

Air Conditioning
Technical Data

FCAHG-G



- > FCAHG71GVEB
- > FCAHG100GVEB
- > FCAHG125GVEB
- > FCAHG140GVEB

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FCAHG-G

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1 Features

First R-32 BLUEVOLUTION light commercial range available in Europe

- High COP cassette ensures top performance, great savings in energy consumption and a comfortable environment for commercial applications
- 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
- Daily automatic filter cleaning results in higher efficiency & comfort and lower maintenance costs. 2 filters available: standard filter and finer mesh filter (for fine dust applications e.g. clothing shops)
- 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!
- Lowest installation height in the market: 214mm for class 20-63
- Modern style decoration panel is available in 3 different variations: white (RAL9010) with grey louvers, full white (RAL9010) or auto cleaning panel
- 5 different fan speeds available for maximum comfort
- 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 675mm lift increases flexibility and installation speed



Infrastructure cooling



Presence & floor sensor



Home leave operation



Fan only



Auto-cleaning filter



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

2 Specifications

2-1 Technical Specifications					FCAHG71G		FCAHG100G		FCAHG125G		FCAHG140G	
Power input - 50Hz	Cooling	Nom.		kW	-				0.244			
	Heating	Nom.		kW	-				0.244			
Casing	Material				Galvanised steel plate							
Dimensions	Unit	Height/Width/Depth		mm	288/840/840							
	Packed unit	Height/Width/Depth		mm	300/882/882							
Weight	Unit			kg	25							
	Packed unit			kg	28							
Decoration panel	Model				BYCQ140D7W1 - white with grey louvers							
	Colour				FRESH WHITE							
	Dimensions	HeightxWidthxDepth		mm	50x950x950							
	Weight			kg	5.4							
Decoration panel 2	Model				BYCQ140D7W1W - full white							
	Colour				FRESH WHITE							
	Dimensions	HeightxWidthxDepth		mm	50x950x950							
	Weight			kg	5.4							
Decoration panel 3	Model				BYCQ140D7GW1 - auto cleaning panel							
	Colour				FRESH WHITE							
	Dimensions	HeightxWidthxDepth		mm	130x950x950							
	Weight			kg	10.3							
Decoration panel 4	Model				BYCQ140D7GFW1							
	Colour				FRESH WHITE							
	Dimensions	HeightxWidthxDepth		mm	950x950x50							
	Weight			kg	10.3							
Heat exchanger	Inside length			mm	2,090							
	Outside length			mm	2,184							
	Rows	Quantity			3							
	Fin pitch			mm	1.20							
	Passes	Quantity			17							
	Face area			m²	0.556							
	Stages	Quantity			18							
	Empty tubeplate hole	Quantity			0							
	Fin	Type			Cross fin coil (Multi slit fins and Ø5HI-XA tubes)							
Air filter	Type				Resin net							
Fan	Model				QTS48D11M		QTS48C15M					
	Type				Turbo fan							
	Quantity				1							
	Air flow rate	Cooling	High	m³/min	21.2	32.3	33.5					
			Medium	m³/min	16.7 (1)	25.7 (1)	26.7 (1)		27.3 (1)			
			Low	m³/min	12.2	19.0	19.9		21.1			
		Heating	High	m³/min	21.2	32.3	33.5					
			Medium	m³/min	16.7 (1)	25.7 (1)	26.7 (1)		27.3 (1)			
Low			m³/min	12.2	19.0	19.9		21.1				
Fan motor	Model				ARW5202DK		EHDS10CDK					
	Speed	Steps			3							
	Output	High		W	48	106						
Sound power level	Cooling			dBA	53	61						
	Heating			dBA	53	61						
Sound pressure level	Cooling	High/Medium/Low		dBA	36/33 (1)/29	44/39 (1)/33		45/40 (1)/35		45/41 (1)/37		
	Heating	High/Medium/Low		dBA	36/33/29	44/39/33		45/40/35		45/41/37		

2 Specifications

2-1 Technical Specifications				FCAHG71G	FCAHG100G	FCAHG125G	FCAHG140G
Control systems	Infrared remote control			BRC7FA532F			
	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/9,52			
	Gas	Type/OD	mm	Flare connection/15.90			
	Drain			VP25 (I.D. 25/O.D. 32)			
	Heat insulation			Foamed polystyrene / Foamed polyethylene			

Standard Accessories : Operation manual; Quantity : 1;
 Standard Accessories : Installation manual; Quantity : 1;
 Standard Accessories : Drain hose; Quantity : 1;
 Standard Accessories : Clamp for drain hose; Quantity : 1;
 Standard Accessories : Washer for hanger bracket; Quantity : 8;
 Standard Accessories : Screws; Quantity : 4;
 Standard Accessories : Installation guide; Quantity : 1;
 Standard Accessories : Insulation for fitting; Quantity : 2;
 Standard Accessories : Sealing pads; Quantity : 4;
 Standard Accessories : Drain sealing pad; Quantity : 1;
 Standard Accessories : Clamps; Quantity : 1;

2-2 Electrical Specifications				FCAHG71G	FCAHG100G	FCAHG125G	FCAHG140G
Power supply	Phase			1~			
	Frequency		Hz	50/60			
	Voltage		V	220-240/220			

Notes

(1) This option is intended exclusively for usage in fine dust environments (clothing shops). Do not use this option in high humidity and/or greasy environments.

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

The BYCQ140D7W1W has white insulations. Be informed that formation of dirt on white insulation is visibly stronger and that it is consequently not advised to install the BYCQ140D7W1W decoration panel in environments exposed to concentrations of dirt.

BYCQ140D7W1: pure white standard panel with grey louvers; BYCQ140D7W1W: pure white standard panel with white louvers; BYCQ140D7GW1: pure white auto cleaning panel.

Options

Options

FCAHG-G

Option kit	Product name	Availability	
		SA	
		FCAG35AVEB FCAG50AVEB FCAG60AVEB FCAG71AVEB FCAG100AVEB FCAG125AVEB FCAG140AVEB	FCAHG71GVEB FCAHG100GVEB FCAHG125GVEB FCAHG140GVEB
Decoration panel - Standard	BYCQ140D7W1	✓	✓
Decoration panel - White	BYCQ140D7W1W (3)	✓	✓
Self-cleaning decoration panel	BYCQ140D7GW9/BYCQ140D7GFW9 (5)(6)(11)	✓	✓
Long-life replacement filter	KAFP551K160	✓	✓
Chamber [part of fresh air intake kit (20% fresh air)]	KDDQ55B140-1 (7)(8)	✓	✓
Diffuser from chamber to duct [part of fresh air intake kit (20% fresh air)]	KDDQ55B140-2 (7)(8)	✓	✓
Air discharge outlet sealing member	KDBHG35B140 (7)	✓	✓
Sensor kit	BRVQ140A7	✓	✓
Wireless remote control	BRC7FA32F (7)	✓	✓
Wired remote control	BRC1D528 (4)	✓	✓
Wired remote control	BRC1E53A7 (12) / BRC1E53B7 (13) / BRC1E53C7 (14) (15)	✓	✓
Simplified remote control (with operation mode selector button)	BRC2E52C (9)(16)	✓	✓
Simplified remote control (without operation mode selector button)	BRC3E52C (9)(16)	✓	✓
Wiring adaptor for electrical appendices 1	KRP1BA57 (2)(7)	✓	✓
Wiring adaptor for electrical appendices 2	KRP4AA53 (2)(7)	✓	✓
Wiring adaptor (hour meter)	KRP1C11 (2)(7)	✓	✓
Remote sensor	KRC501-48	✓	✓
Installation box for adaptor PCB	KRP1H98 (7)	✓	✓
Central remote control	DCS302CA51	✓	✓
Unified ON/OFF controller	DCS301BA51	✓	✓
Electrical box with earth terminal (2 blocks)	KB212AA	✓	✓
Electrical box with earth terminal (3 blocks)	KB311AA	✓	✓
Schedule timer	DST301BA51	✓	✓
Digital input adaptor	BRP7A53 (10)	✓	✓

Notes

- ①: All options are kits
- ②: Requires installation box for adaptor PCB
- ③: This option has white insulation.
Be aware that dirt formation is more easily visible on white insulation.
It is recommended not to install this option in environments with a high concentration of dirt.
- ④: Not recommended because of its limited functionality.
- ⑤: To be able to control option BYCQ140D7GW9/BYCQ140D7GFW9, controller BRC1E is required.
- ⑥: Option BYCQ140D7GW9/BYCQ140D7GFW9 cannot be used with VRV IV-5, multi, and non-inverter split outdoor units.
- ⑦: This option cannot be combined with BYCQ140D7GW9/BYCQ140D7GFW9.
- ⑧: Both parts of the fresh air intake kit are required for each unit.
- ⑨: 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.
- ⑩: Only possible in combination with remote control BRC2/3E52C, BRC1E53A/B/C7.
- ⑪: This option is intended exclusively for use in fine dust environments (e.g. clothing shops). Do not use it in environments that are greasy, or have high humidity.
- ⑫: Included languages are: English, German, French, Italian, Spanish, Portuguese, and Dutch.
- ⑬: Included languages are: English, Czech, Croatian, Hungarian, Slovenian, Romanian, and Bulgarian.
- ⑭: Included languages are: English, Russian, Greek, Turkish, Polish, Albanian, and Slovak.
- ⑮: Language pack 3 of controller BRC1E53C7 is different from that of controller BRC2/3E52C7.

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4 Dimensional drawings

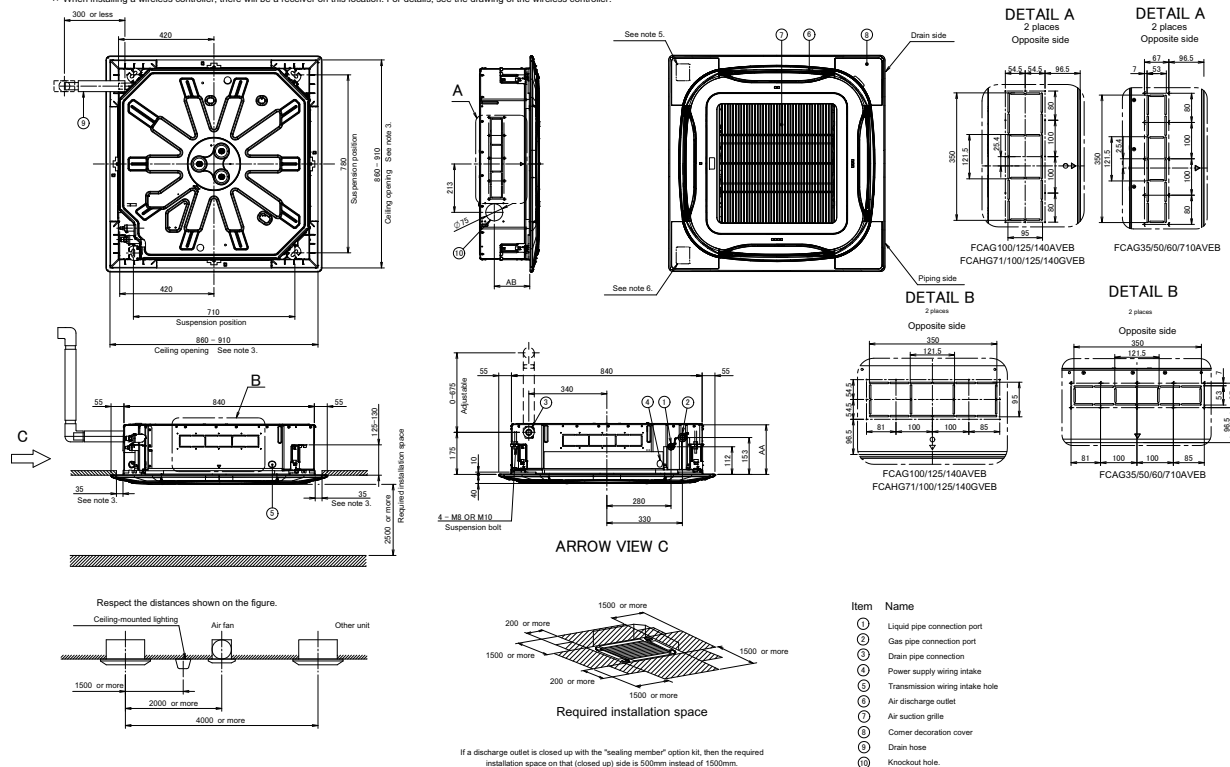
4 - 1 Dimensional Drawings with Accessories

FCAHG-G

Notes

1. Location of nameplate
 - The unit nameplate is located on the control box cover.
 - The decoration panel nameplate is located on the piping-side panel frame, under the corner cover.
2. When installing optional accessories, refer to their respective documentation.
3. Make sure the distance between the ceiling and the cassette does not exceed 35mm.
4. The maximum ceiling opening is 910mm.
5. When the conditions in the ceiling exceed 30°C ambient temperature and 80% relative humidity, or when fresh air is inducted into the ceiling, additional insulation is required (polyethylene foam, thickness ≥10mm).
6. When installing a sensor kit, there will be a sensor on this location. For details, see the drawing of the sensor kit.
7. When installing a wireless controller, there will be a controller on this location. For details, see the drawing of the wireless controller.

AA	AB	Model
204	140	FCAG35/50/60/71AVEB
256	180	FCAG100/125/140AVEB
298	180	FCAG71/100/125/140GVE



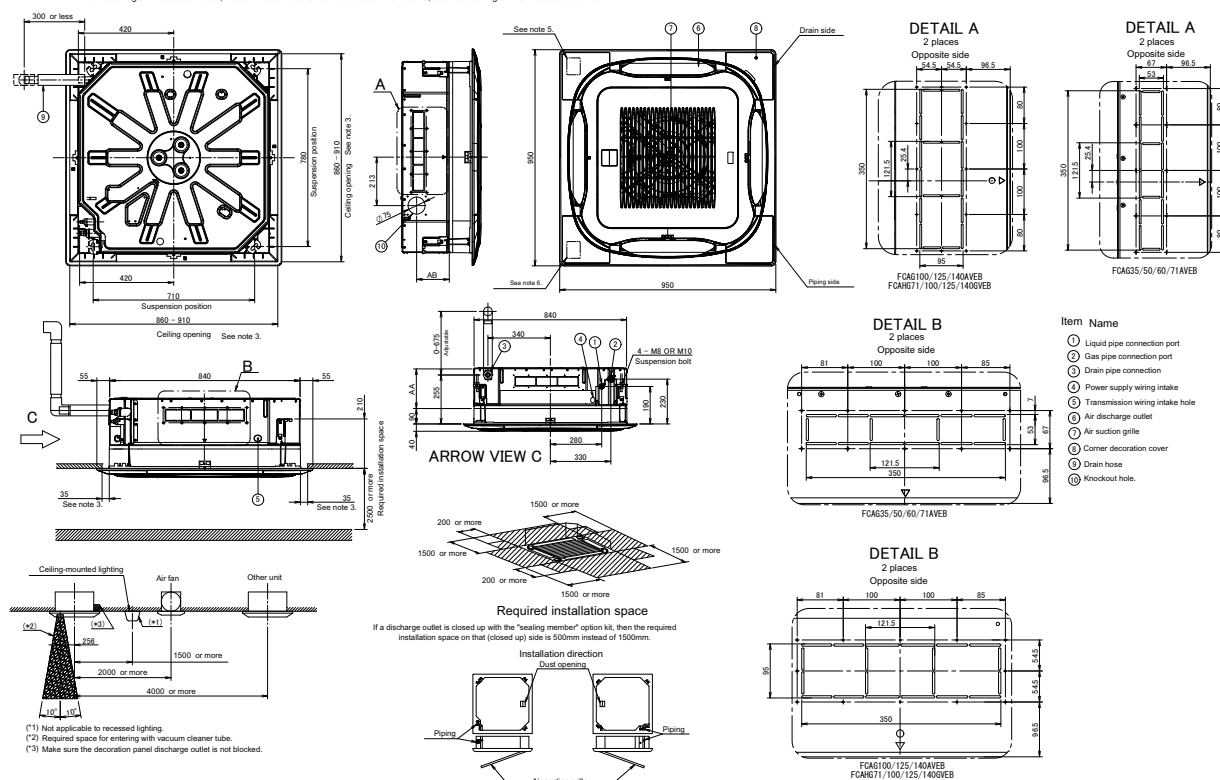
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FCAHG-G

Notes

1. Location of nameplate
The unit nameplate is located on the control box cover.
The decoration panel nameplate is located on the piping-side panel frame, under the corner cover.
2. When installing optional accessories, refer to their respective documentation.
3. Make sure the distance between the ceiling and the cassette does not exceed 35mm.
4. The maximum ceiling opening is 910mm.
5. When the conditions in the ceiling exceed 35°C ambient temperature and 80% relative humidity, or when fresh air is inducted into the ceiling, additional insulation is required (polyethylene foam, thickness 210mm).
6. When installing a sensor kit, there will be a sensor on this location. For details, see the drawing of the sensor kit.
7. When installing a wireless controller, there will be a receiver on this location. For details, see the drawing of the wireless controller.

AA	AB	Model
204	140	FCAG35/50/60/71AVEB
246	180	FCAG100/125/140AVEB
288	180	FCAG171/100/125/140AVEB



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4 Dimensional drawings

4 - 1 Dimensional Drawings with Accessories

FCAHG-G

Remote control dimensions

Transmitter

157

62

17.5

Remote control holder

Installation methods

Installation to wall surface

Wireless remote control

Remote control holder

Receiver detail

Decoration panel

Receiver

Drain side

Piping side

Sensor kit	BRC7FA532F
Decoration panel	BYCQ140D7W1(W)

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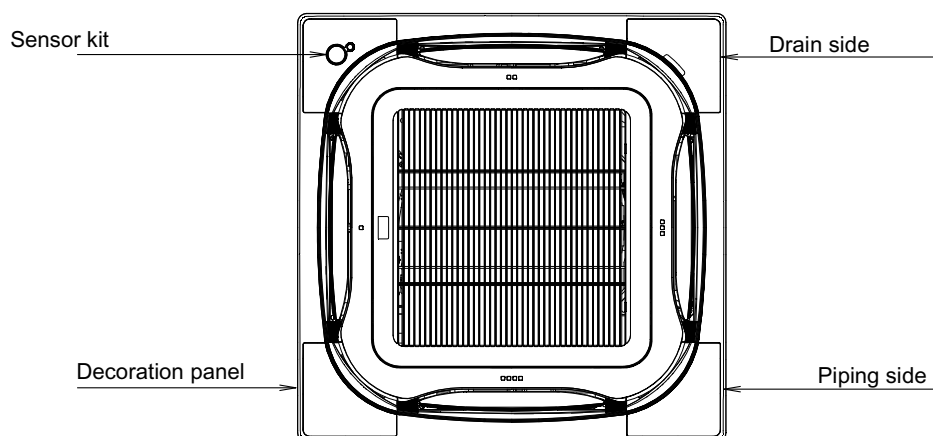
4 Dimensional drawings

4 - 1 Dimensional Drawings with Accessories

FCAHG-G

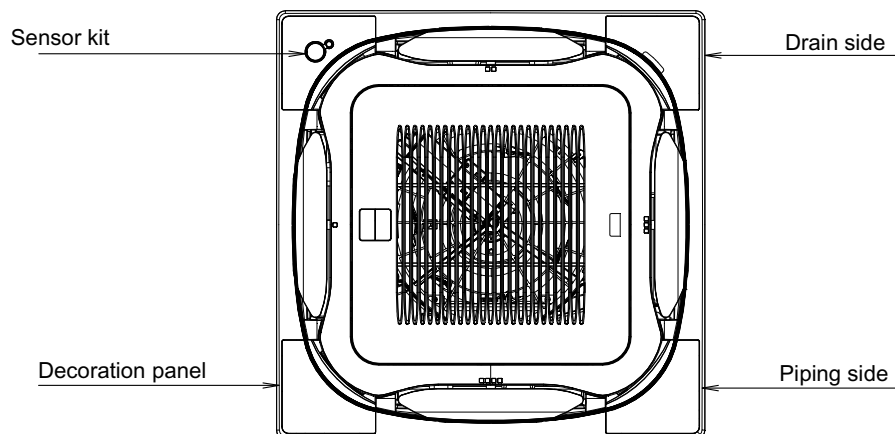
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Sensor kit Installation methods



Sensor kit	BRYQ140A7
Decoration panel	BYCQ140D7W1(W)

Sensor kit Installation methods



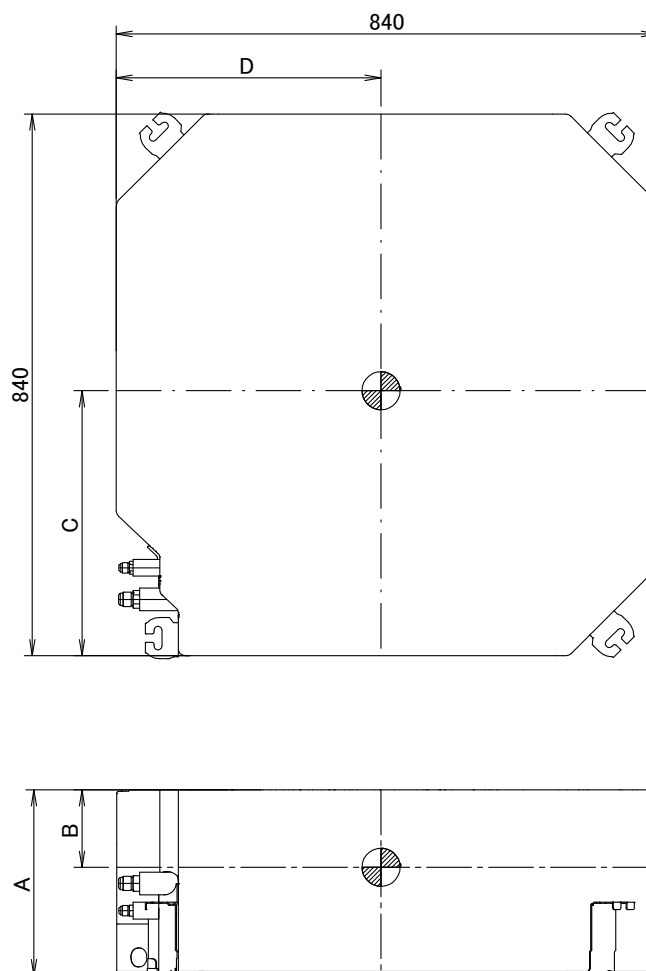
Sensor kit	BRYQ140A7
Decoration panel	BYCQ140D7GW9/BYCQ140D7GFW9

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5 Centre of gravity

5 - 1 Centre of Gravity

FCAHG-G



Model	A	B	C	D
FCQG35~71FVEB, FXFQ20~63AVEB	204	60	409	358
FCQG100~140FVEB, FXFQ80~100AVEB	246	90	411	411
FCQHG71~140FVEB, FXFQ125AVEB	288	120	420	420
FCAHG71~140FVEB	288	120	420	420
FCAG35~71AVEB	204	60	409	358
FCAG100~140AVEB	246	90	411	411

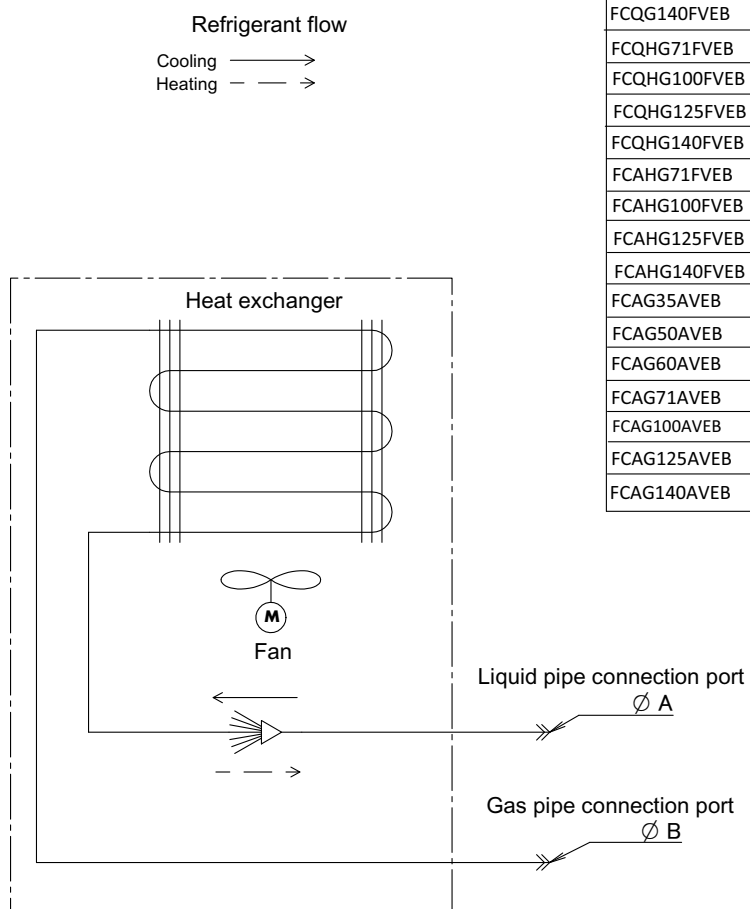
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6 Piping diagrams

6 - 1 Piping Diagrams

FCAHG-G

6



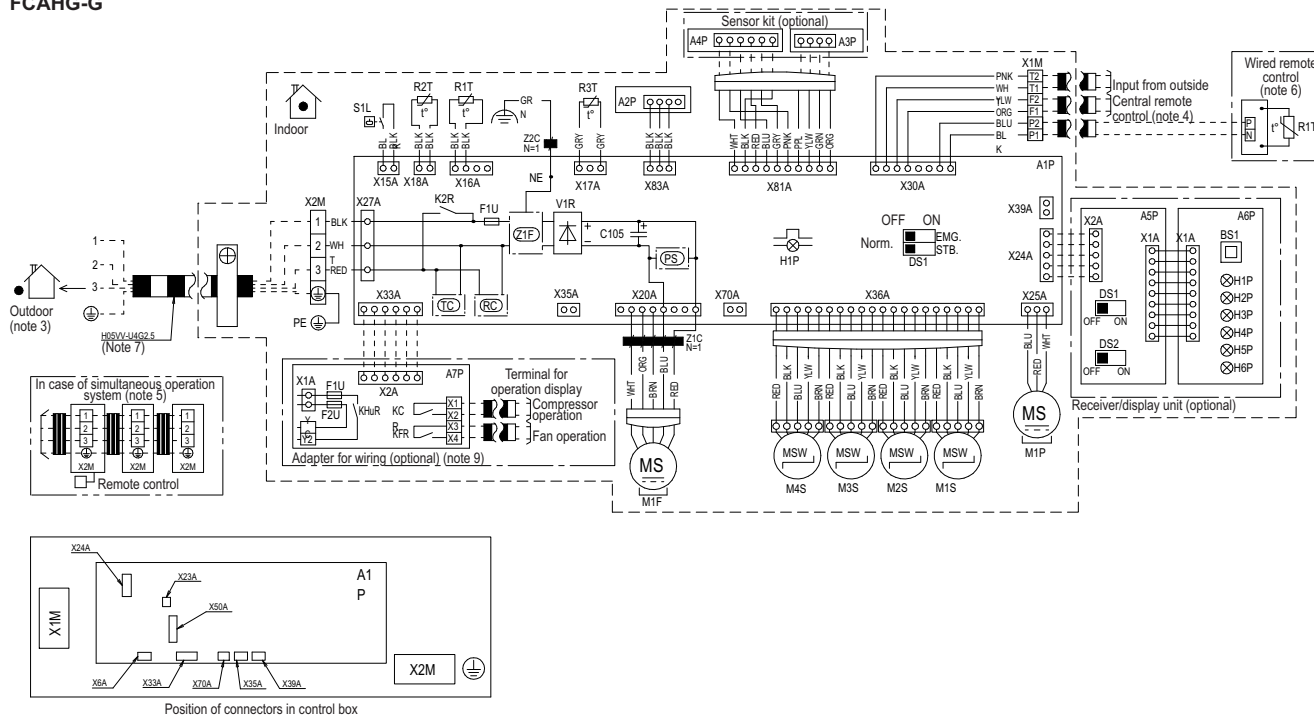
Model	A	B
FCQG35FVEB	6.35	9.52
FCQG50FVEB		12.7
FCQG60FVEB		
FCQG71FVEB	9.52	15.9
FCQG100FVEB		
FCQG125FVEB		
FCQG140FVEB		
FCQHG71FVEB		
FCQHG100FVEB		
FCQHG125FVEB		
FCQHG140FVEB		
FCAHG71FVEB	9.52	15.9
FCAHG100FVEB		
FCAHG125FVEB		
FCAHG140FVEB		
FCAG35AVEB	6.35	9.52
FCAG50AVEB		12.7
FCAG60AVEB		
FCAG71AVEB	9.52	15.9
FCAG100AVEB		
FCAG125AVEB		
FCAG140AVEB		

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7 Wiring diagrams

7 - 1 Wiring Diagrams - Single Phase

FCAHG-G



Indoor unit	
A1P	Main PCB
C105	Capacitor
F1U	Fuse (T, 3.15A, 250V)
DS1	Dip switch on PCB
H1P	Flashing lamp (service monitor green)
K2R	Magnetic relay (drain pump)
M1P	Motor (drain pump)
M1F	Motor (indoor fan)
M1S-M4S	Motor (swing blade)
R1T	Thermistor (air)
R2T, R3T	Thermistor (coil)
V1R	Diode bridge
X1M	Terminal block (remote control)
X2M	Terminal block (power supply)
Z1C, Z2C	Ferrite core
Z1F	Noise filter
PS	Power supply circuit
RC	Signal receiver circuit
TC	Signal transmission circuit
NE	Noiseless earth
Sensor kit	
A3P, A4P	Sensor kit pcb
Infrared remote control (receiver/display unit)	
A5P	Receiver PCB
A6P	Display PCB
BS1	Push button (on/off)
H1P	Pilot lamp (on: red)

H2P	Pilot lamp (timer: green)
H3P	Pilot lamp (filter sign: red)
H4P	Pilot lamp (defrost: orange)
H5P	Pilot lamp (element cleaning: red)
H6P	Pilot lamp (timer: green)
DS1	Dip switch (main/sub)
DS2	Dip switch (wireless address set)
Adapter for wiring	
A7P	Adapter PCB
F1U	Fuse (5a, 250V)
F2U	Fuse (5a, 250V)
KHuR	Magnetic relay
KCR	Magnetic relay
KFR	Magnetic relay
Connector for optional parts	
X1A	Connector (power supply for option PCB)
X2A	Connector (sensor kit)
X24A	Connector (infrared remote control)
X33A	Connector (adapter for wiring)
X35A	Connector (auto clean panel)
X39A	Connector (auto clean panel)
X70A	Connector (auto clean panel)
X81A	Sensor kit
Wired remote control	
R1T	Thermistor (air)
Humidity sensor	
A2P	Sensor PCB

NOTES

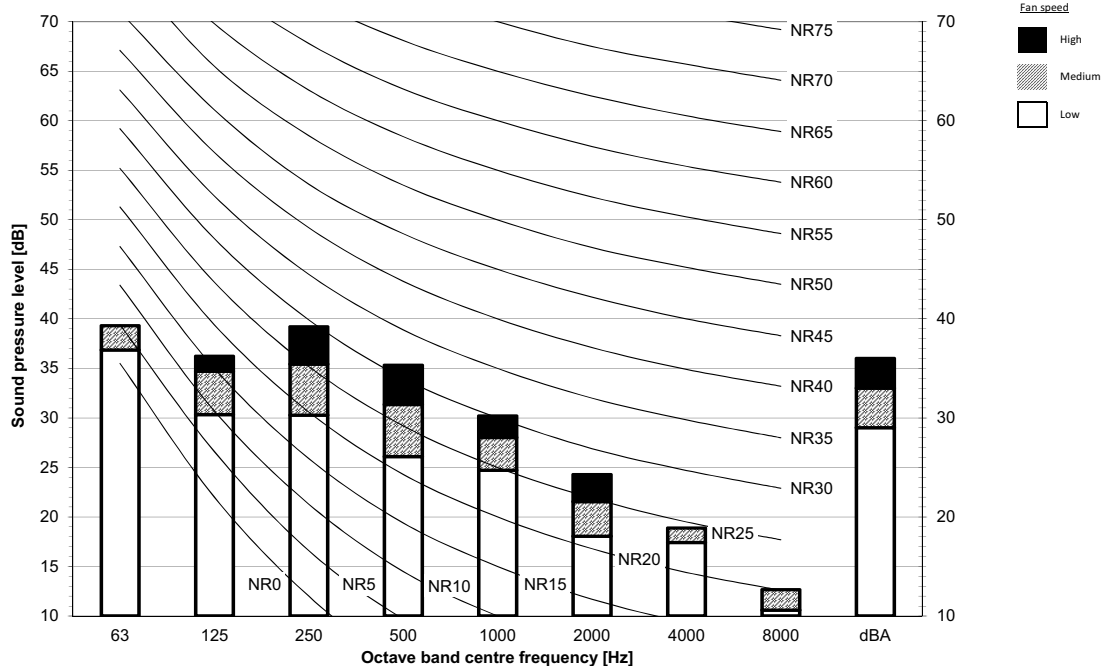
- □ □ □ : terminal block, □ □ □ : connector, - □ □ □ : field wiring
- In case of simultaneous operation indoor unit system, see the indoor unit wiring only.
- For details, see wiring diagram attached to the outdoor unit.
- In case of using central remote control, connect it to the unit in accordance with the attached installation manual.
- In case of simultaneous operation system, connected quantity of the indoor units varies according to the connected outdoor unit.
- In case of main/sub changeover, see installation manual attached to the remote control.
- Shown only in case of protection piping, use H07RN-F in case of no protection.
- X35A, X39A, X70A are connected when optional accessories are being used (auto clean panel), see wiring diagram of this accessory.
- Connect power of adapter for wiring to terminal block (X2M) of indoor unit directly.
- Colors: BLK: Black, RED: Red, BLU: Blue, WHT: White, YLW: Yellow, GRN: Green, BRN: Brown, PPL: Purple, PNK: Pink, ORG: Orange.

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8 Sound data

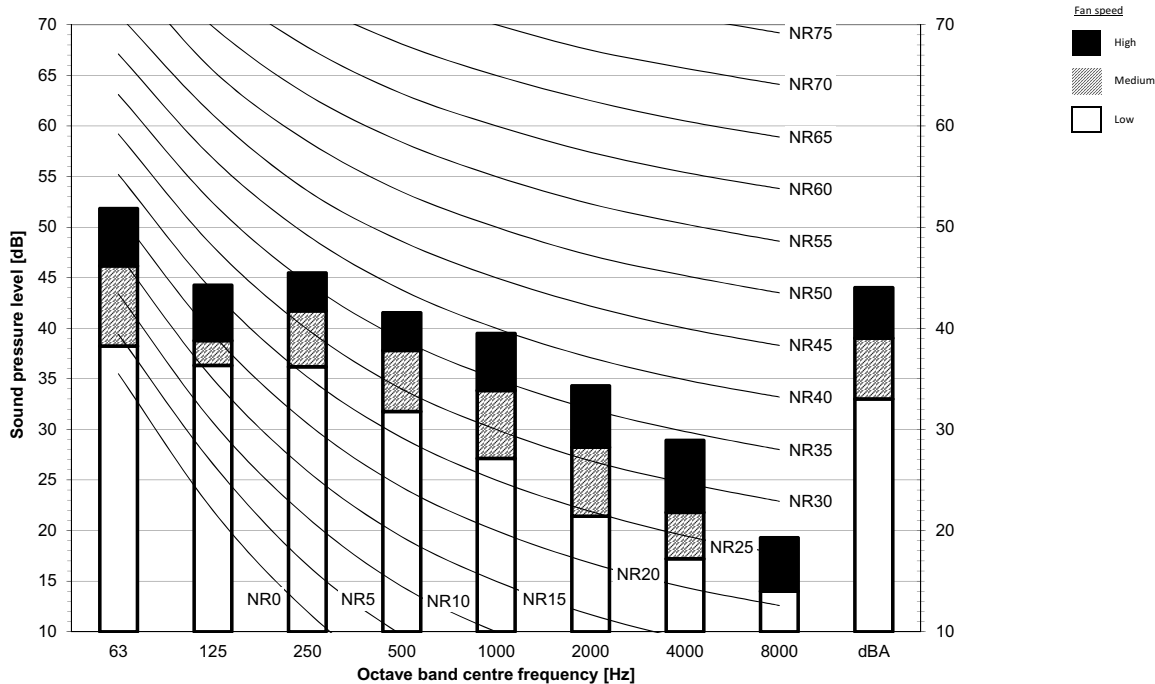
8 - 1 Sound Pressure Spectrum - Cooling

FCAHG71GVEB



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FCAHG100GVEB

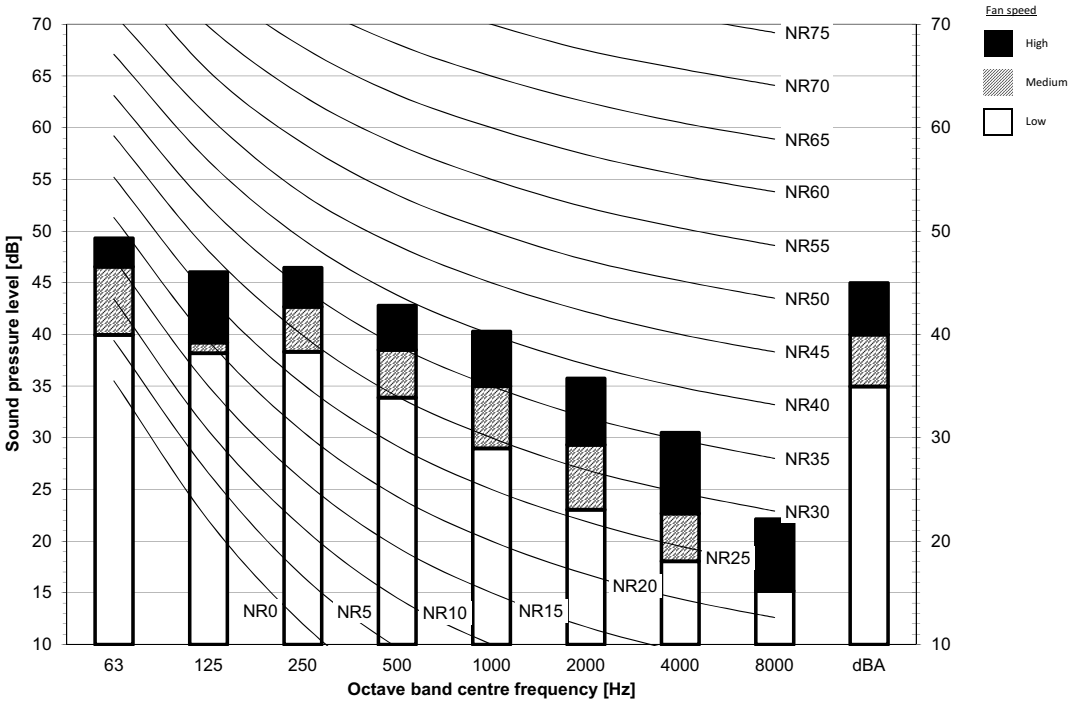


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8 Sound data

8 - 1 Sound Pressure Spectrum - Cooling

FCAHG125GVEB

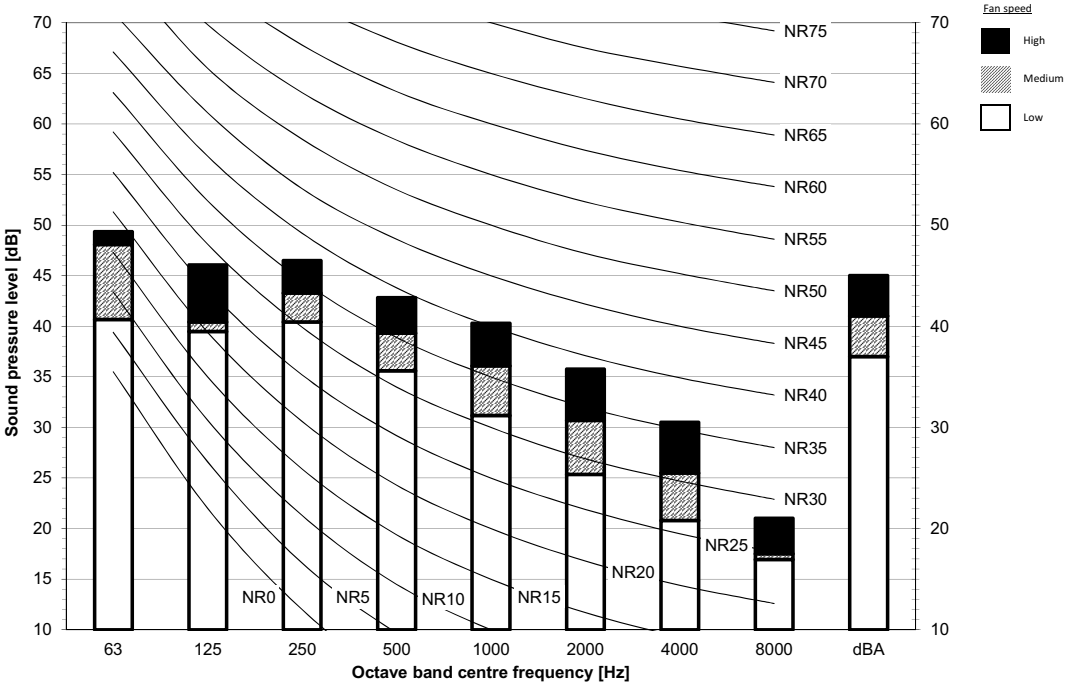


Notes

- Data is valid at free field condition.
- Data is valid at nominal operation condition.
- dBA = A-weighted sound pressure level (A scale according to IEC).
- Reference acoustic pressure 0 dB = 20 µPa

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FCAHG140GVEB



Notes

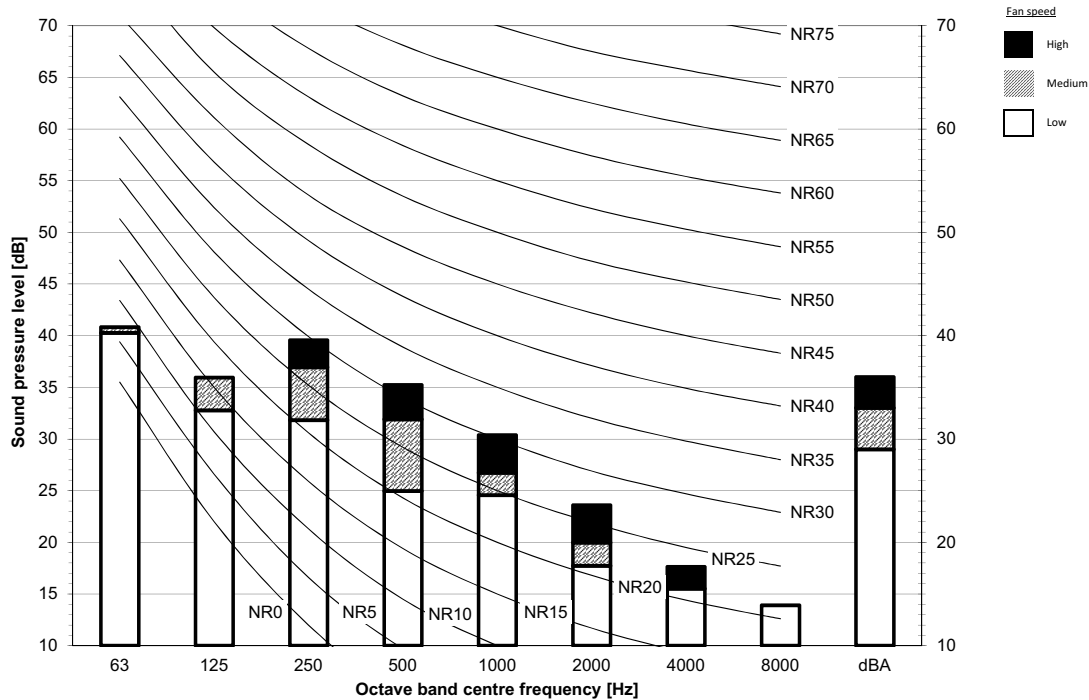
- Data is valid at free field condition.
- Data is valid at nominal operation condition.
- dBA = A-weighted sound pressure level (A scale according to IEC).
- Reference acoustic pressure 0 dB = 20 µPa

3D103016

8 Sound data

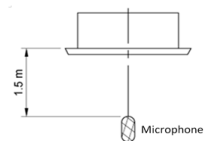
8 - 2 Sound Pressure Spectrum - Heating

FCAHG71GVEB



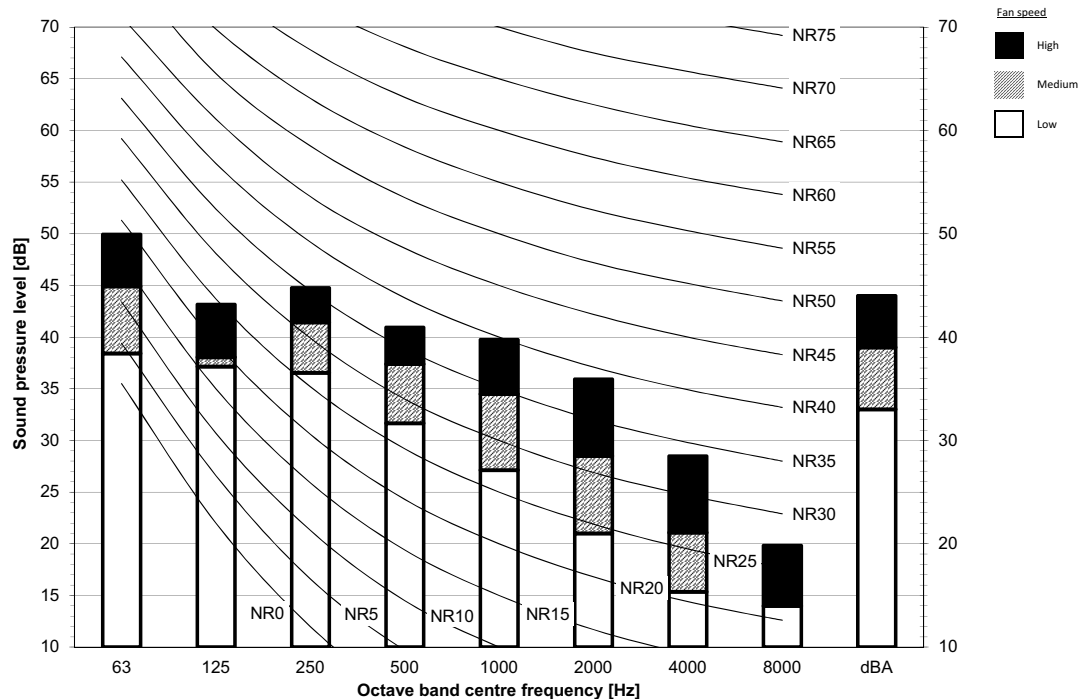
Notes

- Data is valid at free field condition.
- Data is valid at nominal operation condition.
- dBA = A-weighted sound pressure level (A scale according to IEC).
- Reference acoustic pressure 0 dB = 20 μ Pa



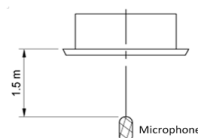
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FCAHG100GVEB



Notes

- Data is valid at free field condition.
- Data is valid at nominal operation condition.
- dBA = A-weighted sound pressure level (A scale according to IEC).
- Reference acoustic pressure 0 dB = 20 μ Pa

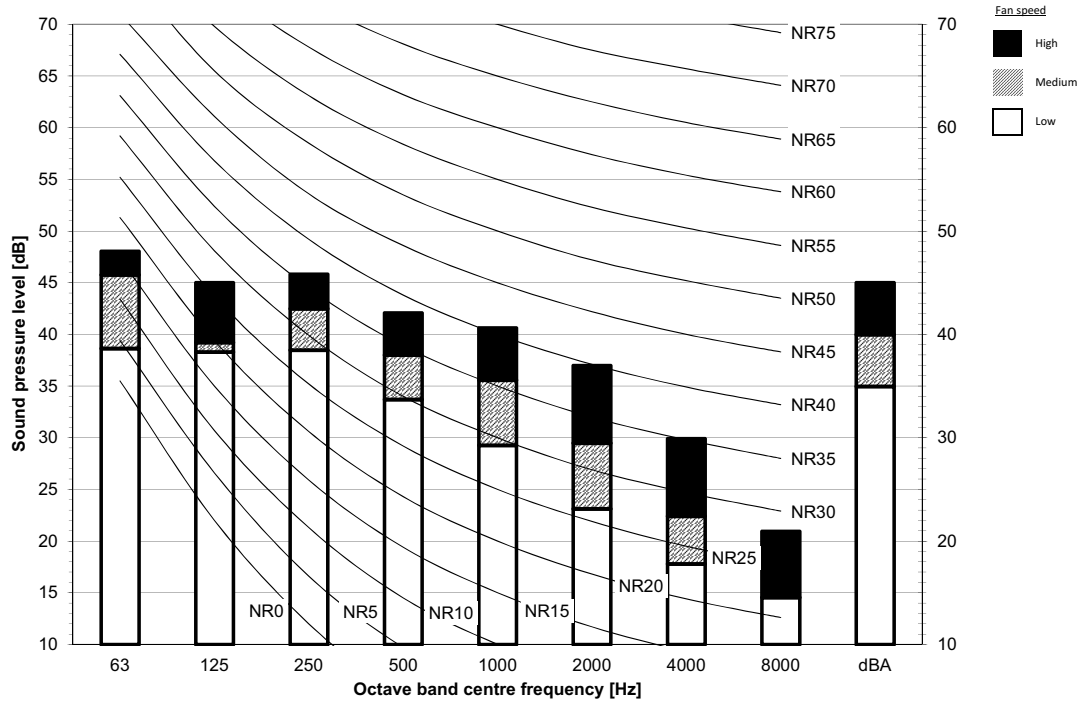


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8 Sound data

8 - 2 Sound Pressure Spectrum - Heating

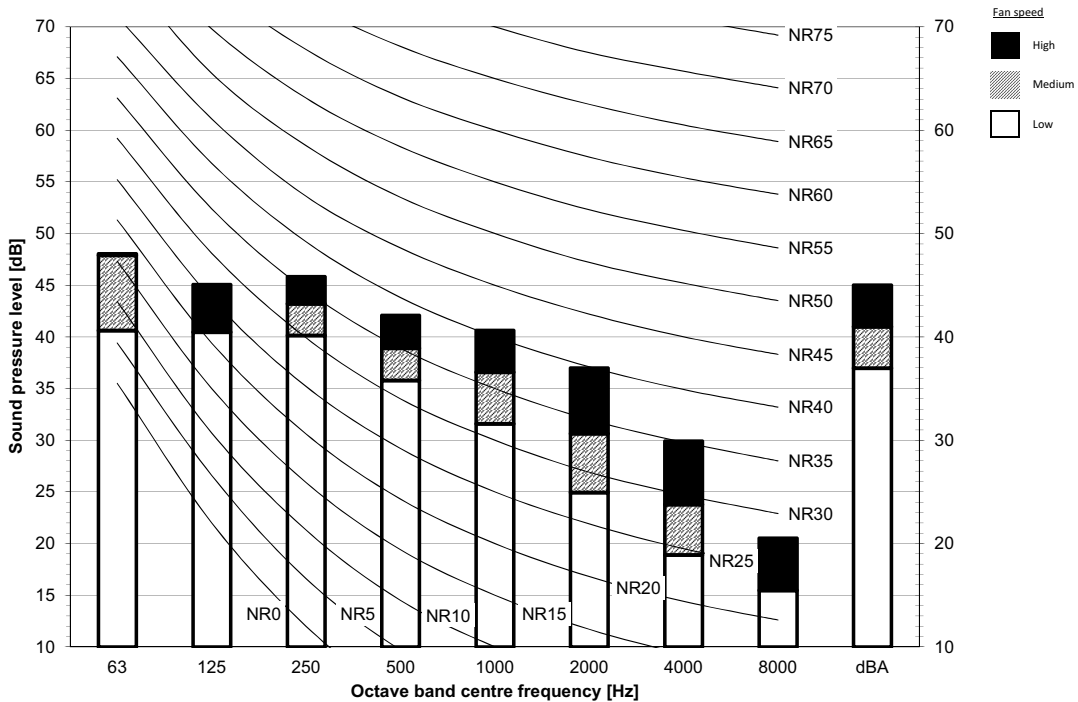
FCAHG125GVEB



- Notes
- Data is valid at free field condition.
 - Data is valid at nominal operation condition.
 - dBA = A-weighted sound pressure level (A scale according to IEC).
 - Reference acoustic pressure 0 dB = 20 µPa

3D103019

FCAHG140GVEB



- Notes
- Data is valid at free field condition.
 - Data is valid at nominal operation condition.
 - dBA = A-weighted sound pressure level (A scale according to IEC).
 - Reference acoustic pressure 0 dB = 20 µPa

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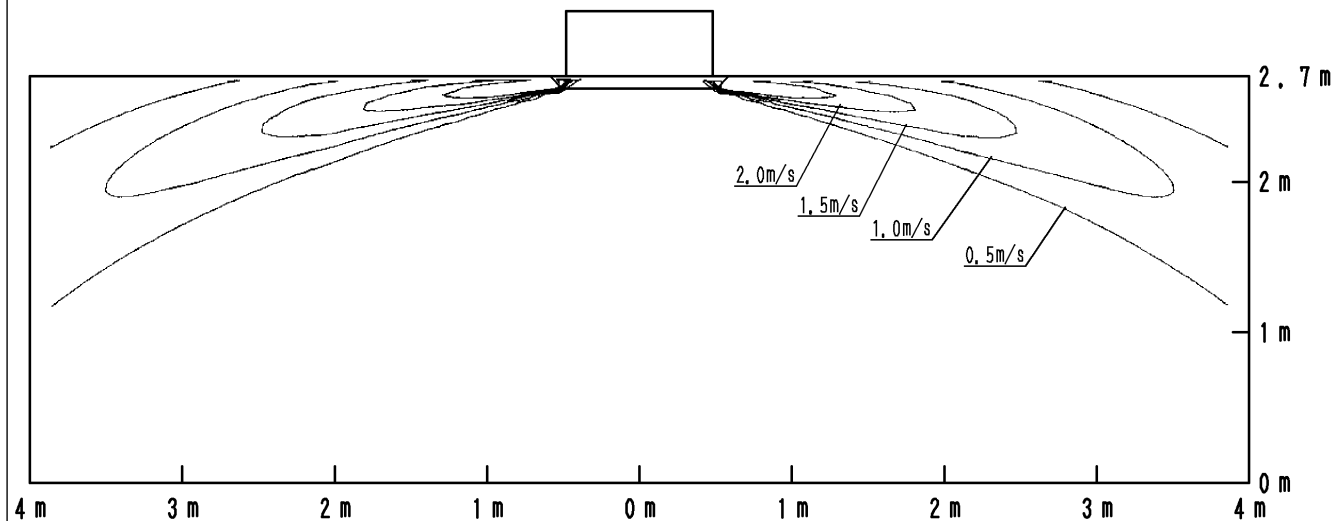
9 Air flow patterns

9 - 1 Air Flow Pattern - Cooling

FCAHG71G

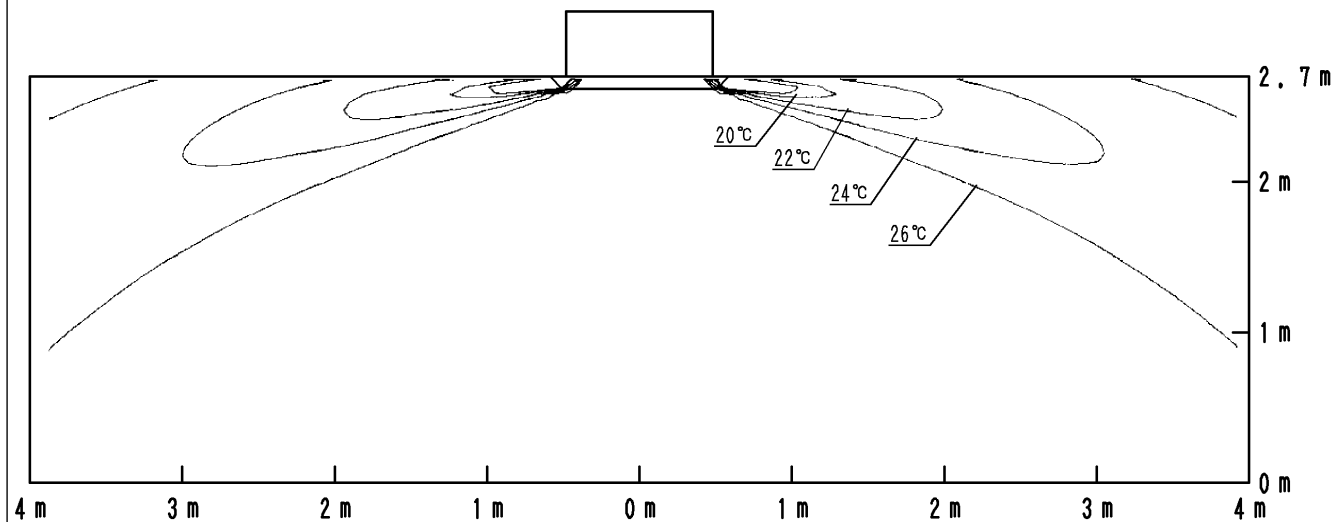
Cooling air velocity distribution

All round air discharge, air flow direction: horizontal



Cooling air temperature distribution

All round air discharge, air flow direction: horizontal



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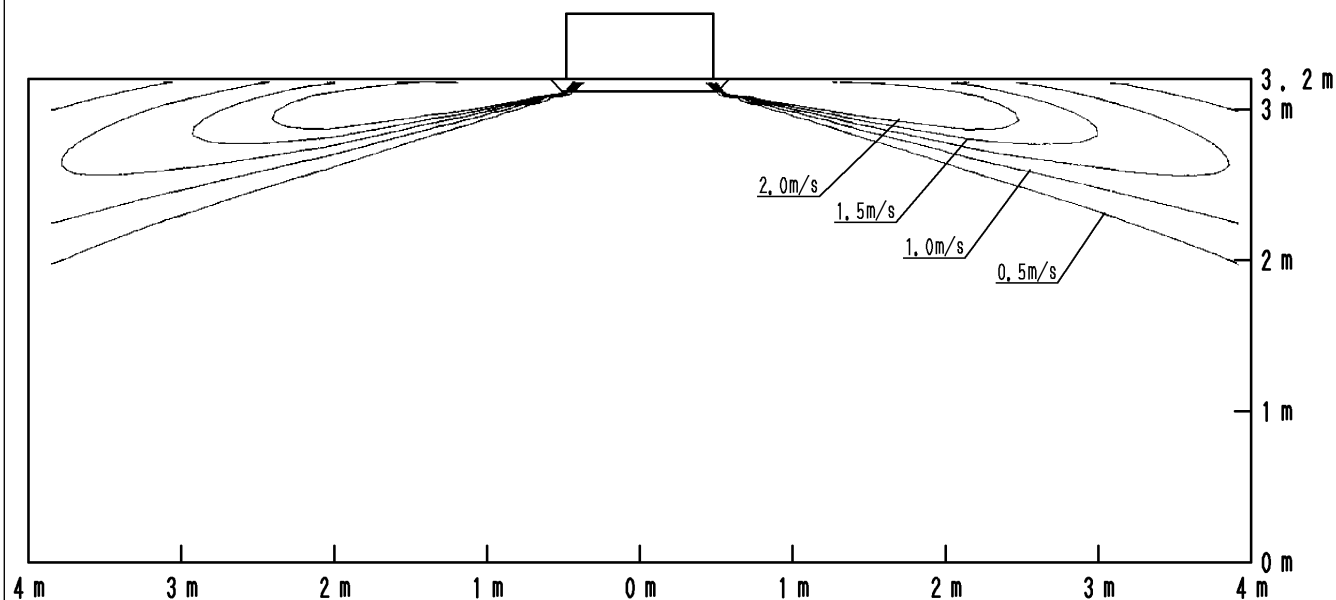
9 Air flow patterns

9 - 1 Air Flow Pattern - Cooling

FCAHG100G

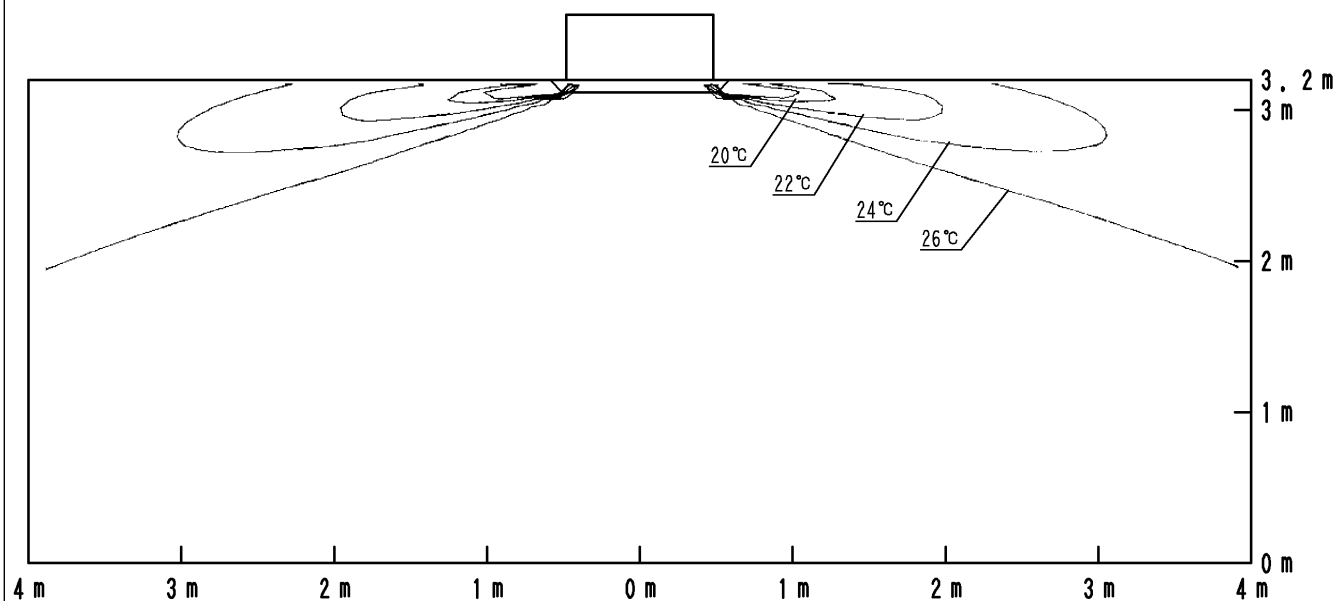
Cooling air velocity distribution

All round air discharge, air flow direction: horizontal



Cooling air temperature distribution

All round air discharge, air flow direction: horizontal



4D077061

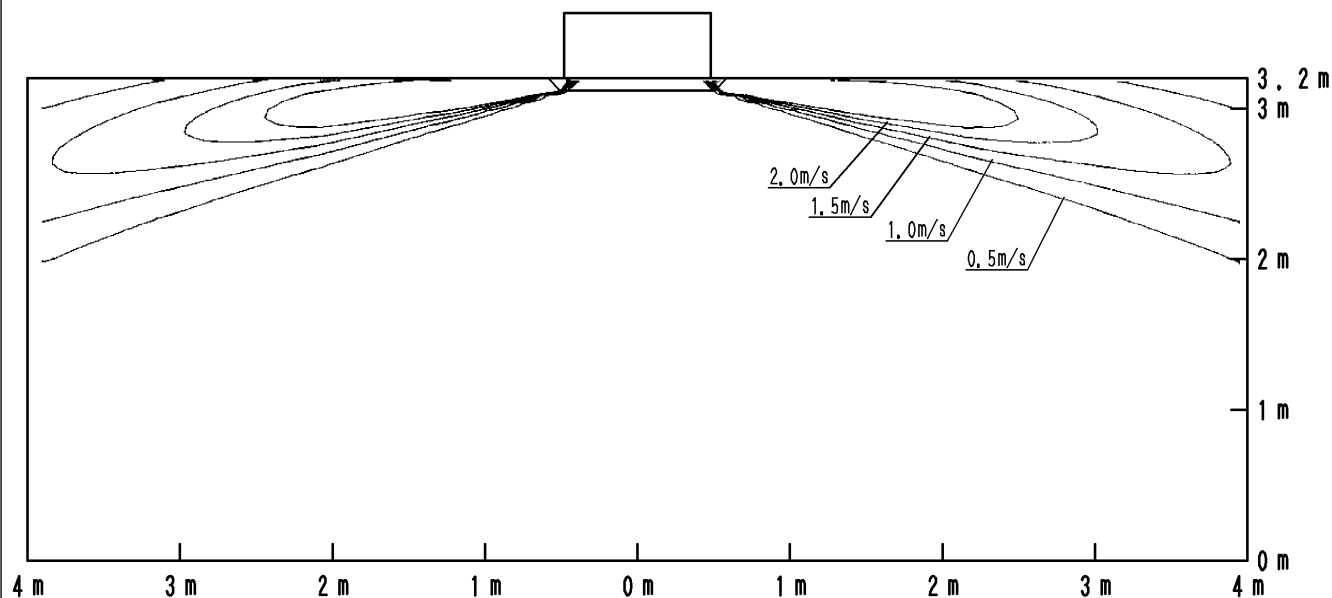
9 Air flow patterns

9 - 1 Air Flow Pattern - Cooling

FCAHG125G

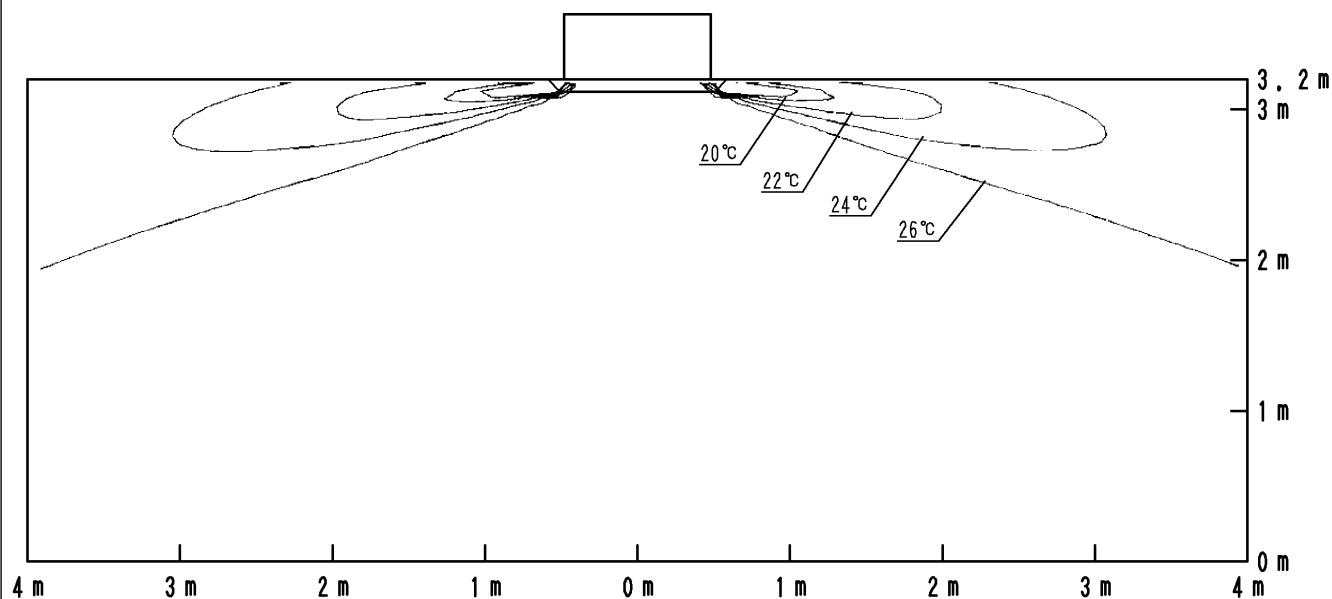
Cooling air velocity distribution

All round air discharge, air flow direction: horizontal



Cooling air temperature distribution

All round air discharge, air flow direction: horizontal



4D077062

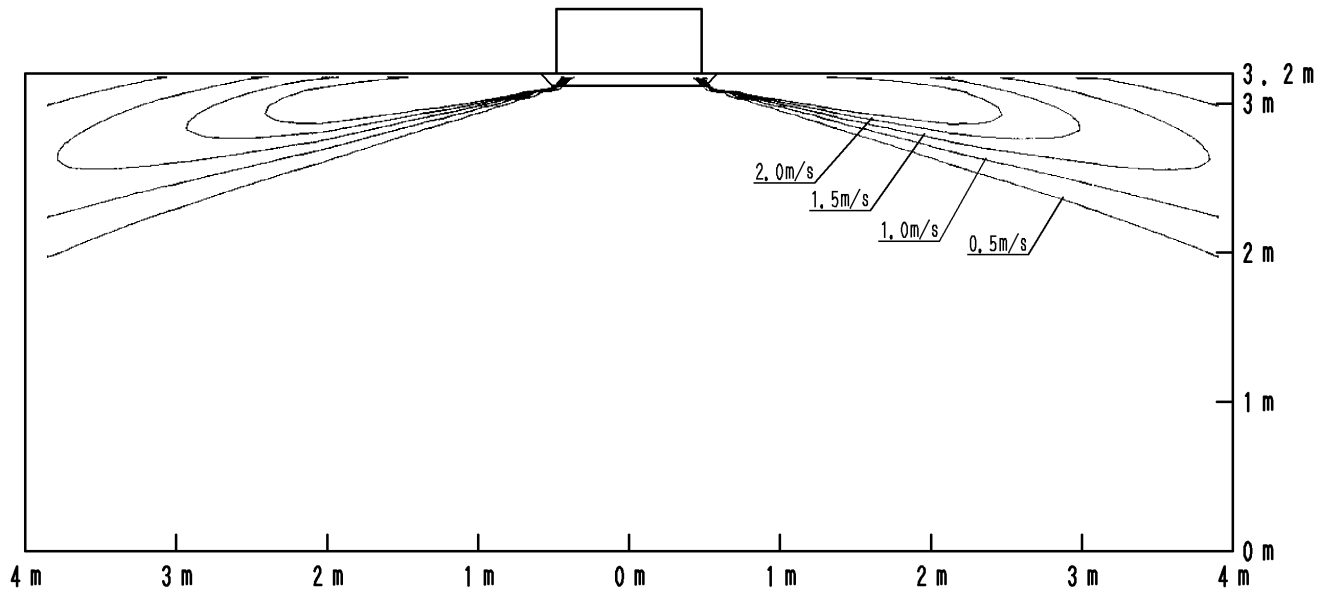
9 Air flow patterns

9 - 1 Air Flow Pattern - Cooling

FCAHG140G

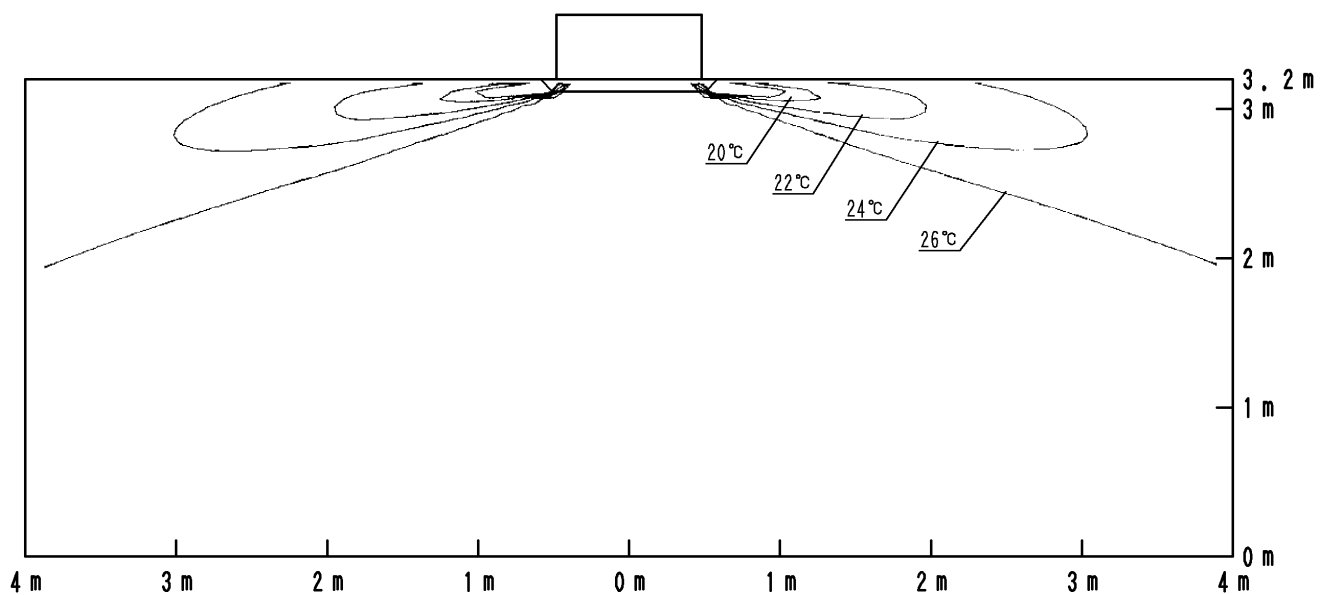
Cooling air velocity distribution

All round air discharge, air flow direction: horizontal



Cooling air temperature distribution

All round air discharge, air flow direction: horizontal



4D077063A

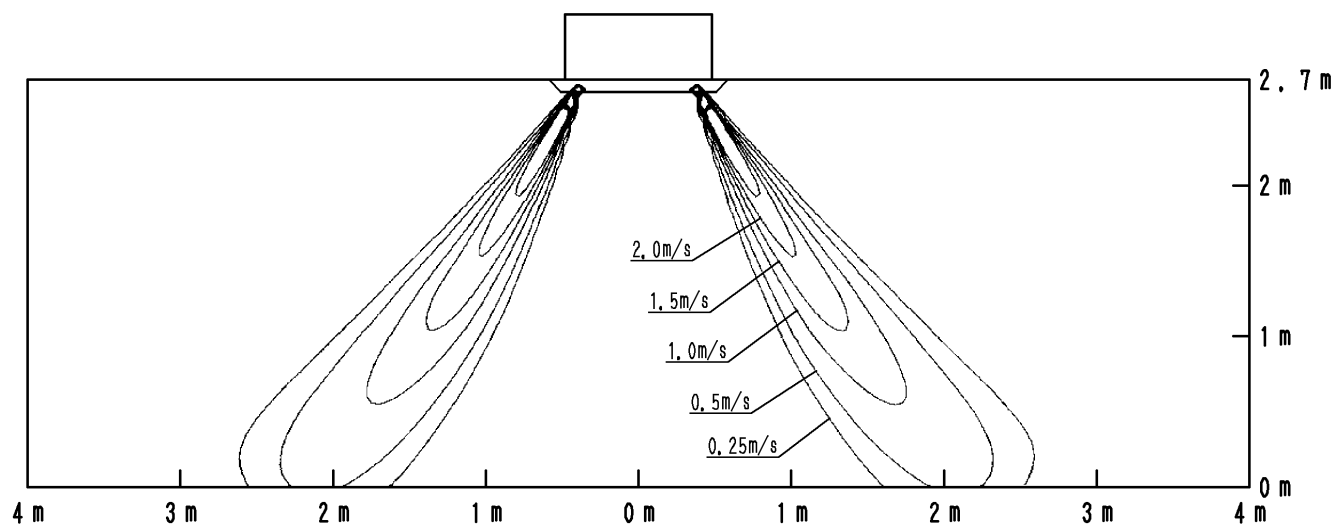
9 Air flow patterns

9 - 2 Air Flow Pattern - Heating

FCAHG71G

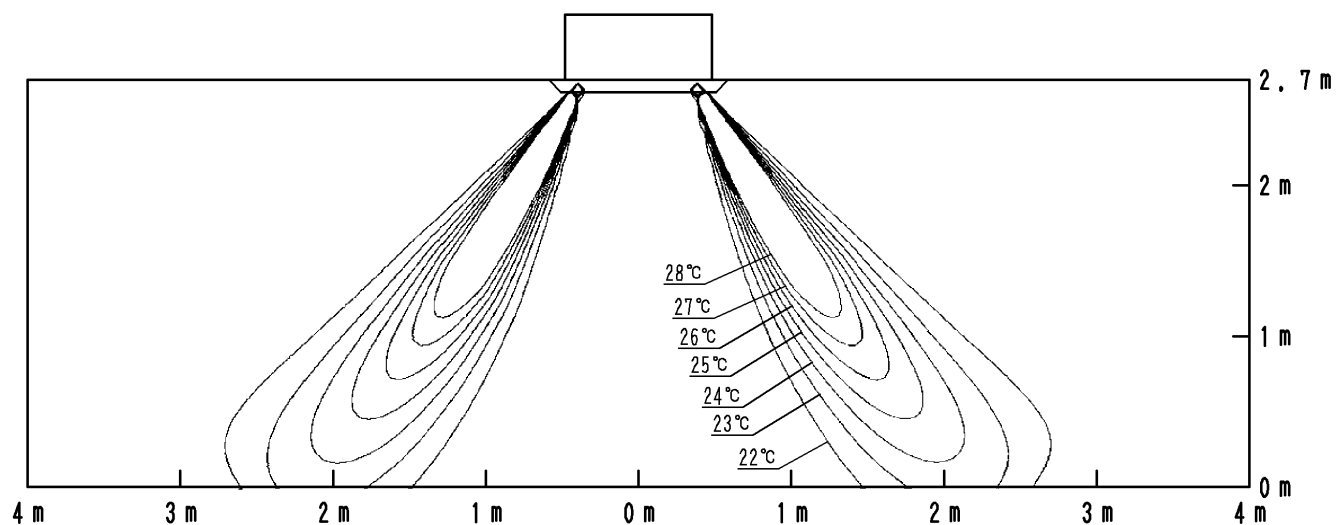
Heating air velocity distribution

All round air discharge, air flow direction: horizontal



Heating air temperature distribution

All round air discharge, air flow direction: horizontal



4D077049

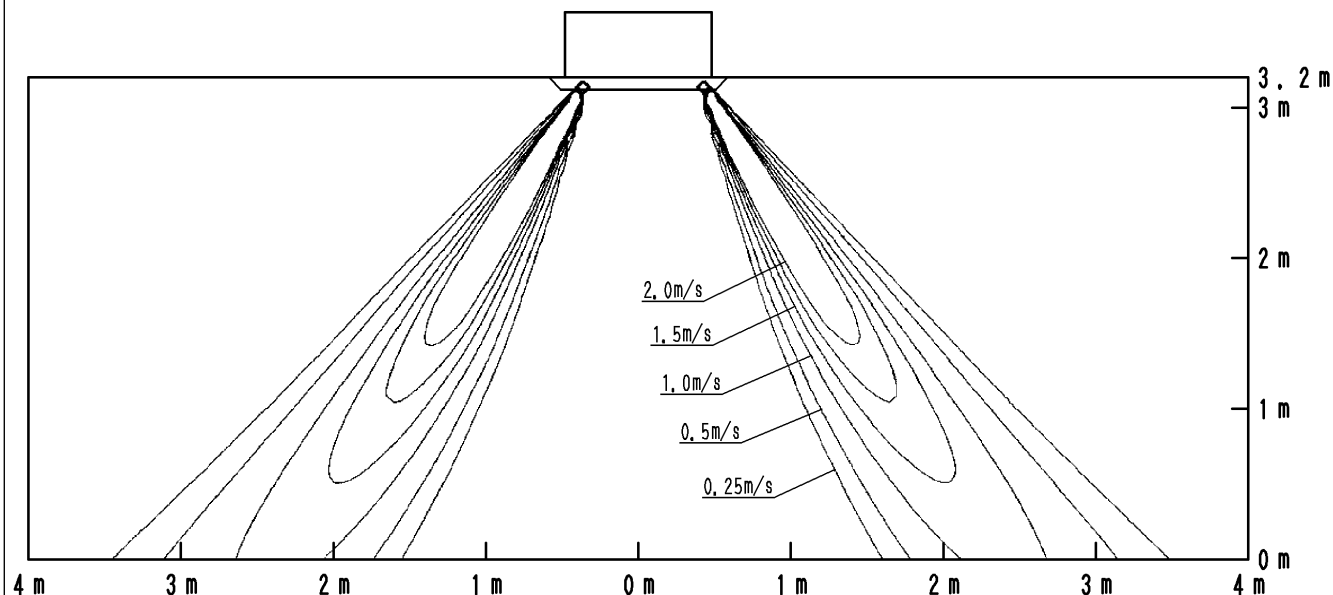
9 Air flow patterns

9 - 2 Air Flow Pattern - Heating

FCAHG100G

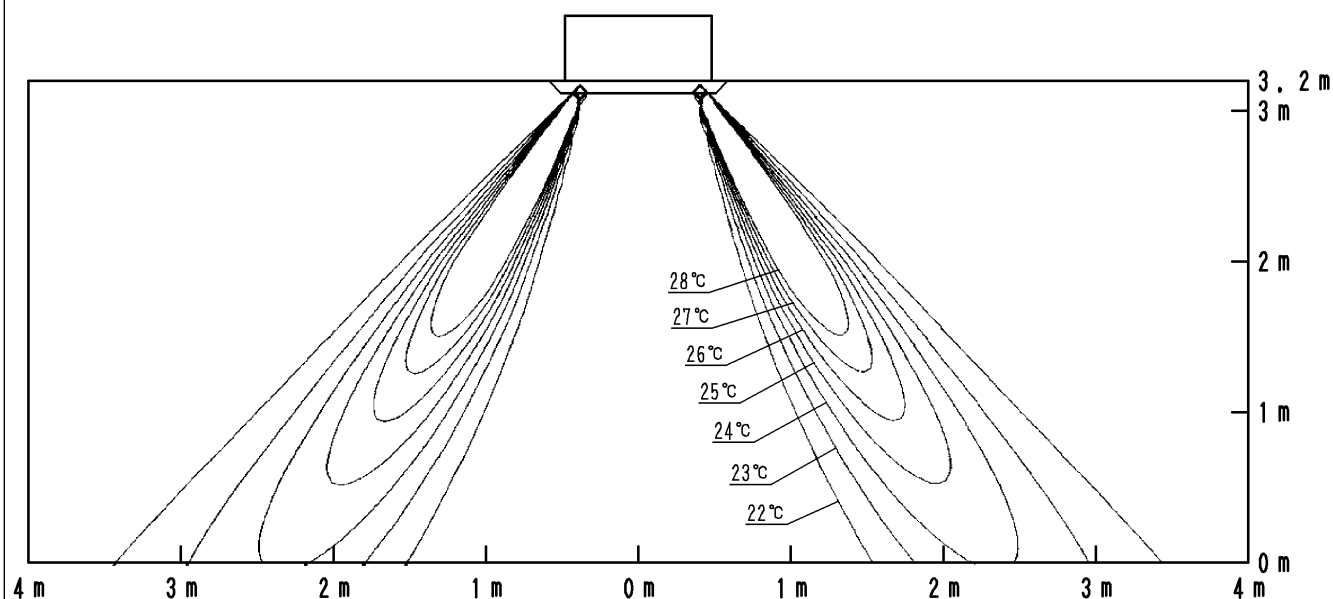
Heating air velocity distribution

All round air discharge, air flow direction: horizontal



Heating air temperature distribution

All round air discharge, air flow direction: horizontal



4D077050

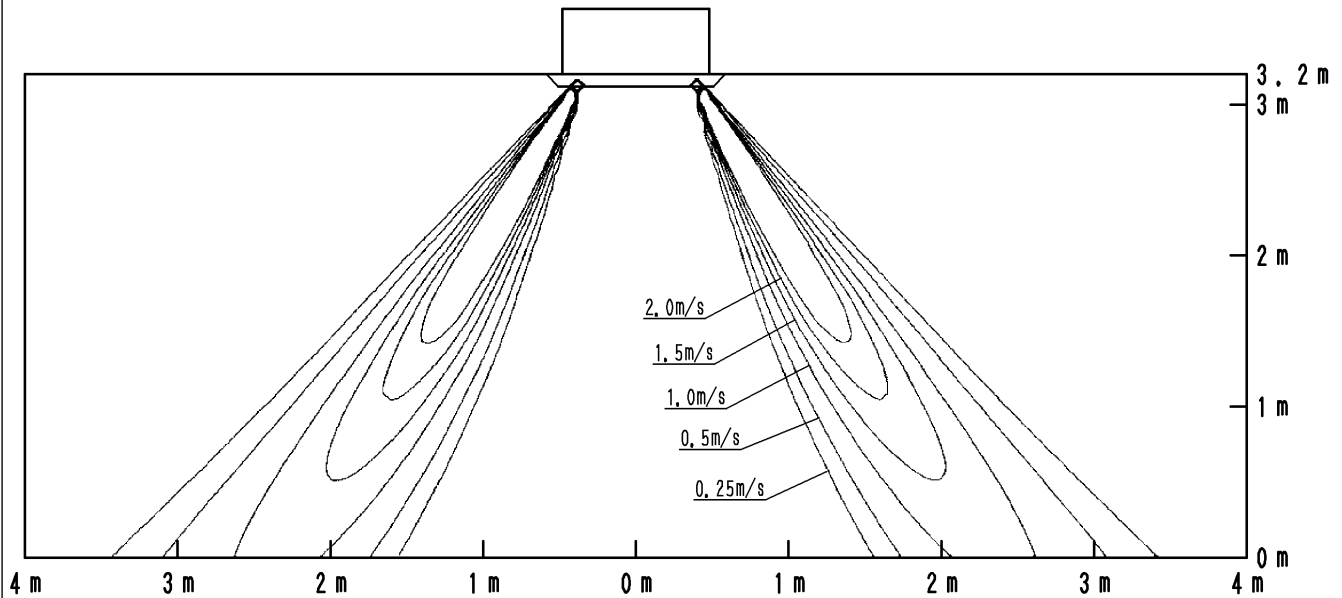
9 Air flow patterns

9 - 2 Air Flow Pattern - Heating

FCAHG125G

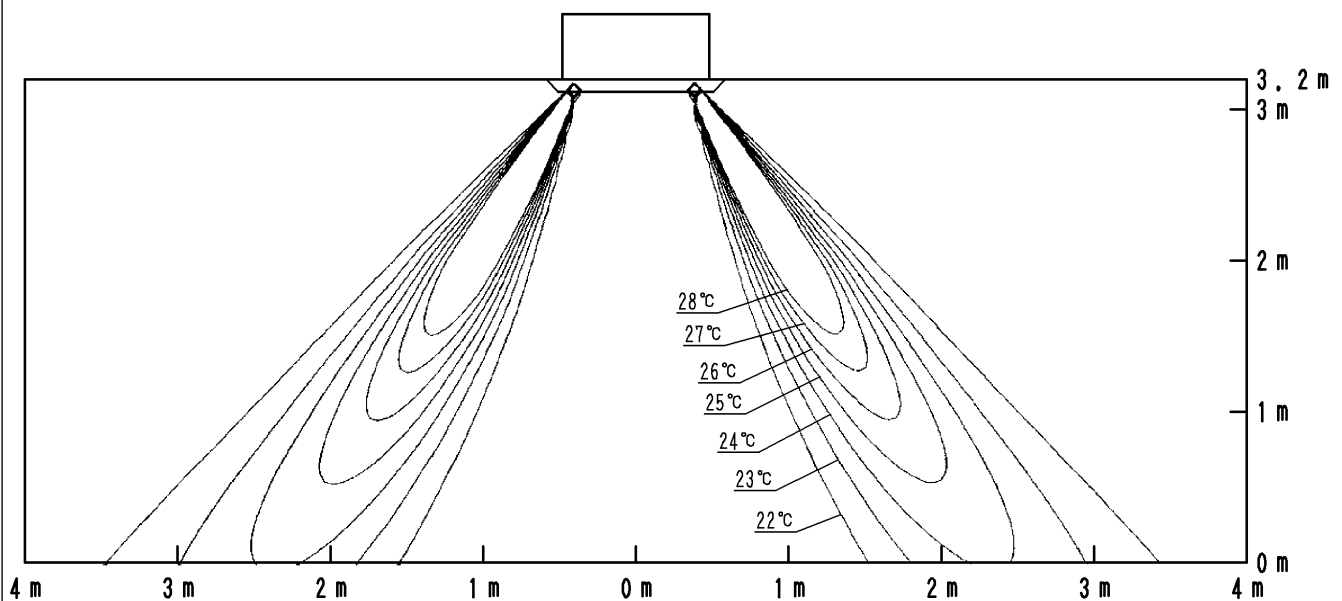
Heating air velocity distribution

All round air discharge, air flow direction: horizontal



Heating air temperature distribution

All round air discharge, air flow direction: horizontal



4D077051

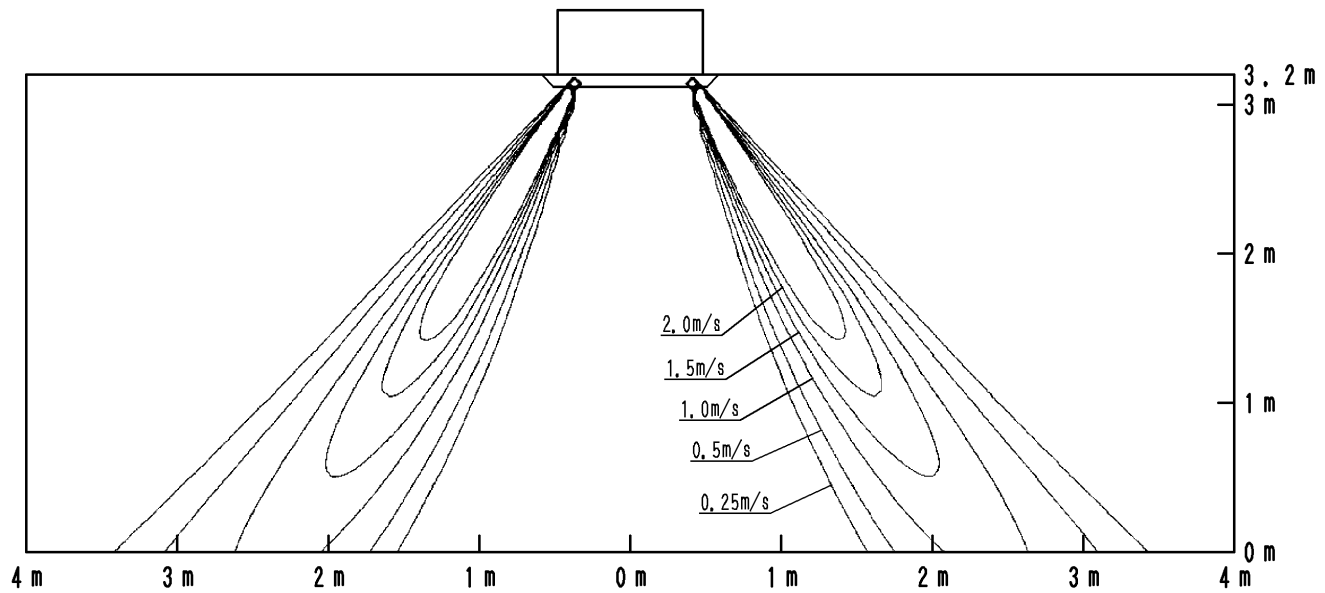
9 Air flow patterns

9 - 2 Air Flow Pattern - Heating

FCAHG140G

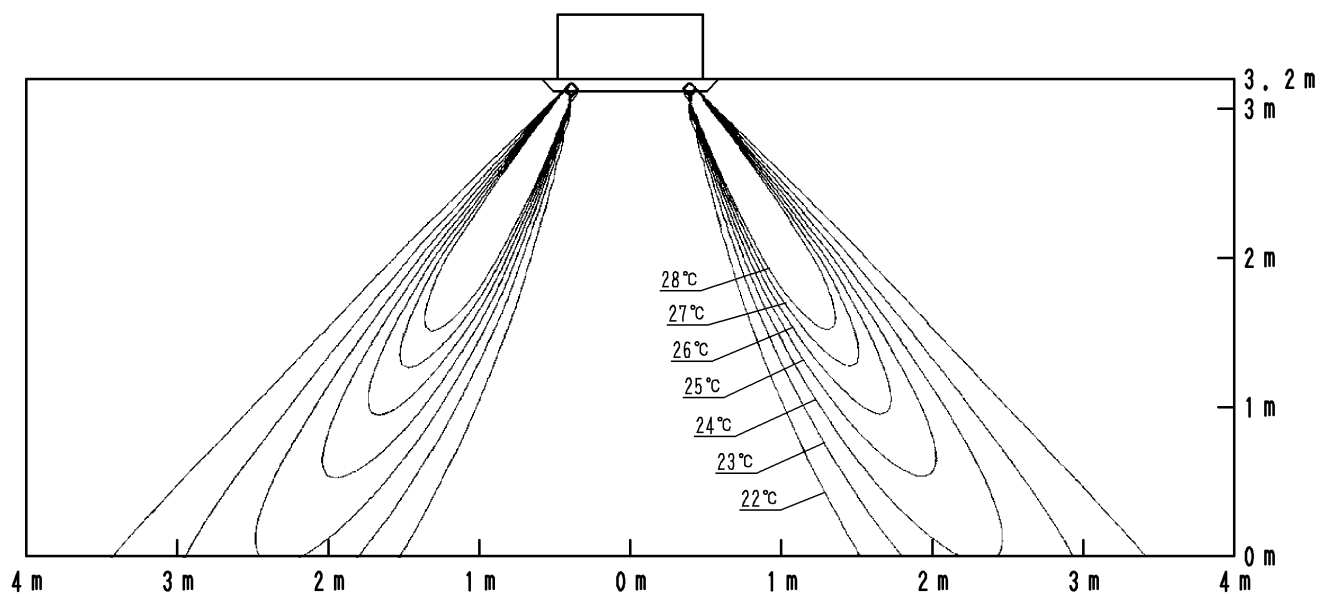
Heating air velocity distribution

All round air discharge, air flow direction: horizontal



Heating air temperature distribution

All round air discharge, air flow direction: horizontal



4D077052A

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