsubishiElectric.com/>