



Air Conditioning Technical Data

Fully flat cassette



EEEN15-100

FFQ-C

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FFQ-C

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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
- Two optional intelligent sensors improve energy efficiency and comfort. The presence sensor adjusts the set point if no one is detected in the room. It also automatically directs air flow away from any person to avoid draught. The infrared floor sensor detects the average floor temperature and ensures even temperature distribution between ceiling and floor to prevent cold feet.
- Reduced energy consumption thanks to specially developed small tube heat exchanger, DC fan motor and drain pump
- Fresh air intake integrated in the same system thus reducing installation cost as no additional ventilation is required
- Standard drain pump with 850mm lift increases flexibility and installation speed
- No optional adapter needed for DIII-connection, link your unit into the wider building management system.



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



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				FFQ25C	FFQ35C	FFQ50C	FFQ60C	
Casing	Material			Galvanised steel plate				
Dimensions	Unit	Height/Width/Depth	mm	260/575/575				
	Packed unit	Height/Width/Depth	mm	270/780/616				
Weight	Unit	kg		16		17.5		
	Packed unit	kg		19		20.5		
Decoration panel	Model			BYFQ60CW				
	Colour			White (N9.5)				
	Dimensions	Height/Width/Depth	mm	46/620/620				
	Weight			kg 2.8				
Decoration panel 2	Model			BYFQ60CS				
	Colour			White (N9.5) + Silver				
	Dimensions	Height/Width/Depth	mm	46/620/620				
	Weight			kg 2.8				
Decoration panel 3	Model			BYFQ60B3W1				
	Colour			White (RAL9010)				
	Dimensions	Height/Width/Depth	mm	55/700/700				
	Weight			kg 2.7				
Heat exchanger	Inside length		mm	1,295		1,248		
	Outside length		mm	1,342				
	Rows	Quantity		2		3		
	Fin pitch		mm	1.2				
	Passes	Quantity		5		7		
	Face area		m ²	0.290		0.300		
	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 with mold resistance			
Fan	Type			Turbo fan				
	Quantity			1				
	Air flow rate	Cooling	High	m ³ /min	9	10	12	14.5
			Nom.	m ³ /min	8	8.5	10	12.5
			Low	m ³ /min	6.5		7.5	9.5
	Heating	High	High	m ³ /min	9	10	12	14.5
			Nom.	m ³ /min	8	8.5	10	12.5
Low			m ³ /min	6.5		7.5	9.5	
Fan motor	Model			QTS32D15M				
	Speed	Steps		3				
	Output	High	W	50				
Sound power level	Cooling		dBA	48	51	56	60	
	Heating		dBA	-				
Sound pressure level	Cooling	High/Nom./Low	dBA	31/28.5/25	34/30.5/25	39/34/27	43/40/32	
	Heating	High/Nom./Low	dBA	31/28.5/25	34/30.5/25	39/34/27	43/40/32	
Control systems	Infrared remote control			BRC7EB530 (standard panel) / BRC7F530W (white panel) / BRC7F530S (grey panel)				
	Wired remote control			BRC1D52 / BRC1E52A/B				
Refrigerant	Type			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/12.7		
	Drain			VP20 (I.D. 20/O.D. 26)				
	Heat insulation			Foamed polystyrene/polyethylene				

2 Specifications

- Standard Accessories : Operation manual; Quantity : 1;
- Standard Accessories : Installation manual; Quantity : 1;
- Standard Accessories : Drain hose; Quantity : 1;
- Standard Accessories : Metal clamp for drain hose; Quantity : 1;
- Standard Accessories : Washer for hanger bracket; Quantity : 8;
- Standard Accessories : Screws; Quantity : 4;
- Standard Accessories : Paper pattern for installation; Quantity : 1;
- Standard Accessories : Insulation for fitting; Quantity : 2;
- Standard Accessories : Sealing pad; Quantity : 4;
- Standard Accessories : Clamps; Quantity : 7;

2

2-2 Electrical Specifications		FFQ25C	FFQ35C	FFQ50C	FFQ60C
Power supply	Name	VE			
	Phase	1~			
	Frequency	Hz	50		
	Voltage	V	220-240		

Notes

Dimensions do not include control box

The sound power level is an absolute value indicating the power which a sound source generates.

3 Safety device settings

3 - 1 Safety Device Settings

FFQ-C

Safety devices		FFQ25-60C
Fuse		250V 5A
Fan motor thermal fuse	°C	---
Fan motor thermal protector	°C	---
Drain pump fuse	°C	---

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4 Options

4 - 1 Options

4

FFQ-C				
Description	BYFQ60B2W1 BYFQ60B3W1	BYFQ60C2W1W	BYFQ60C2W1S	model name
Decoration panel (current)	-	-	-	BYFQ60B2W1
Decoration panel (current)	-	-	-	BYFQ60B3W1
New decoration panel (white)	-	-	-	BYFQ60C2W1W
New decoration panel (silver)	-	-	-	BYFQ60C2W1S
Sensor kit (white)	No	Yes	No	BRYQ60A2W (*3)
Sensor kit (silver)	No	No	Yes	BRYQ60A2S (*3)
Sealing member of air discharge outlet	Yes	Yes	Yes	BDBHQ44C60
Panel spacer	Yes	No	No	KDBQ44B60
Replacement long life filter	Yes	Yes	Yes	KAFQ441BA60
Fresh air intake kit	Yes	Yes	Yes	KDDQ44XA60
Infrared remote control (H/P)	Yes	No	No	BRC7EB530W (*1,2)
Infrared remote control (H/P) (white)	No	Yes	No	BRC7F530W (*1,2)
Infrared remote control (H/P) (silver)	No	No	Yes	BRC7F530S (*1,2)
Wired remote control	Yes	Yes	Yes	BRC1D528 (*2)
Wired remote control	Yes	Yes	Yes	BRC1E52A7 + B7 (*4)
Simplified remote control (with operation mode selector button)	Yes	Yes	Yes	BRC2E52C (*5)
Simplified remote control (without operation mode selector button)	Yes	Yes	Yes	BRC3E52C (*5)
Central remote control	Yes	Yes	Yes	DCS302B51
Unified on/off control	Yes	Yes	Yes	DCS301B51
Schedule timer	Yes	Yes	Yes	DST301B51
Wiring adapter for electrical appendices	Yes	Yes	Yes	KRP1B57
Wiring adapter for electrical appendices	Yes	Yes	Yes	-
Wiring adapter for electrical appendices	Yes	Yes	Yes	KRP4A53
Wiring adapter (hour meter)	Yes	Yes	Yes	EKRP1B2
Installation box for adapter PCB	Yes	Yes	Yes	KRP1B101, KRP1BA101
Remote sensor	Yes	Yes	Yes	KRCS01-4B
Option PCB for Multi tenant	Yes	Yes	Yes	-
I-touch controller	Yes	Yes	Yes	DCS601C51
Digital input adapter	Yes	Yes	Yes	BRP7A53

NOTES	
1.	Sensing function not available.
2.	Independently controllable flaps function not available.
3.	Sensor kit option not applicable with RR and RQ models
4.	Independently controllable flaps function 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 2: English, Bulgarian, Croatian, Czech, Hungarian, Romanian and Slovenian. Language pack 3: English, Greek, Polish, Russian, Serbian, Slovak and Turkish.
6.	Only possible in combination with simplified remote control BRC2/3E52C.
7.	Requires installation box for adapter PCB.

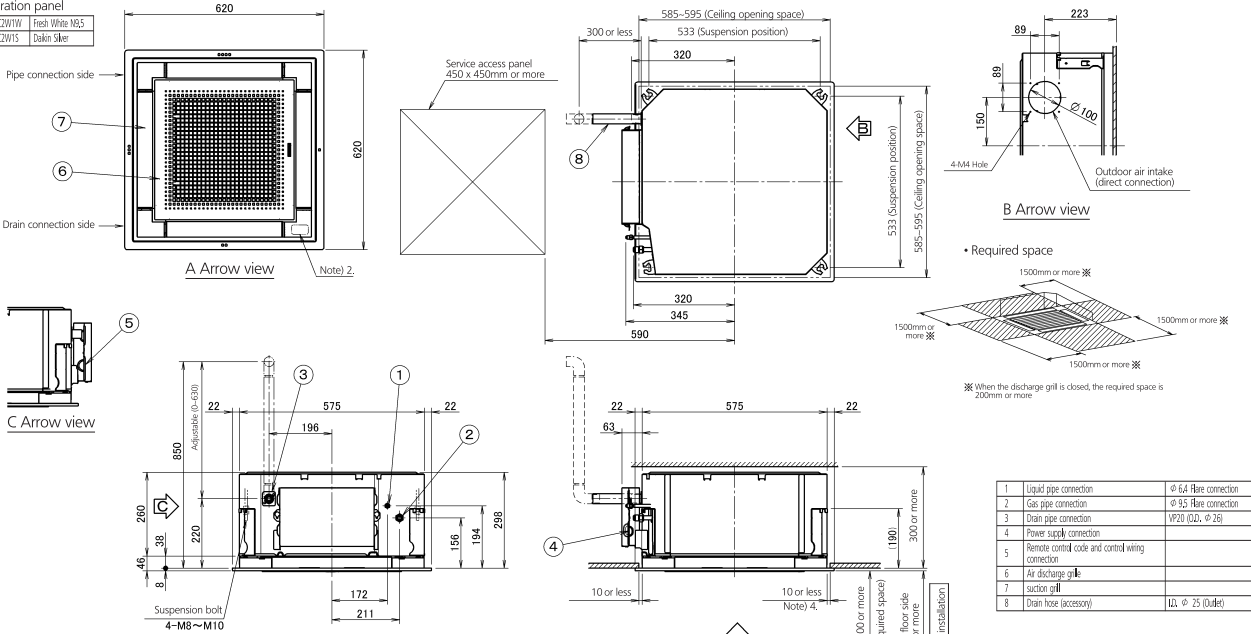
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5 Dimensional drawings

5 - 1 Dimensional Drawings

FFQ25-35C

• Decoration panel
 BYF06C2W1W Fresh White NS3
 BYF06C2W1S Dakin Silver

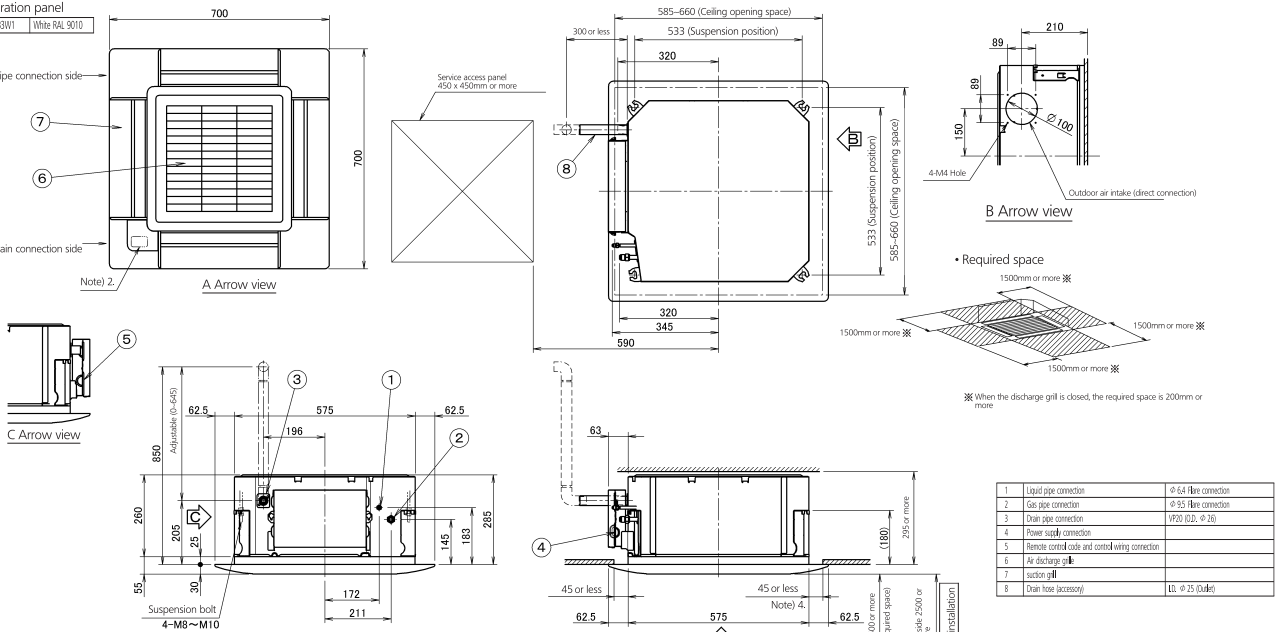


- Note:
1. Sticking location for manufacturer's label
 Manufacturer's label for indoor unit: on the bell mouth inside suction grille.
 Manufacturer's label for decoration panel: on the inner frame inside suction grille.
 2. In case of using infrared remote controller, this position will be a signal receiver. Refer to the drawing of infrared remote controller in detail.
 3. When the temperature and humidity in the ceiling exceed 30°C and RH 80% or the fresh air is inducted into the ceiling or the unit continues 24 hour operation, an additional insulation (thickness 10mm or more glasswool 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.

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FFQ25-35C

• Decoration panel
 BYF06B3W1 White RAL 9010



- Note:
1. Sticking location for manufacturer's label
 Manufacturer's label for indoor unit: on the bell mouth inside suction grille.
 Manufacturer's label for decoration panel: on the inner frame inside suction grille.
 2. In case of using infrared remote controller, this position will be a signal receiver. Refer to the drawing of infrared remote controller in detail.
 3. When the temperature and humidity in the ceiling exceed 30°C and RH 80% or the fresh air is inducted into the ceiling or the unit continues 24 hour operation an additional insulation (thickness 10mm or more glasswool or polyethylene form) is required.
 4. Though the installation is acceptable up to maximum of 660mm square ceiling opening. Keep the clearance of 45mm or less between the main unit and the ceiling opening so that the panel overlap allowance can be ensured.

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5 Dimensional drawings

5 - 1 Dimensional Drawings

5

FFQ50-60C

• Decoration panel
 BYF060C2W1W Fresh White N6.5
 BYF060C2W1S Dakin Silver

A Arrow view
 620 (width), 620 (height)
 Pipe connection side (7), Drain connection side (6)
 Service access panel: 450 x 450mm or more

B Arrow view
 585-595 (Ceiling opening space), 533 (Suspension position), 320, 345, 590
 89, 223, 89, 150, 4-M4 Hole, Outdoor air intake (direct connection)

C Arrow view
 260, 46, 38, 220, 22, 575, 196, 22, 196, 172, 211, 156, 194, 208, 8, 4-M8~M10
 Suspension bolt: 4-M8~M10

Required space
 1500mm or more (width), 1500mm or more (depth)
 ※ When the discharge grill is closed, the required space is 200mm or more.

1	Liquid pipe connection	φ6.4 (flex connection)
2	Gas pipe connection	φ12.7 (flex connection)
3	Drain pipe connection	VP20 (D.L. φ 26)
4	Power supply connection	
5	Remote control code and control wiring connection	
6	Air discharge grille	
7	suction grill	
8	Drain hose (accessory)	10, φ 25 (Outlet)

Note:
 1. Sticking location for manufacturer's label
 Manufacturer's label for indoor unit: on the bell mouth inside suction grille.
 Manufacturer's label for decoration panel: on the inner frame inside suction grille.
 2. In case of using infrared remote controller, this position will be a signal receiver. Refer to the drawing of infrared remote controller in detail.
 3. When the temperature and humidity in the ceiling exceed 30°C and RH 80% or the fresh air is inducted into the ceiling or the unit continues 24 hour operation, an additional insulation (thickness 10mm or more 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.

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FFQ50-60C

• Decoration panel
 BYF060E3W1 White RAL 9010

A Arrow view
 700 (width), 700 (height)
 Pipe connection side (7), Drain connection side (6)
 Service access panel: 450 x 450mm or more

B Arrow view
 585-660 (Ceiling opening space), 533 (Suspension position), 320, 345, 590
 89, 210, 89, 150, 4-M4 Hole, Outdoor air intake (direct connection)

C Arrow view
 260, 55, 205, 25, 62.5, 575, 62.5, 196, 22, 196, 172, 211, 145, 183, 205, 30, 4-M8~M10
 Suspension bolt: 4-M8~M10

Required space
 1500mm or more (width), 1500mm or more (depth)
 ※ When the discharge grill is closed, the required space is 200mm or more.

1	Liquid pipe connection	φ6.4 (flex connection)
2	Gas pipe connection	φ12.7 (flex connection)
3	Drain pipe connection	VP20 (D.L. φ 26)
4	Power supply connection	
5	Remote control code and control wiring connection	
6	Air discharge grille	
7	suction grill	
8	Drain hose (accessory)	10, φ 25 (Outlet)

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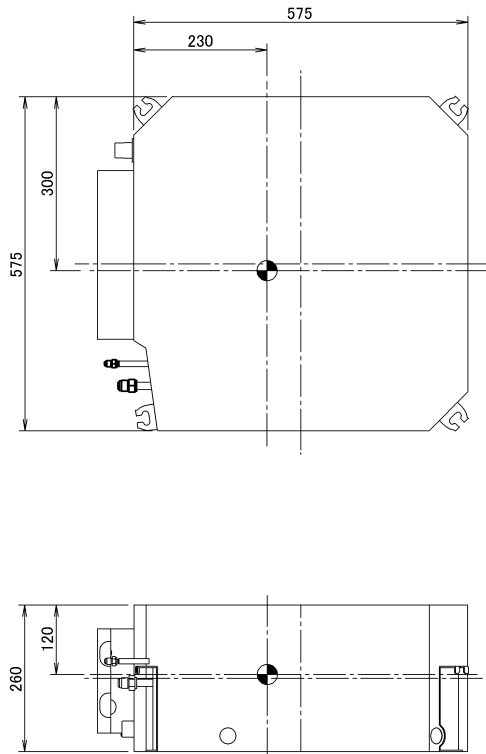
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6 Centre of gravity

6 - 1 Centre of Gravity

FFQ-C

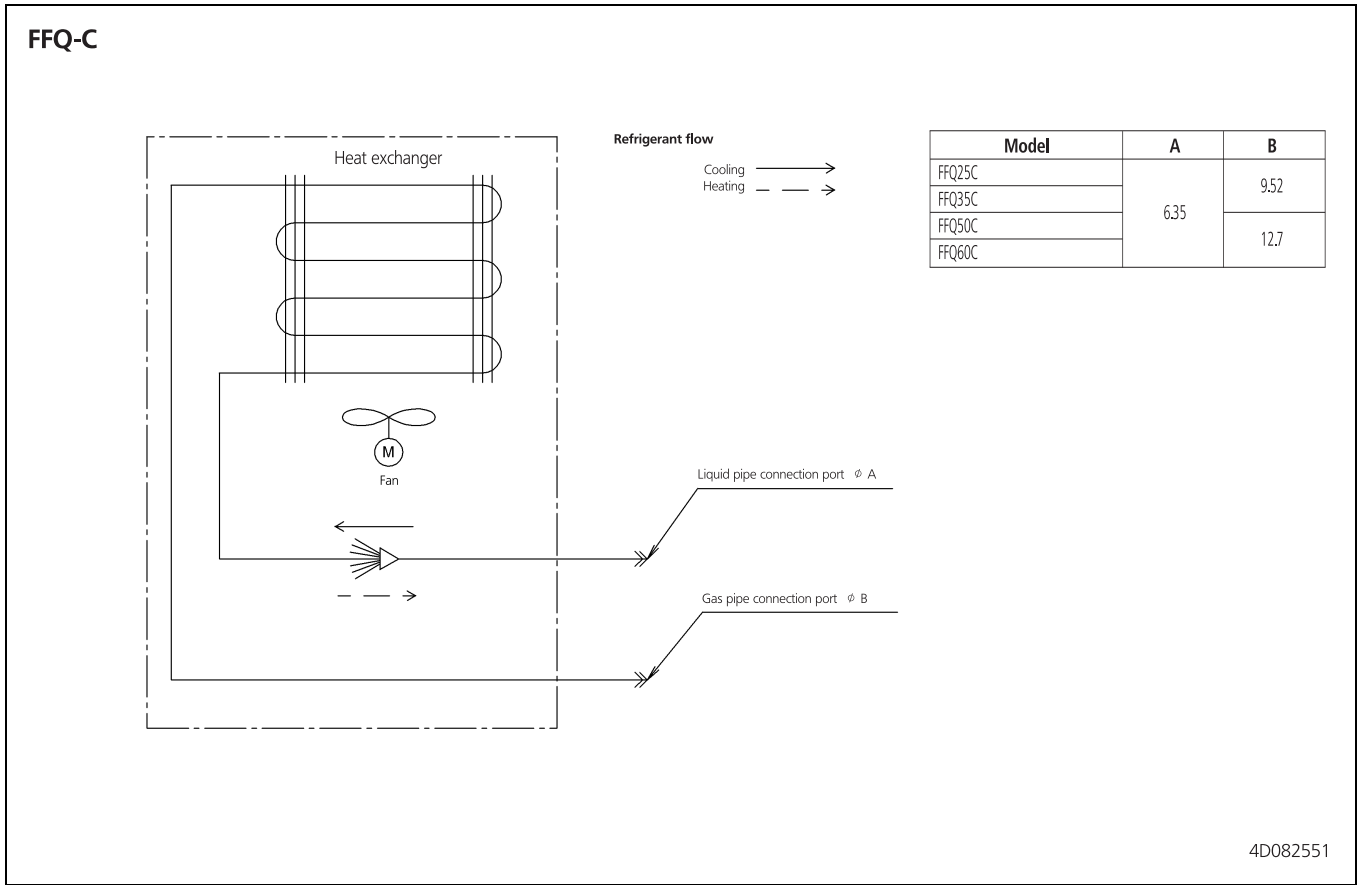


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7 Piping diagrams

7 - 1 Piping Diagrams

7

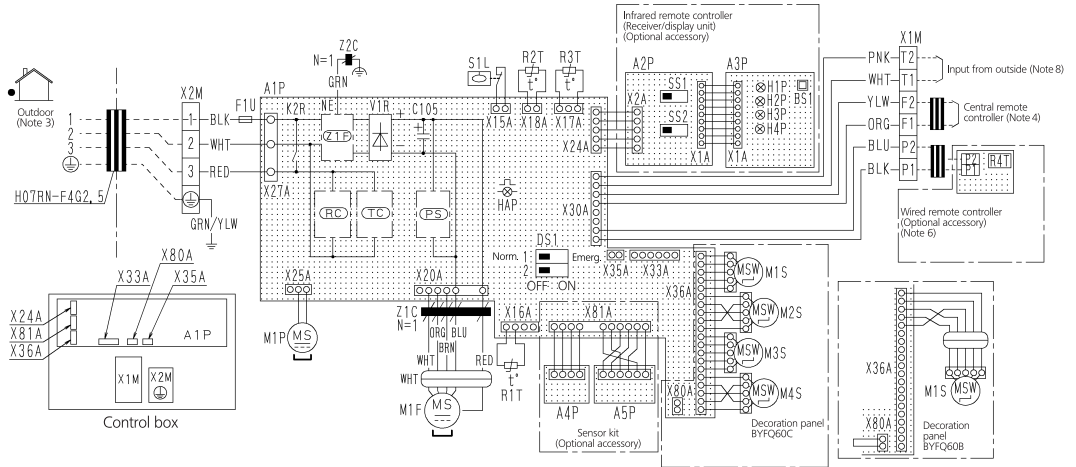


8 Wiring diagrams

8 - 1 Wiring Diagrams - Single Phase

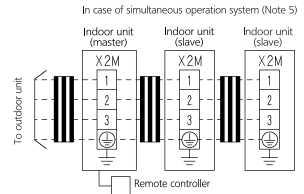
FFQ-C

Indoor unit	
A1P	Printed circuit board
C105	Capacitor (M1F)
DS1	Dip switch on PCB
F1U	Fuse (F, 5A, 250V)
HAP	Flashing lamp (service monitor-green)
K2R	Magnetic relay
M1F	Fan motor
M1P	Drain pump motor
M1S~M5S	Swing motor
R1T	Thermistor (air)
R2T	Thermistor (coil)
R3T	Thermistor (coil)
S1L	Reset switch
V1R	Diode bridge
X1M	Terminal block
X2M	Terminal block
Z1F	Noise filter
Z1C	Ferrite core
Z2C	Ferrite core
PS	Switching power supply
RC	Receiver
TC	Transmitter
Infrared remote controller (Receiver/display unit) (Optional accessory)	
A2P	Printed circuit board
A3P	Printed circuit board
BS1	Push button switch on PCB
H1P	Pilot lamp (on-red)
H2P	Pilot lamp (time-green)
H3P	Pilot lamp (filter sign-red)
H4P	Pilot lamp (defrost-orange)
SS1	Selector switch (main/sub)
SS2	Selector switch (infrared address set)
Sensor kit	
A4P	Printed circuit board
ASP	Printed circuit board
Wired remote controller	
R4T	Thermistor (air)
Connector for optional parts	
X24A	Connector (Infrared remote controller)
X33A	Connector (adapter for wiring)
X35A	Connector (Power supply for adapter)
X81A	Connector (Sensor kit)



Notes

- □ □ : Terminal block, [] : Connector, [] : Field wiring
- In case of simultaneous operation indoor unit system, see the indoor unit wiring only.
- For the detail, see wiring diagram attached to outdoor unit.
- In case of using control remote controller, connect it to the unit in accordance with the attached installation manual.
- In case of simultaneous operation system, connection quantity of the indoor units varies according to the connection outdoor unit, confirm technical guide and catalog, etc, before connecting.
- In case of main/sub changeover, see the installation manual attached to remote controller.
- Symbols show as follows: BLK:Black RED:Red BLU:Blue WHT:White YLW:Yellow GRN:Green ORG:Orange BRN:Brown PNK:Pink
- When connecting the input wiring from outside, forced off or on/off control operation can be selected by the remote controller See installation manual for more details.

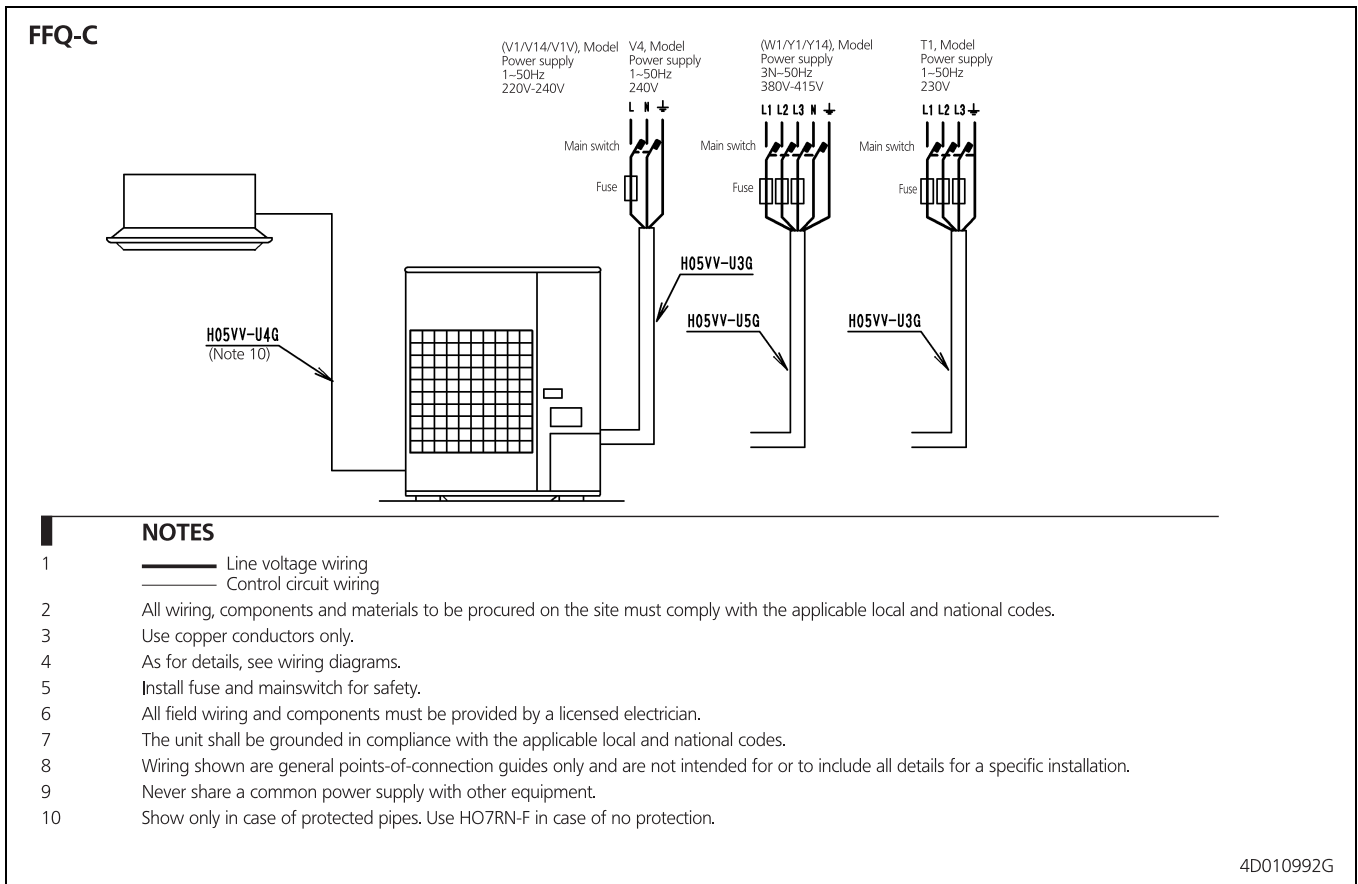


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9 External connection diagrams

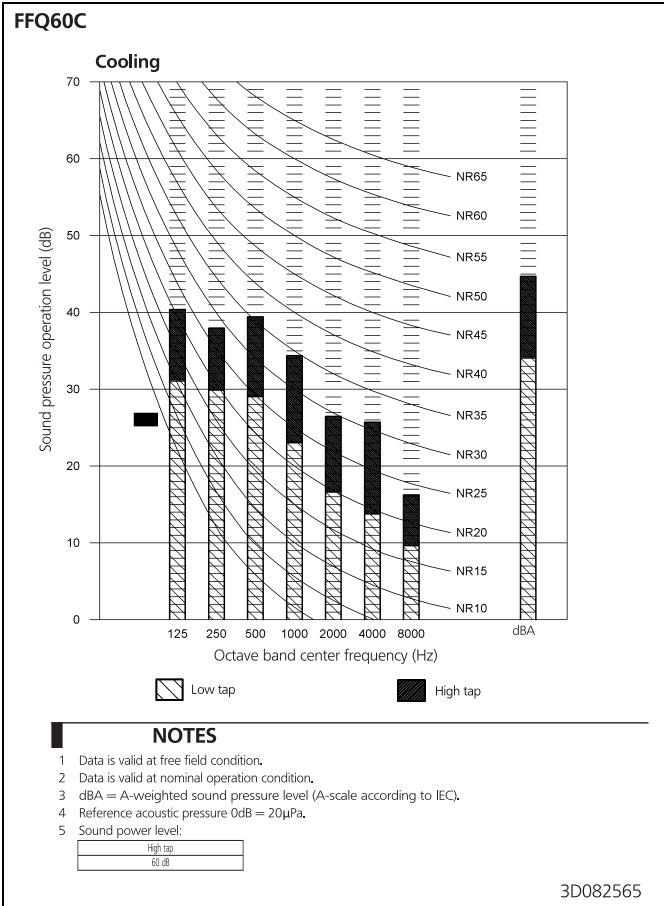
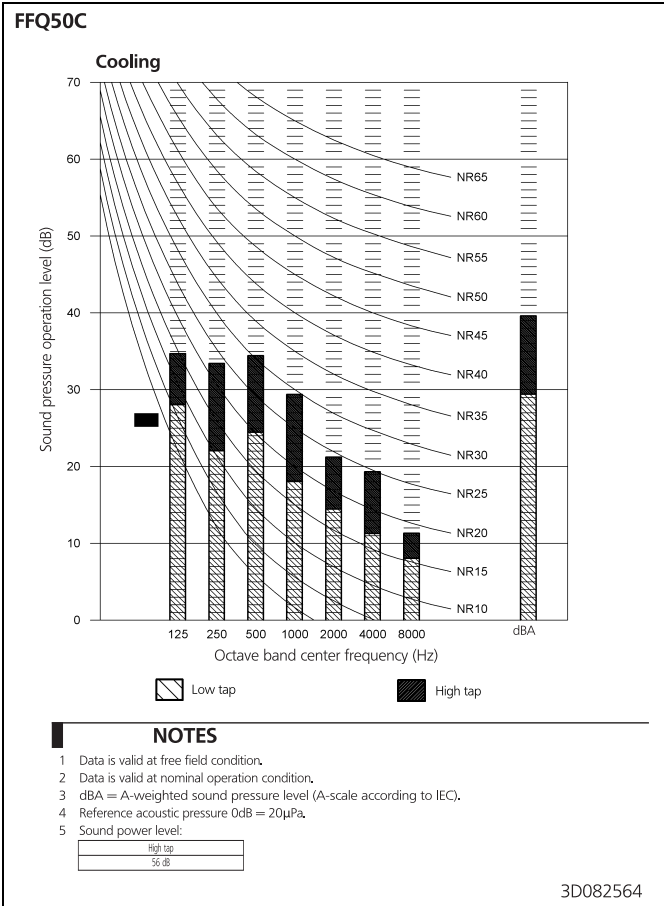
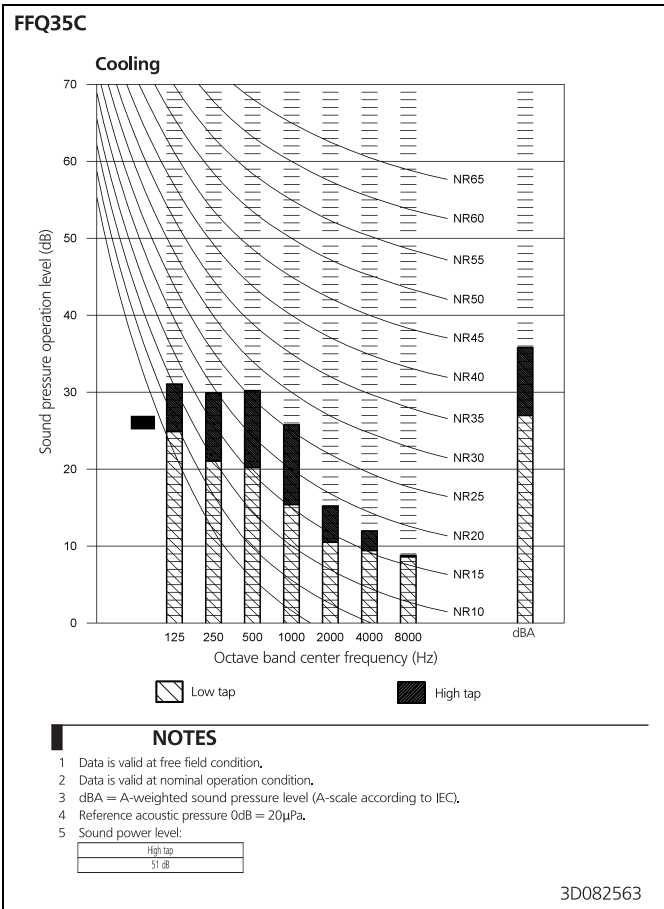
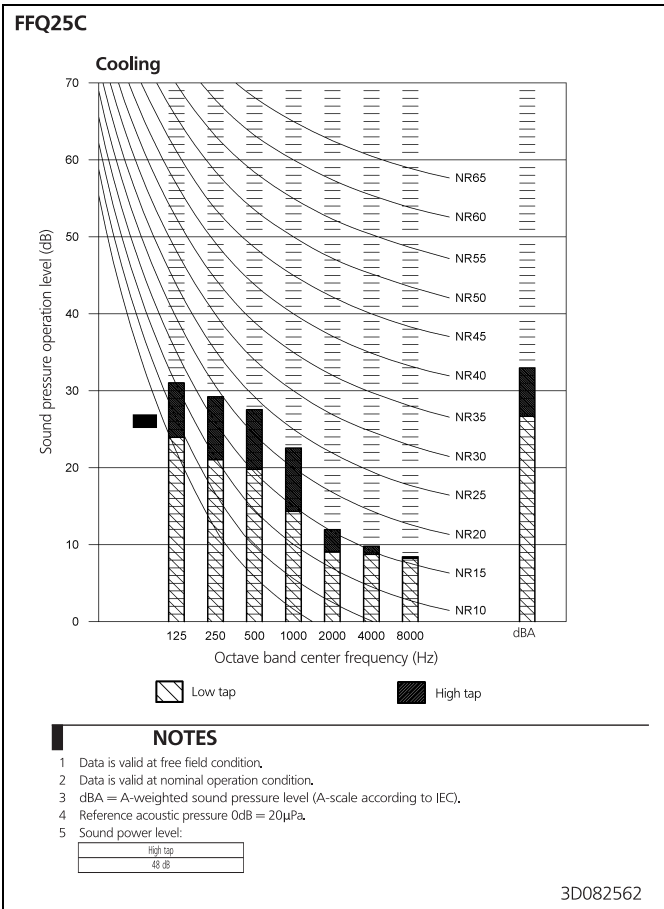
9 - 1 External Connection Diagrams

9



10 Sound data

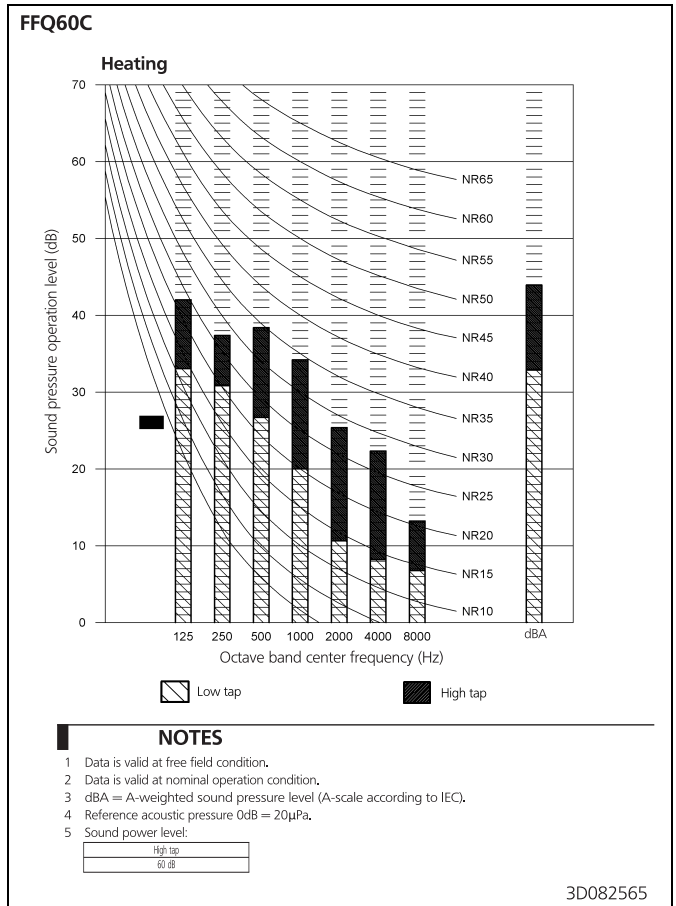
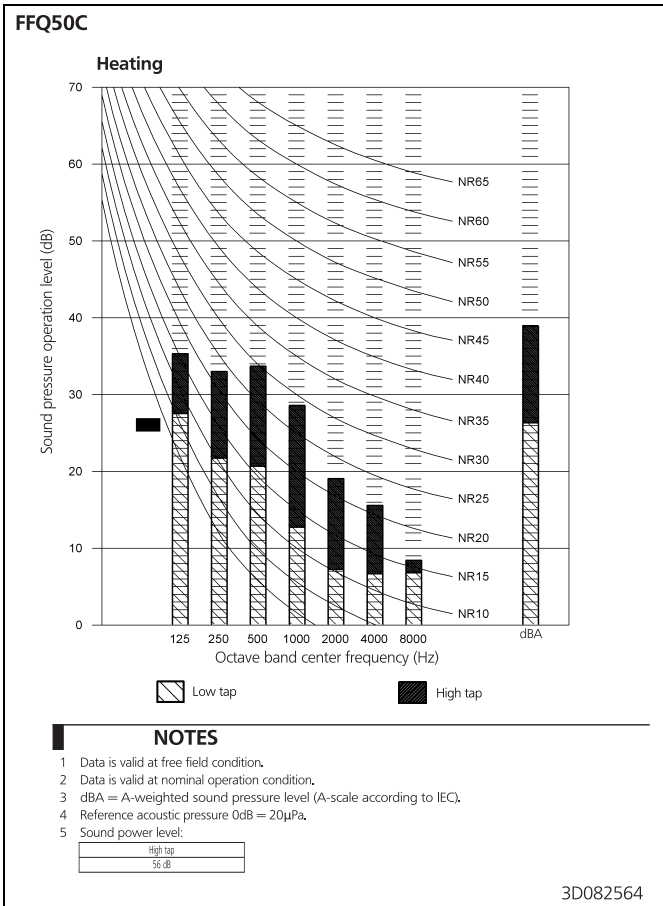
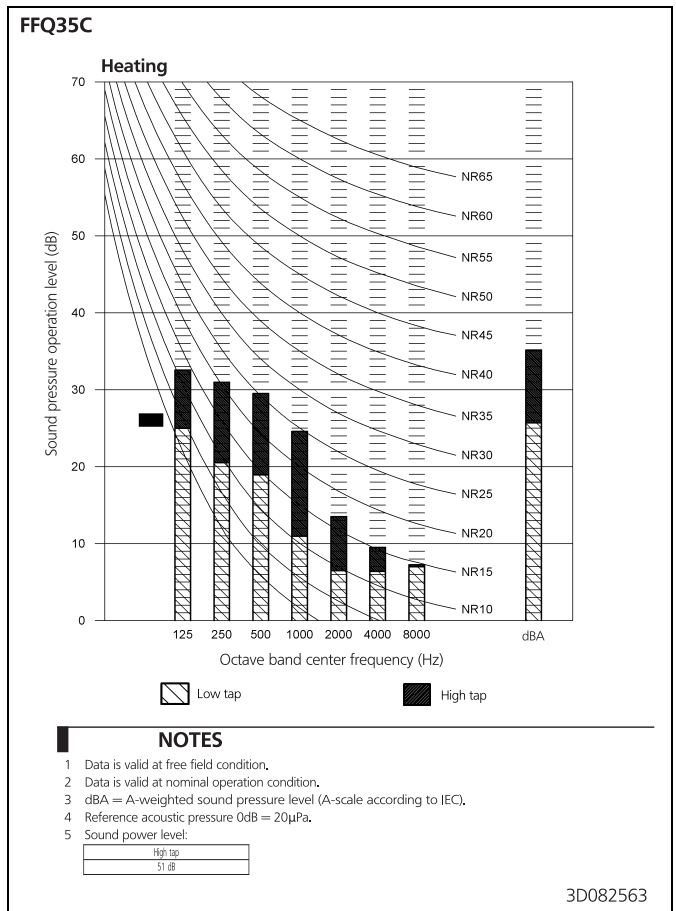
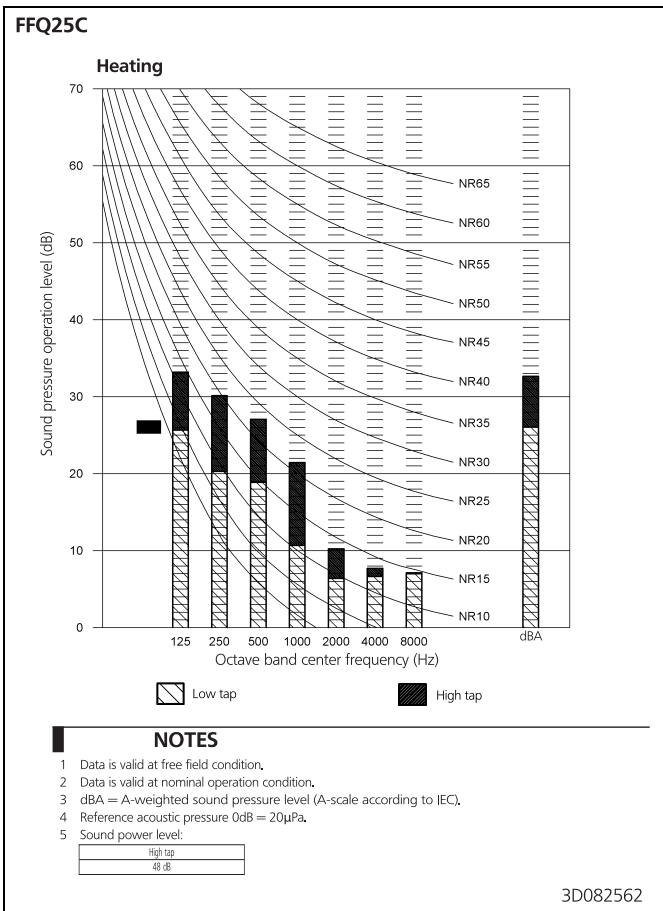
10 - 1 Sound Pressure Spectrum - Cooling



10 Sound data

10 - 2 Sound Pressure Spectrum - Heating

10



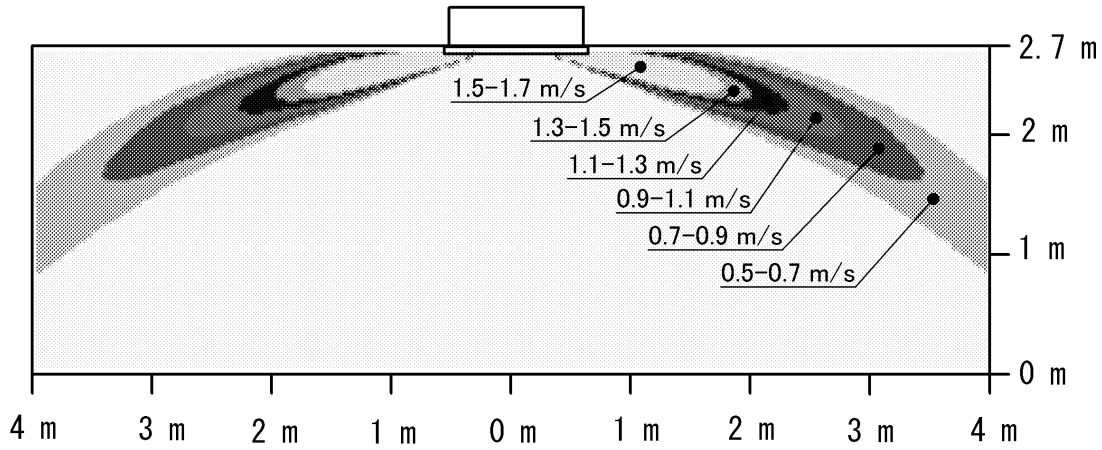
11 Air flow patterns

11 - 1 Air Flow Pattern - Cooling

FFQ25C

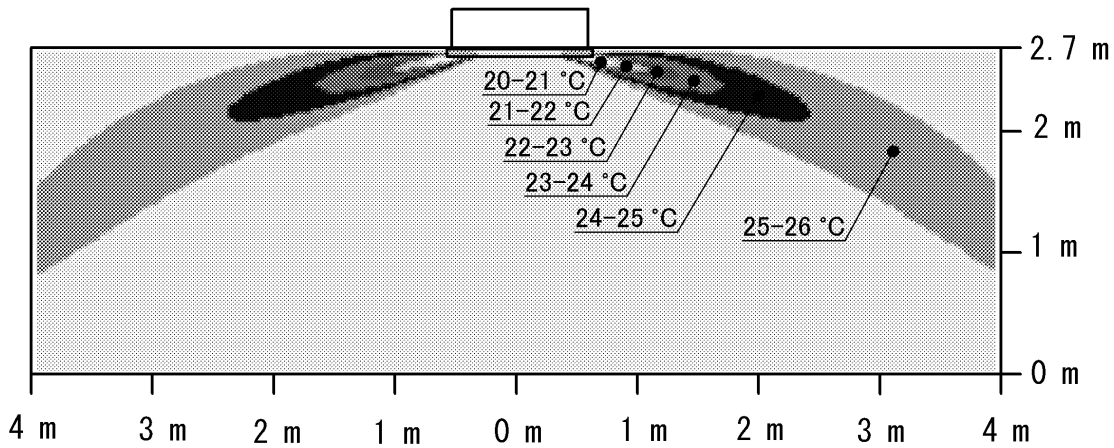
Cooling air velocity distribution

All round air discharge, air flow direction: horizontal



Cooling air temperature distribution

All round air discharge, air flow direction: horizontal



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11 Air flow patterns

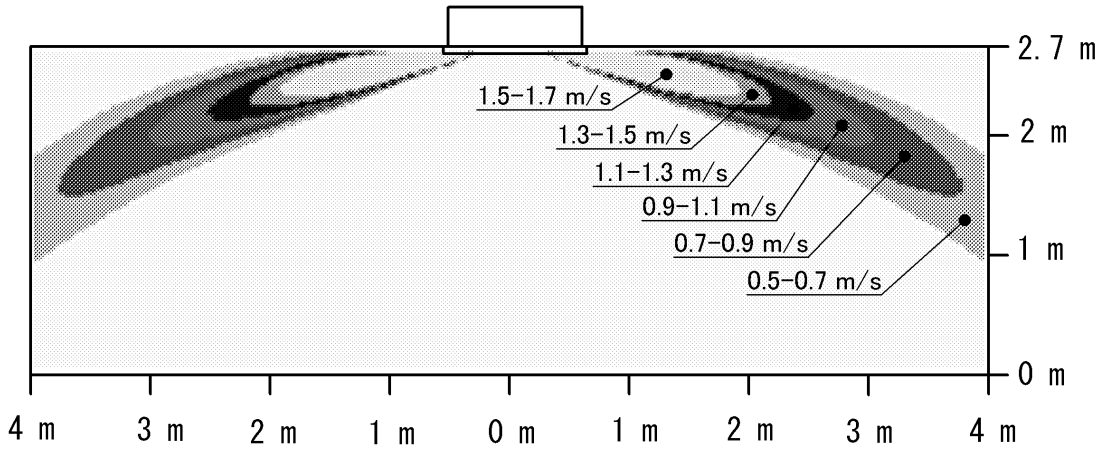
11 - 1 Air Flow Pattern - Cooling

11

FFQ35C

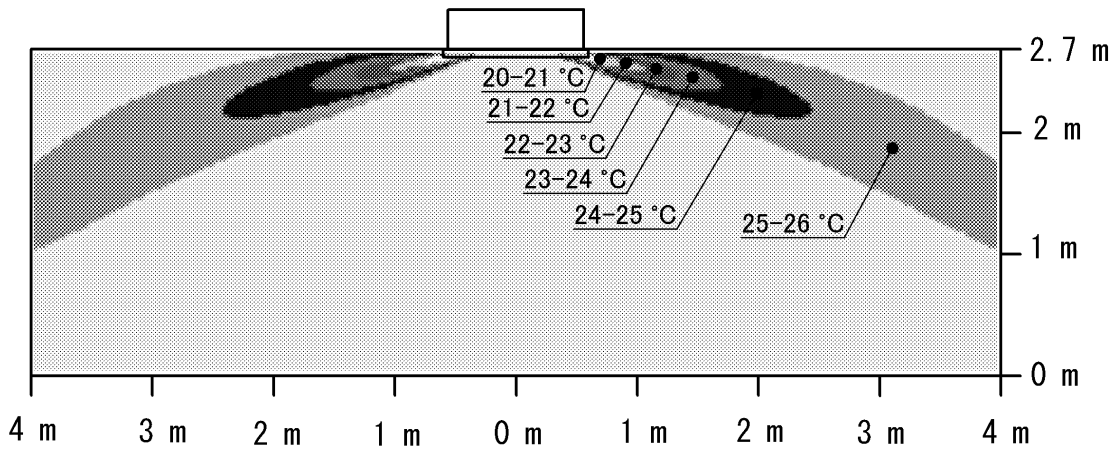
Cooling air velocity distribution

All round air discharge, air flow direction: horizontal



Cooling air temperature distribution

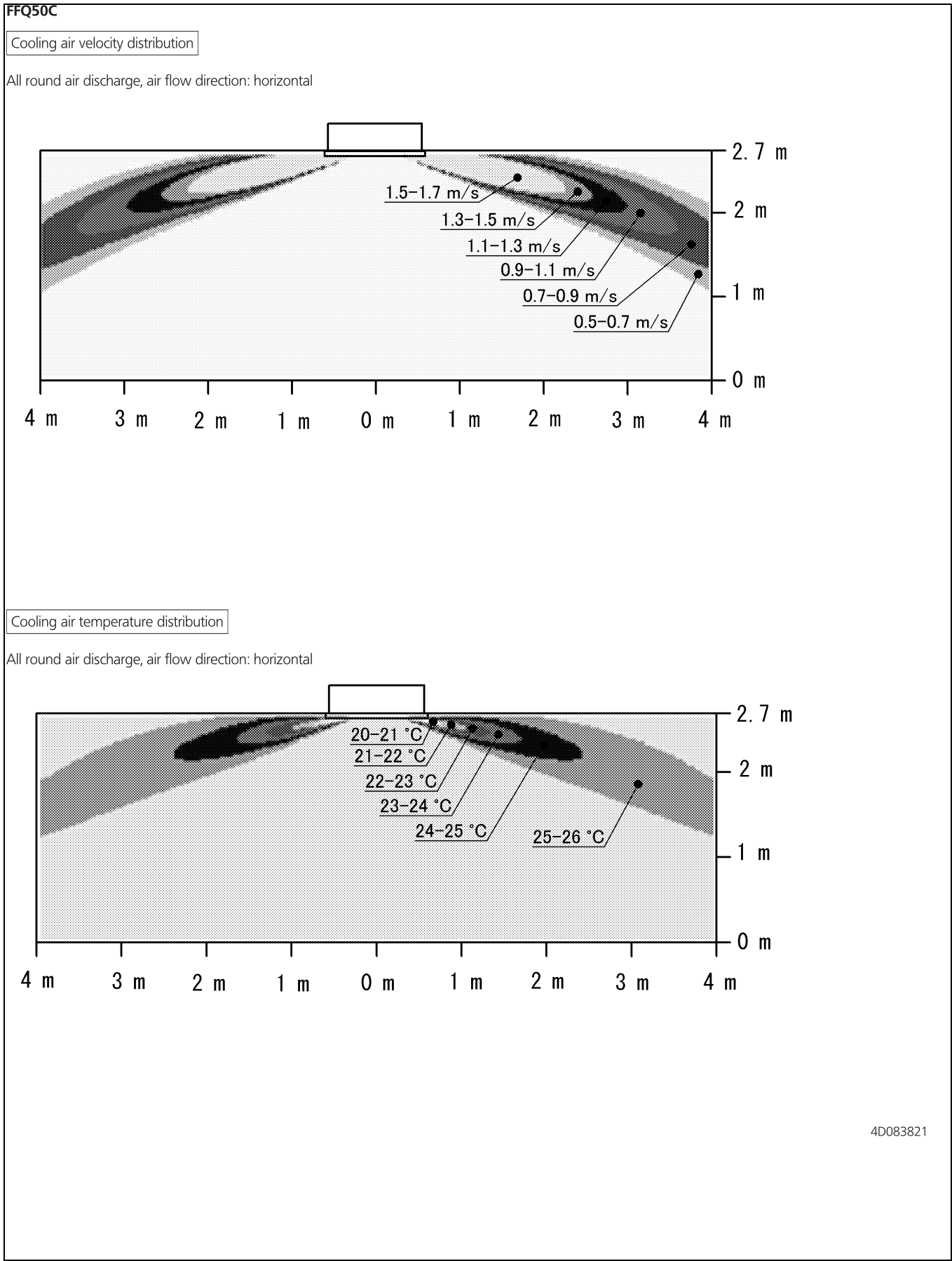
All round air discharge, air flow direction: horizontal



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11 Air flow patterns

11 - 1 Air Flow Pattern - Cooling



11 Air flow patterns

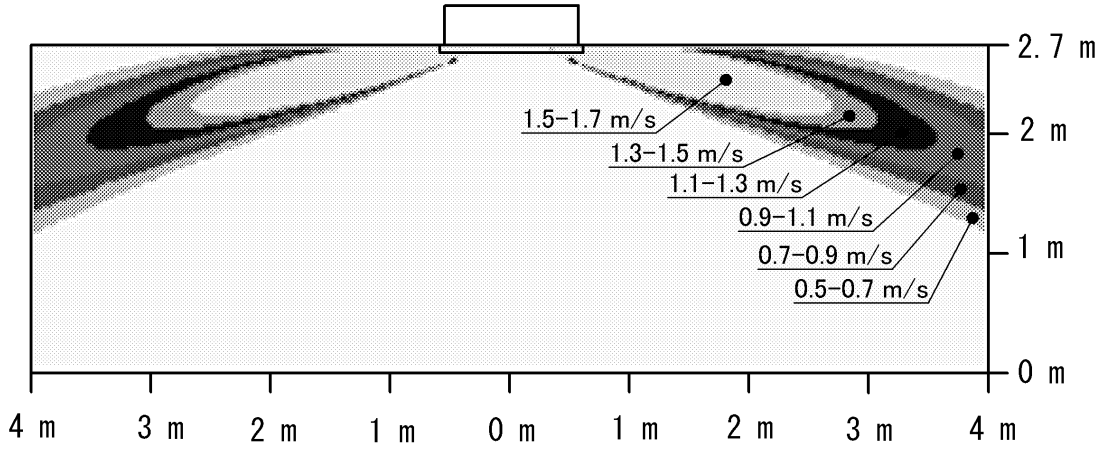
11 - 1 Air Flow Pattern - Cooling

11

FFQ60C

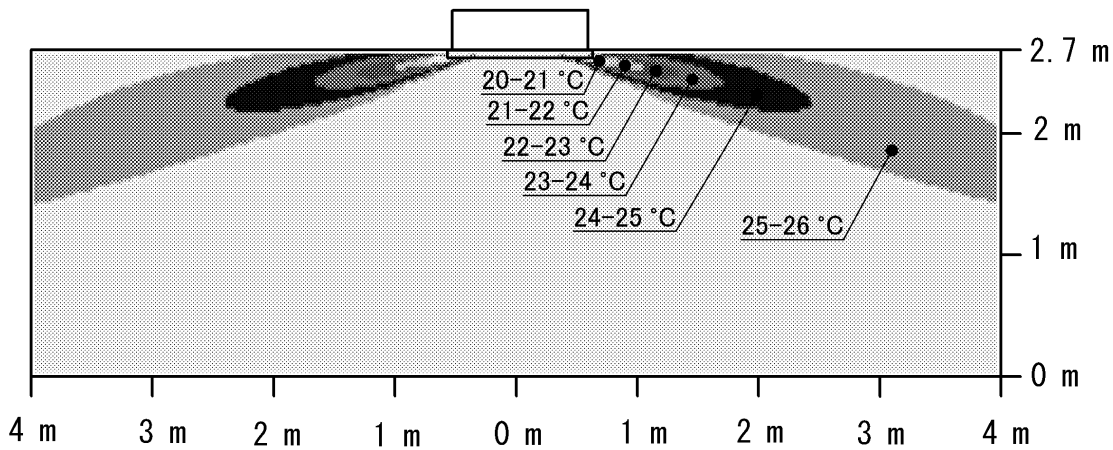
Cooling air velocity distribution

All round air discharge, air flow direction: horizontal



Cooling air temperature distribution

All round air discharge, air flow direction: horizontal



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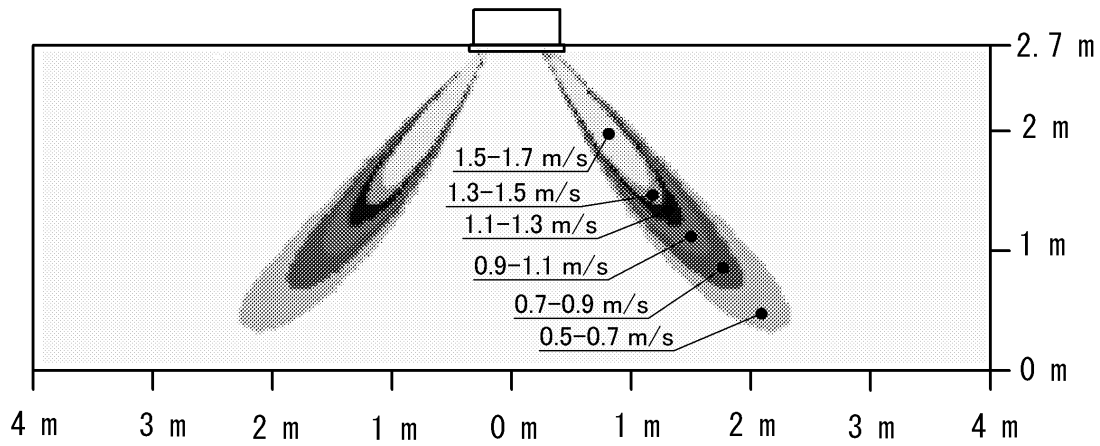
11 Air flow patterns

11 - 2 Air Flow Pattern - Heating

FFQ25C

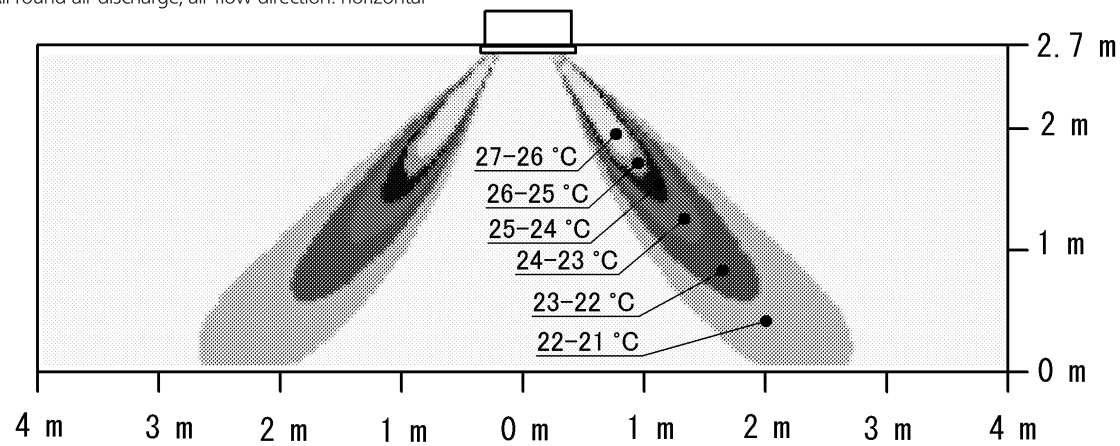
Heating air velocity distribution

All round air discharge, air flow direction: horizontal



Heating air temperature distribution

All round air discharge, air flow direction: horizontal



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11 Air flow patterns

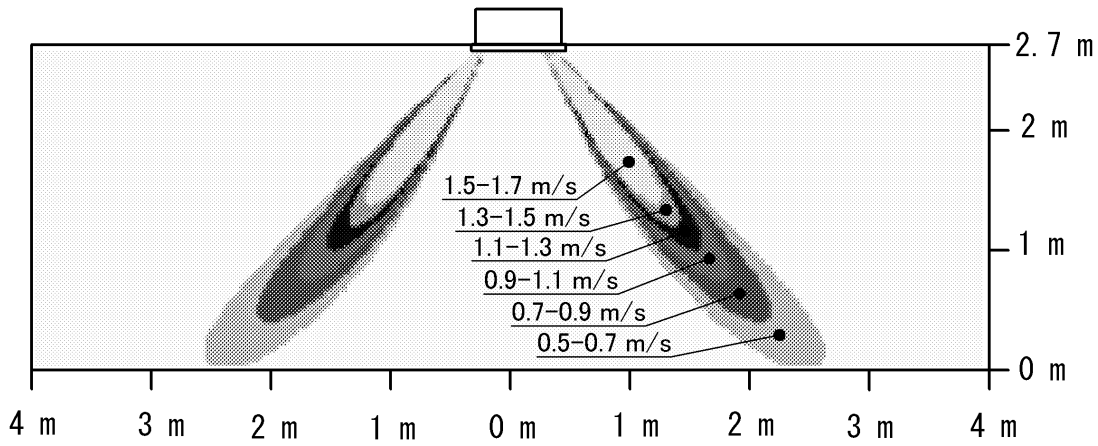
11 - 2 Air Flow Pattern - Heating

11

FFQ35C

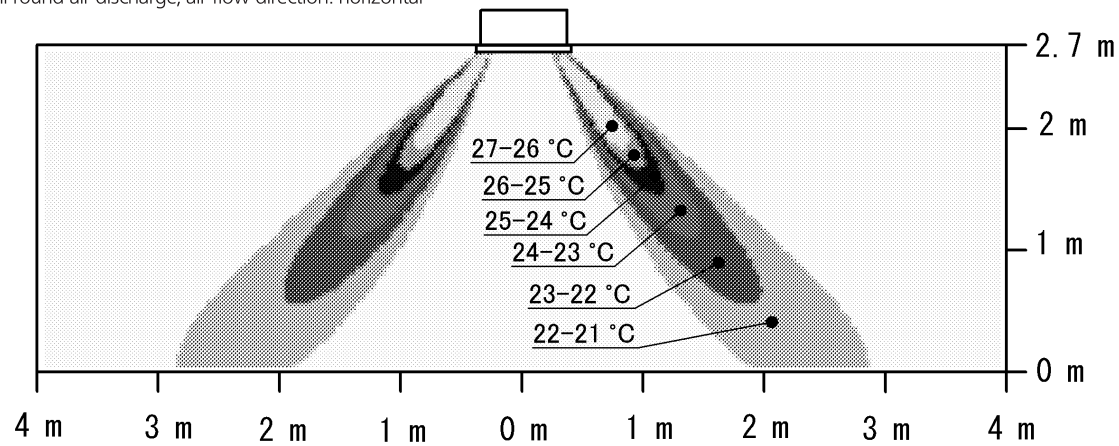
Heating air velocity distribution

All round air discharge, air flow direction: horizontal



Heating air temperature distribution

All round air discharge, air flow direction: horizontal



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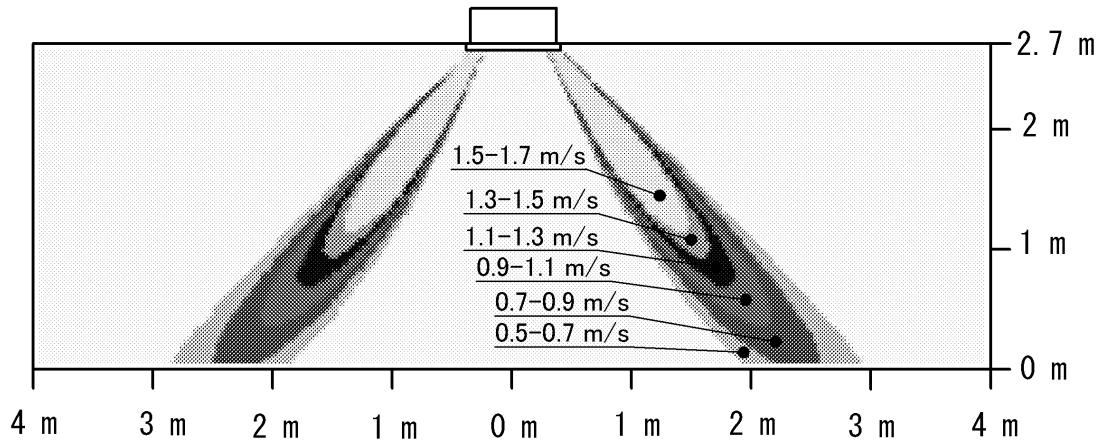
11 Air flow patterns

11 - 2 Air Flow Pattern - Heating

FFQ50C

Heating air velocity distribution

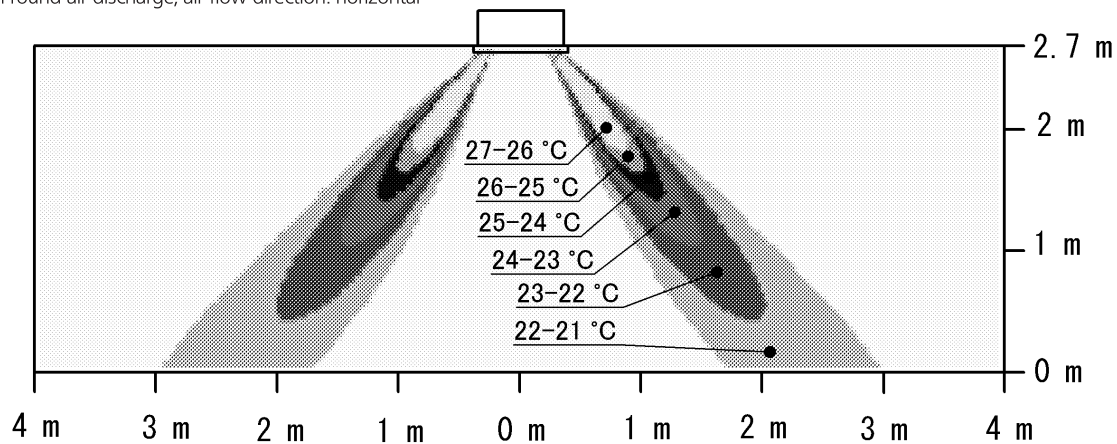
All round air discharge, air flow direction: horizontal



11

Heating air temperature distribution

All round air discharge, air flow direction: horizontal



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11 Air flow patterns

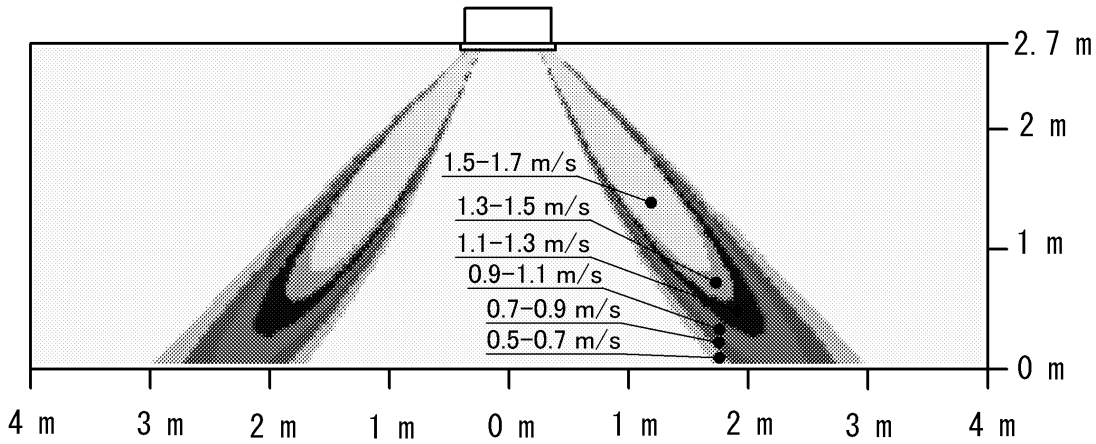
11 - 2 Air Flow Pattern - Heating

11

FFQ60C

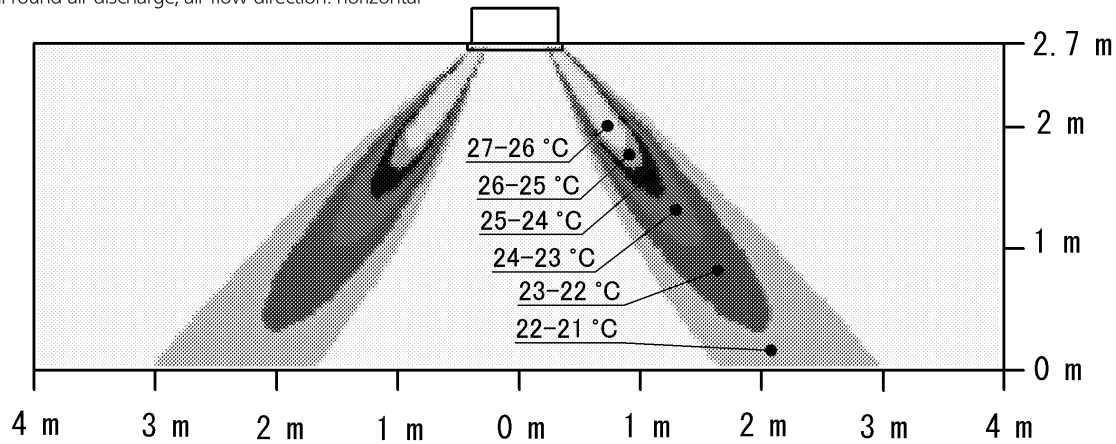
Heating air velocity distribution

All round air discharge, air flow direction: horizontal



Heating air temperature distribution

All round air discharge, air flow direction: horizontal



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