

Air Conditioning
Technical Data

FFA-A



- > FFA25A2VEB
- > FFA35A2VEB
- > FFA50A2VEB
- > FFA60A2VEB

TABLE OF CONTENTS

FFA-A

1	Features	2
2	Specifications	3
	Technical Specifications	3
	Electrical Specifications	4
3	Options	5
4	Dimensional drawings	6
5	Centre of gravity	8
6	Piping diagrams	9
7	Wiring diagrams	10
	Wiring Diagrams - Single Phase	10
8	Sound data	11
	Sound Pressure Spectrum	11
9	Air flow patterns	13
	Air Flow Pattern - Cooling	13
	Air Flow Pattern - Heating	17

1 Features

Unique design in the market that integrates fully flat into the ceiling

- Fully flat integration in standard architectural ceiling tiles, leaving only 8mm
- Remarkable blend of iconic design and engineering excellence with an elegant finish in white or a combination of silver and white
- Unified indoor unit can be combined with R-32 and R-410A outdoor units, simplifying stock
- Combining with R-32 Bluevolution technology, reduces environmental impact with 68% compared to R-410A, leads directly to lower energy consumption thanks to its high energy efficiency and has up to lower 16% refrigerant charge
- Two optional intelligent sensors improve energy efficiency and comfort.
- Individual flap control: flexibility to suit every room layout without changing the location of the unit!
- Reduced energy consumption thanks to specially developed small tube heat exchanger, DC fan motor and drain pump
- Optional fresh air intake
- Branch duct discharge allows to optimize air distribution in irregular shaped rooms or to supply air to small adjacent rooms
- Standard drain pump with 630mm lift increases flexibility and installation speed



Infrastructure cooling



Inverter



Presence & floor sensor



Home leave operation



Fan only



Draught prevention



Auto cooling-heating changeover



Whisper quiet



Ceiling soiling prevention



Individual flap control



Vertical auto swing



Fan speed steps



Dry programme



Air filter



Weekly timer



Infrared remote control



Wired remote control



Centralised control



Auto-restart



Self diagnosis



Drain pump kit



Twin/triple/double twin application



Multi model application



VRV for residential application

2 Specifications

2-1 Technical Specifications				FFA25A	FFA35A	FFA50A	FFA60A	
Casing	Material			Galvanised steel plate				
Dimensions	Unit	Height/Width/Depth	mm	260/575/575				
	Packed unit	Height/Width/Depth	mm	280/686/597				
Weight	Unit			16.0		17.5		
	Packed unit			18.0		19.0		
Decoration panel	Model			BYFQ60C2W1W				
	Colour			White (N9.5)				
	Dimensions	HeightxWidthxDepth	mm	46x620x620				
	Weight			2.8				
Decoration panel 2	Model			BYFQ60C2W1S				
	Colour			SILVER				
	Dimensions	HeightxWidthxDepth	mm	46x620x620				
	Weight			2.8				
Decoration panel 3	Model			BYFQ60B2W1				
	Colour			White (RAL9010)				
	Dimensions	HeightxWidthxDepth	mm	55x700x700				
	Weight			2.7				
Decoration panel 4	Model			BYFQ60B3W1				
	Colour			WHITE (RAL9010)				
	Dimensions	HeightxWidthxDepth	mm	55x700x700				
	Weight			2.7				
Heat exchanger	Inside length		mm	1,295		1,248		
	Outside length		mm	1,342				
	Rows	Quantity		2		3		
	Fin pitch		mm	1.20				
	Passes	Quantity		5		7		
	Face area		m ²	0.29		0.30		
	Stages	Quantity		12		16		
	Empty tubeplate hole	Quantity		0				
	Fin	Type		Cross fin coil (multi slit fins and hi-XA tubes)				
	Air filter	Type			Resin net			
Fan	Model			QTS32D15M				
	Type			Turbo fan				
	Quantity			1				
	Air flow rate	Cooling	High	m ³ /min	9.0	10.0	12.0	14.5
				cfm	318	353	424	512
			Medium	m ³ /min	8.0	8.5	10.0	12.5
		cfm	282	300	353	442		
		Low	m ³ /min	6.5		7.5		9.5
			cfm	230		265		336
	Heating		High	m ³ /min	9.0	10.0	12.0	14.5
cfm		318		353	424	512		
Medium		m ³ /min	8.0	8.5	10.0	12.5		
		cfm	282	300	353	442		
Low		m ³ /min	6.5		7.5		9.5	
		cfm	230		265		336	

2 Specifications

2

2-1 Technical Specifications				FFA25A	FFA35A	FFA50A	FFA60A
Fan motor	Quantity			1			
	Model			ARW5204DK			
	Speed	Steps		3			
		Cooling	High/Low	rpm	653/447	748/481	900/581
		Heating	High/Low	rpm	653/447	748/481	900/581
Output	High	W	50				
Sound power level	Cooling		dBA	48	51	56	60
	Heating		dBA	-			
Sound pressure level	Cooling	High/Medium/Low	dBA	31.0/28.5/25.0	34.0/30.5/25.0	39.0/34.0/27.0	43.0/40.0/32.0
	Heating	High/Medium/Low	dBA	31.0/28.5/25.0	34.0/30.5/25.0	39.0/34.0/27.0	43.0/40.0/32.0
Control systems	Infrared remote control			BRC7EB530W (standard panel) / BRC7F530W (white panel) / BRC7F530S (grey panel)			
	Wired remote control			BRC1D528 / BRC1E53A7 / BRC1E53B7 / BRC1E53C7			
Refrigerant	Type			R-32 / R-410A			
Piping connections	Sound absorbing insulation			Foamed polyurethane			
	Liquid	Type/OD	mm	Flare connection/6,35			
	Gas	Type/OD	mm	Flare connection/9.52		Flare connection/12.70	
	Drain			VP20 (I.D. 20/O.D. 26)			
	Heat insulation			Foamed polystyrene/polyethylene			

Standard Accessories : Installation and operation manual; Quantity : 1;

Standard Accessories : Drain hose; Quantity : 1;

Standard Accessories : Hose band; Quantity : 1;

Standard Accessories : Washer for hanger bracket; Quantity : 8;

Standard Accessories : Screws; Quantity : 4;

Standard Accessories : Thermal insulation tube; Quantity : 2;

Standard Accessories : Sealing material; Quantity : 4;

Standard Accessories : Tie-wraps; Quantity : 7;

2-2 Electrical Specifications				FFA25A	FFA35A	FFA50A	FFA60A
Power supply	Phase			1~			
	Frequency		Hz	50			
	Voltage		V	220-240			

3 Options

3 - 1 Options

FFA-A

Option kit	Product name	New/Existing	Compatibility			Availability
			BYFG08W1 BYFG08W1	BYFG08W1W BYFG08W1W	BYFG08W1S BYFG08W1S	SA FFA2SA2VEB FFA3SA2VEB FFA6SA2VEB
Decoration panel - Standard	BYFG08W1	New	-	-	-	✓
Decoration panel - Standard	BYFG08W1	New	-	-	-	✓
Decoration panel - White	BYFG08W1W	New	-	-	-	✓
Decoration panel - Silver	BYFG08W1S	New	-	-	-	✓
Sensor kit - White	BRY06A2W(3)	New	No	Yes	No	✓
Sensor kit - Silver	BRY06A2S(3)	New	No	No	Yes	✓
Air discharge outlet sealing member	BSRH044C60	New	Yes	Yes	Yes	✓
Panel spacer	KD9044B60	Existing	Yes	No	No	✓
Long-life replacement filter	KAF4441B60	Existing	Yes	Yes	Yes	✓
Fresh air intake kit	KD0044A60	Existing	Yes	Yes	Yes	✓
Remote control Infrared type HP	BRC7E8530W(1/2)	New	Yes	No	No	✓
Remote control Infrared type HP White	BRC7E8530W(1/2)	New	No	Yes	No	✓
Remote control Infrared type HP Silver	BRC7E8530S(1/2)	New	No	No	Yes	✓
Wired remote control	BRC10528(2)	Existing	Yes	Yes	Yes	✓
Wired remote control	BRC1E53A7(8)/BRC1E53B7(9)/BRC1E53C7(10/11)	Existing	Yes	Yes	Yes	✓
Simplified remote control (with operation mode selector button)	BRC2E52C1(3/10)	New	Yes	Yes	Yes	✓
Simplified remote control (without operation mode selector button)	BRC2E52C7(5/11)	New	Yes	Yes	Yes	✓
Central remote control	DC3302B51	Existing	Yes	Yes	Yes	✓
Unified ON/OFF controller	DC3301B51	Existing	Yes	Yes	Yes	✓
Schedule timer	UST01B51	Existing	Yes	Yes	Yes	✓
Wiring adaptor for electrical appendices	KRP1B51	Existing	Yes	Yes	Yes	✓
Wiring adaptor for electrical appendices	KRP4A53	Existing	Yes	Yes	Yes	✓
Wiring adaptor (hour meter)	KRP1B2	Existing	Yes	Yes	Yes	✓
Installation box for adaptor PCB	KRP1B101, KRP1BA101	Existing	Yes	Yes	Yes	✓
Remote sensor	KRC501-4B	Existing	Yes	Yes	Yes	✓
Touch Controller	DC3601C11	Existing	Yes	Yes	Yes	✓
Centralised control systems	DC0603A51	Existing	Yes	Yes	Yes	✓
Intelligent touch controller	DCM603A5A	Existing	Yes	Yes	Yes	✓
Digital input adaptor	BRPTA31(6)	New	Yes	Yes	Yes	✓

- ① The sensing function is not available.
- ② The independently-controllable-flaps function is not available.
- ③ This option cannot be used with RR and RQ models.
- ④ The independently-controllable-flaps function is not available in combination with RR and RQ models.
- ⑤ Included languages are:
 Language pack 1: English, German, French, Dutch, Spanish, Italian, and Portuguese.
 With PC cable EKPCAB3 in combination with the Updater PC software, you can additionally change the language to:
 Language pack 3: English, Greek, Polish, Russian, Serbian, Slovak, and Turkish.
 Language pack 2: English, Bulgarian, Croatian, Czech, Hungarian, Romanian, and Slovenian.
- ⑥ Only possible in combination with remote control BRC2/3E52C, BRC1E53A/B/C7.
- ⑦ Requires installation box for adaptor PCB
- ⑧ Included languages are: English, German, French, Italian, Spanish, Portuguese, and Dutch.
- ⑨ Included languages are: English, Czech, Croatian, Hungarian, Slovenian, Romanian, and Bulgarian.
- ⑩ Included languages are: English, Russian, Greek, Turkish, Polish, Albanian, and Slovak.
- ⑪ Language pack 3 of controller BRC1E53C7 is different from that of controller BRC2/3E52C7.

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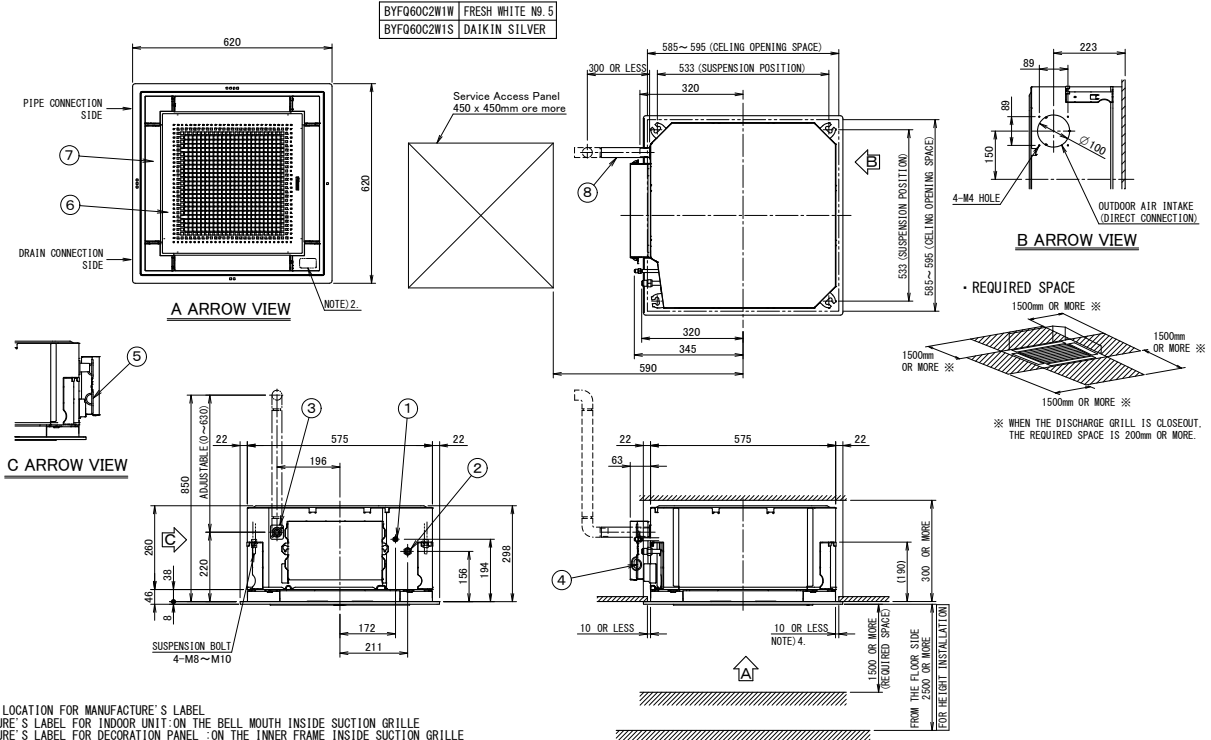
4 Dimensional drawings

4 - 1 Dimensional Drawings

4

FFA25-35A

• DECORATION PANEL



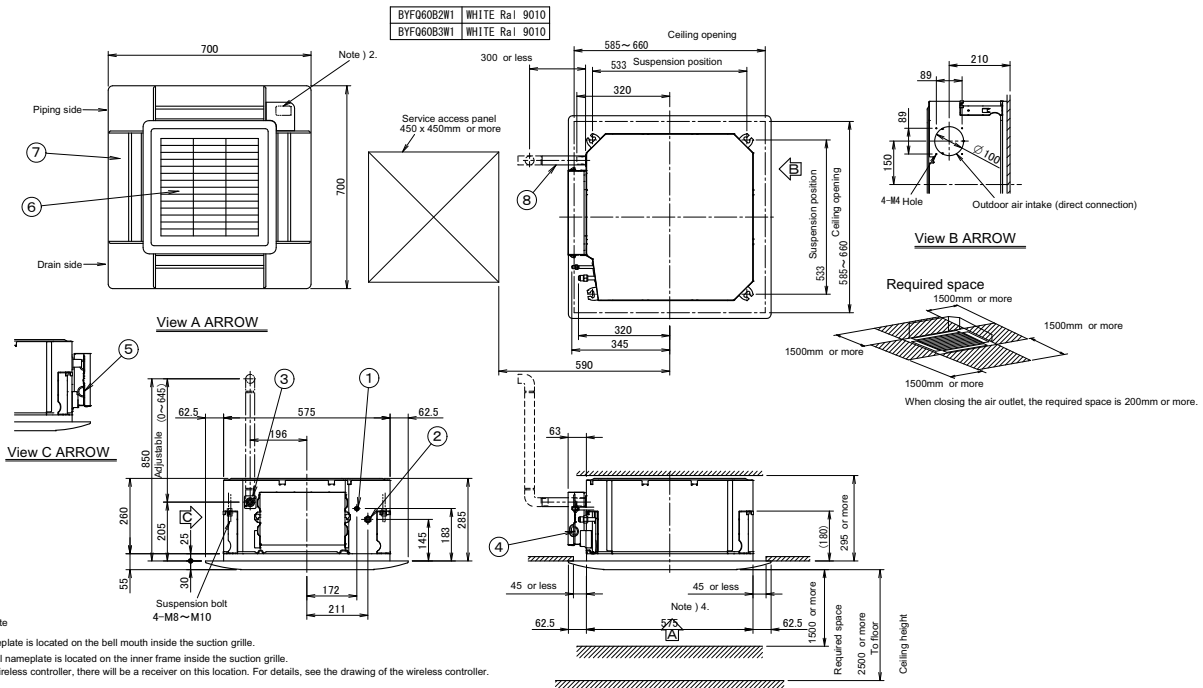
NOTE) 1. STICKING LOCATION FOR MANUFACTURE'S LABEL
MANUFACTURE'S LABEL FOR INDOOR UNIT: ON THE BELL MOUTH INSIDE SUCTION GRILLE
MANUFACTURE'S LABEL FOR DECORATION PANEL: ON THE INNER FRAME INSIDE SUCTION GRILLE
2. IN CASE OF USING WIRELESS REMOTE CONTROLLER, THIS POSITION WILL BE A SIGNAL RECEIVER.
REFER TO THE DRAWING OF WIRELESS REMOTE CONTROLLER IN DETAIL.
3. WHEN THE TEMPERATURE AND HUMIDITY IN THE CEILING EXCEED 30°C AND RH 80% OR THE FRESH AIR IS INDUCED INTO THE CEILING OR THE UNIT CONTINUES 24 HOUR OPERATION, AN ADDITIONAL INSULATION (THICKNESS 10mm OR MORE OF GLASSWOOL OR POLYETHYLENE FOAM) IS REQUIRED.
4. THOUGH THE INSTALLATION IS ACCEPTABLE UP TO MAXIMUM OF 595mm SQUARE CEILING OPENING, KEEP THE CLEARANCE OF 10mm OR LESS BETWEEN THE MAIN UNIT AND THE CEILING OPENING SO THAT THE PANEL OVERLAP ALLOWANCE CAN BE ENSURED.

ITEM	PART NAME	REMARK	ITEM	PART NAME	REMARK
1	LIQUID PIPE CONNECTION	φ6.4 (FLARE CONNECTION)	5	REMOTE CONTROL CODE AND CONTROL WIRING CONNECTION	
2	GAS PIPE CONNECTION	φ9.5 (FLARE CONNECTION)	6	AIR DISCHARGE GRILL	
3	DRAIN PIPE CONNECTION	VP20 (O. D. φ25)	7	SUCTION GRILL	
4	POWER SUPPLY CONNECTION		8	DRAIN HOSE (ACCESSORY) I. D. φ25 (OUTLET)	

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FFA25-35A

Decoration panel



Note)
1. Location of nameplate
The indoor unit nameplate is located on the bell mouth inside the suction grille.
The decoration panel nameplate is located on the inner frame inside the suction grille.
2. When installing a wireless controller, there will be a receiver on this location. For details, see the drawing of the wireless controller.
3. If any of the following conditions are met, additional insulation (glass wool or polyethylene foam, thickness ≥10mm) is required:
Ambient conditions in the ceiling ≥ 30°C and 80% relative humidity.
Fresh air is induced into the ceiling. The unit operates continuously.
4. Though the installation is acceptable up to maximum 660mm square ceiling opening, keep the clearance of 45mm or less between the indoor unit and the ceiling opening, so that the panel overlap allowance can be ensured.

Item	Part name	Remark	Item	Part name	Remark
1	Liquid pipe connection	φ6.4 Flare connection	5	Remote control wiring i nake	
2	Gas pipe connection	φ9.5 Flare connection	6	Air discharge grille	
3	Drain pipe connection	VP20 (O. D. φ25)	7	Air suction grille	
4	Power supply		8	Drain hose Accessory	I. D. φ25 Outlet

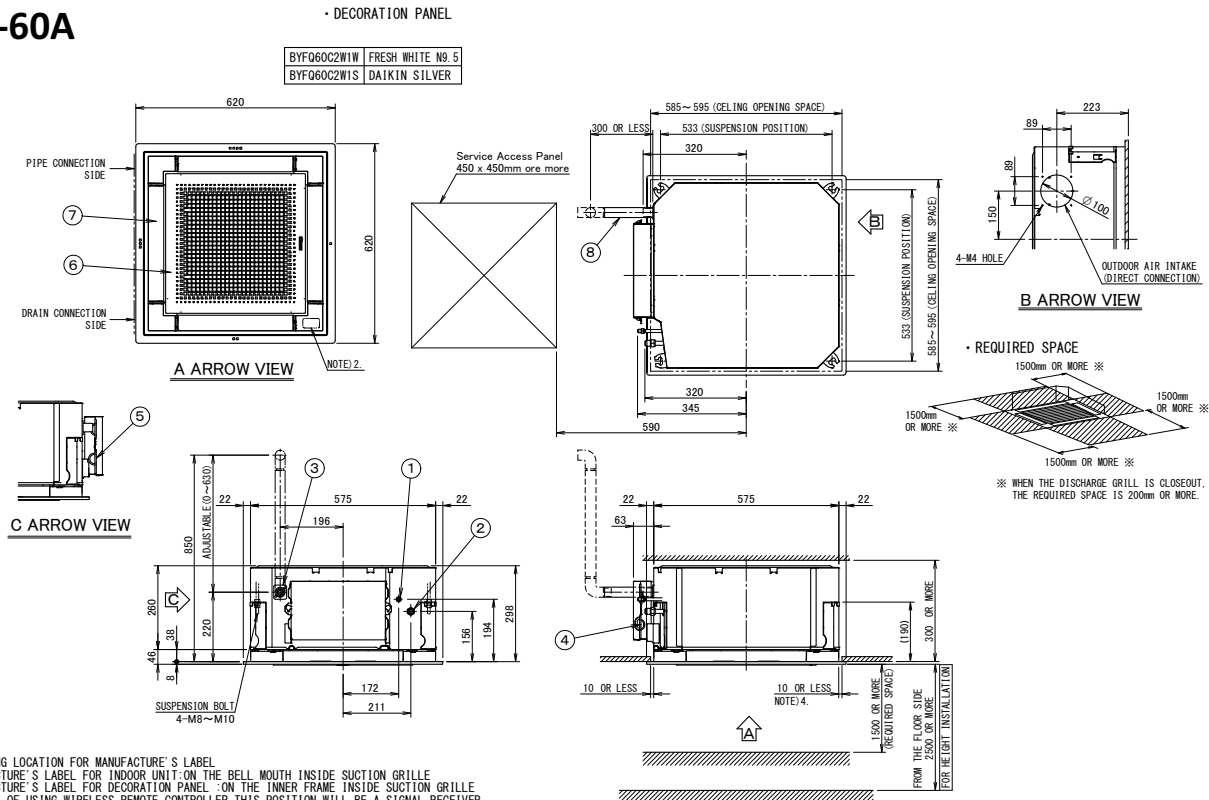
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6

4 Dimensional drawings

4 - 1 Dimensional Drawings

FFA50-60A

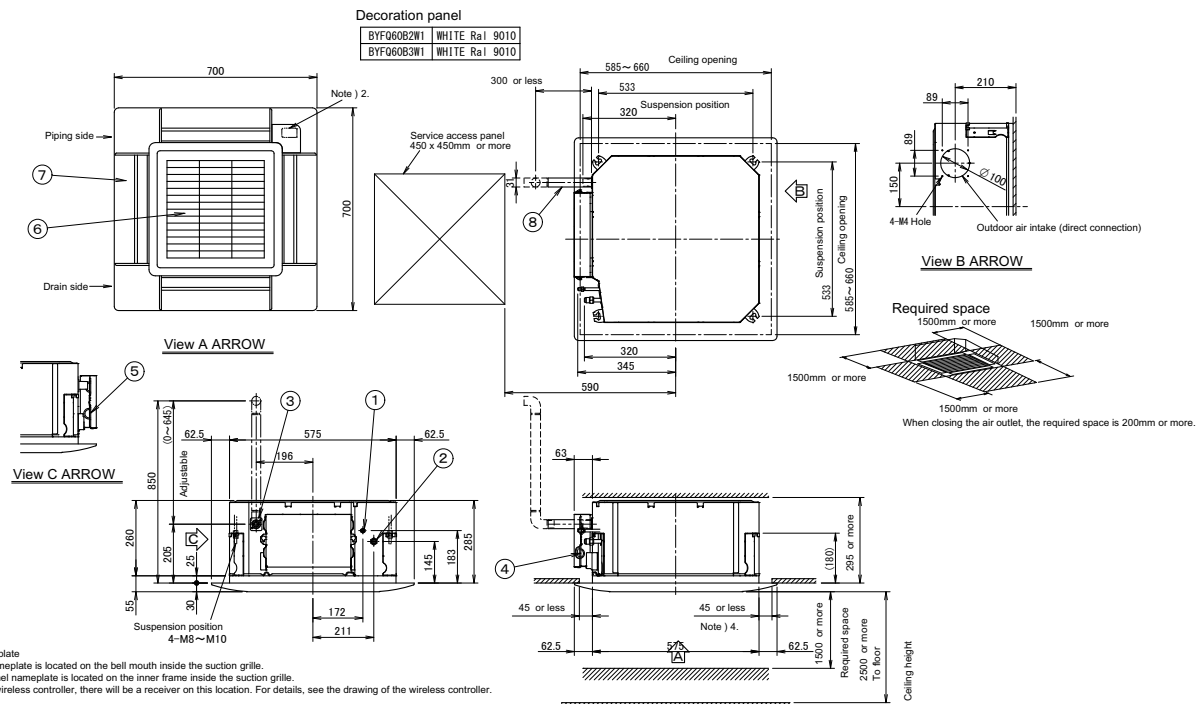


NOTE) 1. STICKING LOCATION FOR MANUFACTURE'S LABEL
 MANUFACTURE'S LABEL FOR INDOOR UNIT ON THE BELL MOUTH INSIDE SUCTION GRILLE
 MANUFACTURE'S LABEL FOR DECORATION PANEL ON THE INNER FRAME INSIDE SUCTION GRILLE
 2. IN CASE OF USING WIRELESS REMOTE CONTROLLER, THIS POSITION WILL BE A SIGNAL RECEIVER.
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 3. WHEN THE TEMPERATURE AND HUMIDITY IN THE CEILING EXCEED 30°C AND RH 80% OR THE FRESH AIR IS INDUCED INTO THE CEILING OR THE UNIT CONTINUES 24 HOUR OPERATION, AN ADDITIONAL INSULATION (THICKNESS 10mm OR MORE OF GLASSWOL OR POLYETHYLENE FORM) IS REQUIRED.
 4. THOUGH THE INSTALLATION IS ACCEPTABLE UP TO MAXIMUM OF 595mm SQUARE CEILING OPENING, KEEP THE CLEARANCE OF 10mm OR LESS BETWEEN THE MAIN UNIT AND THE CEILING OPENING SO THAT THE PANEL OVERLAP ALLOWANCE CAN BE ENSURED.

ITEM	PART NAME	REMARK	ITEM	PART NAME	REMARK
1	LIQUID PIPE CONNECTION	φ6.4 (FLARE CONNECTION)	5	REMOTE CONTROL CODE AND CONTROL WIRING CONNECTION	
2	GAS PIPE CONNECTION	φ12.7 (FLARE CONNECTION)	6	AIR DISCHARGE GRILLE	
3	DRAIN PIPE CONNECTION	VP20 (O. D. φ26)	7	SUCTION GRILLE	
4	POWER SUPPLY CONNECTION		8	DRAIN HOSE (ACCESSORY)	I. D. φ25 (OUTLET)

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FFA50-60A



Note)
 1. Location of nameplate
 The indoor unit nameplate is located on the bell mouth inside the suction grille.
 The decoration panel nameplate is located on the inner frame inside the suction grille.
 2. When installing a wireless controller, there will be a receiver on this location. For details, see the drawing of the wireless controller.
 3. If any of the following conditions are met, additional insulation (glass wool or polyethylene foam, thickness ≥10mm) is required:
 Ambient conditions in the ceiling ≥30°C and 80% relative humidity.
 Fresh air is induced into the ceiling.
 The unit operates continuously.
 4. Though the installation is acceptable up to maximum 660mm square ceiling opening, keep the clearance of 45mm or less between the indoor unit and the ceiling opening, so that the panel overlap allowance can be ensured.

Item	Part name	Remark	Item	Part name	Remark
1	Liquid pipe connection	φ6.4 Flare connection	5		
2	Gas pipe connection	φ12.7 Flare connection	6	Air discharge grille	
3	Drain pipe connection	VP20 (O. D. φ26)	7	Air suction grille	
4	Power supply		8	Drain hose Accessory	I. D. φ25 Outlet

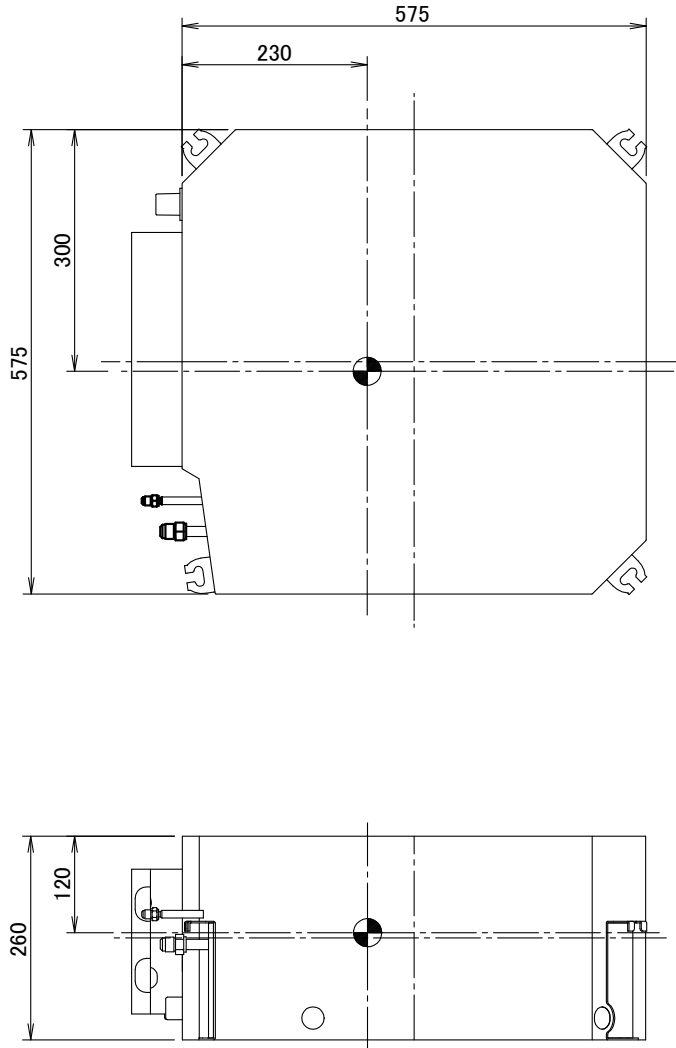
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5 Centre of gravity

5 - 1 Centre of Gravity

5

FFA-A



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6 Piping diagrams

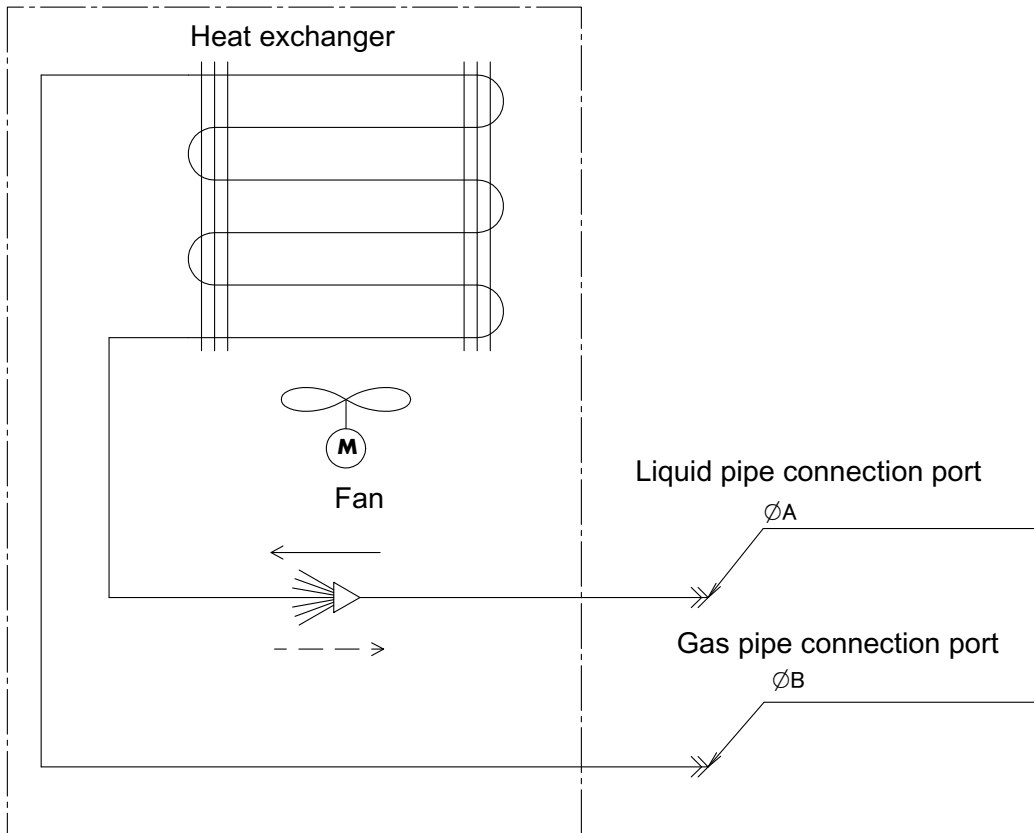
6 - 1 Piping Diagrams

FFA-A

Refrigerant flow

Cooling ————>
 Heating - - - ->

Model	A	B
FFQ25C2VEB	6.35	9.52
FFQ35C2VEB		
FFQ50C2VEB		12.7
FFQ60C2VEB		
FFA25A2VEB		9.52
FFA35A2VEB		
FFA50A2VEB		12.7
FFA60A2VEB		



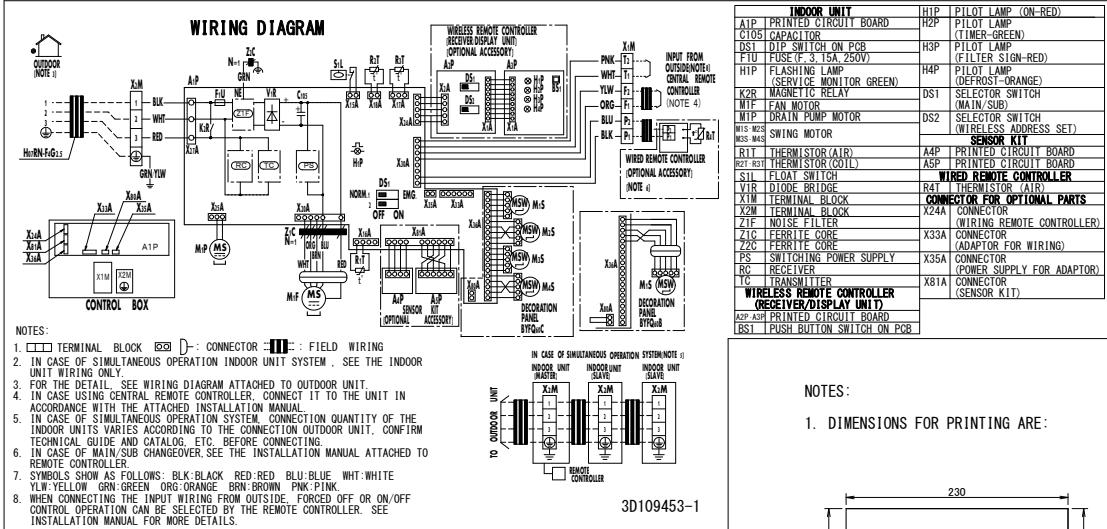
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7 Wiring diagrams

7 - 1 Wiring Diagrams - Single Phase

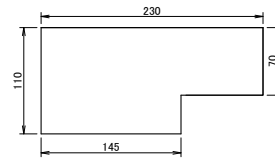
FFA-A

7



NOTES:

1. DIMENSIONS FOR PRINTING ARE:

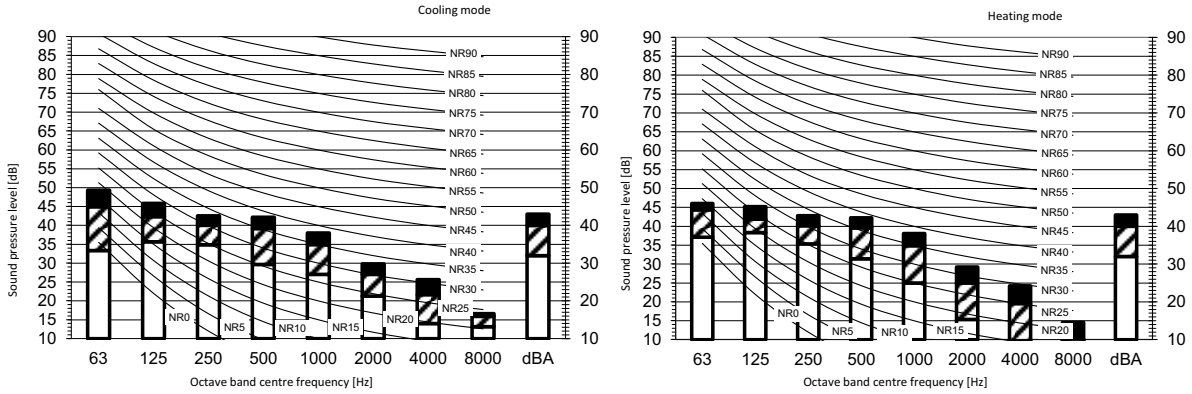


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8 Sound data

8 - 1 Sound Pressure Spectrum

FFA25A

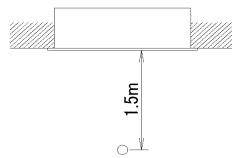


Legend
dBA = A-weighted sound pressure level (A scale according to IEC).

A Scale Fan speed

B High
C Medium
D Low

Location of microphone



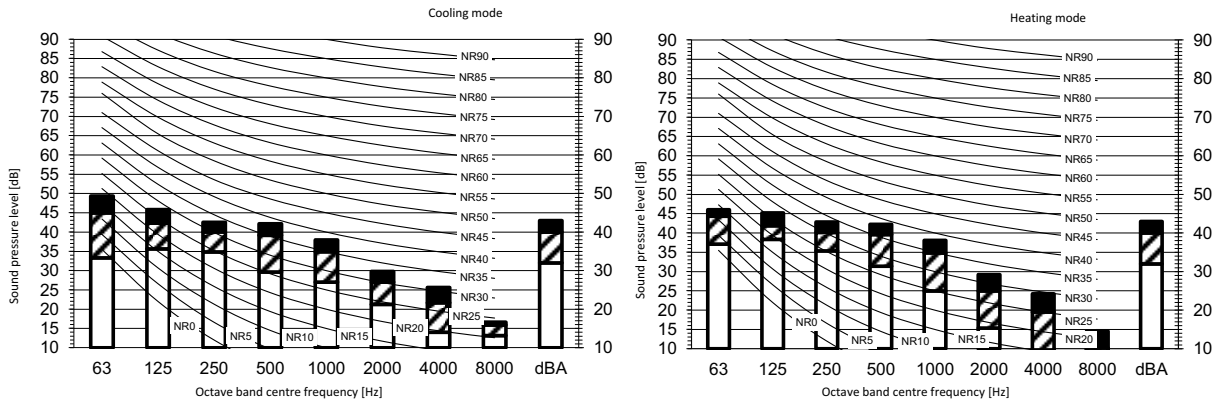
Cooling		Total dB	
A	B	C	D
dBA	31	28,5	25

Heating		Total dB	
A	B	C	D
dBA	31	28,5	25

- Notes
1. Operating conditions: power source 220-240 V/220 V 50/60 Hz; JIS standard
 2. Background noise already taken into account.
 3. Operating noise varies depending on operation and ambient conditions.
 4. The operation noise measuring method is in accordance with JISC9612.
 5. Measuring location: anechoic chamber

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FFA35A

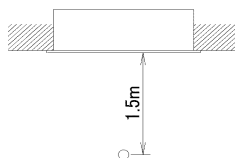


Legend
dBA = A-weighted sound pressure level (A scale according to IEC).

A Scale Fan speed

B High
C Medium
D Low

Location of microphone



Cooling		Total dB	
A	B	C	D
dBA	34	30,5	25

Heating		Total dB	
A	B	C	D
dBA	34	30,5	25

- Notes
1. Operating conditions: power source 220-240 V/220 V 50/60 Hz; JIS standard
 2. Background noise already taken into account.
 3. Operating noise varies depending on operation and ambient conditions.
 4. The operation noise measuring method is in accordance with JISC9612.
 5. Measuring location: anechoic chamber

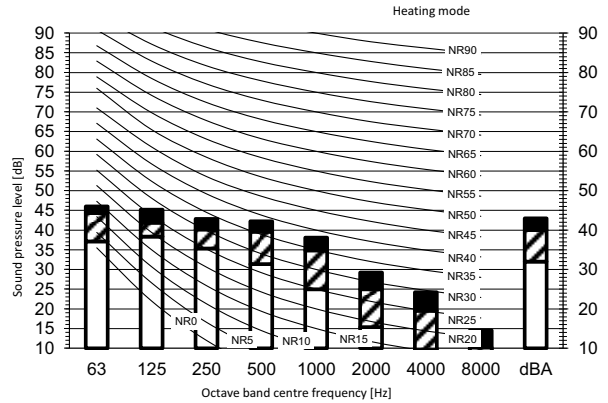
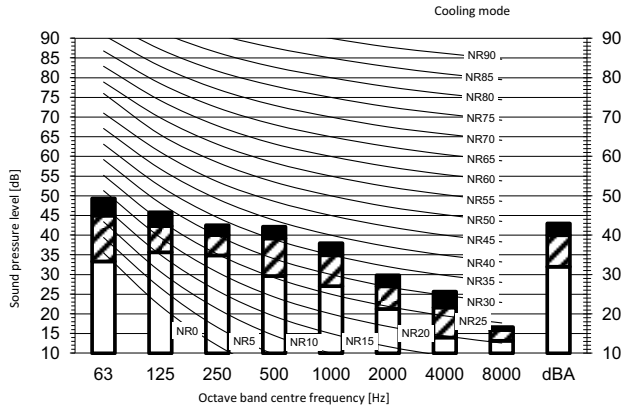
3D109999

8 Sound data

8 - 1 Sound Pressure Spectrum

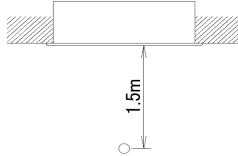
8

FFA50A



Legend
dBA = A-weighted sound pressure level (A scale according to IEC).

A Scale Fan speed
B High
C Medium
D Low
Location of microphone



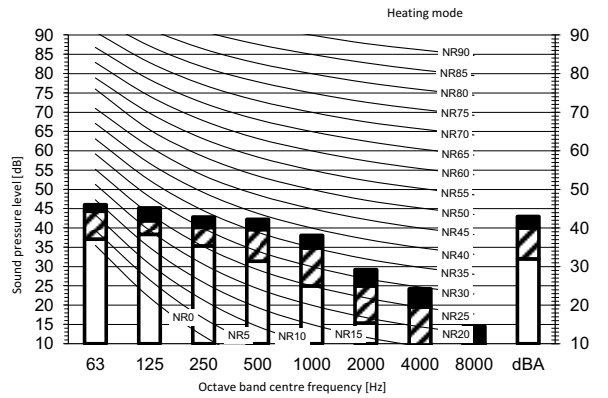
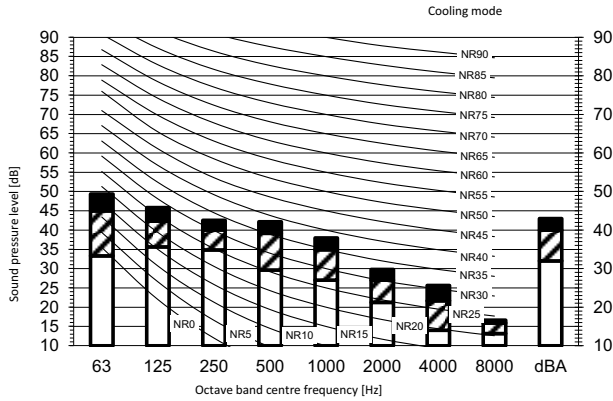
Cooling		Total dB	
A	B	C	D
dBA	39	34	27

Heating		Total dB	
A	B	C	D
dBA	39	34	27

- Notes
- Operating conditions: power source 220-240 V/220 V 50/60 Hz; JIS standard
 - Background noise already taken into account.
 - Operating noise varies depending on operation and ambient conditions.
 - The operation noise measuring method is in accordance with JISC9612.
 - Measuring location: anechoic chamber

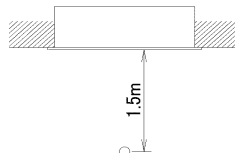
3D110000

FFA60A



Legend
dBA = A-weighted sound pressure level (A scale according to IEC).

A Scale Fan speed
B High
C Medium
D Low
Location of microphone



Cooling		Total dB	
A	B	C	D
dBA	43	40	32

Heating		Total dB	
A	B	C	D
dBA	43	40	32

- Notes
- Operating conditions: power source 220-240 V/220 V 50/60 Hz; JIS standard
 - Background noise already taken into account.
 - Operating noise varies depending on operation and ambient conditions.
 - The operation noise measuring method is in accordance with JISC9612.
 - Measuring location: anechoic chamber

3D110001

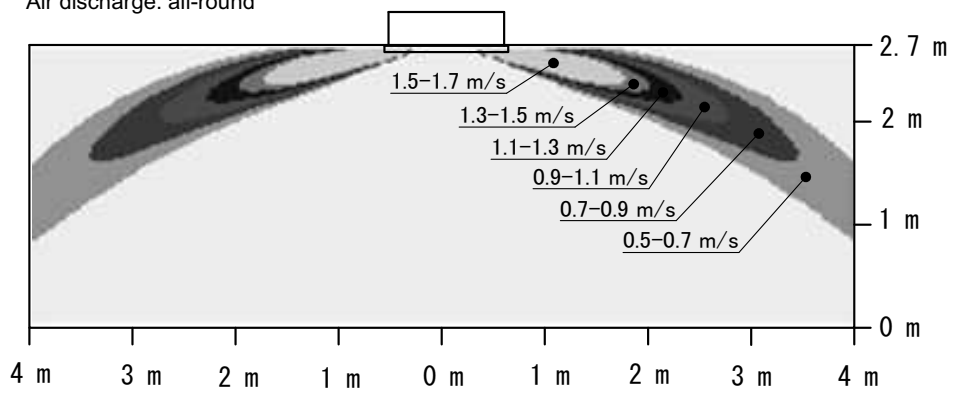
9 Air flow patterns

9 - 1 Air Flow Pattern - Cooling

FFA25A

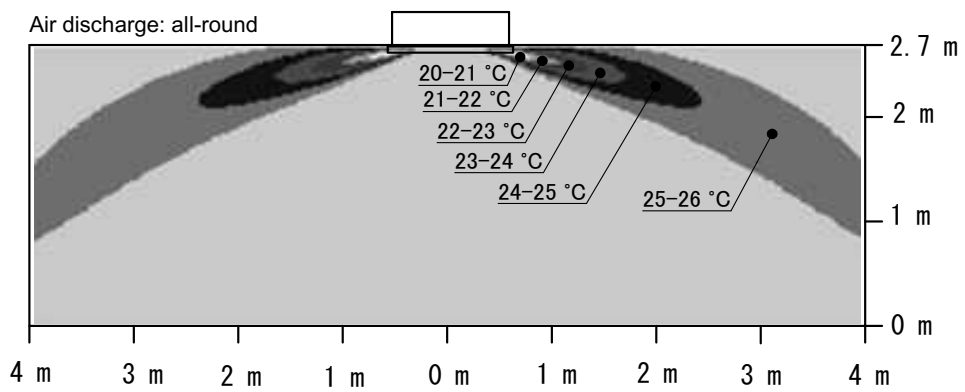
Air velocity distribution (cooling)

Air flow direction: horizontal
Air discharge: all-round



Air temperature distribution (cooling)

Air flow direction: horizontal
Air discharge: all-round



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9 Air flow patterns

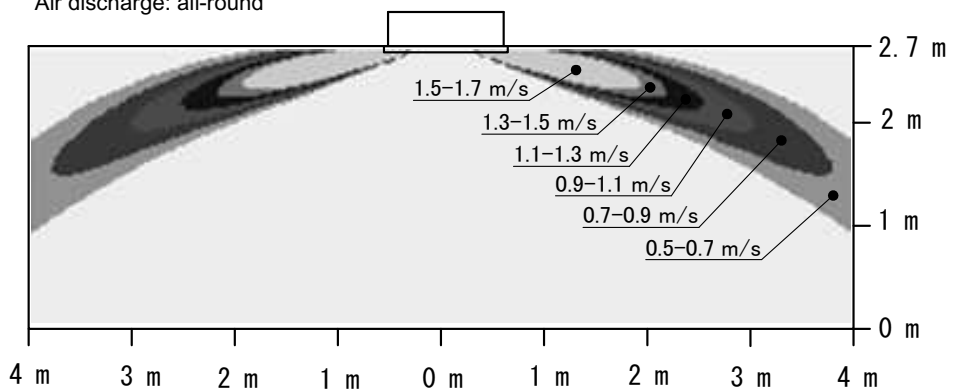
9 - 1 Air Flow Pattern - Cooling

9

FFA35A

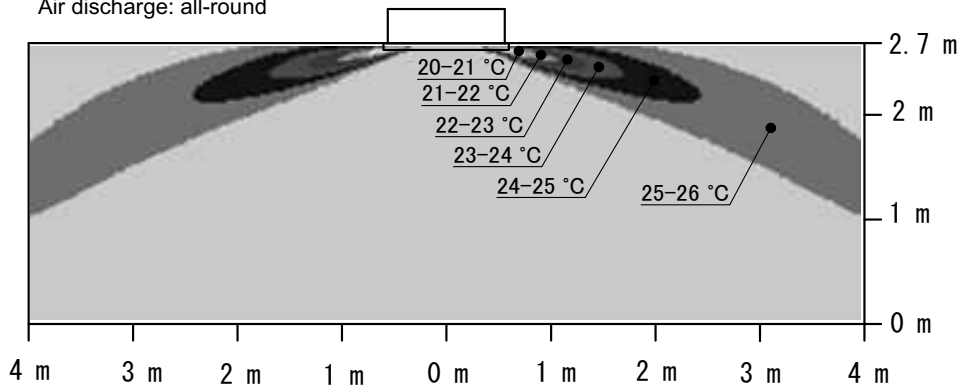
Air velocity distribution (cooling)

Air flow direction: horizontal
Air discharge: all-round



Air temperature distribution (cooling)

Air flow direction: horizontal
Air discharge: all-round



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9 Air flow patterns

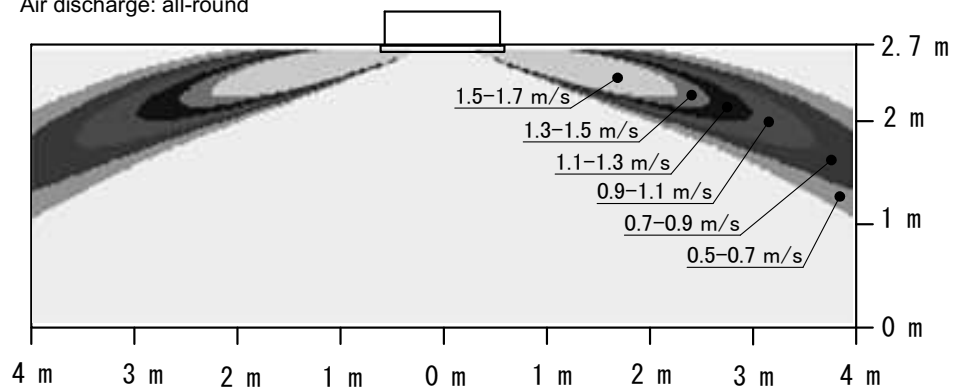
9 - 1 Air Flow Pattern - Cooling

FFA50A

Air velocity distribution (cooling)

Air flow direction: horizontal

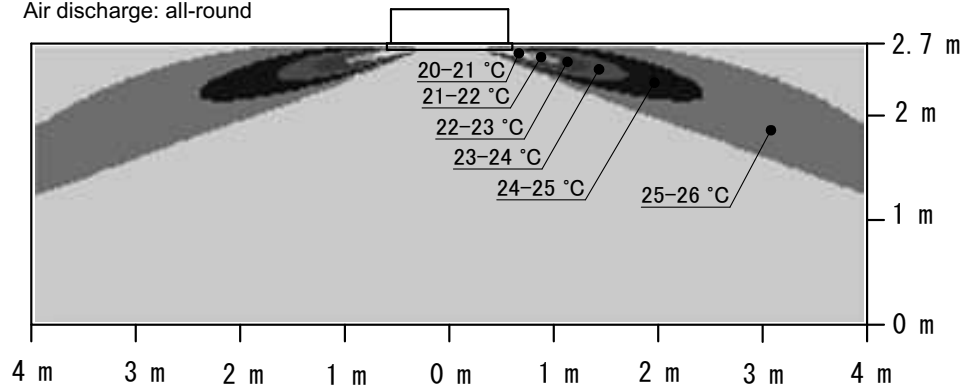
Air discharge: all-round



Air temperature distribution (cooling)

Air flow direction: horizontal

Air discharge: all-round



4D083821A

9 Air flow patterns

9 - 1 Air Flow Pattern - Cooling

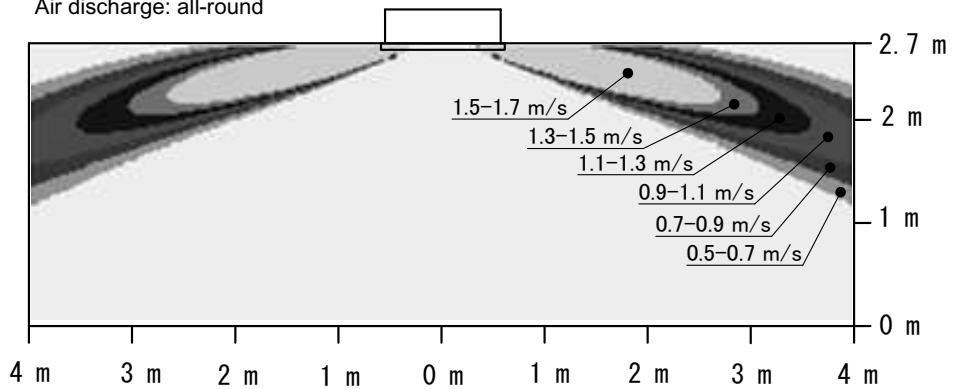
9

FFA60A

Air velocity distribution (cooling)

Air flow direction: horizontal

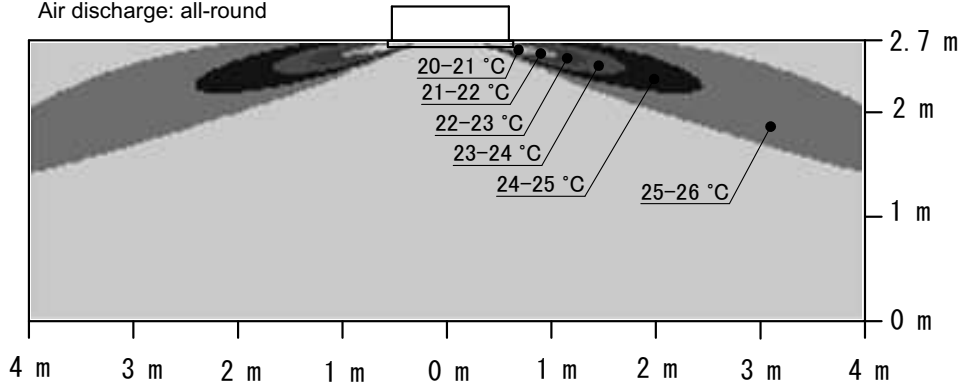
Air discharge: all-round



Air temperature distribution (cooling)

Air flow direction: horizontal

Air discharge: all-round



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9 Air flow patterns

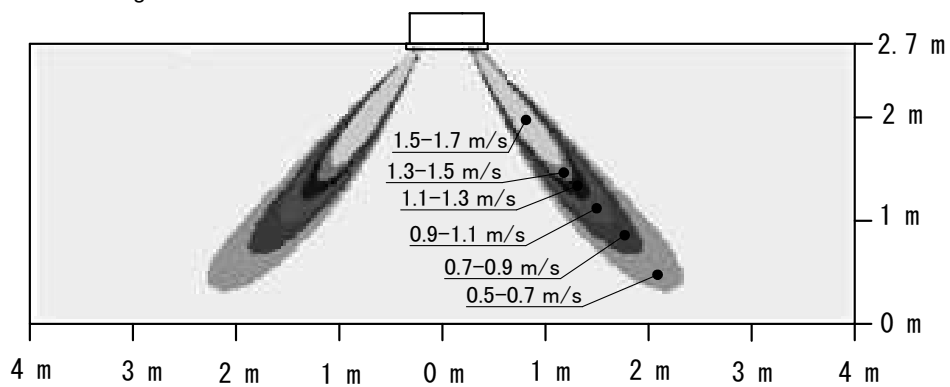
9 - 2 Air Flow Pattern - Heating

FFA25A

Air velocity distribution (heating)

Air flow direction: horizontal

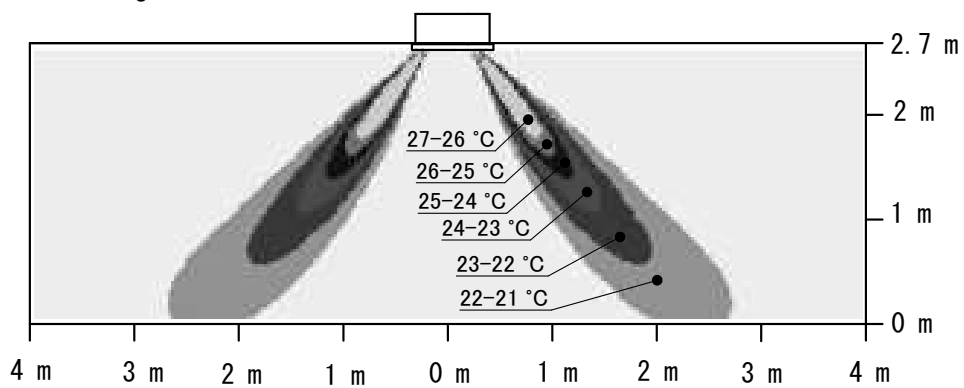
Air discharge: all-round



Air temperature distribution (heating)

Air flow direction: horizontal

Air discharge: all-round



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9 Air flow patterns

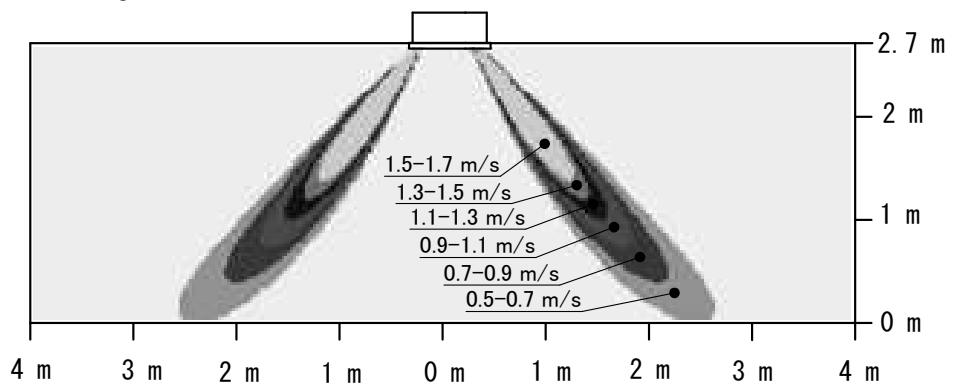
9 - 2 Air Flow Pattern - Heating

9

FFA35A

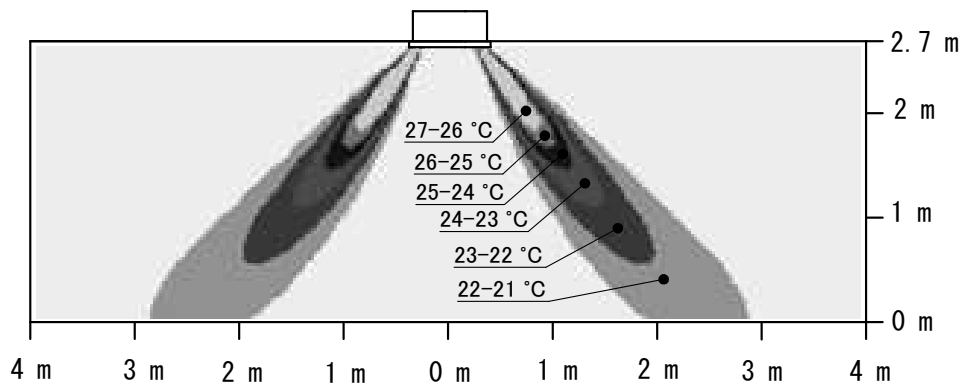
Air velocity distribution (heating)

Air flow direction: horizontal
Air discharge: all-round



Air temperature distribution (heating)

Air flow direction: horizontal
Air discharge: all-round



4D083830A

9 Air flow patterns

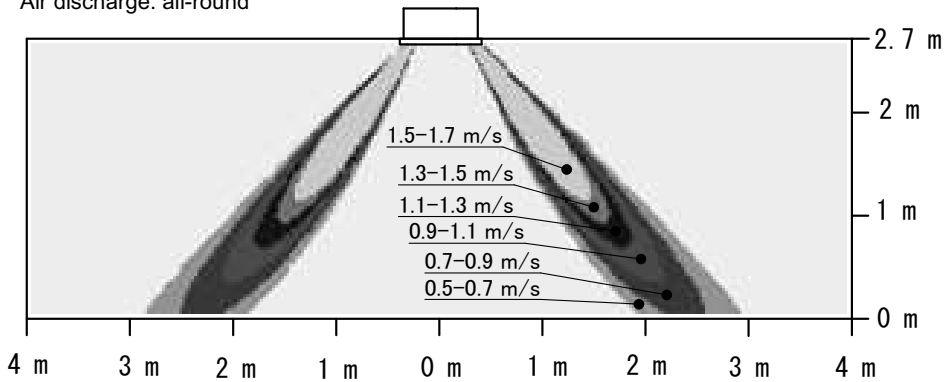
9 - 2 Air Flow Pattern - Heating

FFA50A

Air velocity distribution (heating)

Air flow direction: horizontal

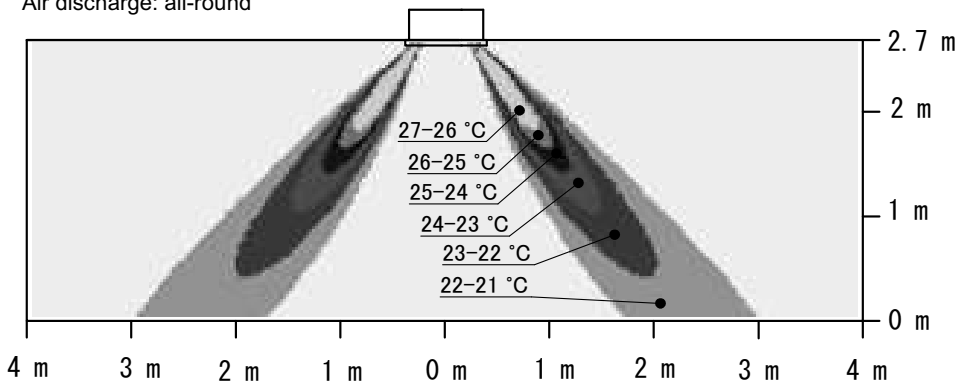
Air discharge: all-round



Air temperature distribution (heating)

Air flow direction: horizontal

Air discharge: all-round



4D083831A

9 Air flow patterns

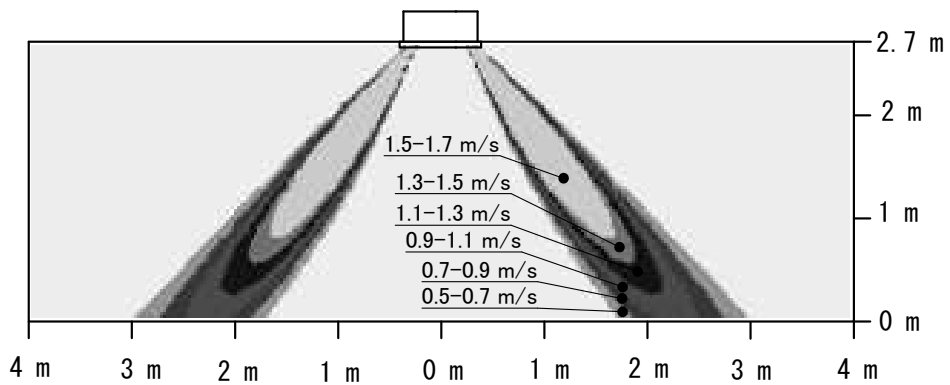
9 - 2 Air Flow Pattern - Heating

9

FFA60A

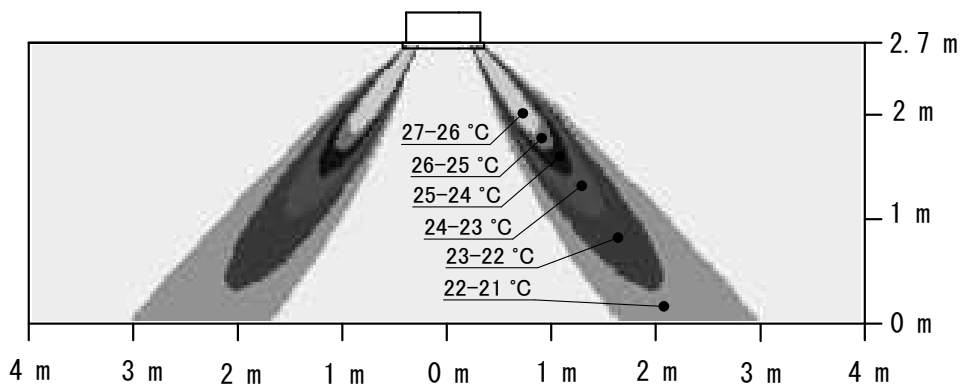
Air velocity distribution (heating)

Air flow direction: horizontal
Air discharge: all-round



Air temperature distribution (heating)

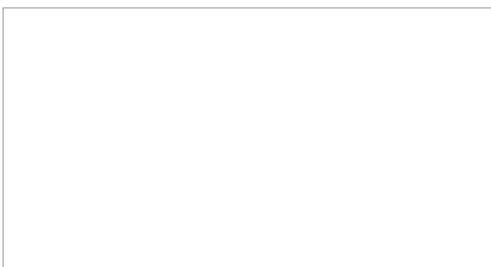
Air flow direction: horizontal
Air discharge: all-round



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Daikin Europe N.V. Naamloze Vennootschap - Zandvoordestraat 300, B-8400 Oostende - Belgium - www.daikin.eu - BE 0412 120 336 - RPR Oostende



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