

# TECHNICAL MANUAL

## Chilled Water Fan Coil Units

**FWW, FWF, FWK(E), FWE, FWC, FUD Series**



FWW



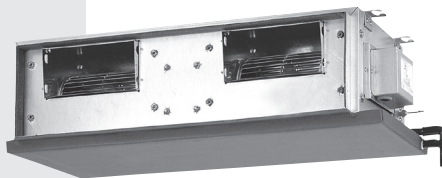
FWF



FWK(E)



FWE-E



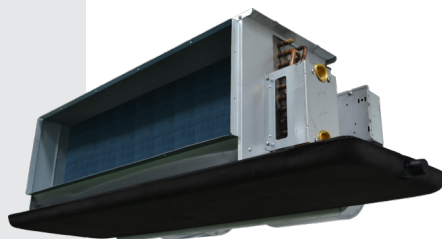
FWC-C



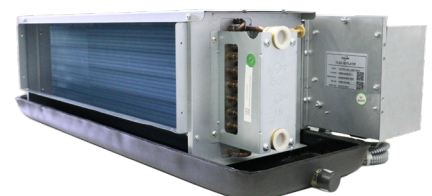
FWC-FD



FUD



FWC-G



FWC-G EC



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# Nomenclature

**FWW 02 L - A C E AB**

## Revision

AA: Revision 1

AB: Revision 2

## Specification

E: Cooling Only

H: Cooling and Heating

## Market

C: Export with CE Mark

E: Export without CE Mark

## Power Supply

A: 220-240V/1Ph/50Hz

F: 380-415V/3Ph/50Hz

## Product Series

L: L series (for FWW)

D: D series (for FWE)

E: E series (for FWE)

## Size

02: 2 kW\*

03: 3 kW\*

## Fan Coil Unit Type

FWW: Wall Mounted

FWE: Ceiling Convertible / Ceiling Exposed

**FWK 06 E - A C C AA**

## Revision

AA: Revision 1

AB: Revision 2

## Specification

C: AC Motor Cooling and Heating

D: DC Motor Cooling and Heating

## Market

C: Export with CE Mark

E: Export without CE Mark

## Power Supply

A: 220-240V/1Ph/50Hz

F: 380-415V/3Ph/50Hz

## Product Series

C: C series (for FWF)

E: E series (for FWK/FWKE)

EH: EH series (for 4 Pipes FWK/FWKE)

## Size

06: 6 kW\*

08: 8 kW\*

## Fan Coil Unit Type

FWF: Ceiling Cassette (600x600)

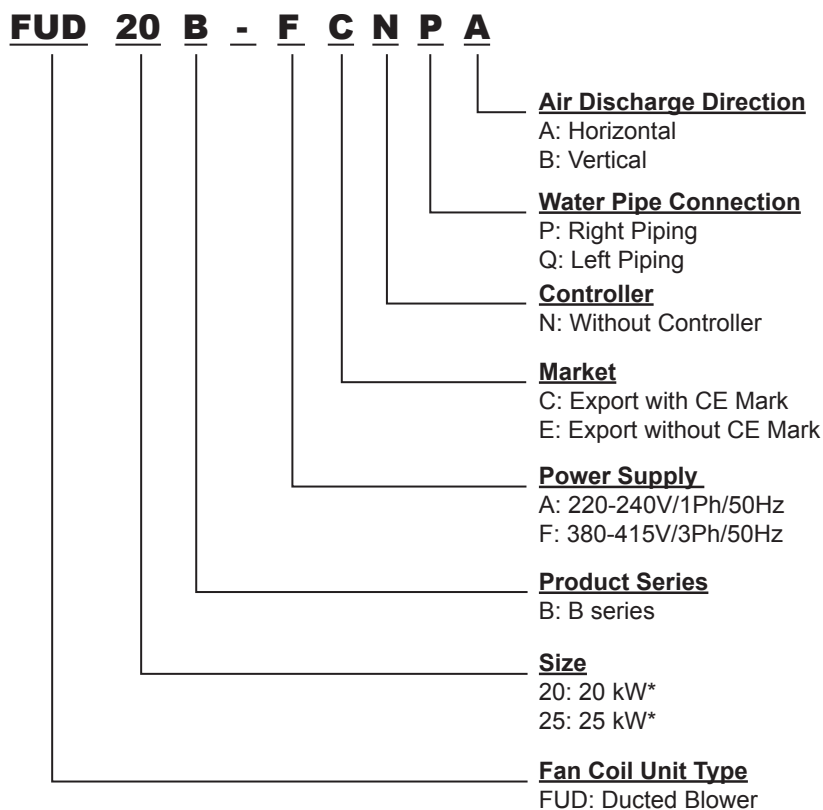
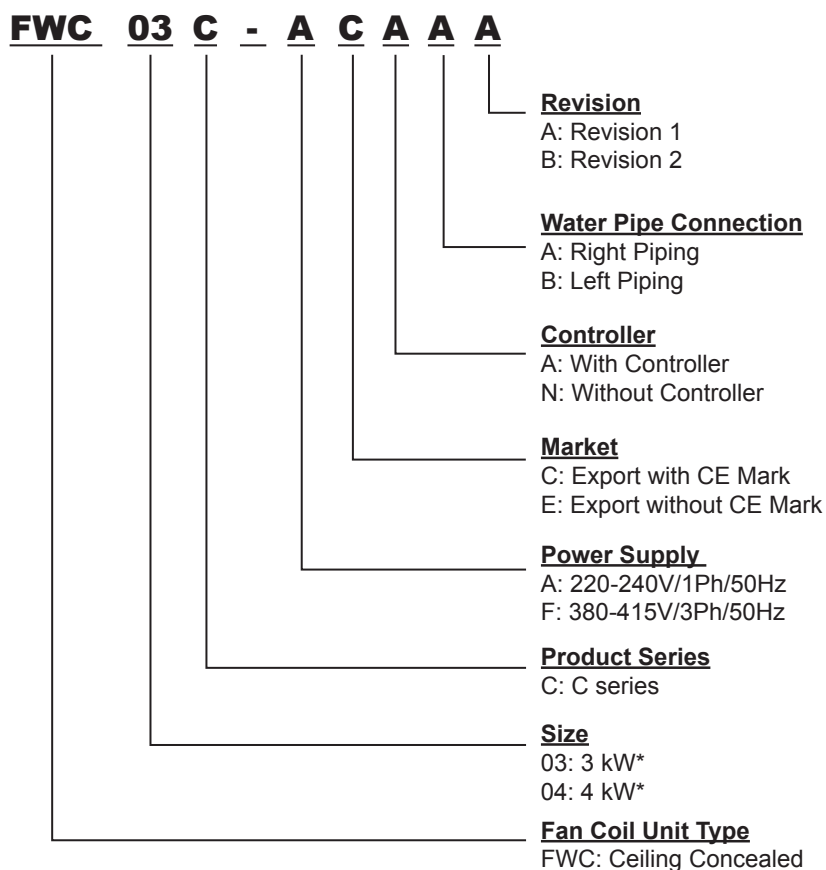
FWK: Ceiling Cassette (900x900)

FWKE: Ceiling Cassette (900x900) DC Motor

Remark:

\* : Capacity value under Nomenclature is an indication.

Please refer to Engineering and Physical Data for exact capacity value



Remark:

\* : Capacity value under Nomenclature is an indication.

Please refer to Engineering and Physical Data for exact capacity value

**FWC 20 F D - A E 5 C R F A X A A**

**Revision**

A: Revision 1  
B: Revision 2

**Insulation Material/Thickness**

A: PE/Drain Pan  
Standard;Return Air Plenum  
Without Insulation  
K: NBR/Drain Pan  
Standard;Return Air Plenum  
Without Insulation

**Motor/Control Module/Wired Controller**

X: AC/Without Control Module/  
Without Wired Controller

**Drain Pan Material & Length**

A: Coated Cold Rolled Steel &  
Standard Length  
D: Stainless Steel & Standard  
Length

**Filter**

F: 8mm Saranet Filter  
H: 1inch Aluminium Filter

**Return Air Plenum & Filter Removal**

R: Rear Return & Side/Bottom  
Filter Removal

**Coil & Water Pipe Connection**

C: 3 Row, Right Piping  
D: 3 Row, Left Piping  
E: 4 Row, Right Piping  
F: 4 Row, Left Piping

**External Static Pressure**

5: 50Pa  
8: 75-80Pa

**Market**

E: Export w/o Marking

**Power Supply**

A: 220-240V/1Ph/50Hz

**Application**

D: High  $\Delta T$  (9°C)

**Product Series**

F: F series

**Size**

02: 200CFM\*  
03: 300CFM\*

**Fan Coil Unit Type**

FWC: Ceiling Concealed

Remark:

\* : Air Flow Rate value under Nomenclature is an indication.

Please refer to Engineering and Physical Data for exact capacity value

Note:

Please consult factory for customised enquiry.

**FWC 10 G - A E 5 C X X A X D A**

**Revision**

A: Revision 1  
B: Revision 2

**Insulation Material/Thickness**

D: PE (10mm)  
G: PE (20mm)  
K: NBR (10mm)  
R: NBR (20mm)

**Motor/Control Module/Wired Controller**

X: AC/Without Control Module/  
Without Wired Controller

**Drain Pan Material & Length**

A: Galvanised Steel & Standard Length  
B: Galvanised Steel & Extended 100mm  
D: Stainless Steel & Standard Length  
E: Stainless Steel & Extended 100mm

**Filter**

X: No Filter  
H: 1" Aluminium Filter  
F: 8mm Saranet Filter  
A: 8mm Aluminium Filter

**Return Air Plenum & Filter Removal**

X: Without Return Plenum &  
Without Filter Removal  
S: Rear Return & Side Filter Removal

**Coil & Water Pipe Connection**

C: Right Piping  
D: Left Piping

**External Static Pressure**

3: 30Pa  
5: 50Pa  
8: 75-80Pa

**Market**

E: Export w/o Marking

**Power Supply**

A: 220-240V/1Ph/50Hz  
W: 220-240V/1Ph/50Hz and  
220-240V/1Ph/60Hz

**Product Series**

G: G series

**Size**

10: 1000CFM\*

**Fan Coil Unit Type**

FWC: Ceiling Concealed

Remark:

\* : Air Flow Rate value under Nomenclature is an indication.

Please refer to Engineering and Physical Data for exact capacity value

Note:

Please consult factory for customised enquiry.

## Product Line-Up

### Chilled Water Fan Coil Units

Model	Classification																	
	PCB					Handset		Control			Connection			Air Discharge			Filter	
	50WJWXX*	UCW_W2.0*	W3*	W3DC*	Without Controller	BRC52A	BRC51A	Auto Air Swing	Turbo	Quiet	1/2" BSP Female Thread Adaptor	3/4" BSP Female Thread Adaptor	1 1/4" BSP Female Thread Adaptor	Horizontal Flow	Vertical Flow	Convertible	Saranet Filter	Viledon R29
FWW02L	X					X		X	X	X	X						X	
FWW03L	X					X		X	X	X	X						X	
FWW04L	X					X		X	X	X	X						X	
FWW05L	X					X		X	X	X	X						X	
FWW06L	X					X		X	X	X	X						X	
FWF02C		X				X		X				X					X	
FWF04C		X				X		X				X					X	
FWF05C		X				X		X				X					X	
FWK06E(H)			X			X		X		X		X					X	
FWK08E(H)			X			X		X		X		X					X	
FWK09E(H)			X			X		X		X		X					X	
FWK11E(H)			X			X		X		X		X					X	
FWK13E(H)			X			X		X		X		X					X	
FWKE05E(H)				X		X		X	X	X		X					X	
FWKE08E(H)				X		X		X	X	X		X					X	
FWKE11E(H)				X		X		X	X	X		X					X	
FWE05E		X				X		X			X					X	X	
FWE06E		X				X		X			X					X	X	
FWE07E		X				X		X			X					X	X	
FWE08E			X			X		X				X				X	X	
FWE10E			X			X		X				X				X	X	
FWE12E			X			X		X				X				X	X	

Model	Classification																					
	PCB					Handset		Control			Connection				Air Return			Air Discharge			Filter	
	50WJWXX*	UCW_W2.0*	W3*	W3DC*	Without Controller	BRC52A	BRC51A	Auto Air Swing	Turbo	Quiet	3/4" BSPT Female Thread Adaptor	3/4" BSP Female Thread Adaptor	1" BSPT Female Thread Adaptor	1 1/4" BSP Female Thread Adaptor	Horizontal Flow	Vertical Flow	Convertible	Rear Return	Bottom Return	Convertible	Saranet Filter	Viledon R29
FWC03C		X					X					X			X			X			X	
FWC04C		X					X					X			X			X			X	
FWC06C		X					X					X			X			X			X	
FWC07C		X					X					X			X			X			X	
FWC09C		X					X					X			X			X			X	
FWC11C		X					X					X			X			X			X	
FWC12C		X					X					X			X			X			X	
FWC14C		X					X					X			X			X			X	
FWC16C		X					X					X			X			X			X	
FWC02FD**					X						X				X			X		X	X	
FWC03FD**					X						X				X			X		X	X	
FWC04FD**					X						X				X			X		X	X	
FWC05FD**					X						X				X			X		X	X	
FWC06FD**					X						X				X			X		X	X	
FWC08FD**					X						X				X			X		X	X	
FWC10FD**					X						X				X			X		X	X	
FWC02G					X						X				X			X				
FWC03G					X						X				X			X				
FWC04G					X						X				X			X				
FWC06G					X						X				X			X				
FWC08G					X						X				X			X				
FWC10G					X						X				X			X				
FWC12G					X						X				X			X				
FWC14G					X								X		X			X				
FWC16G					X								X		X			X				
FWC18G					X								X		X			X				
FWC20G					X								X		X			X				
FUD20B					X									X	X			X			X	
FUD25B					X									X	X			X			X	
FUD30B					X									X	X			X				X
FUD40B					X									X	X			X				X

\* PCB naming

\*\* Standard Model, optional items please refer to Nomenclature.

# Application Information

## Model: FWW

### Operating Limits:

Thermal carrier : Water

Water temperature : 4°C ~ 10°C (Cooling), 35°C ~ 50°C (Heating)

Maximum water pressure : 16 bar

Air temperature : (as below)

### Cooling Mode

Temperature	Ts °C/°F	Th °C/°F
Minimum indoor temperature	19.0 / 66.2	14.0 / 57.2
Maximum indoor temperature	32.0 / 89.6	23.0 / 73.4

### Heating Mode

Temperature	Ts °C/°F	Th °C/°F
Minimum indoor temperature	15.0 / 59.0	-
Maximum indoor temperature	27.0 / 80.6	-

Ts: Dry bulb temperature.

Th: Wet bulb temperature.

## Model: FWF

### Operating Limits:

Thermal carrier : Water

Water temperature : 4°C ~ 10°C (Cooling), 35°C ~ 50°C (2 Pipes) (Heating)

Maximum water pressure : 16 bar

Air temperature : (as below)

### Cooling Mode

Temperature	Ts °C/°F	Th °C/°F
Minimum indoor temperature	19.0 / 66.2	14.0 / 57.2
Maximum indoor temperature	32.0 / 89.6	23.0 / 73.4

### Heating Mode

Temperature	Ts °C/°F	Th °C/°F
Minimum indoor temperature	15.0 / 59.0	-
Maximum indoor temperature	27.0 / 80.6	-

Ts: Dry bulb temperature.

Th: Wet bulb temperature.

## Model: FWK & FWKE

### Operating Limits:

Thermal carrier : Water

Water temperature : 4°C ~ 10°C (Cooling), 35°C ~ 50°C (2 Pipes) (Heating), 35°C ~ 70°C (4 Pipes) (Heating)

Maximum water pressure : 16 bar

Air temperature : (as below)

### Cooling Mode

Temperature	Ts °C/°F	Th °C/°F
Minimum indoor temperature	16.0 / 60.8	11.0 / 51.8
Maximum indoor temperature	32.0 / 89.6	23.0 / 73.4

### Heating Mode

Temperature	Ts °C/°F	Th °C/°F
Minimum indoor temperature	16.0 / 60.8	-
Maximum indoor temperature	30.0 / 86.0	-

Ts: Dry bulb temperature.

Th: Wet bulb temperature.

## Model: FWE

### Operating Limits:

Thermal carrier : Water

Water temperature : 4°C ~ 10°C (Cooling), 35°C ~ 50°C

Maximum water pressure : 16 bar

Air temperature : (as below)

### Cooling Mode

Temperature	Ts °C/°F	Th °C/°F
Minimum indoor temperature	19.0 / 66.2	14.0 / 57.2
Maximum indoor temperature	32.0 / 89.6	23.0 / 73.4

### Heating Mode

Temperature	Ts °C/°F	Th °C/°F
Minimum indoor temperature	15.0 / 59.0	-
Maximum indoor temperature	27.0 / 80.6	-

Ts: Dry bulb temperature.

Th: Wet bulb temperature.

**Model: FWC-C****Operating Limits:**

Thermal carrier : Water

Water temperature : 4 ~ 10°C (Cooling), 35°C ~ 50°C (Heating)

Maximum water pressure : 16 bar

Air temperature : (as below)

**Cooling Mode**

Temperature	Ts °C/°F	Th °C/°F
Minimum indoor temperature	19.0 / 66.2	14.0 / 57.2
Maximum indoor temperature	32.0 / 89.6	23.0 / 73.4

**Heating Mode**

Temperature	Ts °C/°F	Th °C/°F
Minimum indoor temperature	15.0 / 59.0	-
Maximum indoor temperature	27.0 / 80.6	-

Ts: Dry bulb temperature.

Th: Wet bulb temperature.

**Model: FWC-FD****Operating Limits:**

Thermal carrier : Water

Water temperature : 4 ~ 10°C (Cooling)

Maximum water pressure : 16 bar

Air temperature : (as below)

**Cooling Mode**

Temperature	Ts °C/°F	Th °C/°F
Minimum indoor temperature	19.0 / 66.2	14.0 / 57.2
Maximum indoor temperature	32.0 / 89.6	23.0 / 73.4

Ts: Dry bulb temperature.

Th: Wet bulb temperature.

**Model: FWC-G (LSP & MSP) , FWC-G EC (LSP & MSP)****Operating Limits:**

Thermal carrier : Water

Water temperature : 4 ~ 10°C (Cooling)

Maximum water pressure : 16 bar

Air temperature : (as below)

**Cooling Mode**

Temperature	Ts °C/°F	Th °C/°F
Minimum indoor temperature	19.0 / 66.2	14.0 / 57.2
Maximum indoor temperature	32.0 / 89.6	23.0 / 73.4

Ts: Dry bulb temperature.

Th: Wet bulb temperature.

**Model: FUD****Operating Limits:**

Thermal carrier : Water

Water temperature : 4 ~ 10°C (Cooling), 35°C ~ 70°C (Heating)

Maximum water pressure : 16 bar

Air temperature : (as below)

**Cooling Mode**

Temperature	Ts °C/°F	Th °C/°F
Minimum indoor temperature	19.0 / 66.2	14.0 / 57.2
Maximum indoor temperature	32.0 / 89.6	23.0 / 73.4

**Heating Mode**

Temperature	Ts °C/°F	Th °C/°F
Minimum indoor temperature	15.0 / 59.0	-
Maximum indoor temperature	27.0 / 80.6	-

Ts: Dry bulb temperature.

Th: Wet bulb temperature.



Installation Guide

System Configuration

The standard controller board comes with a VALVE jumper and a HEAT jumper. The system can be configured as the jumper selection listed below:

	HEAT Jumper	VALVE Jumper
Heatpump Mode & Valve Application	√	√
Heatpump Mode & Valveless Application	√	X
Cooling Mode & Valve Application	X	√
Cooling Mode & Valveless Application	X	X

√ Jumper Remained      X Jumper Removed

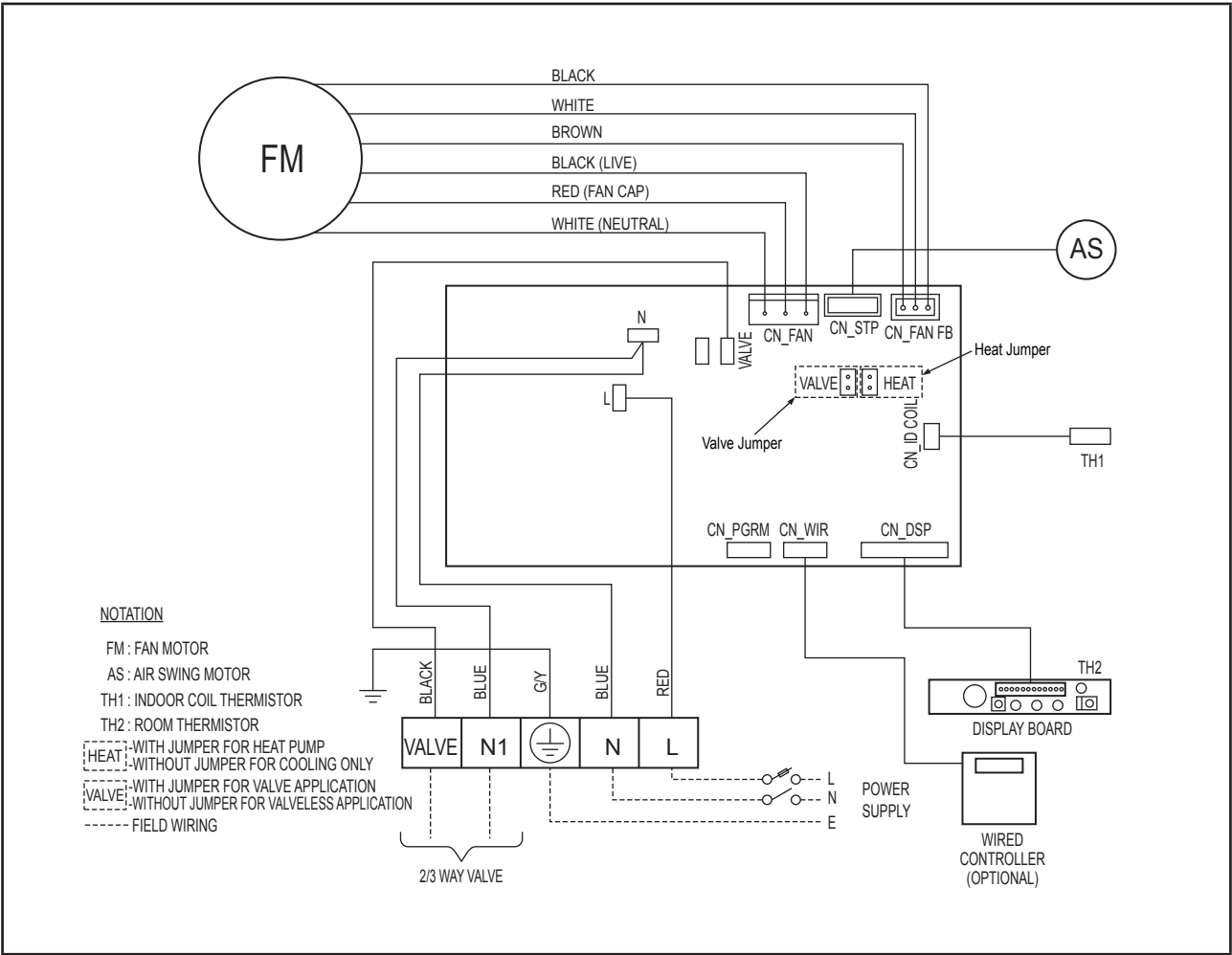


Caution

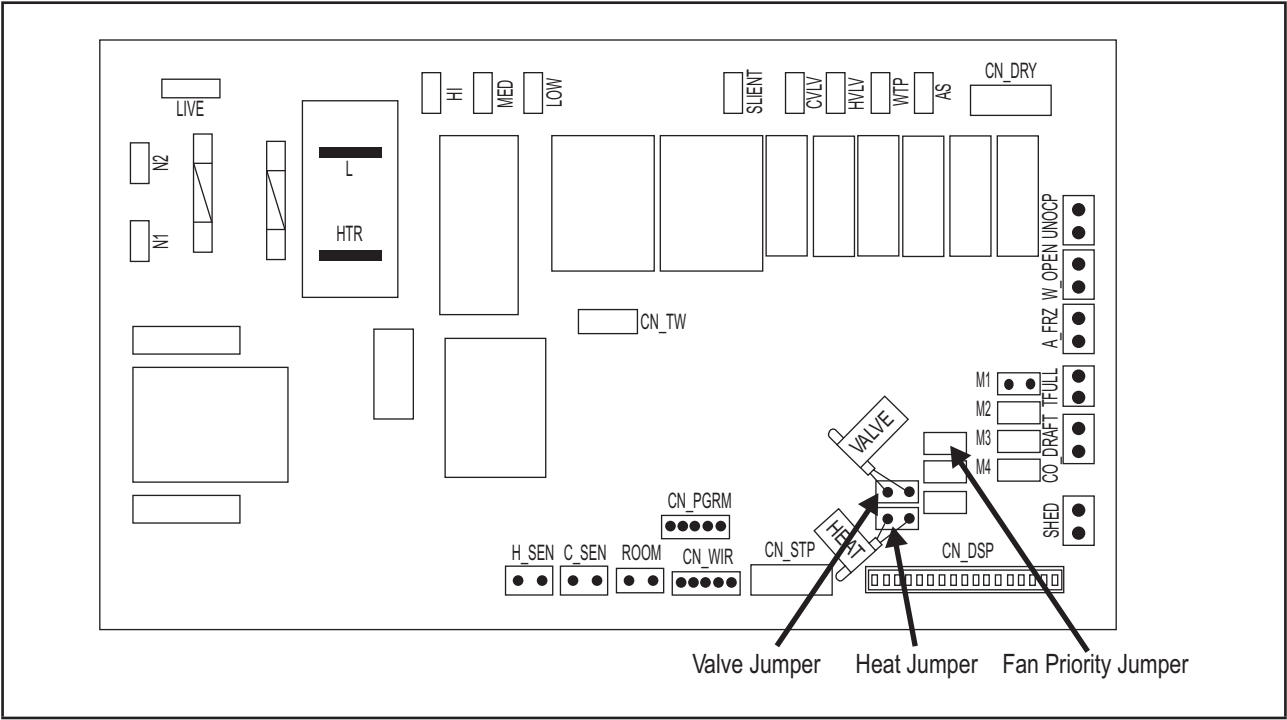
Disconnect the power supply to the unit before attempting to connect the wiring

Valve, Heat and Fan Priority Setting

Model: FWW-L



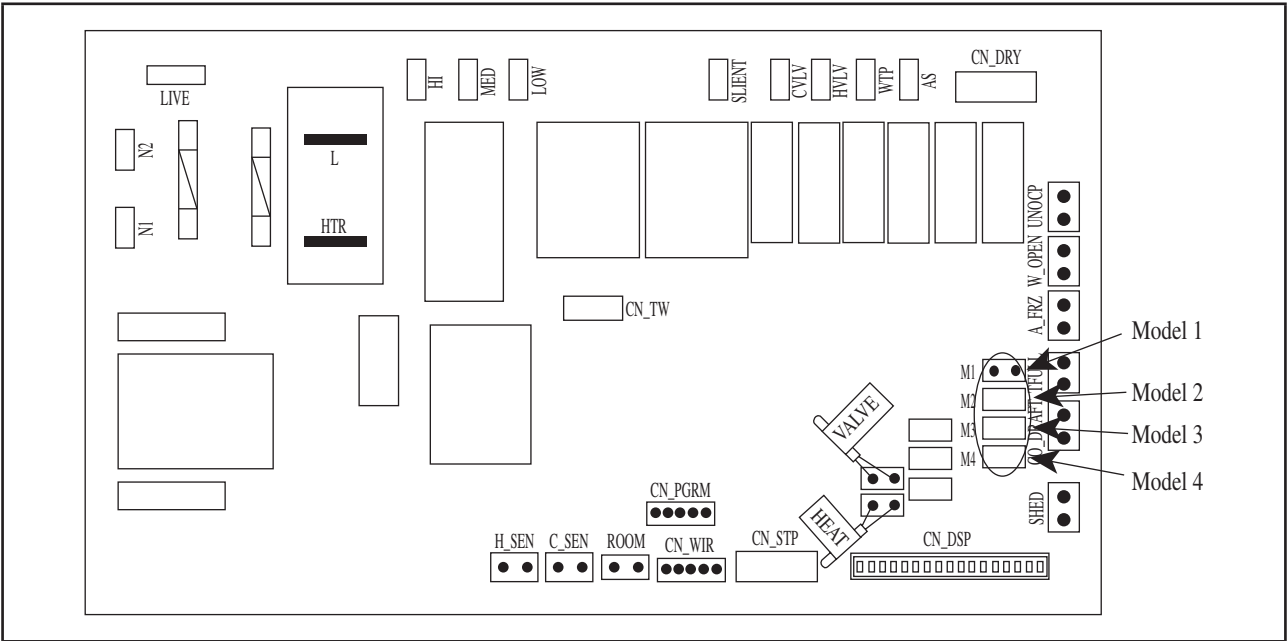
Model: FWF/FWK/FWE/FWC-C



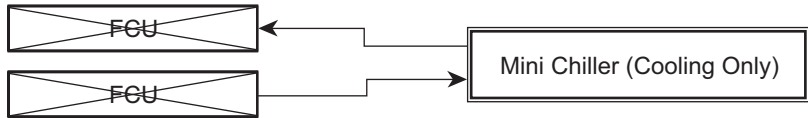
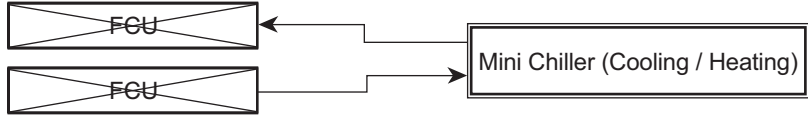
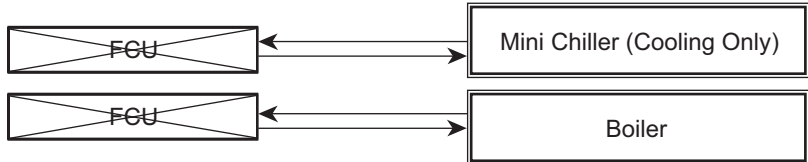
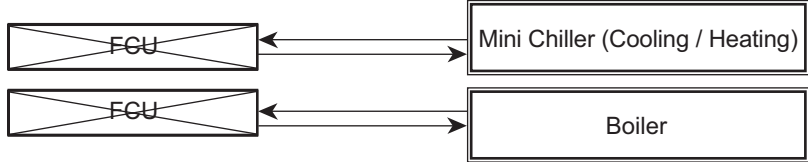
Jumper	With Jumper (Default)	Without Jumper
Fan Priority Jumper	User set speed or lower fan if auto mode is selected	Fan Stop when thermostat cat off
Heat Jumper	For Heat pump	For Cooling only
Valve Jumper	For valve control	For valveless control

4 pipes system controller board setting

Model : FWK-E(H) & FWKE-E(H)



The standard controller board (W3) comes with a default setting for model selection. Please select the model accordingly by using jumper.

System	Model	Function
2 Pipe System	M1 - Model 1	Cooling or Heating 
	M2 - Model 2	Cooling or Heating with Auxiliary Heater 
4 Pipe System	M3 - Model 3	Cooling Only with Boiler 
	M4 - Model 4	Cooling or Heating with Boiler 

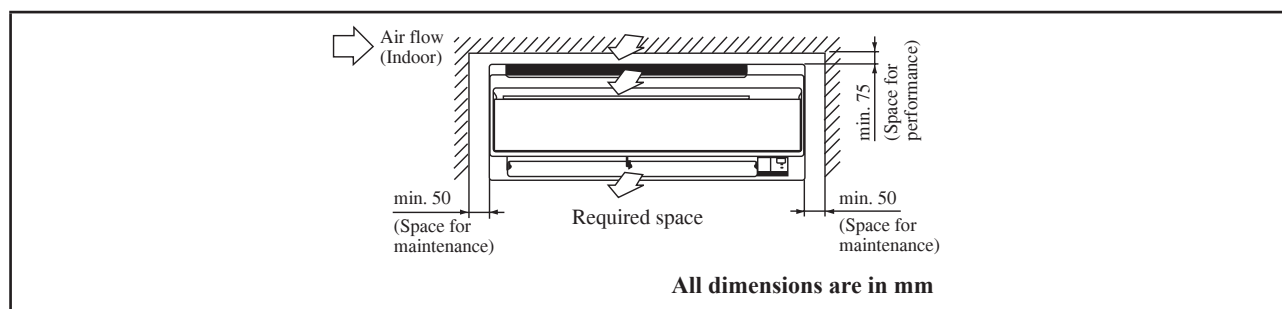
**NOTE :**

- i) Auto Fan Mode is only applicable in Model 3 only. (Cooling only with Boiler)
- ii) Fan mode is not available in valveless control.
- iii) Wired handset has an indoor room sensor. Avoid locating the wired handset at isolated places where room temperature reading will be inaccurate.

## Indoor Installation

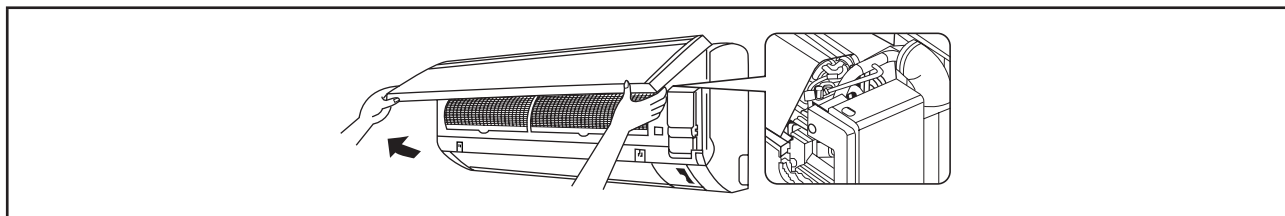
### Model: FWW-L

The indoor unit must be installed in such a way so as to prevent short circuit of the cool discharged air with the hot return air. Please follow the installation clearance shown in the figure. Do not place the indoor unit where there could be direct sunlight shining on it. Also, this location must be suitable for piping and drainage, and be away from doors or windows.



### Air Purging

To prevent pump damage, the fan coil unit should not be energized until the coil and all water lines have been purged of air.



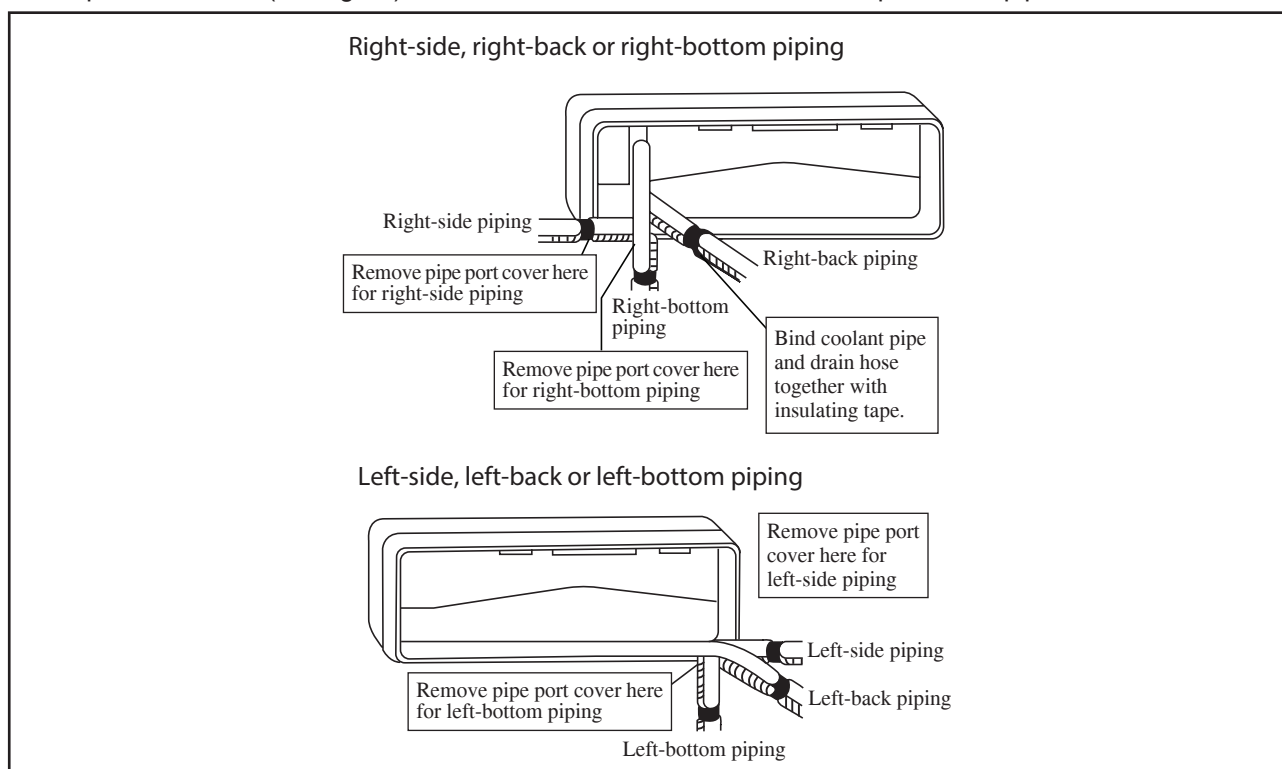
The Air Vent located inside the casing. Removed the casing and connect hose to the air vent while doing purging.



### Caution

**Ensure there is no water droplets go into the control box during purging process.**

The water piping can be routed to the unit in a number of ways (left or right from the back of the unit), by using the cut-out holes on the casing of the unit (see figure). Bend the pipes carefully to the required position in order to align it with the holes. For the side and bottom, hold the bottom of the piping and then position it to the required direction (see figure). The condensation drain hose can be taped to the pipes.

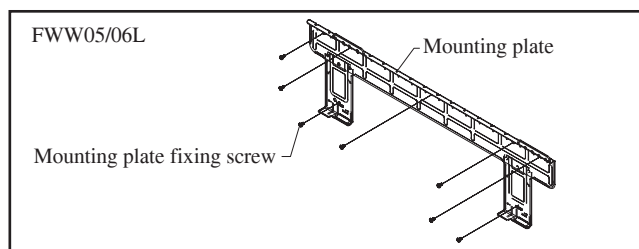
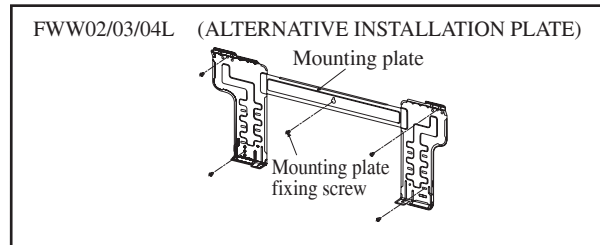
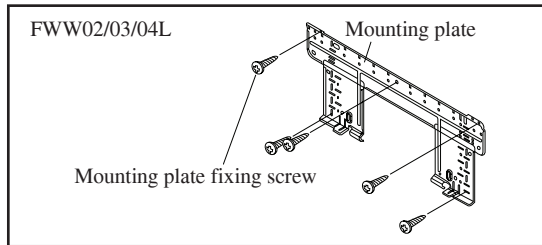


## Mounting Installation Plate

Ensure that the wall is strong enough to withstand the weight of the unit. Otherwise, it is necessary to reinforce the wall with plates, beams or pillars.

Use the level gauge for horizontal mounting, and fix it with 5 suitable screws for FWW02/03/04L and 7 suitable screws for FWW05/06L.

In case the rear piping draws out, drill a hole 65mm in diameter with a cone drill, slightly lower on the outside wall (see figure).

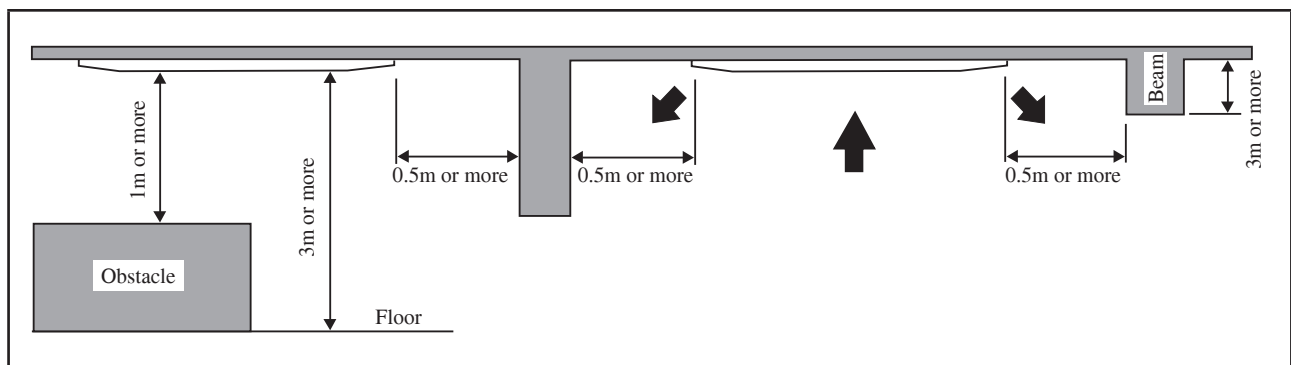


## Model: FWF/FWK/FWKE

### 1. Preliminary Site Survey

Be sure to read this manual before installing the air-conditioner indoor unit.

- Voltage supply fluctuation must not exceed +10% of rated voltage. Electricity supply lines must be independent of welding transformers which can cause high supply fluctuation.
- Ensure that the location is convenient for wiring, piping and drainage.
- Do not exert pressure on the resin parts when opening the unit or when moving it after opening.
- Do not move the unit from packaging while moving, until it reaches the installation site. Use safe material or protection plates when unpacking it or lifting it to avoid damage or scratches to the unit.



- Ensure a location where:
  - a) Drainage can be done easily.
  - b) Convenient for wiring and piping.
  - c) Which have enough space for installation and service work.
  - d) Where no risk of flammable gas leakage.
  - e) When free from any obstacles in path of cool air discharge and warm air return and must allow spreading of air throughout the room (near the center of the room).
  - f) Must be provided clearance for indoor unit from the wall and obstacles as shown in figure below.
  - g) The installation place must be strong enough to support a load 4 times the indoor unit weight to avoid amplifying noise and vibration.
  - h) The installation place (hanging ceiling surface) must be assuring levelness and the height in the ceiling is 350mm or more.
  - i) The indoor unit must be away from heat and steam sources (avoid installing it near an entrance).

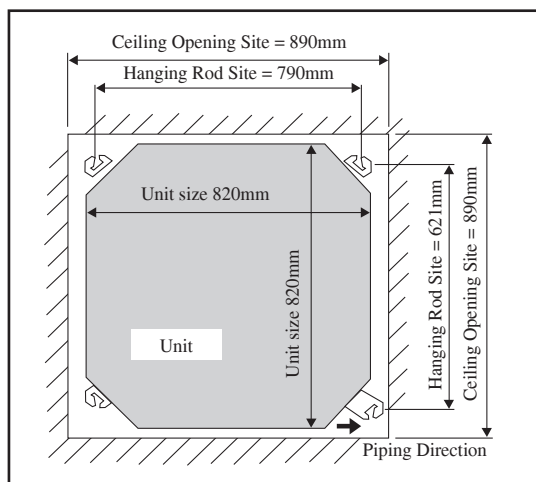
### Unit Installation

- Measure and mark the position for the hanging rod. Drill the hole for the angle nut on the ceiling and fix the hanging rod.
- The installation template is extended according to temperature and humidity. Check on dimensions in use.
- The dimensions of the installation template are the same as those of the ceiling opening dimensions.
- Before ceiling laminating work is completed, be sure to fit the installation template to the indoor unit.

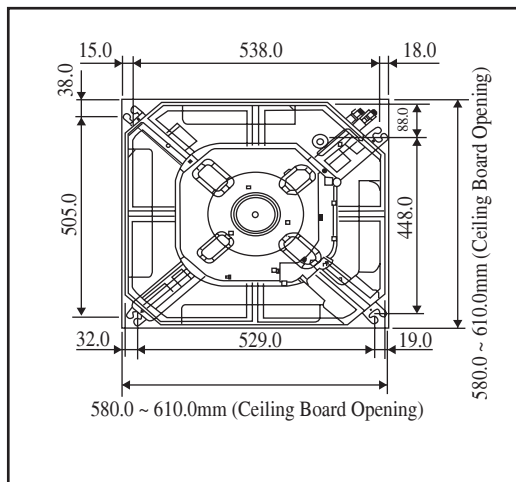
#### NOTE

Be sure to discuss the ceiling drilling work with the installers concerned.

FWK/FWKE

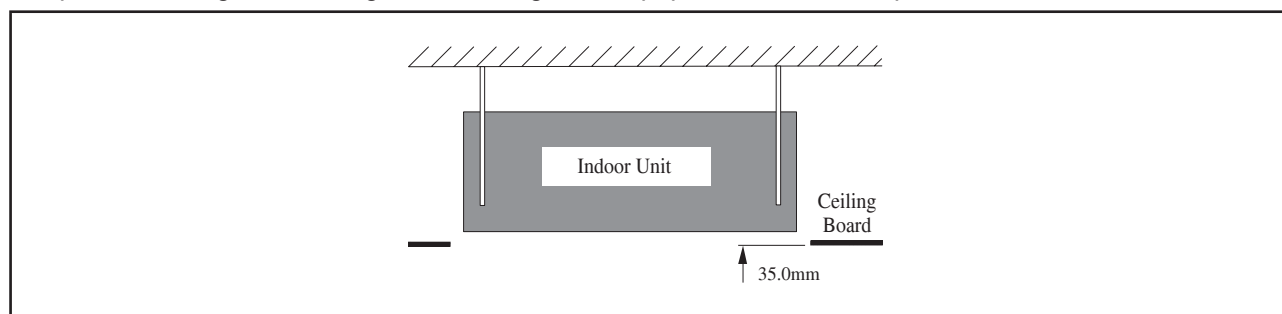


FWF



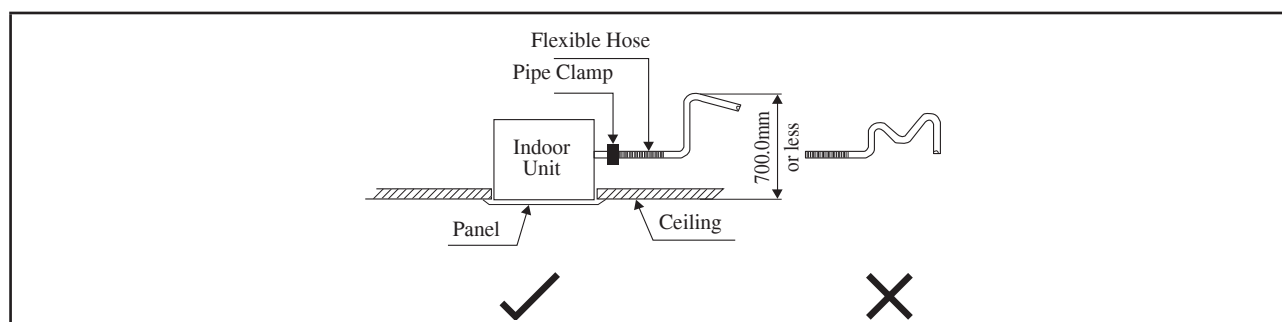
### Unit Hanging

- Confirm the pitch of the hanging rod.
- Hold the unit and hang it on the hanging rod with the nut and washer.
- Adjust the unit height to 35.0mm between the indoor unit bottom surface and the ceiling surface.
- Confirm with a level gauge that the unit is installed horizontally and tighten the nut and bolt to prevent unit failing and vibration.
- Open the ceiling board along the outer edge of the paper installation template.



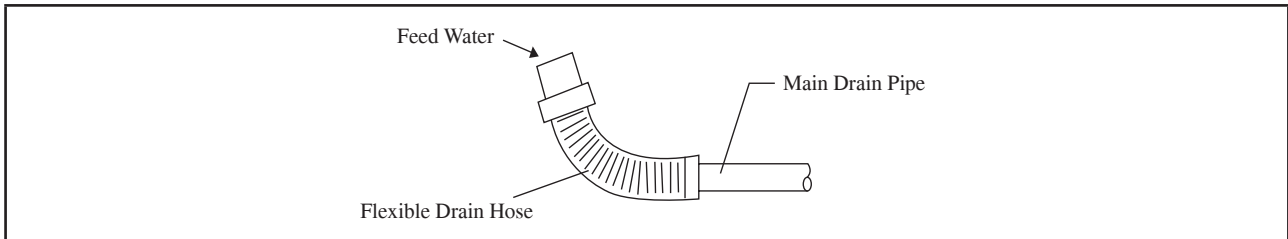
### Drain Piping Work

- Drain pipe must be in downward gradient for smooth drainage.
- Avoid installing the drain pipe in up and down slope to prevent reversed water flow.
- During the drain pipe connection, be careful not to exert extra force on the drain connector at indoor unit.
- The outside diameter of the drain connection at the flexible drain hose is 20mm.
- Be sure to execute heat insulation (polyethylene foam with thickness more than 8.0mm) on the drain piping to avoid the condensed water dripping inside the room.



### Drain Test

- Connect the main drain pipe to the flexible drain.
- Feed water from flexible drain hose to check the piping for leakage.
- When the test is completed, connect the flexible drain hose to the drain connector on the indoor unit.



#### NOTE

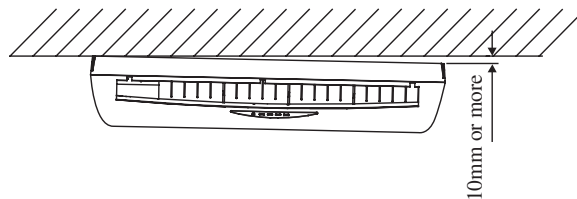
This Indoor Unit uses a drain pump for condensed water drainage. Install the unit horizontally to prevent water leakage or condensation around the air outlet.

### Model: FWE05/06/07E

#### Standard Mounting

- Ensure that the overhead supports are strong enough to hold the weight of the unit.
- Position the hanger rods (wall mounting bracket for floor standing), and check for its alignment with the unit.
- Also, check that the hangers are secured and the base of the fan coil unit is leveled in both horizontal directions, taking into account the gradient for drainage flow as recommended in Figure A.

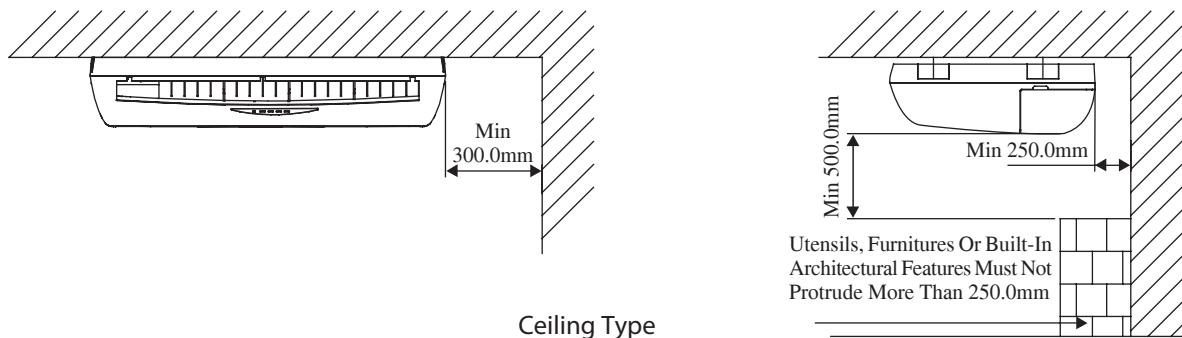
Figure A



Please ensure that the following steps are taken:

- Check the gradient for drainage flow as recommended in Figure A.
- Provide clearance for easy servicing and optimal air flow as shown in Figure B.
- The indoor unit must be installed such that there is no short circuit of the cool discharge air with the warm return air.
- Do not install the indoor unit where there is direct sunlight shining on the unit. The location should be suitable for piping and drainage installation. The unit must be a large distance away from the door.

Figure B

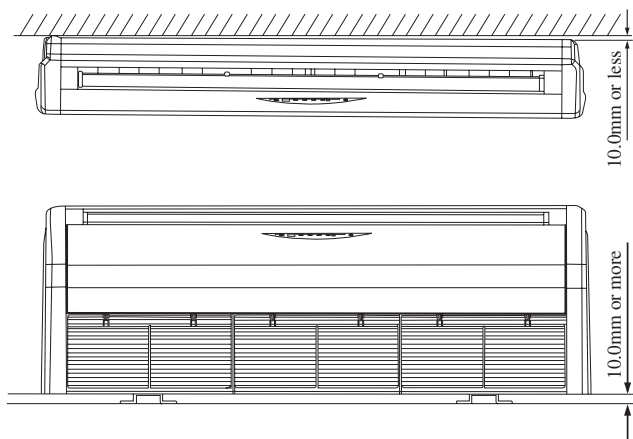


Ceiling Type

**Model: FWE08/10/12E****Standard Mounting**

Ensure that the overhead supports are strong enough to hold the weight of the unit. Position the hanger rods (wall mounting bracket for floor standing), and check for its alignment with the unit. Also, check that the hangers are secured and the base of the fan coil unit is leveled in both horizontal directions, taking into account the gradient for drainage flow as recommended in Figure A.

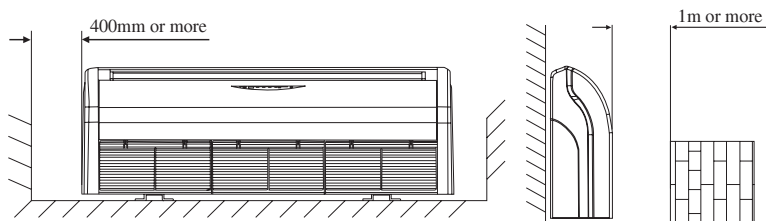
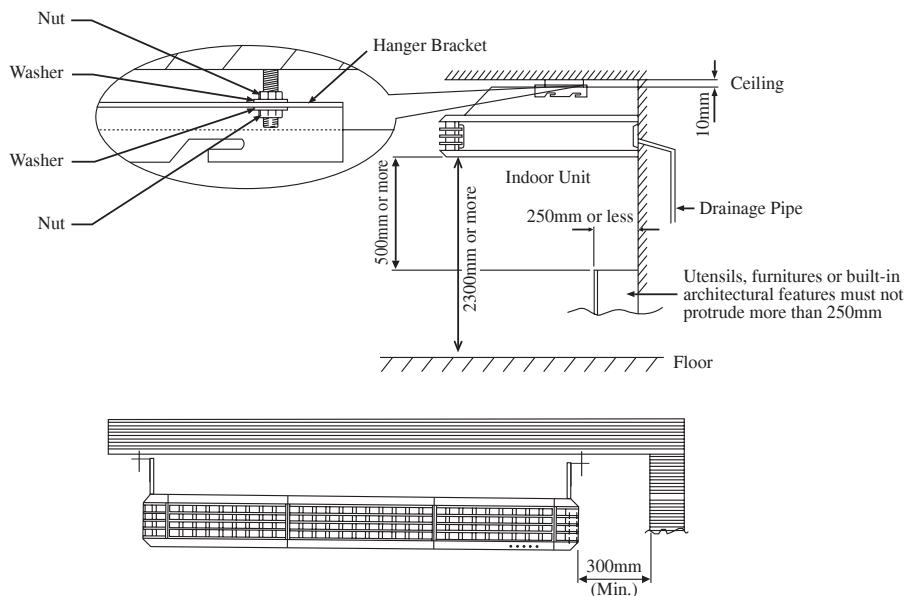
Figure A



Please ensure that the following steps are taken:

- Unit installation should be tilted at least 10mm as recommended in Figure A.
- The drain pipe slope shall be kept at least 1:100.
- Provide clearance for easy servicing and optimal air flow as shown in Figure B.
- The indoor unit must be installed such that there is no short circuit of the cool discharge air with the warm return air.
- Do not install the indoor unit where there is direct sunlight shining on the unit. The location should be suitable for piping and drainage installation. The unit must be a large distance away from the door.

Figure B



Floor Standing Type

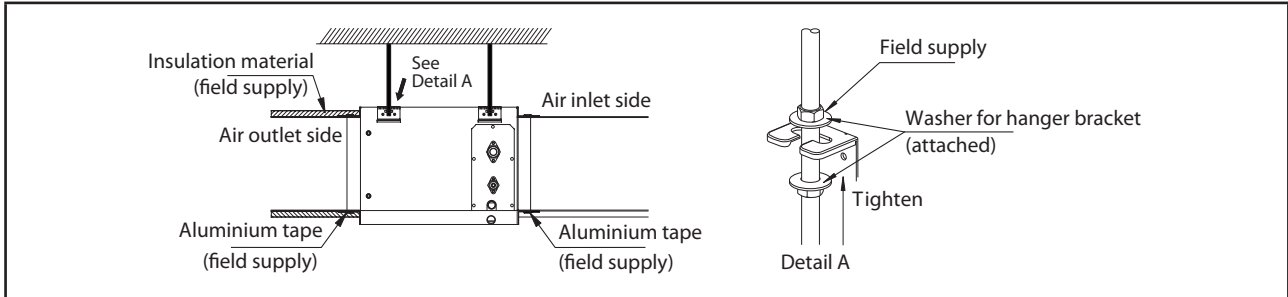


### Model: FWC-C

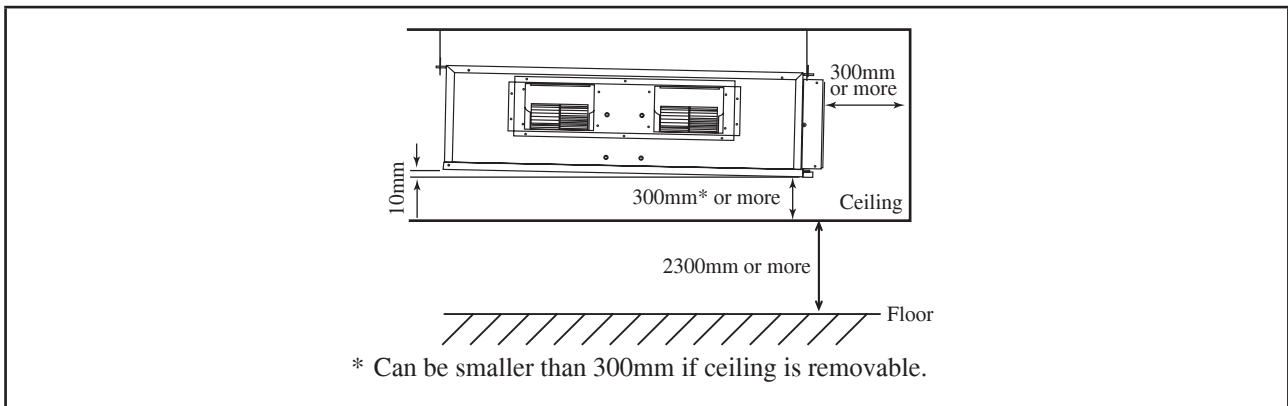
The indoor unit must be installed such that there is no short circuit of the cool discharge. Respect the installation clearance. Do not put the indoor unit where there is direct sunlight on unit. The location is suitable for piping and drainage and it must have a large distance between a door and unit.

#### Ceiling Concealed Mounting

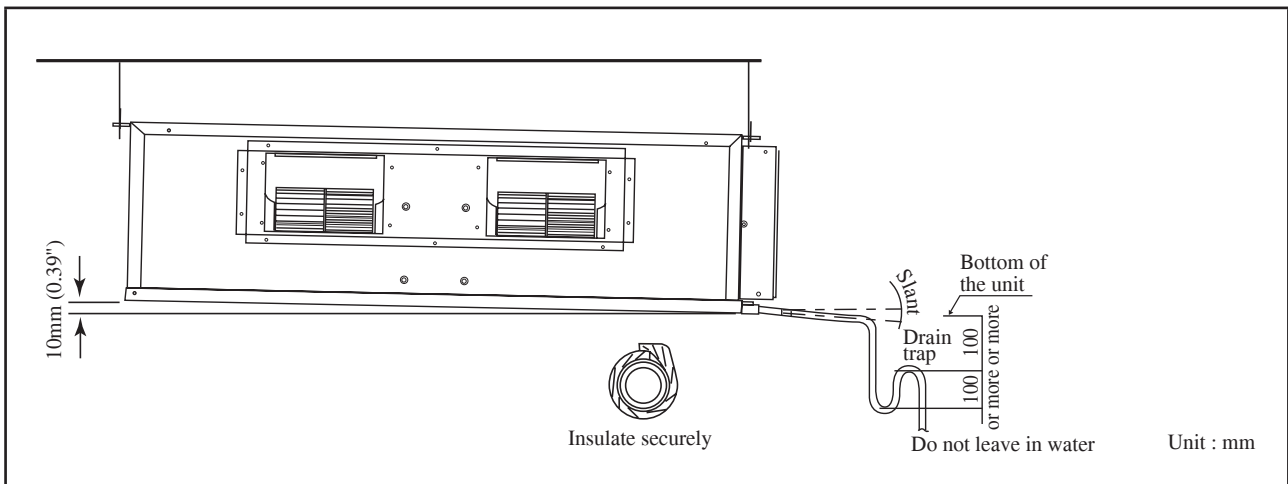
- Use the hanger supplied with the unit.
- Make sure that the ceiling is sufficiently strong to withstand the weight.



Provide clearance for servicing ease and optimal air flow as shown in the diagram.



#### Ceiling Concealed Drain Piping Work



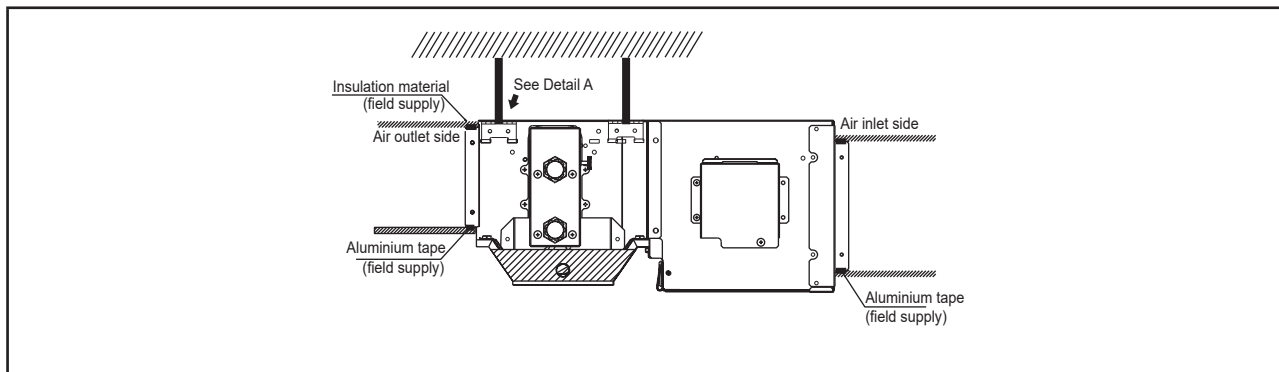
- The drain pipe must be installed as shown in the diagram (see diagram above) to avoid damage caused by leaks and condensation.
- For the best result, keep the piping as short as possible. Slant the piping at an angle to improve the flow.
- Ensure the drain pipe is securely insulated.
- It is necessary to provide a drain trap in the drain outlet to relieve pressure that exists within the unit compared to the outside atmospheric pressure when the unit is operating. The drain trap is to avoid possibility of splashes or an odor.
- Keep pipes as straight as possible for easy cleaning and to prevent the accumulation of dirt and debris.
- Conduct a water drainage test after the installation is completed. Make sure that the drainage flow is smooth.
- In humid environments, use an extra drain pan to cover the entire area of the indoor unit.

**Model: FWC-FD**

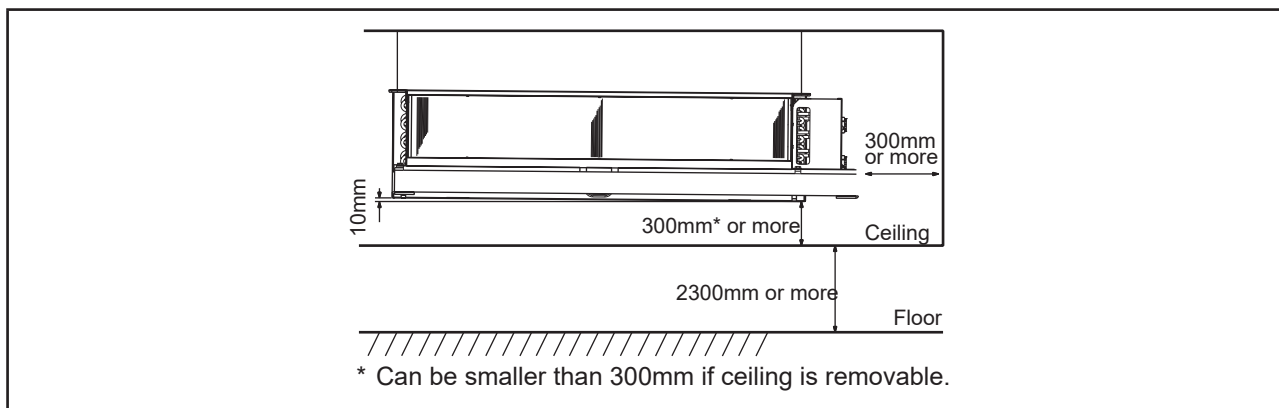
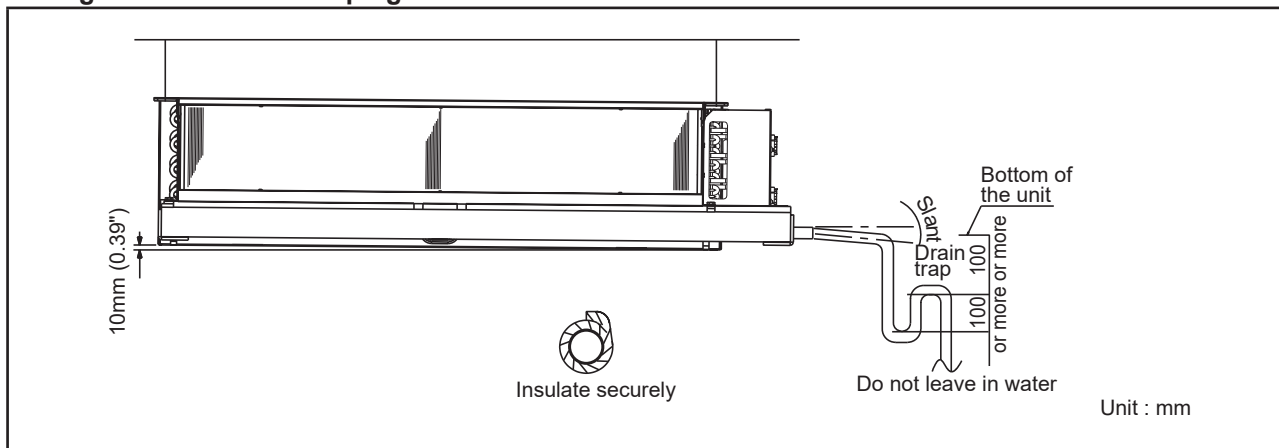
The indoor unit must be installed such that there is no short circuit of the cool discharge. Respect the installation clearance. Do not put the indoor unit where there is direct sunlight on unit. The location is suitable for piping and drainage and it must have a large distance between a door and unit.

**Ceiling Concealed Mounting**

- Use the hanger supplied with the unit.
- Make sure that the ceiling is sufficiently strong to withstand the weight.



Provide clearance for servicing ease and optimal air flow as shown in the diagram.

**Ceiling Concealed Drain Piping Work**

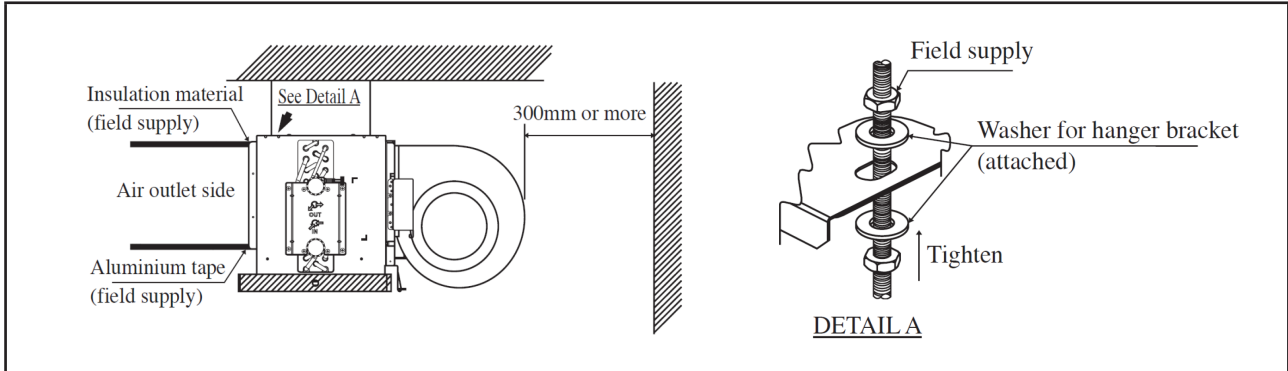
- The drain pipe must be installed as shown in the diagram (see diagram above) to avoid damage caused by leaks and condensation.
- For the best result, keep the piping as short as possible. Slant the piping at an angle to improve the flow.
- Ensure the drain pipe is securely insulated.
- It is necessary to provide a drain trap in the drain outlet to relieve pressure that exists within the unit compared to the outside atmospheric pressure when the unit is operating. The drain trap is to avoid possibility of splashes or an odor.
- Keep pipes as straight as possible for easy cleaning and to prevent the accumulation of dirt and debris.
- Conduct a water drainage test after the installation is completed. Make sure that the drainage flow is smooth.
- In humid environments, use an extra drain pan to cover the entire area of the indoor unit.

### Model: FWC-G (MSP , LSP)

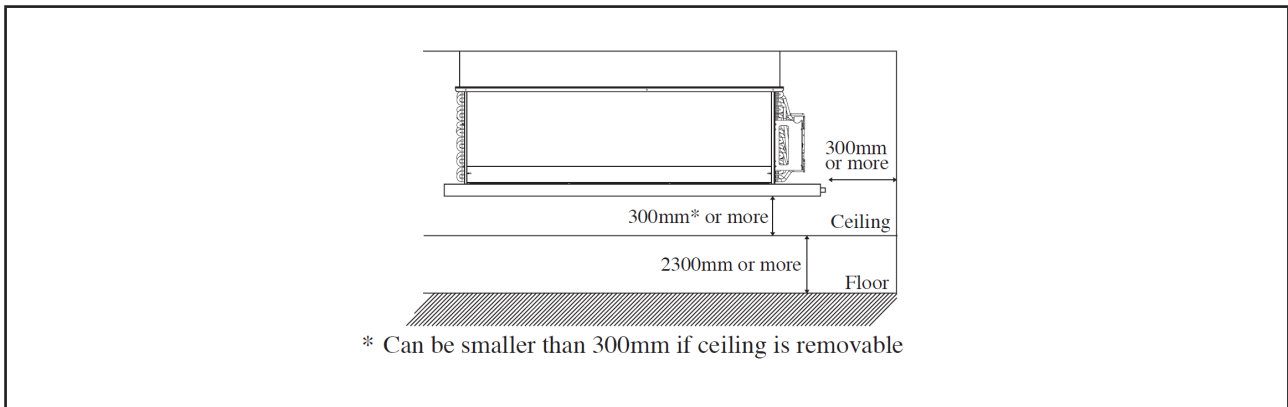
The indoor unit must be installed such that there is no short circuit of the cool discharge. Respect the installation clearance. Do not put the indoor unit where there is direct sunlight on unit. The location is suitable for piping and drainage and it must have a large distance between a door and unit.

#### Ceiling Concealed Mounting

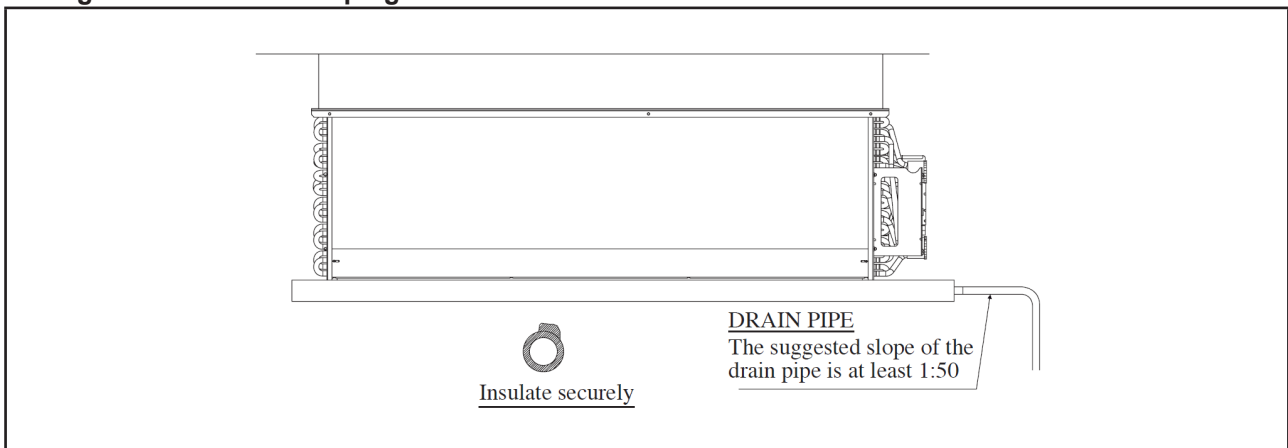
- Use the hanger supplied with the unit.
- Make sure that the ceiling is sufficiently strong to withstand the weight.



Provide clearance for servicing ease and optimal air flow as shown in the diagram.



#### Ceiling Concealed Drain Piping Work



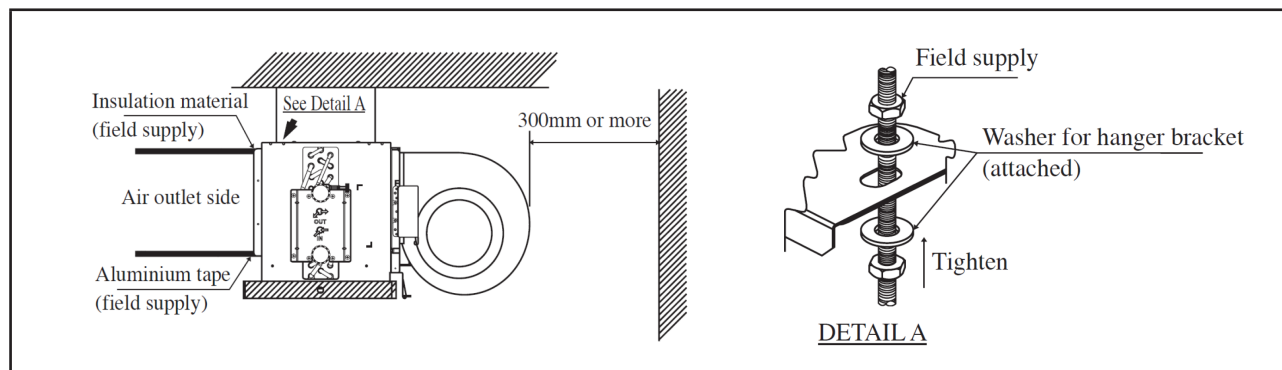
- The drain pipe must be installed as shown in the diagram (see diagram above) to avoid damage caused by leaks and condensation.
- For the best result, keep the piping as short as possible. Slant the piping at an angle to improve the flow.
- Ensure the drain pipe is securely insulated.
- It is necessary to provide a drain trap in the drain outlet to relieve pressure that exists within the unit compared to the outside atmospheric pressure when the unit is operating. The drain trap is to avoid possibility of splashes or an odor.
- Keep pipes as straight as possible for easy cleaning and to prevent the accumulation of dirt and debris.
- Conduct a water drainage test after the installation is completed. Make sure that the drainage flow is smooth.
- In humid environments, use an extra drain pan to cover the entire area of the indoor unit.

**Model: FWC-G EC (MSP , LSP)**

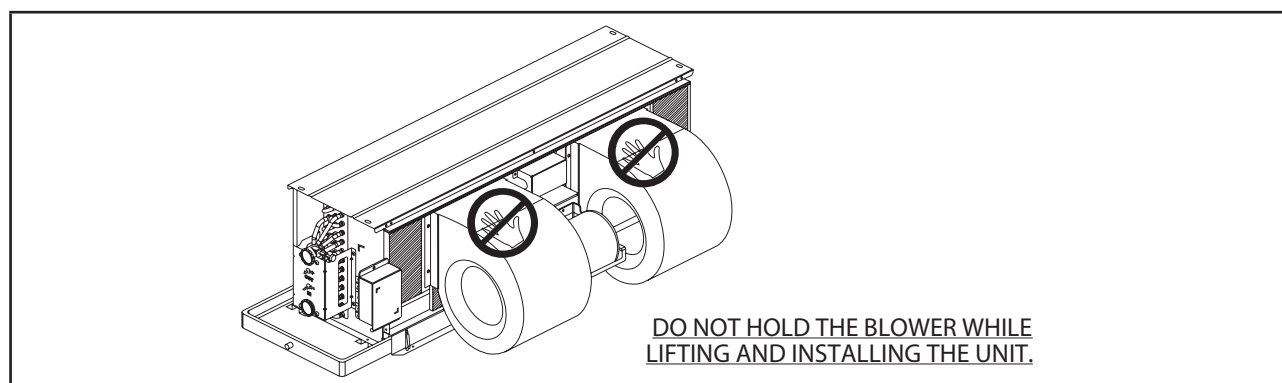
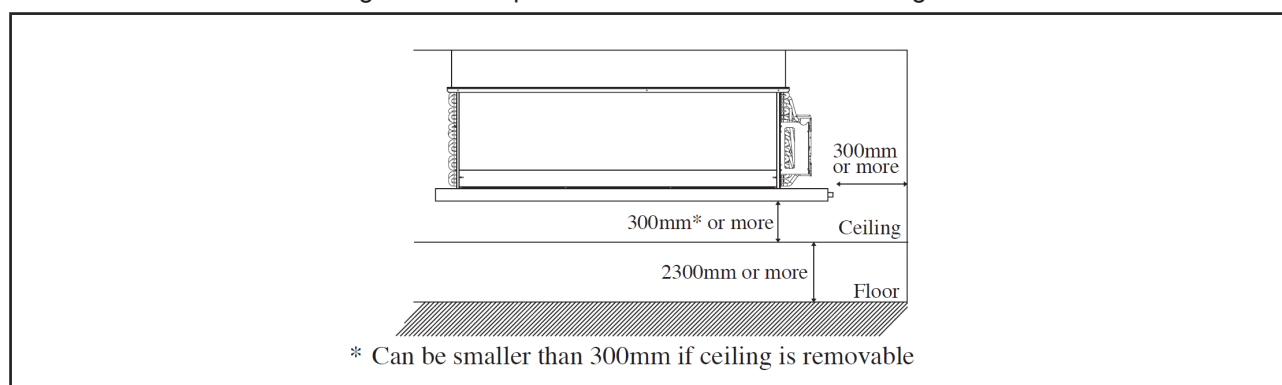
The indoor unit must be installed such that there is no short circuit of the cool discharge. Respect the installation clearance. Do not put the indoor unit where there is direct sunlight on unit. The location is suitable for piping and drainage and it must have a large distance between a door and unit.

**Ceiling Concealed Mounting**

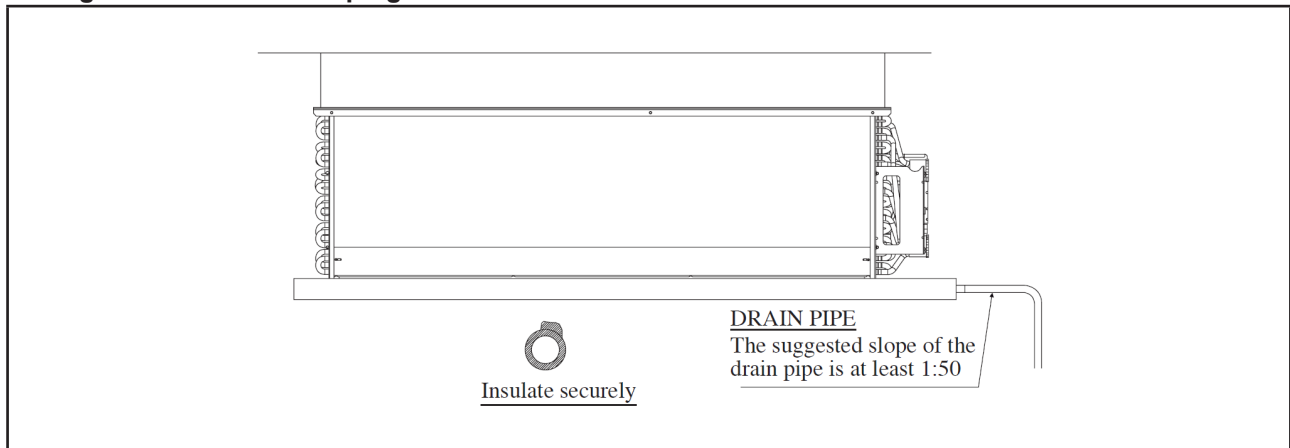
- Use the hanger supplied with the unit.
- Make sure that the ceiling is sufficiently strong to withstand the weight.



Provide clearance for servicing ease and optimal air flow as shown in the diagram.



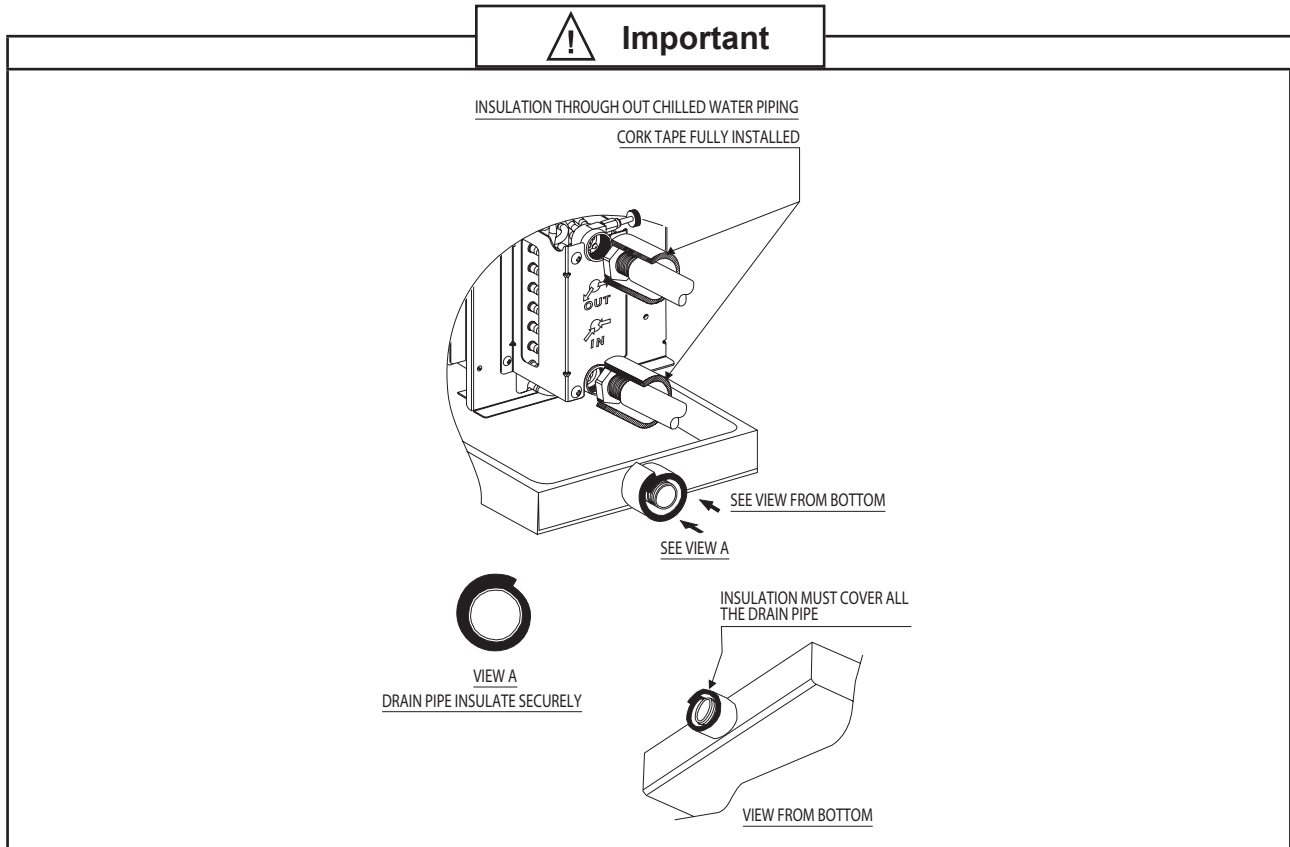
## Ceiling Concealed Drain Piping Work



- The drain pipe must be installed as shown in the diagram (see diagram above) to avoid damage caused by leaks and condensation.
- For the best result, keep the piping as short as possible. Slant the piping at an angle to improve the flow.
- Ensure the drain pipe is securely insulated.
- It is necessary to provide a drain trap in the drain outlet to relieve pressure that exists within the unit compared to the outside atmospheric pressure when the unit is operating. The drain trap is to avoid possibility of splashes or an odor.
- Keep pipes as straight as possible for easy cleaning and to prevent the accumulation of dirt and debris.
- Conduct a water drainage test after the installation is completed. Make sure that the drainage flow is smooth.
- In humid environments, use an extra drain pan to cover the entire area of the indoor unit.

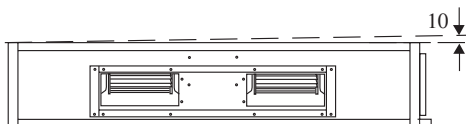
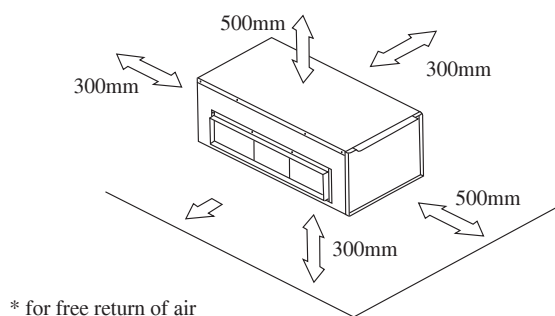


### Important



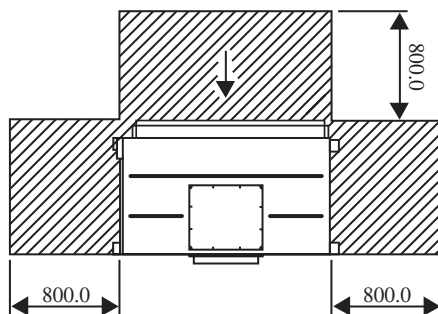
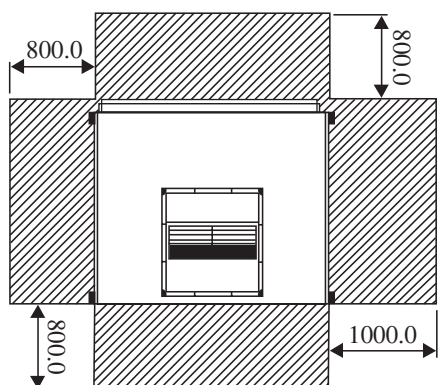
**Model: FUD****Mounting**

Ensure that the overhead supports are strong enough to hold the unit's weight. Position hanger rods and check for alignment with the unit. Check that hangers are secure and that the base of fan-coil unit is level in the two horizontal directions, taking into account the gradient recommended for drainage flow as shown. Check the gradient recommended for drainage flow as follow.

**FUD20/25B**

Provide clearance for servicing and optimal air flow as shown in the diagram.

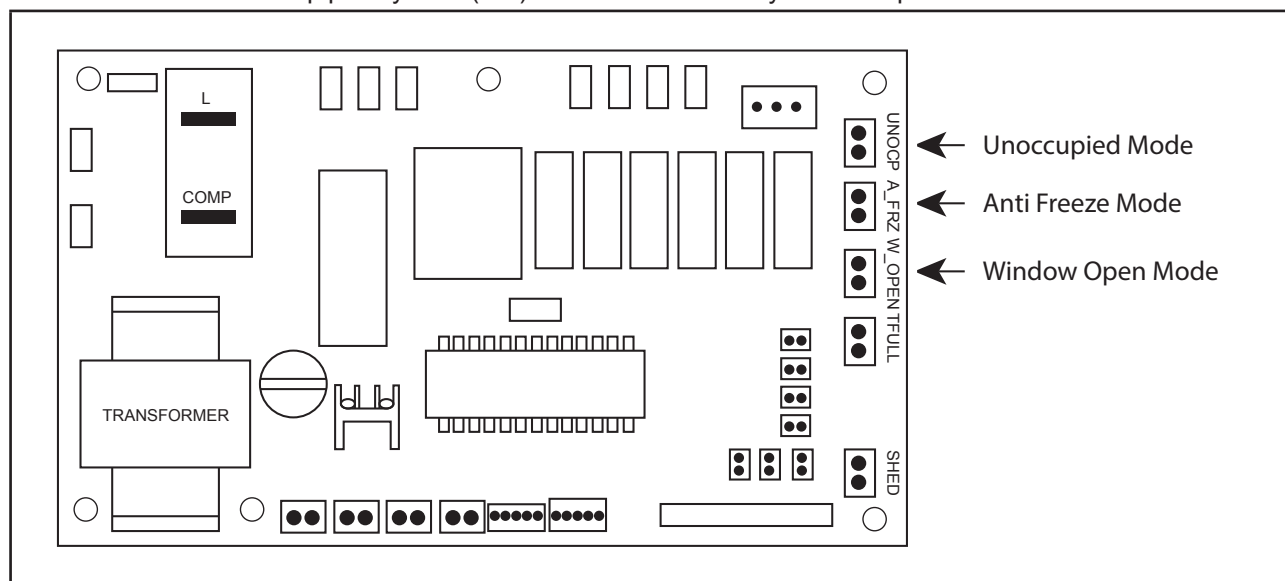
The indoor unit must be installed such that there is no short circuit of cool discharge with air discharge. Respect the installation clearance.

**FUD 30/40B (Horizontal)****FUD 30/40B (Vertical)**

All dimensions in mm

## Others

The controller board of 4 pipes system (W3) comes with other dry contact options.



## i) Unoccupied Mode

If the dry contact is closed, the Unoccupied mode is activated and vice versa. When Timer On is active, system goes back to Occupied mode.

## ii) Anti Freeze Mode

Anti Freeze operation has the highest priority among all unit operation. Anti Freeze operation will be activated only if dry contact is closed and vice versa.

## iii) Window Open Mode

If the dry contact is closed, Window Open Mode will be activated on the fan coil unit which is connected and vice versa.

Note: The dry contact connection point can be connected with individual fan coil unit only. It cannot be connected parallel with other fan coil units.

## Cable Size

Model	Unit	FWE / FWF / FWK / FWW
Power supply cable size*	mm2	1.5
Number of wire		3
Recommended fuse*	A	2

Model	Unit	FWC03C	FWC04C	FWC06C	FWC07C
Power supply cable size*	mm2	1.5	1.5	1.5	1.5
Number of wire		3	3	3	3
Recommended fuse*	A	1	1	1	2

Model	Unit	FWC09C	FWC11/12/14/16C	FWC02/03/04/05FD	FWC06/08FD
Power supply cable size*	mm2	1.5	1.5	1.5	1.5
Number of wire		3	3	5	5
Recommended fuse*	A	3	5	1	2

Model	Unit	FWC10FD	FWC-G	FUD20/25B	FUD30/40B
Power supply cable size*	mm2	1.5	1.0	1.5	1.5
Number of wire		5	5	3	4
Recommended fuse*	A	3	6	10	10

**Important:** \* These values are for information only. They should be checked and selected to comply local or national codes and regulations. They are also subjected to the type of installation and size of conductor

# Sound Data

## Sound Pressure Level

Model	Speed	1/1 Octave A-Weighted Sound Pressure (dBA), ref 20μPa							Overall (dBA)	Noise Criteria
		125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz		
FWW02L	High	31	32	33	28	26	14	6	34	28
	Med	25	29	28	24	19	9	5	29	22
	Low	20	26	24	20	11	8	6	25	18
FWW03L	High	30	33	33	32	28	17	8	35	31
	Med	26	29	30	27	21	11	7	30	25
	Low	19	25	25	21	14	6	6	25	19
FWW04L	High	41	39	39	38	36	26	14	42	38
	Med	38	36	37	34	32	22	10	39	33
	Low	30	30	31	28	23	12	7	32	26
FWW05L	High	37	38	38	39	33	22	11	42	38
	Med	33	35	35	35	29	17	8	38	34
	Low	29	33	32	31	23	12	7	34	30
FWW06L	High	42	42	42	42	40	31	21	46	42
	Med	37	38	39	38	34	24	13	42	37
	Low	34	35	36	35	30	20	9	39	34

Microphone position: 1m in front and 0.8m below the vertical centre line of the unit.

Model	Speed	1/1 Octave A-Weighted Sound Pressure (dBA), ref 20μPa							Overall (dBA)	Noise Criteria
		125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz		
FWF02C	High	44	45	40	36	26	19	10	42	35
	Med	40	38	34	28	19	9	7	35	29
	Low	37	32	27	20	14	7	7	29	21
FWF04C	High	48	48	44	39	31	27	15	45	39
	Med	42	42	36	30	22	13	7	38	31
	Low	39	36	28	20	15	6	6	30	23
FWF05C	High	52	51	46	41	34	31	19	48	41
	Med	44	43	39	33	26	18	8	40	33
	Low	41	39	35	28	22	11	7	36	30

Microphone position: 1.4m below the face center of the air return of the unit.



Model	Speed	1/1 Octave A-Weighted Sound Pressure (dBA), ref 20μPa							Overall (dBA)	Noise Criteria
		125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz		
FWK06E(H)	High	44	43	42	35	29	23	15	42	37
	Med	40	40	38	30	23	16	14	38	33
	Low	35	34	32	23	15	10	14	32	26
FWK08E(H)	High	48	47	45	39	34	28	17	46	40
	Med	44	42	42	34	28	21	10	42	37
	Low	39	37	36	26	19	10	6	35	31
*FWK09E(H)	High	49	48	46	42	37	35	22	48	41
	Med	44	44	42	36	32	27	14	43	37
	Low	41	39	37	31	26	17	8	38	32
*FWK11E(H)	High	51	49	49	45	37	36	24	50	45
	Med	48	46	47	40	33	31	18	47	43
	Low	44	42	43	35	28	23	10	43	38
*FWK13E(H)	High	53	54	50	47	39	38	28	52	46
	Med	49	48	47	43	36	35	25	49	43
	Low	46	45	44	39	32	30	22	45	39

Microphone position: 1.4m/\*1.5m below the face center of the air return of the unit.

Model	Speed	1/1 Octave A-Weighted Sound Pressure (dBA), ref 20μPa							Overall (dBA)	Noise Criteria
		125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz		
FWKE05E(H)	High	39	39	37	28	18	11	6	37	32
	Med	36	33	31	20	8	6	6	31	25
	Low	28	26	23	12	4	5	6	23	16
	Quiet	21	17	13	6	4	5	6	16	-
*FWKE08E(H)	High	49	47	46	40	34	33	20	47	41
	Med	46	43	42	35	29	24	12	42	37
	Low	44	39	37	28	20	12	7	37	32
	Quiet	41	32	30	20	9	6	7	31	24
*FWKE11E(H)	High	53	50	50	45	38	36	25	51	46
	Med	49	45	46	40	33	30	17	46	41
	Low	42	40	41	33	26	19	8	41	36
	Quiet	39	34	34	25	14	7	6	34	29

Microphone position: 1.4m/\*1.5m below the face center of the air return of the unit.

Model	Speed	1/1 Octave A-Weighted Sound Pressure (dBA), ref 20μPa							Overall (dBA)	Noise Criteria
		125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz		
FWE05E	High	39	46	43	40	35	29	23	45	39
	Med	34	40	37	33	27	20	15	38	32
	Low	32	38	35	30	24	16	17	36	30
FWE06E	High	42	48	45	43	38	32	26	48	42
	Med	38	43	42	38	33	26	18	43	37
	Low	35	40	38	33	28	20	11	39	33
FWE07E	High	43	49	47	45	40	34	28	49	44
	Med	40	47	44	41	36	30	23	46	40
	Low	36	42	39	36	30	23	16	41	35
*FWE08E	High	41	46	44	44	42	35	28	48	43
	Med	41	45	42	43	41	33	26	47	42
	Low	38	44	39	40	37	29	24	44	39
*FWE10E	High	44	49	46	48	47	40	33	52	48
	Med	40	44	42	43	41	31	24	47	42
	Low	39	44	41	42	40	31	24	46	41
*FWE12E	High	48	51	49	47	44	41	31	52	47
	Med	45	48	47	45	43	38	28	50	44
	Low	44	47	46	44	41	37	28	49	43

Microphone position: 1m in front of the unit and 0.8m/\*1m below the air discharge opening.

Model	Speed	1/1 Octave A-Weighted Sound Pressure (dBA), ref 20µPa							Overall (dBA)	Noise Criteria
		125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz		
FWC03C	High	43	35	35	30	26	18	13	36	30
	Med	43	34	34	28	25	17	12	35	29
	Low	42	31	31	27	22	14	9	33	25
FWC04C	High	46	40	40	33	29	21	17	40	35
	Med	45	38	38	31	27	18	14	38	33
	Low	40	33	33	26	21	11	9	33	28
FWC06C	High	47	41	43	35	31	24	19	42	38
	Med	47	41	41	34	31	23	18	41	36
	Low	47	39	39	33	29	21	16	40	34
FWC07C	High	48	41	40	35	31	24	19	41	35
	Med	47	39	39	34	29	22	17	40	34
	Low	44	35	35	30	25	17	12	36	30
FWC09C	High	50	45	43	42	37	31	26	46	41
	Med	45	40	40	38	32	26	20	42	37
	Low	42	36	37	33	28	22	15	38	32
FWC12C	High	54	47	47	45	39	35	29	49	44
	Med	49	42	43	41	35	31	24	45	40
	Low	45	39	41	37	30	26	18	41	36
FWC14C	High	54	49	49	48	43	37	32	52	47
	Med	53	47	46	47	40	35	29	50	46
	Low	51	45	44	44	36	32	26	47	43
FWC16C	High	55	49	49	50	44	37	33	53	49
	Med	53	46	47	47	39	34	28	50	46
	Low	51	43	44	43	35	30	24	47	42

Microphone position: 1.5m below the centre of the unit.

(Tested with 2m length duct at the air discharge outlet and 1m length of air return duct).

Model	Speed	1/1 Octave Sound Pressure Level (dB, reference 20mPa)							Overall (dBA)	Noise Criteria
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz		
FWC02FD	High	41	37	38	38	30	23	13	40	37
	Med	43	36	37	37	28	21	12	39	36
	Low	39	35	34	33	24	16	5	36	32
FWC03FD	High	41	41	39	35	32	26	18	40	34
	Med	41	40	38	35	31	25	17	39	34
	Low	41	38	37	34	29	23	15	37	33
FWC04FD	High	43	41	40	37	33	26	18	41	36
	Med	45	41	39	36	32	25	16	40	35
	Low	45	38	36	33	28	20	9	37	32
FWC05FD	High	44	42	43	38	34	29	20	42	38
	Med	43	42	42	38	34	28	20	41	37
	Low	41	40	40	36	31	25	15	39	35
FWC06FD	High	45	44	44	41	34	28	21	45	40
	Med	46	44	44	41	34	28	20	44	40
	Low	45	42	42	38	31	26	16	41	37
FWC08FD	High	52	49	46	47	36	28	21	47	46
	Med	51	47	46	46	35	27	20	46	45
	Low	50	43	44	45	33	25	17	45	44
FWC10FD	High	51	47	46	45	39	32	23	48	44
	Med	51	48	46	44	38	31	22	47	44
	Low	49	45	44	43	36	29	19	45	42

Microphone position: 1.5m below the centre of the unit.

(Tested with 2m length duct at the air discharge outlet and 1m length of air return duct).

Model (LSP)	Speed	1/1 Octave Sound Pressure Level (dB, reference 20mPa)							Overall (dBA)	Noise Criteria
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz		
FWC02G	High	41	33	29	25	17	10	9	31	23
	Med	35	28	24	19	9	8	8	26	0
	Low	29	23	18	12	8	8	7	20	0
FWC03G	High	36	34	29	28	18	11	9	32	26
	Med	28	27	23	19	9	8	8	25	0
	Low	26	20	16	15	8	8	8	20	0
FWC04G	High	40	36	32	30	23	16	9	35	29
	Med	35	31	27	25	16	9	8	29	23
	Low	27	24	19	13	9	9	8	21	0
FWC06G	High	45	40	35	32	28	22	13	38	31
	Med	43	36	32	29	25	19	11	35	28
	Low	40	30	28	25	18	10	8	30	23
FWC08G	High	45	41	37	33	28	20	12	39	32
	Med	41	37	32	27	21	12	11	34	26
	Low	35	29	25	18	11	10	10	26	0
FWC10G	High	47	44	38	35	30	22	16	41	34
	Med	45	39	35	30	24	15	9	37	30
	Low	44	33	27	22	15	8	8	31	25
FWC12G	High	47	43	40	37	32	23	15	42	36
	Med	44	40	37	34	28	19	9	39	33
	Low	41	36	33	30	23	12	8	35	29

Microphone position: 1.5m below the centre of the unit.

(Tested with 2m length duct at the air discharge outlet and 1m length of air return duct).

Model (MSP)	Speed	1/1 Octave Sound Pressure Level (dB, reference 20mPa)							Overall (dBA)	Noise Criteria
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz		
FWC03G	High	37	36	34	30	23	15	5	35	29
	Med	32	30	28	24	16	5	5	29	22
	Low	24	22	20	12	7	7	6	20	-
FWC04G	High	37	37	36	32	28	21	12	37	31
	Med	32	31	30	26	20	12	5	31	24
	Low	25	22	22	15	8	5	5	22	-
FWC06G	High	46	41	39	36	30	24	15	41	35
	Med	41	37	37	32	25	18	9	37	32
	Low	38	32	31	25	17	9	4	31	25
FWC08G	High	47	43	41	38	32	26	15	43	37
	Med	43	38	36	32	25	17	6	37	31
	Low	37	31	30	24	16	6	5	30	24
FWC10G	High	48	44	42	39	33	26	18	44	38
	Med	47	41	38	34	28	20	10	40	33
	Low	43	33	32	26	18	7	5	33	26
FWC12G	High	48	44	43	39	33	26	18	44	38
	Med	43	40	39	35	29	21	12	40	34
	Low	40	38	36	32	24	15	6	37	31
FWC14G	High	52	46	47	41	36	31	26	47	43
	Med	48	42	43	36	31	26	19	43	38
	Low	41	35	35	28	23	15	7	35	30
FWC16G	High	55	48	47	42	38	34	28	48	43
	Med	50	42	44	38	33	28	21	44	39
	Low	43	36	38	29	25	17	7	37	33
FWC18G	High	57	51	46	42	38	34	30	49	41
	Med	55	45	42	38	36	29	24	45	39
	Low	52	39	35	30	26	20	13	39	35
FWC20G	High	55	52	49	43	38	36	31	50	45
	Med	52	48	44	39	35	31	26	46	39
	Low	46	39	37	31	26	20	13	38	32

Microphone position: 1.5m below the centre of the unit.

(Tested with 2m length duct at the air discharge outlet and 1m length of air return duct).

Model EC (LSP)	Speed	1/1 Octave Sound Pressure Level (dB, reference 20mPa)							Overall (dBA)	Noise Criteria
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz		
FWC02G	High	41	33	29	25	17	10	9	31	23
	Med	35	28	24	19	9	8	8	26	0
	Low	29	23	18	12	8	8	7	20	0
FWC03G	High	36	34	29	28	18	11	9	32	26
	Med	28	27	23	19	9	8	8	25	0
	Low	26	20	16	15	8	8	8	20	0
FWC04G	High	40	36	32	30	23	16	9	35	29
	Med	35	31	27	25	16	9	8	29	23
	Low	27	24	19	13	9	9	8	21	0
FWC06G	High	45	40	35	32	28	22	13	38	31
	Med	43	36	32	29	25	19	11	35	28
	Low	40	30	28	25	18	10	8	30	23
FWC08G	High	45	41	37	33	28	20	12	39	32
	Med	41	37	32	27	21	12	11	34	26
	Low	35	29	25	18	11	10	10	26	0
FWC10G	High	47	44	38	35	30	22	16	41	34
	Med	45	39	35	30	24	15	9	37	30
	Low	44	33	27	22	15	8	8	31	25
FWC12G	High	47	43	40	37	32	23	15	42	36
	Med	44	40	37	34	28	19	9	39	33
	Low	41	36	33	30	23	12	8	35	29

Microphone position: 1.5m below the centre of the unit.

(Tested with 2m length duct at the air discharge outlet and 1m length of air return duct).

Model EC (MSP)	Speed	1/1 Octave Sound Pressure Level (dB, reference 20mPa)							Overall (dBA)	Noise Criteria
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz		
FWC03G	High	37	36	34	30	23	15	5	35	29
	Med	32	30	28	24	16	5	5	29	22
	Low	24	22	20	12	7	7	6	20	0
FWC04G	High	37	37	36	32	28	21	12	37	31
	Med	32	31	30	26	20	12	5	31	24
	Low	25	22	22	15	8	5	5	22	0
FWC06G	High	46	41	39	36	30	24	15	41	35
	Med	41	37	37	32	25	18	9	37	32
	Low	38	32	31	25	17	9	4	31	25
FWC08G	High	47	43	41	38	32	26	15	43	37
	Med	43	38	36	32	25	17	6	37	31
	Low	37	31	30	24	16	6	5	30	24
FWC10G	High	48	44	42	39	33	26	18	44	38
	Med	47	41	38	34	28	20	10	40	33
	Low	43	33	32	26	18	7	5	33	26
FWC12G	High	48	44	43	39	33	26	18	44	38
	Med	43	40	39	35	29	21	12	40	34
	Low	40	38	36	32	24	15	6	37	31

Microphone position: 1.5m below the centre of the unit.

(Tested with 2m length duct at the air discharge outlet and 1m length of air return duct).

Model	Speed	1/1 Octave A-Weighted Sound Pressure (dBA), ref 20μPa							Overall (dBA)	Noise Criteria
		125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz		
FUD20B	High	57	50	47	44	40	35	24	50	43
	Med	57	46	44	40	35	30	17	46	41
	Low	48	42	41	35	30	24	6	42	36
FUD25B	High	57	53	50	50	44	40	31	54	49
	Med	55	51	49	48	42	38	28	52	47
	Low	54	50	48	46	40	35	25	50	45
FUD30B	High	57	55	56	53	51	46	38	58	53
FUD40B	High	57	55	56	53	51	46	38	58	53

Microphone position: 1m in front of the unit and center of the unit.

1m away from every side of the unit and 1m above floor level

## Sound Power Level

Model	Speed	1/1 Octave Sound Power Level (dB, reference 1pW)							Overall (dBA)
		125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	
FWW02L	High	40	43	44	41	36	23	19	48
	Med	39	40	40	37	29	20	28	41
	Low	38	37	35	32	21	16	23	36
FWW03L	High	48	45	46	44	38	28	20	48
	Med	48	41	42	40	32	18	19	44
	Low	45	37	38	35	24	14	18	39
FWW04L	High	48	50	52	51	46	38	26	55
	Med	45	47	49	47	41	32	22	50
	Low	43	42	44	41	34	22	18	45
FWW05L	High	50	51	53	51	42	33	20	55
	Med	47	49	50	48	38	27	17	51
	Low	45	46	47	44	33	22	17	47
FWW06L	High	53	55	55	55	50	40	26	59
	Med	48	51	52	50	42	33	21	54
	Low	45	48	50	47	38	29	18	51

Measured In Reverberation Chamber

Model	Speed	1/1 Octave Sound Power Level (dB, reference 1pW)							Overall (dBA)
		125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	
FWF02C	High	53	56	49	43	35	28	21	52
	Med	47	49	42	35	26	20	19	45
	Low	43	44	36	27	19	14	19	39
FWF04C	High	56	58	55	50	42	38	29	56
	Med	50	51	48	41	32	26	20	49
	Low	47	49	45	37	27	20	19	45
FWF05C	High	56	58	55	50	42	38	29	56
	Med	50	51	48	41	32	26	20	49
	Low	47	49	45	37	27	20	19	45

Measured In Reverberation Chamber

Model	Speed	1/1 Octave Sound Power Level (dB, reference 1pW)							Overall (dBA)
		125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	
FWK06E(H)	High	53	54	52	45	35	31	19	52
	Med	50	51	48	39	29	23	17	47
	Low	46	45	42	32	22	14	17	41
FWK08E(H)	High	58	58	55	48	39	37	25	55
	Med	53	53	51	43	33	29	18	51
	Low	49	48	45	36	28	21	17	45
FWK09E(H)	High	59	61	56	51	43	44	31	58
	Med	54	55	52	46	38	36	23	53
	Low	50	50	47	40	32	26	17	47
FWK11E(H)	High	60	60	58	54	45	45	33	59
	Med	57	57	56	50	41	40	26	56
	Low	53	53	51	44	35	32	19	51
FWK13E(H)	High	64	66	61	55	48	48	37	62
	Med	59	60	57	52	44	44	32	58
	Low	56	56	54	48	40	38	25	55

Measured In Reverberation Chamber

Model	Speed	1/1 Octave Sound Power Level (dB, reference 1pW)							Overall (dBA)
		125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	
FWKE05E(H)	High	49	50	45	36	26	20	19	46
	Med	46	44	39	28	16	15	18	40
	Low	38	40	32	22	14	15	20	34
	Quiet	33	38	24	15	10	14	18	30
FWKE08E(H)	High	59	58	56	50	42	42	30	67
	Med	54	54	51	44	37	34	23	52
	Low	57	55	45	37	29	22	25	49
	Quiet	50	44	39	29	17	15	19	40
FWKE11E(H)	High	63	60	58	53	45	46	34	59
	Med	60	55	54	48	40	40	27	55
	Low	58	50	49	41	34	29	20	49
	Quiet	53	45	42	33	22	16	19	43

Measured In Reverberation Chamber

Model	Speed	1/1 Octave Sound Power Level (dB, reference 1pW)							Overall (dBA)
		125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	
FWE05E	High	51	58	55	52	47	41	35	62
	Med	47	52	49	45	39	32	27	55
	Low	44	50	47	42	36	28	29	53
FWE06E	High	54	60	58	55	50	44	38	63
	Med	50	55	54	50	45	38	30	59
	Low	47	52	20	45	40	32	23	56
FWE07E	High	55	61	59	57	52	46	41	66
	Med	52	59	56	53	48	42	35	62
	Low	48	54	52	48	42	35	28	58
FWE08E	High	62	65	60	59	55	50	43	64
	Med	58	63	57	57	52	46	39	61
	Low	56	60	54	54	48	42	34	58
FWE10E	High	65	66	61	60	56	50	44	65
	Med	59	63	58	57	51	45	39	61
	Low	57	60	55	54	48	41	34	58
FWE12E	High	61	66	61	61	56	52	45	65
	Med	60	64	60	58	54	48	41	63
	Low	57	63	57	56	51	45	40	61

Measured In Reverberation Chamber



Model	Speed	1/1 Octave Sound Power Level (dB, reference 1pW)							Overall (dBA)
		125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	
FWC03C	High	57	54	52	52	51	46	44	57
	Med	54	51	50	49	48	43	39	54
	Low	51	48	47	46	44	39	35	51
FWC04C	High	60	58	57	56	54	48	44	61
	Med	56	55	54	53	50	44	40	58
	Low	51	50	49	48	44	37	34	52
FWC06C	High	63	62	61	61	59	55	51	65
	Med	61	61	59	60	58	53	49	64
	Low	57	56	56	56	53	48	44	60
FWC07C	High	63	62	61	62	59	56	53	66
	Med	61	60	59	60	57	53	50	64
	Low	58	57	56	57	54	49	47	61
FWC09C	High	65	66	68	69	65	63	60	73
	Med	61	62	64	65	61	58	55	69
	Low	56	58	60	61	57	53	49	64
FWC12C	High	65	68	70	72	68	66	64	76
	Med	65	65	67	68	64	62	59	72
	Low	59	61	63	64	60	59	54	68
FWC14C	High	67	69	71	72	69	66	64	76
	Med	66	66	69	69	66	63	61	73
	Low	63	64	66	67	62	60	57	70
FWC16C	High	69	70	72	74	71	69	68	78
	Med	69	68	70	71	67	65	63	75
	Low	64	65	67	67	63	61	59	71

Measured In Reverberation Chamber

Model	Speed	1/1 Octave Sound Power Level (dB, reference 1pW)							Overall (dBA)
		125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	
FWC02FD	High	56	59	59	55	50	45	38	61
	Med	57	58	58	54	49	44	37	60
	Low	54	54	54	50	44	38	31	56
FWC03FD	High	59	61	60	57	55	50	42	63
	Med	59	61	59	56	53	48	40	62
	Low	58	59	58	54	51	45	38	60
FWC04FD	High	59	61	61	58	54	49	42	64
	Med	60	60	60	57	53	48	41	63
	Low	60	56	56	53	49	42	34	59
FWC05FD	High	61	62	63	60	57	52	46	66
	Med	60	62	62	60	57	52	45	66
	Low	57	58	59	57	53	47	39	62
FWC06FD	High	63	65	65	62	56	51	46	67
	Med	62	64	64	61	55	51	45	66
	Low	58	60	61	57	51	46	39	63
FWC08FD	High	66	66	65	62	58	53	47	68
	Med	67	65	64	61	57	52	47	67
	Low	64	65	63	60	55	49	44	65
FWC10FD	High	66	67	67	64	61	56	50	70
	Med	65	66	67	64	60	55	49	69
	Low	63	64	64	62	57	52	46	67

Measured In Reverberation Chamber

Model (LSP)	Speed	1/1 Octave Sound Power Level (dB, reference 1pW)							Overall (dBA)
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
FWC02G	High	61	52	54	54	47	41	32	57
	Med	53	49	51	50	42	35	29	53
	Low	47	45	46	44	35	26	21	47
FWC03G	High	56	55	57	57	51	47	37	60
	Med	55	51	52	51	45	39	28	55
	Low	49	43	44	41	33	24	23	45
FWC04G	High	58	58	59	59	54	49	40	62
	Med	55	55	56	55	49	43	33	58
	Low	47	47	47	44	37	28	21	48
FWC06G	High	60	60	60	59	54	51	44	63
	Med	59	58	58	57	52	48	40	61
	Low	54	54	54	53	46	42	33	56
FWC08G	High	60	60	60	58	53	49	41	62
	Med	57	56	56	55	48	43	34	58
	Low	50	50	50	47	39	32	25	51
FWC10G	High	62	62	62	61	57	53	46	65
	Med	59	59	60	59	53	48	41	62
	Low	54	54	55	54	47	41	31	57
FWC12G	High	64	62	62	61	56	52	44	65
	Med	61	60	60	58	52	48	40	62
	Low	58	56	57	54	48	42	33	58

Microphone position: 1.5m below the centre of the unit.

(Tested with 2m length duct at the air discharge outlet and 1m length of air return duct).

Model (MSP)	Speed	1/1 Octave Sound Power Level (dB, reference 1pW)							Overall (dBA)
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
FWC03G	High	55	55	58	58	53	48	40	61
	Med	50	51	53	52	47	41	32	56
	Low	44	43	45	41	34	27	27	46
FWC04G	High	58	58	59	58	54	50	43	62
	Med	54	54	55	54	49	44	36	58
	Low	47	45	47	45	37	30	27	48
FWC06G	High	60	60	62	61	56	52	45	65
	Med	57	58	60	59	53	48	41	62
	Low	54	54	56	55	48	42	34	58
FWC08G	High	61	62	62	62	57	52	45	65
	Med	57	58	59	58	52	47	39	61
	Low	52	51	53	51	43	37	30	54
FWC10G	High	61	63	64	65	60	55	49	68
	Med	58	60	61	61	56	51	43	64
	Low	53	54	56	55	49	42	34	58
FWC12G	High	73	65	65	64	59	55	50	68
	Med	65	61	61	61	56	50	42	64
	Low	61	58	59	58	52	46	37	61
FWC14G	High	68	70	69	68	63	62	60	72
	Med	66	65	65	64	59	56	52	68
	Low	59	55	58	55	50	45	38	59
FWC16G	High	72	72	69	68	64	63	61	73
	Med	70	68	66	64	60	59	55	69
	Low	58	58	58	56	52	48	42	60
FWC18G	High	71	73	72	71	66	65	63	75
	Med	68	69	69	67	62	60	58	71
	Low	63	62	62	60	55	52	48	64
FWC20G	High	71	73	73	72	67	66	65	76
	Med	68	70	70	68	62	62	60	72
	Low	61	62	62	60	55	52	48	64

Microphone position: 1.5m below the centre of the unit.

(Tested with 2m length duct at the air discharge outlet and 1m length of air return duct).

Model EC (LSP)	Speed	1/1 Octave Sound Power Level (dB, reference 1pW)							Overall (dBA)
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
FWC02G	High	61	52	54	54	47	41	32	57
	Med	53	49	51	50	42	35	29	53
	Low	47	45	46	44	35	26	21	47
FWC03G	High	56	55	57	57	51	47	37	60
	Med	55	51	52	51	45	39	28	55
	Low	49	43	44	41	33	24	23	45
FWC04G	High	58	58	59	59	54	49	40	62
	Med	55	55	56	55	49	43	33	58
	Low	47	47	47	44	37	28	21	48
FWC06G	High	60	60	60	59	54	51	44	63
	Med	59	58	58	57	52	48	40	61
	Low	54	54	54	53	46	42	33	56
FWC08G	High	60	60	60	58	53	49	41	62
	Med	57	56	56	55	48	43	34	58
	Low	50	50	50	47	39	32	25	51
FWC10G	High	62	62	62	61	57	53	46	65
	Med	59	59	60	59	53	48	41	62
	Low	54	54	55	54	47	41	31	57
FWC12G	High	64	62	62	61	56	52	44	65
	Med	61	60	60	58	52	48	40	62
	Low	58	56	57	54	48	42	33	58

Microphone position: 1.5m below the centre of the unit.

(Tested with 2m length duct at the air discharge outlet and 1m length of air return duct).

Model EC (MSP)	Speed	1/1 Octave Sound Power Level (dB, reference 1pW)							Overall (dBA)
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
FWC03G	High	55	55	58	58	53	48	40	61
	Med	50	51	53	52	47	41	32	56
	Low	44	43	45	41	34	27	27	46
FWC04G	High	58	58	59	58	54	50	43	62
	Med	54	54	55	54	49	44	36	58
	Low	47	45	47	45	37	30	27	48
FWC06G	High	60	60	62	61	56	52	45	65
	Med	57	58	60	59	53	48	41	62
	Low	54	54	56	55	48	42	34	58
FWC08G	High	61	62	62	62	57	52	45	65
	Med	57	58	59	58	52	47	39	61
	Low	52	51	53	51	43	37	30	54
FWC10G	High	61	63	64	65	60	55	49	68
	Med	58	60	61	61	56	51	43	64
	Low	53	54	56	55	49	42	34	58
FWC12G	High	73	65	65	64	59	55	50	68
	Med	65	61	61	61	56	50	42	64
	Low	61	58	59	58	52	46	37	61

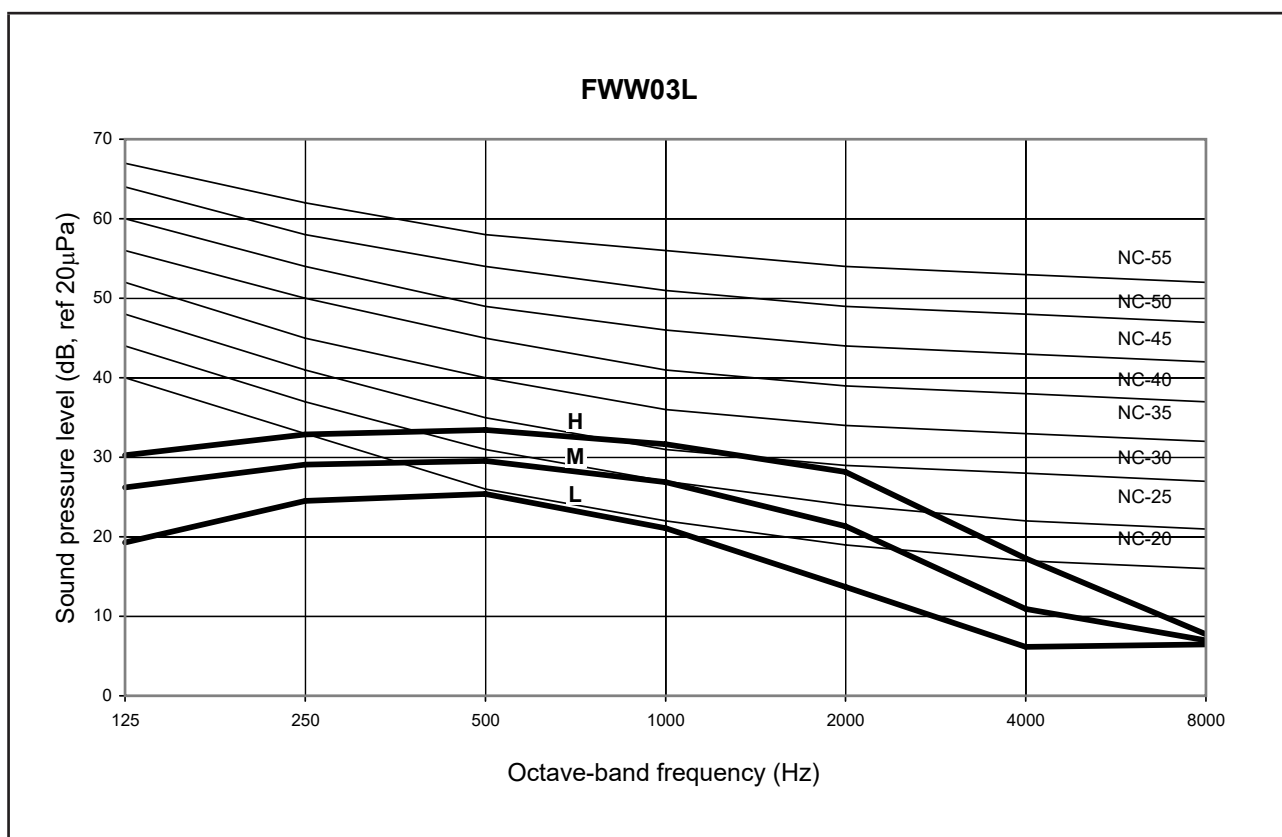
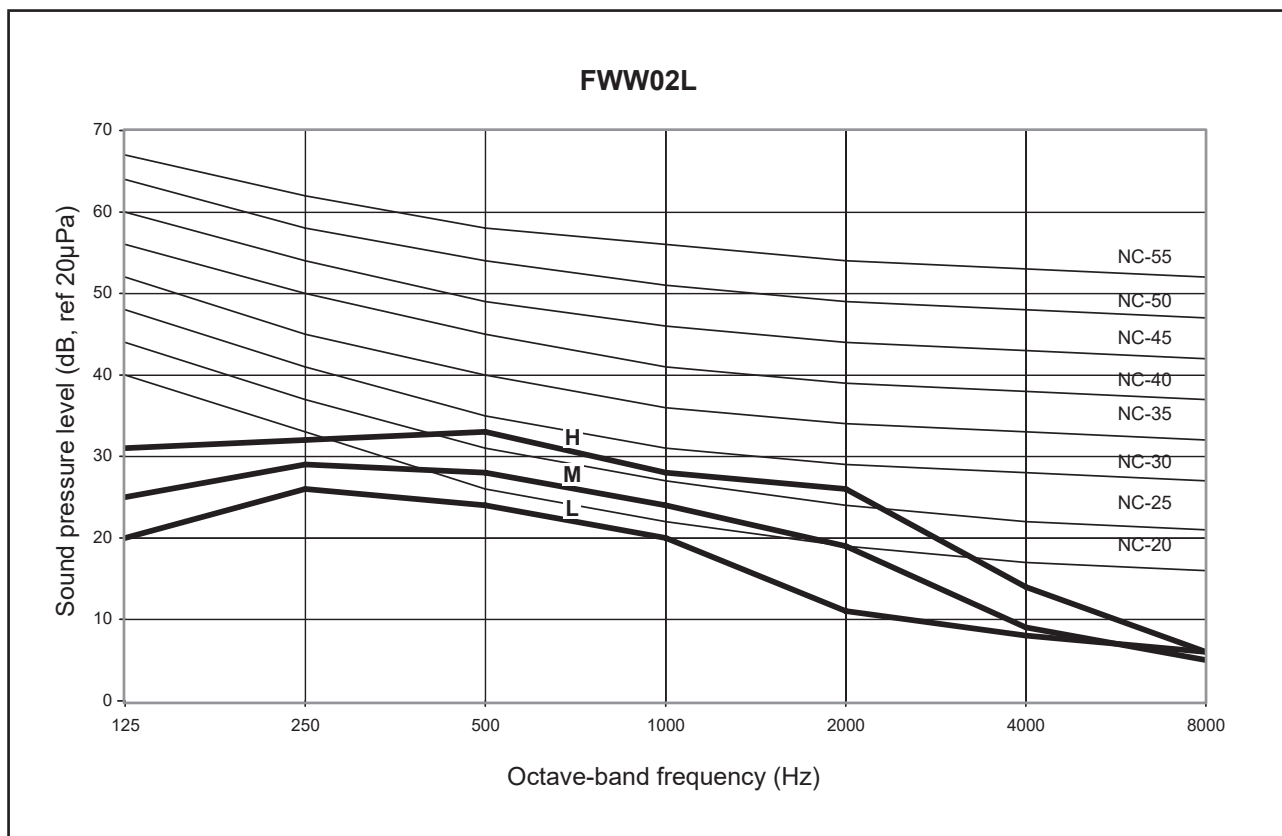
Microphone position: 1.5m below the centre of the unit.

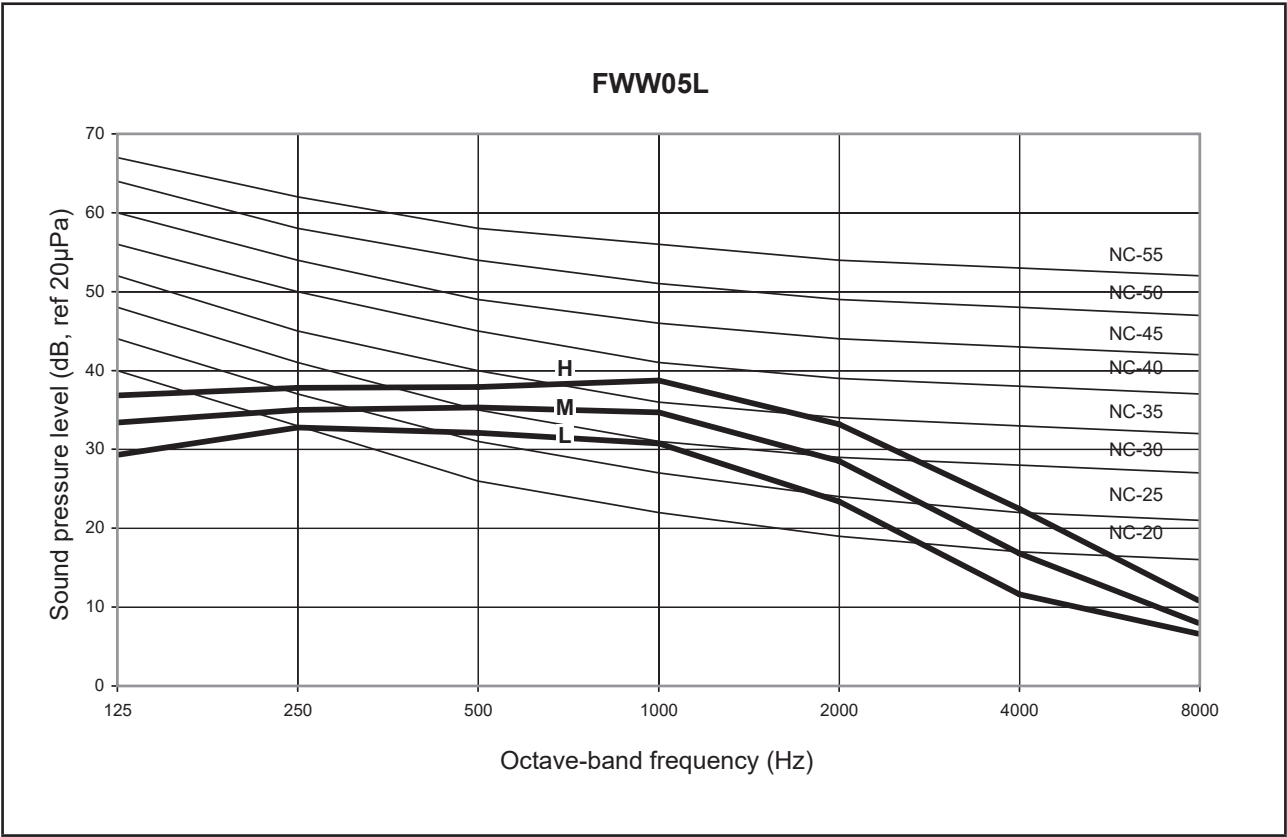
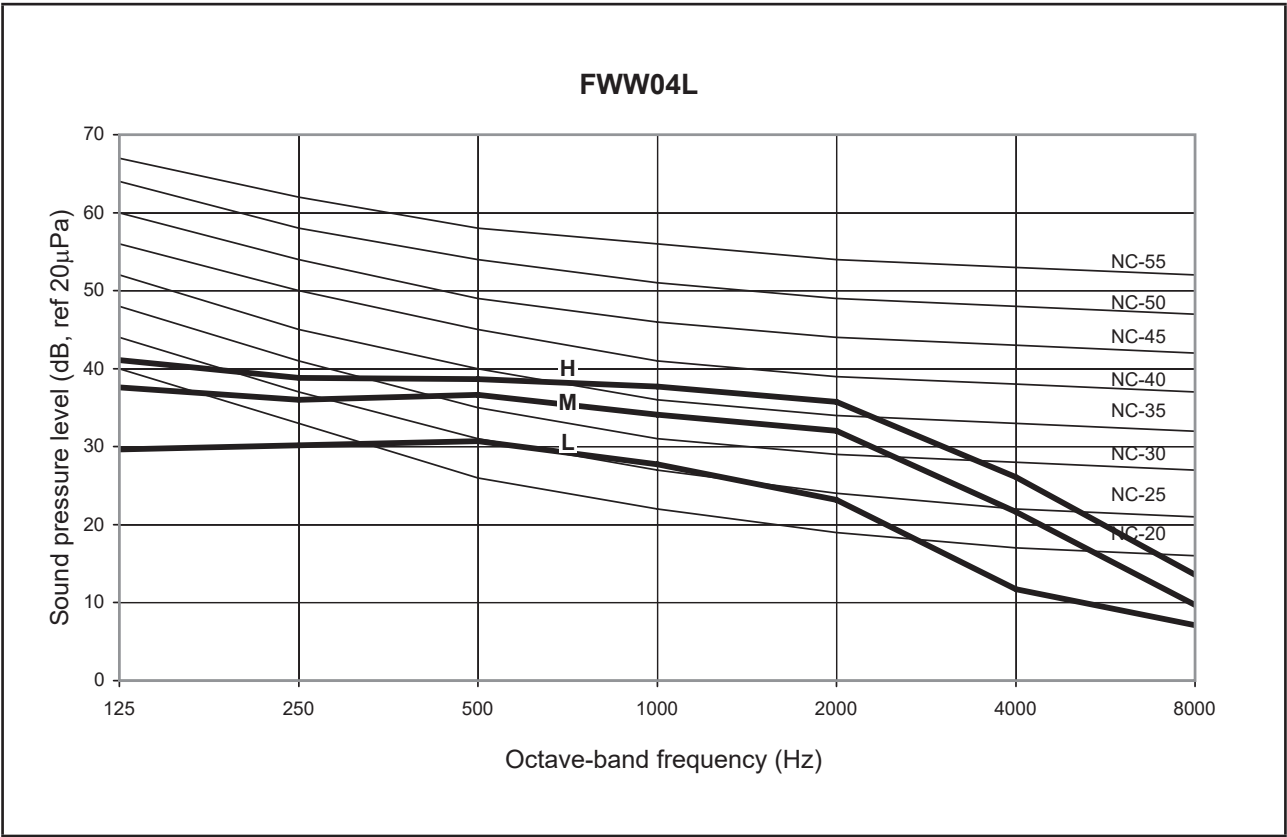
(Tested with 2m length duct at the air discharge outlet and 1m length of air return duct).

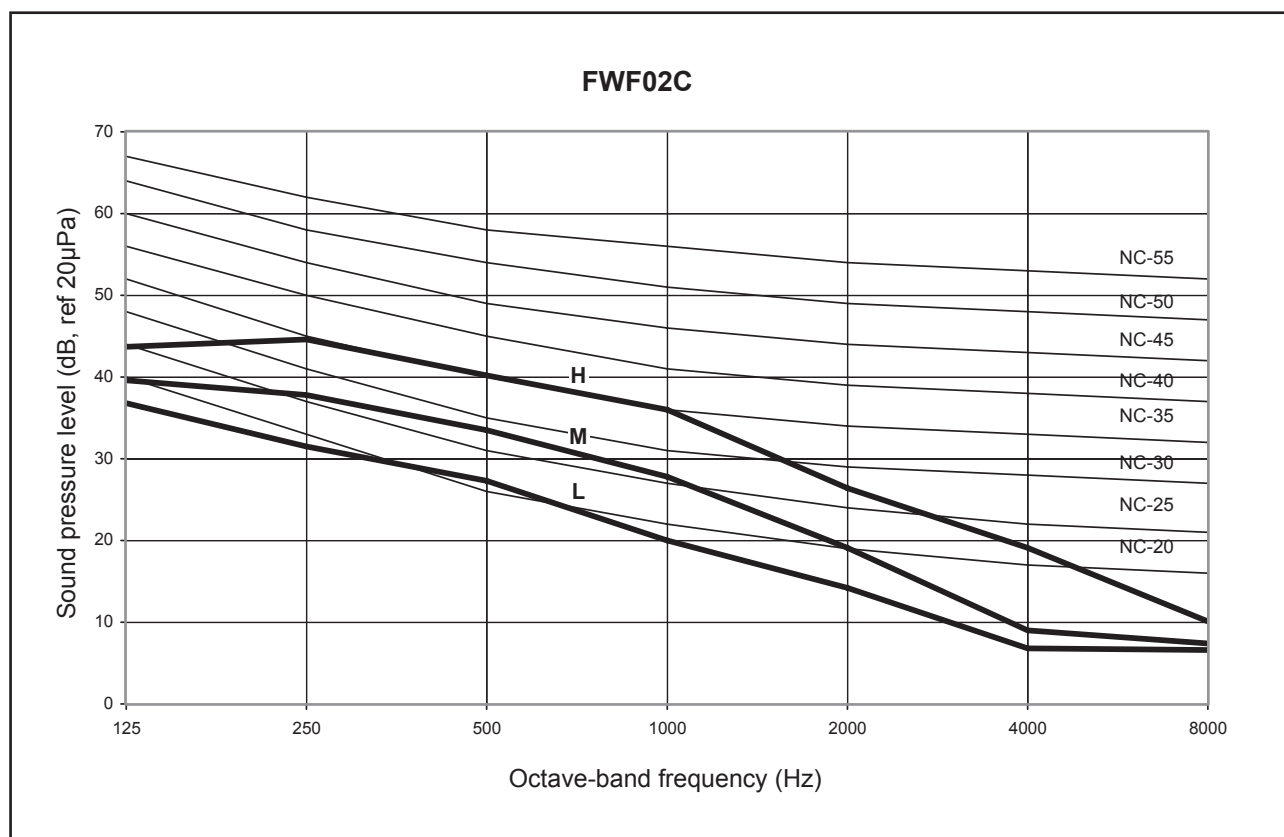
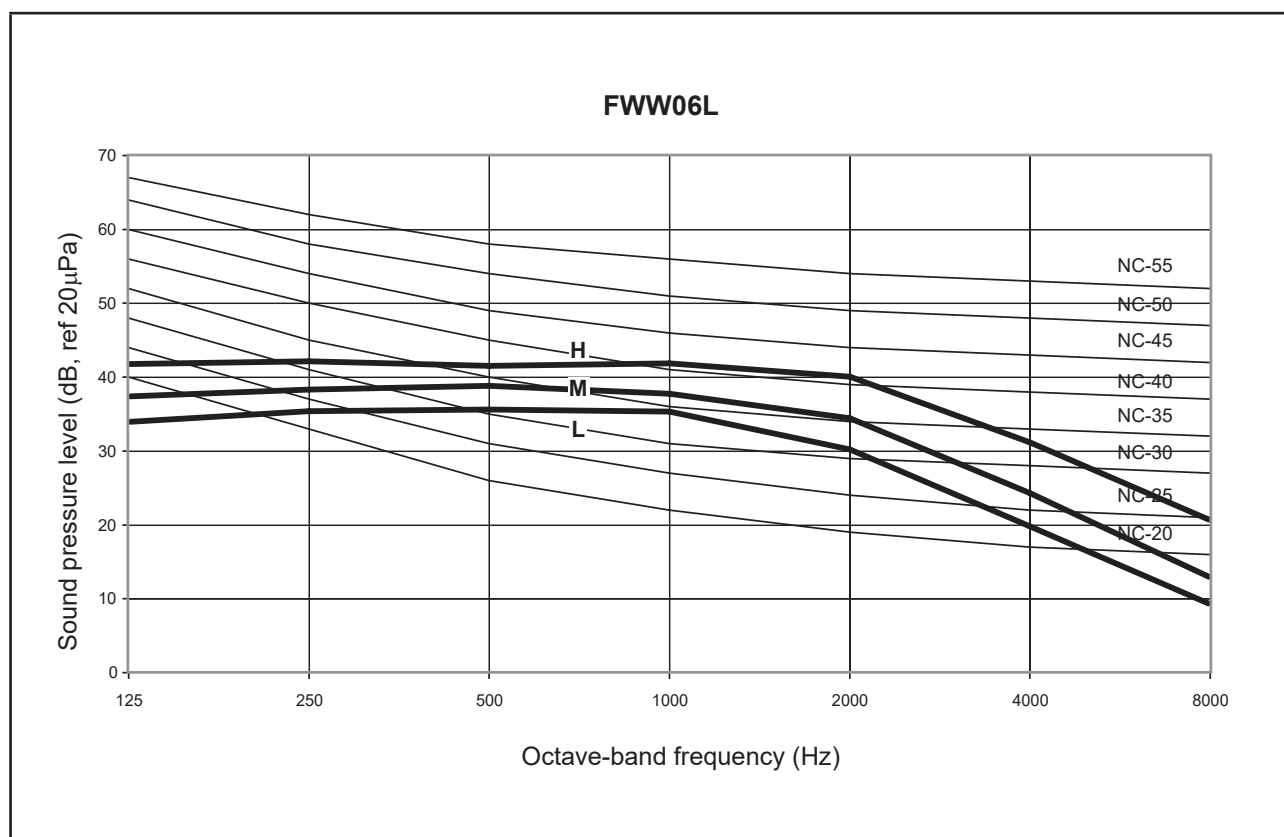
Model	Speed	1/1 Octave Sound Power Level (dB, reference 1pW)							Overall (dBA)
		125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	
<b>FUD20B</b>	High	68	67	72	70	65	65	57	74
	Med	64	64	68	65	61	59	51	69
	Low	61	60	63	60	56	53	43	65
<b>FUD25B</b>	High	71	71	74	74	70	70	63	78
	Med	70	69	73	72	68	68	60	76
	Low	67	67	71	69	65	64	56	73
<b>FUD30B</b>	High	75	76	75	72	69	65	60	77
<b>FUD40B</b>	High	75	76	75	72	69	65	60	77

Measured In Reverberation Chamber

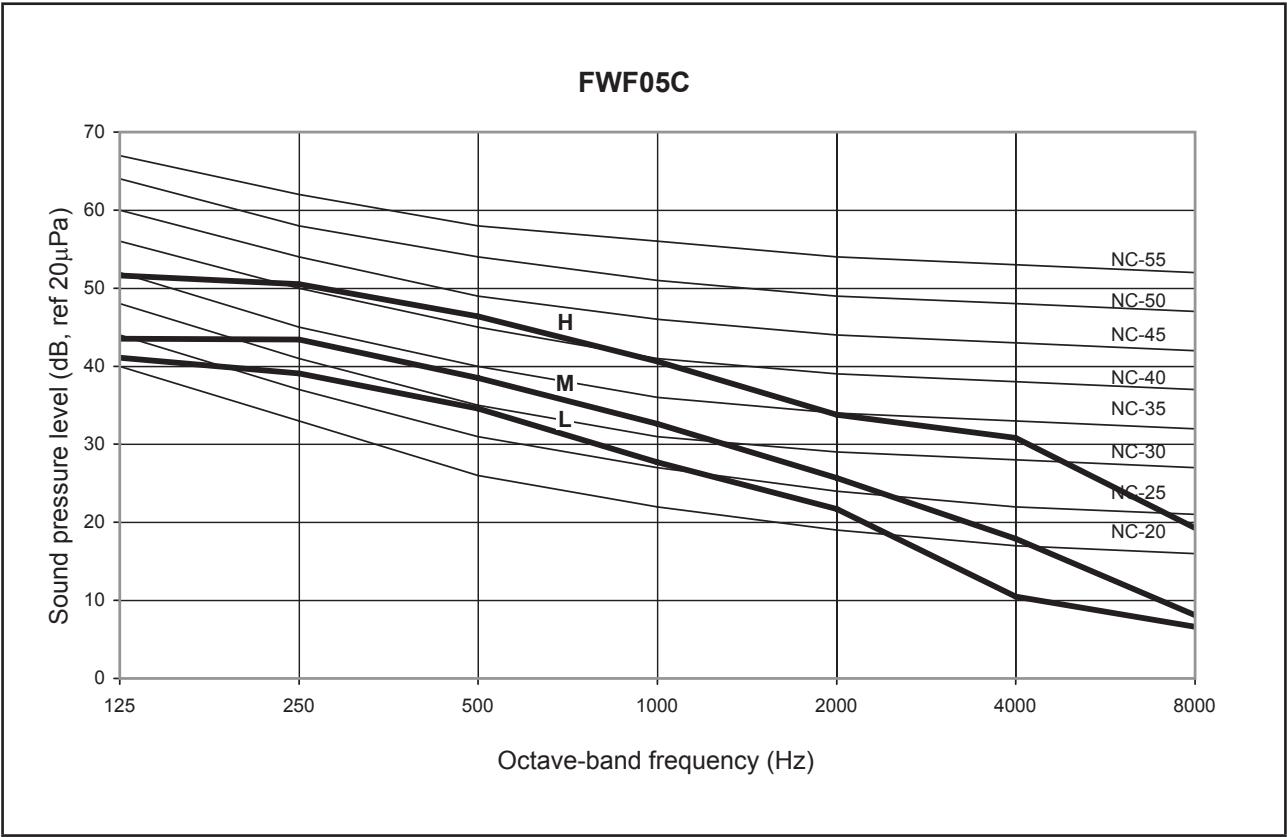
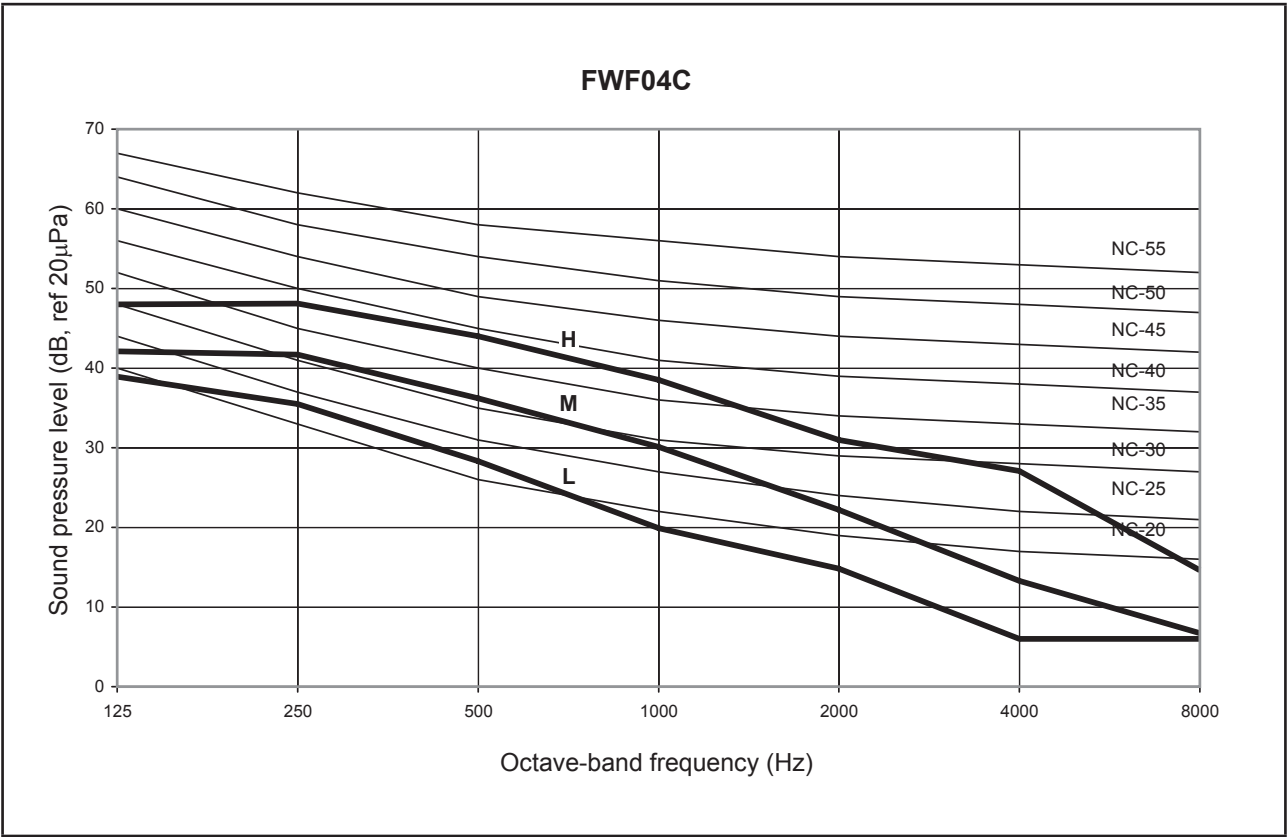
## NC Curve

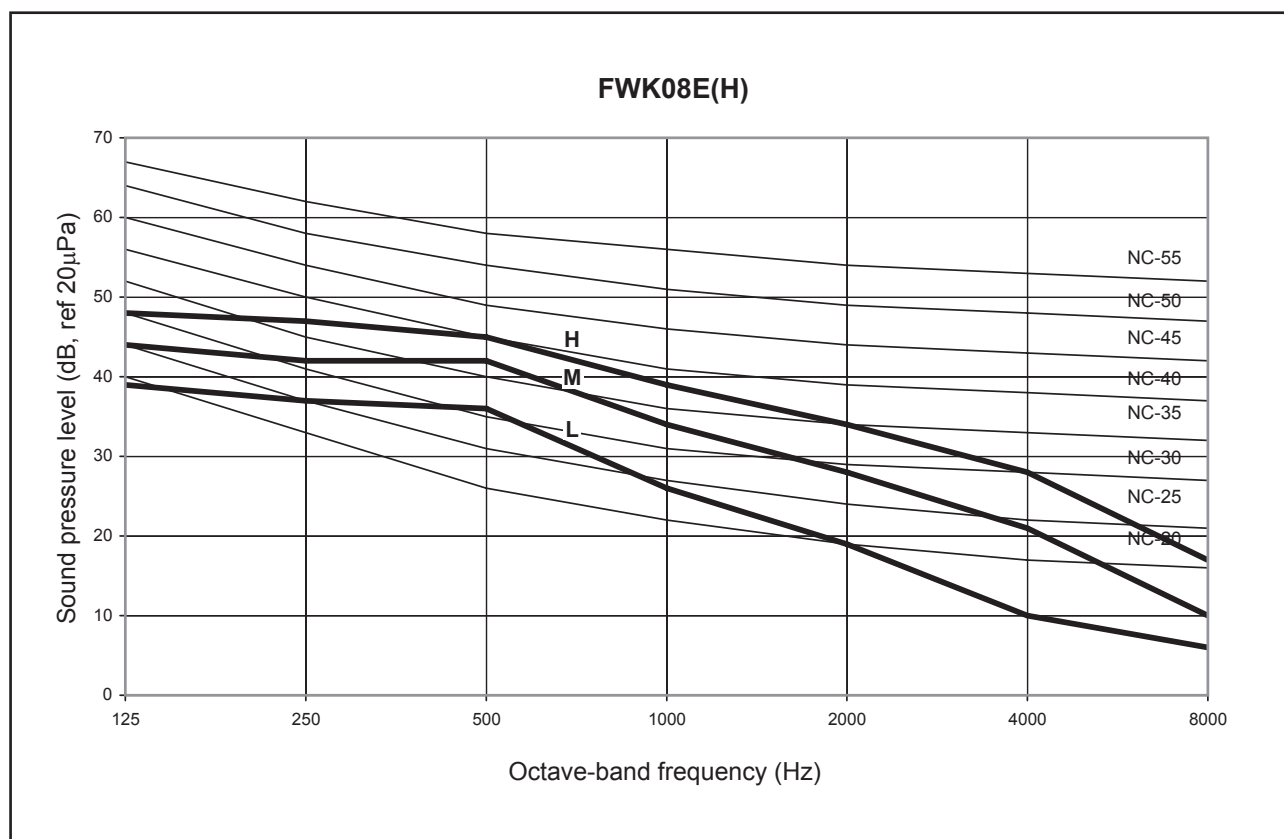
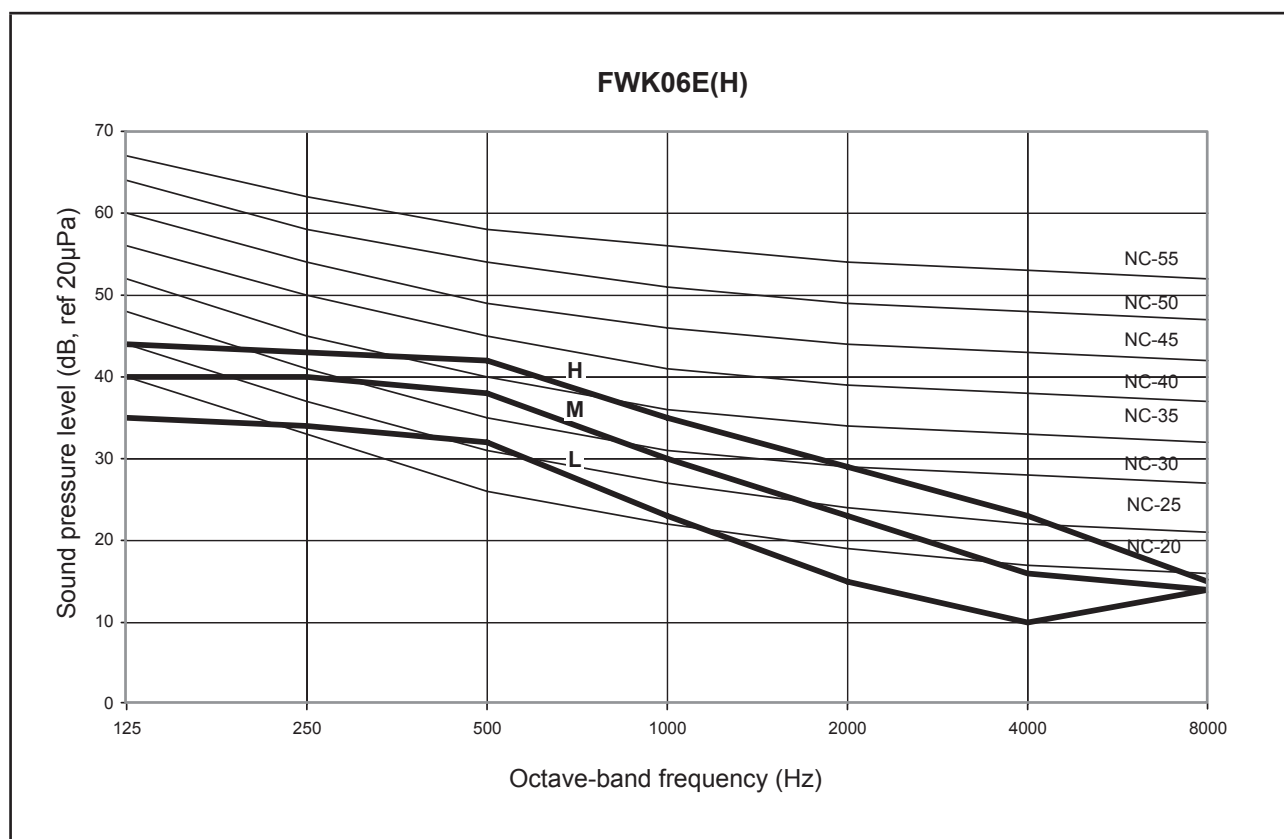


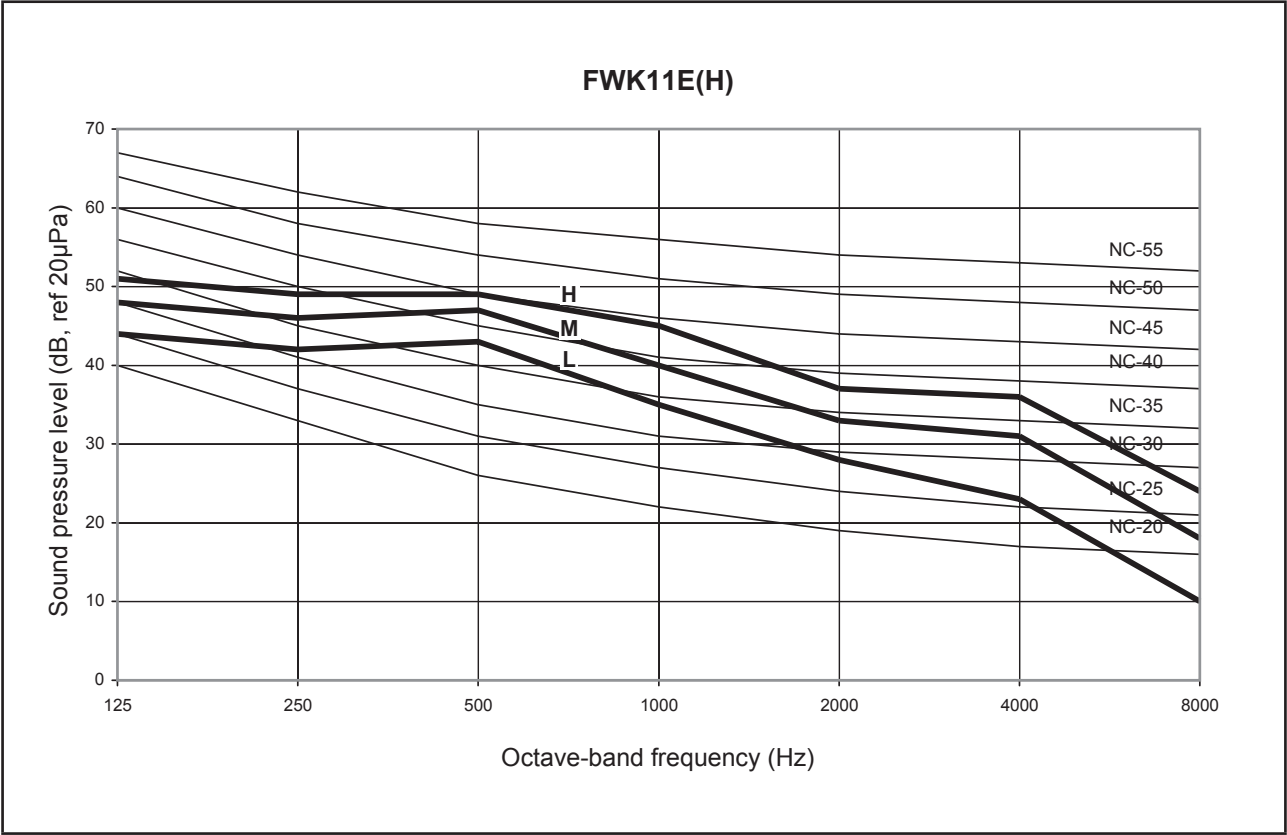
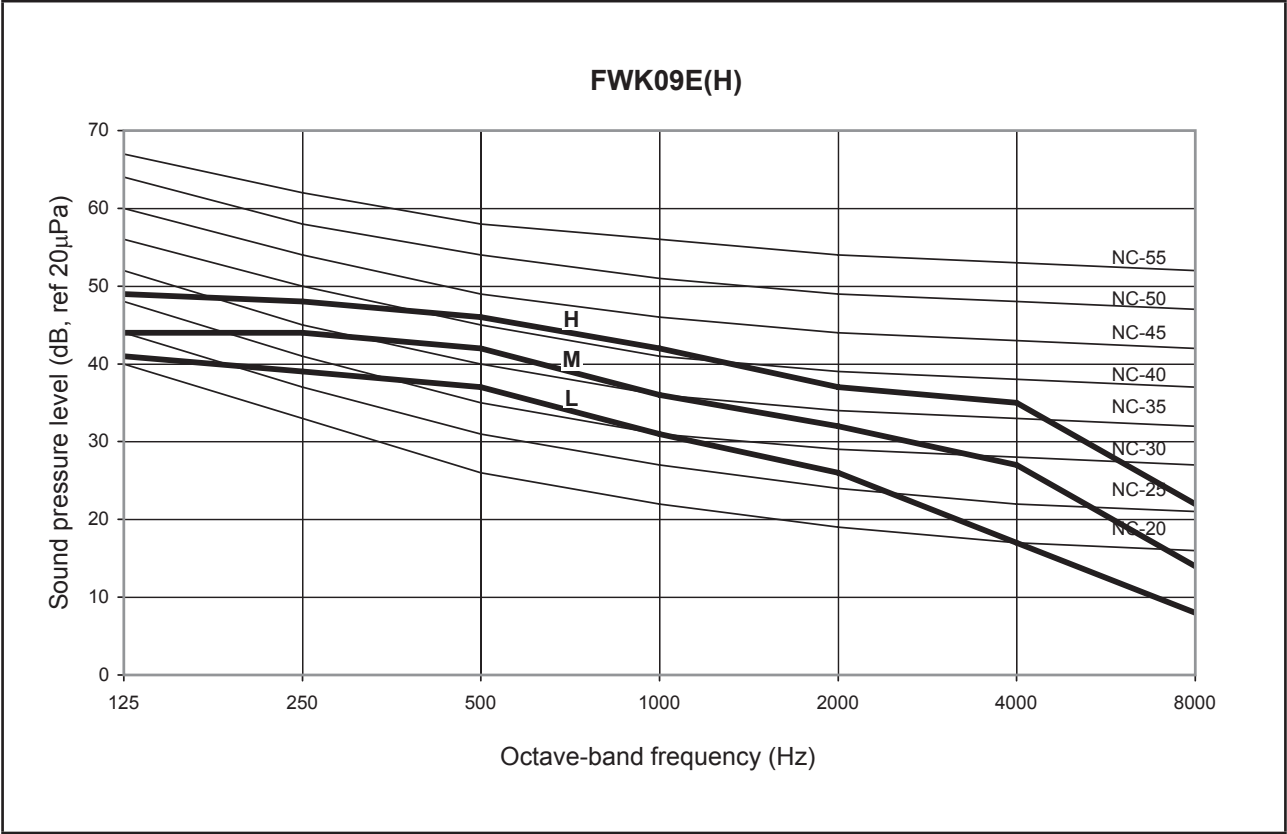


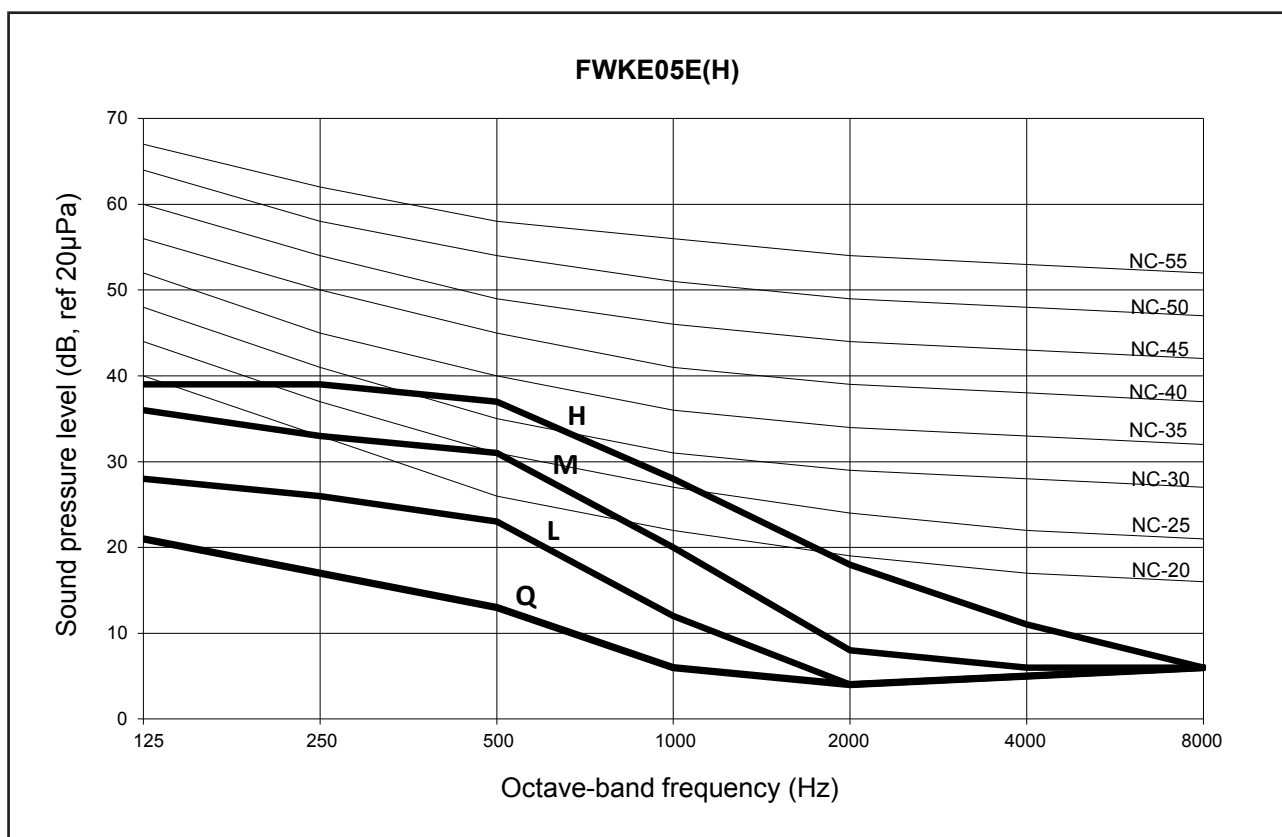
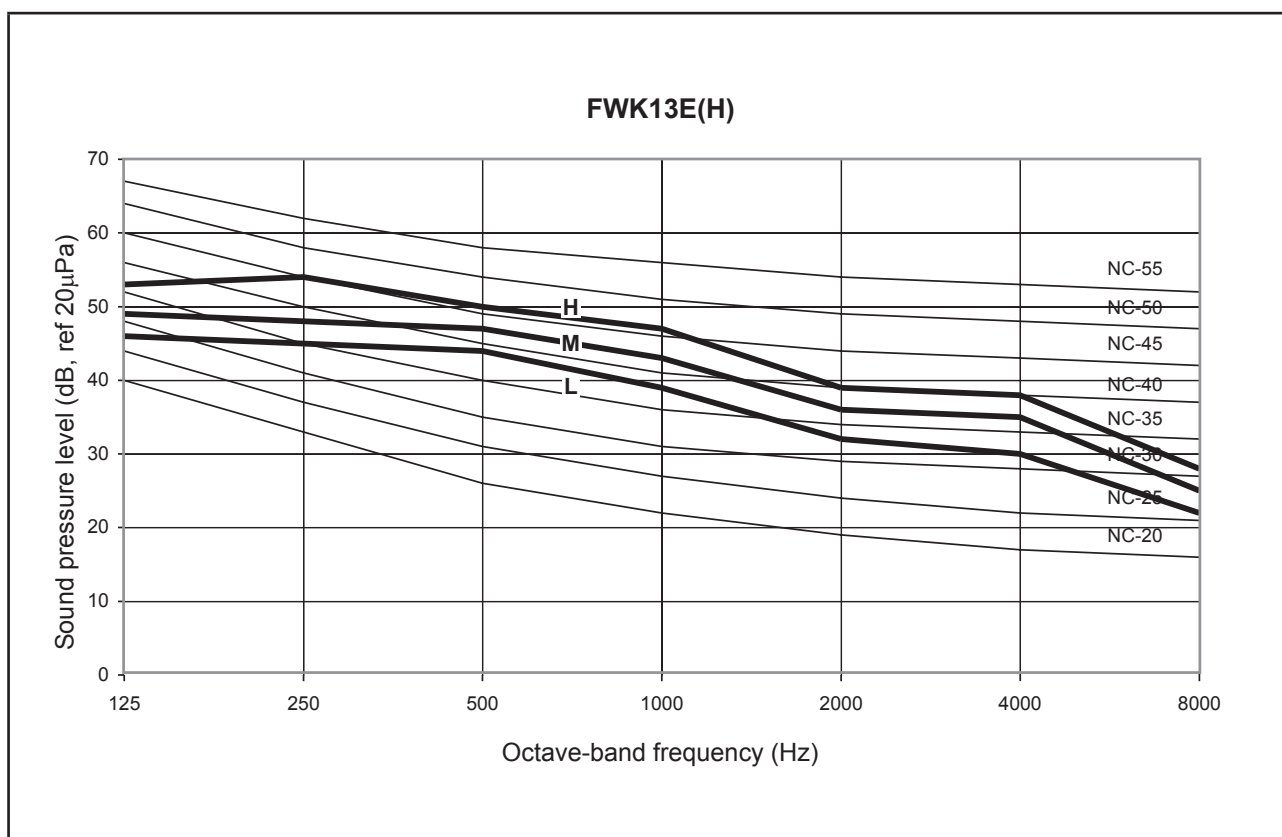


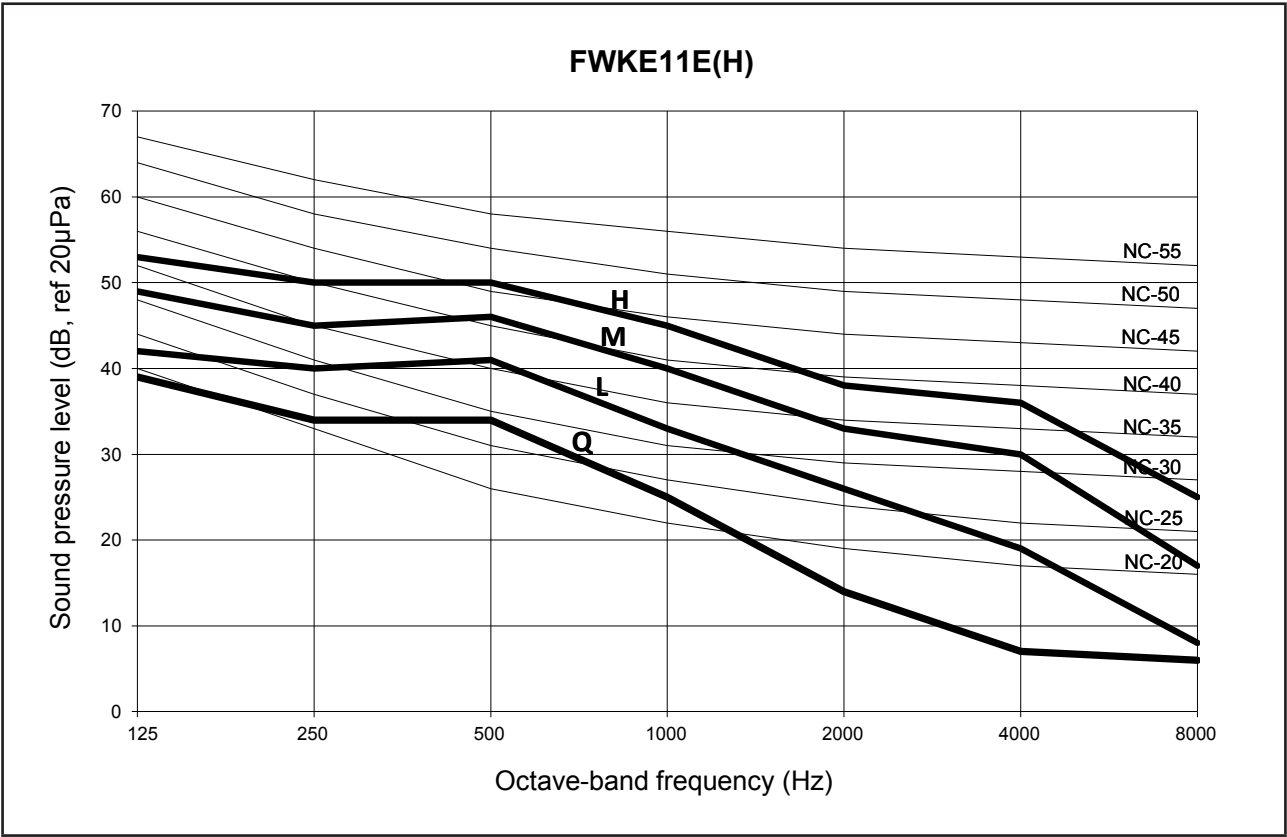
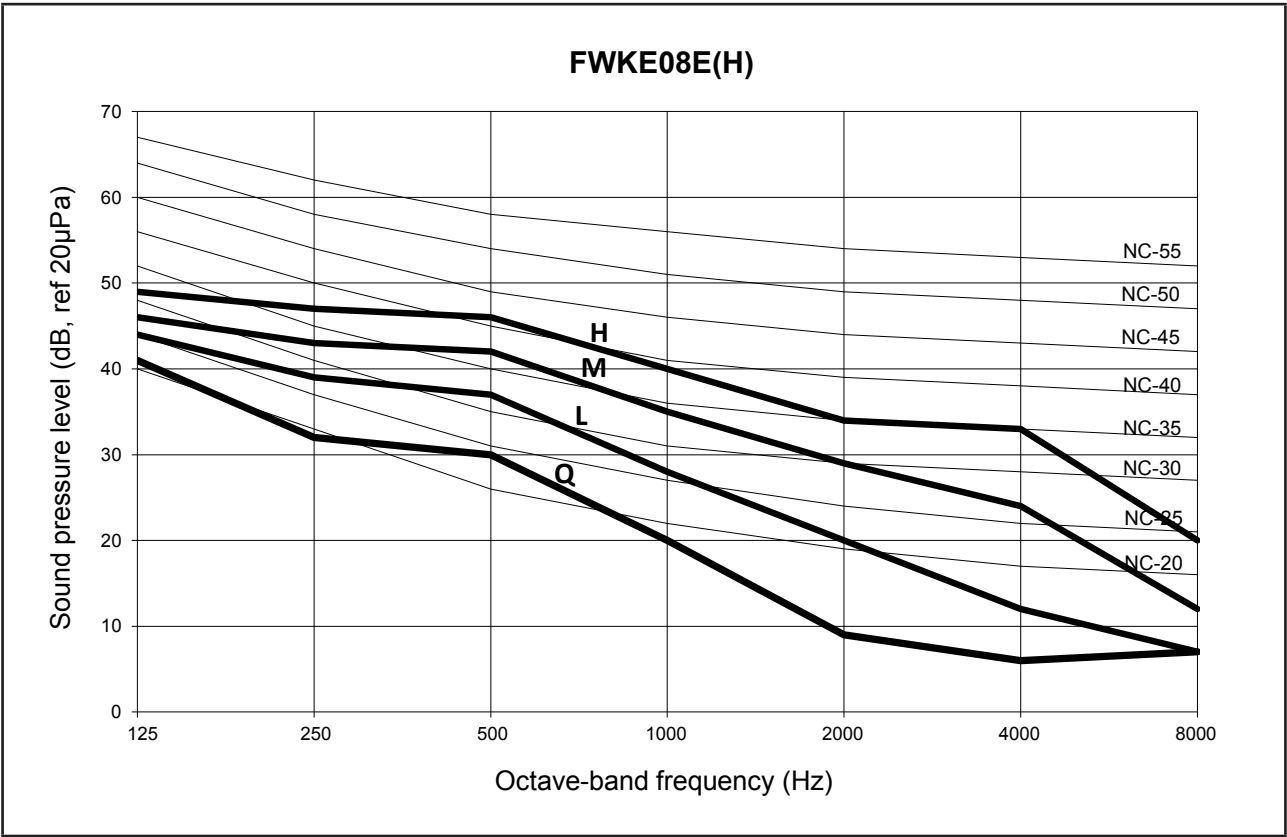


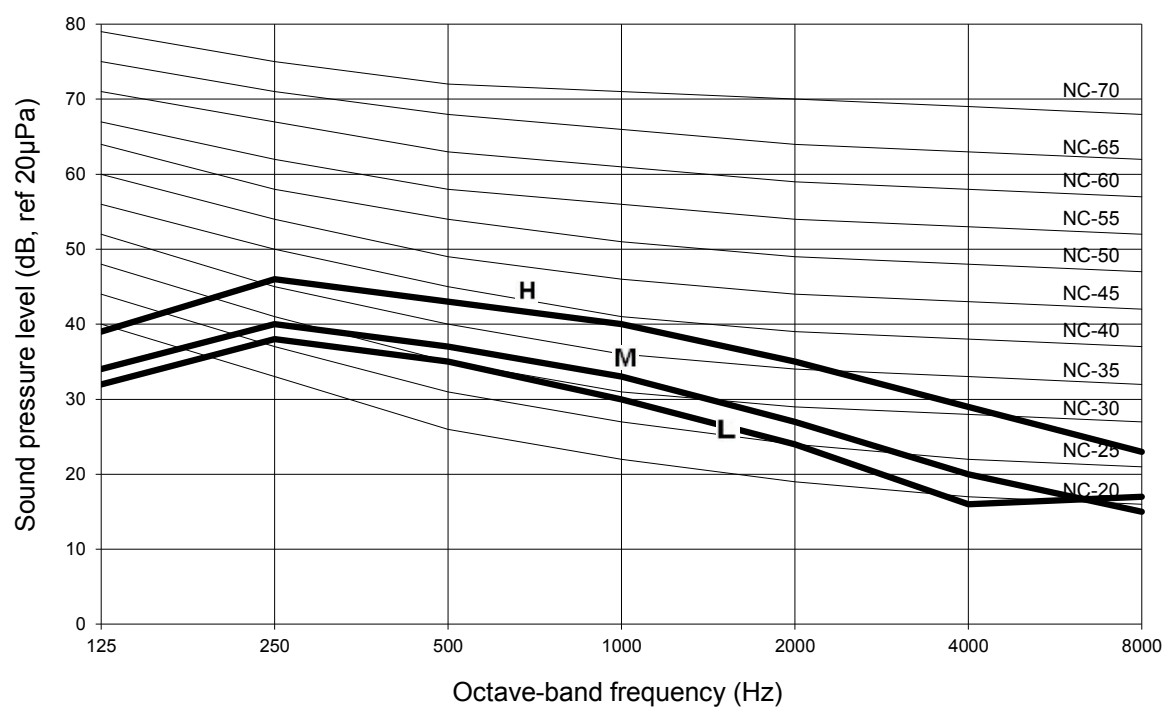
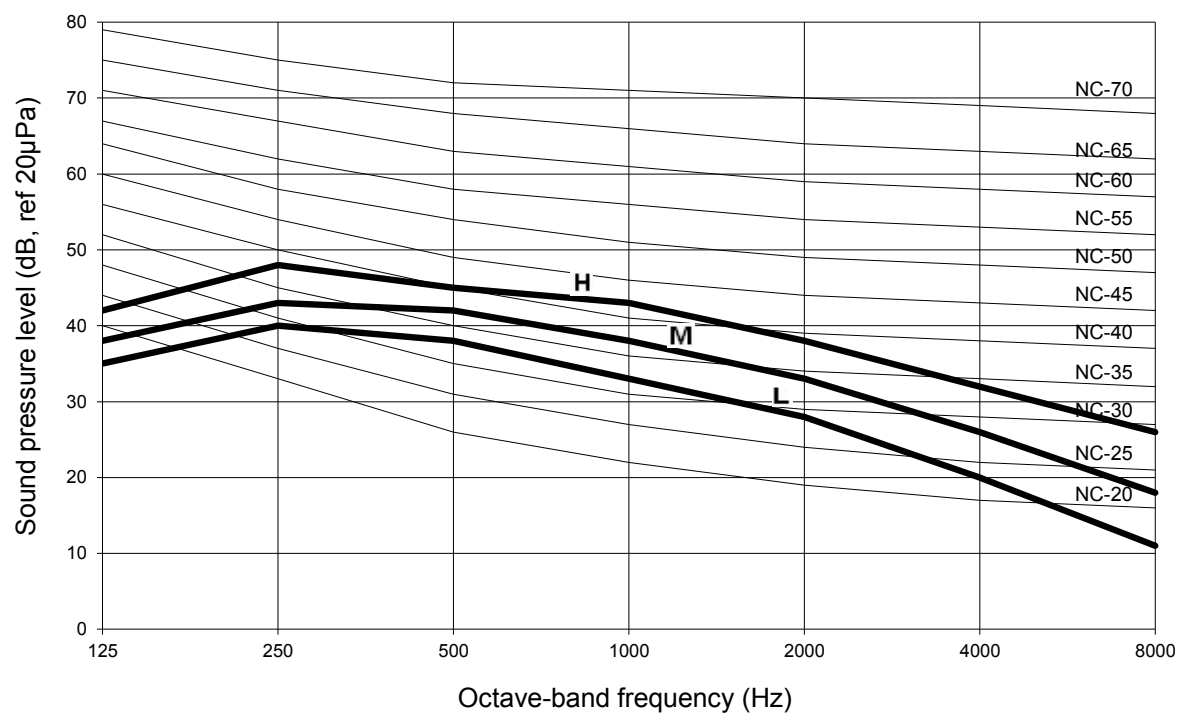


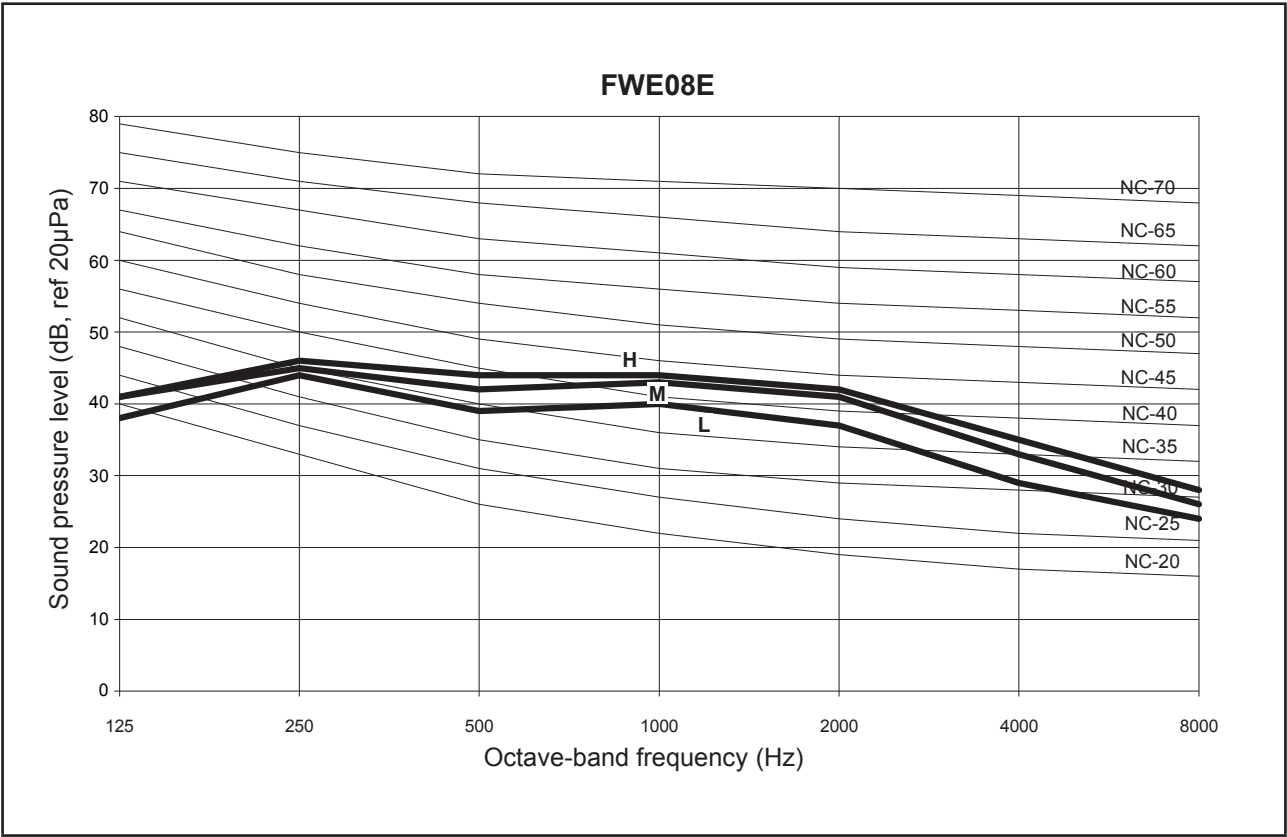
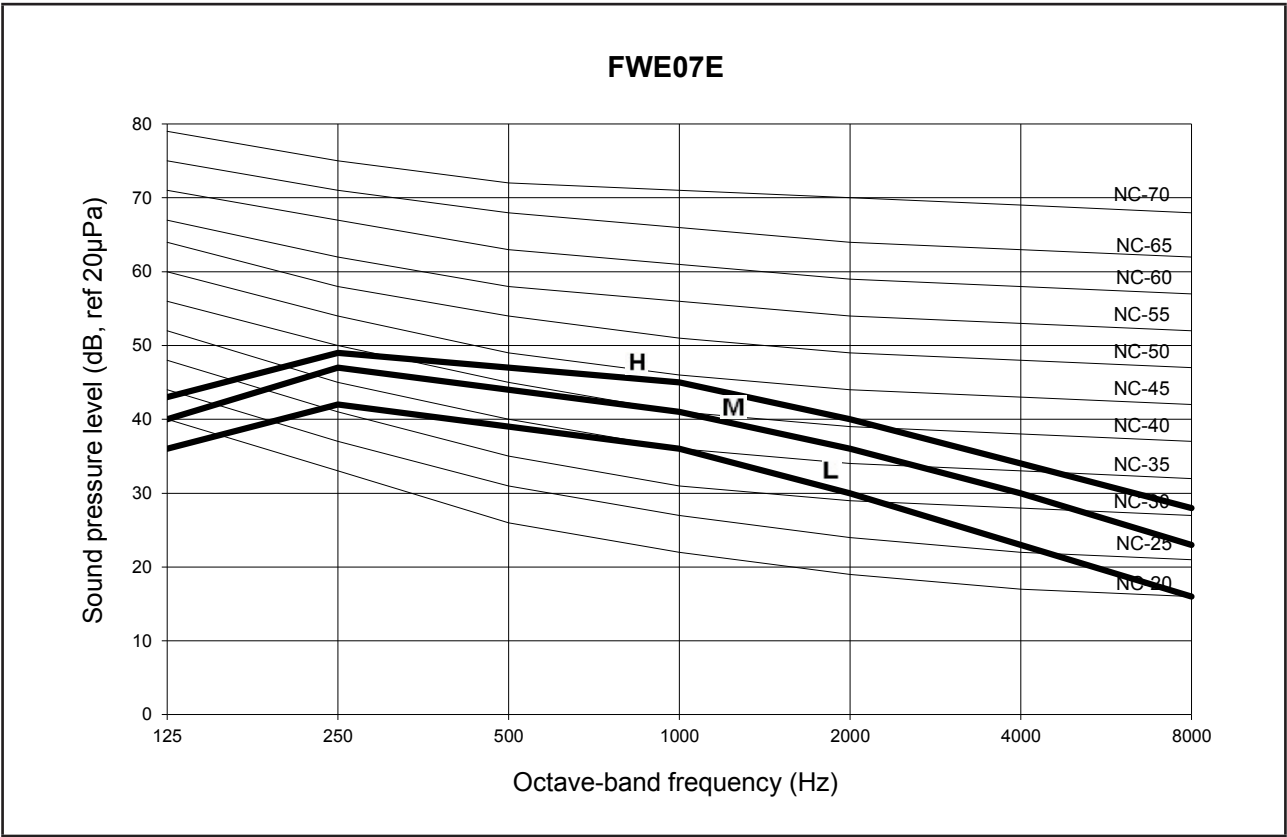


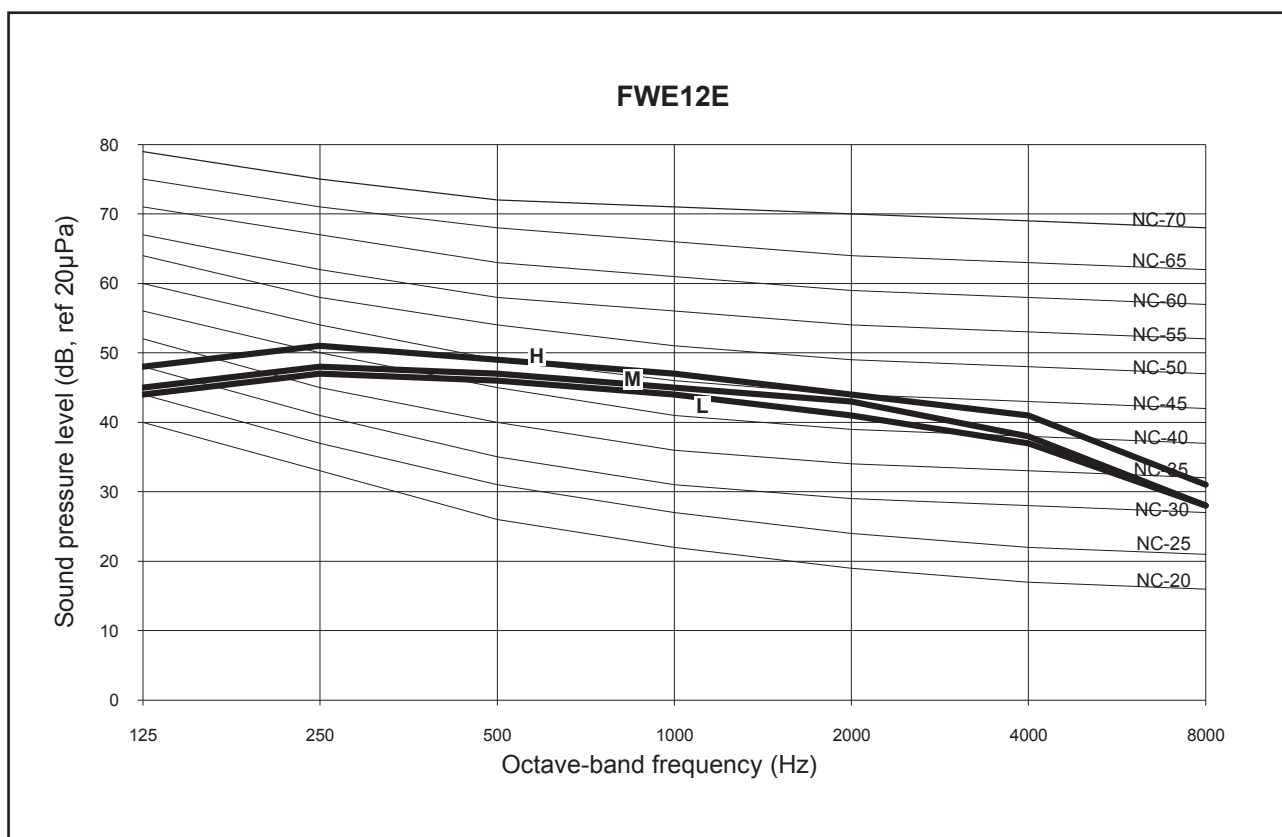
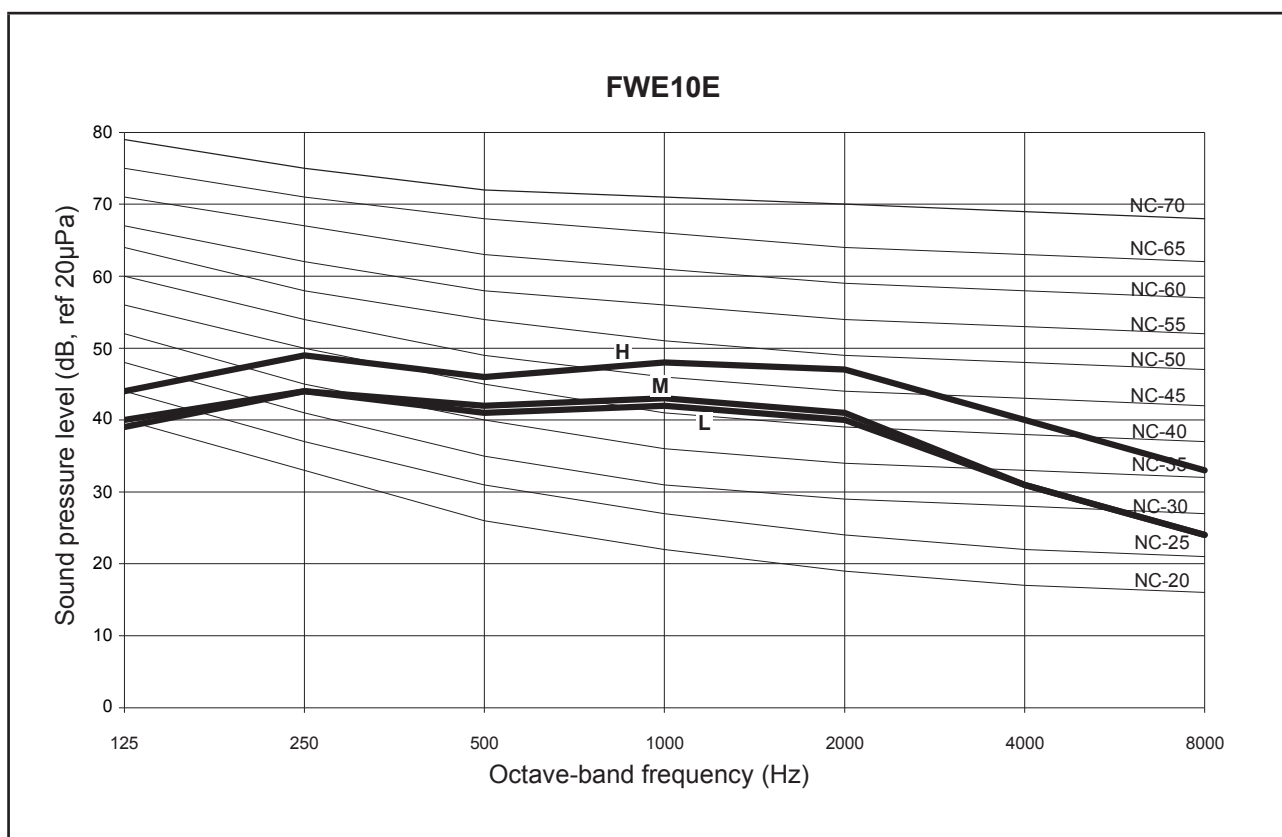




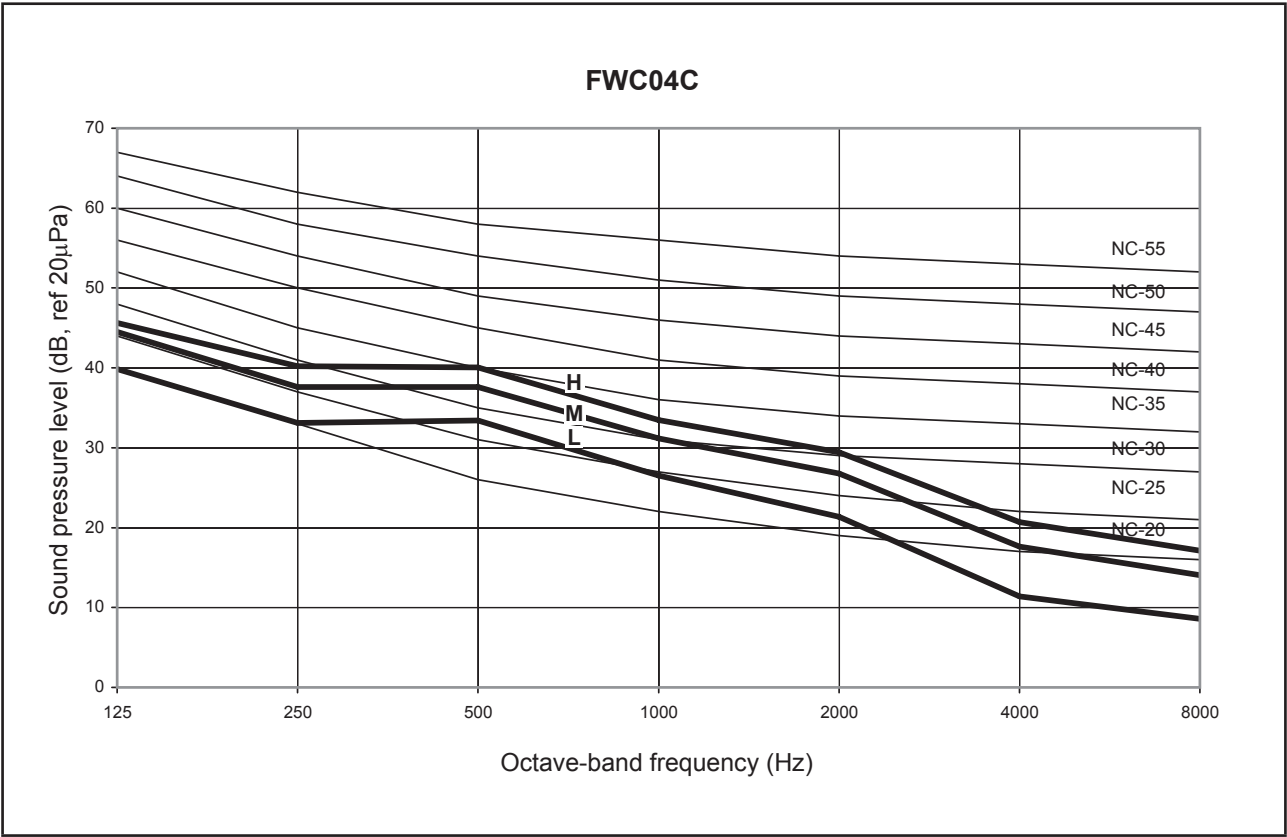
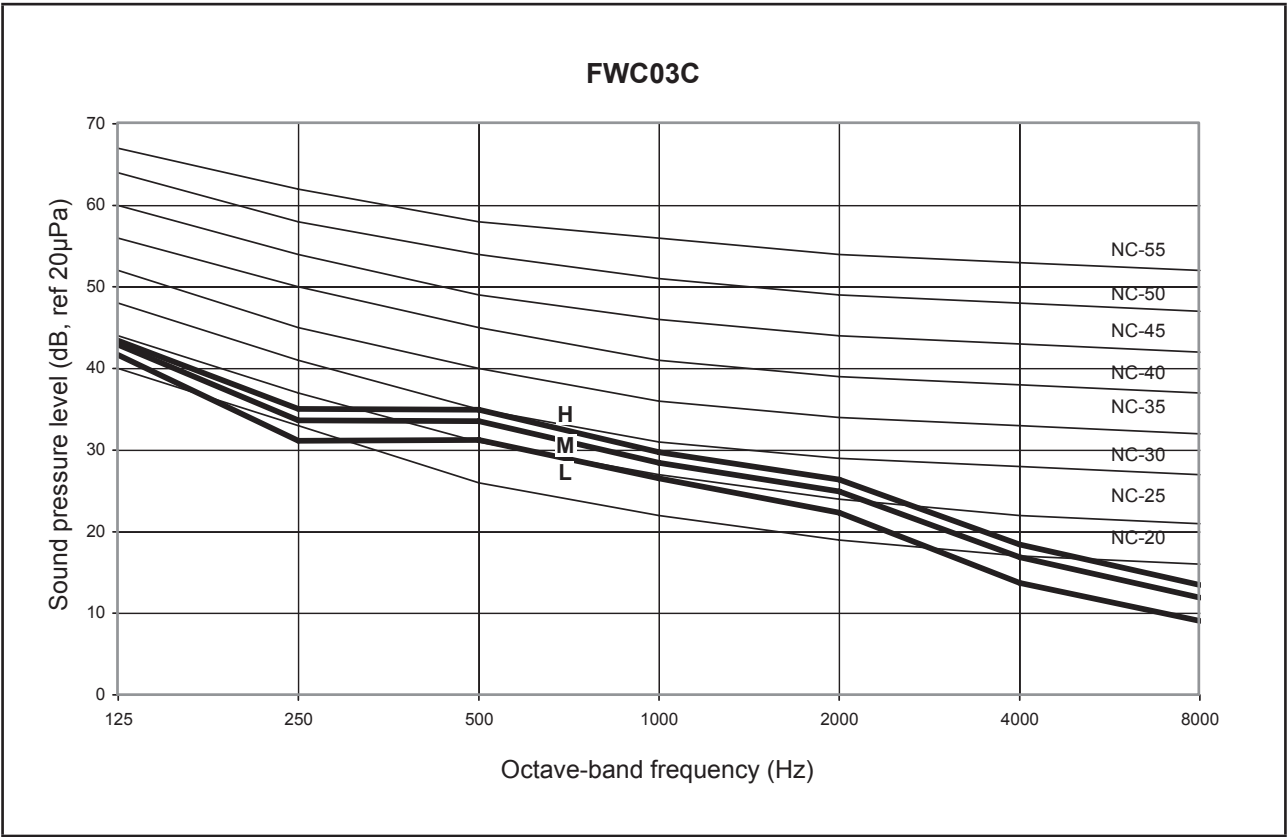


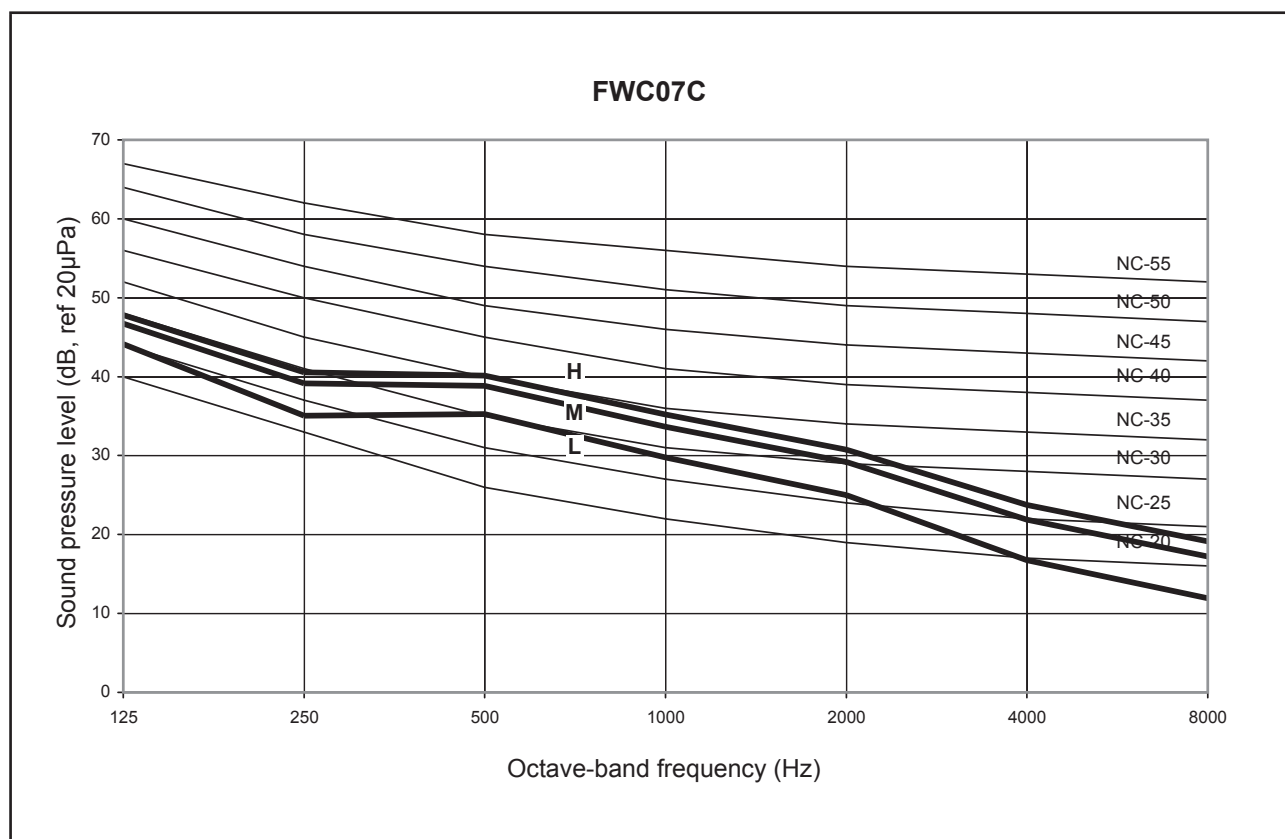
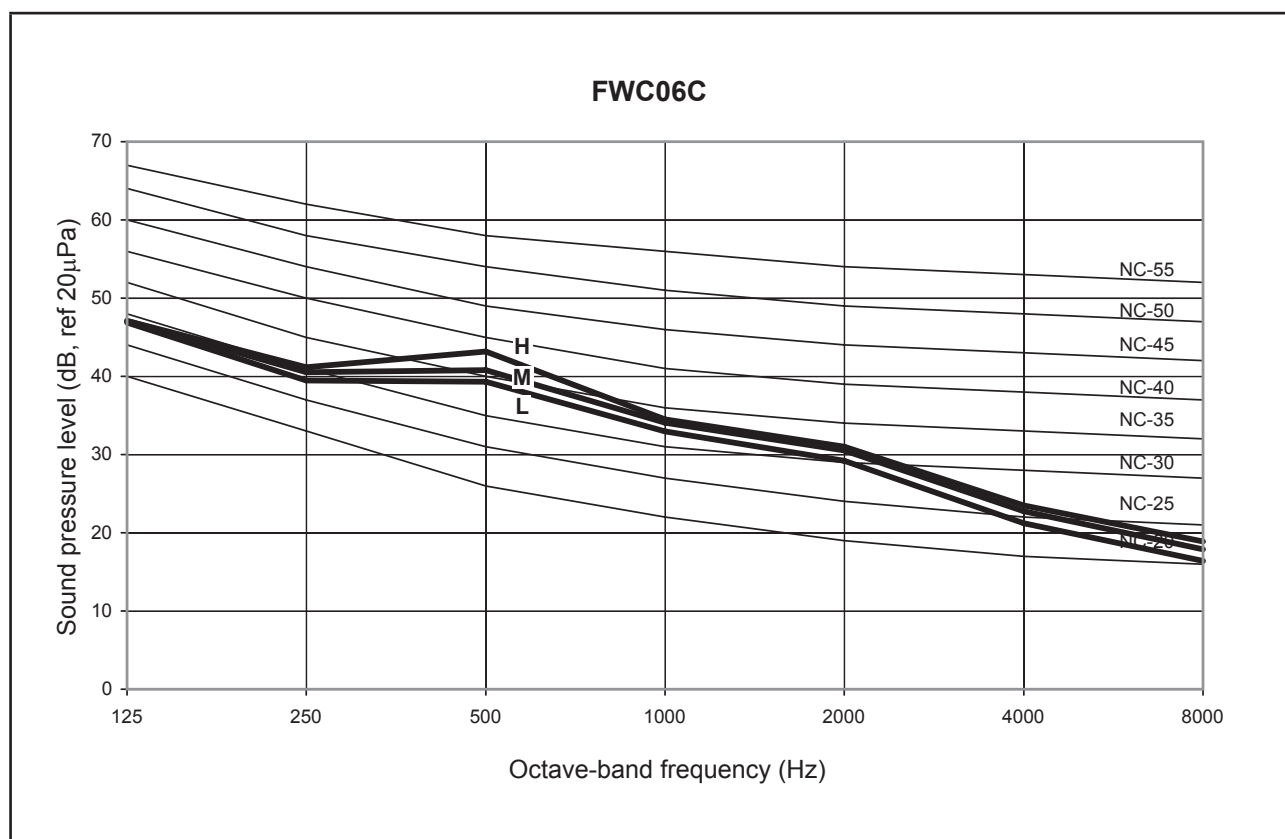
**FWE05E****FWE06E**

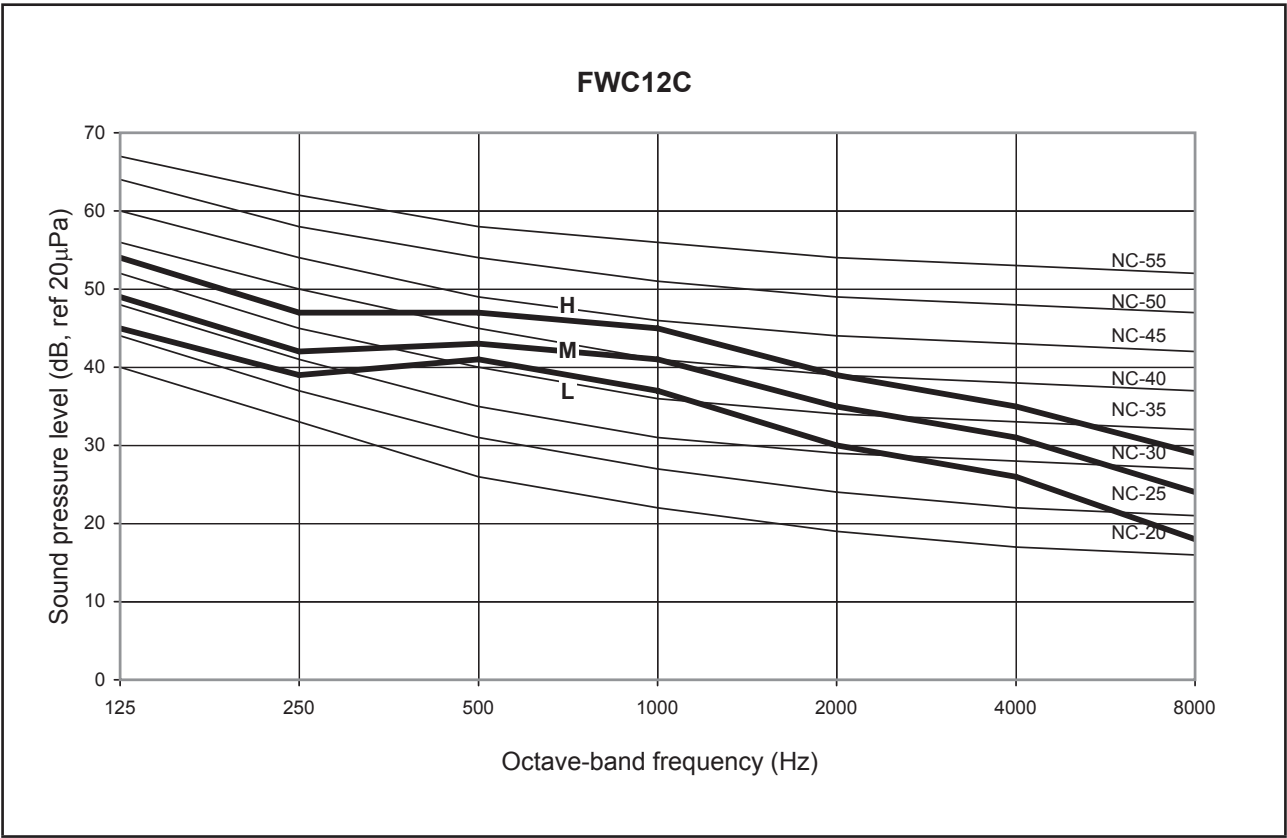
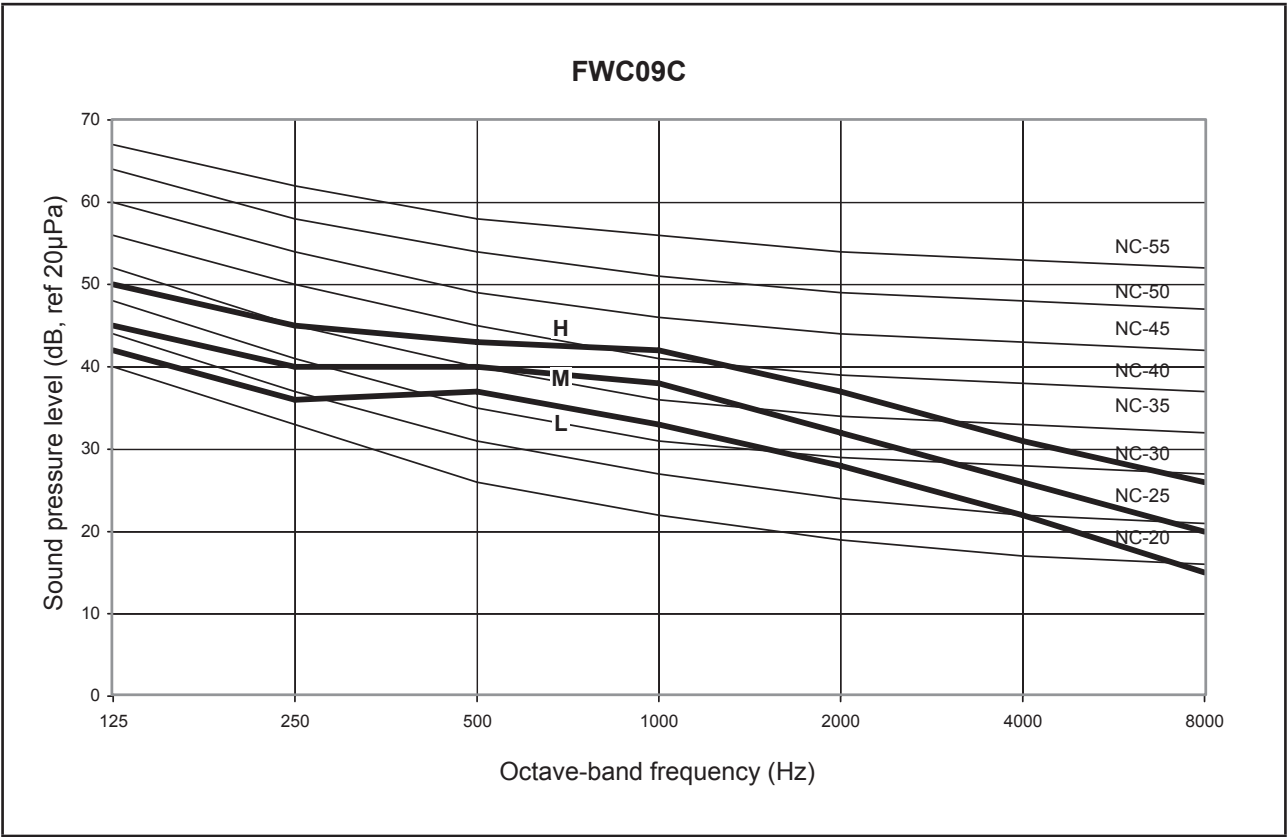


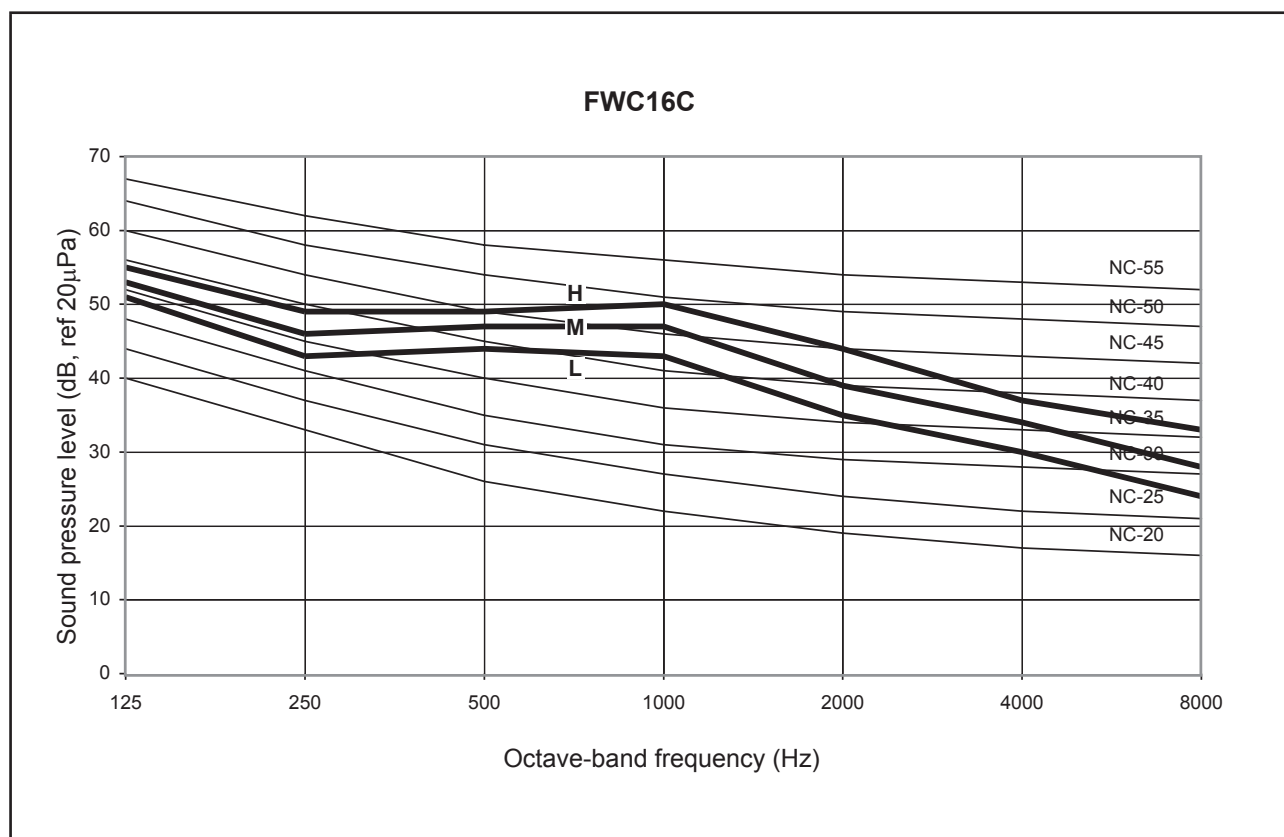
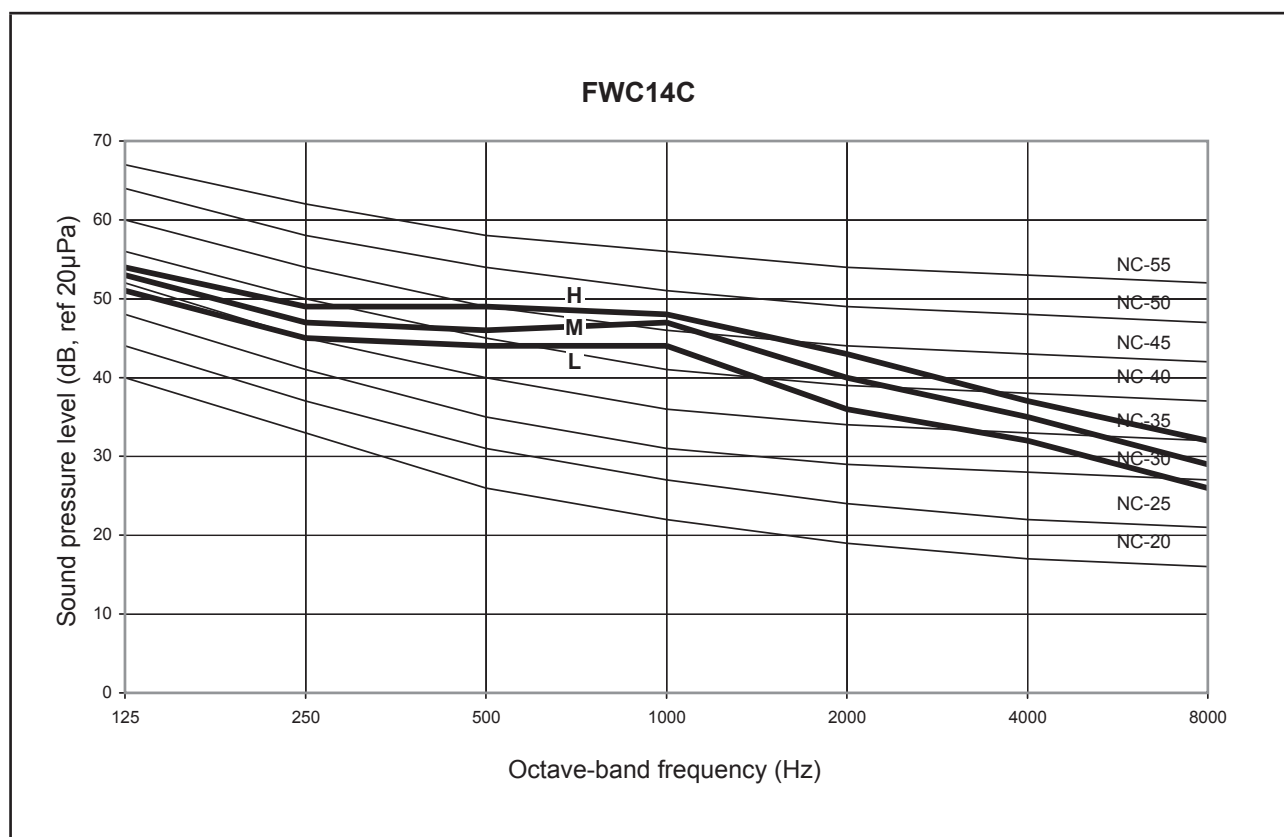


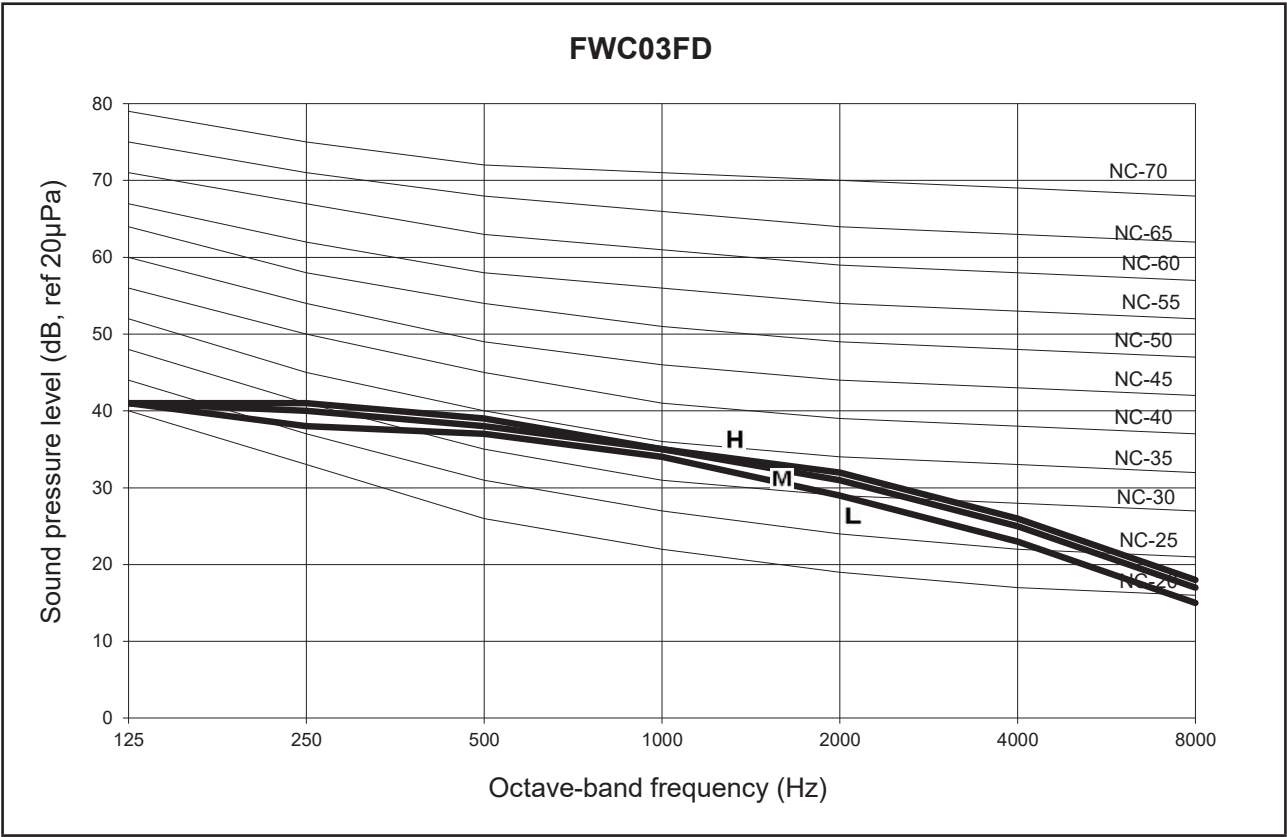
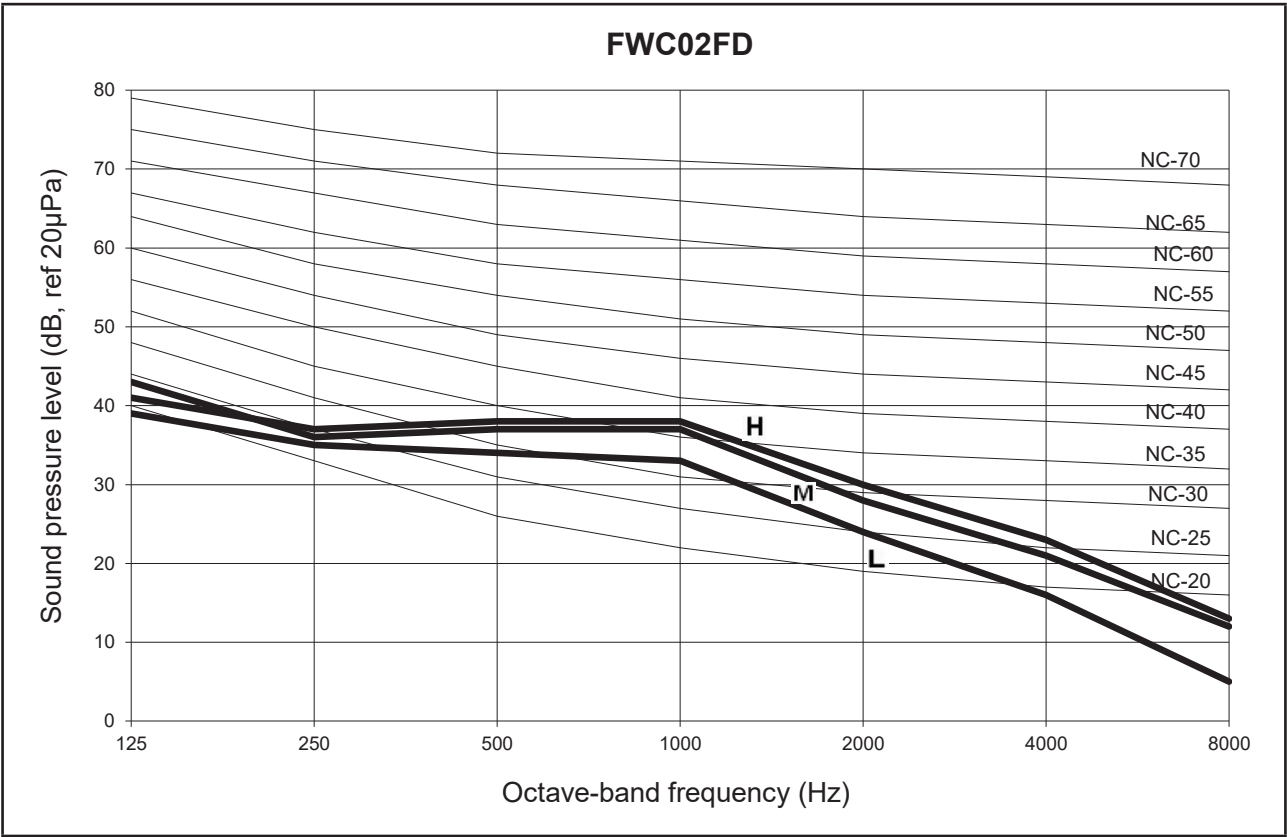


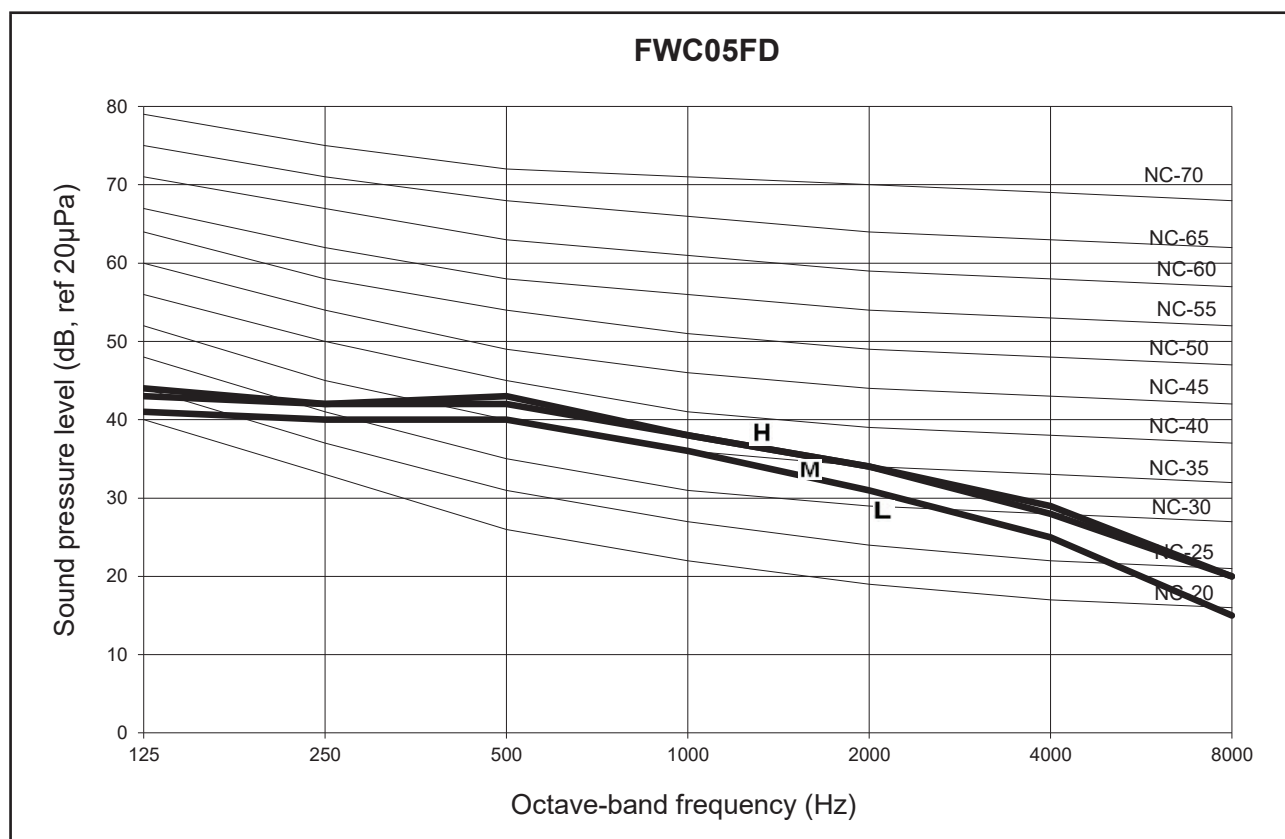
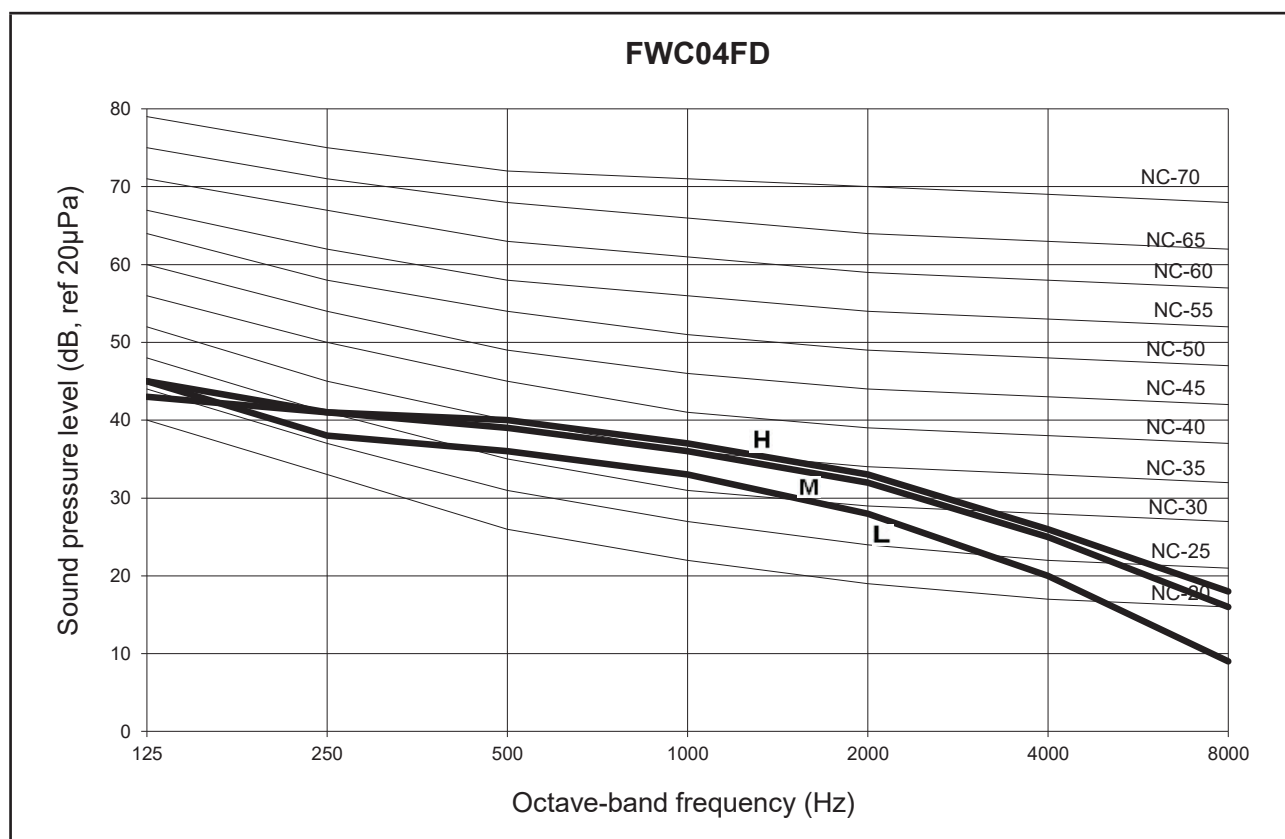


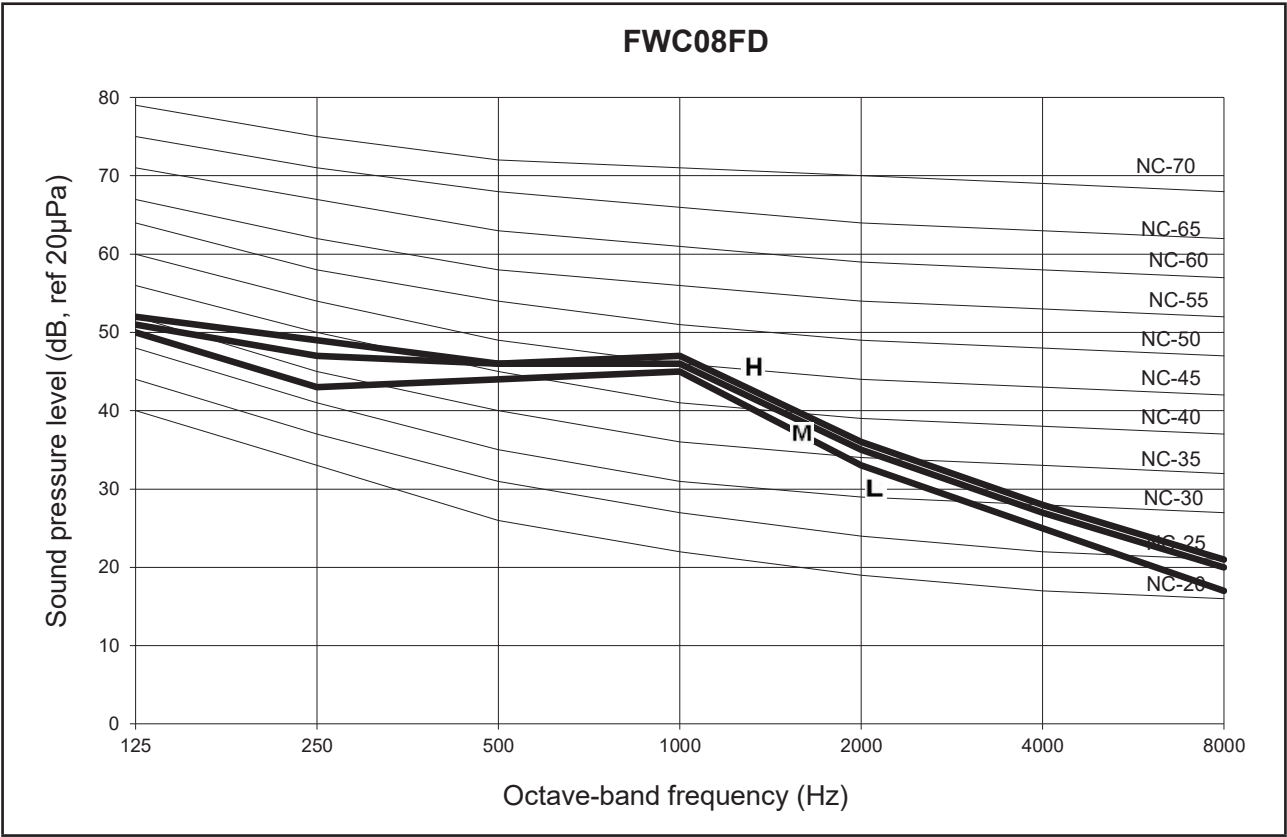
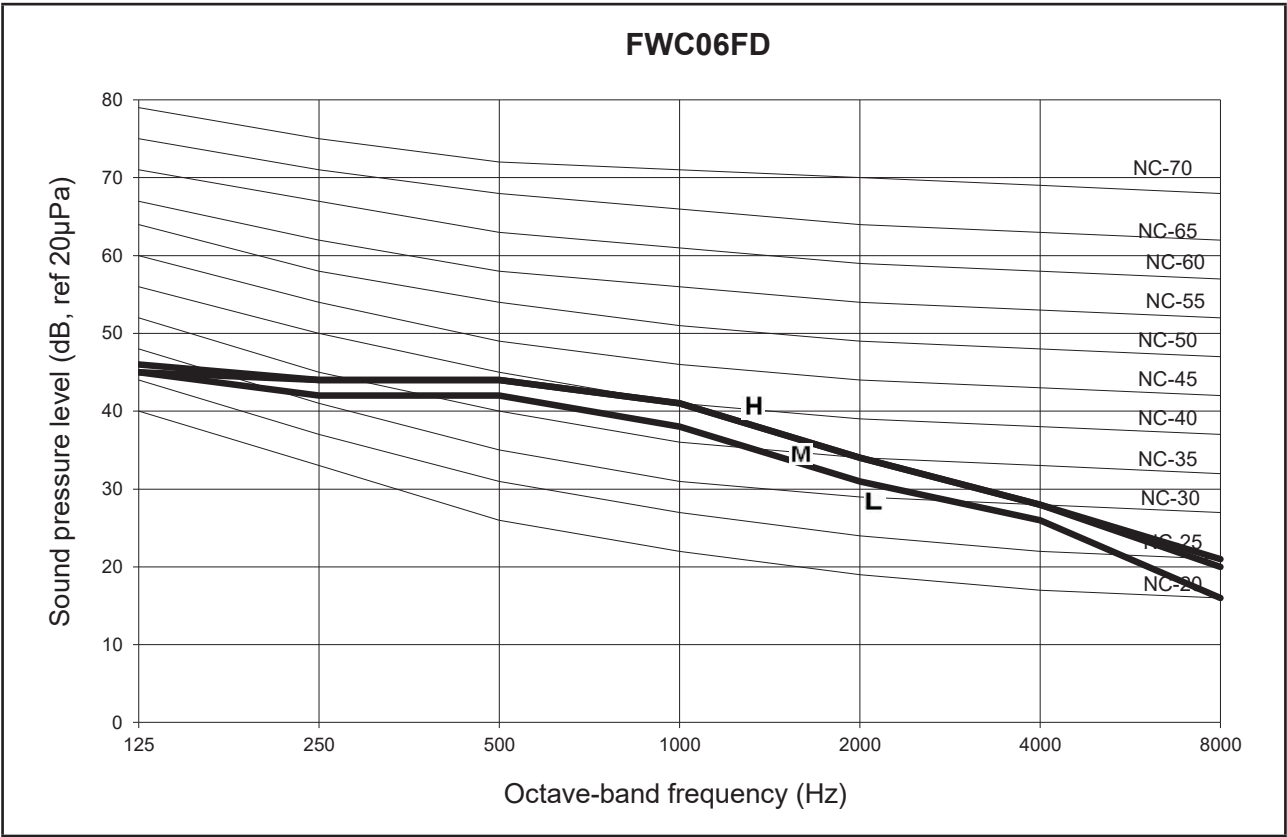


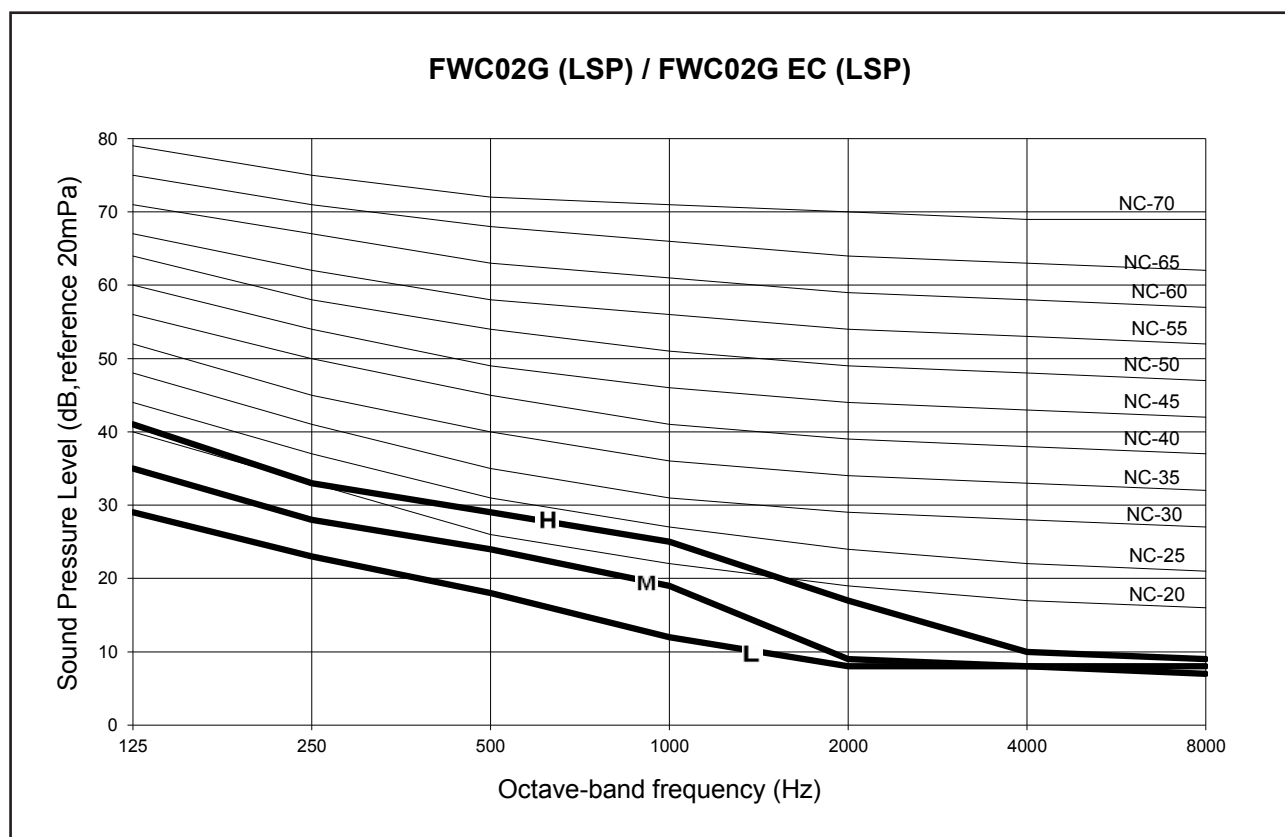
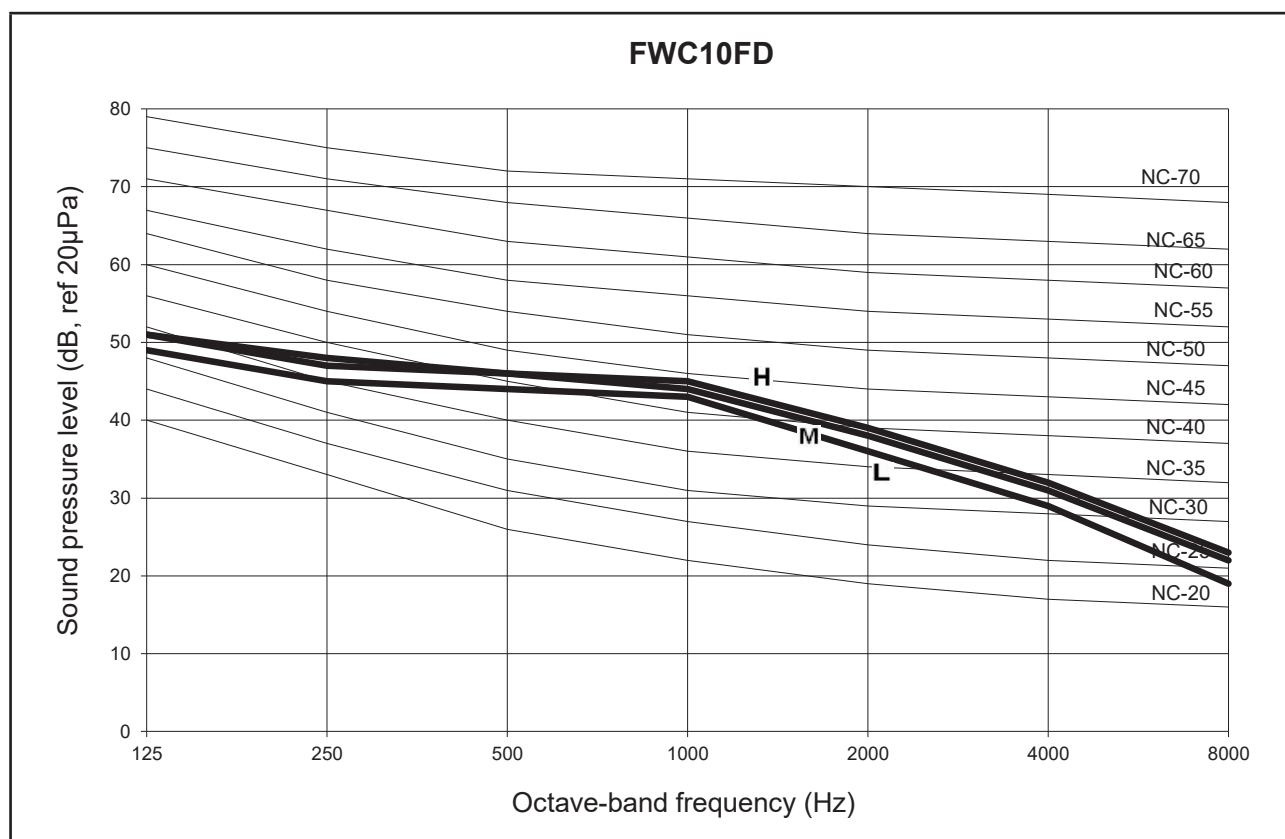




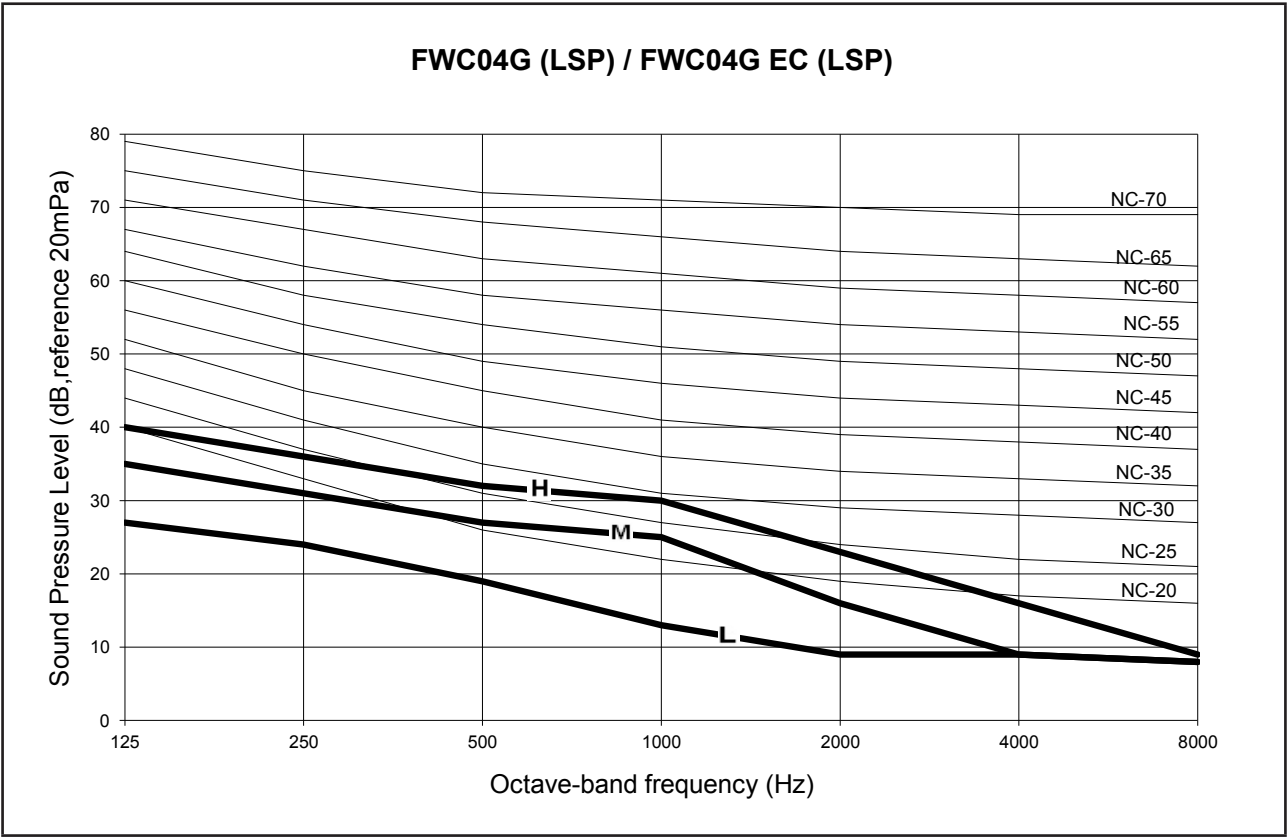
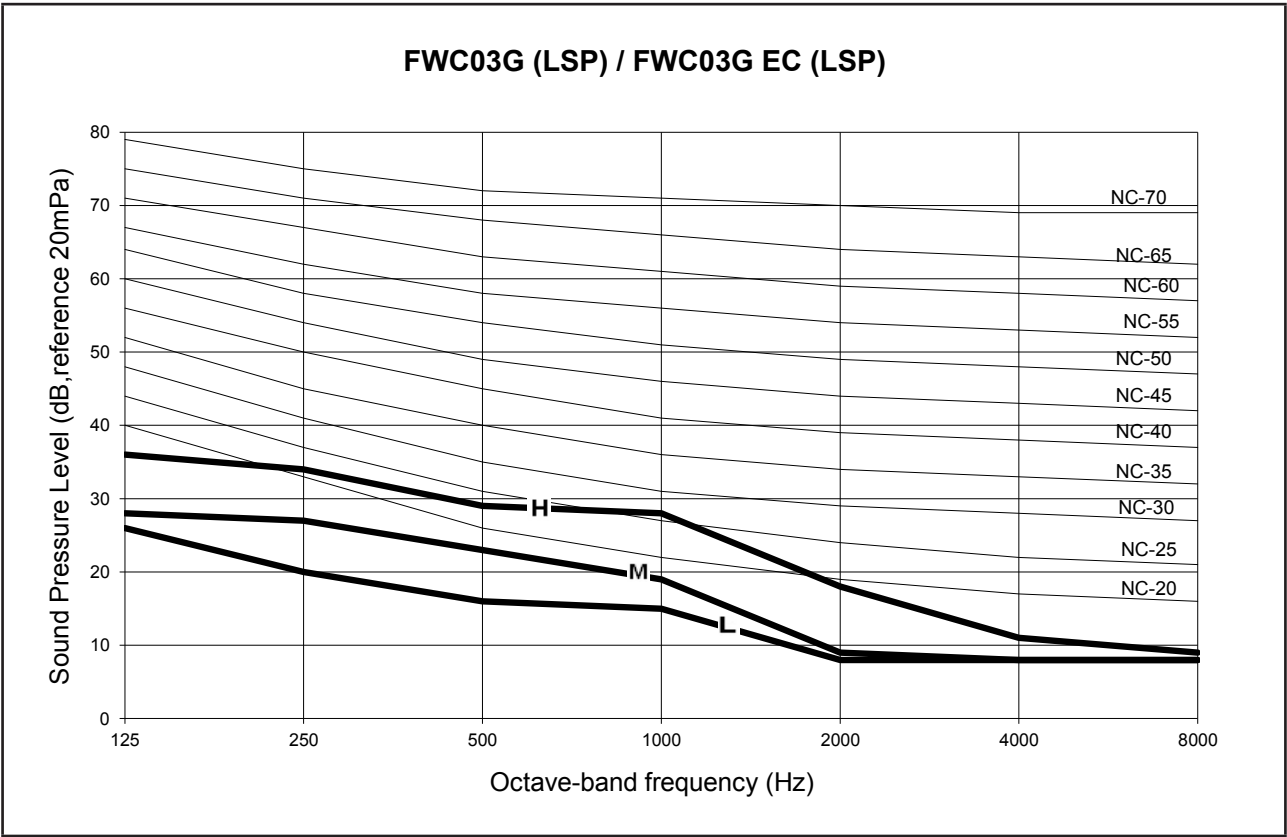


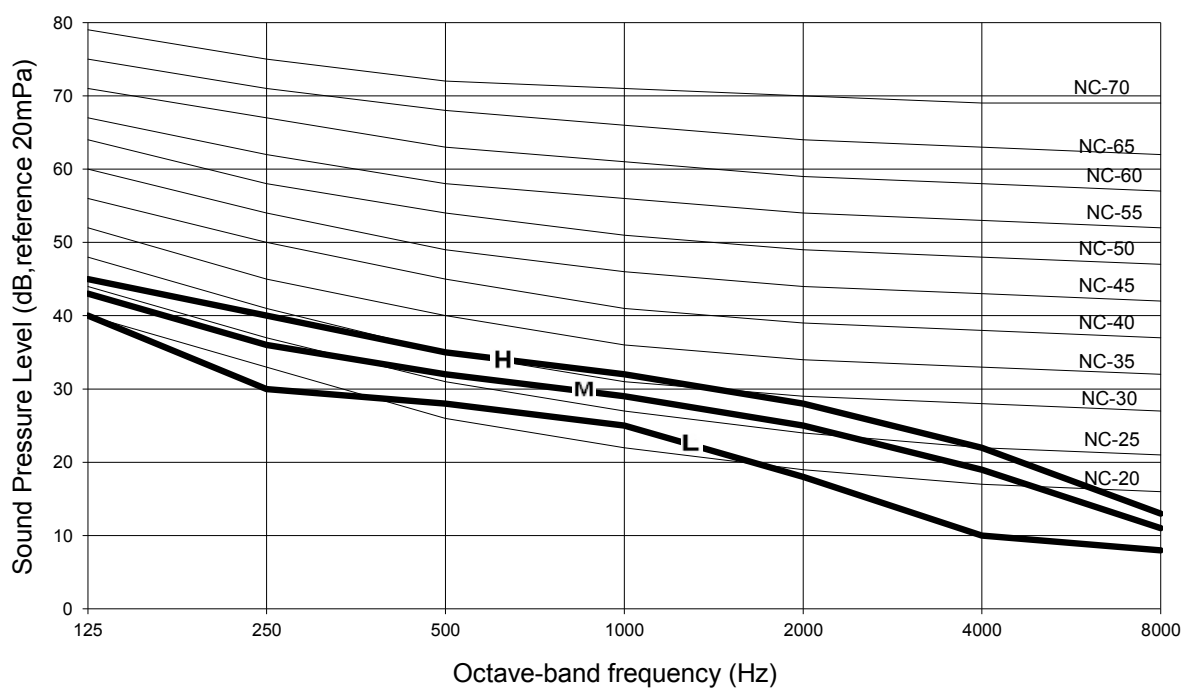
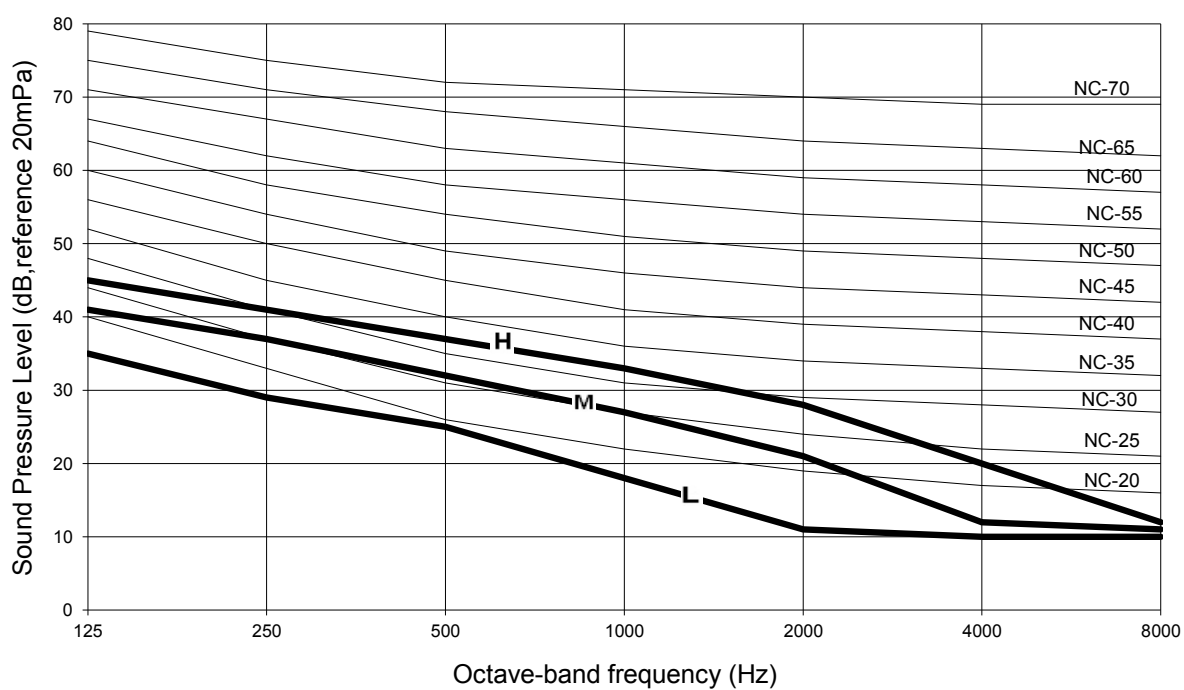


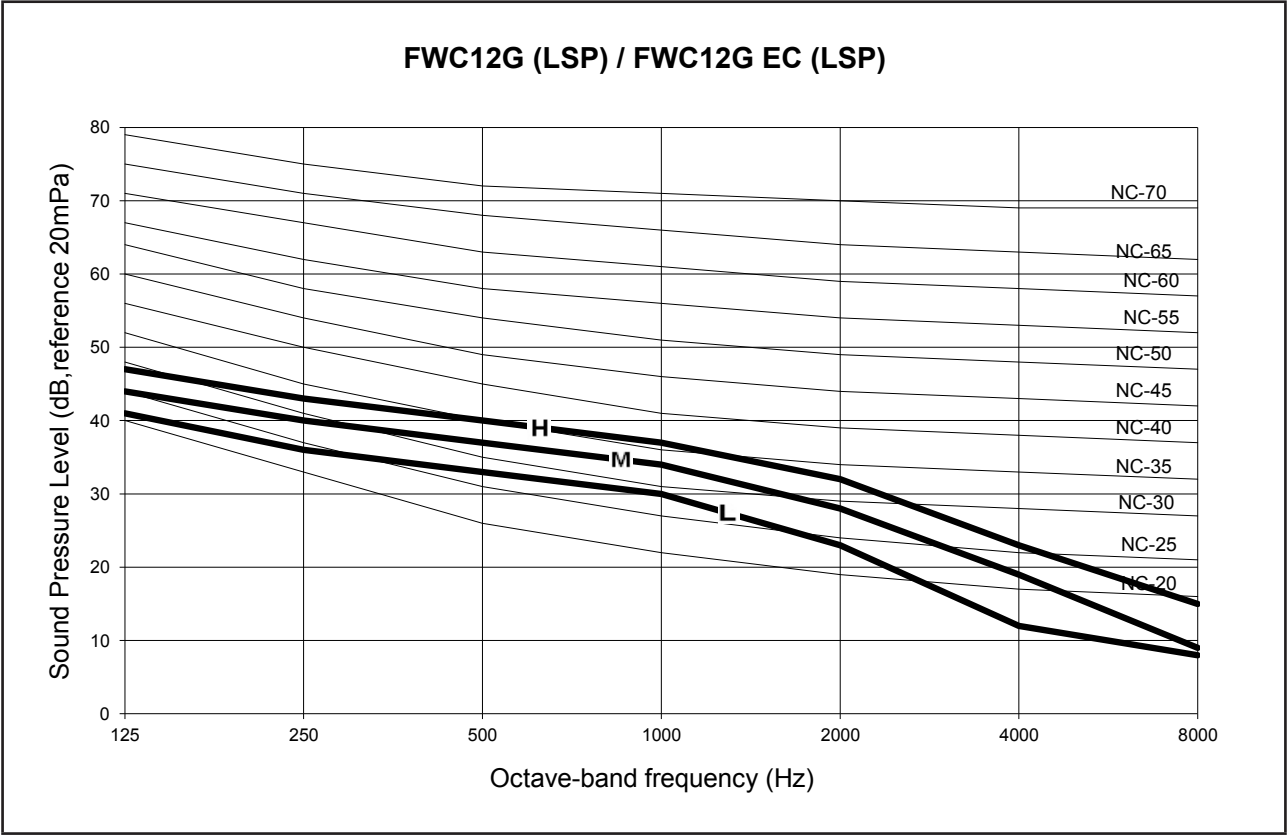
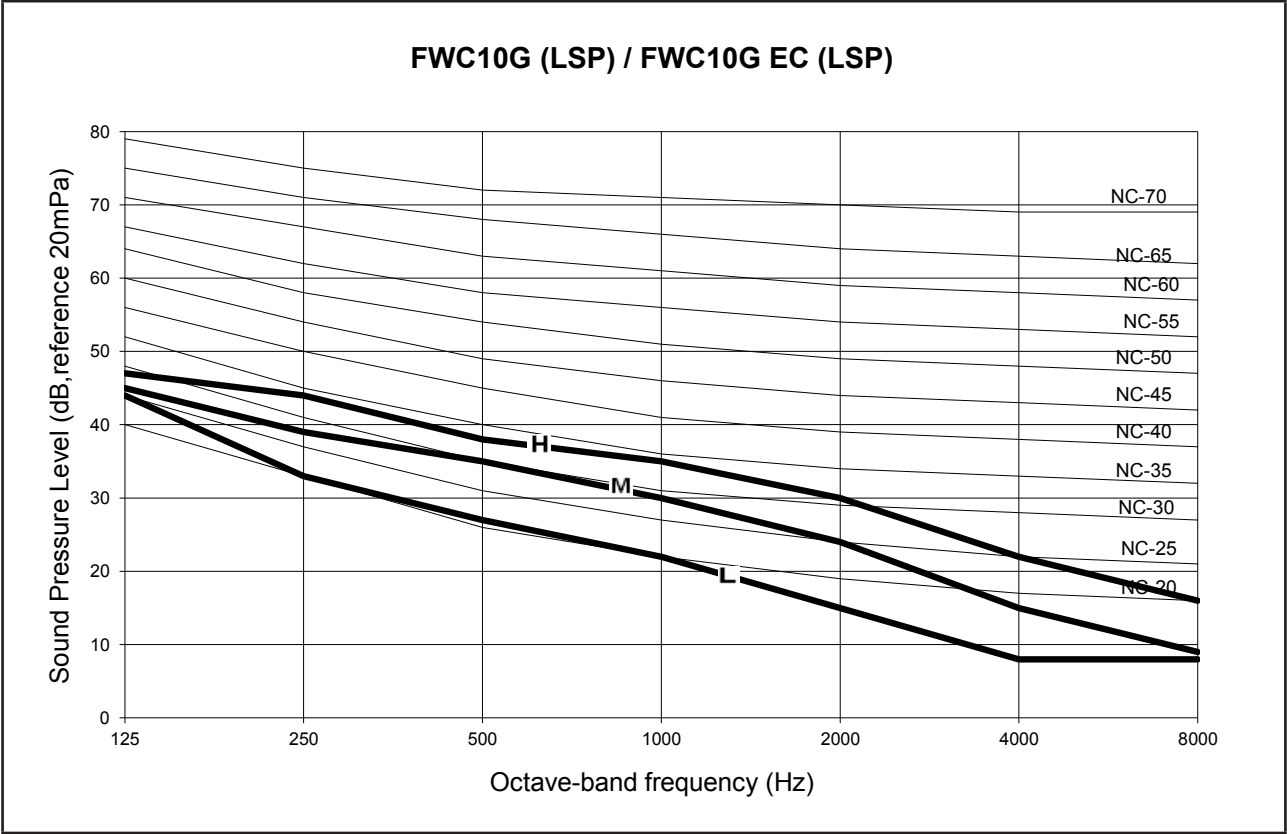




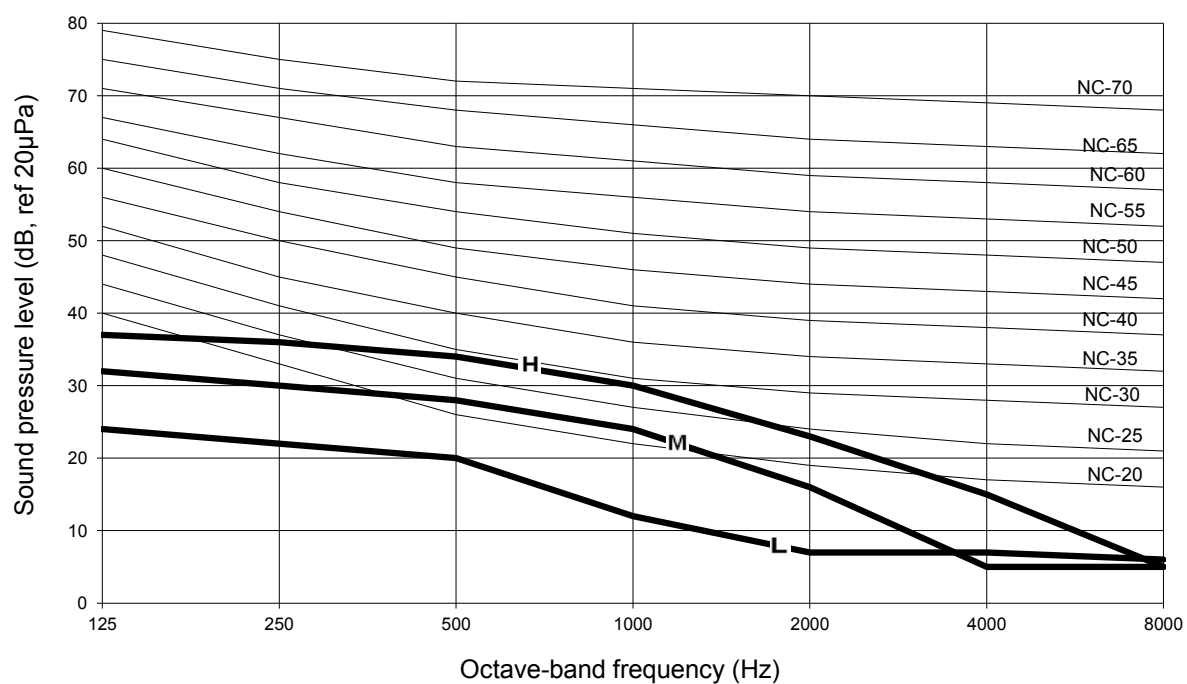




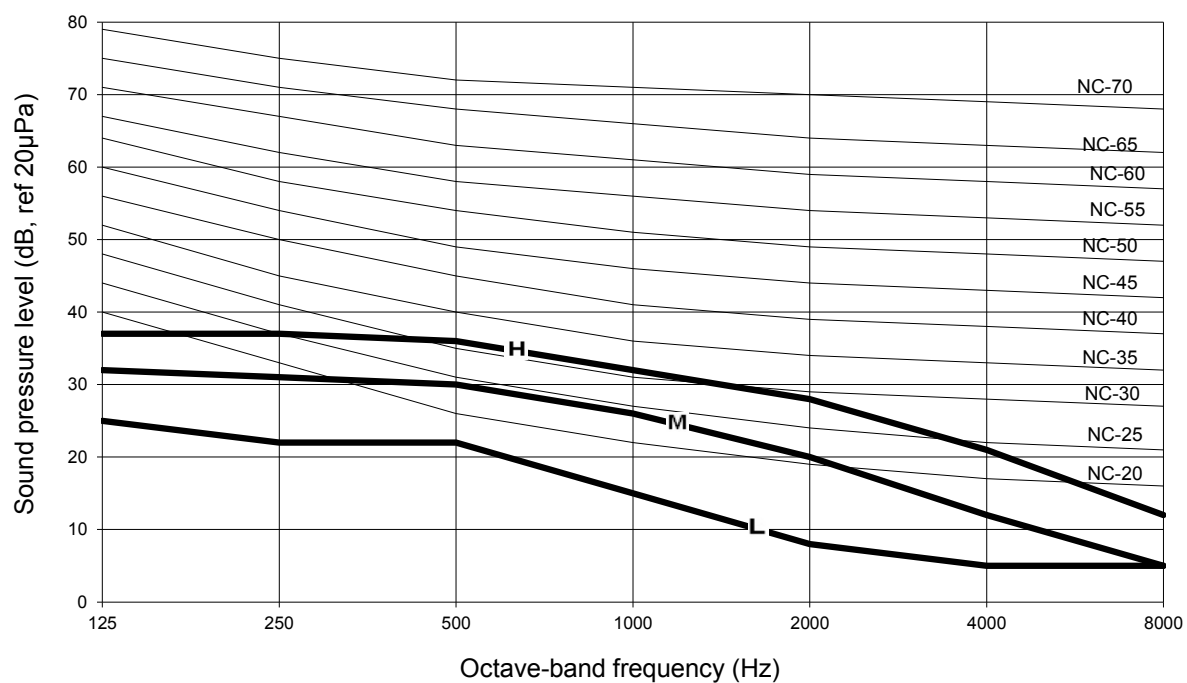
**FWC06G (LSP) / FWC06G EC (LSP)****FWC08G (LSP) / FWC08G EC (LSP)**

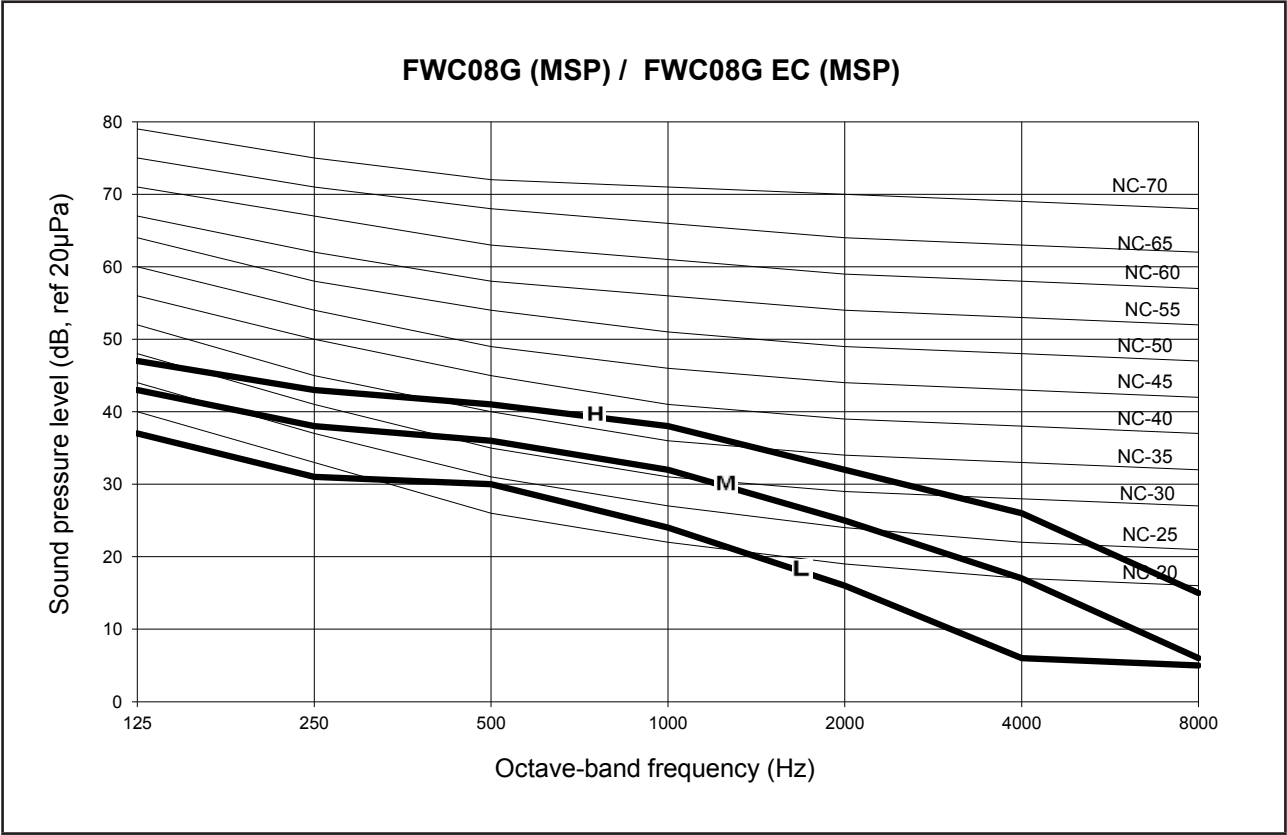
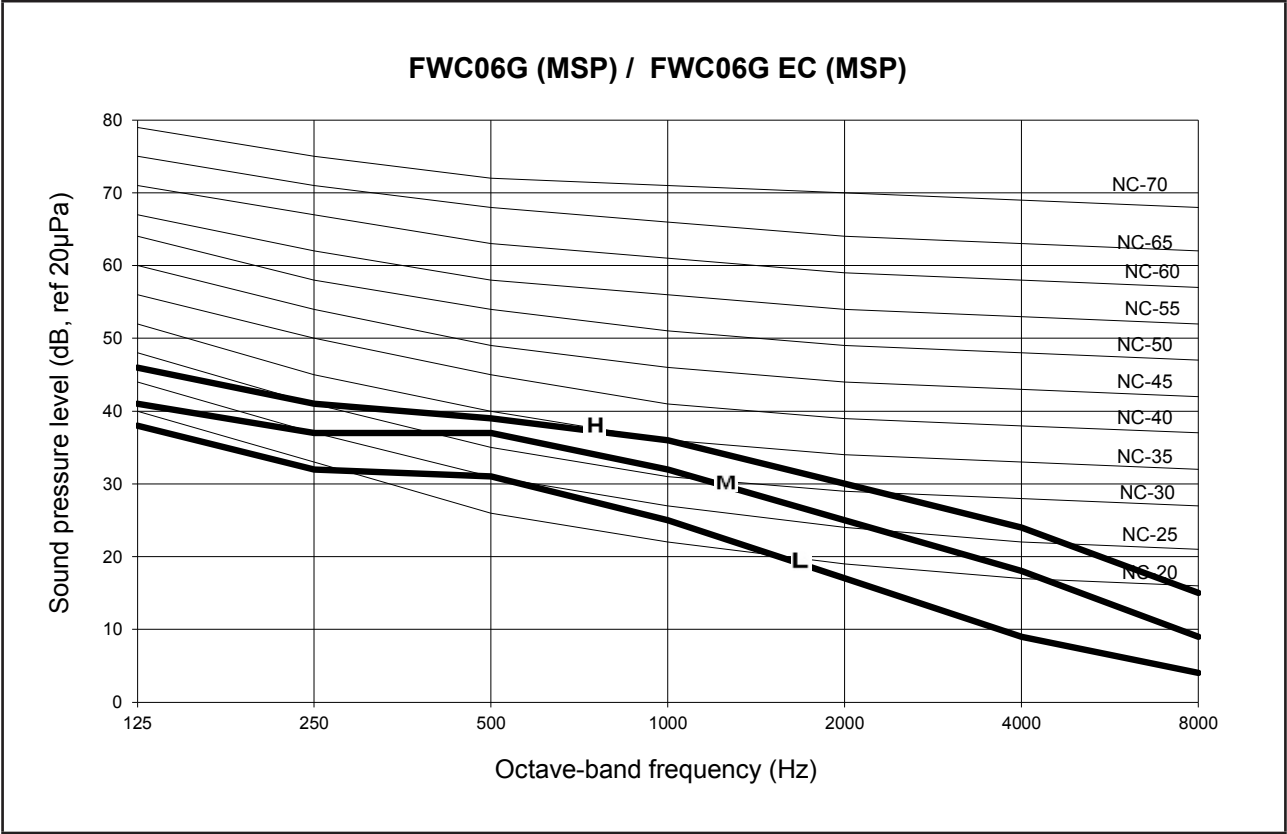


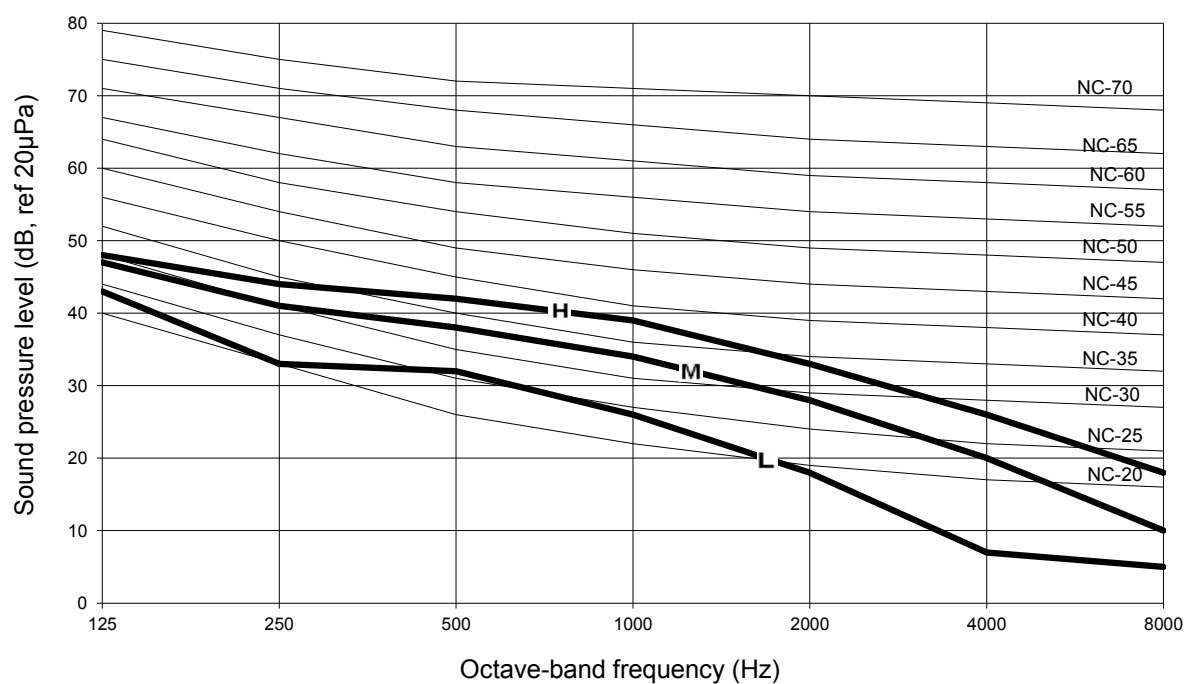
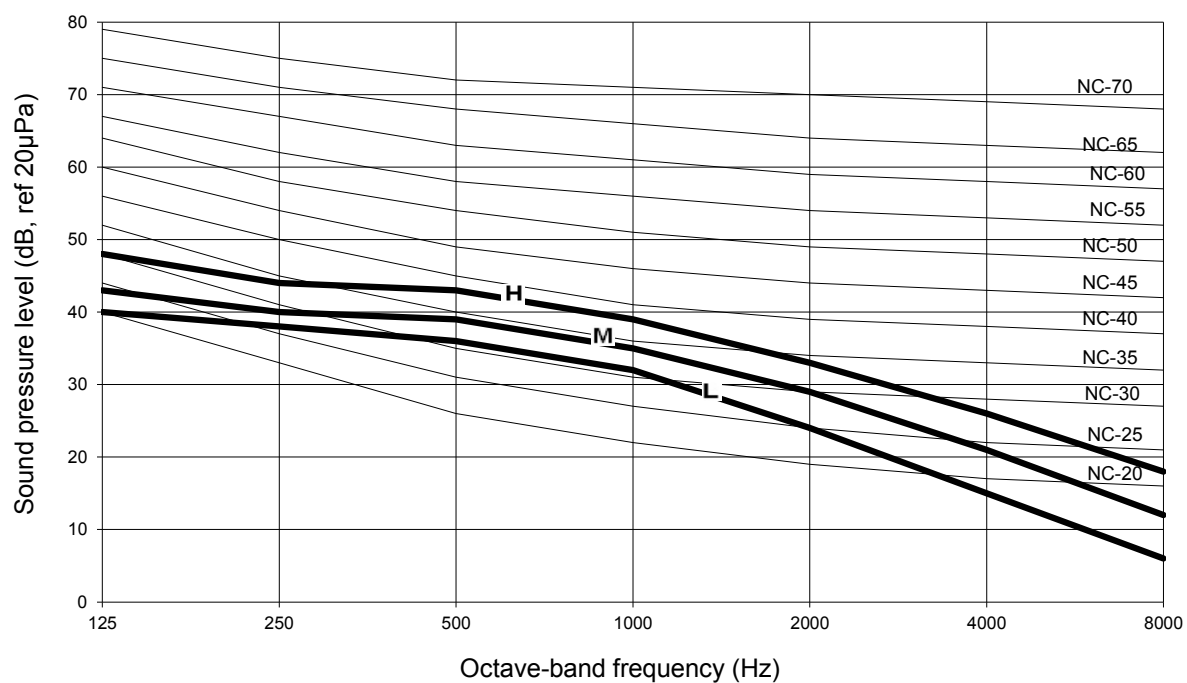
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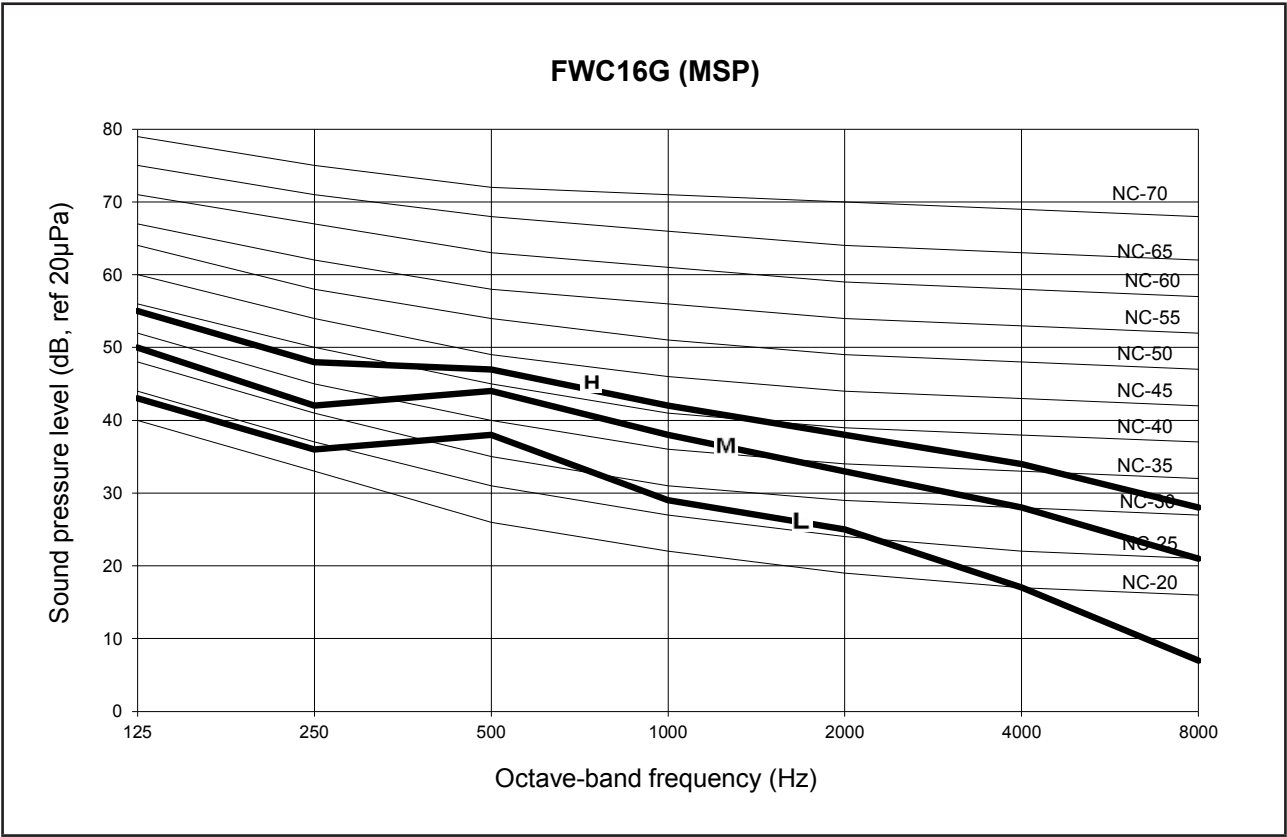
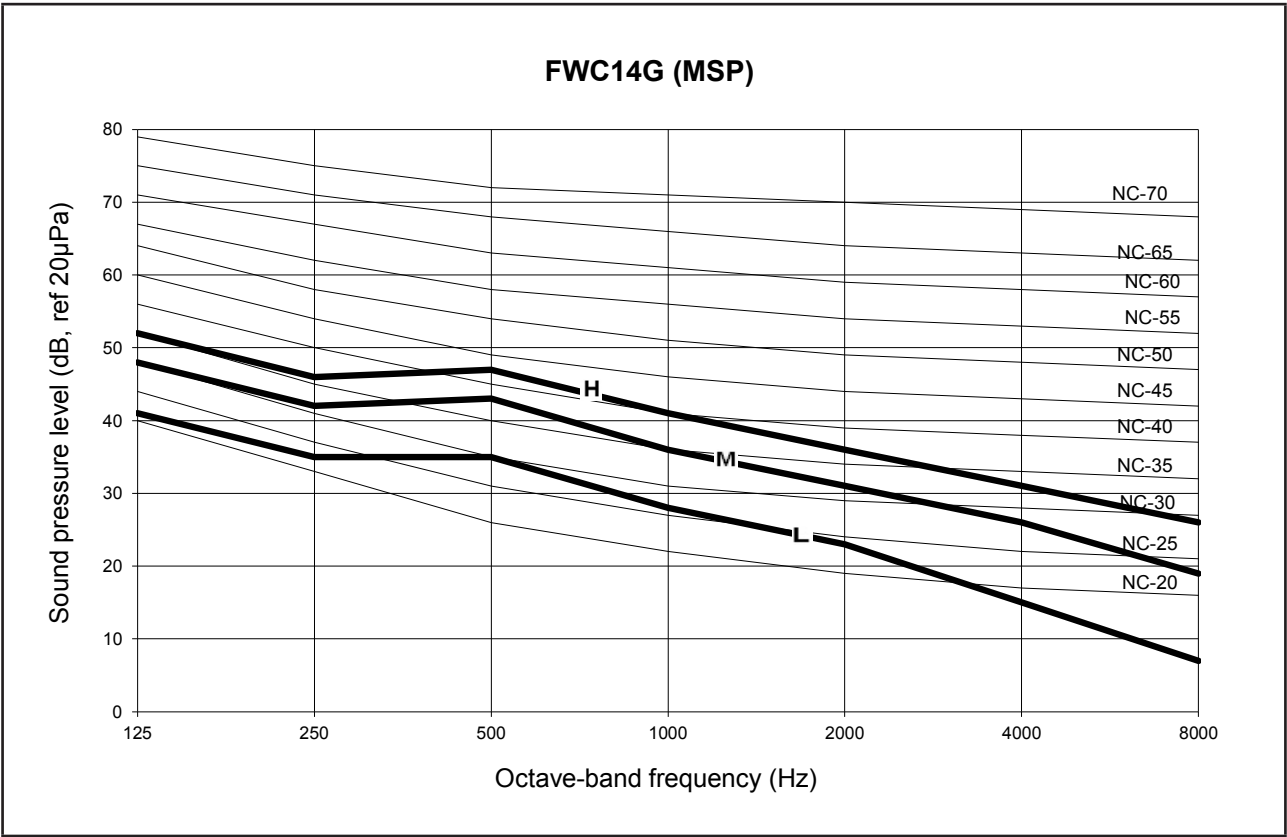


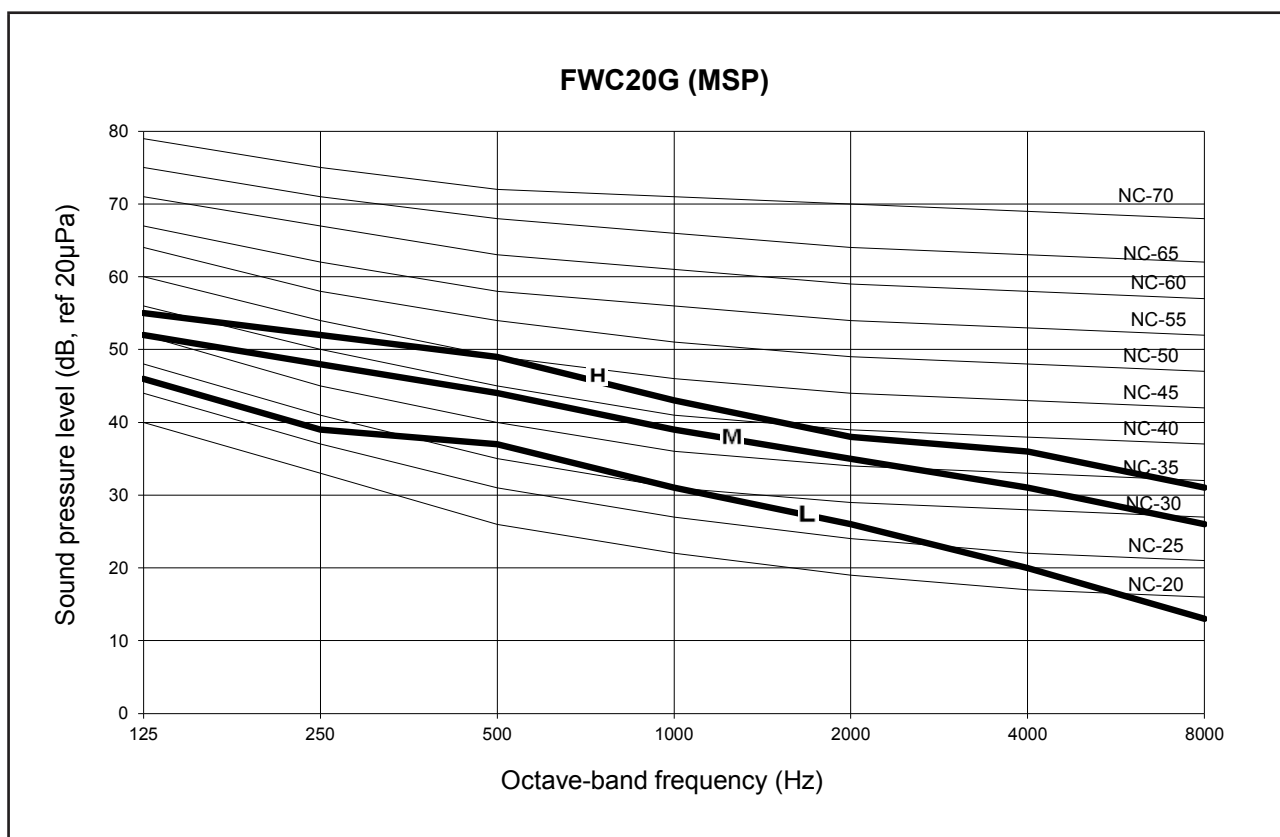
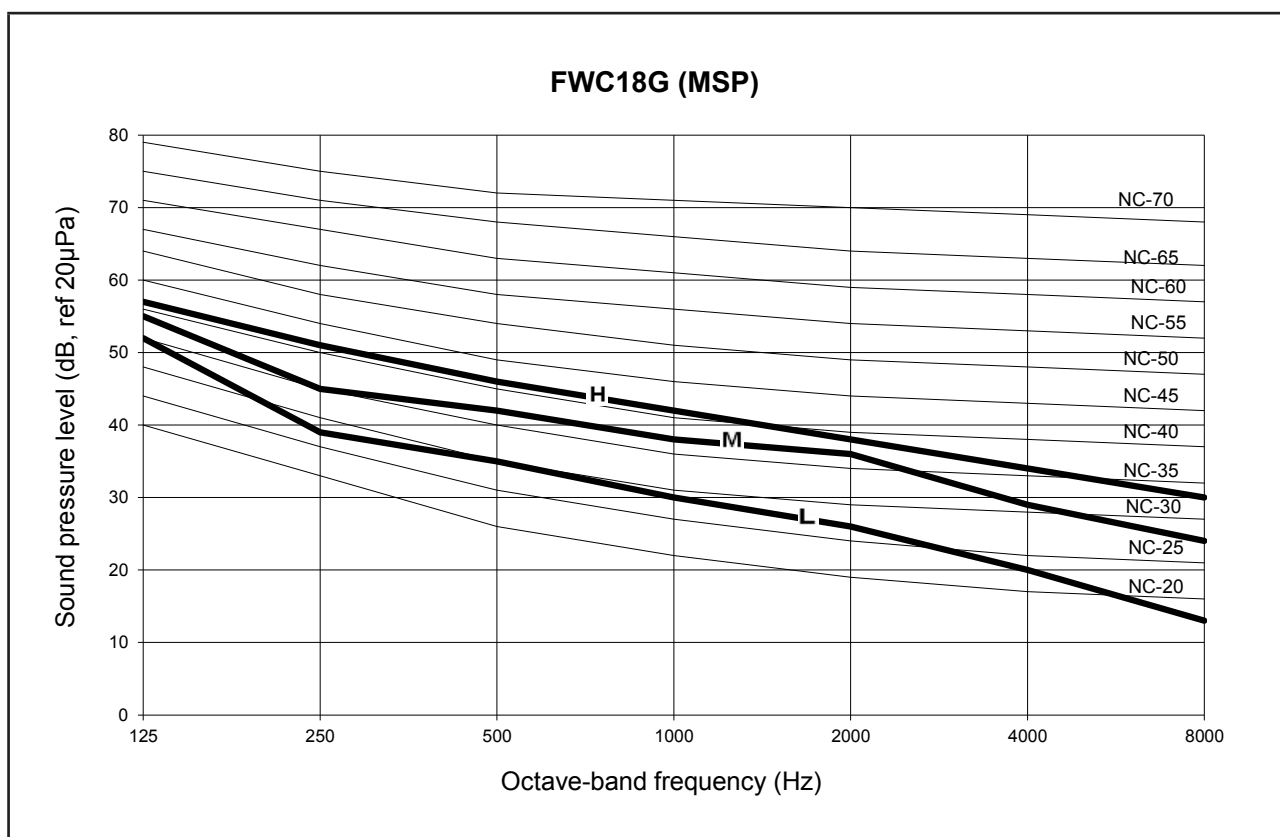
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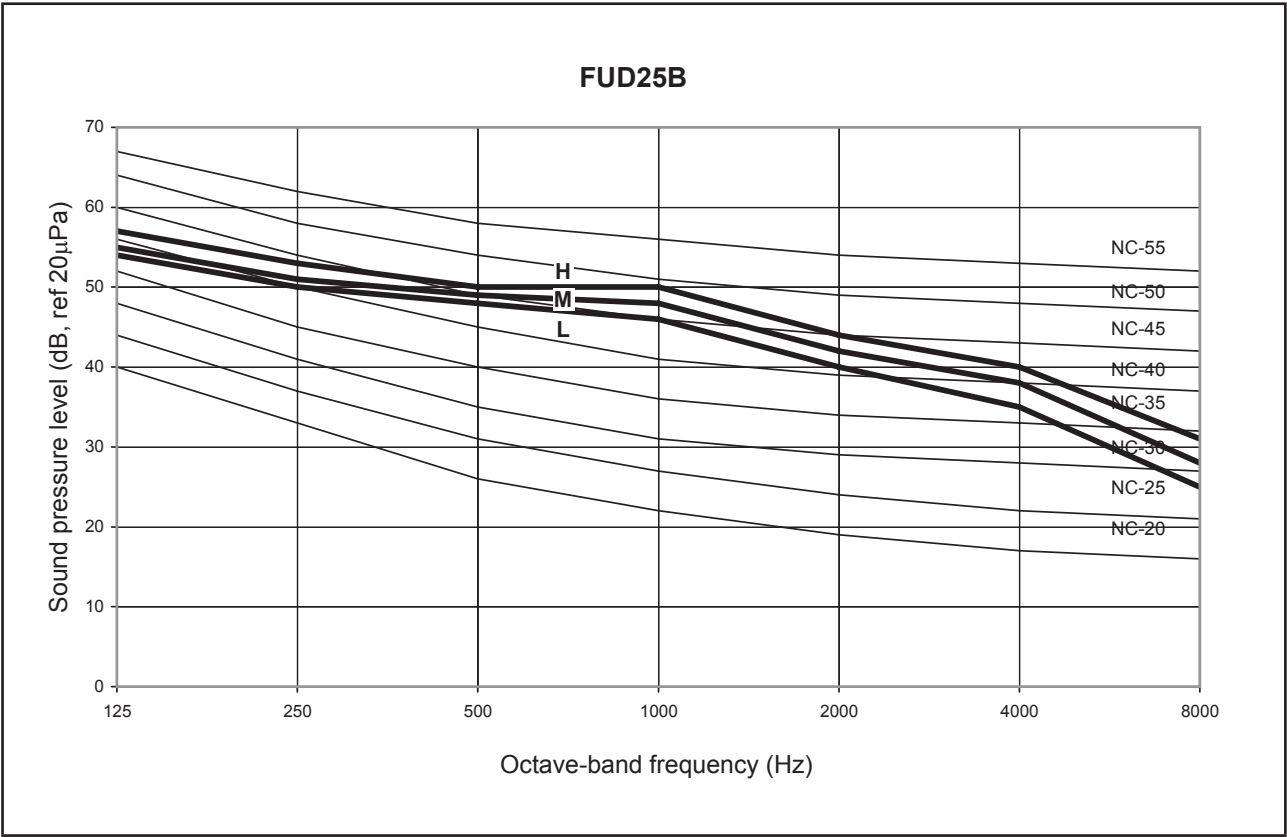
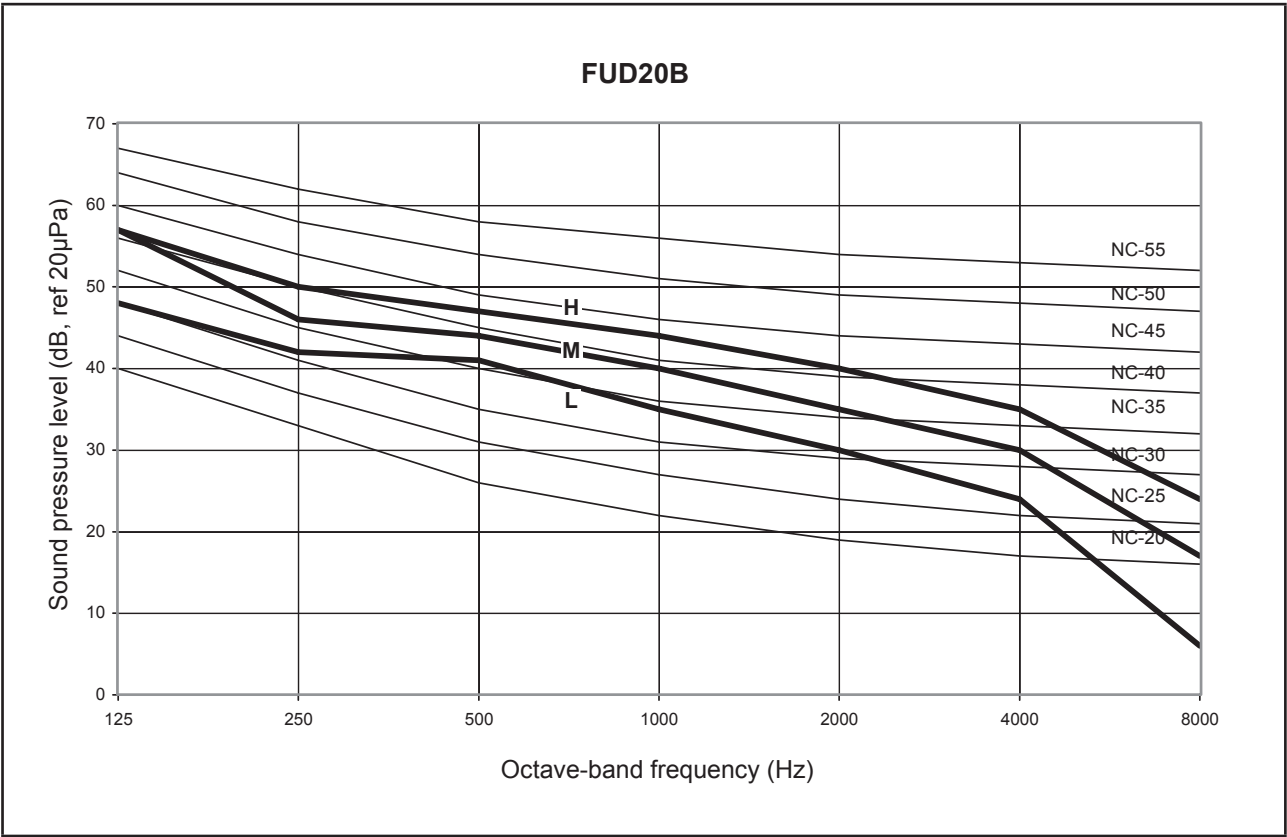


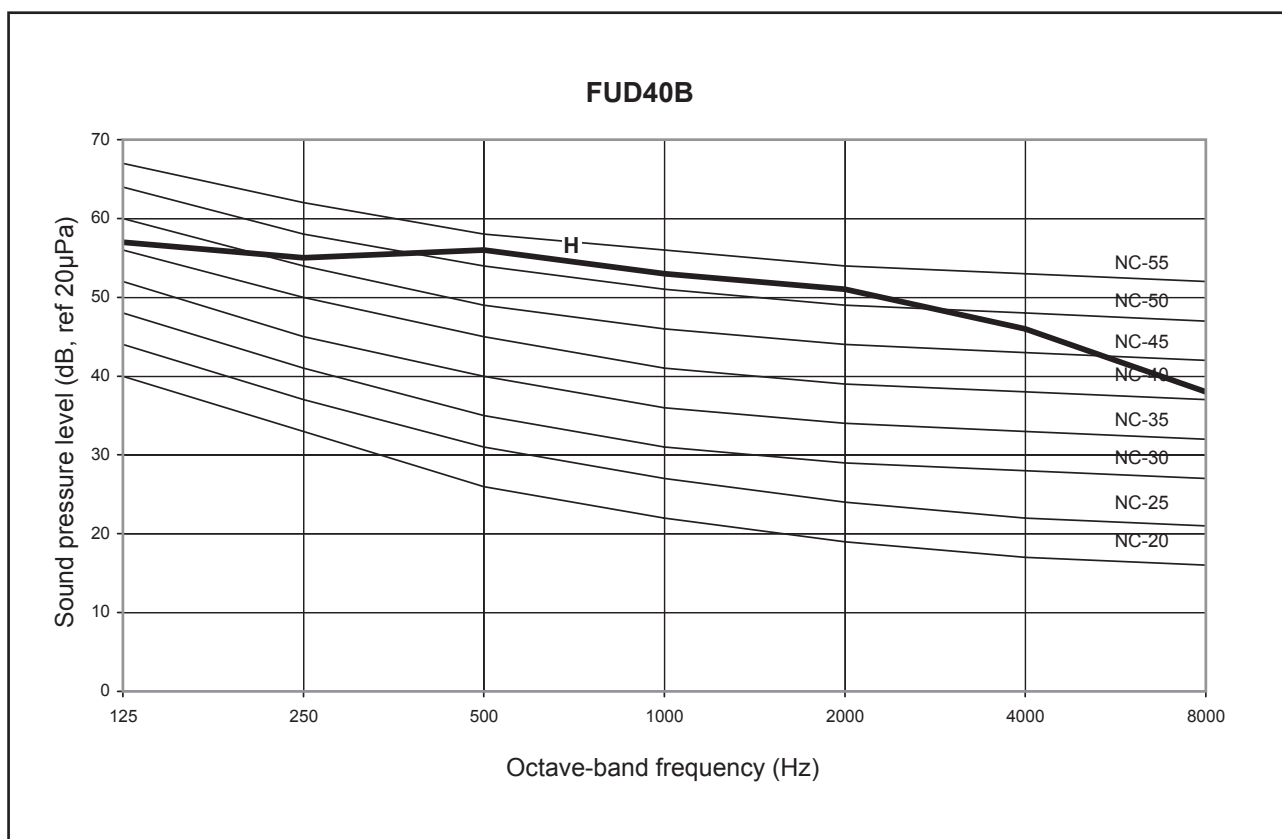
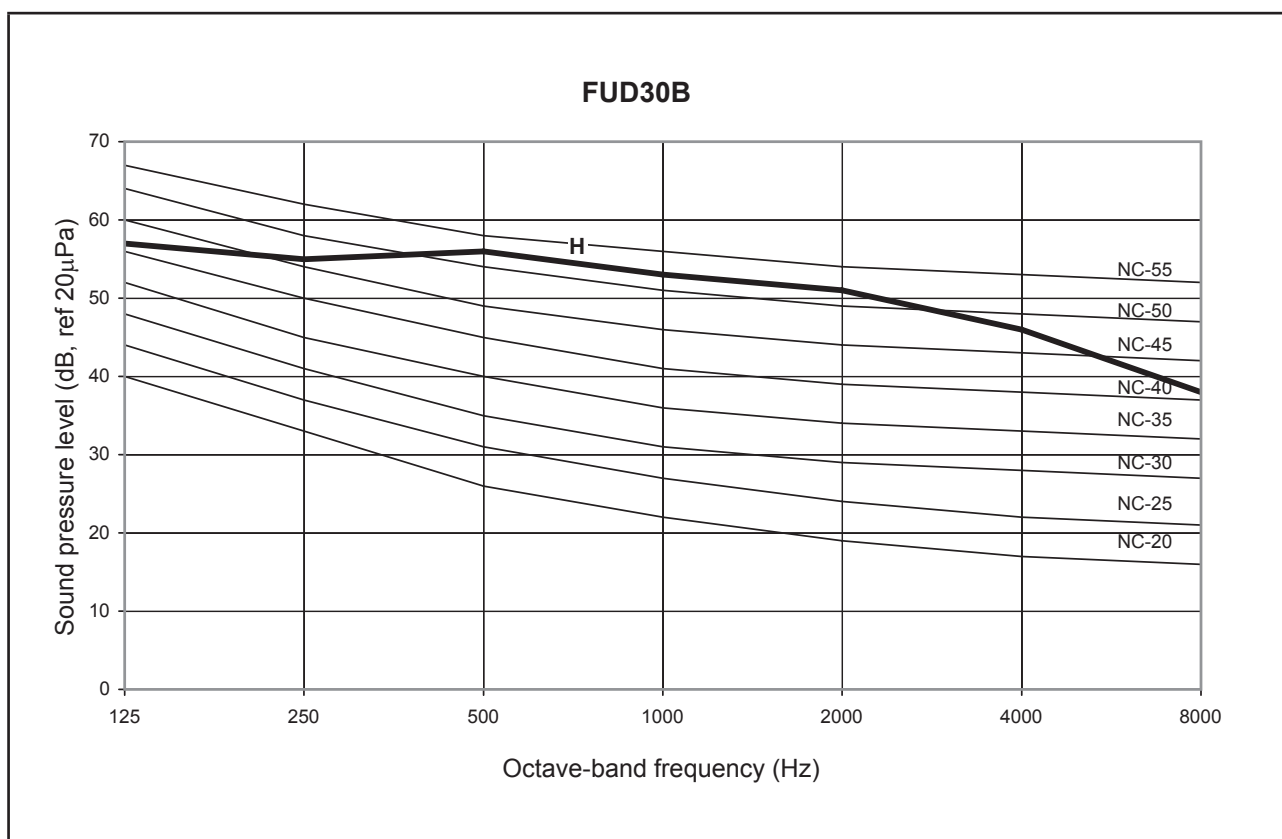
**FWC10G (MSP) / FWC10G EC (MSP)****FWC12G (MSP) / FWC12G EC (MSP)**











# Selection Process

## Fan Performance Chart

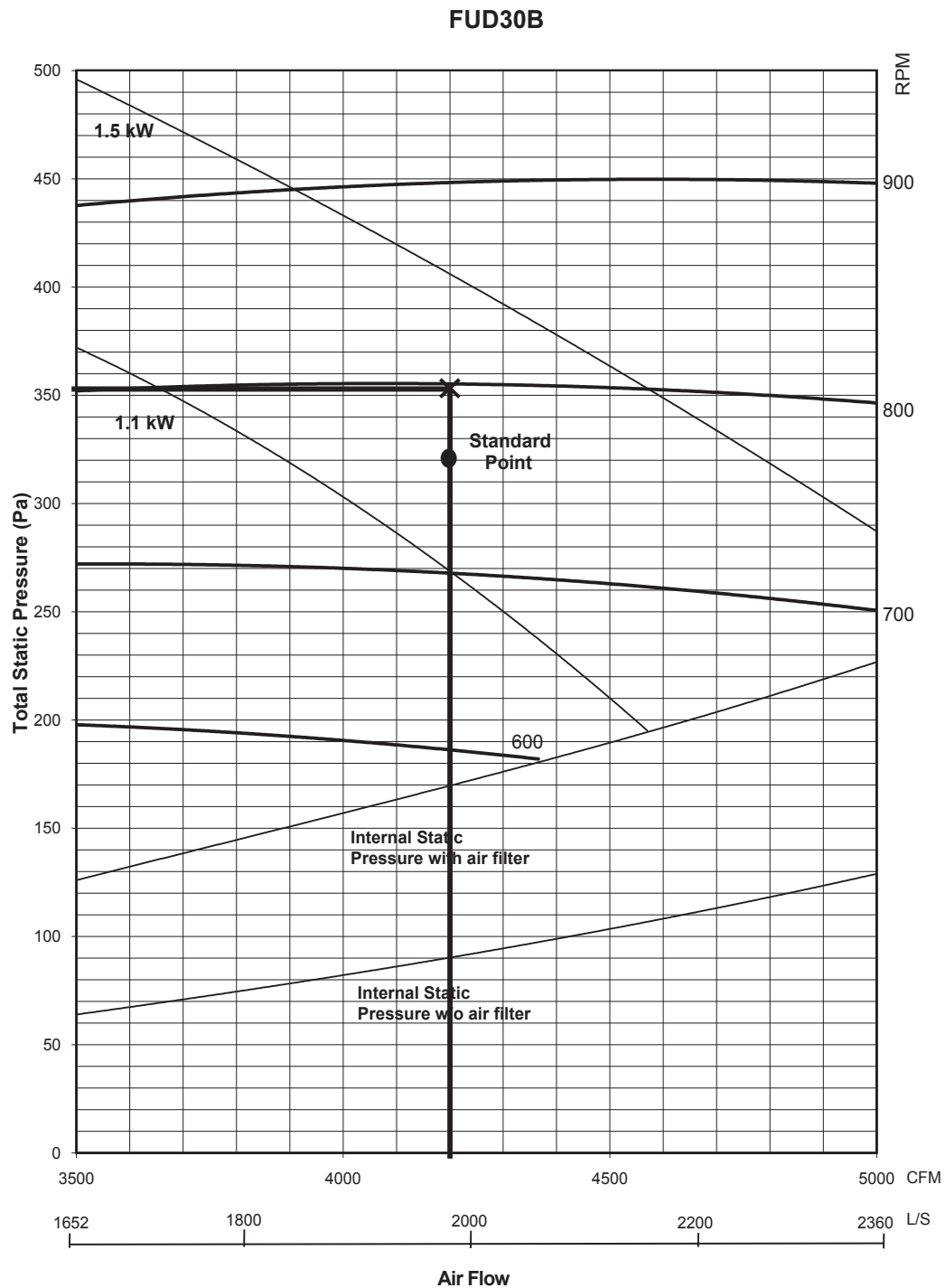
### Example 1 :

The following are the design requirements for FUD30B unit:			
<b>Model:</b>		<b>FUD30B</b>	
Supply Air Quantity	=	4200	CFM
External Static Pressure	=	180	Pa
Step 1:	<p>From the fan curve (at 4200 CFM), Standard operating system;</p> <p>Total Static Pressure = <b>320</b> Pa</p> <p>Internal Static Pressure = <b>171</b> Pa</p> <p>External Static Pressure = <b>149</b> Pa</p> <p>External Static Pressure of 149 Pa did not fulfill the design requirements.</p>		
Step 2:	<p>Therefore at 4200 CFM and 180 Pa External static pressure,</p> <p>Total Static Pressure = 171 + 180 Pa</p> <p>= <b>351</b> Pa</p>		
Step 3:	<p>From the fan curve, the design requirement calls for RPM about 800, whereas the unit can only deliver RPM about 760 under the same CFM. Therefore, it is necessary to resize the pulley sizes.</p> <p>From the table:</p> <p>Motor pulley = 80 mm</p> <p>Blower pulley = 160 mm</p> <p>Motor RPM = 1405</p> <p>In order to obtain 800 RPM, we recalculate the new blower pulley as: (while maintaining the motor pulley)</p> <p>Db = 80 x (1405/800)</p> <p>= 140.5 mm</p> <p>The nearest pulley size will be a diameter of 140mm</p> <p>Recheck, with Db = <b>140mm</b></p> <p>Blower pulley = 1405 x (80/140)</p> <p>= 803</p> <p>We thus need to change the blower pulley from 160mm to 140mm in order to obtain the higher operating static pressure.</p>		
Step 4:	<p>When the pulley is changed, the V-belt length must be rechecked. We have for horizontal air throw configuration:</p> <p>V-belt length, L = 2C + 1.57 (Db + Dm)</p> <p>= (2 x 340) + 1.57 (80 + 140)</p> <p>= 1025.4mm</p> <p>We thus can use a belt with a length of <b>1030mm</b></p> <p>where, C = distance between the centres of the two pulleys</p> <p>Db = diameter of blower pulley</p> <p>Dm = diameter of motor pulley</p>		
Step 5:	<p>From the fan curve, we can also notice that the motor power input has increased. At the new operating point, the power is approximately 1.25 kW.</p> <p>By applying a safety factor of 1.2 to account for losses, we calculate that the motor power input requirement should be = 1.25 x 1.2 = <b>1.5 kW</b></p> <p>Thus, the existing motor is still sufficient to drive the blower with the smaller 140mm pulley.</p>		
	<p><b>Summary:</b></p> <p>i) Fan motor kW = <b>1.5</b> kW</p> <p>ii) Blower pulley diameter = <b>140</b> mm</p> <p>iii) V-belt size = <b>1030</b> mm</p>		

The following table summarizes the pulley data, motor size used for the FUD series, as manufactured:

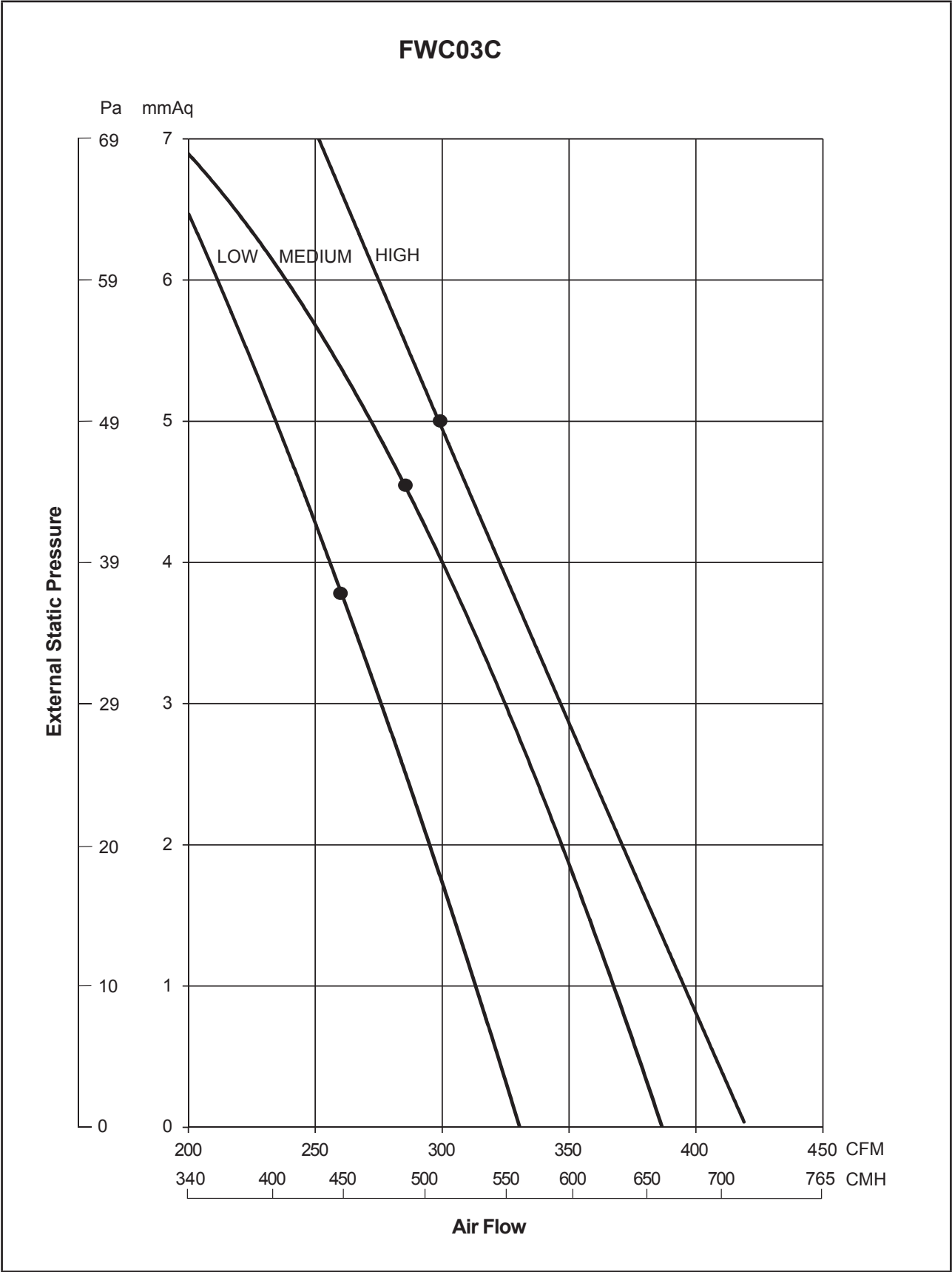
Model	Motor Size	Motor Speed	Motor Pulley Diameter	Blower Pulley Diameter	Pulley Center Distance, C		V-Belt Length	V-Belt Length
	kW	RPM	mm	mm	Horizontal	Vertical	Horizontal	Vertical
	mm	mm	mm	mm	mm	mm	mm	mm
FUD30B	1.5	1405	80	160	340	350	1060	1080
FUD40B	1.5	1405	80	160	340	350	1060	1080

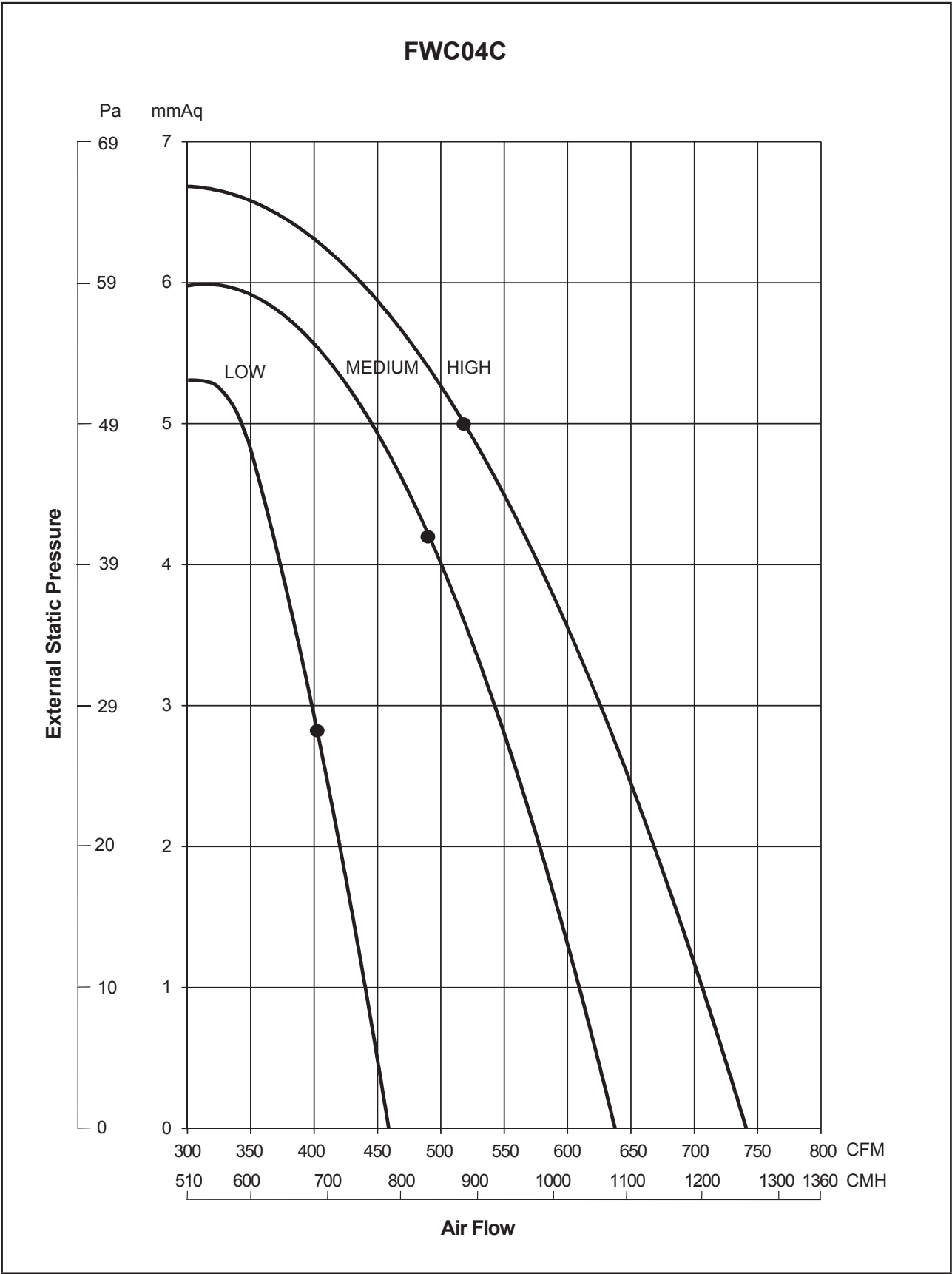
Example 1:

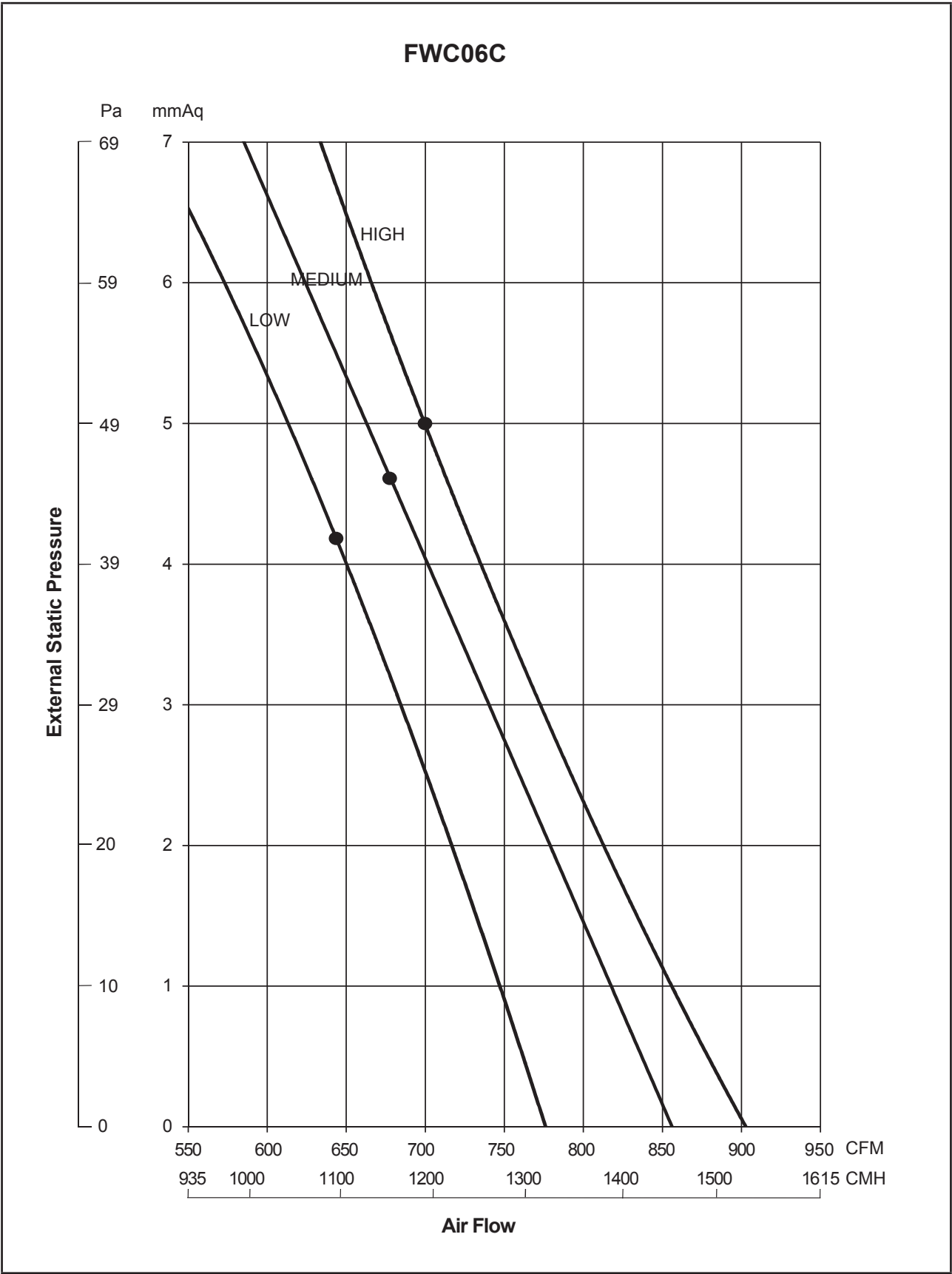


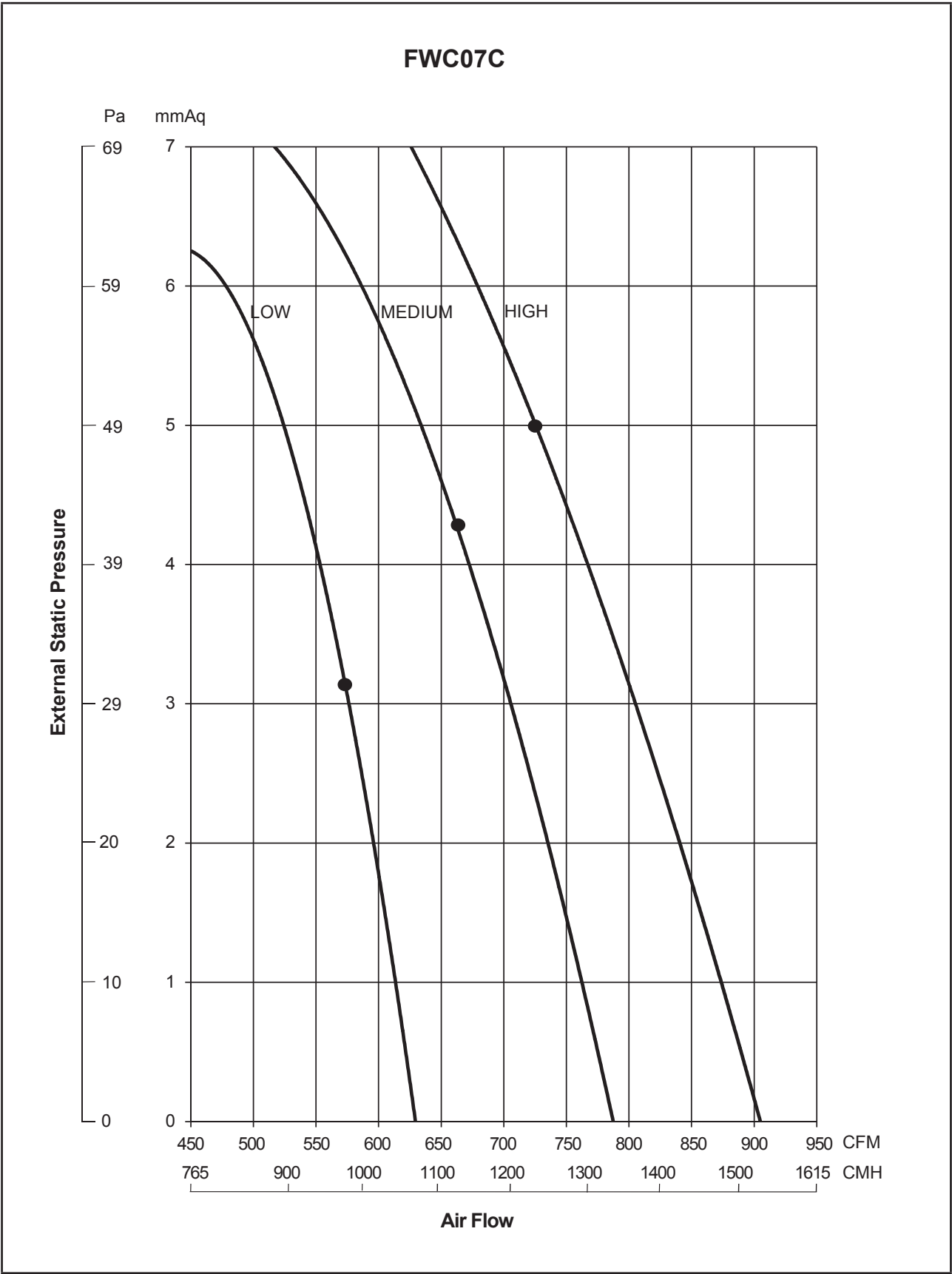
# Fan Performance Chart

## Fan Performance Curve

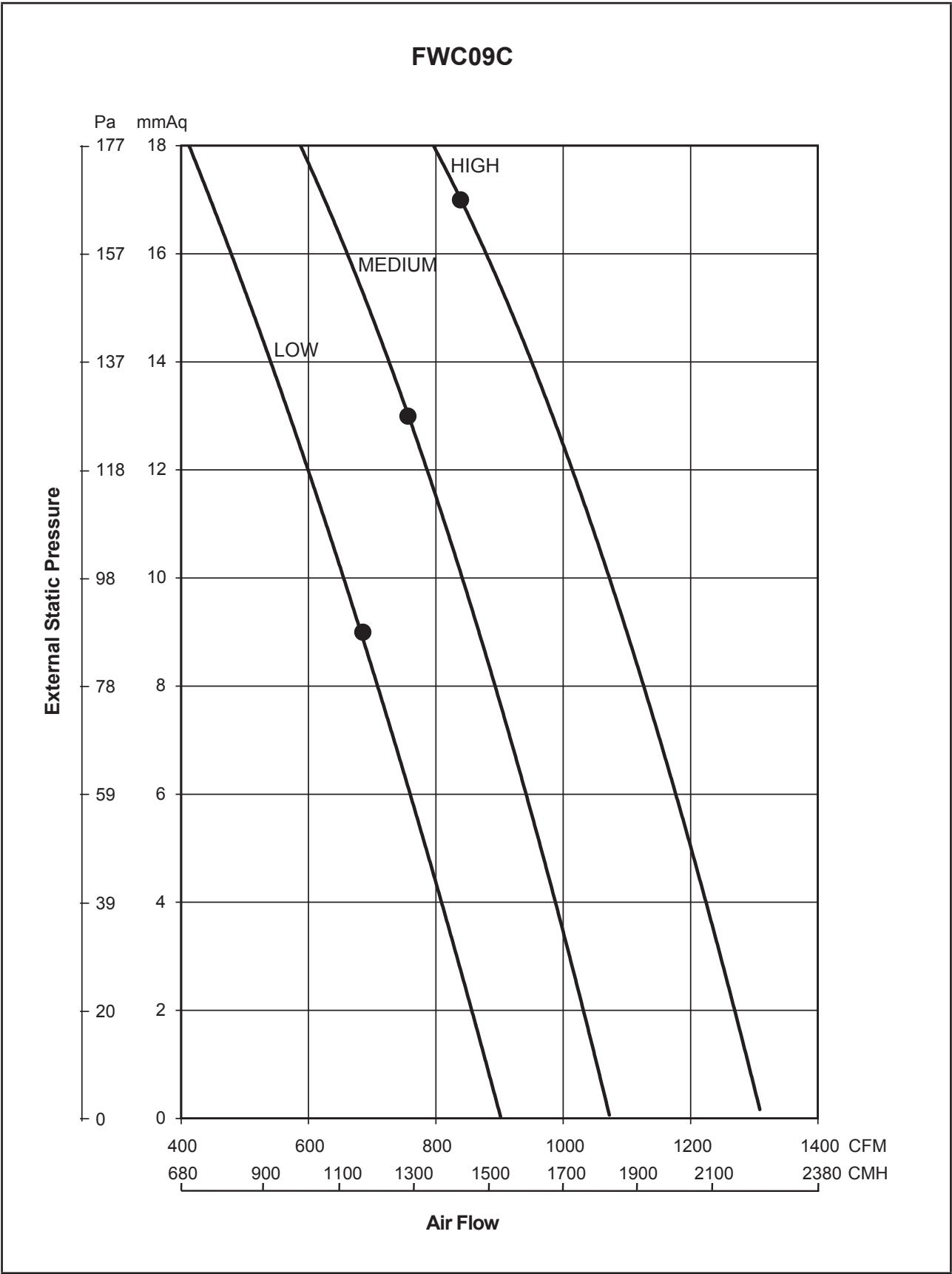


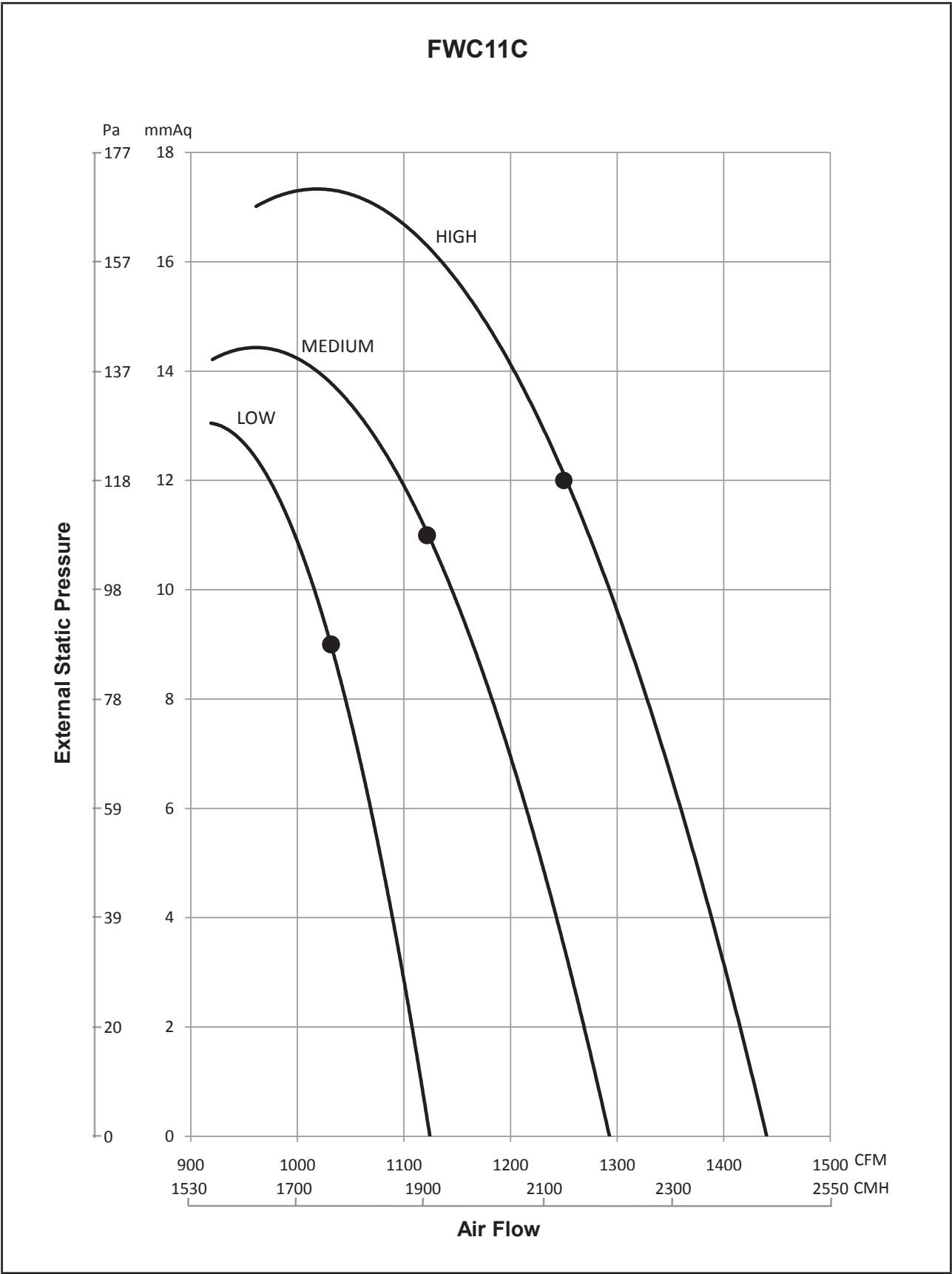


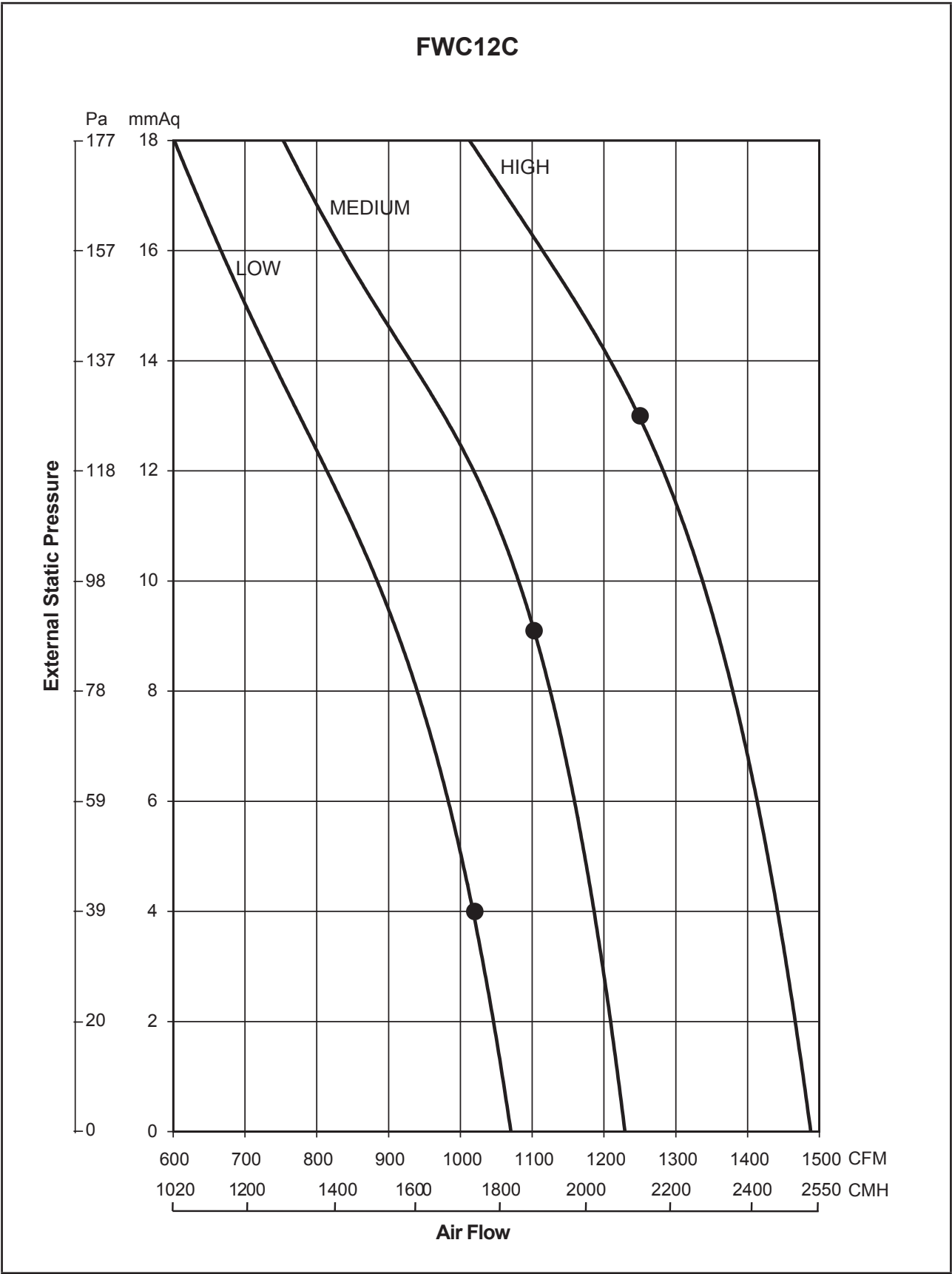


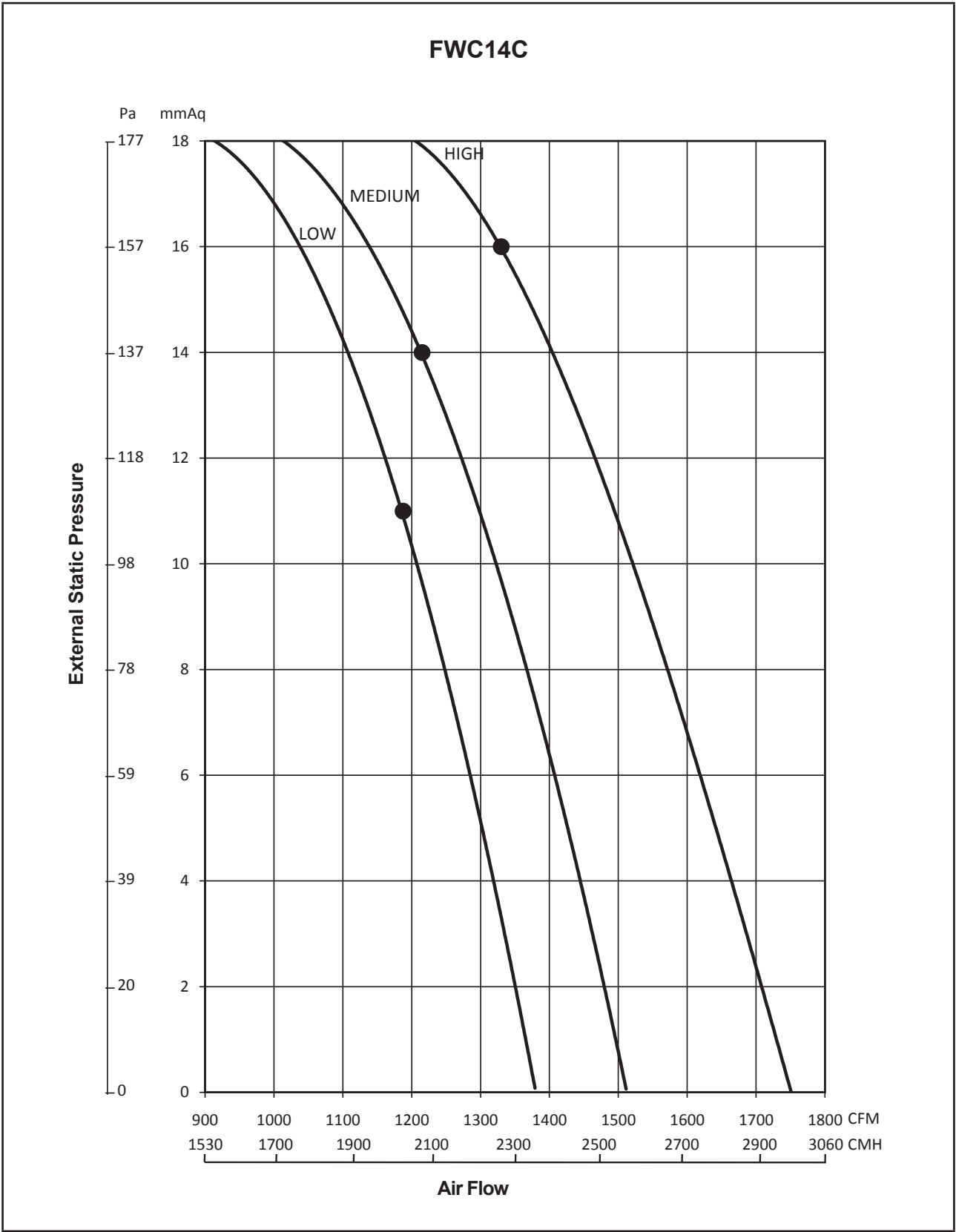


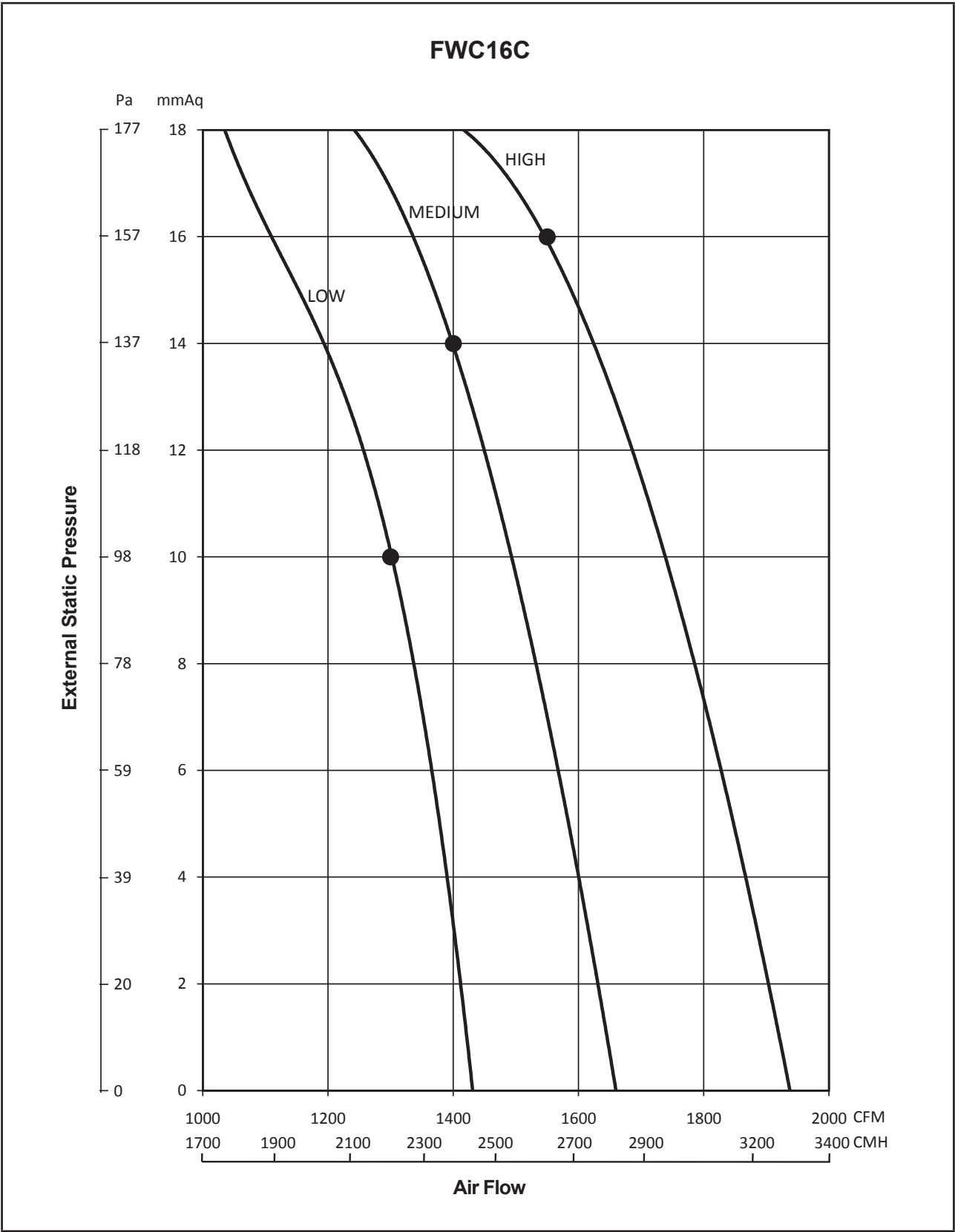


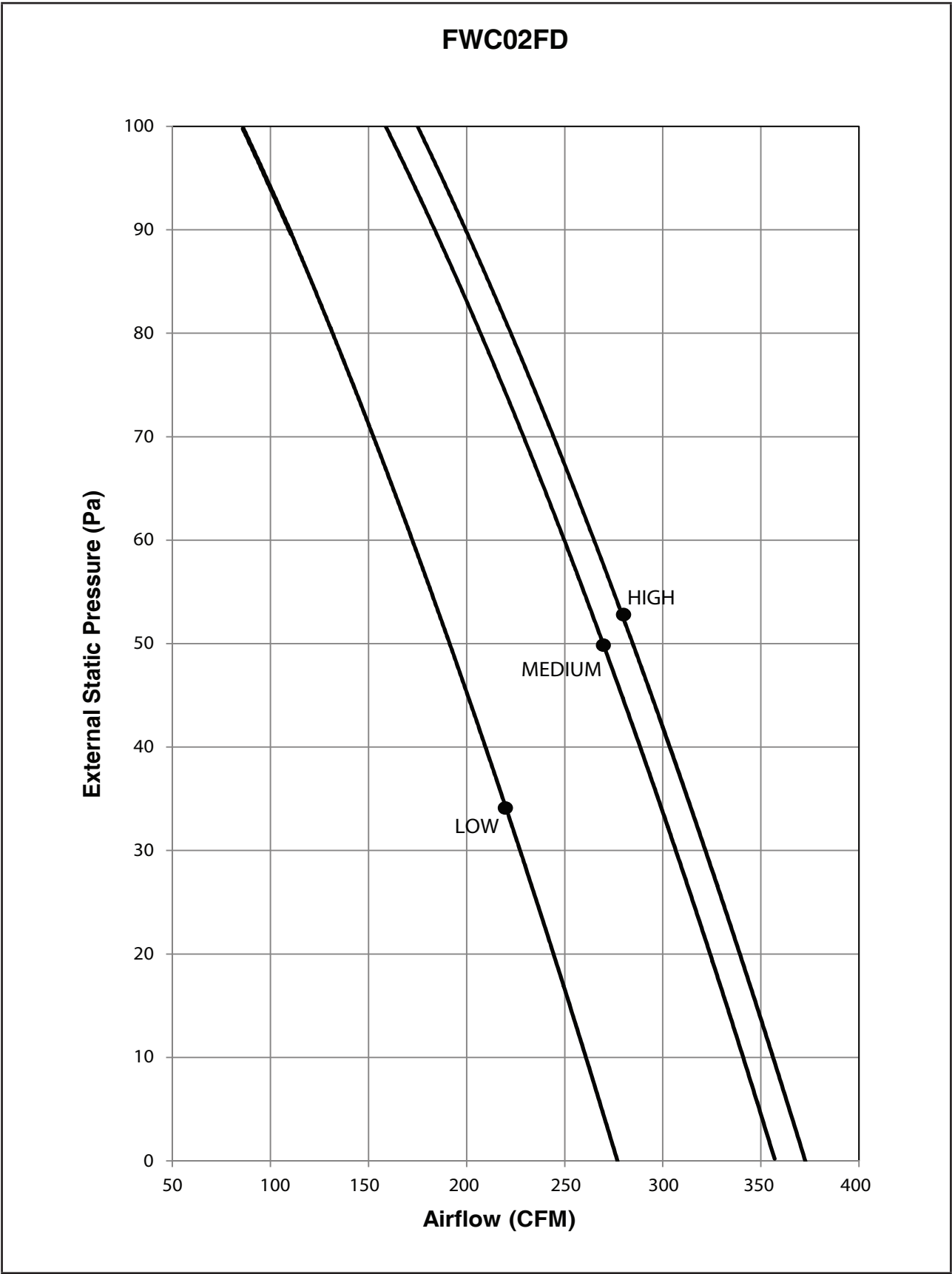


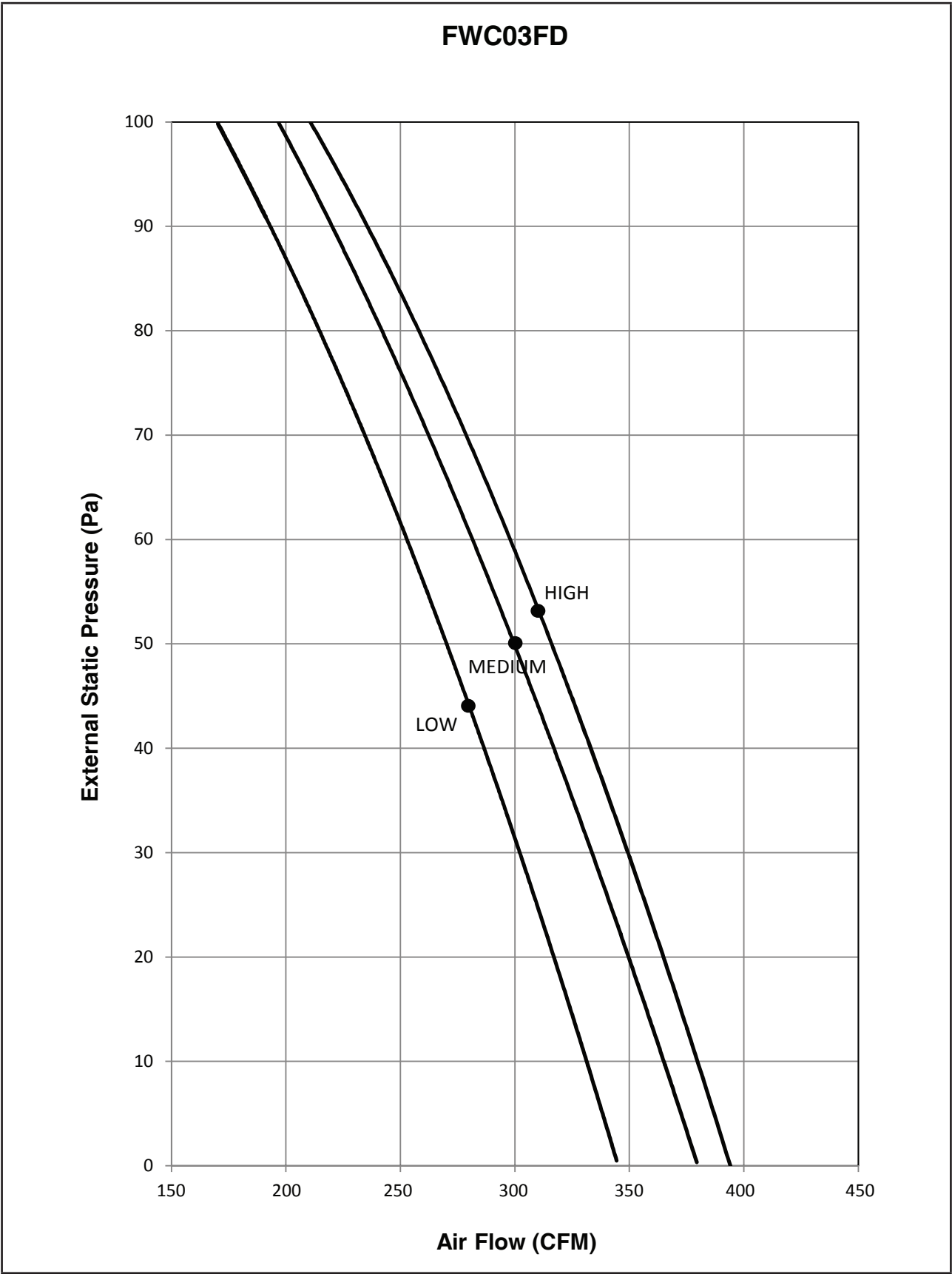


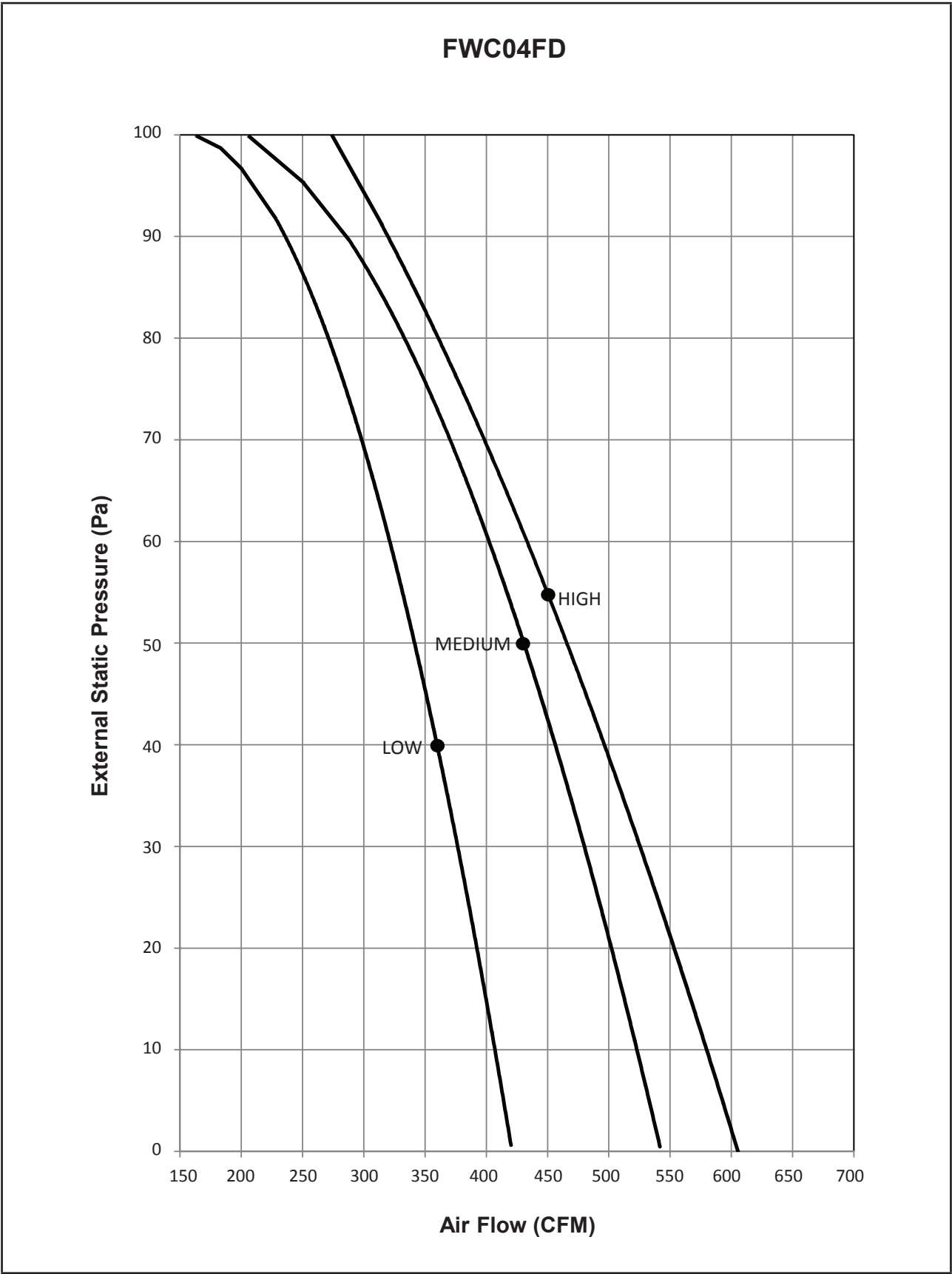




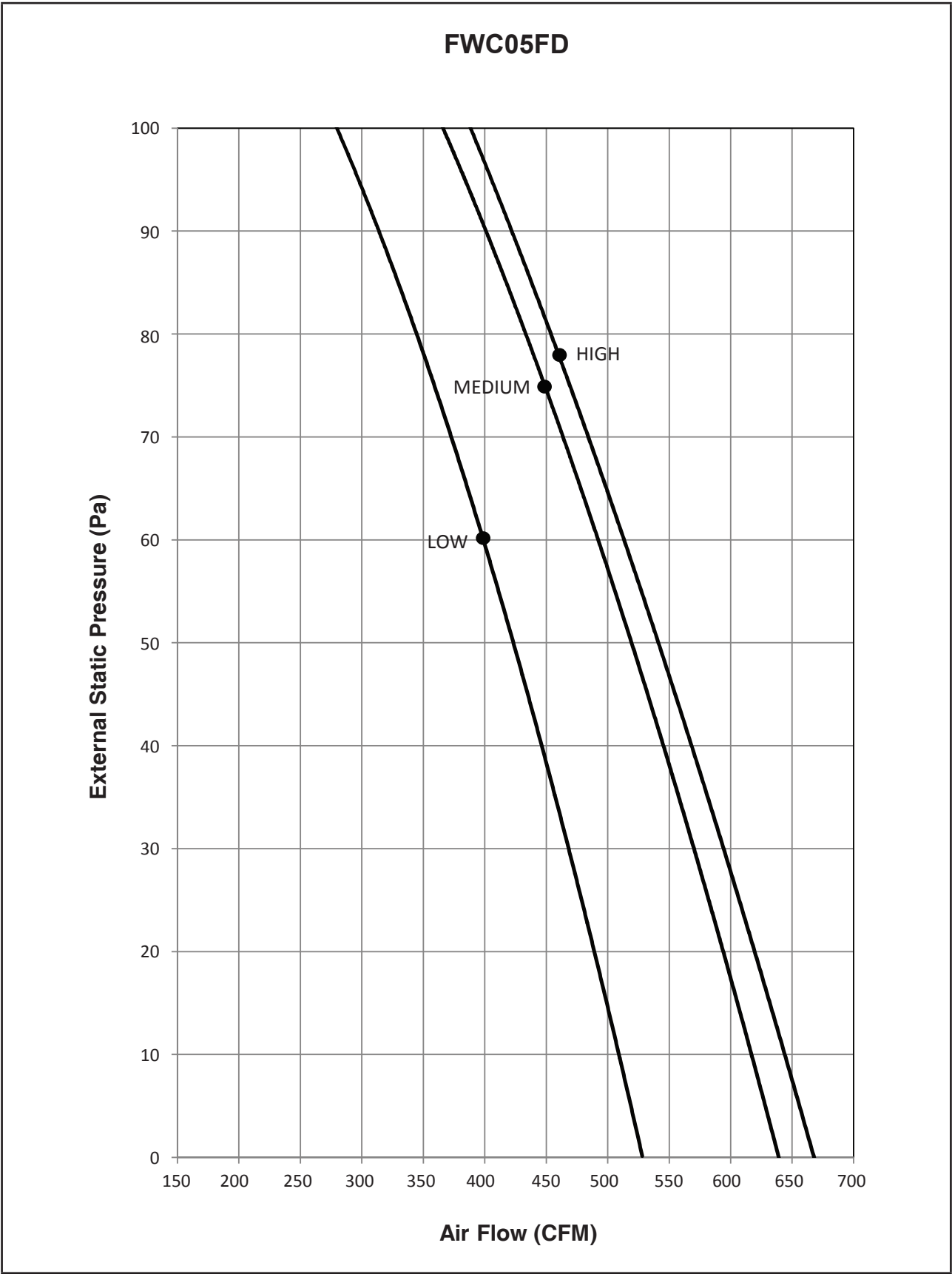


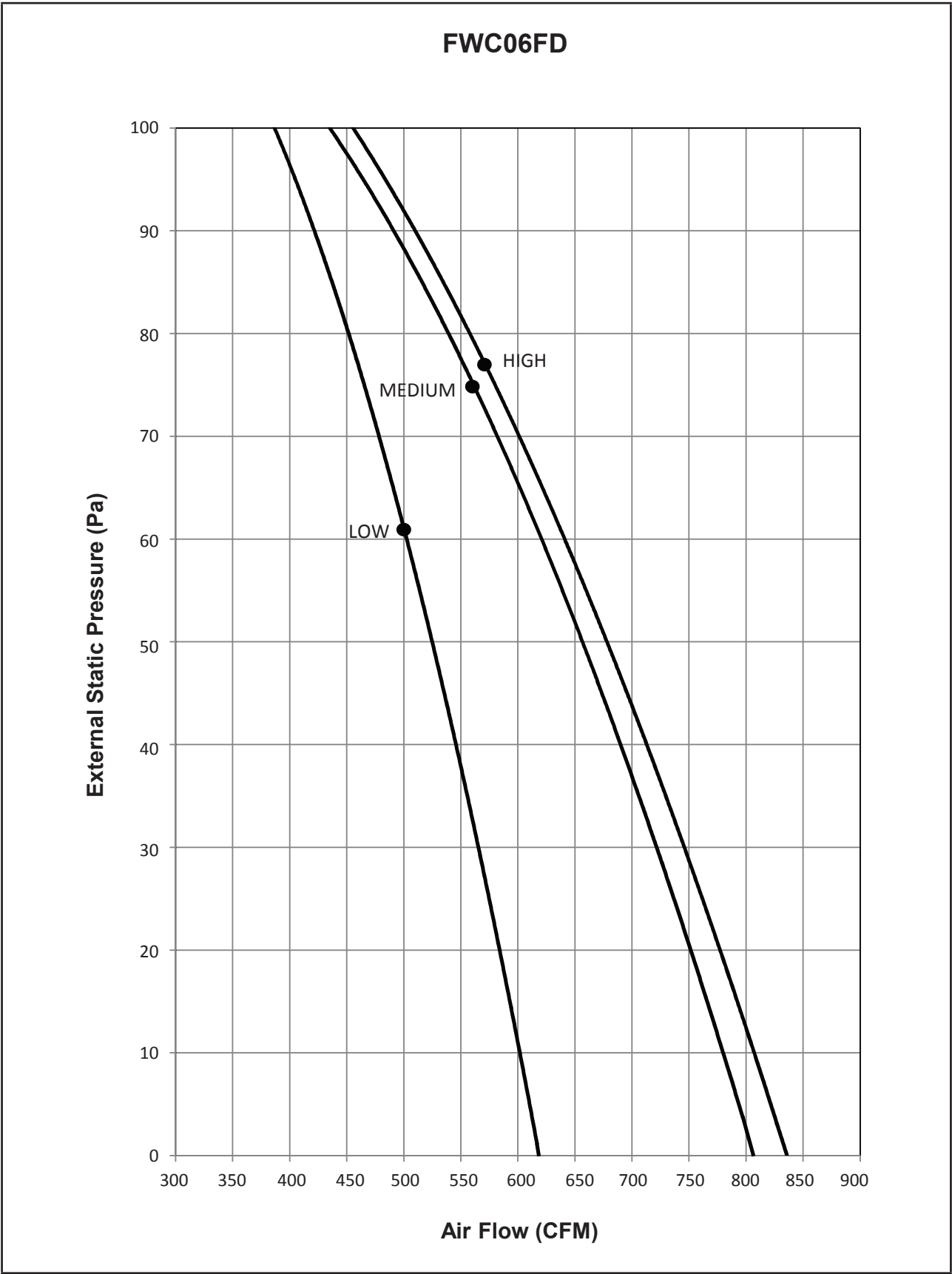


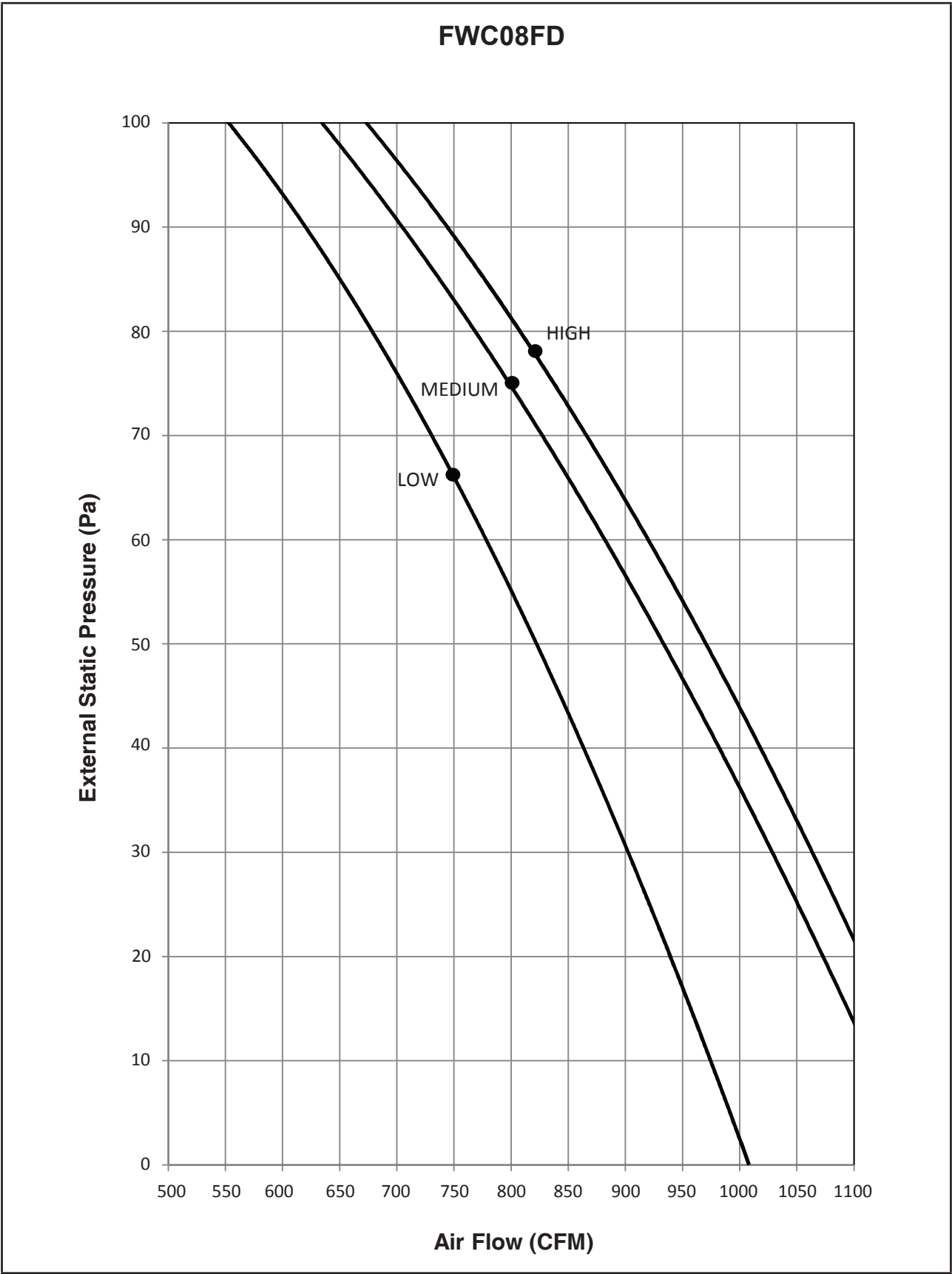


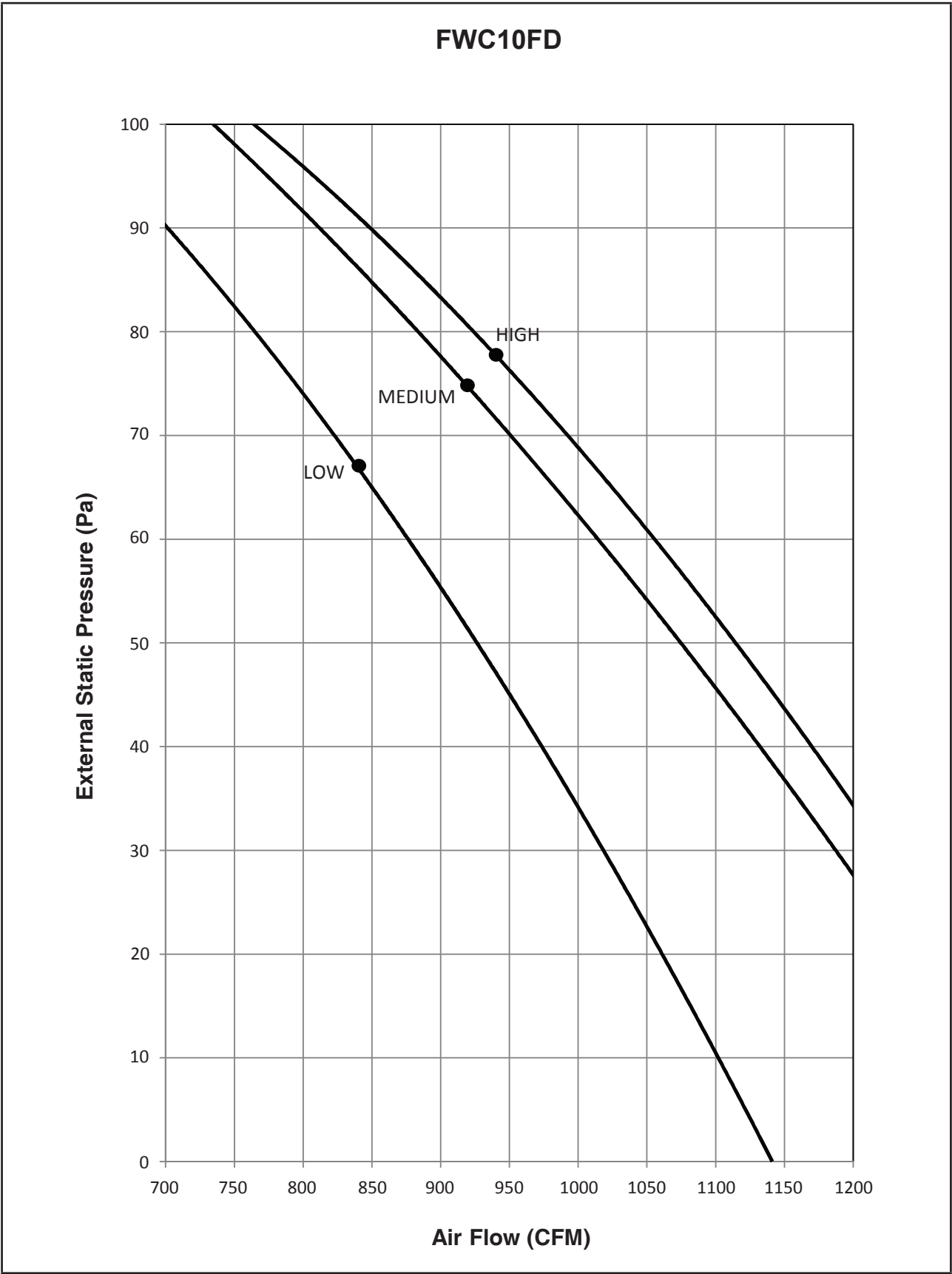


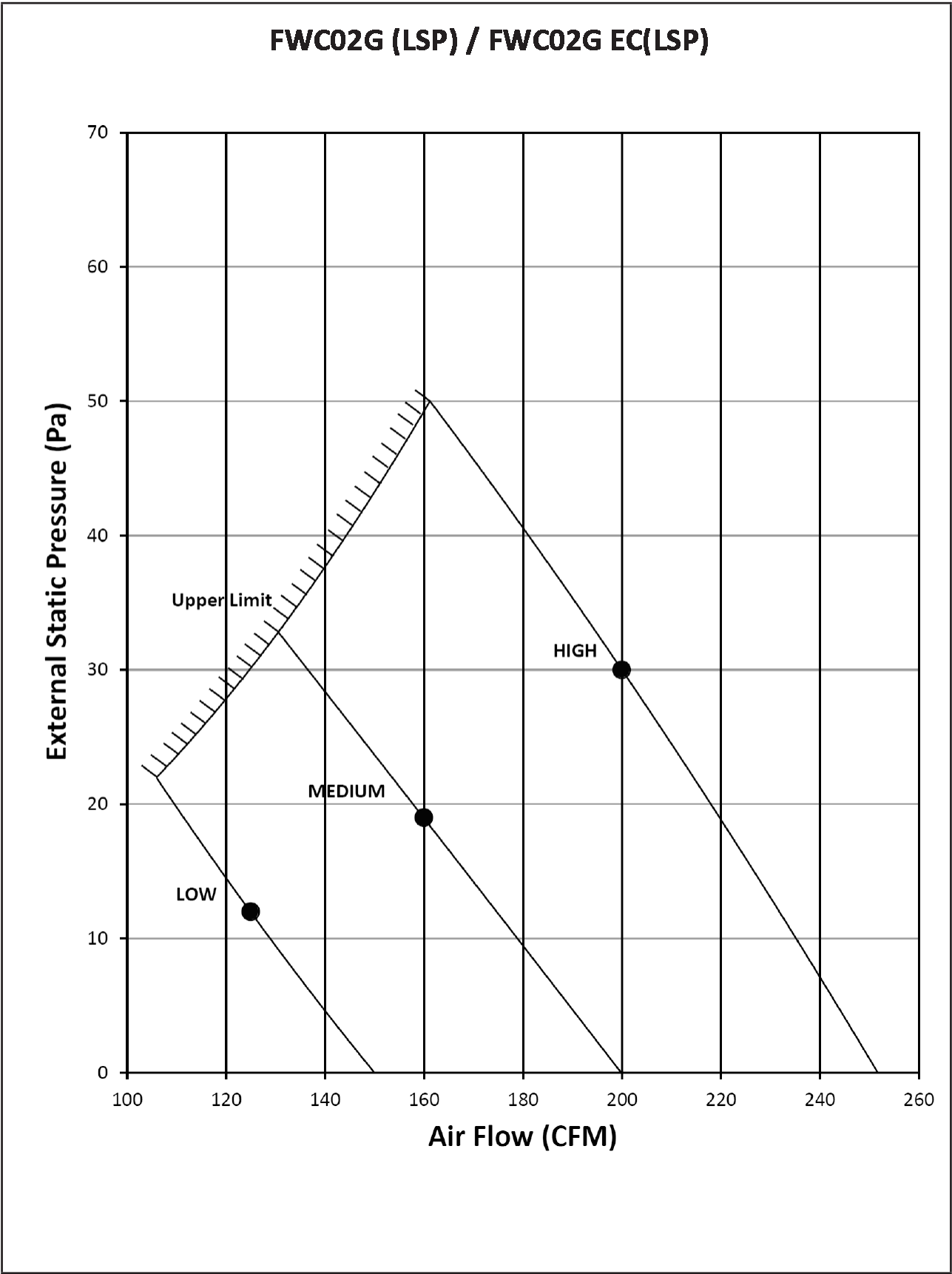




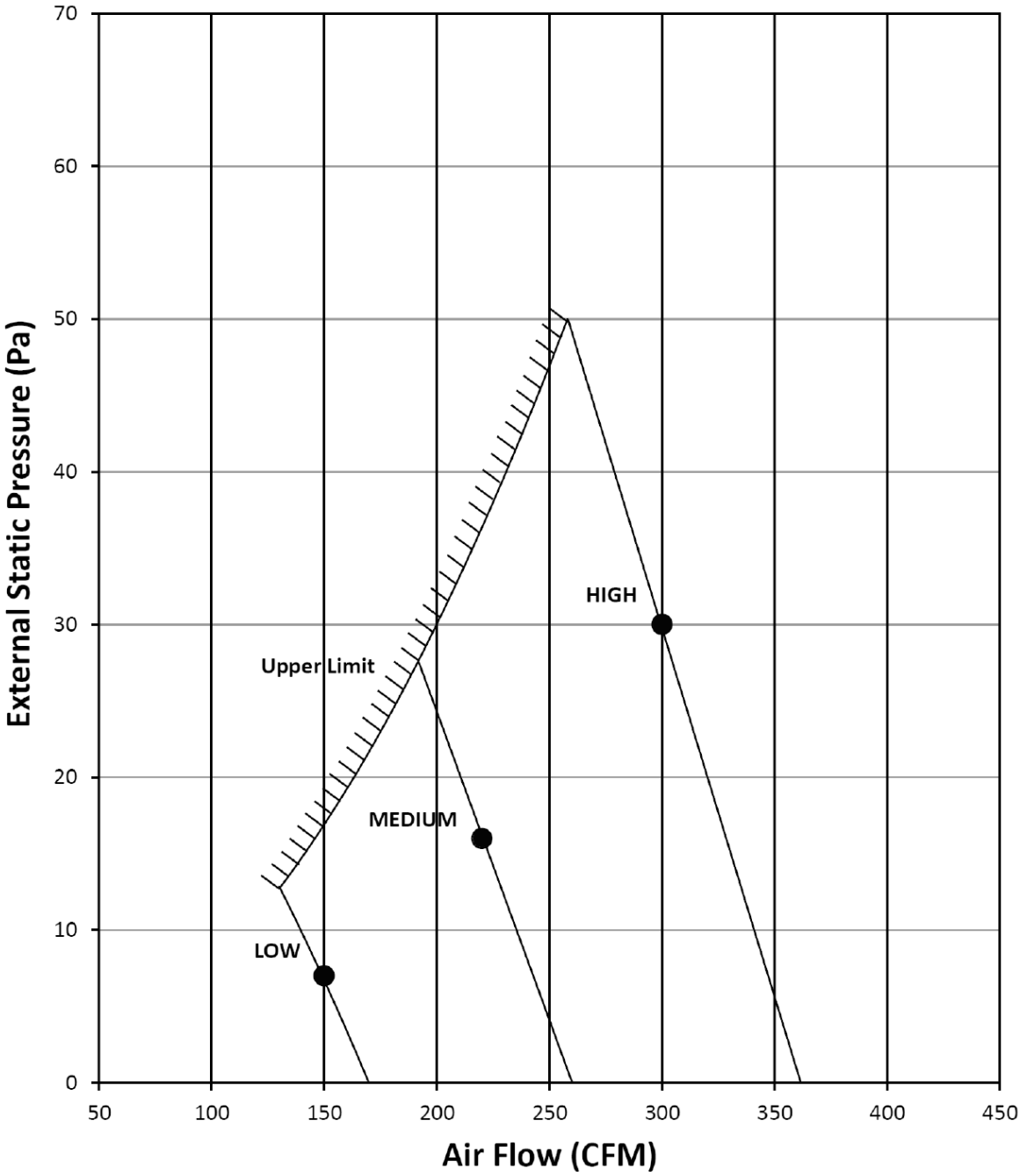


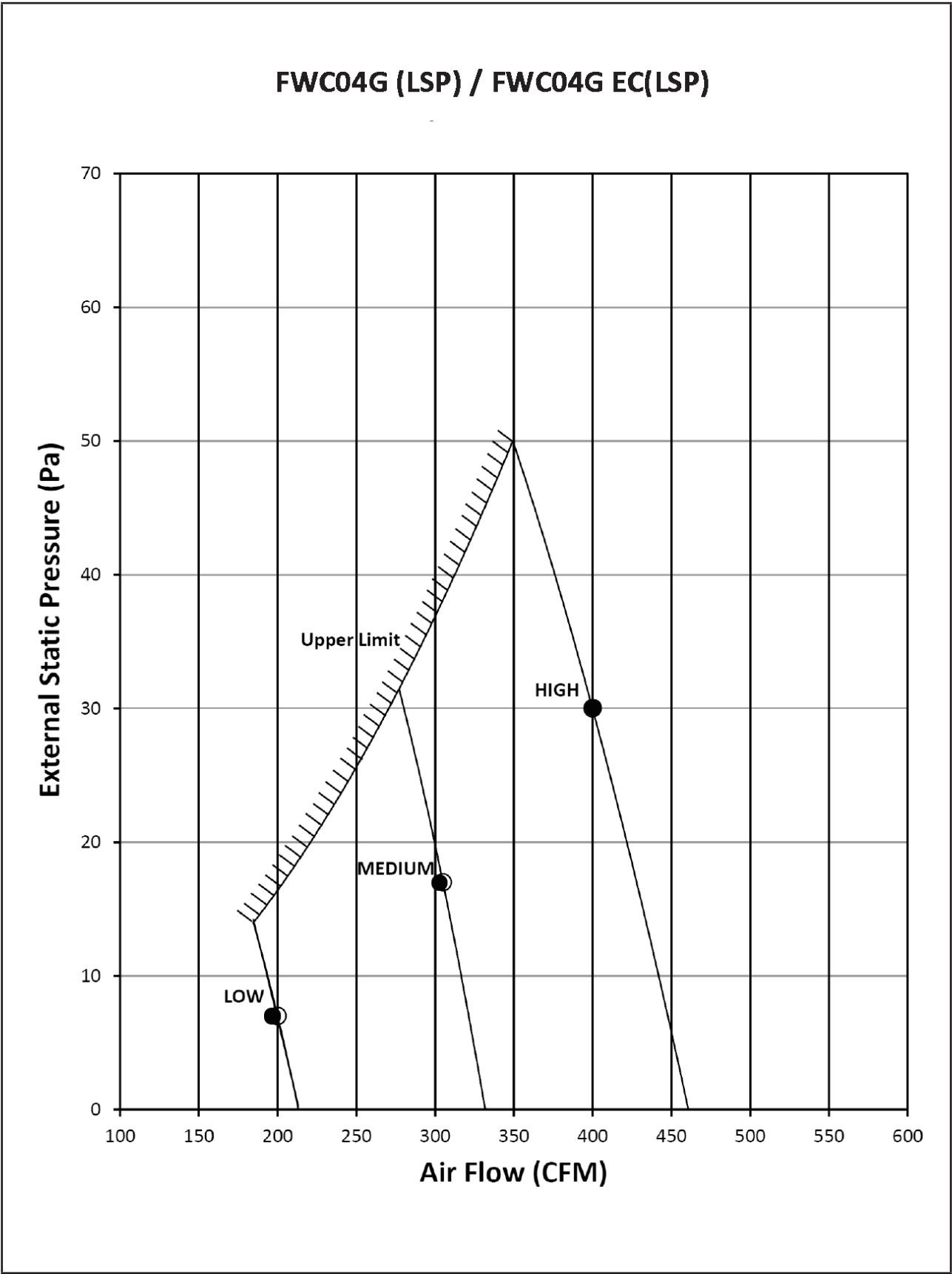




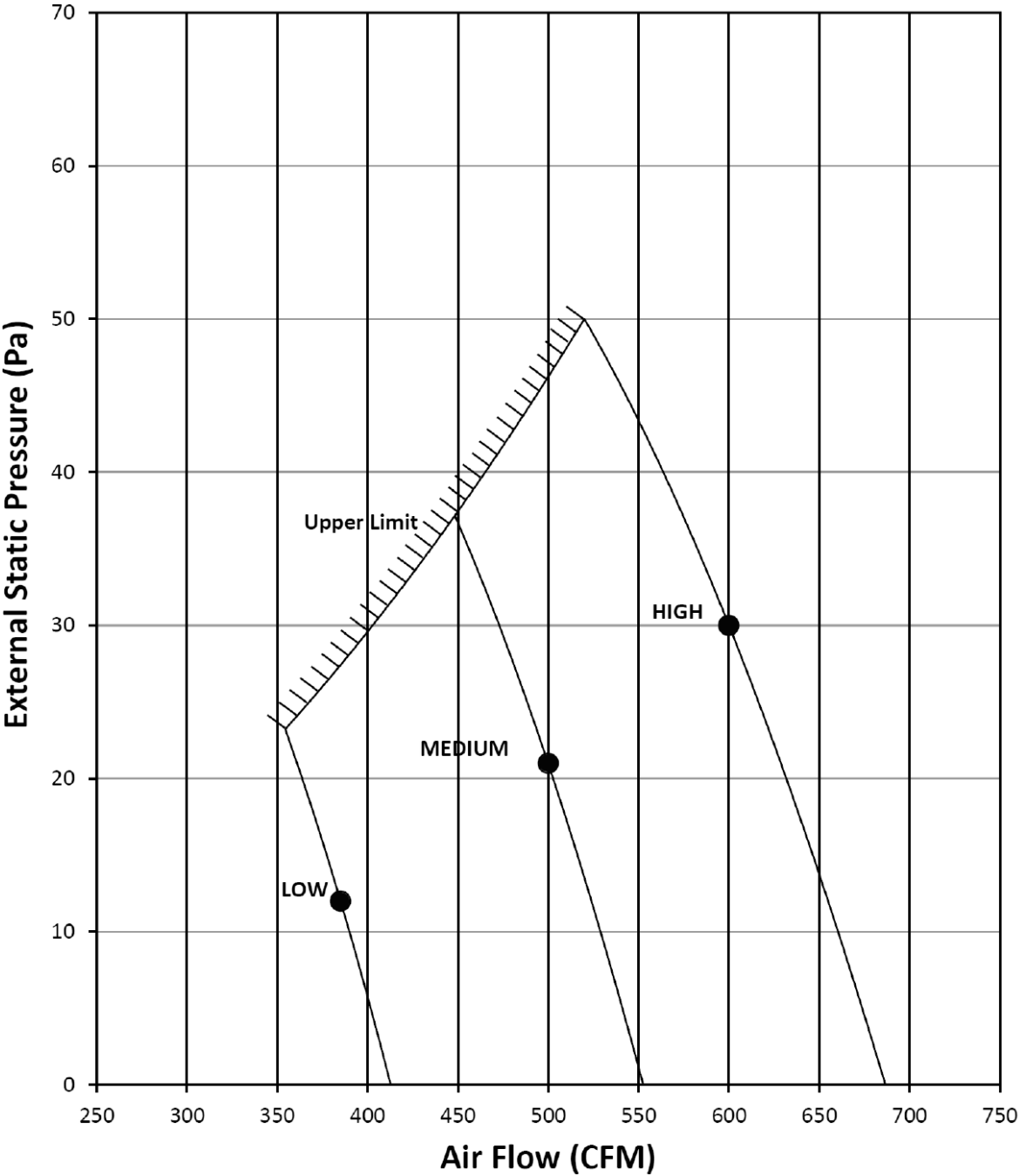


FWC03G (LSP) / FWC03G EC(LSP)

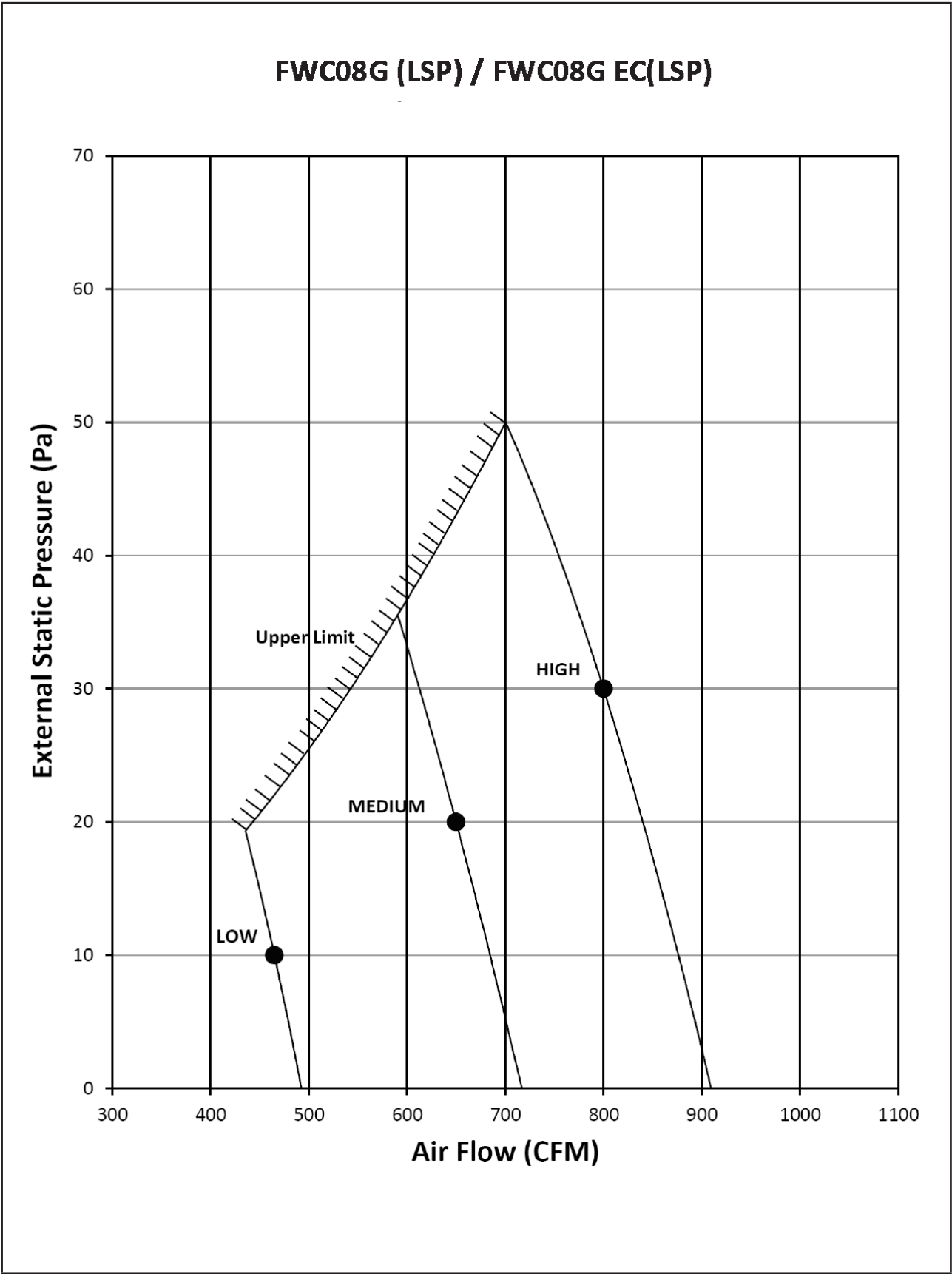


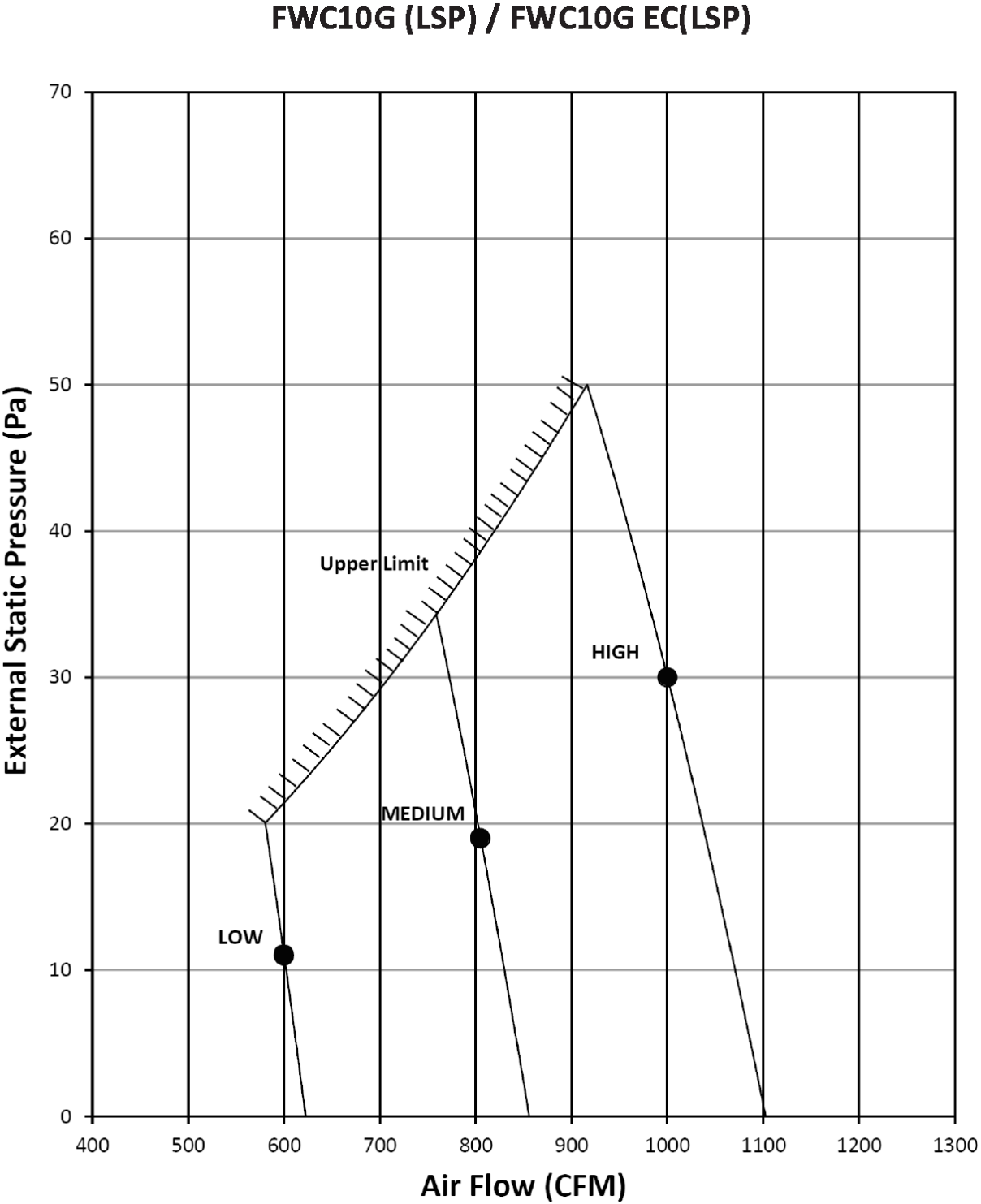


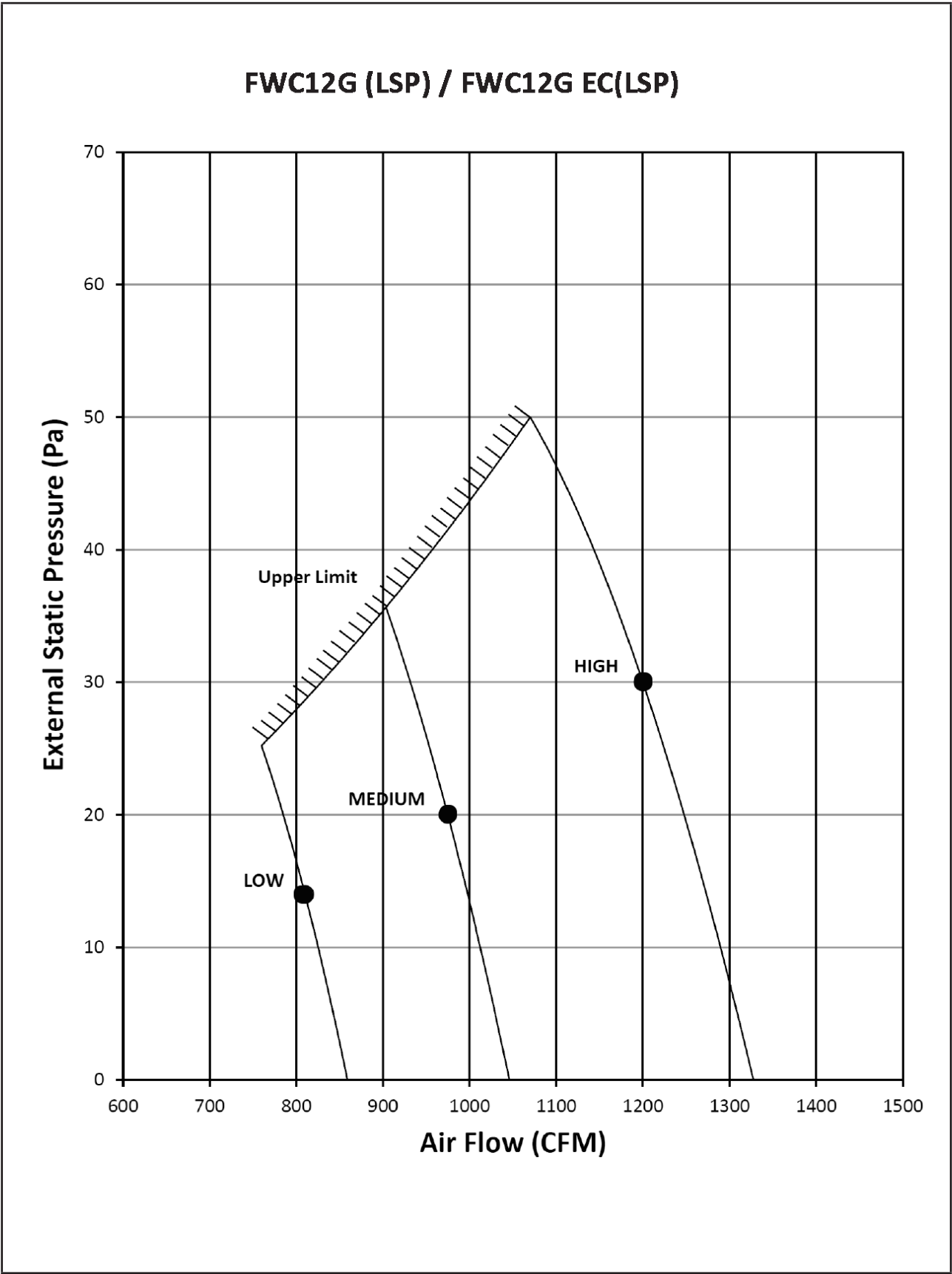
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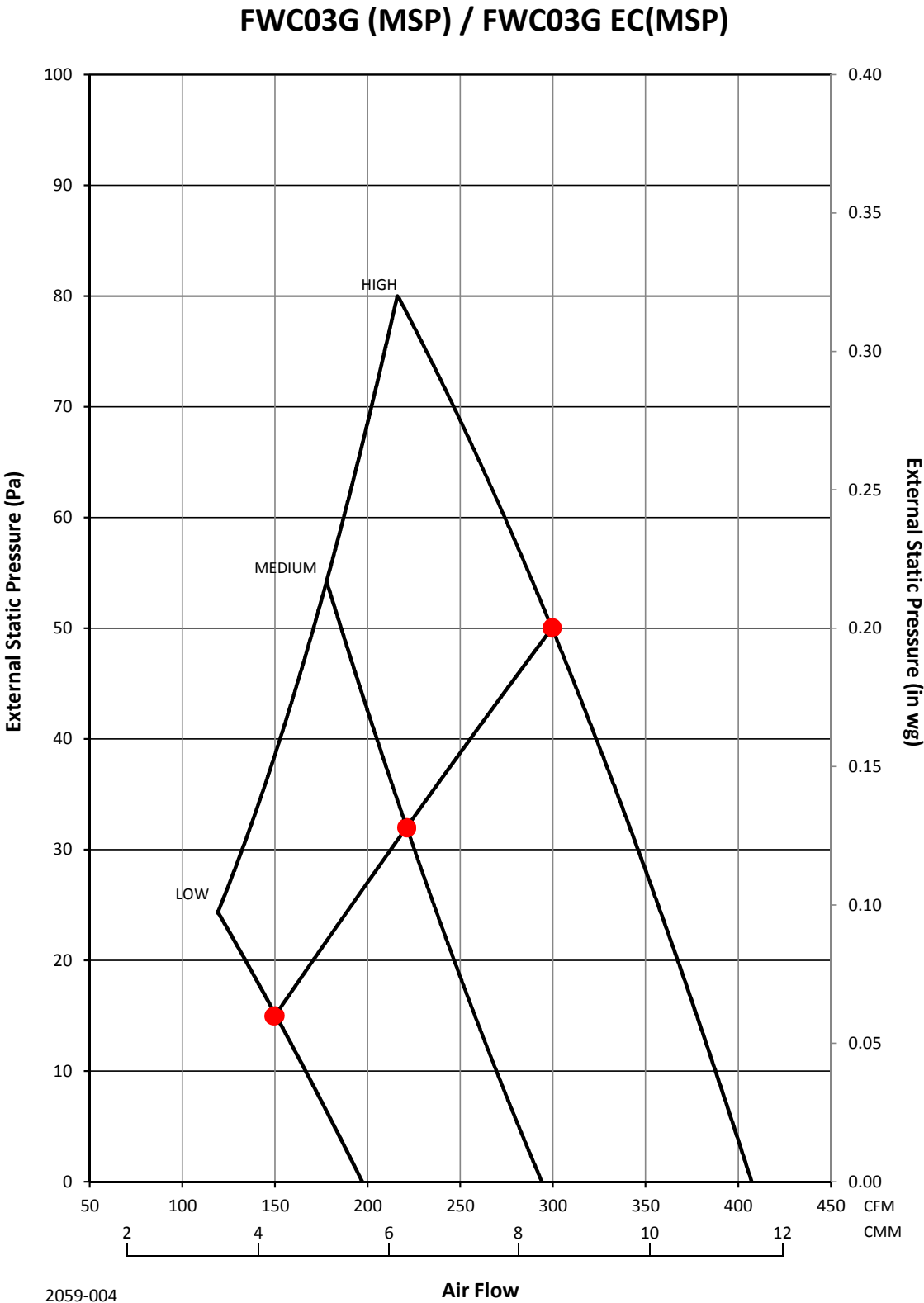




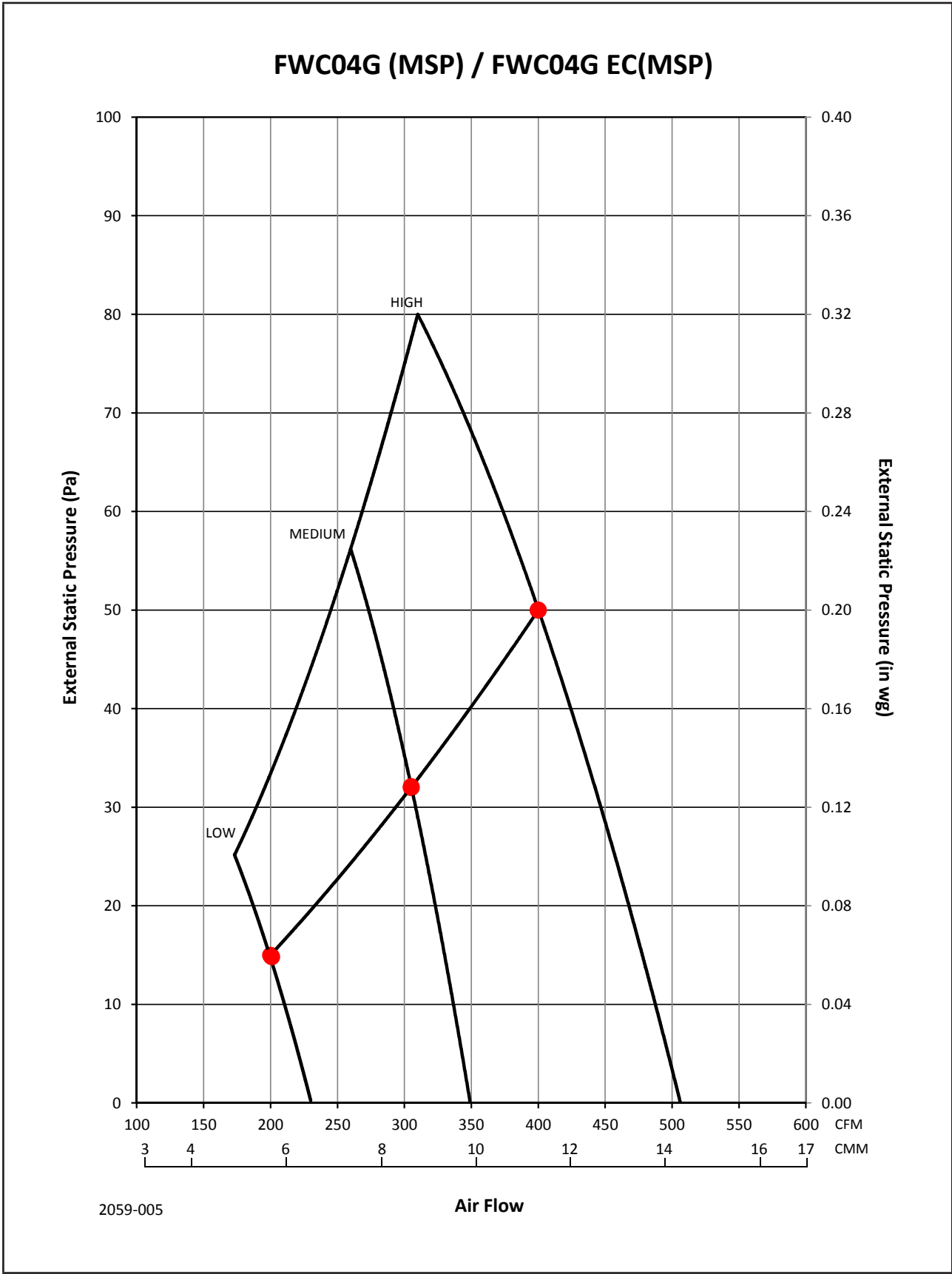


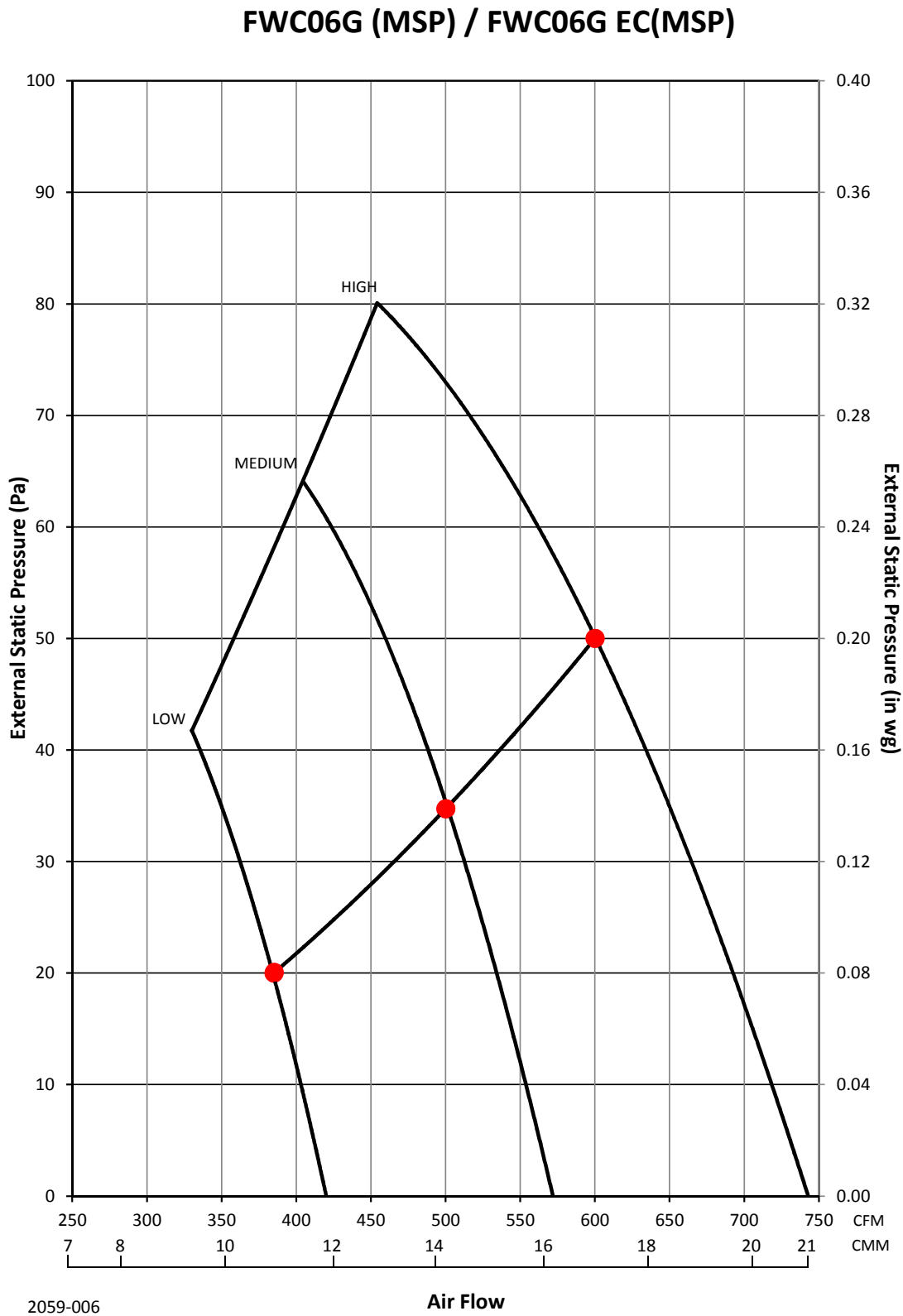


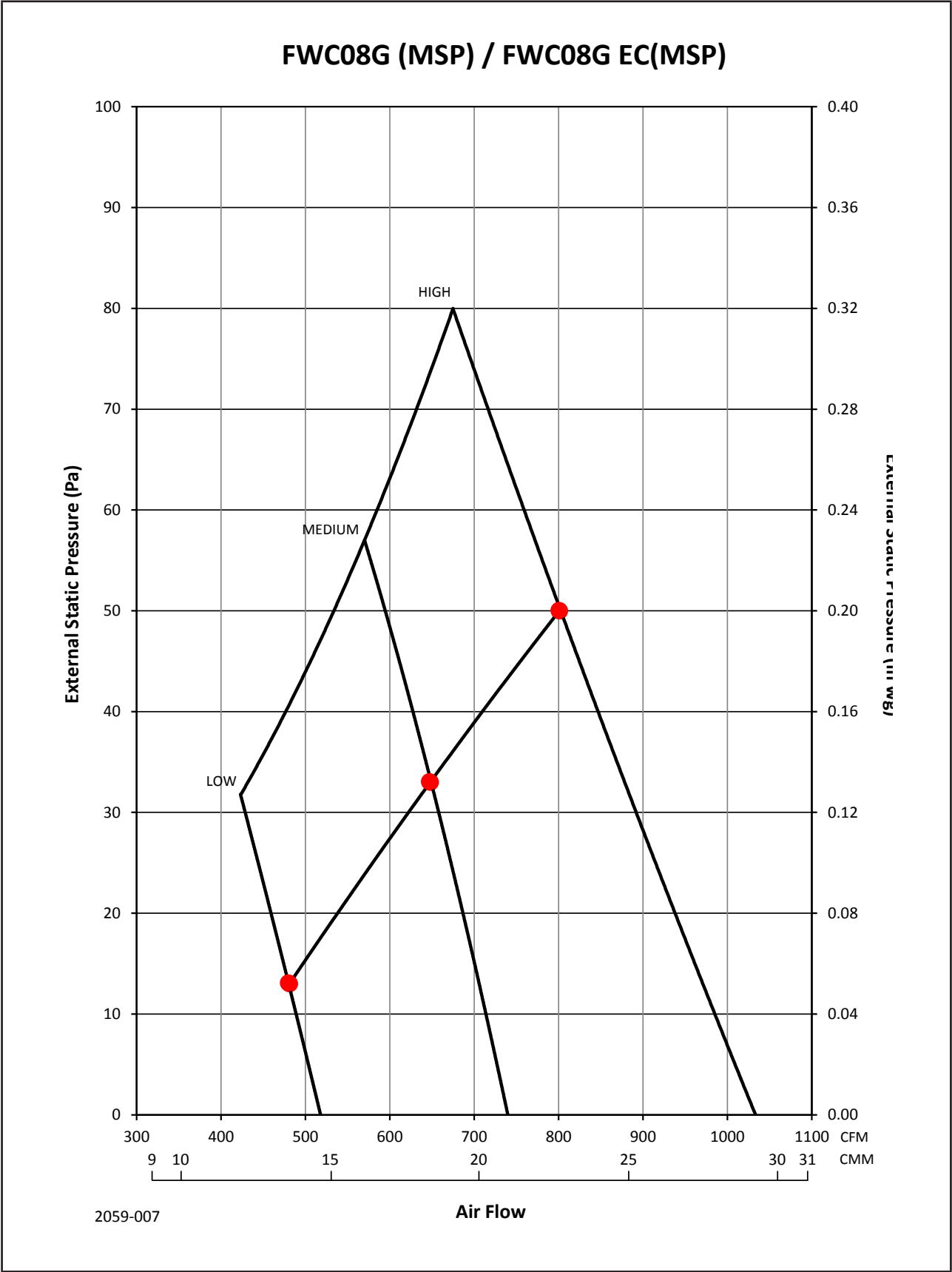


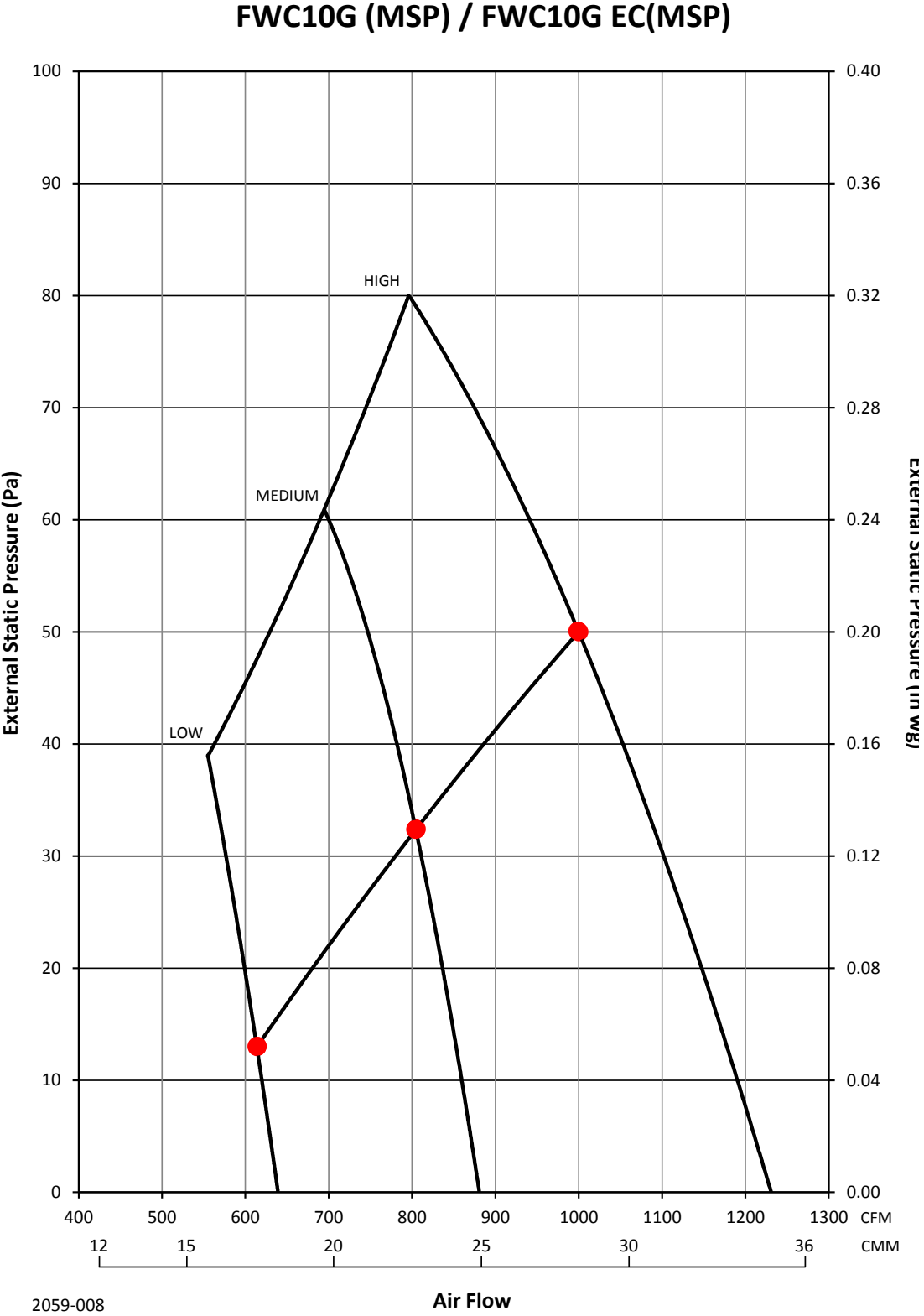


2059-004

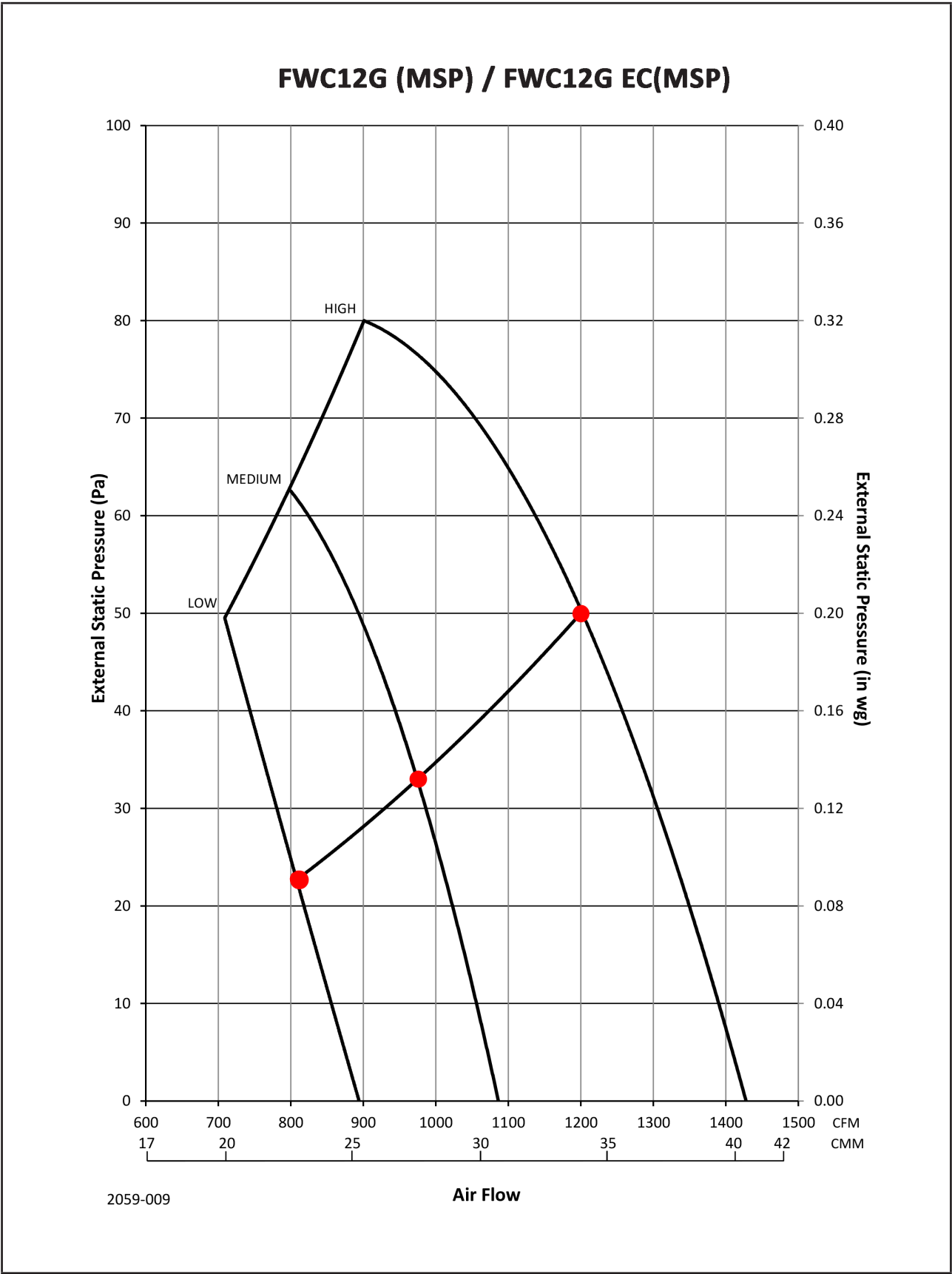


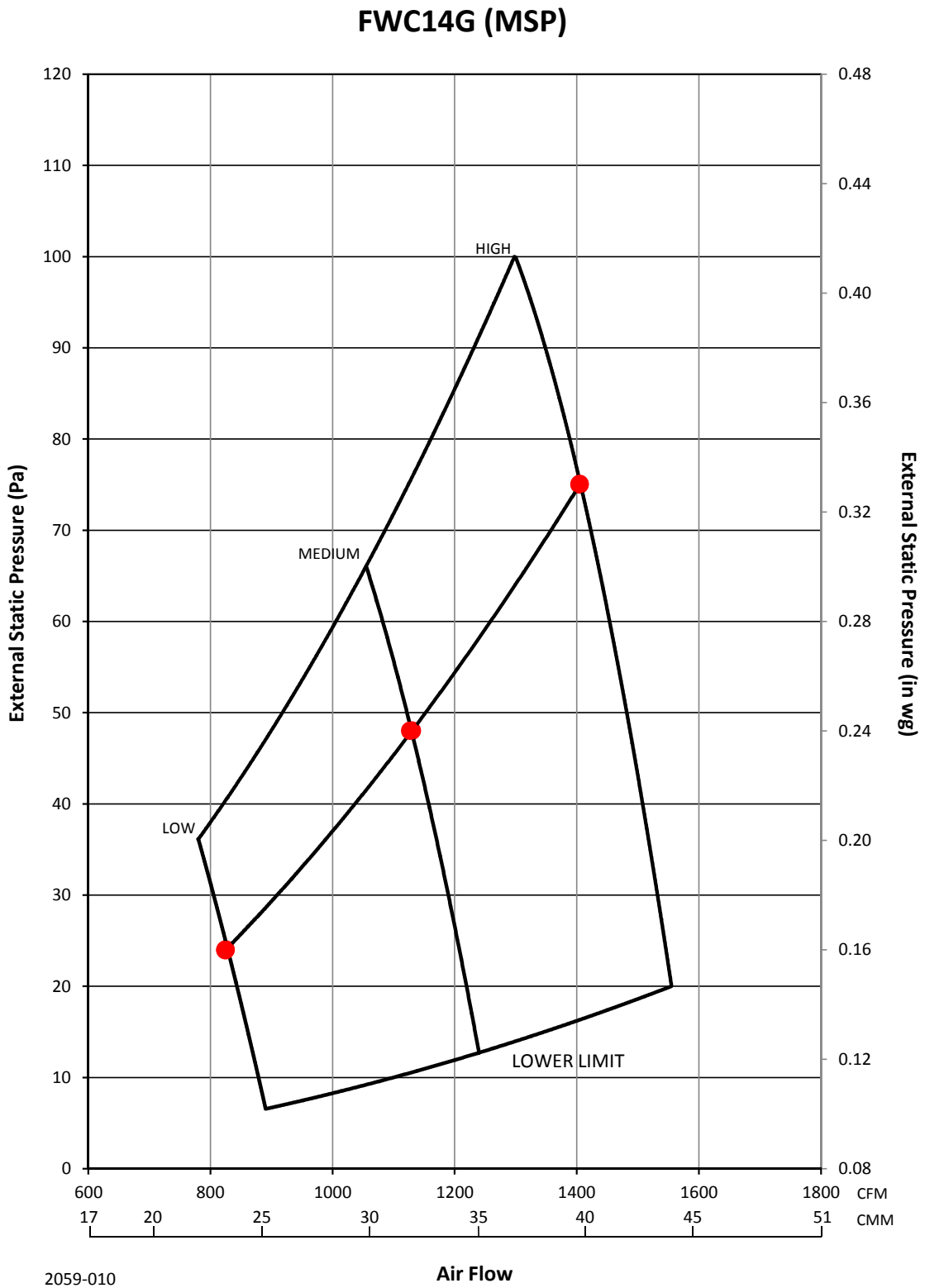




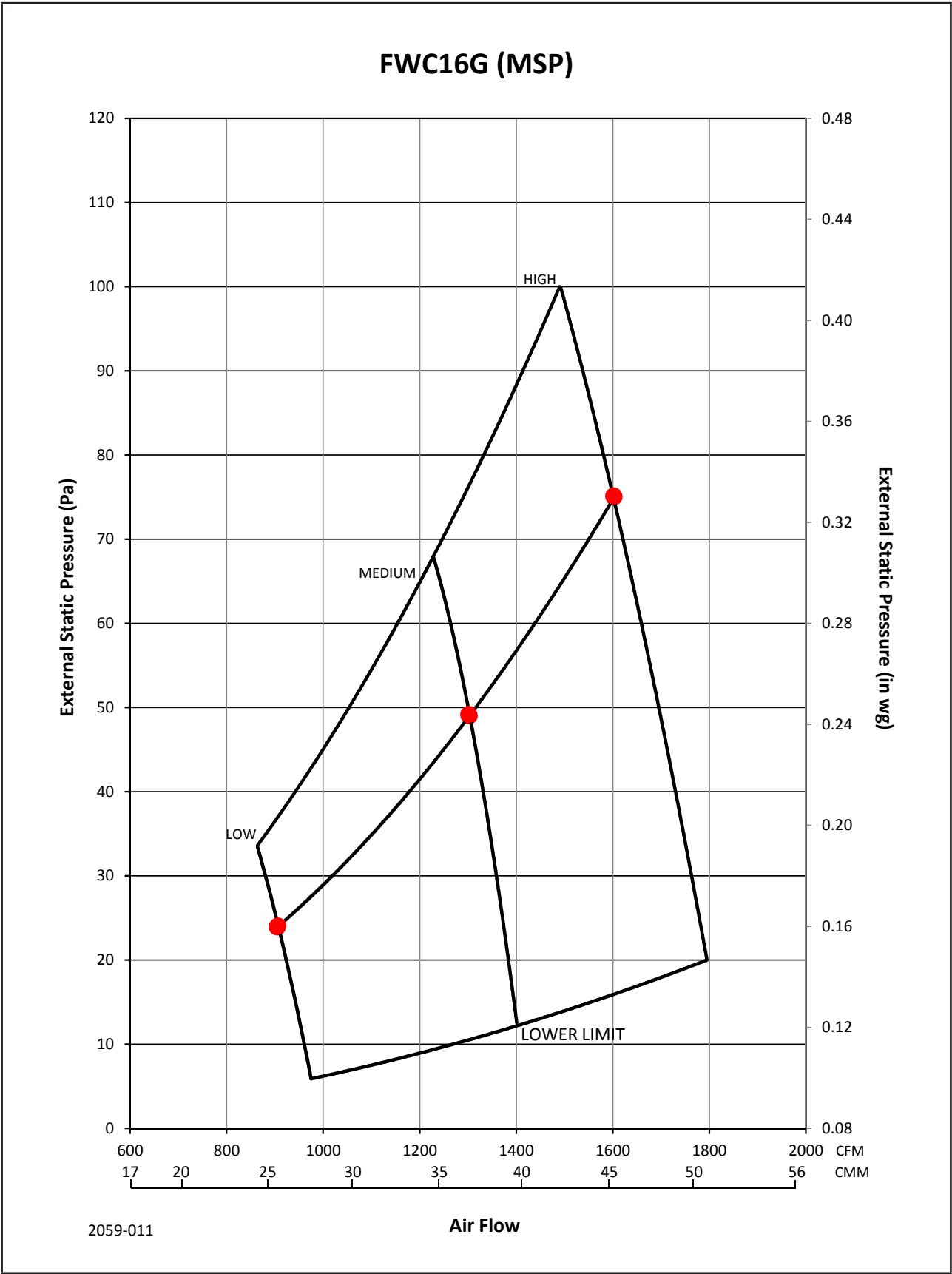


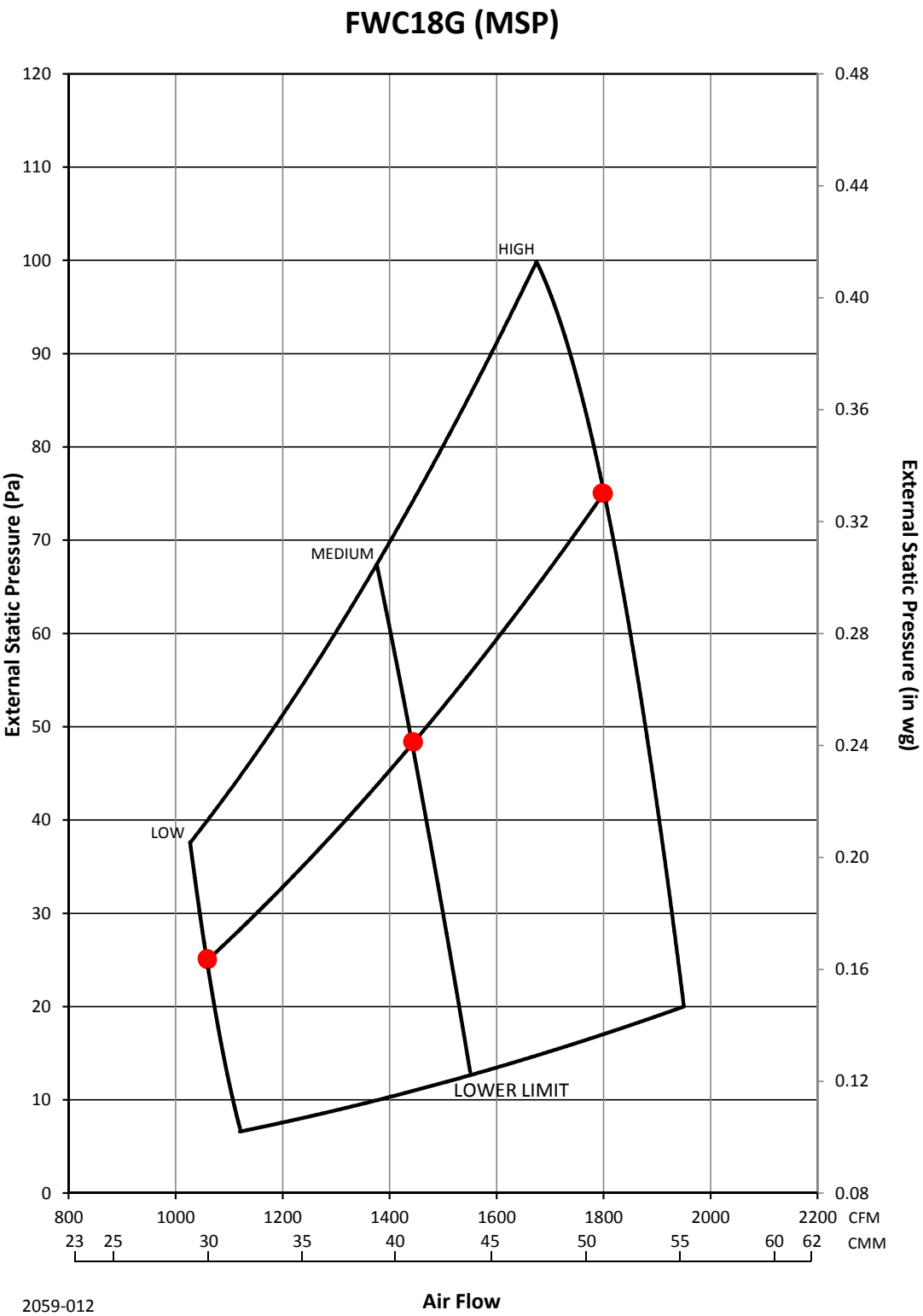




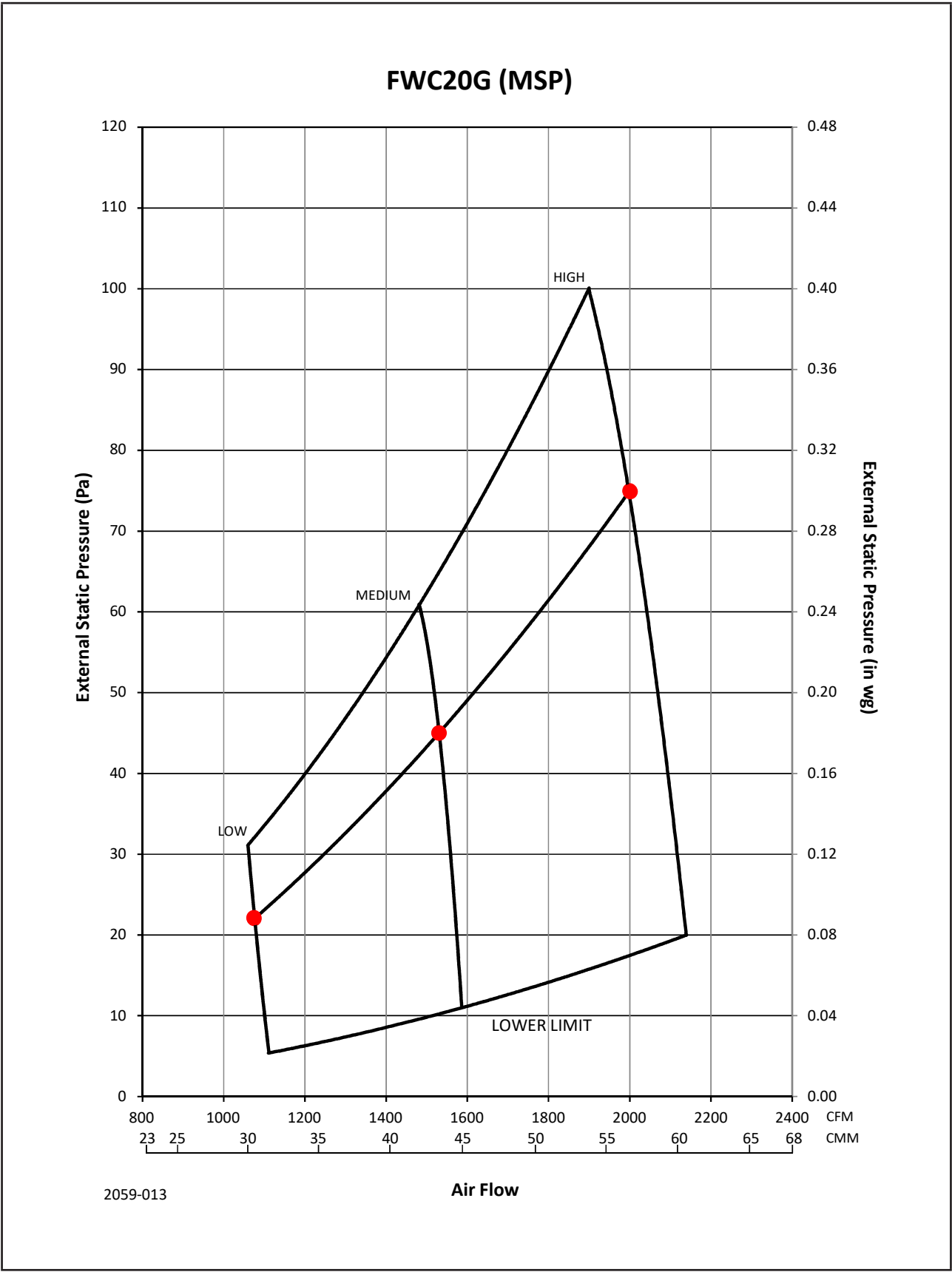


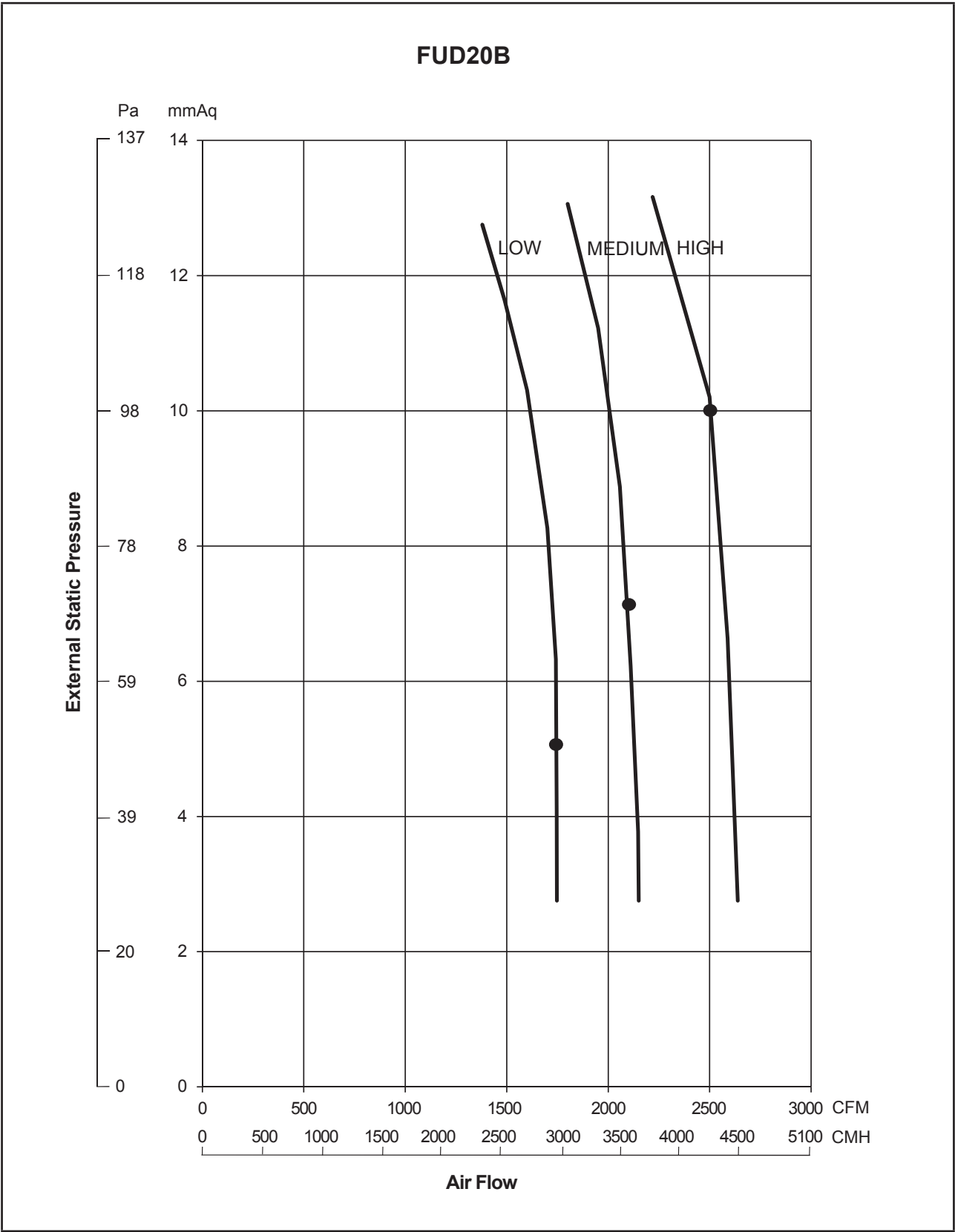
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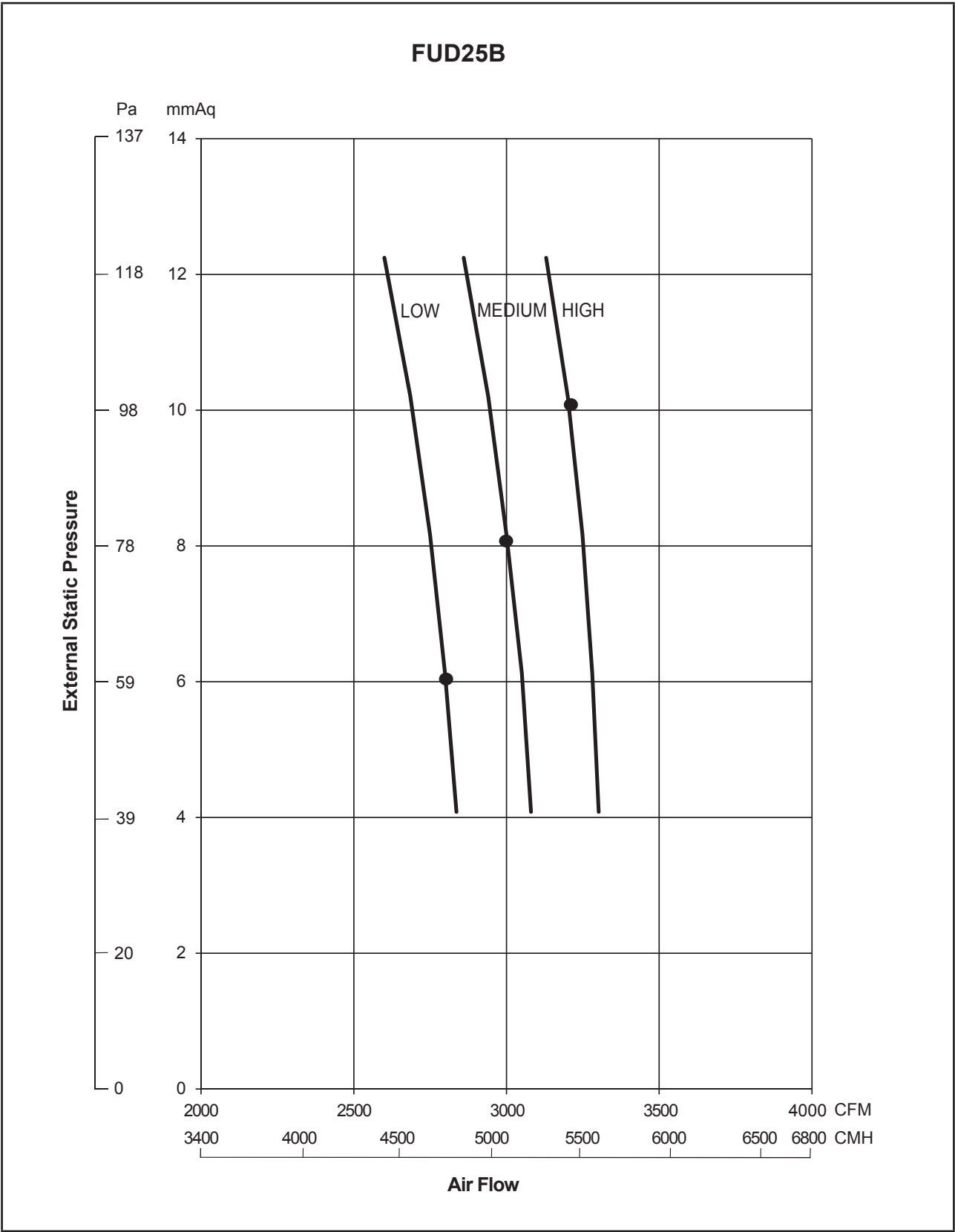


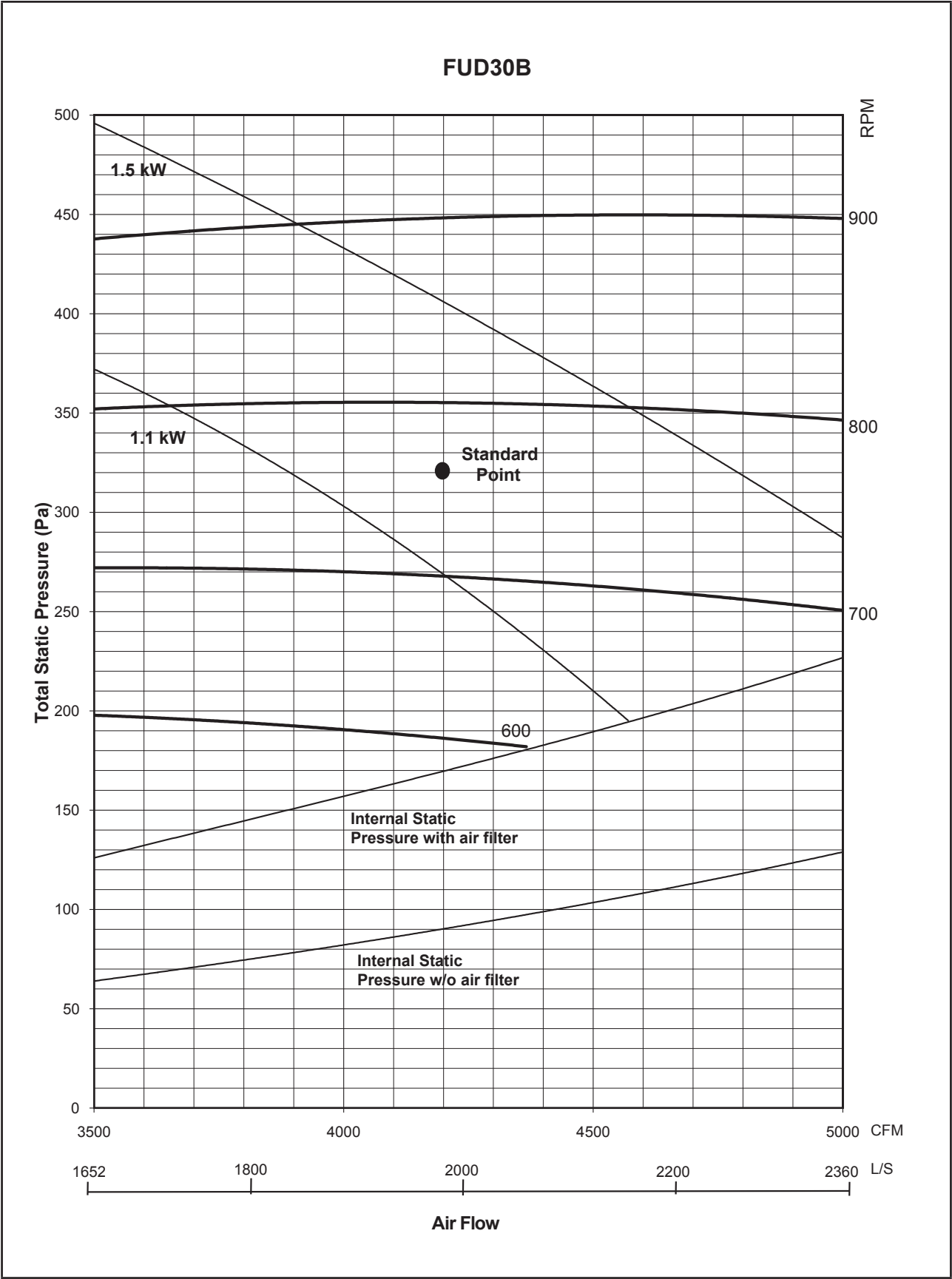


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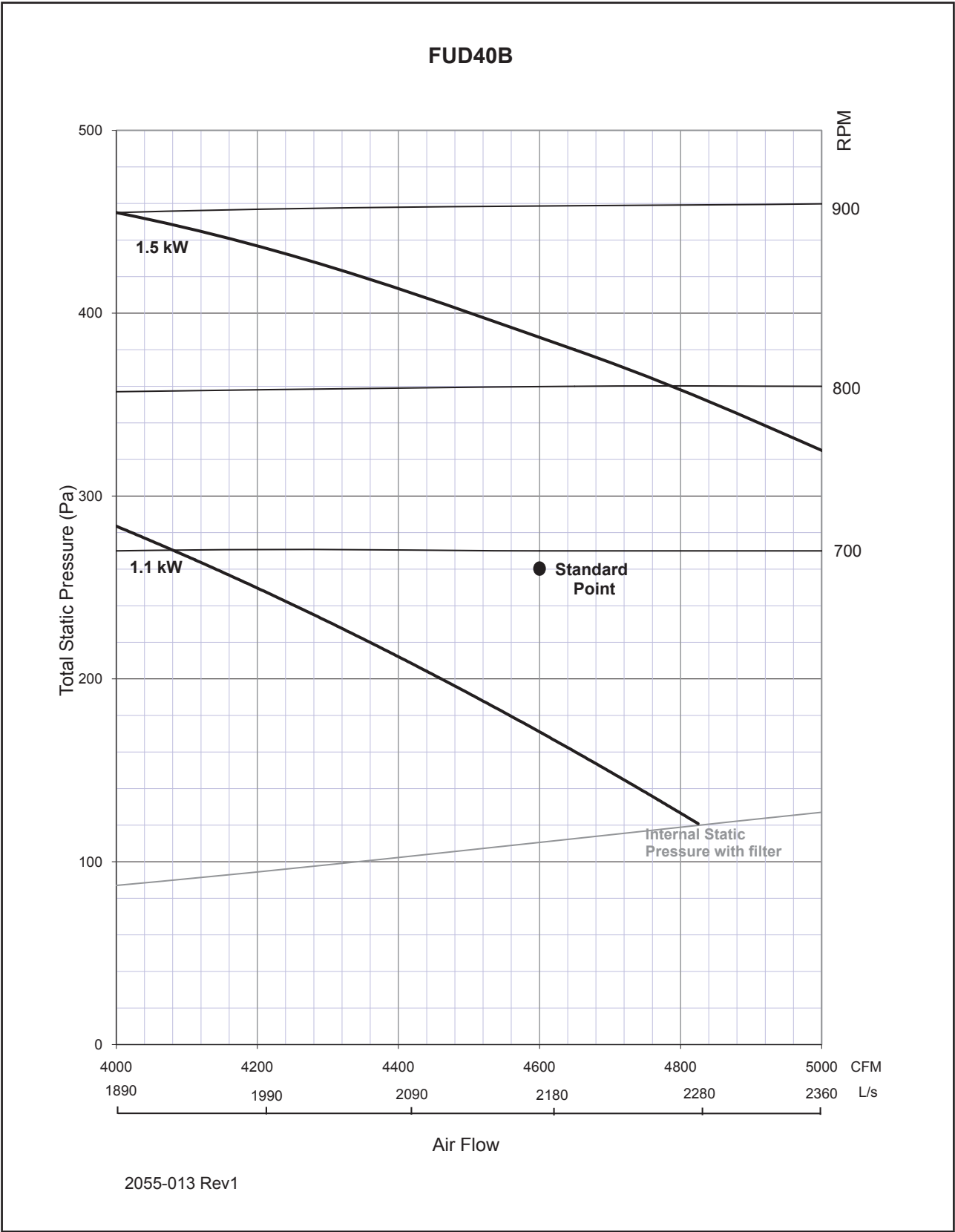












# Engineering & Physical Data

## Engineering Data - Chilled Water Fan Coil Unit

MODEL				FWW02L	FWW03L	FWW04L	FWW05L	FWW06L		
NOMINAL COOLING CAPACITY				Btu/h	8300	9200	11300	15500	18000	
				W	2430	2700	3310	4540	5280	
NOMINAL SENSIBLE COOLING CAPACITY				Btu/h	6300	6900	9000	11700	14000	
				W	1850	2020	2640	3430	4100	
NOMINAL HEATING CAPACITY (ENTERING WATER TEMP. = 50°C)				Btu/h	11000	12000	15000	20500	25000	
				W	3220	3520	4400	6010	7330	
NOMINAL TOTAL INPUT POWER				W	31	32	42	53	72	
NOMINAL RUNNING CURRENT				A	0.19	0.20	0.21	0.29	0.34	
POWER SOURCE				V/Ph/Hz	220-240/1/50					
INDOOR UNIT	CONTROL	AIR DISCHARGE OPERATION			AUTOMATIC LOUVER (UP & DOWN)					
					LCD WIRELESS MICRO-COMPUTER REMOTE CONTROL					
	AIR FLOW	HIGH	CFM	260	280	370	510	620		
		MEDIUM	CFM	230	250	320	450	520		
		LOW	CFM	200	220	260	390	460		
		QUIET	CFM	180	190	240	360	440		
	NOMINAL WATER FLOW RATE			USGPM	1.85	2.03	2.51	3.43	4.01	
				litres/min	7.00	7.68	9.50	13.00	15.18	
	HEAD LOSS (COOLING)			kPa	34	24	31	30	36	
	HEAD LOSS (HEATING) : 50°C			kPa	29	20	25	27	33	
	MAX. WORKING PRESSURE			kPa	1608					
	SURFACE AIR VELOCITY			m/s	0.68	0.74	0.97	0.83	1.01	
	SOUND PRESSURE LEVEL (H/M/L)			dB(A)	34 / 29 / 25 / 24	35 / 30 / 25 / 24	42 / 39 / 32 / 29	42 / 38 / 34 / 32	46 / 42 / 39 / 37	
	UNIT DIMENSION		H X W X D	mm	288 x 800 x 206			310 x 1065 x 224		
	PACKING DIMENSION		H X W X D	mm	344 x 874 x 274			386 x 1136 x 314		
	UNIT WEIGHT			kg	9			14		
	CONDENSATE DRAIN SIZE			mm	19.05					
	PIPE CONNECTION			mm	12.70 BSP FEMALE THREAD ADAPTOR					
	FAN	TYPE			CROSS FLOW FAN					
		DRIVE			DIRECT					
		FAN SPEED	HIGH	RPM	1030	1050	1310	1035	1250	
			MEDIUM	RPM	890	910	1150	920	1070	
			LOW	RPM	760	780	955	825	970	
		FAN EFFICIENCY	HIGH	%	26.70	24.20	21.00	21.60	20.90	
			MEDIUM	%	25.30	22.70	22.10	21.70	22.20	
			LOW	%	24.80	21.60	22.80	23.10	22.80	
		FAN MOTOR	TYPE			SILICON-CONTROLLED RECTIFIER (SCR)				
			INDEX OF PROTECTION (IP)			IP20			IP44	
	INSULATION GRADE			E						
	RATED INPUT POWER		HIGH	W	31	32	42	53	72	
			MEDIUM	W	29	31	37	47	68	
			LOW	W	25	29	33	42	60	
	RATED RUNNING CURRENT		HIGH	A	0.19	0.20	0.21	0.29	0.34	
			MEDIUM	A	0.18	0.20	0.20	0.26	0.32	
			LOW	A	0.17	0.19	0.19	0.25	0.31	
	STARTING CURRENT		A	0.40	0.40	0.40	0.30	0.43		
MOTOR OUTPUT			W	18	18	18	26	30		
MOTOR EFFICIENCY	HIGH		%	27.40	29.00	44.00	36.50	48.00		
	MEDIUM		%	19.30	21.00	36.00	29.00	36.00		
	LOW		%	13.00	15.00	22.50	24.00	29.00		
COIL	POLES			4						
	TUBE	MATERIAL		COPPER						
		DIAMETER		7.00						
	FIN	MATERIAL		ALUMINIUM						
		FACE AREA		0.18	0.18	0.18	0.29	0.29		
	ROW		2							
WATER VOLUME			litre	0.52	0.58	0.58	0.95	0.95		
AIR QUALITY	FILTER	TYPE			WASHABLE SARANET FILTER					
		QUANTITY			2					
CASING		COLOUR			WHITE					

MODE	COOLING	HEATING
ENTERING AIR TEMPERATURE	27°C DB / 19°C WB	20°C DB
ENTERING WATER TEMPERATURE	7°C	50°C (2 Pipes System)
LEAVING WATER TEMPERATURE	12°C	-

ALL SPECIFICATIONS ARE SUBJECT TO CHANGE BY THE MANUFACTURER WITHOUT PRIOR NOTICE.

## Engineering Data - Chilled Water Fan Coil Unit

MODEL				FWF02C		FWF04C		FWF05C						
NOMINAL COOLING CAPACITY				Btu/h		8500		14000		15500				
				W		2490		4100		4540				
NOMINAL SENSIBLE COOLING CAPACITY				Btu/h		6500		10000		11500				
				W		1910		2930		3370				
NOMINAL HEATING CAPACITY (ENTERING WATER TEMP. = 50°C)				Btu/h		12000		16000		18000				
				W		3520		4690		5280				
NOMINAL TOTAL INPUT POWER				W		63		64		79				
NOMINAL RUNNING CURRENT				A		0.28		0.28		0.35				
POWER SOURCE				V/Ph/Hz		220-240/1/50								
INDOOR UNIT	CONTROL		AIR DISCHARGE		4 WAY AUTOMATIC LOUVER (UP & DOWN)									
			OPERATION		LCD WIRELESS MICRO-COMPUTER REMOTE CONTROL									
	AIR FLOW		HIGH		CFM		380		400		440			
			MEDIUM		CFM		290		310		330			
			LOW		CFM		230		220		280			
	NOMINAL WATER FLOW RATE				USGPM		2.03		3.43		3.57			
					litres/min		7.68		12.98		13.51			
	HEAD LOSS (COOLING)				kPa		19.3		26.9		28.8			
	HEAD LOSS (HEATING) : 50°C				kPa		16.8		23.9		26.5			
	MAX. WORKING PRESSURE				kPa		1608							
	SURFACE AIR VELOCITY				m/s		0.74		0.74		0.82			
	SOUND PRESSURE LEVEL (H/M/L)				dBA		42 / 35 / 29		45 / 38 / 30		48 / 40 / 36			
	UNIT DIMENSION - (WITH PANEL)			H X W X D		mm		250 x 570 x 570 (295 x 640 x 640)						
	PACKING DIMENSION - (PANEL)			H X W X D		mm		316 x 630 x 630 (126 x 700 x 726)						
	UNIT WEIGHT (UNIT + PANEL)					kg		15 + 3		17 + 3		17 + 3		
	CONDENSATE DRAIN SIZE					mm		19.05						
	PIPE CONNECTION					mm		19.05 BSP FEMALE THREAD ADAPTOR						
	FAN		TYPE		TURBO FAN									
			DRIVE		DIRECT									
			FAN SPEED		HIGH		RPM		725		810		900	
					MEDIUM		RPM		565		630		700	
					LOW		RPM		460		480		610	
			FAN EFFICIENCY		HIGH		%		38.30		46.90		25.90	
					MEDIUM		%		35.10		45.40		32.30	
					LOW		%		46.70		46.10		21.50	
	FAN MOTOR		TYPE		PERMANENT SPLIT CAPACITOR (INDUCTION)									
			INDEX OF PROTECTION (IP)				IP20							
			INSULATION GRADE				B							
			RATED INPUT POWER		HIGH		W		63		64		79	
					MEDIUM		W		51		58		73	
					LOW		W		46		52		69	
			RATED RUNNING CURRENT		HIGH		A		0.28		0.28		0.35	
					MEDIUM		A		0.23		0.25		0.32	
					LOW		A		0.21		0.24		0.31	
			STARTING CURRENT				A		0.32		0.30		0.47	
			MOTOR OUTPUT				W		17		23		28	
			MOTOR EFFICIENCY		HIGH		%		32.20		44.50		49.20	
					MEDIUM		%		20.50		23.60		24.00	
					LOW		%		12.30		11.20		14.80	
	POLES				6									
	COIL		TUBE		MATERIAL		COPPER							
					DIAMETER		mm		7.00					
			FIN		MATERIAL		ALUMINIUM							
					FACE AREA		m²		0.24		0.25		0.25	
					ROW				1		2		2	
	WATER VOLUME				litre		0.43		0.83		0.83			
	AIR QUALITY		FILTER		TYPE		WASHABLE SARANET FILTER							
					QUANTITY		pc		1					
CASING				COLOUR		WHITE								

MODE	COOLING	HEATING
ENTERING AIR TEMPERATURE	27°C DB / 19°C WB	20°C DB
ENTERING WATER TEMPERATURE	7°C	50°C (2 Pipes System)
LEAVING WATER TEMPERATURE	12°C	-

ALL SPECIFICATIONS ARE SUBJECTED TO CHANGE BY THE MANUFACTURER WITHOUT PRIOR NOTICE.

## Engineering Data - Chilled Water Fan Coil Unit

MODEL				FWK06E	FWK08E	FWK09E	FWK11E	FWK13E	
NOMINAL COOLING CAPACITY				Btu/h	21000	25000	30000	38000	43000
				W	6150	7330	8790	11140	12600
NOMINAL SENSIBLE COOLING CAPACITY				Btu/h	16700	19200	22300	27400	31000
				W	4890	5630	6540	8030	9090
NOMINAL HEATING CAPACITY (ENTERING WATER TEMP. = 50°C)				Btu/h	28000	33600	38300	45500	52000
				W	8210	9850	11230	13340	15240
NOMINAL TOTAL INPUT POWER				W	95	126	167	186	227
NOMINAL RUNNING CURRENT				A	0.44	0.55	0.74	0.85	1.03
POWER SOURCE				V/Ph/Hz	220-240/1/50				
INDOOR UNIT	CONTROL		AIR DISCHARGE OPERATION		4 WAY AUTOMATIC LOUVER (UP & DOWN)				
					LCD WIRELESS MICRO-COMPUTER REMOTE CONTROL				
	AIR FLOW	HIGH	CFM	750	860	890	1000	1140	
		MEDIUM	CFM	620	700	720	840	1000	
		LOW	CFM	480	540	570	680	840	
		QUIET	CFM	320	380	420	540	700	
	NOMINAL WATER FLOW RATE		USGPM	4.71	5.59	6.69	8.45	9.60	
			litres/min	17.83	21.17	25.29	31.94	36.29	
	HEAD LOSS (COOLING)		kPa	20	37	22	44	53	
	HEAD LOSS (HEATING) : 50°C		kPa	19	33	19	38	47	
	MAX. WORKING PRESSURE		kPa	1608					
	SURFACE AIR VELOCITY		m/s	0.92	1.05	1.13	1.02	1.17	
	SOUND PRESSURE LEVEL (H/M/L/Q)		dBA	42 / 38 / 32 / 23	46 / 42 / 35 / 27	48 / 43 / 38 / 30	50 / 47 / 43 / 33	52 / 49 / 45 / 39	
	UNIT DIMENSION - (WITH PANEL)		H X W X D	mm			265 x 820 x 820 (340 x 990 x 990)		
	PACKING DIMENSION - (PANEL)		H X W X D	mm			341 x 916 x 916 (125 x 1020 x 1020)		
	UNIT WEIGHT (UNIT + PANEL)		kg	26 + 4	26 + 4	28 + 4	32 + 4	32 + 4	
	CONDENSATE DRAIN SIZE		mm	19.05					
	PIPE CONNECTION		mm	19.05 BSP FEMALE THREAD ADAPTOR					
	FAN	TYPE		TURBO FAN					
		DRIVE		DIRECT					
		FAN SPEED	HIGH	RPM	530	600	660	710	800
			MEDIUM	RPM	450	500	550	610	710
			LOW	RPM	360	400	450	510	610
		FAN EFFICIENCY	HIGH	%	57.10	60.50	65.00	58.30	55.70
			MEDIUM	%	60.50	62.10	63.00	57.20	65.40
			LOW	%	58.20	63.30	52.70	58.40	61.60
	FAN MOTOR	TYPE		PERMANENT SPLIT CAPACITOR (INDUCTION)					
INDEX OF PROTECTION (IP)		IP20							
INSULATION GRADE		B							
RATED INPUT POWER		HIGH	W	95	126	167	186	227	
		MEDIUM	W	79	103	109	151	176	
		LOW	W	67	89	86	118	144	
RATED RUNNING CURRENT		HIGH	A	0.44	0.55	0.74	0.85	1.03	
		MEDIUM	A	0.40	0.45	0.49	0.71	0.82	
		LOW	A	0.36	0.39	0.39	0.57	0.69	
STARTING CURRENT		A	0.44	0.71	0.89	1.02	1.28		
MOTOR OUTPUT		W	30	45	65	80	110		
MOTOR EFFICIENCY		HIGH	%	35.20	37.70	30.80	40.30	48.50	
		MEDIUM	%	25.60	25.20	24.10	31.00	40.60	
		LOW	%	15.60	14.60	21.50	23.20	30.90	
COIL	POLES		8					6	
	TUBE	MATERIAL		COPPER					
		DIAMETER		7.00					
	FIN	MATERIAL		ALUMINIUM					
		FACE AREA		0.37					
	ROW		3						
WATER VOLUME		litre	1.36	1.34	1.97	2.35	2.35		
AIR QUALITY CASING	FILTER	TYPE		WASHABLE SARANET FILTER					
		QUANTITY		1					
		COLOUR		WHITE					

MODE	COOLING	HEATING
ENTERING AIR TEMPERATURE	27°C DB / 19°C WB	20°C DB
ENTERING WATER TEMPERATURE	7°C	50°C (2 Pipes System)
LEAVING WATER TEMPERATURE	12°C	-

ALL SPECIFICATIONS ARE SUBJECTED TO CHANGE BY THE MANUFACTURER WITHOUT PRIOR NOTICE.

## Engineering Data - Chilled Water Fan Coil Unit

MODEL				FWK06EH	FWK08EH	FWK09EH	FWK11EH	FWK13EH	
NOMINAL COOLING CAPACITY			Btu/h	16400	18500	24600	29600	31300	
			W	4800	5430	7210	8670	9160	
NOMINAL SENSIBLE COOLING CAPACITY			Btu/h	14487	16108	19922	23991	25790	
			W	4250	4720	5840	7030	7560	
NOMINAL HEATING CAPACITY (ENTERING WATER TEMP. = 70°C)			Btu/h	30300	33400	40500	51100	54900	
			W	8870	9800	11880	14990	16100	
NOMINAL TOTAL INPUT POWER			W	95	126	167	186	227	
NOMINAL RUNNING CURRENT			A	0.44	0.55	0.74	0.85	1.03	
POWER SOURCE			V/Ph/Hz	220-240/1/50					
INDOOR UNIT	CONTROL	AIR DISCHARGE OPERATION		4 WAY AUTOMATIC LOUVER (UP & DOWN)					
				LCD WIRELESS MICRO-COMPUTER REMOTE CONTROL					
	AIR FLOW	HIGH	CFM	750	860	890	1000	1140	
		MEDIUM	CFM	620	700	720	840	1000	
		LOW	CFM	480	540	570	680	840	
		QUIET	CFM	320	380	420	540	700	
	NOMINAL WATER FLOW RATE (COOLING)		USGPM	3.65	4.14	5.46	6.56	6.96	
			litres/min	13.83	15.67	20.67	24.83	26.33	
	NOMINAL WATER FLOW RATE (HEATING)		USGPM	3.35	3.70	4.49	5.68	6.12	
			litres/min	12.67	14.00	17.00	21.50	23.17	
	HEAD LOSS (COOLING)		kPa	25	31	27	31	35	
	HEAD LOSS (HEATING) : 70°C		kPa	30	37	38	45	51	
	MAX. WORKING PRESSURE		kPa	1608					
	SURFACE AIR VELOCITY		m/s	0.92	1.05	1.13	1.02	1.17	
	SOUND PRESSURE LEVEL (H/M/L/Q)		dBA	42 / 38 / 32 / 23	46 / 42 / 35 / 27	48 / 43 / 38 / 30	50 / 47 / 43 / 33	52 / 49 / 45 / 39	
	UNIT DIMENSION - (WITH PANEL)		H X W X D	mm 265 x 820 x 820 (340 x 990 x 990)			300 x 820 x 820 (385 x 990 x 990)		
	PACKING DIMENSION - (PANEL)		H X W X D	mm 341 x 916 x 916 (125 x 1020 x 1020)			376 x 916 x 916 (125 x 1020 x 1020)		
	UNIT WEIGHT (UNIT + PANEL)		kg	26 + 4	26 + 4	28 + 4	32 + 4	32 + 4	
	CONDENSATE DRAIN SIZE		mm	19.05					
	PIPE CONNECTION		mm	19.05 BSP FEMALE THREAD ADAPTOR					
	FAN	TYPE			TURBO FAN				
			DRIVE		DIRECT				
		FAN SPEED	HIGH	RPM	530	600	660	710	800
			MEDIUM	RPM	450	500	550	610	710
			LOW	RPM	360	400	450	510	610
		FAN EFFICIENCY	HIGH	%	57.10	60.50	65.00	58.30	55.70
			MEDIUM	%	60.50	62.10	63.00	57.20	65.40
			LOW	%	58.20	63.30	52.70	58.40	61.60
		FAN MOTOR	TYPE		PERMANENT SPLIT CAPACITOR (INDUCTION)				
			INDEX OF PROTECTION (IP)		IP20				
INSULATION GRADE			B						
RATED INPUT POWER	HIGH		W	95	126	167	186	227	
	MEDIUM		W	79	103	109	151	176	
	LOW		W	67	89	86	118	144	
RATED RUNNING CURRENT	HIGH		A	0.44	0.55	0.74	0.85	1.03	
	MEDIUM		A	0.40	0.45	0.49	0.71	0.82	
	LOW		A	0.36	0.39	0.39	0.57	0.69	
STARTING CURRENT			A	0.44	0.71	0.89	1.02	1.28	
MOTOR OUTPUT			W	30	45	65	80	110	
MOTOR EFFICIENCY	HIGH		%	35.20	37.70	30.80	40.30	48.50	
	MEDIUM	%	25.60	25.20	24.10	31.00	40.60		
	LOW	%	15.60	14.60	21.50	23.20	30.90		
COIL	POLES		8					6	
	TUBE	MATERIAL		COPPER					
		DIAMETER		7.00					
	FIN	MATERIAL		ALUMINIUM					
		FACE AREA		m²					
	ROW		m²	0.39	0.39	0.37	0.46	0.46	
WATER VOLUME		litre	2	2	3	3	3		
AIR QUALITY	FILTER	TYPE	WASHABLE SARANET FILTER						
		QUANTITY	1						
CASING		COLOUR	WHITE						

MODE	COOLING	HEATING
ENTERING AIR TEMPERATURE	27°C DB / 19°C WB	20°C DB
ENTERING WATER TEMPERATURE	7°C	50°C (2 Pipes System)
LEAVING WATER TEMPERATURE	12°C	70°C (4 Pipes System)

ALL SPECIFICATIONS ARE SUBJECTED TO CHANGE BY THE MANUFACTURER WITHOUT PRIOR NOTICE.

## Engineering Data - Chilled Water Fan Coil Unit

MODEL			FWKE05E				FWKE08E				
			HIGH	MEDIUM	LOW	QUIET	HIGH	MEDIUM	LOW	QUIET	
NOMINAL COOLING CAPACITY			Btu/h	20100	15900	11900	8200	30000	24700	19800	15200
			W	5900	4650	3500	2400	8800	7250	5800	4550
NOMINAL SENSIBLE COOLING CAPACITY			Btu/h	15400	11700	8700	5800	21900	18500	14500	11000
			W	4510	3440	2540	1710	6430	5410	4260	3220
NOMINAL HEATING CAPACITY (ENTERING WATER TEMP. = 50°C)			Btu/h	24200	19800	15200	11300	38200	30400	23900	18400
			W	7100	5800	4450	3300	11200	8900	7000	5400
FAN INPUT POWER			W	37	19	12	7	90	50	26	17
NOMINAL RUNNING CURRENT			A	0.26	0.19	0.13	0.11	0.74	0.43	0.28	0.19
POWER SOURCE			V/Ph/Hz	220-240/1/50							
INDOOR UNIT	CONTROL	AIR DISCHARGE OPERATION	4 WAY AUTOMATIC LOUVER (UP & DOWN) LCD WIRELESS MICRO-COMPUTER REMOTE CONTROL								
	AIR FLOW	CFM	620	470	350	220	890	720	560	420	
	NOMINAL WATER FLOW RATE	USGPM	4.52	3.56	2.68	1.84	6.74	5.55	4.44	3.41	
		litres/min	17.10	13.48	10.15	6.96	25.51	21.02	16.81	12.90	
	HEAD LOSS (COOLING)	kPa	24	15	10	5	20	14	9	7	
	HEAD LOSS (HEATING) : 50°C	kPa	21	13	8	4	18	12	8	5	
	MAX. WORKING PRESSURE	kPa	1608								
	SURFACE AIR VELOCITY	m/s	0.76	0.57	0.43	0.27	1.13	0.92	0.71	0.54	
	SOUND PRESSURE LEVEL	dBA	37	31	23	16	47	42	37	31	
	UNIT DIMENSION - (WITH PANEL)	H X W X D	265 x 820 x 820 (340 x 990 x 990)								
	PACKING DIMENSION - (PANEL)	H X W X D	341 x 916 x 916 (125 x 1020 x 1020)								
	UNIT WEIGHT (UNIT + PANEL)	kg	26 + 4				28 + 4				
	CONDENSATE DRAIN SIZE	mm	19.05								
	PIPE CONNECTION	mm	19.05 BSP FEMALE THREAD ADAPTOR								
	FAN	TYPE	TURBO FAN								
		DRIVE	DIRECT								
		FAN SPEED	RPM	450	360	280	200	660	550	440	350
		FAN EFFICIENCY	%	50.3	51.3	37.4	22.0	51.9	52.6	49.6	40.5
	FAN MOTOR	TYPE	BRUSHLESS DIRECT CURRENT								
		INDEX OF PROTECTION (IP)	IP20								
		INSULATION GRADE	E								
		RATED RUNNING CURRENT	A	0.26	0.19	0.13	0.11	0.74	0.43	0.28	0.19
		STARTING CURRENT	A	N/A				N/A			
		MOTOR OUTPUT	W	70				70			
MOTOR EFFICIENCY		%	70.0	70.0	70.0	70.0	75.0	75.0	75.0	75.0	
COIL	POLES	8									
	TUBE	MATERIAL	COPPER								
		DIAMETER	mm	7.00							
	FIN	MATERIAL	ALUMINIUM								
		FACE AREA	m²	0.39				0.37			
		ROW	2				3				
AIR QUALITY	WATER VOLUME	litre	1.36				1.97				
	FILTER	TYPE	WASHABLE SARANET FILTER								
		QUANTITY	pc	1							
CASING		COLOUR	WHITE								

## NOTE:

A) BASED ON EUROVENT CONDITIONS

B) ADDITIONAL 10W IS REQUIRED FOR CONDENSATE DRAIN PUMP

C) SOUND PRESSURE LEVEL IS TESTED AS PER JIS STANDARD AS BELOW:

FWKE05E(H) MODEL - 1.4M BELOW THE FACE CENTER OF AIR RETURN OF THE UNIT

FWKE08/11E(H) MODEL - 1.5M BELOW THE FACE CENTER OF AIR RETURN OF THE UNIT

MODE	COOLING	HEATING
ENTERING AIR TEMPERATURE	27°C DB / 19°C WB	20°C DB
ENTERING WATER TEMPERATURE	7°C	50°C (2 Pipes System)
LEAVING WATER TEMPERATURE	12°C	-

ALL SPECIFICATIONS ARE SUBJECTED TO CHANGE BY THE MANUFACTURER WITHOUT PRIOR NOTICE.

## Engineering Data - Chilled Water Fan Coil Unit

MODEL				FWKE11E				
				HIGH	MEDIUM	LOW	QUIET	
NOMINAL COOLING CAPACITY			Btu/h	40100	33100	26800	21000	
			W	11750	9700	7850	6150	
NOMINAL SENSIBLE COOLING CAPACITY			Btu/h	28600	23800	18900	14600	
			W	8370	6970	5540	4270	
NOMINAL HEATING CAPACITY (ENTERING WATER TEMP. = 50°C)			Btu/h	46700	39100	31600	24100	
			W	13700	11450	9250	7050	
FAN INPUT POWER			W	120	83	39	23	
NOMINAL RUNNING CURRENT			A	0.95	0.55	0.35	0.21	
POWER SOURCE			V/Ph/Hz	220-240/1/ 50				
INDOOR UNIT	CONTROL		AIR DISCHARGE		4 WAY AUTOMATIC LOUVER (UP & DOWN)			
			OPERATION		LCD WIRELESS MICRO-COMPUTER REMOTE CONTROL			
	AIR FLOW		CFM	1060	870	680	510	
	NOMINAL WATER FLOW RATE		USGPM	9.00	7.43	6.01	4.71	
			litres/min	34.06	28.12	22.76	17.83	
	HEAD LOSS (COOLING)		kPa	41	30	22	15	
	HEAD LOSS (HEATING) : 50°C		kPa	37	26	20	12	
	MAX. WORKING PRESSURE		kPa	1608				
	SURFACE AIR VELOCITY		m/s	1.08	0.89	0.70	0.52	
	SOUND PRESSURE LEVEL		dBA	51	46	41	34	
	UNIT DIMENSION - (WITH PANEL)		H X W X D	mm300 x 820 x 820 (375 x 990 x 990)				
	PACKING DIMENSION - (PANEL)		H X W X D	mm376 x 916 x 916 (125 x 1020 x 1020)				
	UNIT WEIGHT (UNIT + PANEL)		kg	32 + 4				
	CONDENSATE DRAIN SIZE		mm	19.05				
	PIPE CONNECTION		mm	19.05 BSP FEMALE THREAD ADAPTOR				
	FAN		TYPE		TURBO FAN			
			DRIVE		DIRECT			
			FAN SPEED	RPM	750	630	510	400
			FAN EFFICIENCY	%	55.6	55.5	49.6	49.4
	FAN MOTOR		TYPE		BRUSHLESS DIRECT CURRENT			
			INDEX OF PROTECTION (IP)		IP20			
			INSULATION GRADE		E			
			RATED RUNNING CURRENT	A	0.95	0.55	0.35	0.21
			STARTING CURRENT	A	N/A			
			MOTOR OUTPUT	W	100			
			MOTOR EFFICIENCY	%	75.0	75.0	75.0	75.0
	COIL		POLES		8			
			TUBE	MATERIAL	COPPER			
DIAMETER				mm7.00				
FIN			MATERIAL	ALUMINIUM				
			FACE AREA	m²0.46				
ROW			3					
WATER VOLUME		litre	2.35					
AIR QUALITY		FILTER	TYPE	WASHABLE SARANET FILTER				
			QUANTITY	1				
CASING			COLOUR	WHITE				

## NOTE:

A) BASED ON EUROVENT CONDITIONS

B) ADDITIONAL 10W IS REQUIRED FOR CONDENSATE DRAIN PUMP

C) SOUND PRESSURE LEVEL IS TESTED AS PER JIS STANDARD AS BELOW:

FWKE05E(H) MODEL - 1.4M BELOW THE FACE CENTER OF AIR RETURN OF THE UNIT

FWKE08/11E(H) MODEL - 1.5M BELOW THE FACE CENTER OF AIR RETURN OF THE UNIT

MODE	COOLING	HEATING
ENTERING AIR TEMPERATURE	27°C DB / 19°C WB	20°C DB
ENTERING WATER TEMPERATURE	7°C	50°C (2 Pipes System)
LEAVING WATER TEMPERATURE	12°C	-

ALL SPECIFICATIONS ARE SUBJECTED TO CHANGE BY THE MANUFACTURER WITHOUT PRIOR NOTICE.

## Engineering Data - Chilled Water Fan Coil Unit

MODEL			FWKE05EH				FWKE08EH					
			HIGH	MEDIUM	LOW	QUIET	HIGH	MEDIUM	LOW	QUIET		
NOMINAL COOLING CAPACITY			Btu/h	15000	12300	9600	6800	24600	20800	17100	13300	
			W	4400	3600	2800	2000	7200	6100	5000	3900	
NOMINAL SENSIBLE COOLING CAPACITY			Btu/h	13100	10200	7600	5300	19600	16600	13000	9900	
			W	3850	2990	2240	1560	5750	4850	3810	2910	
NOMINAL HEATING CAPACITY (ENTERING WATER TEMP. = 70°C)			Btu/h	26100	21700	17200	12800	38200	32800	27300	21800	
			W	7650	6350	5050	3750	11200	9600	8000	6400	
FAN INPUT POWER			W	37	19	12	7	90	50	26	17	
NOMINAL RUNNING CURRENT			A	0.26	0.19	0.13	0.11	0.74	0.43	0.28	0.19	
POWER SOURCE			V/Ph/Hz	220-240/1/50								
INDOOR UNIT	CONTROL	AIR DISCHARGE OPERATION	4 WAY AUTOMATIC LOUVER (UP & DOWN) LCD WIRELESS MICRO-COMPUTER REMOTE CONTROL									
	AIR FLOW	CFM	620	470	350	220	890	720	560	420		
	NOMINAL WATER FLOW RATE (COOLING)		USGPM	3.39	2.76	2.14	1.53	5.50	4.67	3.83	2.99	
			litres/min	12.75	10.44	8.12	5.80	20.87	17.68	14.49	11.31	
	NOMINAL WATER FLOW RATE (HEATING)		USGPM	2.95	2.43	1.93	1.44	4.27	3.68	3.06	2.45	
			litres/min	11.09	9.20	7.31	5.44	16.23	13.91	11.58	9.28	
	HEAD LOSS (COOLING)		kPa	18	13	9	5	19	15	10	6	
	HEAD LOSS (HEATING) : 70°C		kPa	22	16	10	7	32	25	18	13	
	MAX. WORKING PRESSURE		kPa	1608								
	SURFACE AIR VELOCITY		m/s	0.76	0.57	0.43	0.27	1.13	0.92	0.71	0.54	
	SOUND PRESSURE LEVEL		dBA	37	31	23	16	47	42	37	31	
	UNIT DIMENSION - (WITH PANEL)		H X W X D	mm 265 x 820 x 820 (340 x 990 x 990)								
	PACKING DIMENSION - (PANEL)		H X W X D	mm 341 x 916 x 916 (125 x 1020 x 1020)								
	UNIT WEIGHT (UNIT + PANEL)		kg	26 + 4				28 + 4				
	CONDENSATE DRAIN SIZE		mm	19.05								
	PIPE CONNECTION		mm	19.05 BSP FEMALE THREAD ADAPTOR								
	FAN	TYPE	TURBO FAN									
		DRIVE	DIRECT									
		FAN SPEED	RPM	450	360	280	200	660	550	440	350	
		FAN EFFICIENCY	%	50.3	51.3	37.4	22.0	51.9	52.6	49.6	40.5	
	FAN MOTOR	TYPE	BRUSHLESS DIRECT CURRENT									
		INDEX OF PROTECTION (IP)	IP20									
		INSULATION GRADE	E									
		RATED RUNNING CURRENT	A	0.26	0.19	0.13	0.11	0.74	0.43	0.28	0.19	
		STARTING CURRENT	A	N/A				N/A				
		MOTOR OUTPUT	W	70				70				
MOTOR EFFICIENCY		%	70.0	70.0	70.0	70.0	75.0	75.0	75.0	75.0		
COIL	POLES	8										
	TUBE	MATERIAL	COPPER									
		DIAMETER	mm	7.00								
	FIN	MATERIAL	ALUMINIUM									
		FACE AREA	m²	0.39				0.37				
	ROW	2				3						
WATER VOLUME		litre	1.36				1.97					
AIR QUALITY	FILTER	TYPE	WASHABLE SARANET FILTER									
CASING	QUANTITY	pc	1									
	COLOUR		WHITE									

## NOTE:

A) BASED ON EUROVENT CONDITIONS

B) ADDITIONAL 10W IS REQUIRED FOR CONDENSATE DRAIN PUMP

C) SOUND PRESSURE LEVEL IS TESTED AS PER JIS STANDARD AS BELOW:

FWKE05E(H) MODEL - 1.4M BELOW THE FACE CENTER OF AIR RETURN OF THE UNIT

FWKE08/11E(H) MODEL - 1.5M BELOW THE FACE CENTER OF AIR RETURN OF THE UNIT

MODE	COOLING	HEATING
ENTERING AIR TEMPERATURE	27°C DB / 19°C WB	20°C DB
ENTERING WATER TEMPERATURE	7°C	50°C (2 Pipes System) 70°C (4 Pipes System)
LEAVING WATER TEMPERATURE	12°C	60°C (4 Pipes System)

ALL SPECIFICATIONS ARE SUBJECTED TO CHANGE BY THE MANUFACTURER WITHOUT PRIOR NOTICE.



## Engineering Data - Chilled Water Fan Coil Unit

MODEL				FWKE11EH				
				HIGH	MEDIUM	LOW	QUIET	
NOMINAL COOLING CAPACITY			Btu/h	30700	26400	22200	17700	
			W	9000	7750	6500	5200	
NOMINAL SENSIBLE COOLING CAPACITY			Btu/h	24500	20700	16700	13300	
			W	7170	6060	4900	3890	
NOMINAL HEATING CAPACITY (ENTERING WATER TEMP. = 70°C)			Btu/h	53400	46200	39100	31900	
			W	15650	13550	11450	9350	
FAN INPUT POWER			W	120	83	39	23	
NOMINAL RUNNING CURRENT			A	0.95	0.55	0.35	0.21	
POWER SOURCE			V/Ph/Hz	220-240/1/50				
INDOOR UNIT	CONTROL		AIR DISCHARGE OPERATION		4 WAY AUTOMATIC LOUVER (UP & DOWN) LCD WIRELESS MICRO-COMPUTER REMOTE CONTROL			
	AIR FLOW		CFM	1060	870	680	510	
	NOMINAL WATER FLOW RATE (COOLING)		USGPM	6.91	5.93	4.98	3.98	
			litres/min	26.09	22.47	18.84	15.07	
	NOMINAL WATER FLOW RATE (HEATING)		USGPM	5.99	5.19	4.38	3.58	
			litres/min	22.68	19.64	16.60	13.55	
	HEAD LOSS (COOLING)		kPa	32	24	19	12	
	HEAD LOSS (HEATING) : 50°C		kPa	52	39	30	21	
	MAX. WORKING PRESSURE		kPa	1608				
	SURFACE AIR VELOCITY		m/s	1.08	0.89	0.70	0.52	
	SOUND PRESSURE LEVEL		dBA	51	46	41	34	
	UNIT DIMENSION - (WITH PANEL)		H X W X D	mm 300 x 820 x 820 (375 x 990 x 990)				
	PACKING DIMENSION - (PANEL)		H X W X D	mm 376 x 916 x 916 (125 x 1020 x 1020)				
	UNIT WEIGHT (UNIT + PANEL)		kg	32 + 4				
	CONDENSATE DRAIN SIZE		mm	19.05				
	PIPE CONNECTION		mm	19.05 BSP FEMALE THREAD ADAPTOR				
	FAN		TYPE		TURBO FAN			
			DRIVE		DIRECT			
			FAN SPEED	RPM	750	630	510	400
			FAN EFFICIENCY	%	55.6	55.5	49.6	49.4
	FAN MOTOR		TYPE		BRUSHLESS DIRECT CURRENT			
			INDEX OF PROTECTION (IP)		IP20			
			INSULATION GRADE		E			
			RATED RUNNING CURRENT	A	0.95	0.55	0.35	0.21
			STARTING CURRENT	A	N/A			
			MOTOR OUTPUT	W	100			
			MOTOR EFFICIENCY	%	75.0	75.0	75.0	75.0
	POLES		8					
	COIL		TUBE	MATERIAL		COPPER		
				DIAMETER	mm	7.00		
			FIN	MATERIAL		ALUMINIUM		
				FACE AREA	m²	0.46		
				ROW	3			
	WATER VOLUME		litre	2.35				
	AIR QUALITY	FILTER	TYPE		WASHABLE SARANET FILTER			
			QUANTITY	pc	1			
	CASING			COLOUR	WHITE			

## NOTE:

A) BASED ON EUROVENT CONDITIONS

B) ADDITIONAL 10W IS REQUIRED FOR CONDENSATE DRAIN PUMP

C) SOUND PRESSURE LEVEL IS TESTED AS PER JIS STANDARD AS BELOW:

FWKE05E(H) MODEL - 1.4M BELOW THE FACE CENTER OF AIR RETURN OF THE UNIT

FWKE08/11E(H) MODEL - 1.5M BELOW THE FACE CENTER OF AIR RETURN OF THE UNIT

MODE	COOLING	HEATING
ENTERING AIR TEMPERATURE	27°C DB / 19°C WB	20°C DB
ENTERING WATER TEMPERATURE	7°C	50°C (2 Pipes System)
		70°C (4 Pipes System)
LEAVING WATER TEMPERATURE	12°C	60°C (4 Pipes System)

ALL SPECIFICATIONS ARE SUBJECTED TO CHANGE BY THE MANUFACTURER WITHOUT PRIOR NOTICE.

## Engineering Data - Chilled Water Fan Coil Unit

MODEL				FWE05E	FWE06E	FWE07E	FWE08E	FWE10E	FWE12E	
NOMINAL COOLING CAPACITY		Btu/h		15500	20300	21000	25000	34000	47000	
		W		4540	5950	6150	7330	9960	13770	
NOMINAL SENSIBLE COOLING CAPACITY		Btu/h		12700	15400	16150	19250	25500	32900	
		W		3720	4510	4730	5640	7470	9640	
NOMINAL HEATING CAPACITY (ENTERING WATER TEMP. = 50°C)		Btu/h		19500	25000	28000	35000	47000	59000	
		W		5720	7330	8210	10260	13770	17290	
NOMINAL TOTAL INPUT POWER		W		86	135	160	148	197	225	
NOMINAL RUNNING CURRENT		A		0.38	0.67	0.79	0.65	0.87	0.99	
POWER SOURCE		V/Ph/Hz		220-240/1/50						
INDOOR UNIT	CONTROL	AIR DISCHARGE OPERATION			AUTOMATIC LOUVER (UP & DOWN)					
					LCD WIRELESS MICRO-COMPUTER REMOTE CONTROL					
	AIR FLOW	HIGH	CFM	520	580	640	840	1120	1230	
		MEDIUM	CFM	460	530	560	750	980	1090	
		LOW	CFM	406	490	460	660	860	990	
	NOMINAL WATER FLOW RATE	USGPM	3.43	4.49	4.67	5.77	7.71	10.17		
		litres/min	12.98	17.00	17.68	21.85	29.19	38.53		
	HEAD LOSS (COOLING)		kPa	27	48	57	36	50	67	
	HEAD LOSS (HEATING) : 50°C		kPa	24	42	50	32	45	58	
	MAX. WORKING PRESSURE		kPa	1608						
	SURFACE AIR VELOCITY		m/s	0.91	1.02	1.12	1.50	1.63	1.50	
	SOUND PRESSURE LEVEL (H/M/L)		dBA	45 / 38 / 36	48 / 43 / 39	49 / 46 / 41	48/47/44	52/47/46	52/50/49	
	UNIT DIMENSION		H X W X D	mm	212 x 1090 x 630			259 x 1320 x 635	259 x 1538 x 635	259 x 1786 x 635
	PACKING DIMENSION		H X W X D	mm	297 x 1197 x 740			348 x 1393 x 734	348 x 1612 x 734	348 x 1860 x 734
	UNIT WEIGHT		kg	27			41	46	53	
	CONDENSATE DRAIN SIZE		mm	19.05						
	PIPE CONNECTION		mm	12.70 BSP FEMALE THREAD ADAPTOR			19.05 BSP FEMALE THREAD ADAPTOR			
	FAN	TYPE				BLOWER				
			DRIVE			DIRECT				
		FAN SPEED	HIGH	RPM	1220	1300	1400	1235	1300	1310
			MEDIUM	RPM	990	1100	1200	1120	1170	1170
			LOW	RPM	890	930	1000	1010	1090	1050
		FAN EFFICIENCY	HIGH	%	30.2	27.6	14.9	46.0	45.2	39.1
			MEDIUM	%	34.9	26.7	15.8	47.1	46.5	42.6
			LOW	%	34.7	27.1	20	50.0	46.4	42.9
	FAN MOTOR	TYPE		PERMANENT SPLIT CAPACITOR (INDUCTION)						
		INDEX OF PROTECTION (IP)		IP20						
		INSULATION GRADE		B						
		RATED INPUT POWER	HIGH	W	86	135	160	148	197	225
			MEDIUM	W	58	97	113	138	169	190
			LOW	W	51	83	91	126	153	173
		RATED RUNNING CURRENT	HIGH	A	0.38	0.67	0.79	0.65	0.87	0.99
MEDIUM			A	0.26	0.45	0.52	0.61	0.74	0.84	
LOW			A	0.23	0.39	0.44	0.55	0.67	0.76	
STARTING CURRENT		A	1.10	1.20	1.30	1.15	1.54	1.88		
MOTOR OUTPUT		W	50	65	70	92	118	149		
MOTOR EFFICIENCY		HIGH	%	51.0	49.4	54.9	53.5	57.7	56.2	
		MEDIUM	%	36.5	37.5	42.0	40.2	47.4	43.3	
		LOW	%	30.2	26.2	29.4	29.7	40.7	33.5	
POLES		4								
COIL	TUBE	MATERIAL		COPPER						
		DIAMETER		7.00						
	FIN	MATERIAL		ALUMINIUM						
		FACE AREA		0.27		0.26	0.32	0.38		
		ROW		3		4	4			
WATER VOLUME		litre	1.41		1.23	1.48	2.37			
AIR QUALITY CASING	FILTER	TYPE		WASHABLE SARANET FILTER						
		QUANTITY		pc	2	3	3	4		
		COLOUR		LIGHT GREY						

MODE	COOLING	HEATING
ENTERING AIR TEMPERATURE	27°C DB / 19°C WB	20°C DB
ENTERING WATER TEMPERATURE	7°C	50°C (2 Pipes System)
LEAVING WATER TEMPERATURE	12°C	-

ALL SPECIFICATIONS ARE SUBJECTED TO CHANGE BY THE MANUFACTURER WITHOUT PRIOR NOTICE.

## Engineering Data - Chilled Water Fan Coil Unit

MODEL				FWC03C	FWC04C	FWC06C	FWC07C	
NOMINAL COOLING CAPACITY			Btu/h	9900	11600	18000	22500	
			W	2900	3400	5280	6590	
NOMINAL SENSIBLE COOLING CAPACITY			Btu/h	7000	8120	12600	15750	
			W	2050	2380	3690	4620	
NOMINAL HEATING CAPACITY (ENTERING WATER TEMP. = 50°C)			Btu/h	11500	15000	23000	29000	
			W	3370	4400	6740	8500	
NOMINAL TOTAL INPUT POWER			W	89	140	168	182	
NOMINAL RUNNING CURRENT			A	0.40	0.65	0.77	0.86	
POWER SOURCE			V/Ph/Hz	220-240/1/50				
INDOOR UNIT	CONTROL	AIR DISCHARGE OPERATION		DUCTED				
				WIRED REMOTE CONTROL				
	AIR FLOW	HIGH	CFM	300	510	700	730	
		MEDIUM	CFM	285	490	675	660	
		LOW	CFM	260	400	640	580	
	EXTERNAL STATIC PRESSURE		Pa	49 / 44 / 36	49 / 42 / 28	49 / 45 / 41	49 / 43 / 30	
	NOMINAL WATER FLOW RATE		USGPM	2.20	2.60	4.05	5.06	
			litres/min	8.33	9.84	15.33	19.15	
	HEAD LOSS (COOLING)		kPa	10.5	24.0	20.1	32.4	
	HEAD LOSS (HEATING) : 50°C		kPa	8.8	20.3	17.0	27.6	
	MAX. WORKING PRESSURE		kPa	1608				
	SURFACE AIR VELOCITY		m/s	1.23	1.68	1.88	1.70	
	SOUND PRESSURE LEVEL (H/M/L)		dBA	36 / 35 / 33	40 / 38 / 33	42 / 41 / 40	41 / 40 / 36	
	UNIT DIMENSION	H X W X D	mm	267 x 702 x 351	267 x 842 x 351	267 x 1002 x 351	267 x 1137 x 351	
	PACKING DIMENSION	H X W X D	mm	376 x 951 x 541	376 x 1091 x 541	376 x 1251 x 541	376 x 1386 x 541	
	UNIT WEIGHT		kg	18	22	24	26	
	CONDENSATE DRAIN SIZE		mm	19.05				
	PIPE CONNECTION		mm	19.05 BSP FEMALE THREAD ADAPTOR				
	FAN	TYPE			BLOWER			
			DRIVE		DIRECT			
		FAN SPEED	HIGH	RPM	1282	1385	1369	1348
			MEDIUM	RPM	1221	1279	1331	1270
			LOW	RPM	1117	1078	1263	1072
		FAN EFFICIENCY	HIGH	%	38.70	42.90	39.70	36.20
			MEDIUM	%	40.70	51.90	47.50	38.10
	LOW		%	43.00	50.30	48.90	39.10	
	FAN MOTOR	TYPE		PERMANENT SPLIT CAPACITOR (INDUCTION)				
		INDEX OF PROTECTION (IP)		IP20				
		INSULATION GRADE		B				
		RATED INPUT POWER	HIGH	W	89	140	168	182
			MEDIUM	W	86	128	165	175
			LOW	W	78	127	163	163
RATED RUNNING CURRENT		HIGH	A	0.40	0.65	0.77	0.86	
		MEDIUM	A	0.39	0.59	0.76	0.83	
		LOW	A	0.35	0.59	0.75	0.77	
STARTING CURRENT		A	0.73	1.66	1.22	1.86		
MOTOR OUTPUT		W	38	72	80	90		
MOTOR EFFICIENCY		HIGH	%	47.90	49.70	56.40	57.50	
	MEDIUM	%	42.40	39.60	50.90	48.40		
	LOW	%	33.50	24.80	44.10	30.40		
COIL	POLES		4					
	TUBE	MATERIAL		COPPER				
		DIAMETER		9.52				
	FIN	MATERIAL		ALUMINIUM				
		FACE AREA		0.11	0.14	0.18	0.20	
ROW		3						
WATER VOLUME		litre	0.90	1.20	1.40	1.60		
AIR QUALITY	FILTER	TYPE		WASHABLE SARANET FILTER				
		QUANTITY		1				
CASING		pc	COLOUR					
			WITHOUT PAINT					

MODE	COOLING	HEATING
ENTERING AIR TEMPERATURE	27°C DB / 19°C WB	20°C DB
ENTERING WATER TEMPERATURE	7°C	50°C (2 Pipes System)
LEAVING WATER TEMPERATURE	12°C	-

ALL SPECIFICATIONS ARE SUBJECTED TO CHANGE BY THE MANUFACTURER WITHOUT PRIOR NOTICE.

## Engineering Data - Chilled Water Fan Coil Unit

MODEL				FWC09C	FWC11C	FWC12C	FWC14C	FWC16C	
NOMINAL COOLING CAPACITY			Btu/h	24800	38000	37000	44700	51800	
			W	7270	11140	10840	13100	15180	
NOMINAL SENSIBLE COOLING CAPACITY			Btu/h	19700	29800	29300	35100	40900	
			W	5770	8730	8590	10290	11990	
NOMINAL HEATING CAPACITY (ENTERING WATER TEMP. = 50°C)			Btu/h	32800	49200	48000	54900	65300	
			W	9610	14420	14070	16090	19140	
NOMINAL TOTAL INPUT POWER			W	345	504	442	427	531	
NOMINAL RUNNING CURRENT			A	1.50	2.28	1.93	1.86	2.32	
POWER SOURCE			V/Ph/Hz	220-240/1/50					
INDOOR UNIT	CONTROL	AIR DISCHARGE OPERATION		DUCTED					
				WIRED REMOTE CONTROL					
	AIR FLOW	HIGH	CFM	830	1250	1240	1340	1550	
		MEDIUM	CFM	760	1130	1100	1220	1400	
		LOW	CFM	710	1040	1020	1190	1300	
	EXTERNAL STATIC PRESSURE		Pa	167 / 128 / 88	118 / 108 / 88	128 / 88 / 39	157 / 137 / 108	157 / 137 / 98	
	NOMINAL WATER FLOW RATE		USGPM	5.55	8.59	8.28	10.04	11.62	
			litres/min	21.01	32.51	31.34	38.00	43.98	
	HEAD LOSS (COOLING)		kPa	14.0	39.0	23.0	38.0	51.0	
	HEAD LOSS (HEATING) : 50°C		kPa	11.0	37.0	19.0	33.0	48.0	
	MAX. WORKING PRESSURE		kPa	1608					
	SURFACE AIR VELOCITY		m/s	1.41	1.75	1.83	1.54	1.52	
	SOUND PRESSURE LEVEL (H/M/L)		dBA	46 / 42 / 38	51 / 48 / 45	49 / 45 / 41	52 / 50 / 47	53 / 50 / 47	
	UNIT DIMENSION		H X W X D	mm	384 x 917 x 462	316 x 1225 x 559	384 x 1003 x 462	384 x 1287 x 462	384 x 1487 x 462
	PACKING DIMENSION		H X W X D	mm	415 x 1126 x 631	355 x 1461 x 727	415 x 1245 x 631	415 x 1497 x 631	415 x 1701 x 631
	UNIT WEIGHT		kg	42	47	44	50	56	
	CONDENSATE DRAIN SIZE		mm	19.05					
	PIPE CONNECTION		mm	19.05 BSP FEMALE THREAD ADAPTOR					
	FAN	TYPE	DRIVE		BLOWER				
					DIRECT				
		FAN SPEED	HIGH	RPM	1230	1381	1260	1284	1303
			MEDIUM	RPM	1093	1268	1097	1203	1215
			LOW	RPM	937	1169	913	1108	1067
		FAN EFFICIENCY	HIGH	%	37.20	46.00	42.20	43.70	41.70
			MEDIUM	%	39.50	49.10	42.90	47.30	43.30
			LOW	%	41.60	44.50	44.30	48.70	43.40
	FAN MOTOR	TYPE		PERMANENT SPLIT CAPACITOR (INDUCTION)					
		INDEX OF PROTECTION (IP)		IP20	IP21	IP22	IP20	IP20	
		INSULATION GRADE		B					
		RATED INPUT POWER	HIGH	W	345	504	442	427	531
			MEDIUM	W	304	380	384	388	466
			LOW	W	270	338	342	373	413
		RATED RUNNING CURRENT	HIGH	A	1.50	2.28	1.93	1.86	2.32
			MEDIUM	A	1.34	1.72	1.69	1.69	2.02
			LOW	A	1.21	1.53	1.54	1.63	1.81
		STARTING CURRENT		A	2.43	2.77	3.18	3.50	4.90
		MOTOR OUTPUT		W	310	470	355	373	500
		MOTOR EFFICIENCY	HIGH	%	60.80	63.10	63.80	63.00	68.00
			MEDIUM	%	47.40	60.80	47.50	58.60	59.60
			LOW	%	34.80	53.00	32.30	49.40	46.10
	COIL	POLES		4					
		TUBE	MATERIAL	COPPER					
			DIAMETER	mm	9.52				
		FIN	MATERIAL	ALUMINIUM					
			FACE AREA	m²	0.28	0.34	0.32	0.41	0.48
		ROW		3	3	3	3	3	
	WATER VOLUME		litre	2.20	2.70	2.60	3.30	3.80	
AIR QUALITY	FILTER	TYPE	WASHABLE SARANET FILTER						
CASING		QUANTITY	pc	2					
		COLOUR	WITHOUT PAINT						

MODE	COOLING	HEATING
ENTERING AIR TEMPERATURE	27°C DB / 19°C WB	20°C DB
ENTERING WATER TEMPERATURE	7°C	50°C (2 Pipes System)
LEAVING WATER TEMPERATURE	12°C	-

ALL SPECIFICATIONS ARE SUBJECTED TO CHANGE BY THE MANUFACTURER WITHOUT PRIOR NOTICE.

## Engineering Data - Chilled Water Fan Coil Unit

MODEL				FWC02FD	FWC03FD	FWC04FD	FWC05FD	
NOMINAL COOLING CAPACITY			Btu/h	6600	8700	12100	14000	
			W	1930	2550	3550	4100	
NOMINAL SENSIBLE COOLING CAPACITY			Btu/h	5400	6300	9500	9600	
			W	1580	1850	2780	2810	
NOMINAL TOTAL INPUT POWER			W	92	108	131	151	
NOMINAL RUNNING CURRENT			A	0.42	0.50	0.58	0.66	
POWER SOURCE			V/Ph/Hz	220-240/1/50				
INDOOR UNIT	CONTROL	AIR DISCHARGE OPERATION		DUCTED				
				WITHOUT CONTROLLER				
	AIR FLOW	HIGH	CFM	280	310	450	460	
		MEDIUM	CFM	270	300	430	450	
		LOW	CFM	220	280	360	400	
	EXTERNAL STATIC PRESSURE (H/M/L)		Pa	53 / 50 / 34	53 / 50 / 44	55 / 50 / 40	78 / 75 / 60	
	NOMINAL WATER FLOW RATE		USGPM	0.84	1.06	1.50	1.72	
			litres/min	3.17	4.00	5.67	6.50	
	HEAD LOSS (COOLING)		kPa	24.9	20.8	17.2	31.2	
	MAX. WORKING PRESSURE		kPa	1608				
	SURFACE AIR VELOCITY		m/s	1.20	1.33	1.25	1.28	
	SOUND PRESSURE LEVEL (H/M/L)		dBA	40 / 39 / 36	40 / 39 / 37	41 / 40 / 37	42 / 41 / 39	
	UNIT DIMENSION	H X W X D	mm	247 x 552 x 619		247 x 552 x 870		
	PACKING DIMENSION	H X W X D	mm	320 x 630 x 737		320 x 630 x 987		
	UNIT WEIGHT		kg	16	17	23	24	
	CONDENSATE DRAIN SIZE		mm	19.05				
	PIPE CONNECTION		mm	19.05 BSPT FEMALE TREAD ADAPTOR				
	FAN	TYPE		CENTRIFUGAL				
		DRIVE		DIRECT				
		QUANTITY		1	1	2	2	
		FAN SPEED	HIGH	RPM	1265	1379	1290	1389
			MEDIUM	RPM	1232	1356	1245	1369
			LOW	RPM	1107	1290	1115	1290
		FAN EFFICIENCY	HIGH	%	40.4	37.5	40.0	36.4
			MEDIUM	%	40.8	39.4	41.1	38.6
			LOW	%	41.9	42.8	40.1	42.9
	FAN MOTOR	TYPE		PERMANENT SPLIT CAPACITOR (INDUCTION)				
		INDEX OF PROTECTION (IP)		IP20				
		INSULATION GRADE		B				
		QUANTITY		1	1	1	1	
		RATED INPUT POWER	HIGH	W	92	108	131	151
			MEDIUM	W	86	100	124	131
			LOW	W	68	84	105	102
		RATED RUNNING CURRENT	HIGH	A	0.42	0.50	0.58	0.66
			MEDIUM	A	0.38	0.44	0.54	0.58
			LOW	A	0.30	0.37	0.46	0.49
		STARTING CURRENT		A	0.68	1.08	1.08	1.41
		MOTOR OUTPUT		W	36	71	71	100
		MOTOR EFFICIENCY	HIGH	%	37.0	45.9	53.3	53.6
			MEDIUM	%	35.1	44.0	48.1	52.0
			LOW	%	28.2	40.0	34.4	46.0
	POLES			4	4	4	4	
	COIL	TUBE	MATERIAL		COPPER			
			DIAMETER	mm	7			
		FIN	MATERIAL		ALUMINIUM			
			FACE AREA	m²	0.11	0.11	0.17	0.17
		ROW			3	4	3	4
	WATER VOLUME		litre	0.38	0.63	0.72	0.96	
AIR QUALITY	FILTER	TYPE		WASHABLE SARANET FILTER				
		QUANTITY		2				
CASING		COLOUR		WITHOUT PAINT				

MODE	COOLING
ENTERING AIR TEMPERATURE	24°C DB / 18°C WB
ENTERING WATER TEMPERATURE	5.5°C
LEAVING WATER TEMPERATURE	14.5°C

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## Engineering Data - Chilled Water Fan Coil Unit

MODEL				FWC06FD	FWC08FD	FWC10FD	
NOMINAL COOLING CAPACITY			Btu/h	17000	24500	28500	
			W	4980	7180	8350	
NOMINAL SENSIBLE COOLING CAPACITY			Btu/h	11800	17000	20200	
			W	3460	4980	5920	
NOMINAL TOTAL INPUT POWER			W	192	265	321	
NOMINAL RUNNING CURRENT			A	0.95	1.28	1.57	
POWER SOURCE			V/Ph/Hz	220-240/1/50			
INDOOR UNIT	CONTROL	AIR DISCHARGE OPERATION		DUCTED			
				WITHOUT CONTROLLER			
	AIR FLOW	HIGH	CFM	570	820	940	
		MEDIUM	CFM	560	800	920	
		LOW	CFM	500	750	840	
	EXTERNAL STATIC PRESSURE (H/M/L)		Pa	77 / 75 / 61	78 / 75 / 66	78 / 75 / 67	
	NOMINAL WATER FLOW RATE (COOLING)		USGPM	2.11	3.04	3.52	
			litres/min	8.00	11.50	13.33	
	HEAD LOSS (COOLING)		kPa	18.7	25.0	19.4	
	MAX. WORKING PRESSURE		kPa	1608			
	SURFACE AIR VELOCITY		m/s	1.24	1.29	1.22	
	SOUND PRESSURE LEVEL (H/M/L)		dBA	45 / 44 / 41	47 / 46 / 45	48 / 47 / 45	
	UNIT DIMENSION	H X W X D	mm	247 x 552 x 1060	247 x 552 x 1390	247 x 552 x 1600	
	PACKING DIMENSION	H X W X D	mm	320 x 630 x 1177	320 x 630 x 1507	320 x 630 x 1717	
	UNIT WEIGHT		kg	28	38	45	
	CONDENSATE DRAIN SIZE		mm	19.05			
	PIPE CONNECTION		mm	19.05 BSPT FEMALE TREAD ADAPTOR			
	FAN	TYPE		CENTRIFUGAL			
		DRIVE		DIRECT			
		QUANTITY		2	3	4	
		FAN SPEED	HIGH	RPM	1415	1430/1403	1422
			MEDIUM	RPM	1395	1415/1388	1402
			LOW	RPM	1283	1336/1337	1322
		FAN EFFICIENCY	HIGH	%	33.7	40.9	31.0
			MEDIUM	%	38.1	45.9	32.3
			LOW	%	36.9	45.7	38.4
	FAN MOTOR	TYPE		PERMANENT SPLIT CAPACITOR (INDUCTION)			
		INDEX OF PROTECTION (IP)		IP20			
		INSULATION GRADE		B			
		QUANTITY		1	2	2	
		RATED INPUT POWER	HIGH	W	192	265	321
			MEDIUM	W	178	242	297
			LOW	W	149	201	253
		RATED RUNNING CURRENT	HIGH	A	0.95	1.28	1.57
			MEDIUM	A	0.79	1.06	1.31
			LOW	A	0.65	0.88	1.11
		STARTING CURRENT		A	2.65	2.65/1.08	2.65
		MOTOR OUTPUT		W	150	150/71	150
		MOTOR EFFICIENCY	HIGH	%	58.5	54.6/40.1	60.2
			MEDIUM	%	53.6	48.6/39.4	56.7
	LOW		%	41.4	43.9/38.1	44.9	
	POLES			4	4	4	
	COIL	TUBE	MATERIAL	COPPER			
			DIAMETER	7			
		FIN	MATERIAL	ALUMINIUM			
			FACE AREA	0.22			
		ROW		4	4	4	
	WATER VOLUME		litre	1.22	1.67	1.95	
AIR QUALITY	FILTER	TYPE		WASHABLE SARANET FILTER			
		QUANTITY		2	3		
CASING			COLOUR	WITHOUT PAINT			

MODE	COOLING
ENTERING AIR TEMPERATURE	24°C DB / 18°C WB
ENTERING WATER TEMPERATURE	5.5°C
LEAVING WATER TEMPERATURE	14.5°C

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## Engineering Data - Chilled Water Fan Coil Unit

## Low Static Pressure (LSP)

MODEL				FWC02G	FWC03G	FWC04G	FWC06G	
NOMINAL COOLING CAPACITY			Btu/h	6000	9000	12000	18000	
			W	1760	2640	3520	5280	
NOMINAL SENSIBLE COOLING CAPACITY			Btu/h	5000	7000	9700	14400	
			W	1470	2050	2840	4220	
NOMINAL TOTAL INPUT POWER			W	53	61	81	116	
NOMINAL RUNNING CURRENT			A	0.23	0.27	0.36	0.50	
POWER SOURCE			V/Ph/Hz	220-240/1/50				
INDOOR UNIT	CONTROL	AIR DISCHARGE OPERATION		DUCTED				
				WITHOUT CONTROLLER				
	AIR FLOW	HIGH	CFM	200	300	400	600	
		MEDIUM	CFM	160	220	305	500	
		LOW	CFM	130	150	200	385	
	EXTERNAL STATIC PRESSURE (H/M/L)		Pa	30/19/12	30/16/7	30/18/7	30/21/13	
	NOMINAL WATER FLOW RATE		USGPM	1.32	2.00	2.66	3.99	
			litres/min	5.00	7.57	10.09	15.13	
	HEAD LOSS (COOLING)		kPa	7	20	25	34	
	MAX. WORKING PRESSURE		kPa	1608				
	SURFACE AIR VELOCITY		m/s	1.26	1.17	1.56	1.99	
	SOUND PRESSURE LEVEL (H/M/L)		dBA	31/26/20	32/25/20	35/29/21	38/35/30	
	UNIT DIMENSION		H X W X D	mm	251X630X461	251X774X461	251X774X461	251X874X461
	PACKING DIMENSION		H X W X D	mm	595X836X284	595x984x284	595x984x284	595x1084x284
	UNIT WEIGHT			kg	11.00	14.50	15.00	17.50
	CONDENSATE DRAIN SIZE			mm	19.05			
	PIPE CONNECTION			mm	19.05 BSPT FEMALE THREAD ADAPTOR			
	FAN	TYPE			BLOWER			
					DIRECT			
		QUANTITY			1	2	2	2
		FAN SPEED	HIGH	RPM	985	970	1070	1300
			MEDIUM	RPM	800	740	870	1120
			LOW	RPM	655	540	610	940
		FAN EFFICIENCY	HIGH	%	34.2	34.8	32.5	33.4
			MEDIUM	%	36.7	36.1	34.6	34.1
			LOW	%	40.4	39.6	39.0	35.5
		FAN MOTOR	TYPE		PERMANENT SPLIT CAPACITOR (INDUCTION)			
	INDEX OF PROTECTION (IP)		IP20					
	INSULATION GRADE		B					
	QUANTITY			1	1	1	1	
	RATED INPUT POWER		HIGH	W	53	61	81	116
			MEDIUM	W	30	39	57	91
			LOW	W	19	21	30	67
	RATED RUNNING CURRENT		HIGH	A	0.23	0.27	0.36	0.50
			MEDIUM	A	0.13	0.17	0.25	0.39
			LOW	A	0.08	0.09	0.13	0.29
	STARTING CURRENT		A	0.27	0.37	0.47	0.97	
	MOTOR OUTPUT		W	15	21	32	70	
	MOTOR EFFICIENCY		HIGH	%	28.20	28.60	38.70	54.80
			MEDIUM	%	24.40	19.00	27.20	40.70
			LOW	%	19.00	11.90	15.80	29.10
	COIL	POLES		4				
		TUBE	MATERIAL		COPPER			
			DIAMETER		7.00			
		FIN	MATERIAL		ALUMINIUM			
			FACE AREA		0.08	0.12	0.12	0.14
	ROW		3					
	WATER VOLUME		litre	0.28	0.45	0.45	0.62	
AIR QUALITY CASING	FILTER	TYPE		OPTION (WASHABLE SARANET FILTER OR ALUMINIUM MESH FILTER)				
		QUANTITY		2				
		pc	WITHOUT PAINT					
		COLOUR						

MODE	COOLING
ENTERING AIR TEMPERATURE	27°C DB / 19°C WB
ENTERING WATER TEMPERATURE	7°C
LEAVING WATER TEMPERATURE	12°C

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# Engineering Data - Chilled Water Fan Coil Unit

## Low Static Pressure (LSP)

MODEL				FWC08G	FWC10G	FWC12G		
NOMINAL COOLING CAPACITY			Btu/h	24000	30000	36000		
			W	7030	8790	10550		
NOMINAL SENSIBLE COOLING CAPACITY			Btu/h	19100	23400	27900		
			W	5600	6860	8180		
NOMINAL TOTAL INPUT POWER			W	159	202	241		
NOMINAL RUNNING CURRENT			A	0.72	0.90	1.05		
POWER SOURCE			V/Ph/Hz	220-240/1/50				
INDOOR UNIT	CONTROL	AIR DISCHARGE OPERATION		DUCTED				
				WITHOUT CONTROLLER				
	AIR FLOW	HIGH	CFM	800	1000	1200		
		MEDIUM	CFM	650	805	975		
		LOW	CFM	465	600	810		
	EXTERNAL STATIC PRESSURE (H/M/L)		Pa	30/19/10	30/18/11	30/20/13		
	NOMINAL WATER FLOW RATE		USGPM	5.33	6.66	7.99		
			litres/min	20.18	25.22	30.26		
	HEAD LOSS (COOLING)		kPa	38	42	38		
	MAX. WORKING PRESSURE		kPa	1608				
	SURFACE AIR VELOCITY		m/s	1.69	2.11	2.05		
	SOUND PRESSURE LEVEL (H/M/L)		dBA	39/34/26	41/37/31	42/39/35		
	UNIT DIMENSION		H X W X D	mm	251x1264x461	251x1264x461	251x1514x461	
	PACKING DIMENSION		H X W X D	mm	595x1437x284	595x1473x284	595x1724x284	
	UNIT WEIGHT		kg	26	26	30		
	CONDENSATE DRAIN SIZE		mm	19.05				
	PIPE CONNECTION		mm	19.05 BSPT FEMALE THREAD ADAPTOR				
	FAN		TYPE		BLOWER			
			DRIVE		DIRECT			
			QUANTITY		3	3	4	
			FAN SPEED	HIGH	RPM	1140	1275	1220
				MEDIUM	RPM	950	1035	1010
				LOW	RPM	710	805	835
			FAN EFFICIENCY	HIGH	%	52.90	43.90	37.70
				MEDIUM	%	53.60	51.20	33.90
				LOW	%	57.60	57.30	46.70
			FAN MOTOR	TYPE		PERMANENT SPLIT CAPACITOR (INDUCTION)		
	INDEX OF PROTECTION (IP)			IP20				
	INSULATION GRADE			B				
	QUANTITY			2	2	2		
	RATED INPUT POWER	HIGH		W	159	202	241	
		MEDIUM		W	126	161	187	
		LOW		W	81	115	148	
	RATED RUNNING CURRENT	HIGH		A	0.72	0.90	1.05	
		MEDIUM		A	0.54	0.70	0.82	
		LOW		A	0.35	0.50	0.65	
	STARTING CURRENT			A	0.93	1.31	1.51	
	MOTOR OUTPUT			W	74	109	122	
	MOTOR EFFICIENCY	HIGH		%	44.00	54.20	51.90	
		MEDIUM		%	32.70	34.80	35.90	
		LOW		%	20.80	21.40	25.20	
	COIL	POLES		4				
		TUBE	MATERIAL		COPPER			
			DIAMETER		7.00			
		FIN	MATERIAL		ALUMINIUM			
			FACE AREA		0.22	0.22	0.28	
		ROW		3				
	WATER VOLUME		litre	0.90	1.04	1.29		
AIR QUALITY	FILTER	TYPE		OPTION (WASHABLE SARANET FILTER OR ALUMINIUM MESH FILTER)				
CASING		QUANTITY		pc	3	3	4	
			COLOUR	WITHOUT PAINT				

MODE	COOLING
ENTERING AIR TEMPERATURE	27°C DB / 19°C WB
ENTERING WATER TEMPERATURE	7°C
LEAVING WATER TEMPERATURE	12°C

ALL SPECIFICATIONS ARE SUBJECTED TO CHANGE BY THE MANUFACTURER WITHOUT PRIOR NOTICE.



## Engineering Data - Chilled Water Fan Coil Unit

### Medium Static Pressure (MSP)

MODEL				FWC03G	FWC04G	FWC06G	FWC08G	FWC10G	
NOMINAL COOLING CAPACITY			Btu/h	9000	12000	18000	24000	30000	
			W	2640	3520	5280	7030	8790	
NOMINAL SENSIBLE COOLING CAPACITY			Btu/h	7000	9700	14400	19100	23400	
			W	2050	2840	4220	5600	6860	
NOMINAL TOTAL INPUT POWER			W	61	87	130	184	235	
NOMINAL RUNNING CURRENT			A	0.27	0.38	0.58	0.81	1.03	
POWER SOURCE			V/Ph/Hz	220-240/1/50					
INDOOR UNIT	CONTROL	AIR DISCHARGE OPERATION		DUCTED					
				WITHOUT CONTROLLER					
	AIR FLOW	HIGH	CFM	300	400	600	800	1000	
		MEDIUM	CFM	220	305	500	650	805	
		LOW	CFM	150	200	385	465	600	
	EXTERNAL STATIC PRESSURE (H/M/L)		Pa	50/32/15	50/32/15	50/35/20	50/33/17	50/33/18	
	NOMINAL WATER FLOW RATE		USGPM	2.00	2.66	3.99	5.33	6.66	
			litres/min	7.57	10.09	15.13	20.18	25.22	
	HEAD LOSS (COOLING)		kPa	20	25	34	38	42	
	MAX. WORKING PRESSURE		kPa	1608					
	SURFACE AIR VELOCITY		m/s	1.17	1.56	1.99	1.69	2.11	
	SOUND PRESSURE LEVEL (H/M/L)		dBa	35/29/20	37/31/22	41/37/31	43/37/30	44/40/33	
	UNIT DIMENSION	H X W X D	mm	251X774X461	251X774X461	251X874X461	251X1264X461	251X1264X461	
	PACKING DIMENSION	H X W X D	mm	595X984X284	595X984X284	595X1084X284	595X1473X284	595X1473X284	
	UNIT WEIGHT		kg	14.50	15.00	17.50	26.00	26.00	
	CONDENSATE DRAIN SIZE		mm	19.05					
	PIPE CONNECTION		mm	19.05 BSPT FEMALE THREAD ADAPTOR					
	FAN	TYPE		BLOWER					
		DRIVE		DIRECT					
		QUANTITY		2	2	2	3	3	
		FAN SPEED	HIGH	RPM	1115	1235	1350	1310	1405
			MEDIUM	RPM	900	990	1170	1080	1190
			LOW	RPM	645	715	935	830	930
		FAN EFFICIENCY	HIGH	%	35.90	36.30	33.50	39.00	36.00
			MEDIUM	%	37.00	36.00	33.90	39.90	38.60
			LOW	%	38.70	37.00	35.40	40.40	39.60
		FAN MOTOR	TYPE		PERMANENT SPLIT CAPACITOR (INDUCTION)				
	INDEX OF PROTECTION (IP)		IP20						
	INSULATION GRADE		B						
	QUANTITY		1	1	1	2	2		
	RATED INPUT POWER		HIGH	W	61	87	130	184	235
MEDIUM			W	43	66	106	143	176	
LOW			W	26	42	80	104	137	
RATED RUNNING CURRENT	HIGH		A	0.27	0.38	0.58	0.81	1.03	
	MEDIUM		A	0.19	0.29	0.47	0.63	0.77	
	LOW		A	0.12	0.19	0.35	0.46	0.60	
STARTING CURRENT			A	0.34	0.53	0.91	1.27	2.09	
MOTOR OUTPUT			W	27	43	80	104	140	
MOTOR EFFICIENCY	HIGH		%	43.00	50.30	58.80	53.30	58.30	
	MEDIUM		%	28.60	32.10	46.40	36.40	43.50	
	LOW		%	15.80	17.00	30.50	21.80	25.60	
POLES			4						
COIL	TUBE	MATERIAL	COPPER						
		DIAMETER	7.00						
	FIN	MATERIAL	ALUMINIUM						
		FACE AREA	0.12						
	ROW		3						
WATER VOLUME		litre	0.45	0.45	0.62	0.90	1.04		
AIR QUALITY	FILTER	TYPE	OPTION (WASHABLE SARANET FILTER OR ALUMINIUM MESH FILTER)						
		QUANTITY	2	2	2	3	3		
CASING		COLOUR	WITHOUT PAINT						

MODE	COOLING
ENTERING AIR TEMPERATURE	27°C DB / 19°C WB
ENTERING WATER TEMPERATURE	7°C
LEAVING WATER TEMPERATURE	12°C

ALL SPECIFICATIONS ARE SUBJECTED TO CHANGE BY THE MANUFACTURER WITHOUT PRIOR NOTICE.

## Engineering Data - Chilled Water Fan Coil Unit

## Medium Static Pressure (MSP)

MODEL				FWC12G	FWC14G	FWC16G	FWC18G	FWC20G		
NOMINAL COOLING CAPACITY				Btu/h	36000	42000	48000	54000	60000	
				W	10550	12310	14070	15830	17580	
NOMINAL SENSIBLE COOLING CAPACITY				Btu/h	27900	33900	38200	43900	50000	
				W	8180	9940	11200	12870	14650	
NOMINAL TOTAL INPUT POWER				W	246	450	558	624	659	
NOMINAL RUNNING CURRENT				A	1.10	1.96	2.43	2.72	2.87	
POWER SOURCE				V/Ph/Hz	220-240/1/50					
INDOOR UNIT	CONTROL	AIR DISCHARGE OPERATION			DUCTED					
					WITHOUT CONTROLLER					
	AIR FLOW	HIGH	CFM	1200	1400	1600	1800	2000		
		MEDIUM	CFM	975	1130	1300	1445	1530		
		LOW	CFM	810	825	905	1060	1075		
	EXTERNAL STATIC PRESSURE (H/M/L)			Pa	50/33/23	75/48/24	75/48/24	75/48/25	75/45/22	
	NOMINAL WATER FLOW RATE			USGPM	7.99	9.32	10.65	11.98	13.31	
				litres/min	30.26	35.31	40.35	45.40	50.44	
	HEAD LOSS (COOLING)			kPa	38	31	27	33	32	
	MAX. WORKING PRESSURE			kPa	1608					
	SURFACE AIR VELOCITY			m/s	2.05	2.43	2.41	2.71	2.65	
	SOUND PRESSURE LEVEL (H/M/L)			dBa	44/40/37	47/43/35	48/44/37	49/45/39	50/46/38	
	UNIT DIMENSION		H X W X D	mm	251X1514X461	363X1116X660	363X1254X660	363X1254X660	363X1394X660	
	PACKING DIMENSION		H X W X D	mm	595X1724X284	760X1331X395	760X1469X395	760X1469X395	760X1609X395	
	UNIT WEIGHT			kg	30	34	37	38	41	
	CONDENSATE DRAIN SIZE			mm	19.05					
	PIPE CONNECTION			mm	19.05 BSPT FEMALE THREAD ADAPTOR	25.4 BSPT FEMALE THREAD ADAPTOR				
	FAN	TYPE				BLOWER				
						DIRECT				
		QUANTITY			4	2	2	2	2	
		FAN SPEED	HIGH	RPM	1320	1065	1115	1210	1220	
			MEDIUM	RPM	1050	875	920	1000	1070	
			LOW	RPM	965	675	690	740	875	
		FAN EFFICIENCY	HIGH	%	32.90	37.60	31.70	33.60	32.40	
			MEDIUM	%	30.10	38.60	35.00	34.50	40.30	
			LOW	%	33.40	42.70	41.00	36.90	46.40	
	FAN MOTOR	TYPE			PERMANENT SPLIT CAPACITOR (INDUCTION)					
		INDEX OF PROTECTION (IP)			IP20					
INSULATION GRADE			B							
QUANTITY			2	1	1	1	1			
RATED INPUT POWER		HIGH	W	246	450	558	624	659		
		MEDIUM	W	200	307	385	459	497		
		LOW	W	158	173	214	295	313		
RATED RUNNING CURRENT		HIGH	A	1.10	1.96	2.43	2.72	2.87		
		MEDIUM	A	0.88	1.34	1.68	2.00	2.17		
		LOW	A	0.70	0.76	0.95	1.31	1.40		
STARTING CURRENT			A	1.62	2.75	3.81	4.38	4.35		
MOTOR OUTPUT			W	146	248	342	418	446		
MOTOR EFFICIENCY		HIGH	%	58.80	53.20	53.30	62.10	59.80		
		MEDIUM	%	38.90	41.60	40.70	44.90	50.70		
		LOW	%	33.10	29.70	26.70	27.70	37.20		
COIL	POLES			4						
	TUBE	MATERIAL		COPPER						
		DIAMETER		mm	7.00	9.52				
	FIN	MATERIAL		ALUMINIUM						
		FACE AREA		m²	0.28	0.22	0.26	0.26	0.29	
AIR QUALITY	FILTER	TYPE		OPTION ( WASHABLE SARANET FILTER OR ALUMINIUM MESH FILTER)						
		QUANTITY		pc	4	2	3	3	3	
		CASING			COLOUR	WITHOUT PAINT				

MODE	COOLING
ENTERING AIR TEMPERATURE	27°C DB/ 19°C WB
ENTERING WATER TEMPERATURE	7°C
LEAVING WATER TEMPERATURE	12°C

ALL SPECIFICATIONS ARE SUBJECTED TO CHANGE BY THE MANUFACTURER WITHOUT PRIOR NOTICE.

## Engineering Data - Chilled Water Fan Coil Unit (EC Motor)

### Medium Static Pressure (LSP)

MODEL				FWC02G	FWC03G	FWC04G	FWC06G	
NOMINAL COOLING CAPACITY			Btu/h	6000	9000	12000	18000	
			W	1.76	2.64	3.52	5.28	
NOMINAL SENSIBLE COOLING CAPACITY			Btu/h	5000	7000	9700	14400	
			W	1.47	2.05	2.84	4.22	
NOMINAL TOTAL INPUT POWER			W	19	30	43	80	
NOMINAL RUNNING CURRENT			A	0.20	0.29	0.40	0.69	
POWER SOURCE			V/Ph/Hz	220-240/1/50 & 208-230/1/60				
INDOOR UNIT	CONTROL	AIR DISCHARGE OPERATION		DUCTED				
				WITHOUT CONTROLLER				
	AIR FLOW	HIGH	CFM	200	300	400	600	
		MEDIUM	CFM	160	220	305	500	
		LOW	CFM	130	150	200	385	
	EXTERNAL STATIC PRESSURE (H/M/L)		Pa	30/19/12	30/16/7	30/18/7	30/21/13	
	NOMINAL WATER FLOW RATE		USGPM	1.32	2.00	2.66	3.99	
			litres/min	5.00	7.57	10.09	15.13	
	HEAD LOSS (COOLING)		kPa	7	20	25	34	
	MAX. WORKING PRESSURE		kPa	1608				
	SURFACE AIR VELOCITY		m/s	1.26	1.17	1.56	1.99	
	SOUND PRESSURE LEVEL (H/M/L)		dBa	32/27/21	33/26/21	36/30/22	39/36/31	
	UNIT DIMENSION		H X W X D	mm	251x630x461	251x774x461	251x774x461	251x874x461
	PACKING DIMENSION		H X W X D	mm	595x836x284	595x984x284	595x984x284	595x1084x284
	UNIT WEIGHT			kg	13	16	16	17.5
	CONDENSATE DRAIN SIZE			mm	19.05			
	PIPE CONNECTION			mm	19.05 BSPT FEMALE THREAD ADAPTOR			
	FAN	TYPE		BLOWER				
		DRIVE		DIRECT				
		QUANTITY			1	2	2	2
		FAN SPEED	HIGH	RPM	985	970	1070	1300
			MEDIUM	RPM	800	740	870	1120
			LOW	RPM	655	540	610	940
		FAN EFFICIENCY	HIGH	%	34.2	34.8	32.5	33.4
			MEDIUM	%	36.7	36.1	34.6	34.1
			LOW	%	40.4	39.6	39.0	35.5
		FAN MOTOR	TYPE		DC BRUSHLESS MOTOR			
	INDEX OF PROTECTION (IP)		IP20					
	INSULATION GRADE		B					
	QUANTITY		1					
	RATED INPUT POWER		HIGH	W	19	30	43	80
			MEDIUM	W	10	13	21	56
			LOW	W	6	6	9	30
	RATED RUNNING CURRENT		HIGH	A	0.20	0.29	0.40	0.69
			MEDIUM	A	0.15	0.18	0.22	0.50
			LOW	A	0.12	0.13	0.14	0.30
	STARTING CURRENT		A	1.20	1.20	1.20	1.20	
	MOTOR OUTPUT		W	120	120	120	120	
	MOTOR EFFICIENCY		HIGH	%	71.5	77.9	79.9	81.1
			MEDIUM	%	56.8	64.6	72.4	80.4
			LOW	%	38.3	44.1	56.4	76.4
	POLES		10					
	COIL	TUBE	MATERIAL		COPPER			
			DIAMETER		7.00			
		FIN	MATERIAL		ALUMINIUM			
			FACE AREA		0.08	0.12	0.12	0.14
	ROW		3					
	WATER VOLUME		litre	0.28	0.45	0.45	0.62	
	AIR QUALITY	FILTER	TYPE		OPTION (WASHABLE SARANET FILTER OR ALUMINIUM MESH FILTER)			
QUANTITY			2					
CASING			pc	WITHOUT PAINT				
			COLOUR					

MODE	COOLING
ENTERING AIR TEMPERATURE	27°C DB / 19°C WB
ENTERING WATER TEMPERATURE	7°C
LEAVING WATER TEMPERATURE	12°C

ALL SPECIFICATIONS ARE SUBJECTED TO CHANGE BY THE MANUFACTURER WITHOUT PRIOR NOTICE.

# Engineering Data - Chilled Water Fan Coil Unit (EC Motor)

## Medium Static Pressure (LSP)

MODEL				FWC08G	FWC10G	FWC12G	
NOMINAL COOLING CAPACITY			Btu/h	24000	30000	36000	
			W	7.03	8.79	10.55	
NOMINAL SENSIBLE COOLING CAPACITY			Btu/h	19100	23400	27900	
			W	5.60	6.86	8.18	
NOMINAL TOTAL INPUT POWER			W	100	142	163	
NOMINAL RUNNING CURRENT			A	0.87	1.18	1.35	
POWER SOURCE			V/Ph/Hz	220-240/1/50 & 208-230/1/60			
INDOOR UNIT	CONTROL	AIR DISCHARGE OPERATION		DUCTED			
				WITHOUT CONTROLLER			
	AIR FLOW	HIGH	CFM	800	1000	1200	
		MEDIUM	CFM	650	805	975	
		LOW	CFM	465	600	810	
	EXTERNAL STATIC PRESSURE (H/M/L)		Pa	30/19/10	30/18/11	30/20/13	
	NOMINAL WATER FLOW RATE		USGPM	5.33	6.66	7.99	
			litres/min	20.18	25.22	30.26	
	HEAD LOSS (COOLING)		kPa	38	42	38	
	MAX. WORKING PRESSURE		kPa	1608			
	SURFACE AIR VELOCITY		m/s	1.69	2.11	2.05	
	SOUND PRESSURE LEVEL (H/M/L)		dBA	40/35/27	42/38/32	43/40/36	
	UNIT DIMENSION		H X W X D	mm	251x1264x461	251x1264x461	251x1514x461
	PACKING DIMENSION		H X W X D	mm	595x1473x284	595x1473x284	595x1724x284
	UNIT WEIGHT			kg	26	26	29.5
	CONDENSATE DRAIN SIZE			mm	19.05		
	PIPE CONNECTION			mm	19.05 BSPT FEMALE THREAD ADAPTOR		
	FAN	TYPE			BLOWER		
					DIRECT		
		QUANTITY			3	3	4
		FAN SPEED	HIGH	RPM	1140	1275	1220
			MEDIUM	RPM	950	1035	1010
			LOW	RPM	710	805	835
		FAN EFFICIENCY	HIGH	%	52.9	43.9	37.7
			MEDIUM	%	53.6	51.2	33.9
			LOW	%	57.6	57.3	46.7
	FAN MOTOR	TYPE		DC BRUSHLESS MOTOR			
		INDEX OF PROTECTION (IP)		IP20			
		INSULATION GRADE		B			
		QUANTITY		2	2	2	
		RATED INPUT POWER	HIGH	W	100	142	163
			MEDIUM	W	60	84	102
			LOW	W	29	40	62
		RATED RUNNING CURRENT	HIGH	A	0.87	1.18	1.35
			MEDIUM	A	0.58	0.77	0.89
			LOW	A	0.37	0.42	0.60
STARTING CURRENT		A	2.40	2.40	2.40		
MOTOR OUTPUT		W	120	120	120		
MOTOR EFFICIENCY		HIGH	%	80.1	81.3	80.8	
		MEDIUM	%	77.1	78.6	79.5	
		LOW	%	69.1	73.9	78.0	
POLES		10					
COIL	TUBE	MATERIAL		COPPER			
		DIAMETER		7.00			
	FIN	MATERIAL		ALUMINIUM			
		FACE AREA		0.22	0.22	0.28	
	ROW		3				
WATER VOLUME		litre	0.90	1.04	1.29		
AIR QUALITY	FILTER	TYPE		OPTION (WASHABLE SARANET FILTER OR ALUMINIUM MESH FILTER)			
		QUANTITY		3	3	4	
CASING				WITHOUT PAINT			

MODE	COOLING
ENTERING AIR TEMPERATURE	27°C DB / 19°C WB
ENTERING WATER TEMPERATURE	7°C
LEAVING WATER TEMPERATURE	12°C

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## Engineering Data - Chilled Water Fan Coil Unit (EC Motor)

### Medium Static Pressure (MSP)

MODEL				FWC03G	FWC04G	FWC06G			
NOMINAL COOLING CAPACITY			Btu/h	9000	12000	18000			
			W	2.64	3.52	5.28			
NOMINAL SENSIBLE COOLING CAPACITY			Btu/h	7000	9700	14400			
			W	2.05	2.84	4.22			
NOMINAL TOTAL INPUT POWER			W	40	55	94			
NOMINAL RUNNING CURRENT			A	0.38	0.49	0.80			
POWER SOURCE			V/Ph/Hz	220-240/1/50 & 208-230/1/60					
INDOOR UNIT	CONTROL		AIR DISCHARGE OPERATION		DUCTED				
					WITHOUT CONTROLLER				
	AIR FLOW		HIGH	CFM	300	400	600		
			MEDIUM	CFM	220	305	500		
			LOW	CFM	150	200	385		
	EXTERNAL STATIC PRESSURE (H/M/L)			Pa	50/32/15	50/32/15	50/35/20		
	NOMINAL WATER FLOW RATE			USGPM	2.00	2.66	3.99		
				litres/min	7.57	10.09	15.13		
	HEAD LOSS (COOLING)			kPa	20	25	34		
	MAX. WORKING PRESSURE			kPa	1608				
	SURFACE AIR VELOCITY			m/s	1.17	1.56	1.99		
	SOUND PRESSURE LEVEL (H/M/L)			dB(A)	35/29/20	37/31/22	41/37/31		
	UNIT DIMENSION		H X W X D	mm	251x774x461	251x774x461	251x874x461		
	PACKING DIMENSION		H X W X D	mm	595x984x284	595x984x284	595x1084x284		
	UNIT WEIGHT			kg	16	16	17.5		
	CONDENSATE DRAIN SIZE			mm	19.05				
	PIPE CONNECTION			mm	19.05 BSPT FEMALE THREAD ADAPTOR				
	FAN		TYPE		BLOWER				
			DRIVE		DIRECT				
			QUANTITY		2	2	2		
			FAN SPEED		HIGH	RPM	1115	1235	1350
					MEDIUM	RPM	900	990	1170
					LOW	RPM	645	715	935
			FAN EFFICIENCY		HIGH	%	35.9	36.3	33.5
					MEDIUM	%	37.0	36.0	33.9
					LOW	%	38.7	37.0	35.4
			FAN MOTOR		TYPE		DC BRUSHLESS MOTOR		
	INDEX OF PROTECTION (IP)				IP20				
	INSULATION GRADE				B				
	QUANTITY				1	1	1		
	RATED INPUT POWER				HIGH	W	40	55	94
					MEDIUM	W	19	27	62
LOW					W	9	11	34	
RATED RUNNING CURRENT		HIGH			A	0.38	0.49	0.80	
		MEDIUM			A	0.20	0.26	0.56	
		LOW			A	0.13	0.16	0.32	
STARTING CURRENT					A	1.20	1.20	1.20	
MOTOR OUTPUT					W	120	120	120	
MOTOR EFFICIENCY		HIGH			%	75.0	76.4	81.5	
		MEDIUM			%	67.2	72.0	81.4	
		LOW			%	54.1	59.3	77.8	
POLES					10				
COIL		TUBE		MATERIAL		COPPER			
				DIAMETER		mm	7.00		
		FIN		MATERIAL		ALUMINIUM			
				FACE AREA		m²	0.12	0.12	0.14
ROW			3						
WATER VOLUME			litre	0.45	0.45	0.62			
AIR QUALITY		FILTER		TYPE		OPTION (WASHABLE SARANET FILTER OR ALUMINIUM MESH FILTER)			
				QUANTITY		pc	2	2	2
CASING			COLOUR	WITHOUT PAINT					

MODE	COOLING
ENTERING AIR TEMPERATURE	27°C DB / 19°C WB
ENTERING WATER TEMPERATURE	7°C
LEAVING WATER TEMPERATURE	12°C

ALL SPECIFICATIONS ARE SUBJECTED TO CHANGE BY THE MANUFACTURER WITHOUT PRIOR NOTICE.

# Engineering Data - Chilled Water Fan Coil Unit (EC Motor)

## Medium Static Pressure (MSP)

MODEL				FWC08G	FWC10G	FWC12G	
NOMINAL COOLING CAPACITY			Btu/h	24000	30000	36000	
			W	7.03	8.79	10.55	
NOMINAL SENSIBLE COOLING CAPACITY			Btu/h	19100	23400	27900	
			W	5.60	6.86	8.18	
NOMINAL TOTAL INPUT POWER			W	120	170	189	
NOMINAL RUNNING CURRENT			A	1.02	1.38	1.54	
POWER SOURCE			V/Ph/Hz	220-240/1/50 & 208-230/1/60			
INDOOR UNIT	CONTROL	AIR DISCHARGE OPERATION		DUCTED			
				WITHOUT CONTROLLER			
	AIR FLOW	HIGH	CFM	800	1000	1200	
		MEDIUM	CFM	650	805	975	
		LOW	CFM	465	600	810	
	EXTERNAL STATIC PRESSURE (H/M/L)		Pa	50/33/17	50/33/18	50/33/23	
	NOMINAL WATER FLOW RATE		USGPM	5.33	6.66	7.99	
			litres/min	20.18	25.22	30.26	
	HEAD LOSS (COOLING)		kPa	38	42	38	
	MAX. WORKING PRESSURE		kPa	1608			
	SURFACE AIR VELOCITY		m/s	1.69	2.11	2.05	
	SOUND PRESSURE LEVEL (H/M/L)		dBA	43/37/30	44/40/33	44/40/37	
	UNIT DIMENSION		H X W X D	mm	251x1264x461	251x1264x461	251x1514x461
	PACKING DIMENSION		H X W X D	mm	595x1473x284	595x1473x284	595x1724x284
	UNIT WEIGHT			kg	26	26	29.5
	CONDENSATE DRAIN SIZE			mm	19.05		
	PIPE CONNECTION			mm	19.05 BSPT FEMALE THREAD ADAPTOR		
	FAN	TYPE	DRIVE		BLOWER		
					DIRECT		
			QUANTITY		3	3	4
		FAN SPEED	HIGH	RPM	1310	1405	1320
			MEDIUM	RPM	1080	1190	1050
			LOW	RPM	830	930	965
		FAN EFFICIENCY	HIGH	%	39.0	36.0	32.9
			MEDIUM	%	39.9	38.6	30.1
	LOW		%	40.4	39.6	33.4	
	FAN MOTOR	TYPE		DC BRUSHLESS MOTOR			
		INDEX OF PROTECTION (IP)		IP20			
		INSULATION GRADE		B			
		QUANTITY		2	2	2	
		RATED INPUT POWER	HIGH	W	120	170	189
			MEDIUM	W	68	101	126
LOW			W	34	45	72	
RATED RUNNING CURRENT		HIGH	A	1.02	1.38	1.54	
		MEDIUM	A	0.63	0.89	1.09	
		LOW	A	0.40	0.46	0.68	
STARTING CURRENT		A	2.40	2.40	2.40		
MOTOR OUTPUT		W	120	120	120		
MOTOR EFFICIENCY		HIGH	%	80.7	82.1	81.7	
	MEDIUM	%	78.6	80.7	80.9		
	LOW	%	70.7	74.6	78.5		
COIL	POLES		10				
	TUBE	MATERIAL		COPPER			
		DIAMETER		7			
	FIN	MATERIAL		ALUMINIUM			
		FACE AREA		0.22	0.22	0.28	
	ROW		3				
WATER VOLUME		litre	0.90	1.04	1.29		
AIR QUALITY	FILTER	TYPE		OPTION (WASHABLE SARANET FILTER OR ALUMINIUM MESH FILTER)			
		QUANTITY		pc	3	4	
CASING		COLOUR		WITHOUT PAINT			

MODE	COOLING
ENTERING AIR TEMPERATURE	27°C DB / 19°C WB
ENTERING WATER TEMPERATURE	7°C
LEAVING WATER TEMPERATURE	12°C

ALL SPECIFICATIONS ARE SUBJECTED TO CHANGE BY THE MANUFACTURER WITHOUT PRIOR NOTICE.

## Engineering Data - Chilled Water Fan Coil Unit

MODEL				FUD20B	FUD25B	FUD30B	FUD40B			
NOMINAL COOLING CAPACITY			Btu/h	75600	95000	125000	150000			
			W	22160	27840	36640	43960			
NOMINAL SENSIBLE COOLING CAPACITY			Btu/h	53700	69400	90000	106500			
			W	15740	20340	26380	31210			
NOMINAL HEATING CAPACITY (ENTERING WATER TEMP. = 50°C)			Btu/h	78000	97500	138000	170000			
			W	22860	28580	40450	49820			
NOMINAL TOTAL INPUT POWER			W	760	1800	1620	1910			
NOMINAL RUNNING CURRENT			A	3.49	7.84	3.33	4.03			
POWER SOURCE			V/Ph/Hz	220-240/1/50		380-415/3/50				
INDOOR UNIT	CONTROL		AIR DISCHARGE OPERATION		DUCTED					
	AIR FLOW		HIGH		CFM	2500	3200	4200	4600	
			MEDIUM		CFM	2100	3000	N/A	N/A	
			LOW		CFM	1750	2800	N/A	N/A	
	EXTERNAL STATIC PRESSURE			Pa	100 / 72 / 50	100 / 80 / 60	149*	149*		
	NOMINAL WATER FLOW RATE			USGPM	16.90	21.10	27.70	33.30		
				litres/min	64.00	80.00	105.00	126.00		
	HEAD LOSS (COOLING)			kPa	34.5	42.0	48.8	53.3		
	HEAD LOSS (HEATING) : 50°C			kPa	32.9	27.4	31.5	63.2		
	MAX. WORKING PRESSURE			kPa	1608					
	SURFACE AIR VELOCITY			m/s	2.18	2.79	1.97	2.16		
	SOUND PRESSURE LEVEL			dBA	50 / 46 / 42	54 / 52 / 50	58	58		
	UNIT DIMENSION		H X W X D	mm	572 x 1402 x 605		885 x 1540 x 850			
	PACKING DIMENSION		H X W X D	mm	762 x 1605 x 880		1154 x 1787 x 1188			
	UNIT WEIGHT			kg	92	102	176	189		
	CONDENSATE DRAIN SIZE			mm	19.05					
	PIPE CONNECTION			mm	31.75 BSP FEMALE THREAD ADAPTOR					
	FAN	TYPE		BLOWER						
		DRIVE		DIRECT		BELT				
		FAN SPEED	HIGH	RPM	835	950	707	707		
			MEDIUM	RPM	720	885	N/A	N/A		
			LOW	RPM	620	805	N/A	N/A		
		FAN EFFICIENCY	HIGH	%	43.30	31.60	41.30	27.10		
			MEDIUM	%	43.20	35.00	N/A	N/A		
			LOW	%	45.40	38.20	N/A	N/A		
		FAN MOTOR	TYPE		PERMANENT SPLIT CAPACITOR (INDUCTION)		THREE PHASE INDUCTION			
			INDEX OF PROTECTION (IP)		IP22					
	INSULATION GRADE		B							
	RATED INPUT POWER		HIGH	W	760	1800	1620	1910		
			MEDIUM	W	611	1620	N/A	N/A		
			LOW	W	478	1320	N/A	N/A		
	RATED RUNNING CURRENT		HIGH	A	3.49	7.84	3.33	4.03		
			MEDIUM	A	2.86	7.06	N/A	N/A		
			LOW	A	2.32	5.82	N/A	N/A		
	STARTING CURRENT		A	5.20	10.30	3.48	4.21			
	MOTOR OUTPUT		W	375	500	1500	1500			
	MOTOR EFFICIENCY		HIGH	%	58.30	41.00	77.20	79.70		
			MEDIUM	%	42.50	36.60	N/A	N/A		
		LOW	%	31.30	31.30	N/A	N/A			
	COIL	POLES		6					4	4
		TUBE	MATERIAL	COPPER						
			DIAMETER	mm	9.52					
		FIN	MATERIAL	ALUMINIUM						
			FACE AREA	m²	0.54	0.54	1.01	1.01		
		ROW		3	4	3	4			
	WATER VOLUME			litre	4.53	6.27	8.14	11.63		
	AIR QUALITY	FILTER	TYPE	WASHABLE SARANET FILTER			VILEDON R29			
			QUANTITY	2			3			
	CASING			COLOUR	IVORY WHITE					

\* The external static pressure for FUD30/40B above is inclusive of R29 filters whereby R29 filters contribute a pressure drop of 81Pa.

MODE	COOLING	HEATING
ENTERING AIR TEMPERATURE	27°C DB / 19°C WB	20°C DB
ENTERING WATER TEMPERATURE	7°C	50°C (2 Pipes System)
LEAVING WATER TEMPERATURE	12°C	-

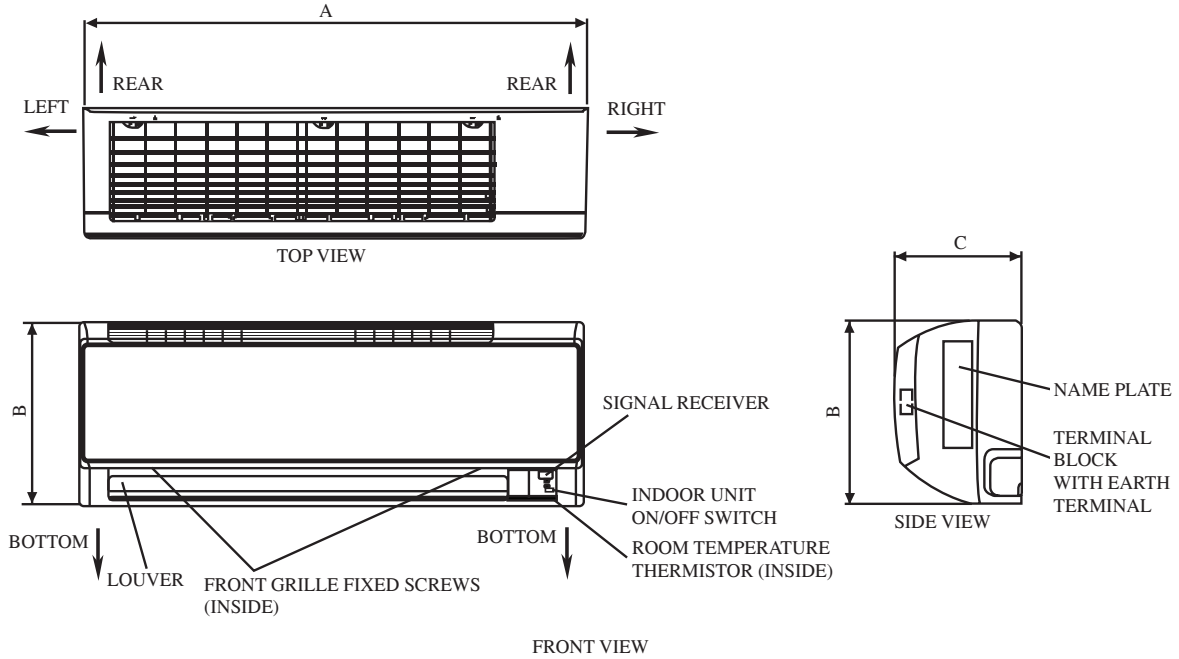
ALL SPECIFICATIONS ARE SUBJECT TO CHANGE BY THE MANUFACTURER WITHOUT PRIOR NOTICE.

# Outlines & Dimensions

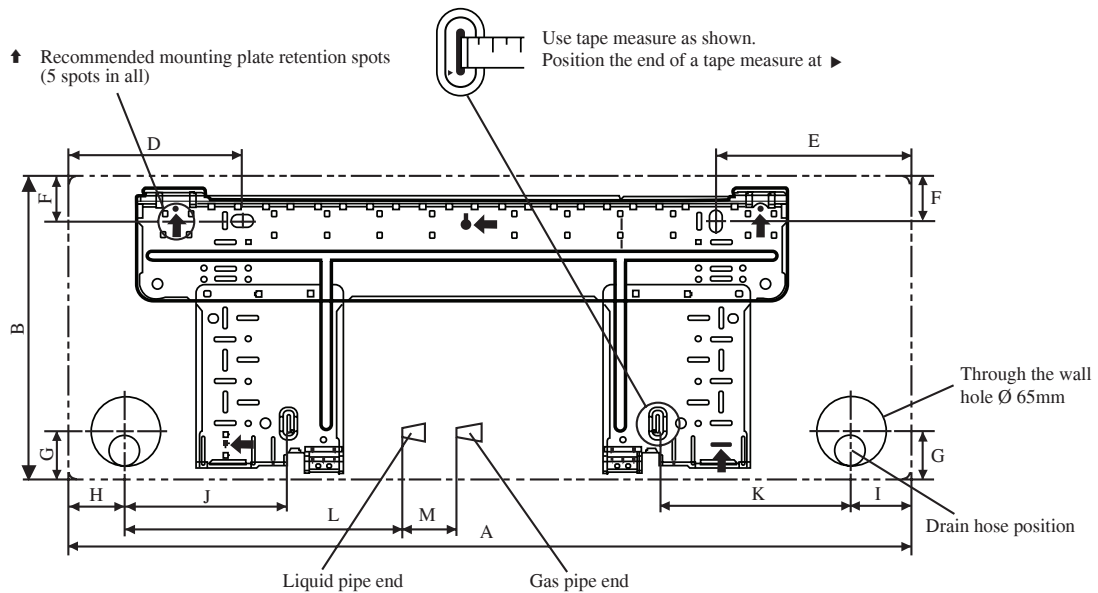
## Indoor Unit

Model: FWW02/03/04/05/06L

THE MARK ( → ) SHOWS PIPING DIRECTION



NOTE: PLEASE BASED ON ACTUAL INSTALLATION PLATE DESIGN IN THE UNIT FOR INSTALLATION PLATE FWW02/03/04L DIMENSION REFERENCE AT PAGE 1&2.



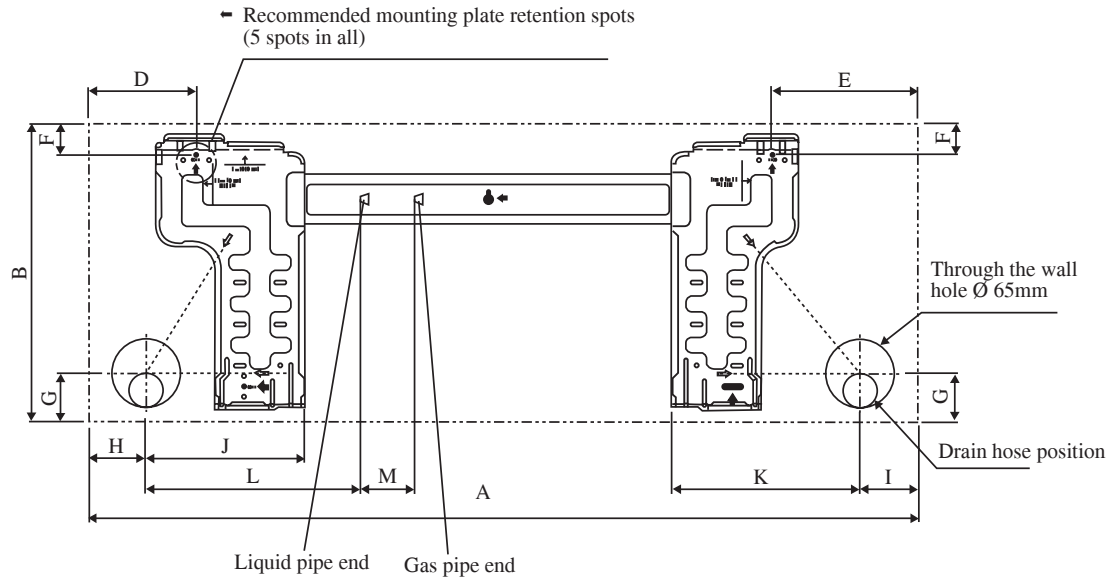
INSTALLATION PLATE FWW02/03/04L

Dimension Model	A	B	C	D	E	F	G	H	I	J	K	L	M
FWW02/03/04L	800	288	206	166	184	42	46	55	56	154	182	263	52

Note: Dimension in mm

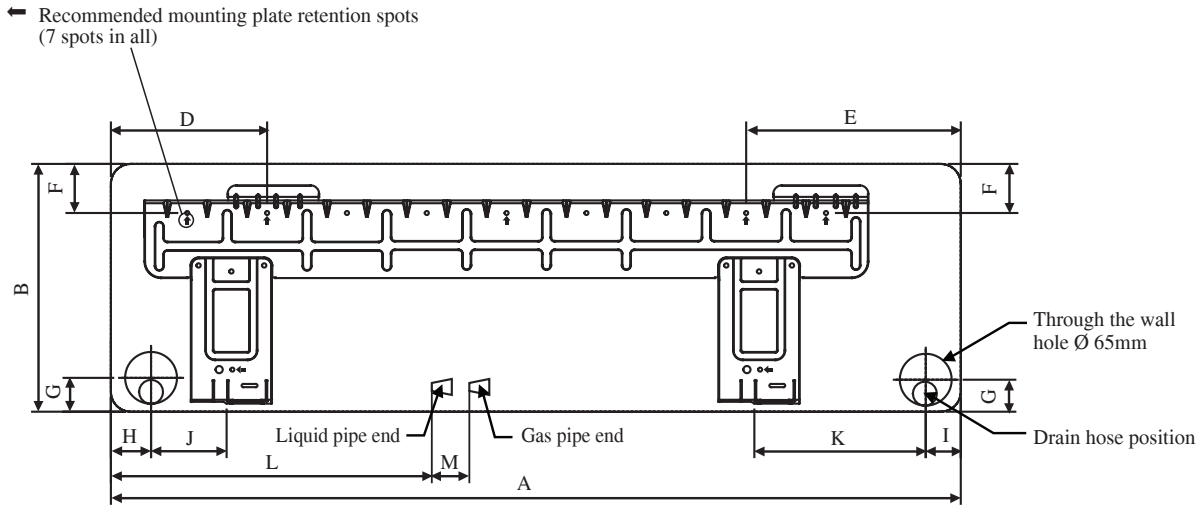


Model: FWW02/03/04/05/06L



ALTERNATIVE INSTALLATION PLATE FWW02/03/04L

Dimension Model	A	B	C	D	E	F	G	H	I	J	K	L	M
FWW02/03/04L	800	288	206	104	141	30	46	55	56	153	181	207	52

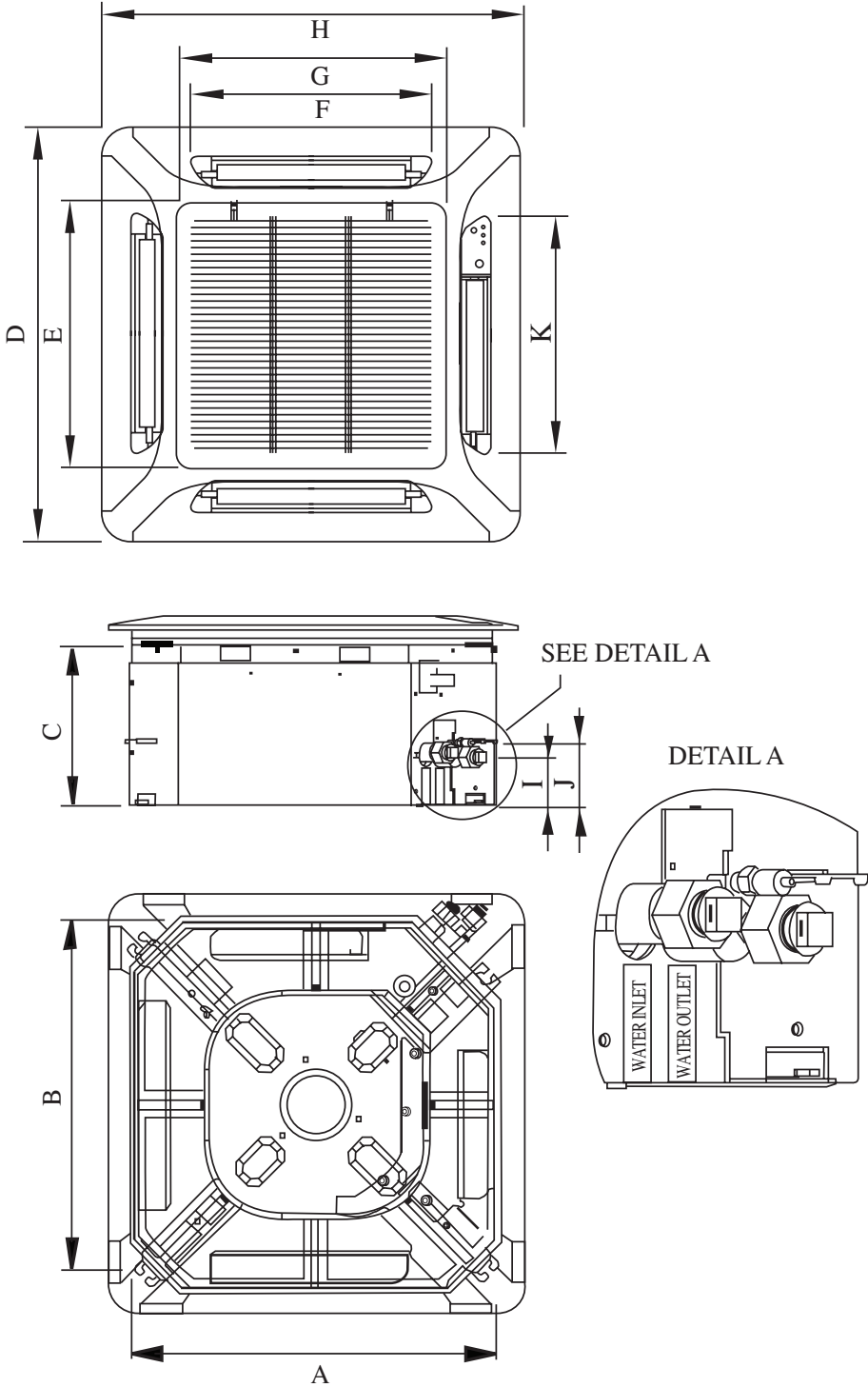


INSTALLATION PLATE FWW05/06L

Dimension Model	A	B	C	D	E	F	G	H	I	J	K	L	M
FWW05/06L	1065	310	224	190	173	61	40	45	48	91	219	580	45

Note: Dimension in mm

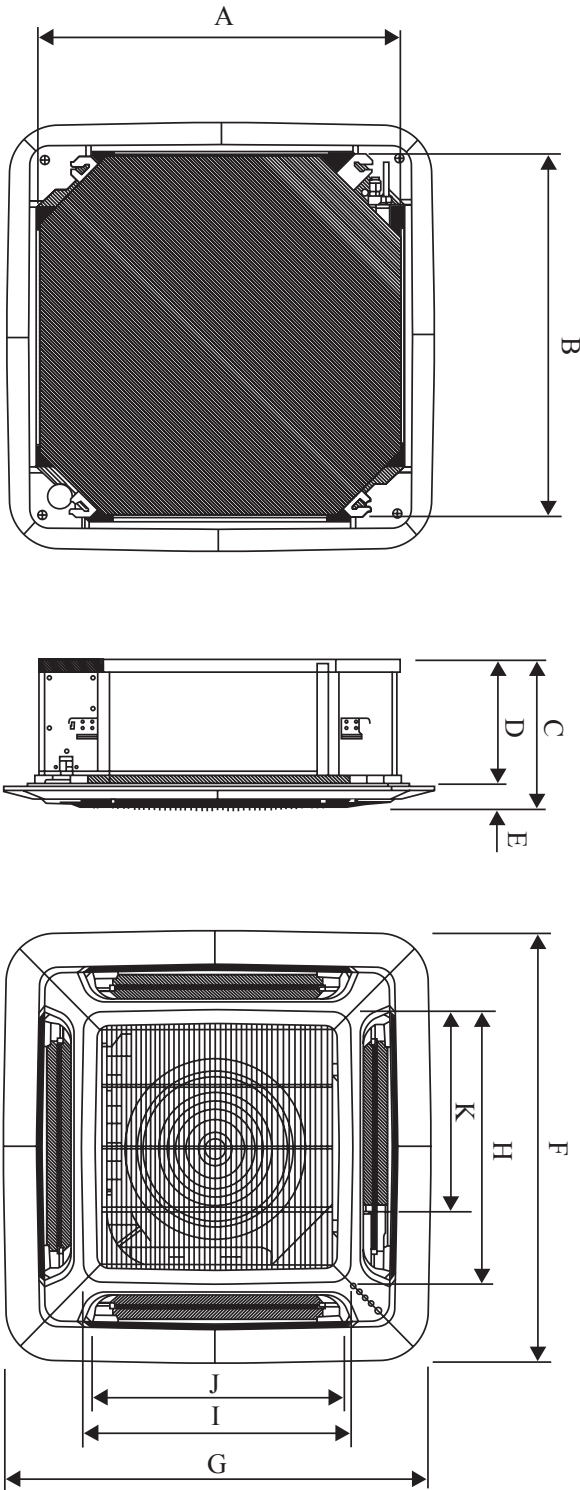
Model: FWF02/04/05C



Dimension Model	A	B	C	D	E	F	G	H	I	J	K
FWF02/04/05C	570	570	250	640	408	364	408	640	75	98	364

Note: Dimension in mm

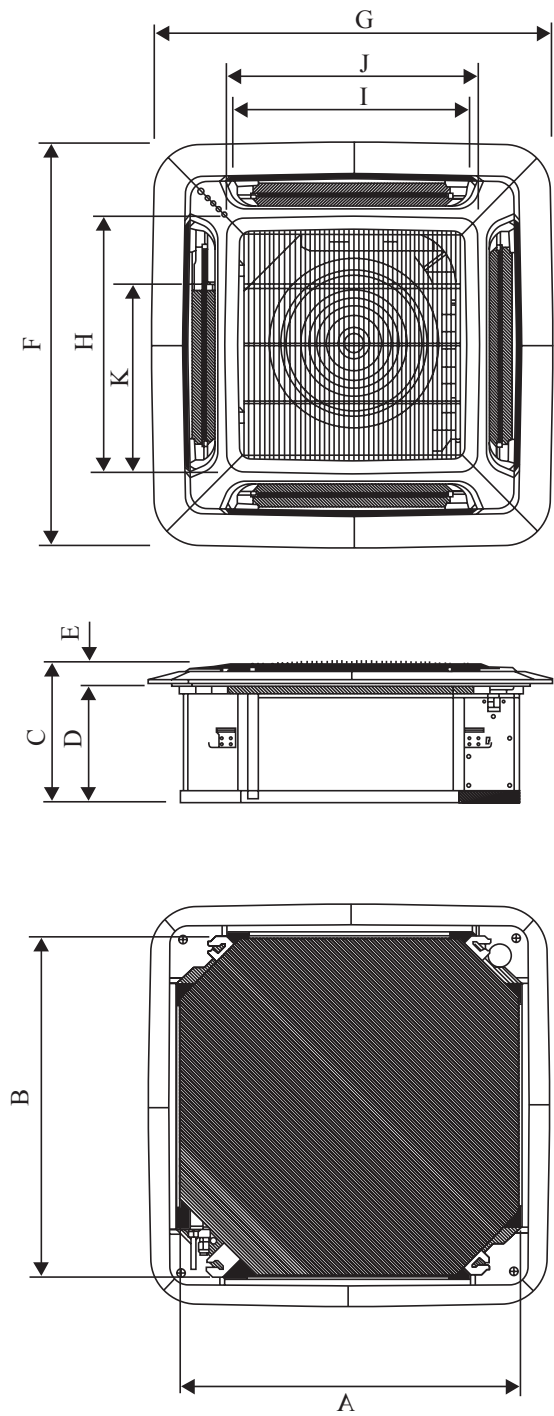
Model: FWK06/08/09/11/13E(H)



Dimension Model	A	B	C	D	E	F	G	H	I	J	K
FWK06/08/09E(H)	820	820	340	300	40	990	990	627	627	607	430
FWK11/13E(H)	820	820	375	335	40	990	990	627	627	607	430

Note: Dimension in mm

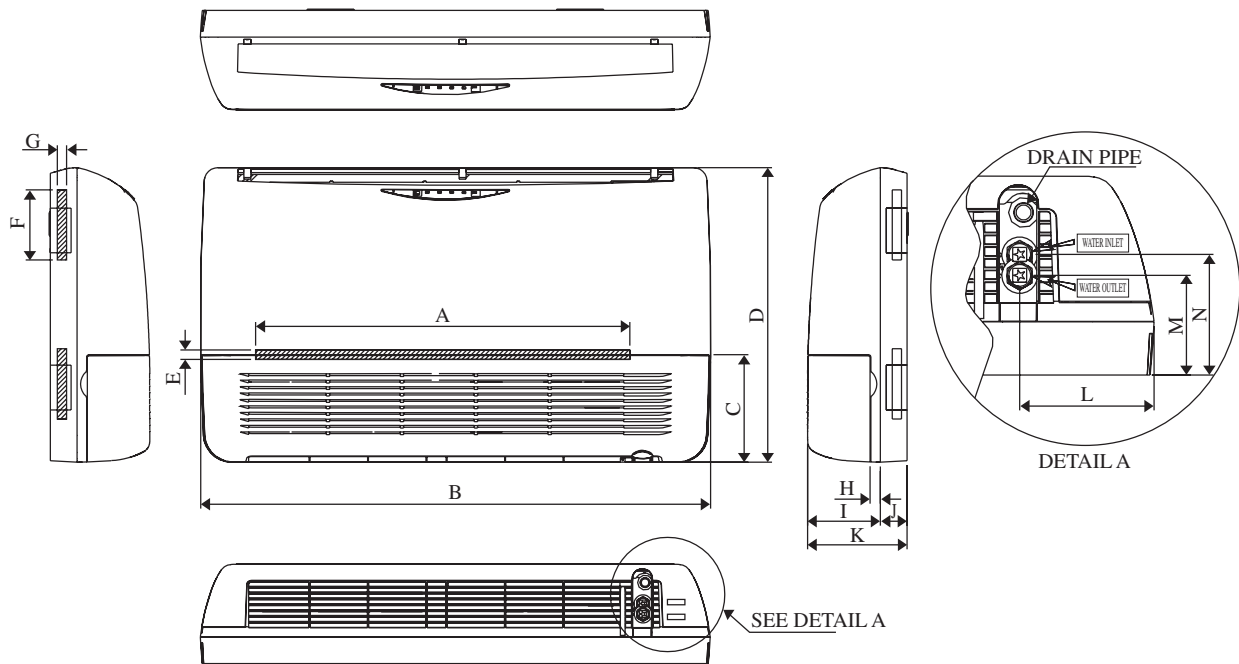
Model: FWKE05/08/11E(H)



Dimension Model	A	B	C	D	E	F	G	H	I	J	K
FWKE05/08E(H)	820	820	340	300	40	990	990	627	627	607	430
FWKE11E(H)	820	820	375	335	40	990	990	627	627	607	430

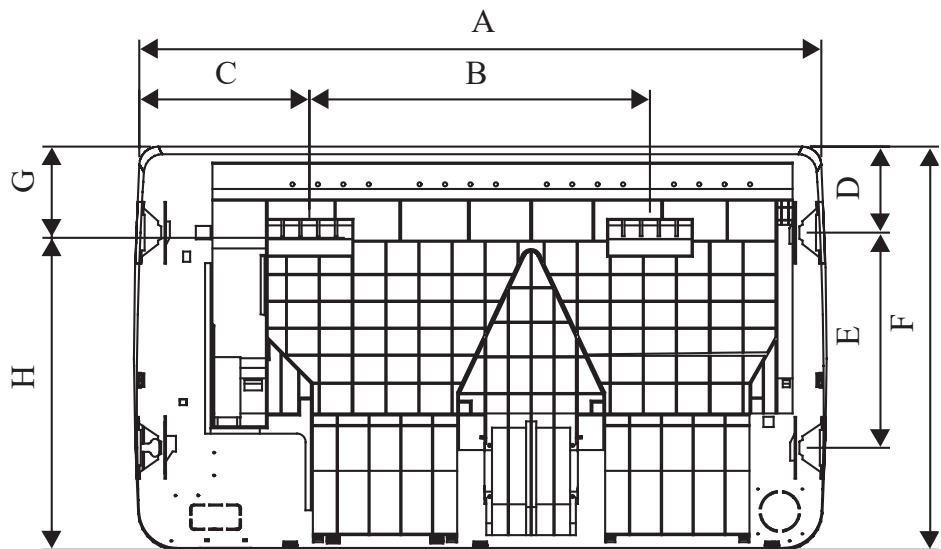
Note: Dimension in mm

Model: FWE05/06/07E



Dimension	A	B	C	D	E	F	G	H	I	J	K	L	M	N
Model														
FWE05/06/07E	800	1090	230	630	20	150	20	21	156	57	213	144	107	129

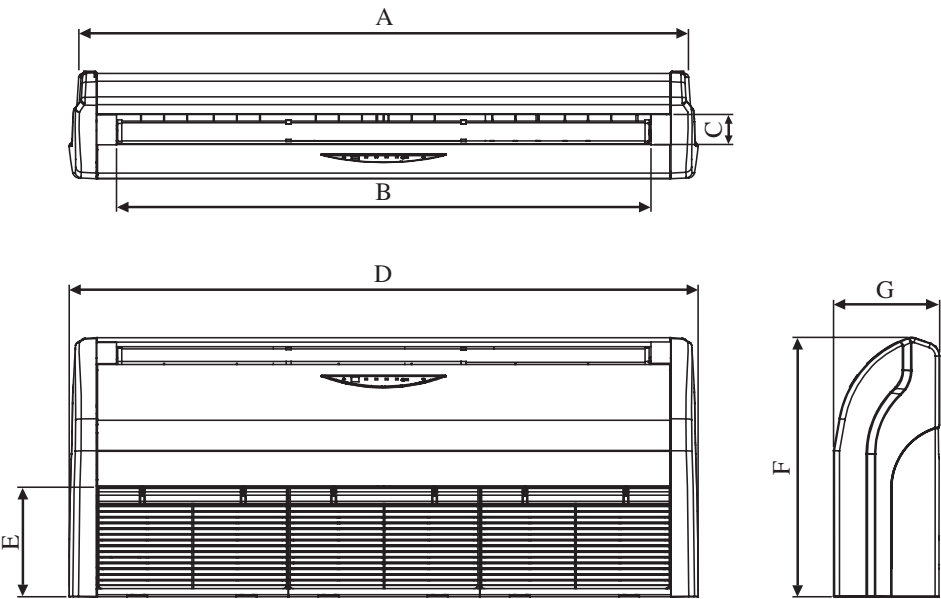
Mounting Bracket



Dimension	A	B	C	D	E	F	G	H
Model								
FWE05/06/07E	1073	534	268	135	336	630	145	485

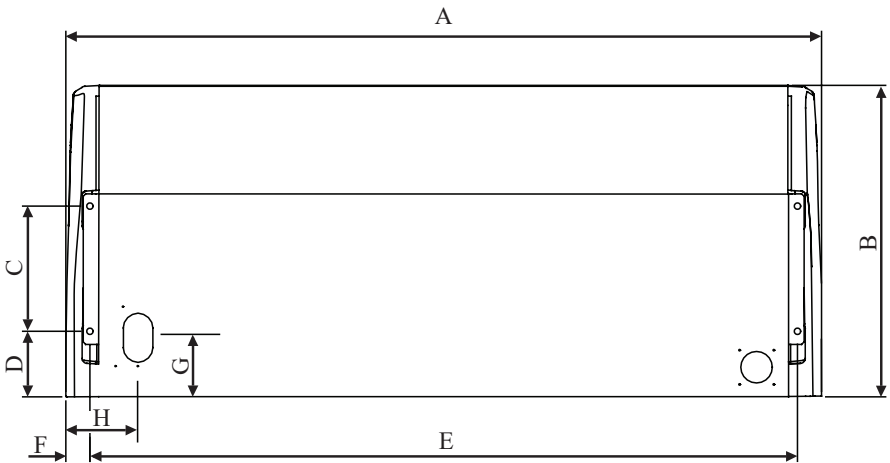
Note: Dimension in mm

Model: FWE08/10/12E



Dimension Model	A	B	C	D	E	F	G
FWE08E	1272	1088	74	1320	268	635	259
FWE10E	1490	1308	74	1538	268	635	259
FWE12E	1738	1556	74	1786	268	635	259

Mounting Bracket

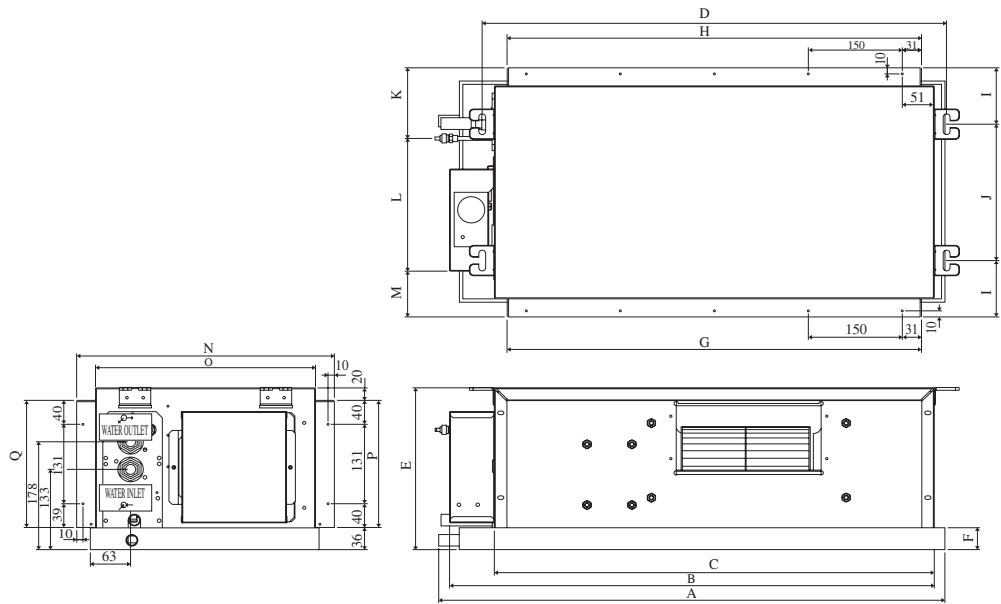


Dimension Model	A	B	C	D	E	F	G	H
FWE08E	1320	635	255	134	1222	49	148	120
FWE10E	1538	635	255	134	1440	49	148	120
FWE12E	1786	635	255	134	1688	49	148	120

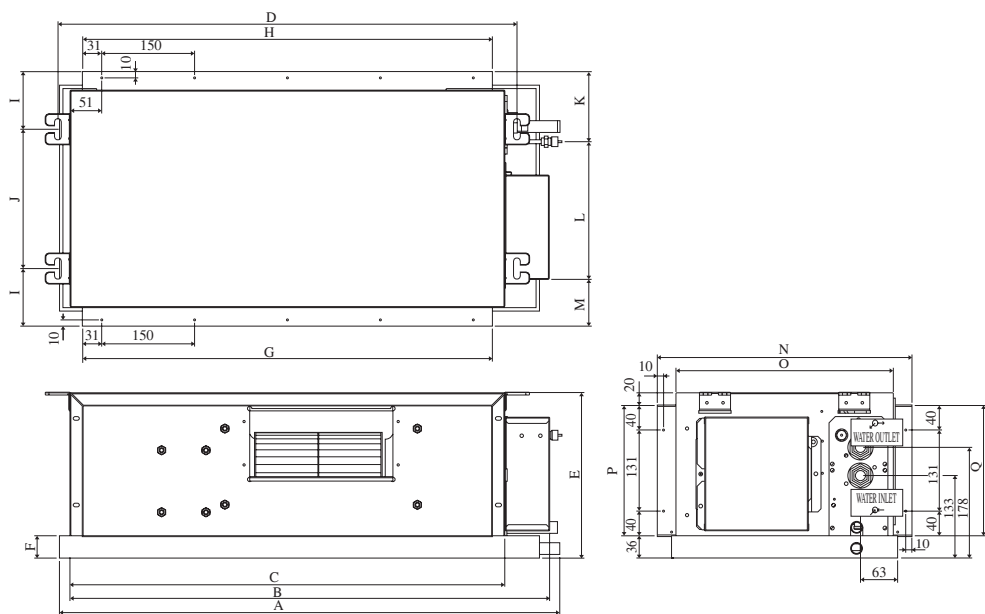
Note: Dimension in mm

Model: FWC03C

LEFT PIPING



RIGHT PIPING



Dimension Model	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
FWC03C	808	774	702	741	267	36	662	662	93	225	115	218	76	411	351	211	211

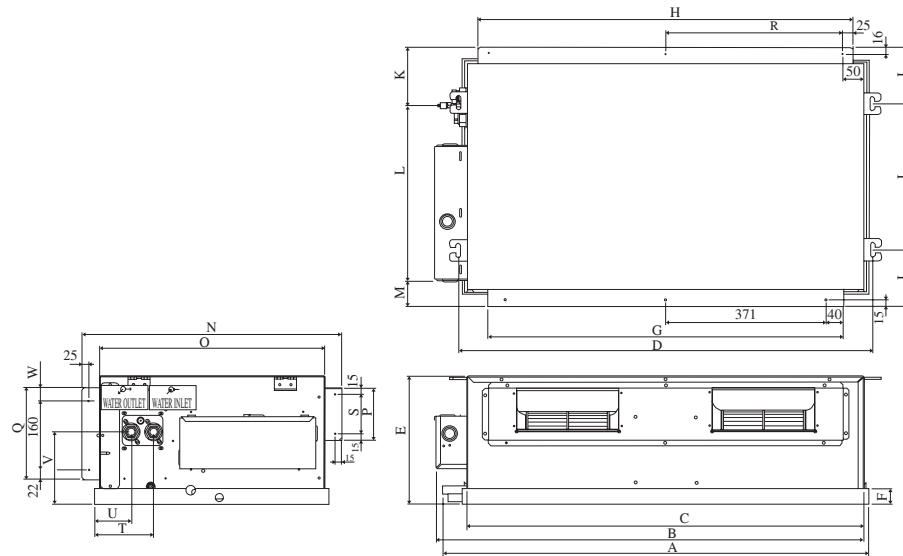
Note: Dimension in mm



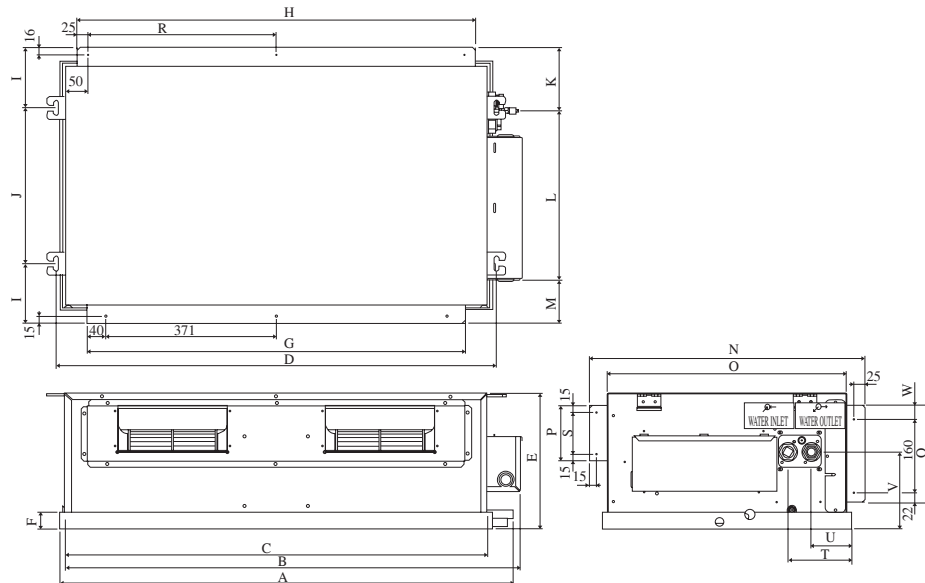


Model: FWC08/11C

LEFT PIPING



RIGHT PIPING

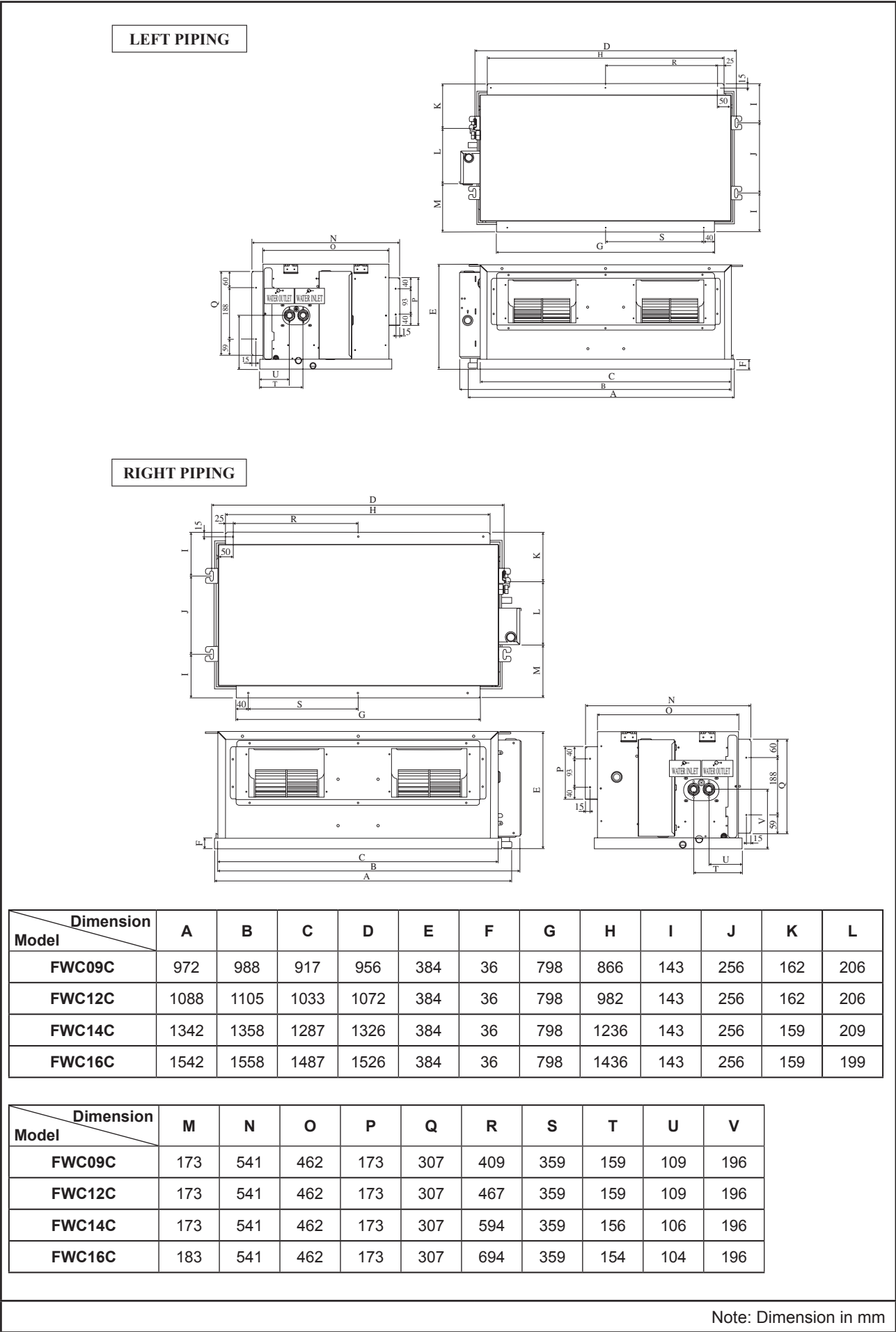


Dimension Model	A	B	C	D	E	F	G	H	I	J	K	L
FWC08C	987	997	920	959	296	36	824	869	131	339	136	367
FWC11C	1292	1297	1225	1264	316	36	824	1174	119	401	147	394

Dimension Model	M	N	O	P	Q	R	S	T	U	V	W
FWC08C	97	600	521	121	213	410	91	137	87	167	31
FWC11C	97	638	559	186	233	563	156	148	97	149	51

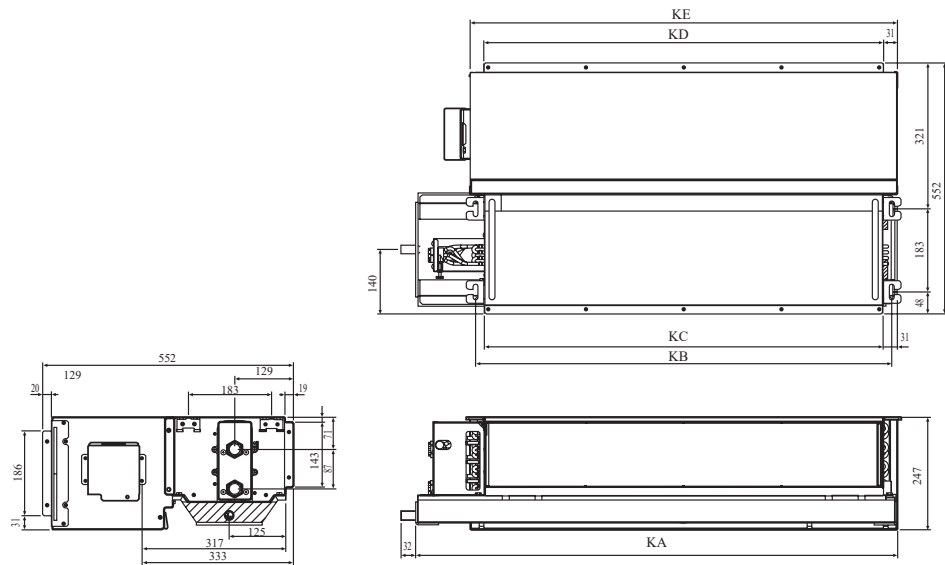
Note: Dimension in mm

Model: FWC09/12/14/16C

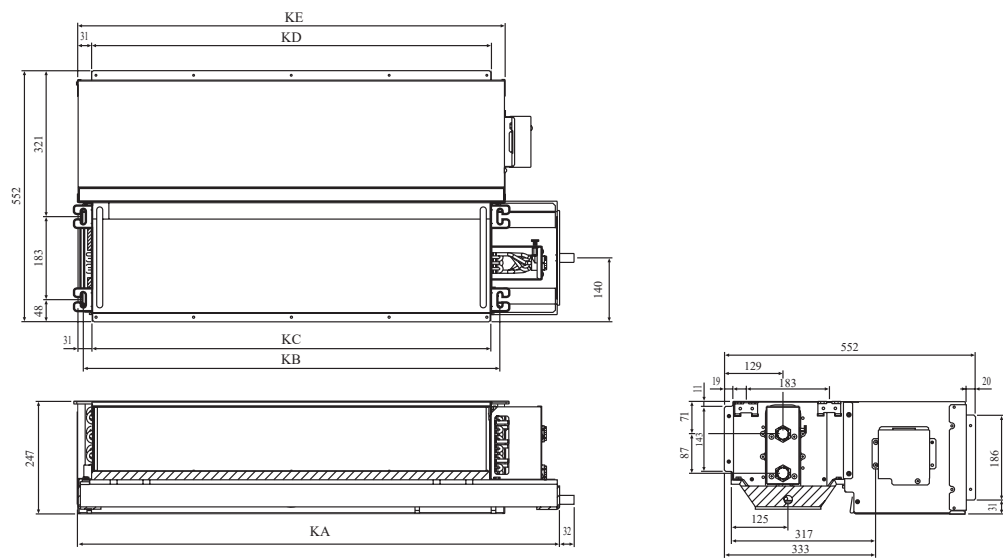


Model: FWC02/03/04/05/06/08/10FD

LEFT PIPING



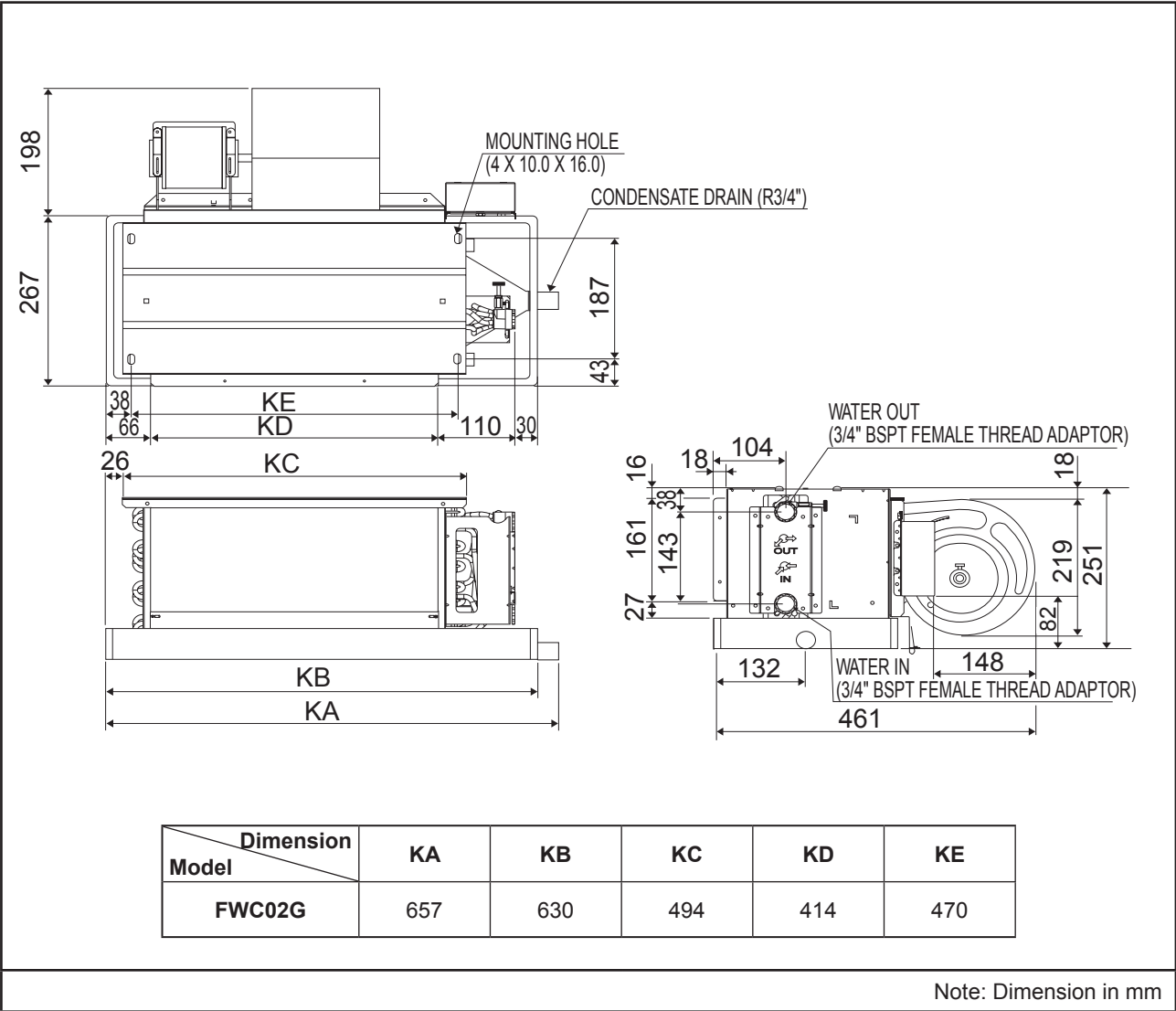
RIGHT PIPING



Dimension Model	KA	KB	KC	KD	KE
FWC02/03FD	619	477	437	440	501
FWC04/05FD	870	726	687	690	751
FWC06FD	1060	916	877	880	941
FWC08FD	1390	1246	1207	1210	1271
FWC10FD	1600	1456	1417	1420	1481

Note: Dimension in mm

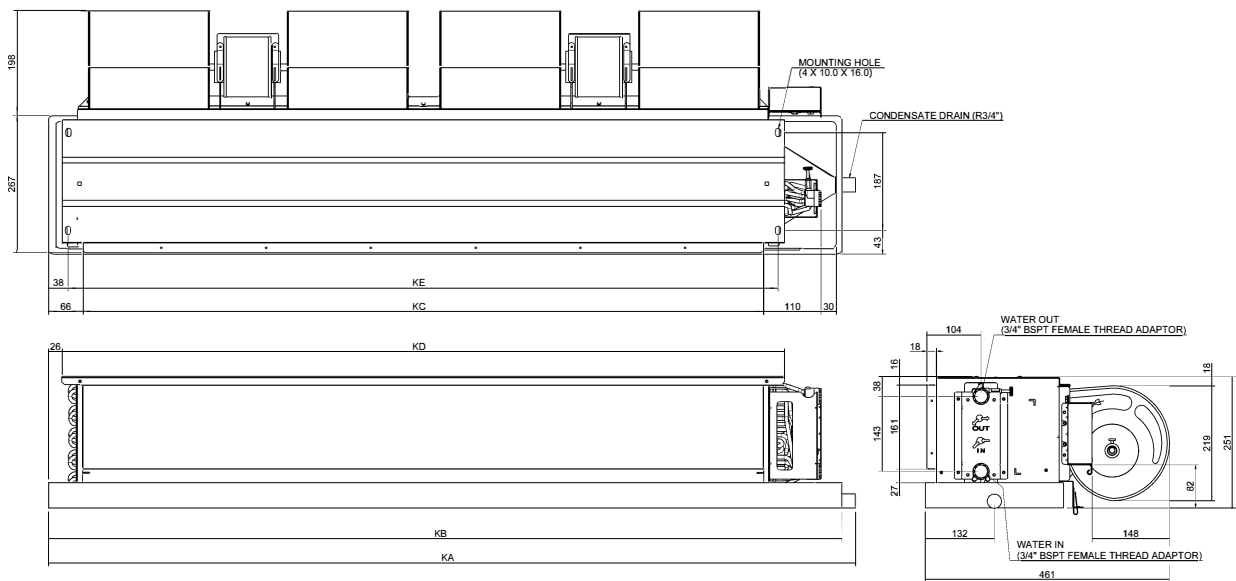
Model: FWC02G (LSP)







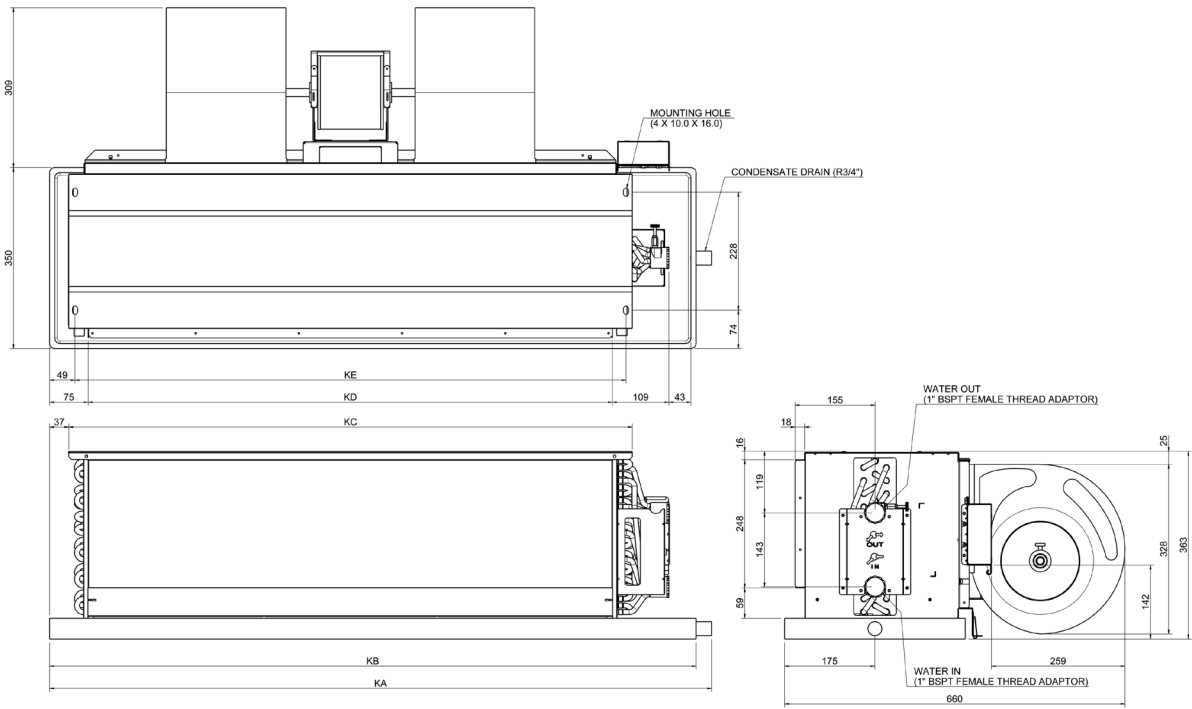
Model: FWC12G (MSP,LSP)



Dimension Model	KA	KB	KC	KD	KE
FWC12G	1540	1514	1300	1378	1354

Note: Dimension in mm

Model: FWC14/16/18/20G (MSP)

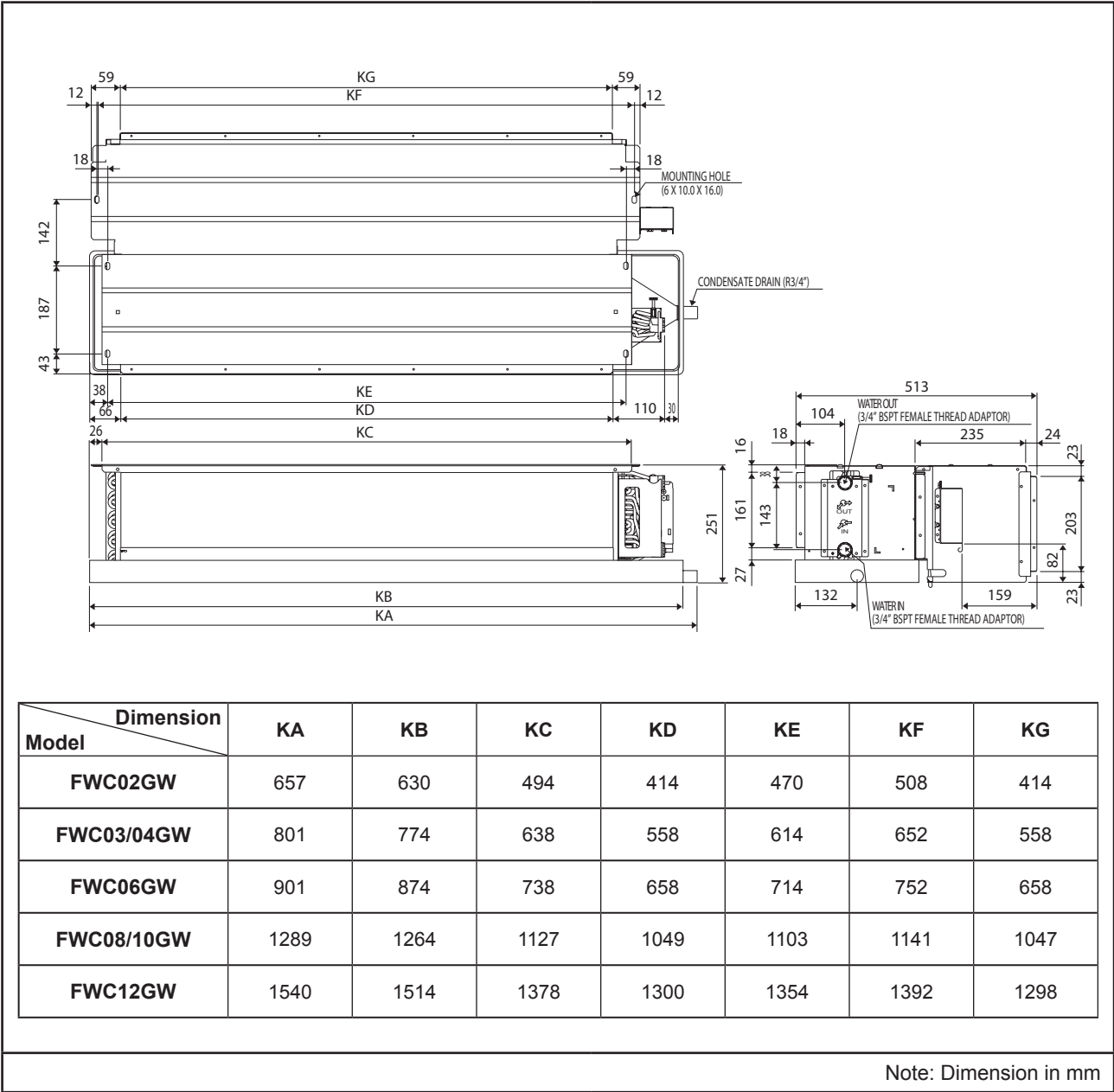


Model \ Dimension	KA	KB	KC	KD	KE
FWC14GW	1142	1116	953	877	929
FWC16/18GW	1280	1254	1091	1015	1067
FWC20GW	1420	1394	1231	1155	1207

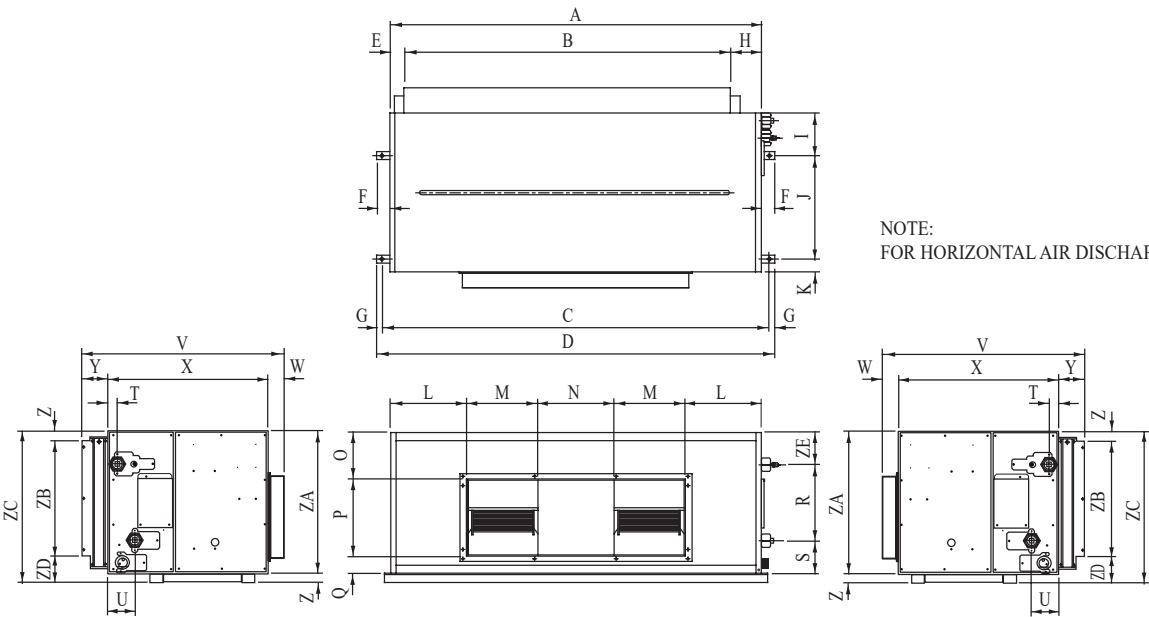
Note: Dimension in mm



Model: FWC02/03/04/06/08/10/12G EC (LSP , MSP)



Model: FUD20/25B



LEFT PIPING (OPTIONAL)

RIGHT PIPING (STANDARD)

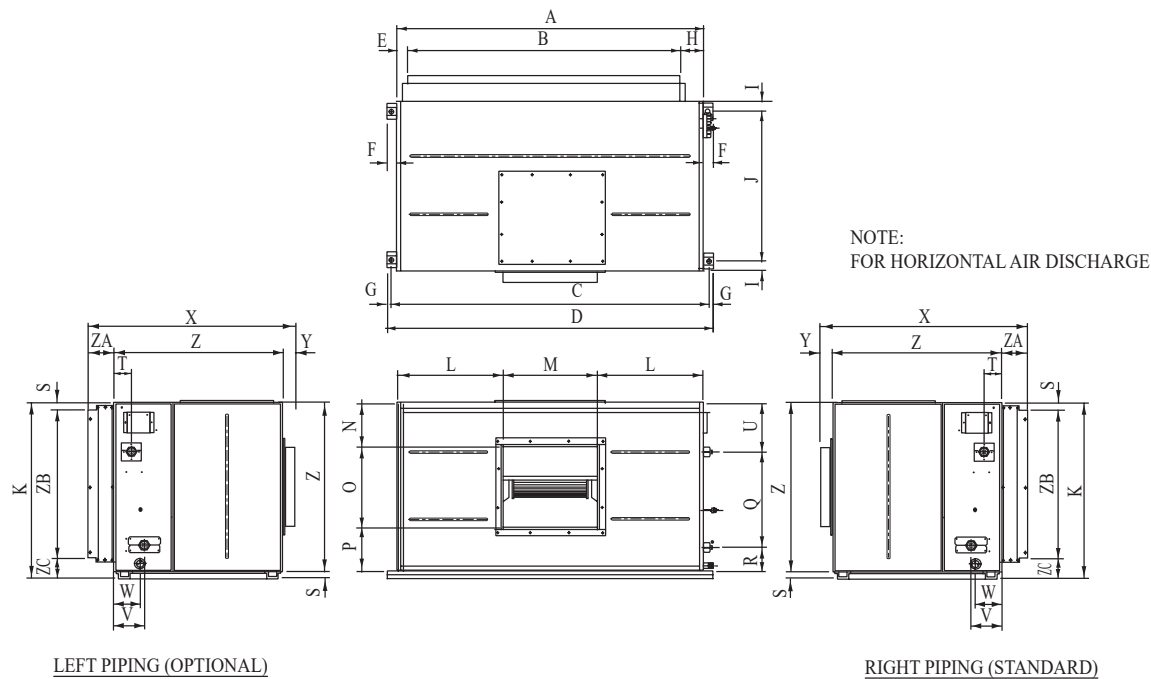
Dimension Model	A	B	C	D	E	F	G	H	I	J	K	L	M
FUD20B	1402	1232	1462	1502	53	50	20	117	163	394	48	287	270
FUD25B	1402	1232	1462	1502	53	50	20	117	163	394	48	287	270

Dimension Model	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
FUD20B	288	177	295	65	302	103	33	72	761	60	605	96	35
FUD25B	288	177	295	65	289	103	33	72	761	60	605	96	35

Dimension Model	ZA	ZB	ZC	ZD	ZE
FUD20B	537	437	572	100	132
FUD25B	537	437	572	100	145

Note: Dimension in mm

Model: FUD30/40B (Horizontal Air Discharge)



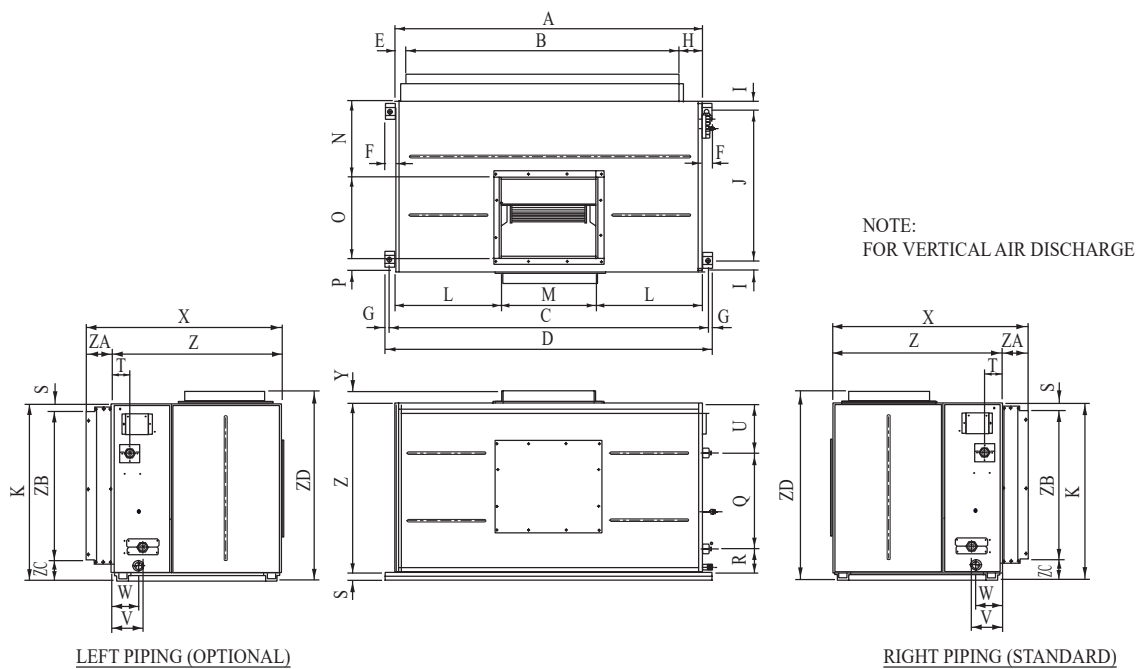
Dimension	A	B	C	D	E	F	G	H	I	J	K	L	M
Model													
FUD30B	1540	1370	1600	1640	53	50	20	117	48	754	885	533	474
FUD40B	1540	1370	1600	1640	53	50	20	117	48	754	885	533	474

Dimension	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
Model													
FUD30B	220	408	222	468	120	35	88	262	155	132	1040	60	850
FUD40B	220	408	222	468	120	35	88	262	155	132	1040	60	850

Dimension	ZA	ZB	ZC
Model			
FUD30B	130	747	103
FUD40B	130	747	103

Note: Dimension in mm

Model: FUD30/40B (Vertical Air Discharge)



Dimension Model	A	B	C	D	E	F	G	H	I	J	K	L	M
FUD30B	1540	1370	1600	1640	53	50	20	117	48	754	885	533	474
FUD40B	1540	1370	1600	1640	53	50	20	117	48	754	885	533	474

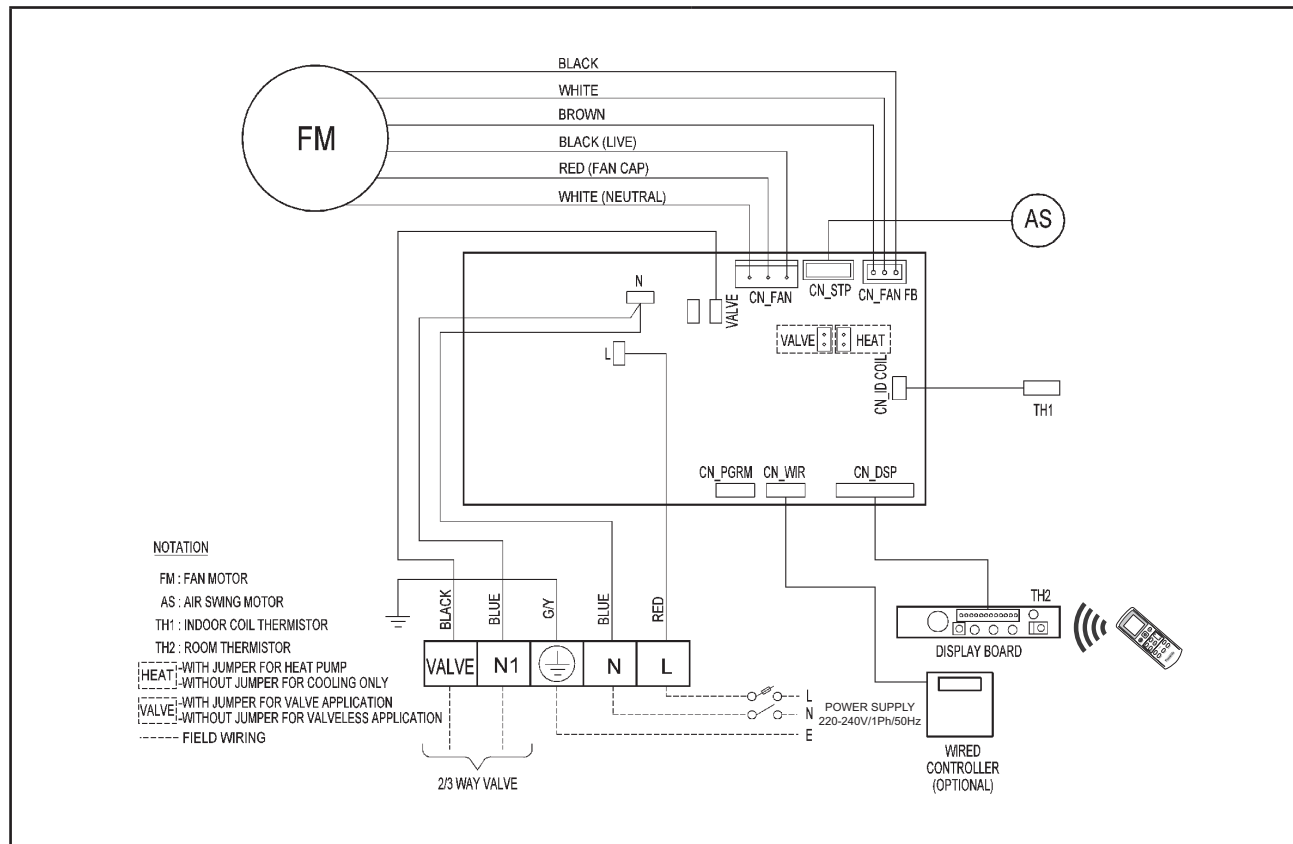
Dimension Model	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
FUD30B	382	408	60	468	120	35	88	262	155	132	980	60	850
FUD40B	382	408	60	468	120	35	88	262	155	132	980	60	850

Dimension Model	ZA	ZB	ZC	ZD
FUD30B	130	747	103	945
FUD40B	130	747	103	945

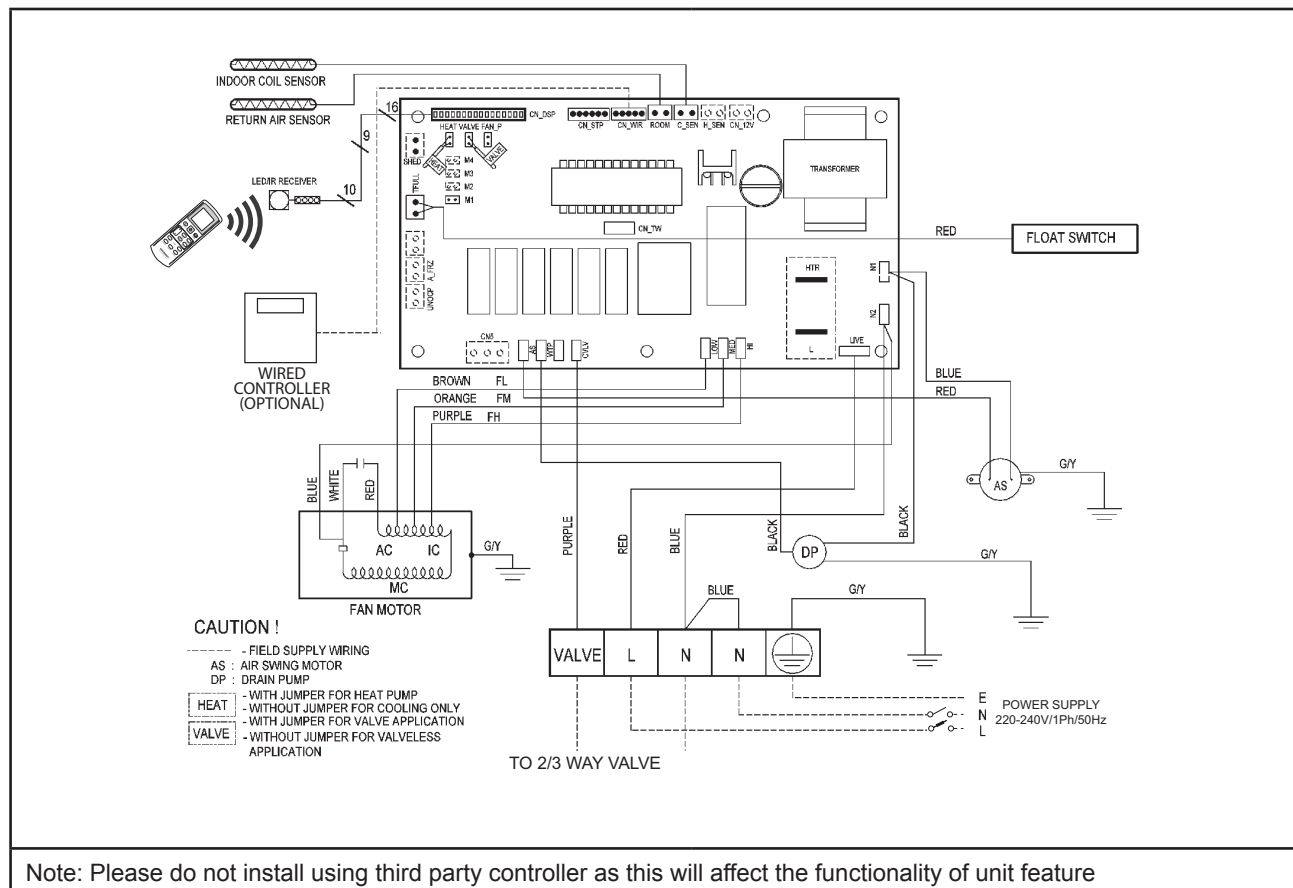
Note: Dimension in mm

# Wiring Diagrams

Model: FWW02/03/04/05/06L

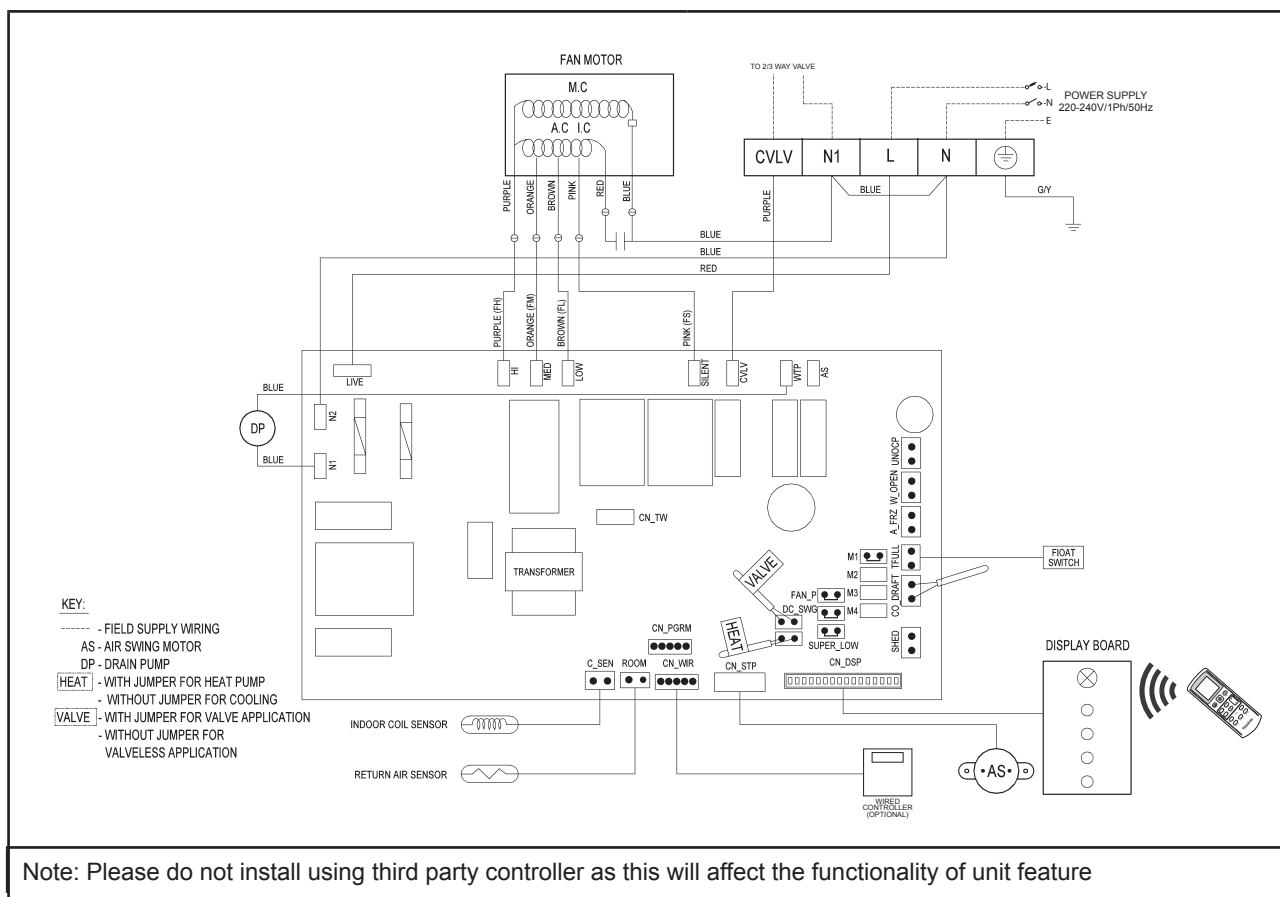


Model: FWF02/04/05C

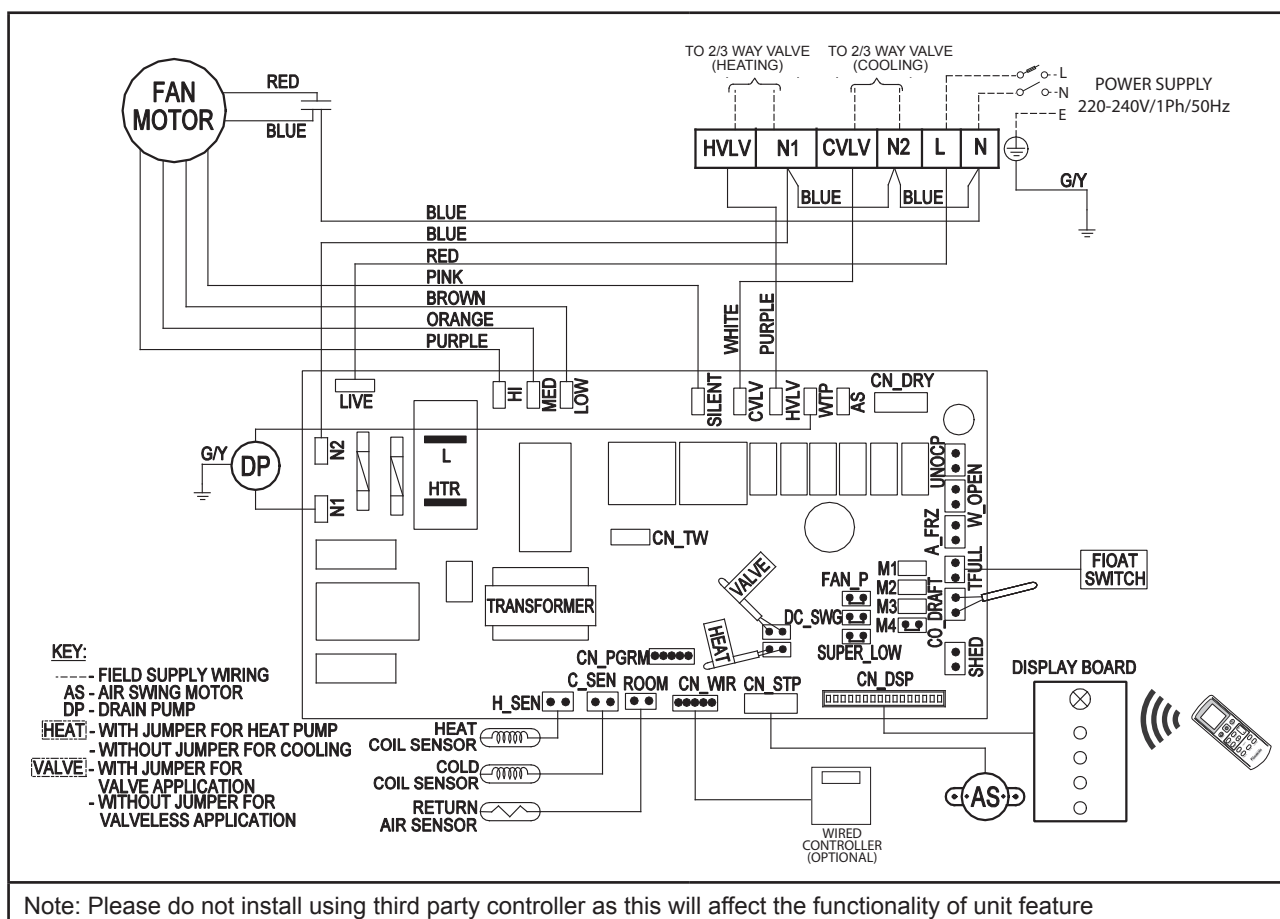


Note: Please do not install using third party controller as this will affect the functionality of unit feature

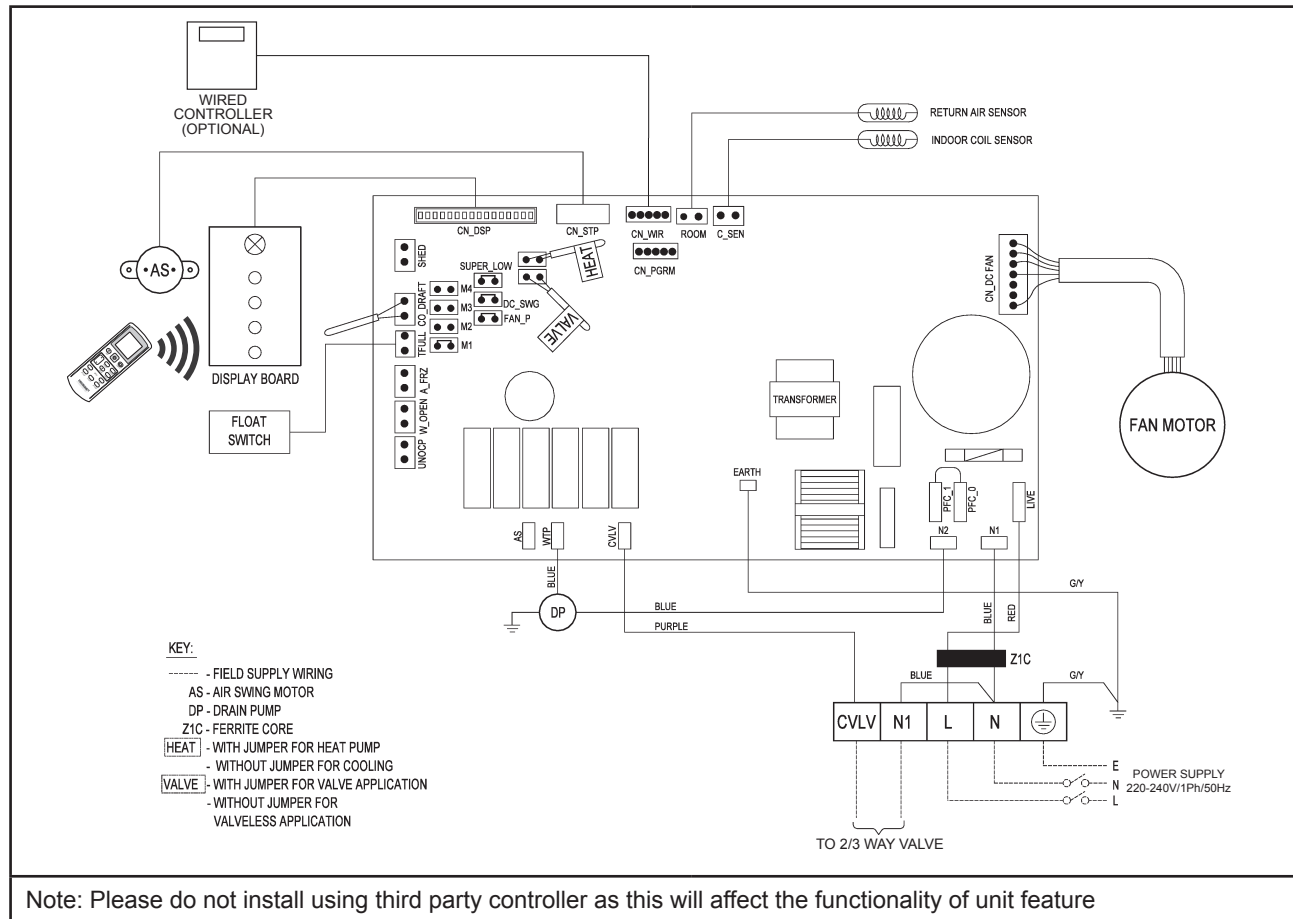
## Model: FWK06/08/09/11/13E



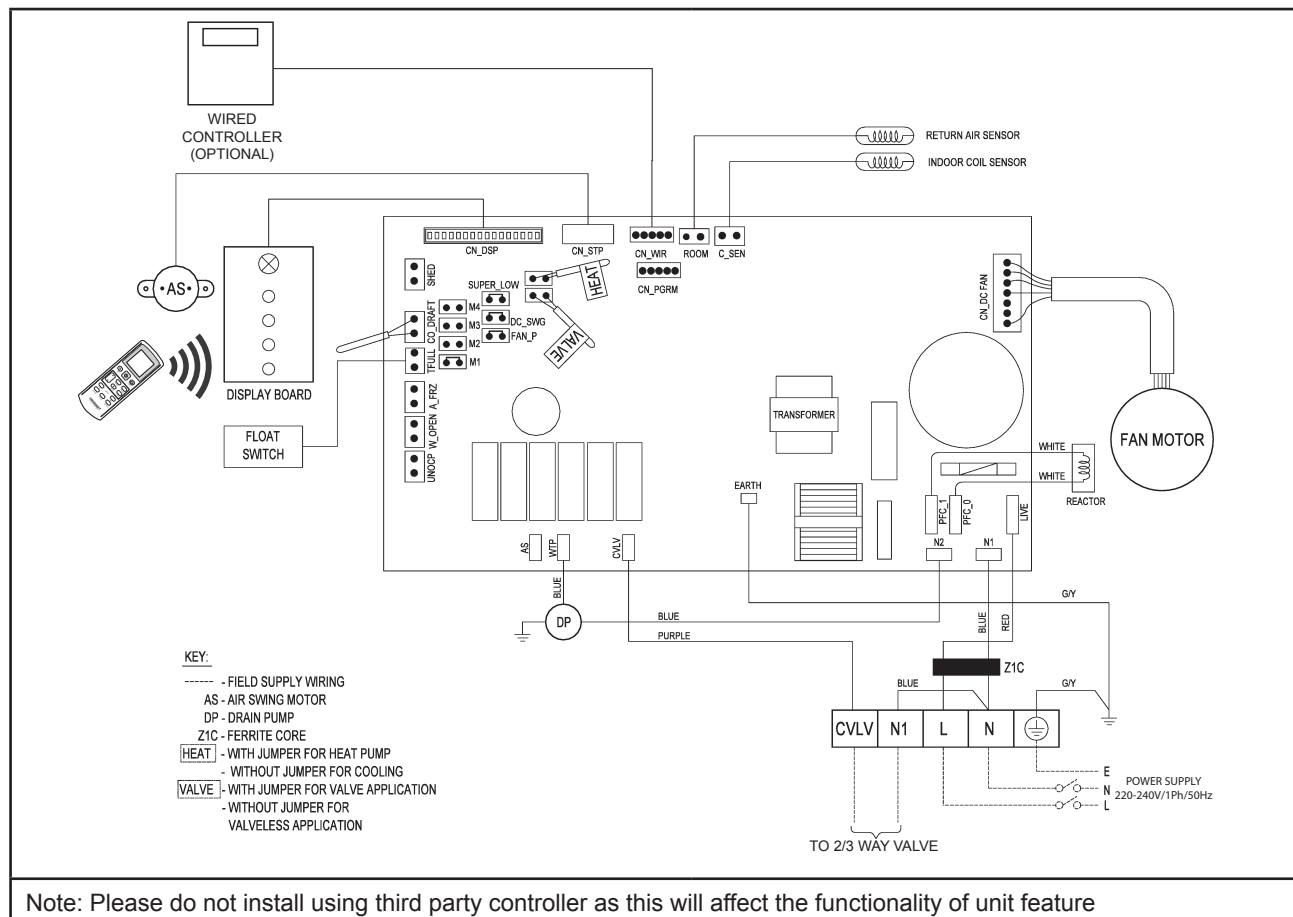
## Model: FWK06/08/09/11/13EH



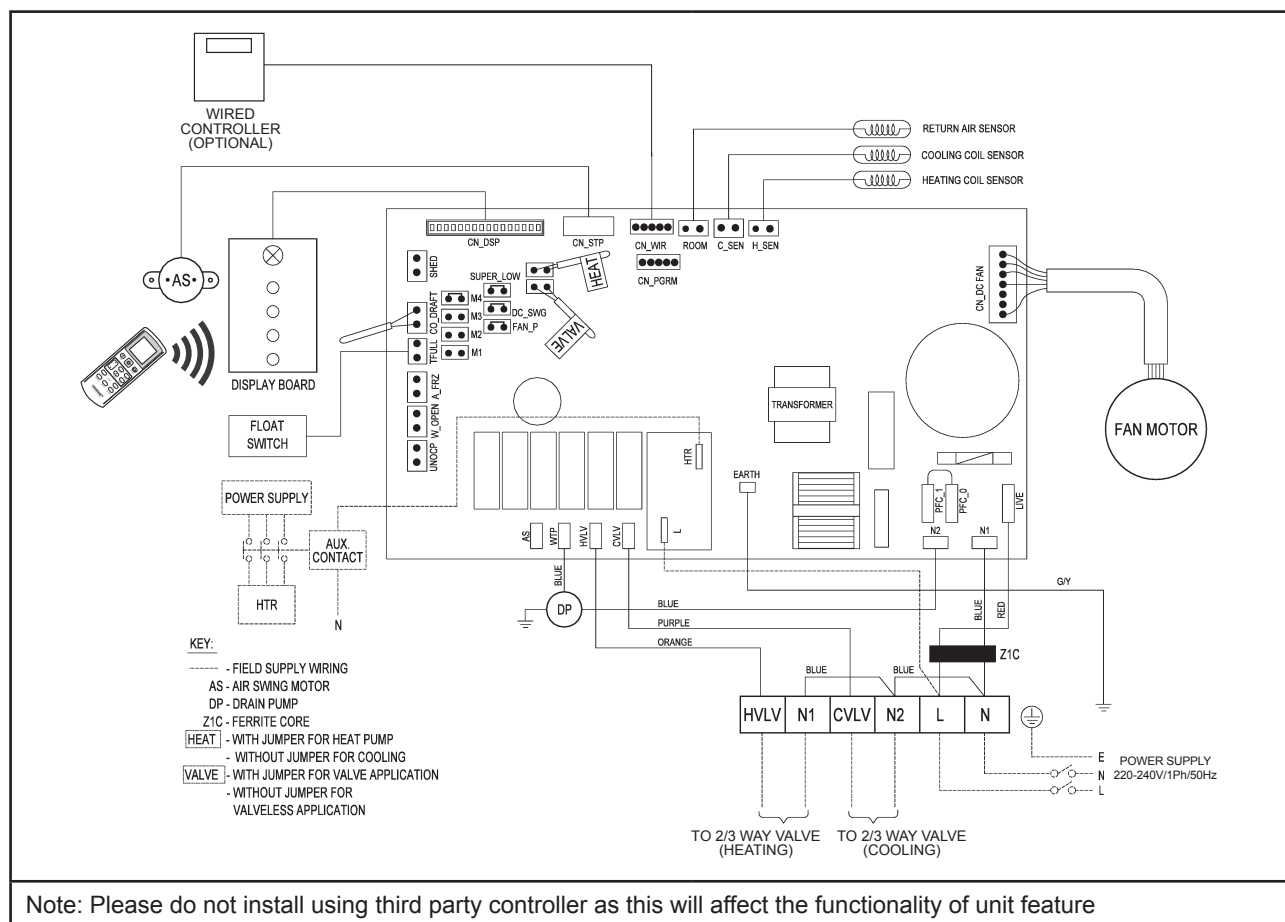
## Model: FWKE05/08E



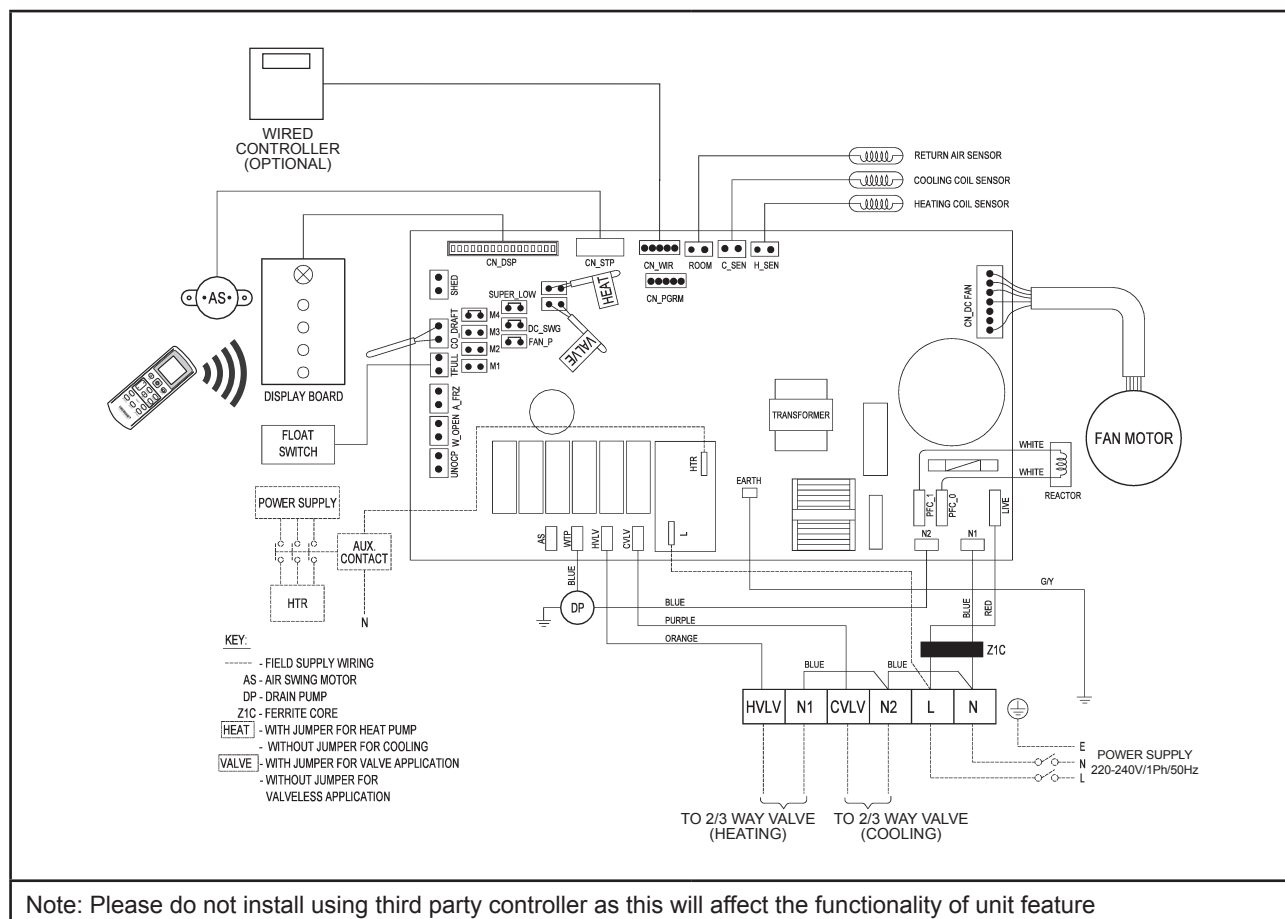
## Model: FWKE11E



## Model: FWKE05/08EH

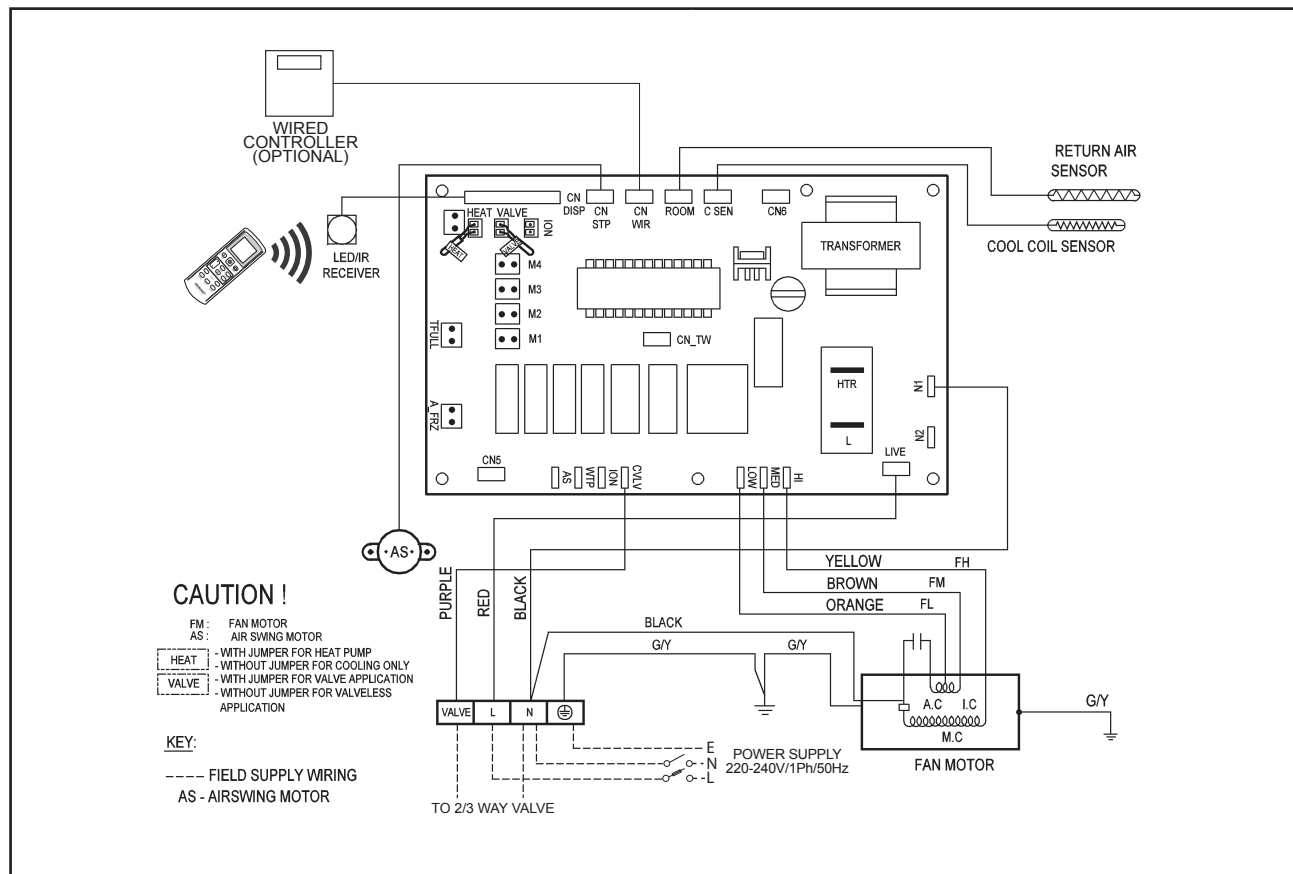


## Model: FWKE11EH

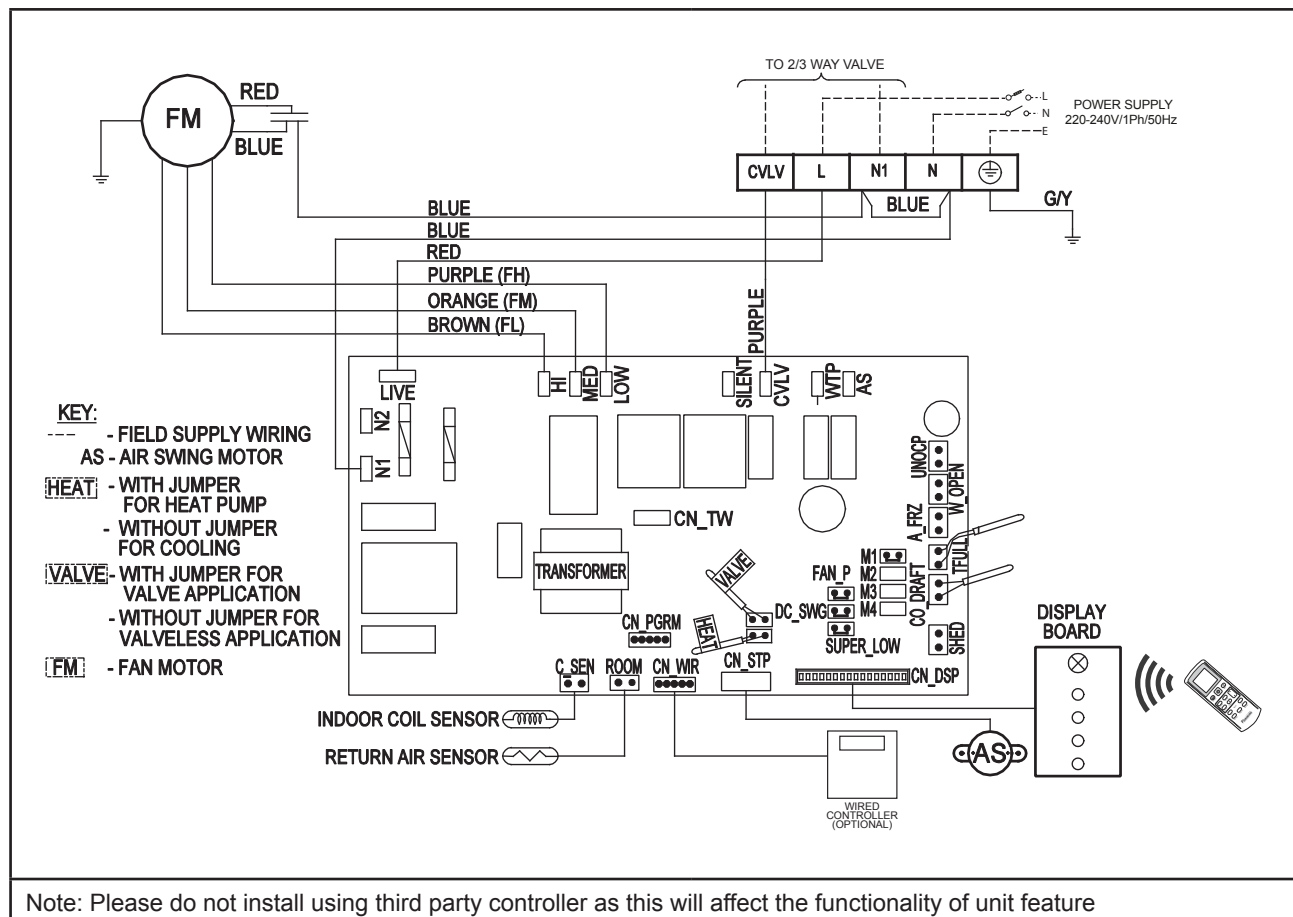




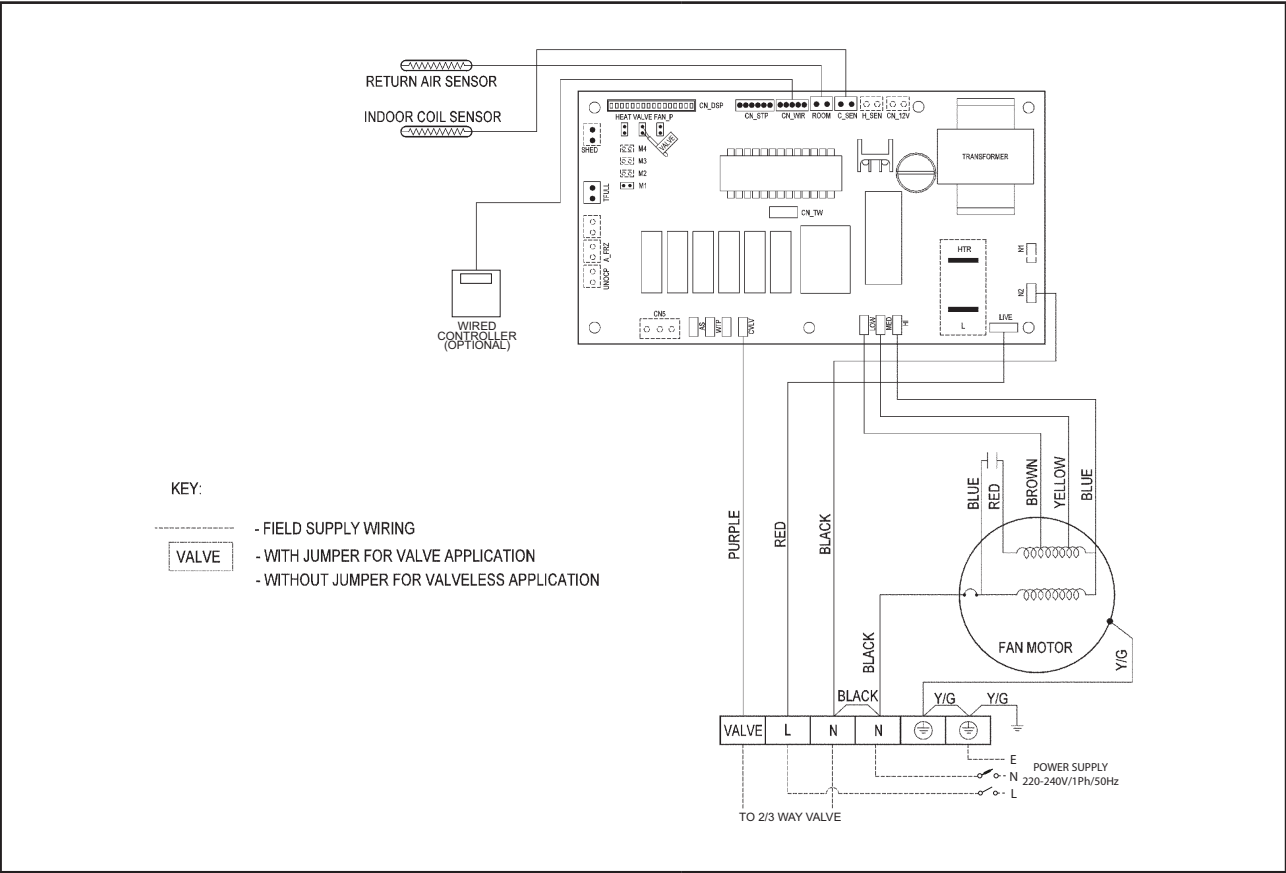
**Model: FWE05/06/07E**



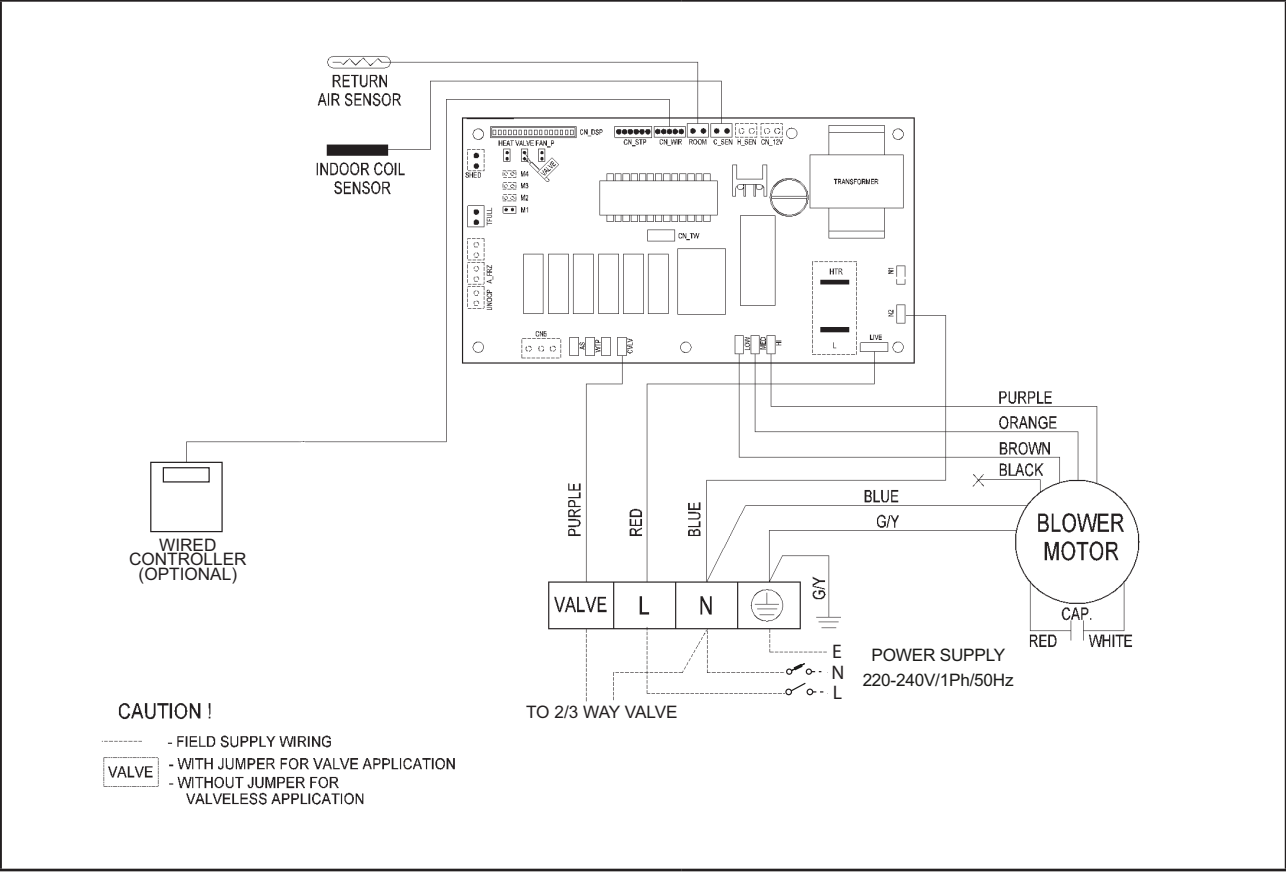
**Model: FWE08/10/12E**



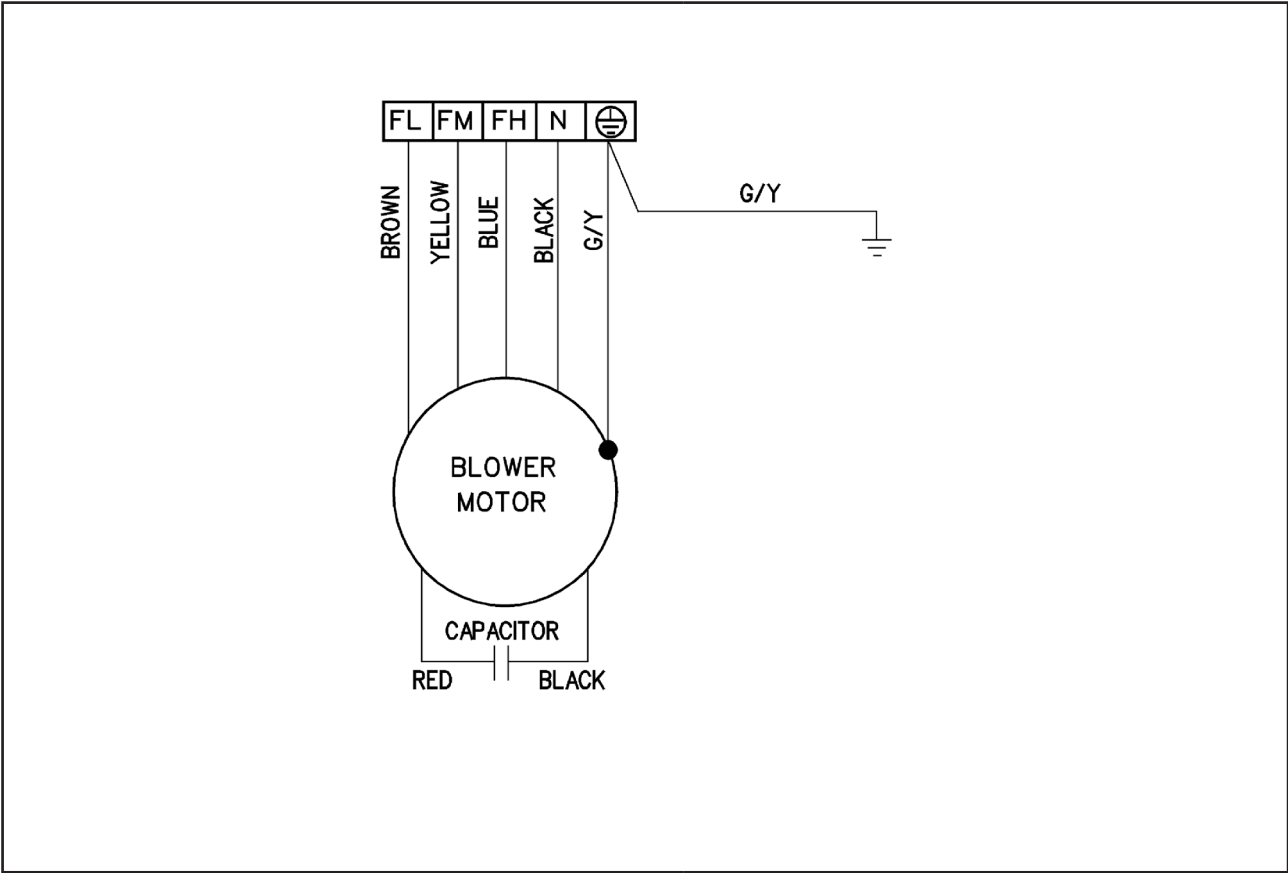
Model: FWC03/04/06/07C (With Controller)



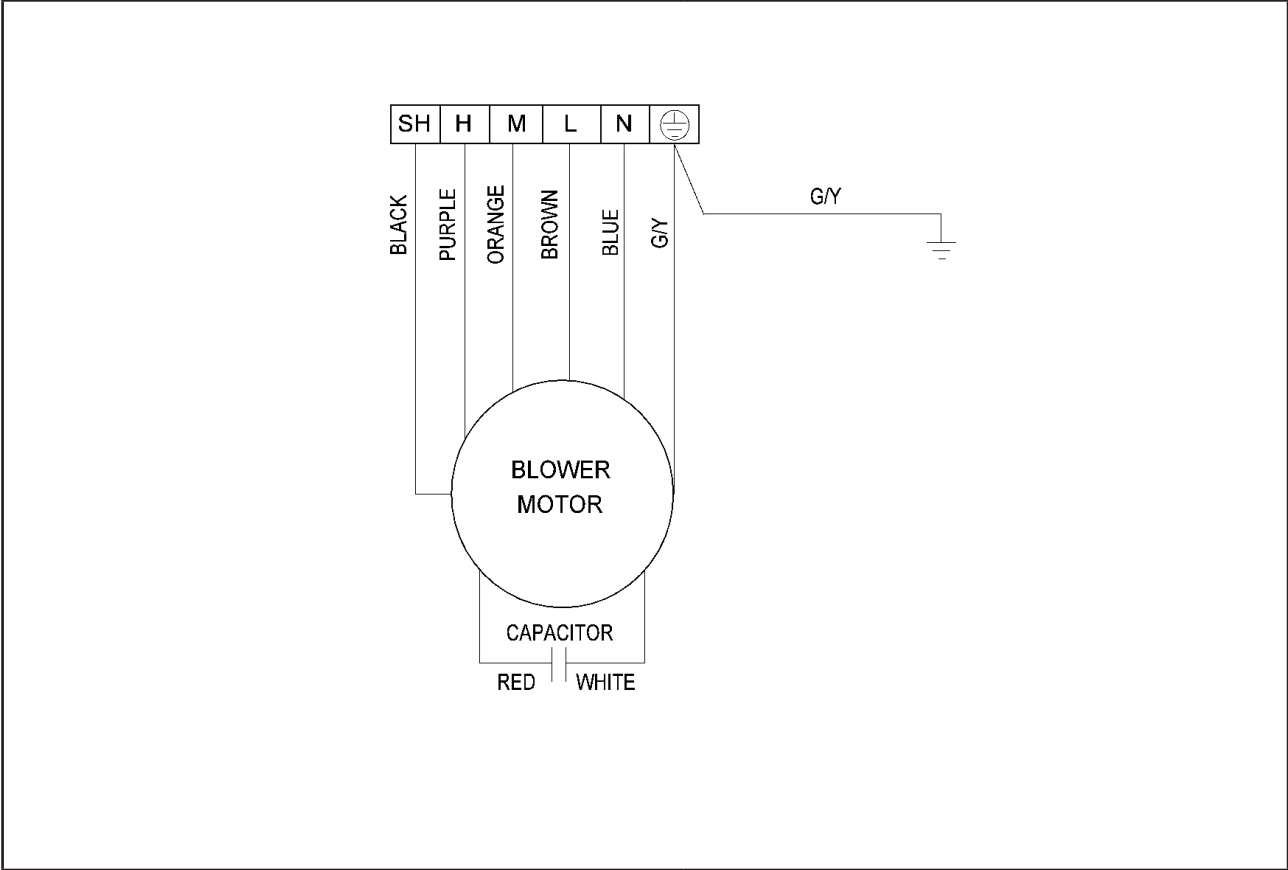
Model: FWC09/11/12/14/16C (With Controller)



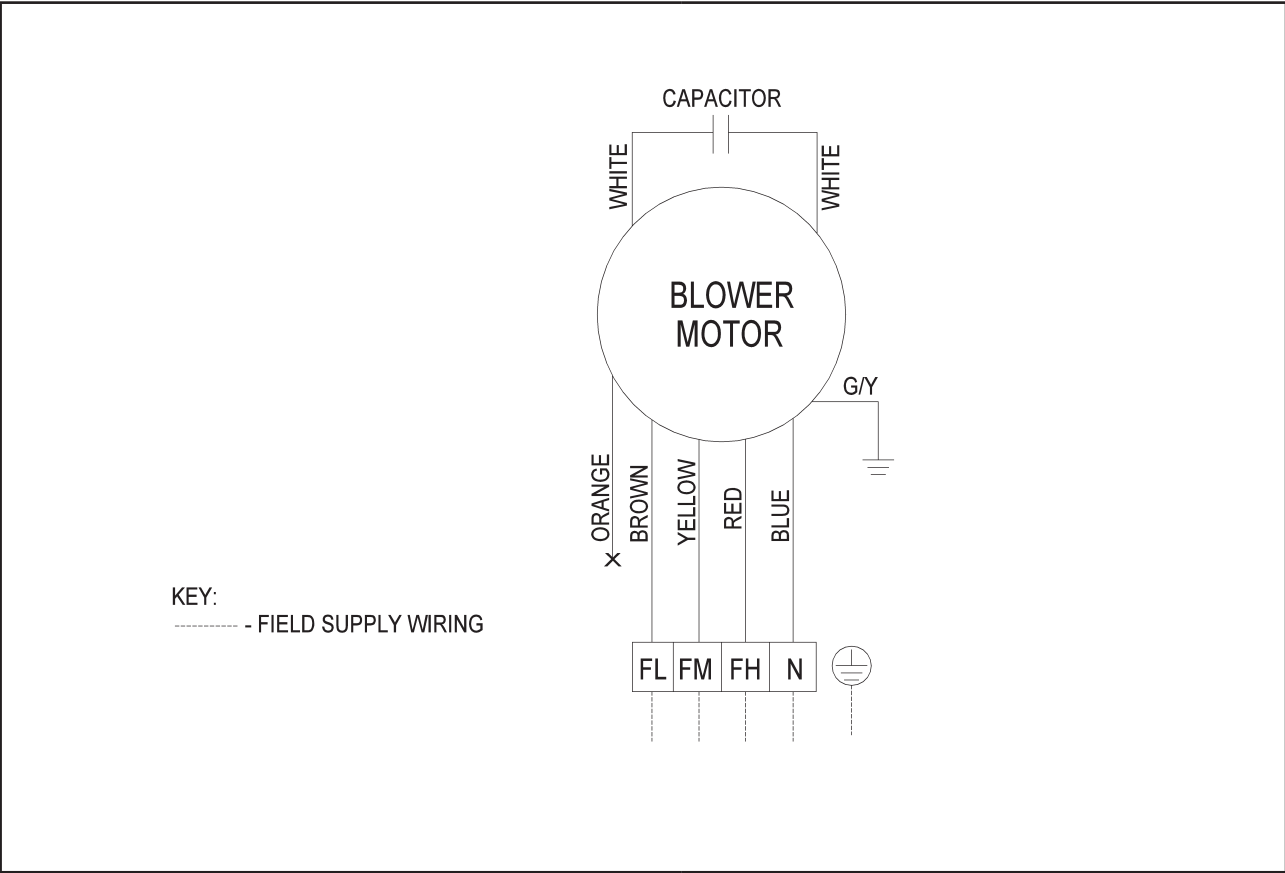
Model: FWC03/04/06/07C (Without Controller)



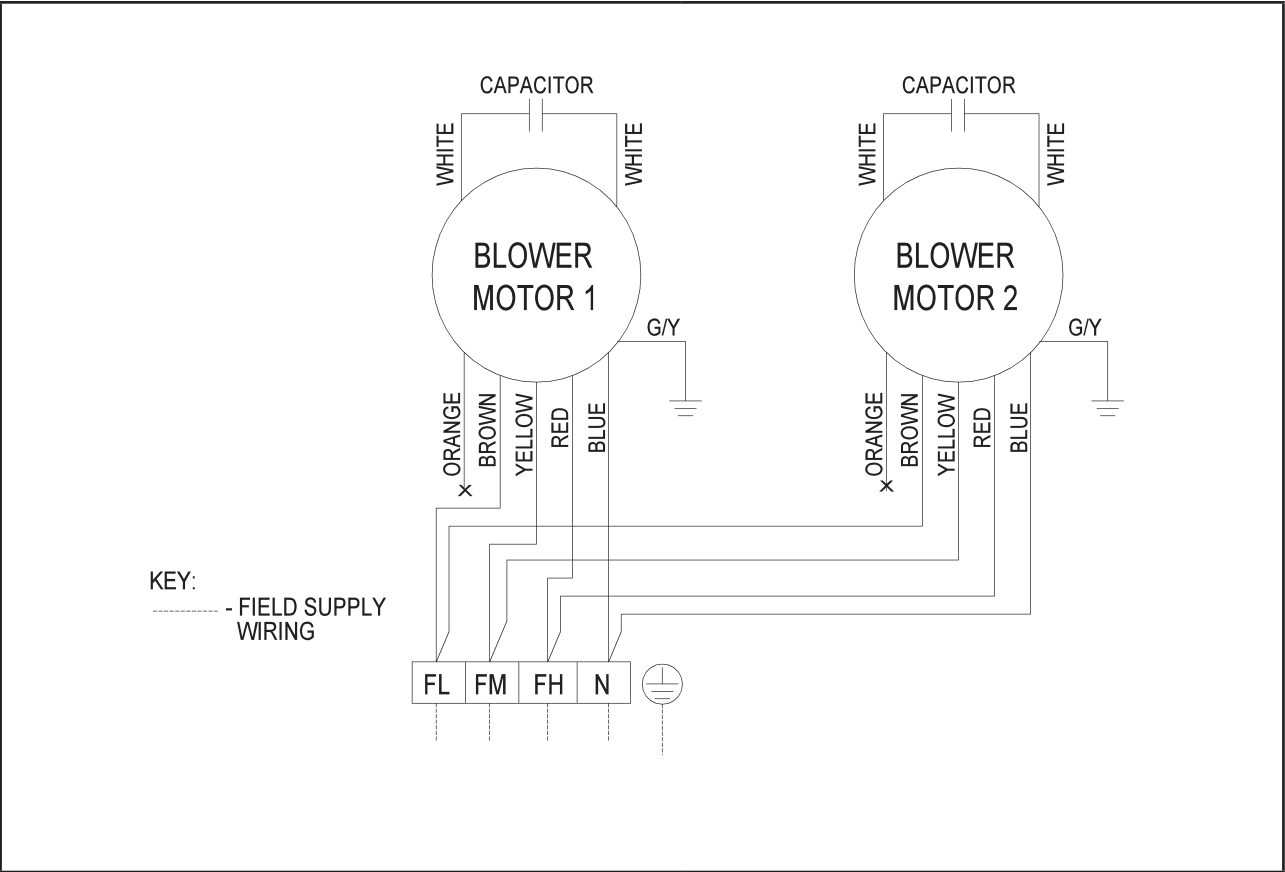
Model: FWC09/11/12/14/16C (Without Controller)



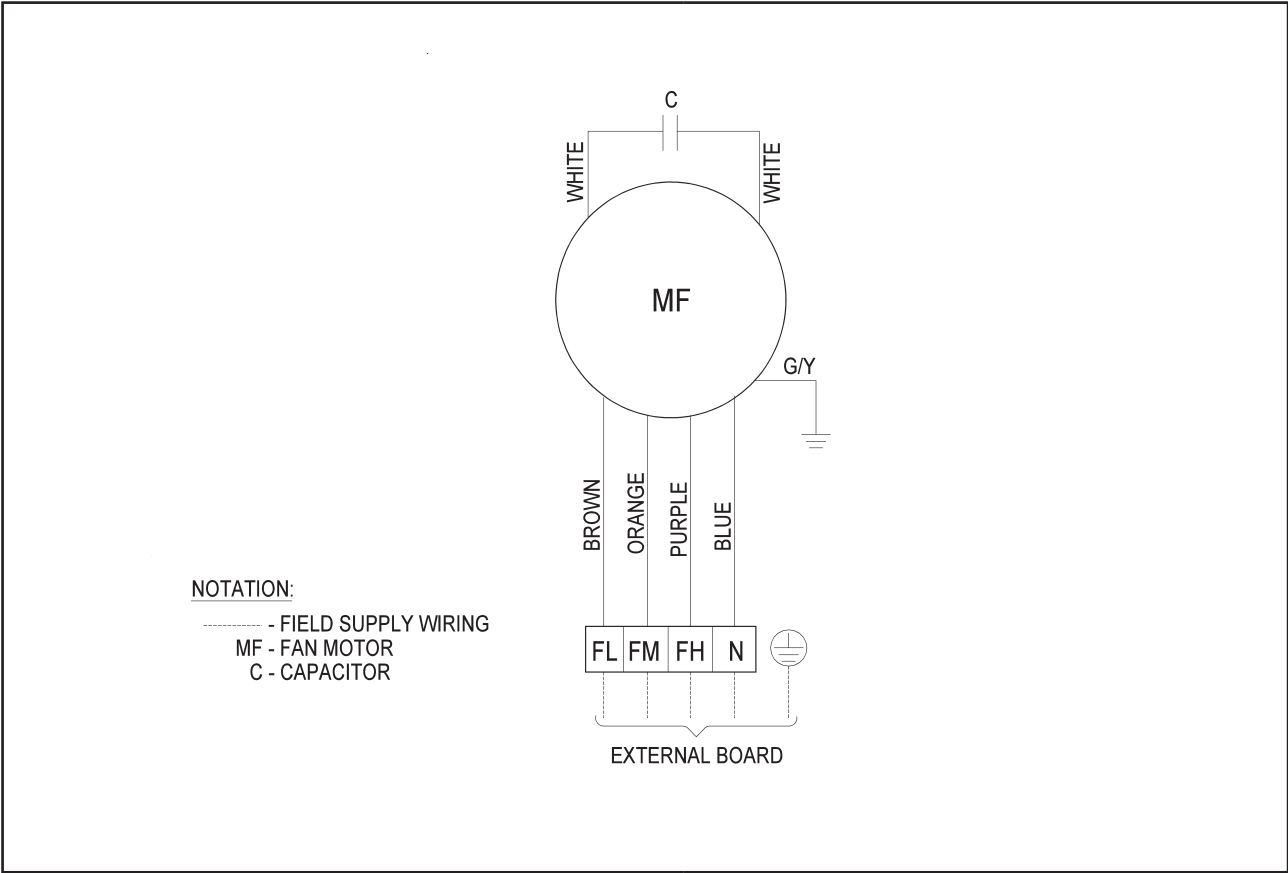
Model: FWC02/03/04/05/06FD



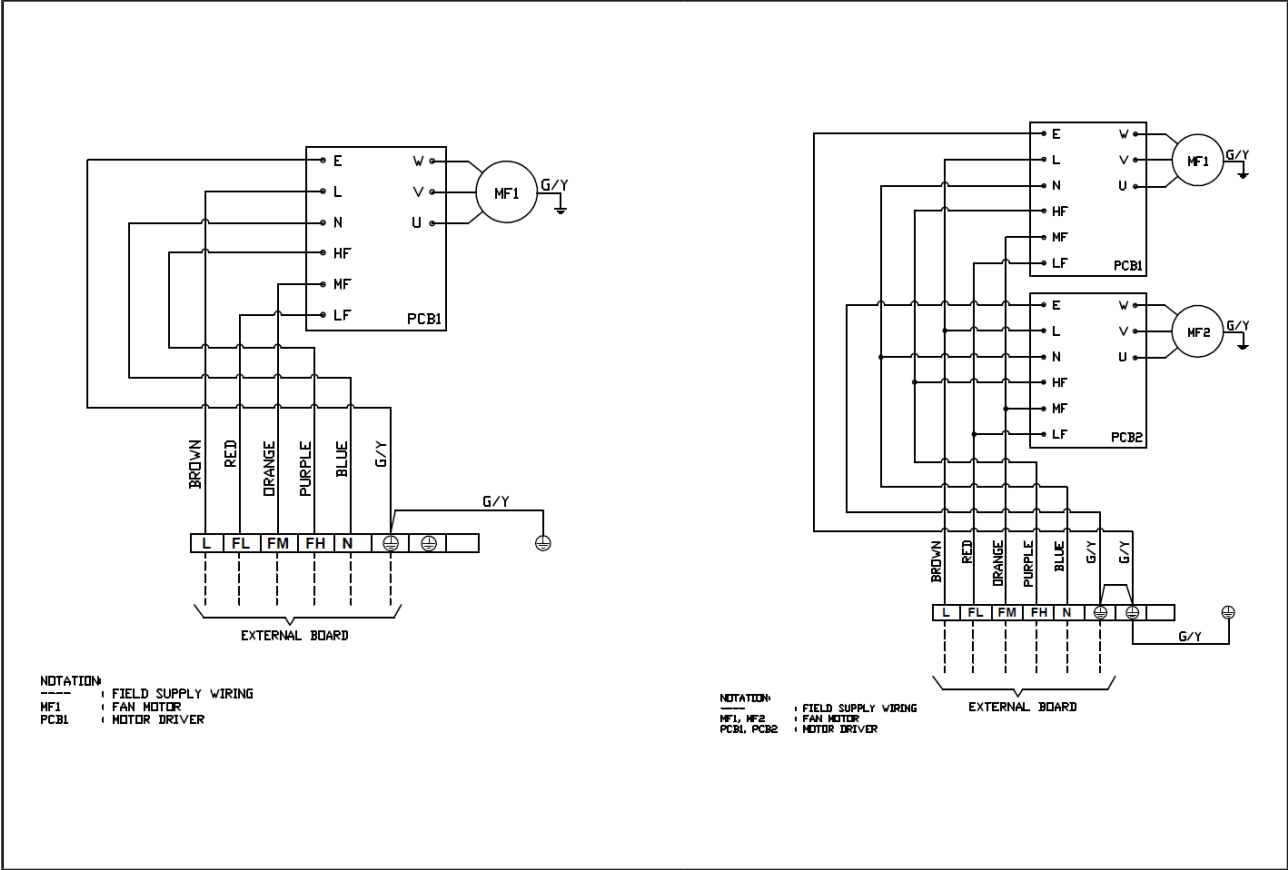
Model: FWC08/10FD



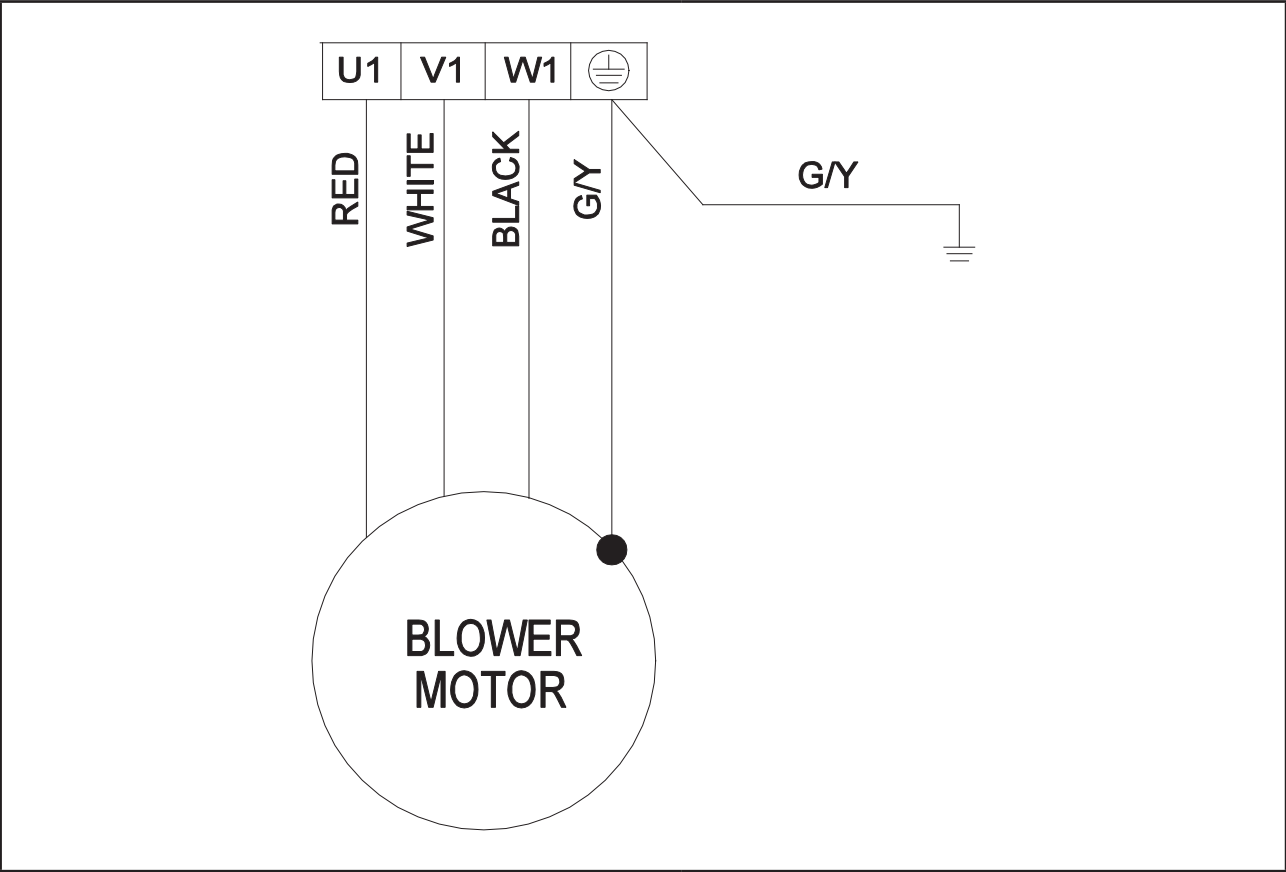
Model: FWC02/03/04/06/14/16/18/20G



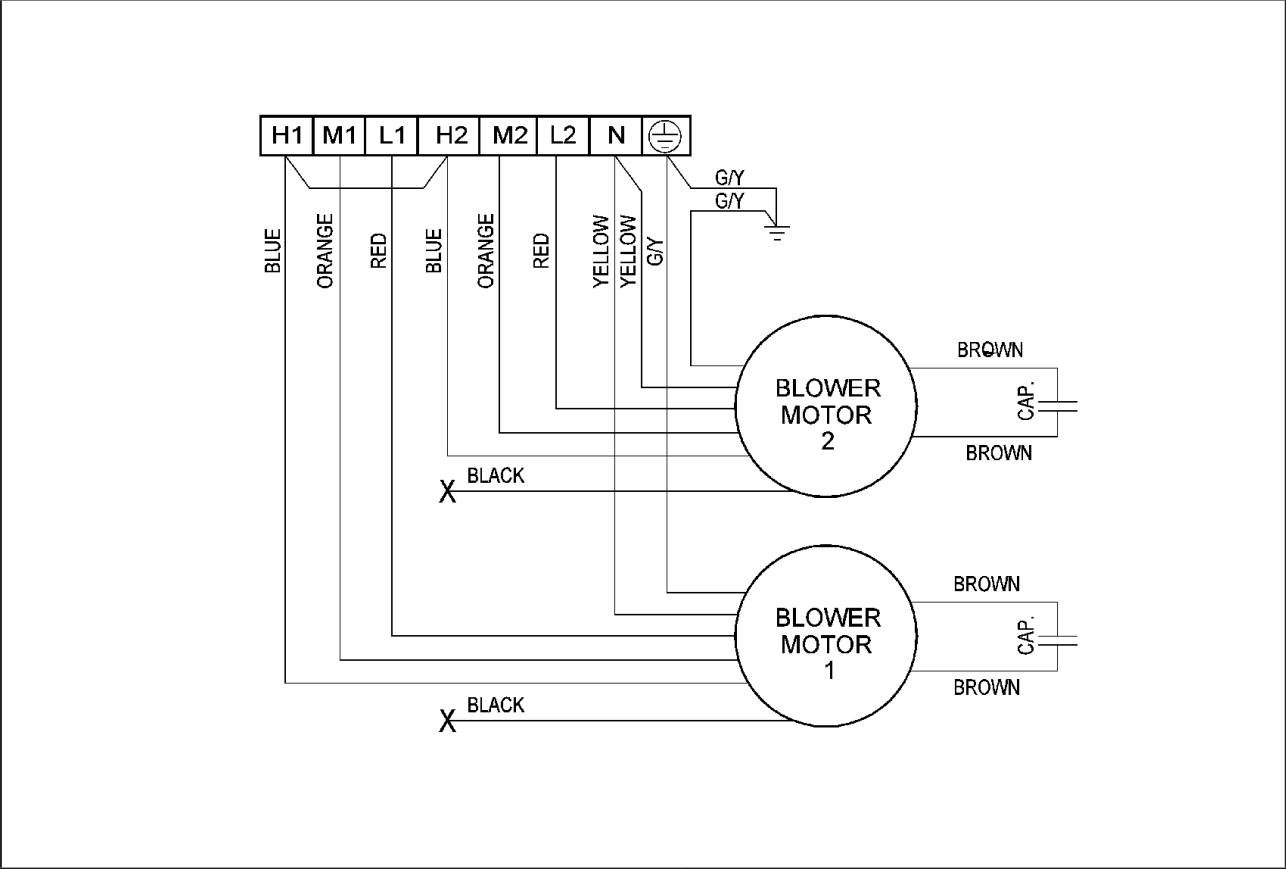
Model: FWC02/03/04/06/08/12G EC (LSP , MSP)



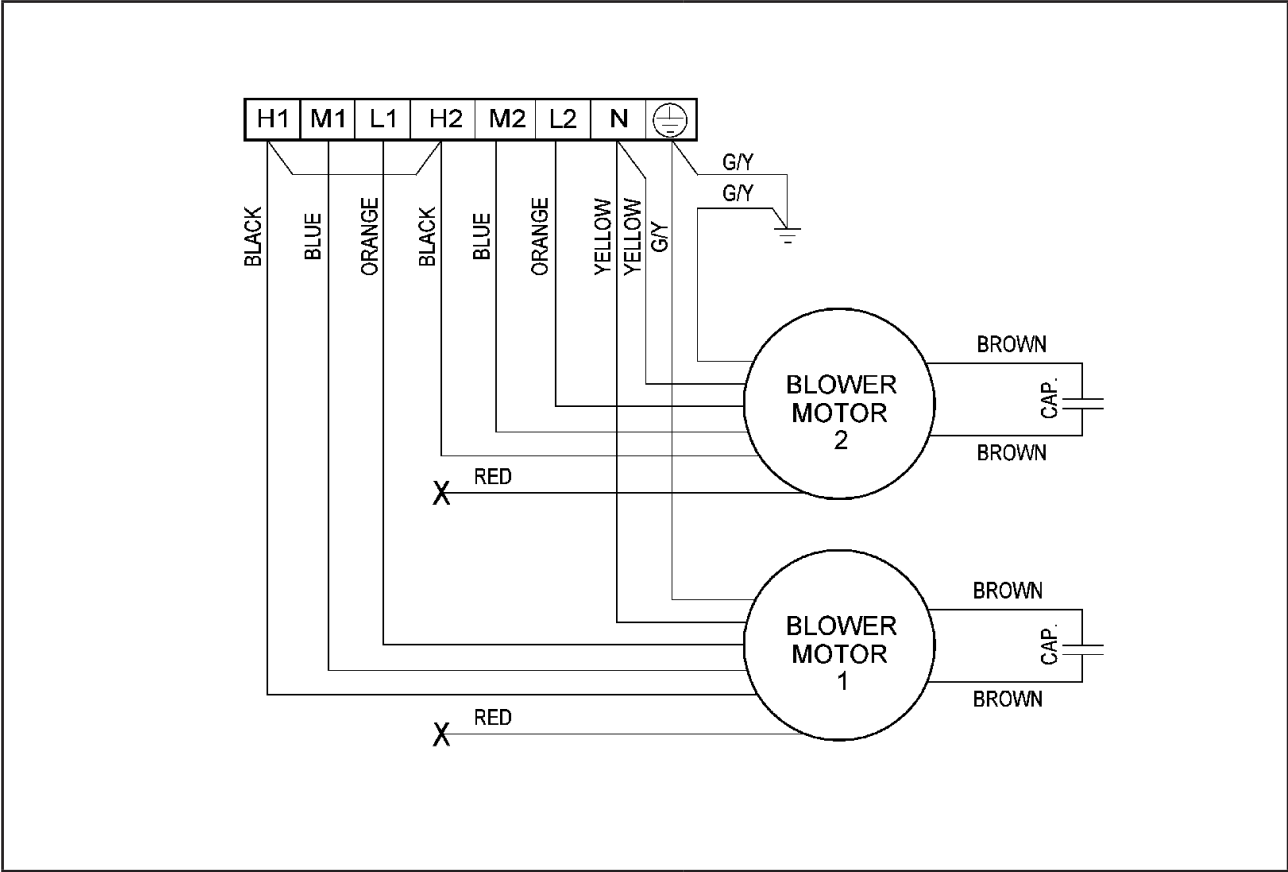
Model: FUD30/40B



Model: FUD20B



Model: FUD25B



# Service & Maintenance



## Caution

**Moving machinery and electrical power hazards. May cause severe personal injury or death. Disconnect from main power supply before servicing equipment.**

The unit is designed to give long life operation with minimum maintenance required. However, it should be regularly checked and the following items should be given due attention.

Components	Maintenance Procedures	Recommended Schedule
Air Filter (Indoor Unit)	<ol style="list-style-type: none"> <li>1. Remove any dust adhering to the filter by using a vacuum cleaner or wash in lukewarm water (below 40°C) with a neutral cleaning detergent.</li> <li>2. Rinse the filter well and dry before placing it back onto the unit.</li> <li>3. Note: Never use gasoline, volatile substances or chemicals to clean the filter.</li> </ol>	<p>At least once every 4 weeks.</p> <p>More frequently if necessary.</p>
Indoor Unit	<ol style="list-style-type: none"> <li>1. Clean any dirt or dust on the grille or panel by wiping it with a soft cloth soaked in lukewarm water (below 40°C) and a neutral detergent solution.</li> <li>2. Note: Never use gasoline, volatile substances or chemicals to clean the indoor unit.</li> </ol>	<p>At least once every 4 weeks.</p> <p>More frequently if necessary.</p>
Condense Drain Pan & Pipe	<ol style="list-style-type: none"> <li>1. Check the cleanliness and clean it if necessary.</li> </ol>	Every 3 months.
Indoor Fan	Check if there is any abnormal noise.	When necessary.
Indoor Coil	<ol style="list-style-type: none"> <li>1. Check and remove the dirt between the fins.</li> <li>2. Check and remove any obstacles which hinder air flowing into and out of the indoor unit.</li> </ol>	Every month.
Power Supply	<ol style="list-style-type: none"> <li>1. Check the voltage and current of the indoor unit.</li> <li>2. Check the electrical wiring for any faulty contacts caused by loose connections, foreign matters, etc. Tighten the wires onto the terminal block if necessary.</li> </ol>	Every 2 months.
Fan Motor Oil	All motors are pre-lubricated and sealed at factory.	No maintenance required.



## Caution






















Do not charge **OXYGEN, ACETYLENE OR OTHER FLAMMABLE** and poisonous gases into the unit when performing a leakage test or an air tight test. These gases could cause severe explosion and damage if expose to high temperature and pressure.



# Troubleshooting

Model	Board
FWW02/03/04/05/06L	50WJW
FWF02/04/05C	W2
FWK06/08/09/11/13E(H) FWE08/10/12E	W3
FWKE05/08/11E(H)	W3DC
FWE05/06/07E	W2
FWC02/03/04/06/07/08/09/11/12/14/16C	W2
FWC02/03/04/06/08/10/12/14/16/18/20G	No Controller
FUD20/25/30/40B	No Controller

## Self Diagnostic Table - 50WJW Board

	 COOL/HEAT (GREEN/RED)		Normal Operation/Fault Indication	Action	Error Code
	 Green		Cool mode	-	-
	 Red		Heat mode	-	-
			Timer on	-	-
			Sleep mode on	-	-
			Fan mode on	-	-
			Dry mode on	-	-
	 1 time		Room air sensor contact Loose/Short	Call your dealer	Blink E1
 2 times			Indoor coil sensor open/short	Call your dealer	Blink E2
		 3 times	Pipe water temperature poor	-	Blink E4
		 1 time	Pipe water temperature bad	-	Blink E5
		 6 times	Hardware error (tact switch pin short)	Call your dealer	Blink E8
 4 times			No feedback from indoor fan	Call your dealer	Blink E9

 ON

  ON or OFF

 Blinking

### Self Diagnostic Table – W2 Board

Fault Indication	COOL LED	Error Code	Action
Room sensor error (short/open)	Blink 1 time	E1	Check room sensor connection/change room air sensor
Pipe water sensor error (short/open)	Blink 2 times	E2	Check pipe water sensor connection/change pipe water sensor
Water pump error*	Blink 6 times	E6	Clear the clogging at drain pipe. If pump is not working, change the pump
Pipe water temperature fault	Blink 5 times	E5	Check chiller condition (not working or just started)

\*Applicable to FWF model only.

### Self Diagnostic Table – W3 Board

	Event	Power LED	Timer LED	Error Code
1.	Room Sensor Open or Short	Blink 1 time	-	Blink E1
2.	Pipe Water sensor Open or Short	Blink 2 times	-	Blink E2
3.	Pipe Water Temperature poor	Blink 3 times	-	Blink E4
4.	Pipe Water Temperature bad/fault	-	Blink 1 time	Blink E5
5.	Water Pump Fault**	-	Blink 2 times	Blink E6
6.	Hardware Error (tact switch pin Short/M3 or M4 Mode with valveless section)	-	Blink 6 times	Blink E8
7.	Window Open activated*	Blink 6 times	-	-
8.	Antifreeze mode activated*	Blink 7 times	-	-
9.	Load Shedding activated*	Blink 8 times	-	-

\*Only applicable for 4-pipes system.

\*\*Applicable to FWK model only.

### Self Diagnostic Table – W3DC Board

	Event	Power LED	Timer LED	Error Code
1.	Room Sensor Open or Short	Blink 1 time	-	Blink E1
2.	Pipe Water sensor Open or Short	Blink 2 times	-	Blink E2
3.	Pipe Water Temperature poor	Blink 3 times	-	Blink E4
4.	Pipe Water Temperature bad/fault	-	Blink 1 time	Blink E5
5.	Water Pump Fault	-	Blink 2 times	Blink E6
6.	Window Open activated*	Blink Cool 6 times	-	-
7.	Antifreeze mode activated*	Blink Cool 7 times	-	-
8.	Load Shedding activated*	Blink Cool 8 times	-	-
9.	Hardware Error	-	Blink 6 times	Blink E8
10.	No feedback from indoor fan	Blink Cool 4 times		Blink E9

\*Only applicable for 4-pipes system.

