

LG

MULTI/SINGLE CAC

Indoor unit

R410A

OCTI0-06E (Replaces OCTI0-06D)

TOTAL HVAC SOLUTION PROVIDER

ENGINEERING PRODUCT DATA BOOK



Introduction

Preface

New era brings the more sophisticated and advanced buildings which in turn demands for specialized and optimized direct expansion air conditioning systems. Also energy efficiency, low noise and low maintenance are the features which are essential for these systems.

As a part of vertical integration LG makes all the key components in house, which gives us an edge to LG to make better and latest technology products with best quality in optimized time.

These systems are equipped with inverter technology and R410A refrigerant which is perfect solution to various installation locations.

This Engineering product data book incorporates information about the product itself, and installation, designing for these systems.

The comprehensive study of this book will improve your knowledge about the system and its application in detail.

LG Electronics Inc.
Air Conditioning and Energy Solution Company

MULTI/SINGLE CAC

Indoor unit

General information

1. Model Names

2. External Appearance

3. Nomenclature

1. Model Names

Category		Chassis Name	Capacity Index [kW (kBtu/h)]													
			1.5 (5)	2.1 (7)	2.5 (9)	3.5 (12)	4.2 (15)	5.0 (18)	7.1 (24)	8.0 (30)	10.0 (36)	12.5 (42)	14.0 (48)	15.0 (60)	19.0 (70)	23.0 (85)
Wall mounted	Libero-R	SB		○	○	○										
		SC						○	○							
	Libero-E	SW	○	○												
		SB			○	○	○									
		SC						○	○							
		SV								◎	◎					
ART COOL		SF			○	○										
ART COOL Mirror		SB		○	○	○										
		SC						○	○							
Ceiling Cassette	1-Way	TU			○	○										
	4-Way	TR	○	○	●	●										
		TQ						●								
		TP							●	◎						
		TN									◎					
		TM										◎	◎	◎		
	4-Way(2)	TQ						◎								
	TP							◎	◎							
Ceiling Concealed Duct	High Static Pressure	B9													◎	◎
	Middle Static Pressure	M1						●	●	◎						
		M2									◎	◎				
		M3											◎	◎		
	Low Static Pressure (Slim)	L1			●											
		L2				●		●								
L3								●								
Ceiling & Floor		VE			●	●										
Ceiling Suspended		VJ						●	●	◎						
		VK									◎					
		VL										◎	◎	◎		
Console		QA			●	●		●								
Floor Standing		PT2											◎			

Notes :

- Refer the Combination Table of Product Data Book for Outdoor Units.
 - : Connectable with Multi type outdoor unit only.
 - ◎ : Connectable with Single type outdoor unit only.
 - : Connectable with Multi or Single type outdoor unit.
- This product contains Fluorinated greenhouse gases.




2. External Appearance

2.1 Indoor units

<ul style="list-style-type: none"> • Wall Mounted(LIBERO-R) <p>AMNW07GRBL0 [MS07AQ NB0] AMNW09GRBL0 [MS09AQ NB0] AMNW12GRBL0 [MS12AQ NB0] AMNW18GRCL0 [MS18AQ NC0] AMNW24GRCL0 [MS24AQ NC0]</p>	<ul style="list-style-type: none"> • Ceiling Concealed Duct – Middle static pressure <p>ABNW18GM1A0 [CM18 N14] ABNW24GM1A0 [CM24 N14] ABNW30GM1A0 [UM30 N14] ABNW36GM2A0 [UM36 N24] ABNW42GM2A0 [UM42 N24] ABNW48GM3A0 [UM48 N34] ABNW60GM3A0 [UM60 N34]</p>
<ul style="list-style-type: none"> • Wall Mounted(LIBERO-E) <p>AMNW05GEWA0 [MS05SQ NW0] AMNW07GEWA0 [MS07SQ NW0] AMNW09GEBA0 [MS09SQ NB0] AMNW12GEBA0 [MS12SQ NB0] AMNW15GEBA0 [MS15SQNB0] AMNW18GECA0 [MS18SQ NC0] AMNW24GECA0 [MS24SQ NC0] AJNW30GVLA0 [UJ30 NV2] AJNW36GVLA0 [UJ36 NV2]</p>	<ul style="list-style-type: none"> • Ceiling Concealed Duct –High static pressure <p>ABNW70GB9A0 [UB70 N94] ABNW85GB9A0 [UB85 N94]</p>
<ul style="list-style-type: none"> • ART COOL <p>AMNH09GAF*1 [MA09AH* NF1] AMNH12GAF*1 [MA12AH* NF1]</p> <p>* : Silver(V), Gold(G), White Silver(H), Red(E), Gallery(1)</p>	<ul style="list-style-type: none"> • Ceiling Concealed Duct – Low static pressure <p>ABNH09GL1A2 [CB09L N12] ABNH12GL2A2 [CB12L N22] ABNH18GL2A2 [CB18L N22] ABNH24GL3A2 [CB24L N32]</p>
<ul style="list-style-type: none"> • Ceiling Cassette 1-way <p>AMNH09GTUC0 [MT09AH NU1] AMNH12GTUC0 [MT11AH NU1]</p>	<ul style="list-style-type: none"> • Ceiling & Floor <p>AVNH09GELA2 [CV09 NE2] AVNH12GELA2 [CV12 NE2]</p>
<ul style="list-style-type: none"> • Ceiling Cassette 4-way <p>AMNH05GTRA0 [MT06AH NR0] AMNH07GTRA0 [MT08AH NR0] ATNH09GRLE2 [CT09 NR2] ATNH12GRLE2 [CT12 NR2] ATNH18GQLE2 [CT18 NQ2] ATNH24GPLE2 [CT24 NP2] ATNH30GPLE2 [UT30 NP2] ATNH36GNLE2 [UT36 NN2] ATNH42GMLE2 [UT42 NM2] ATNH48GMLE2 [UT48 NM2] ATNH60GMLE2 [UT60 NM2]</p>	<ul style="list-style-type: none"> • Ceiling Suspended <p>UVNH18GJLA2 [CV18 NJ2] UVNH24GJLA2 [CV24 NJ2] UVNH30GJLA2 [UV30 NJ2] UVNH36GKLA2 [UV36 NK2] UVNH42GLLA2 [UV42 NL2] UVNH48GLLA2 [UV48 NL2] UVNH60GLLA2 [UV60 NL2]</p>
<ul style="list-style-type: none"> • ART COOL Mirror <p>AMNW07GDB*0 [MS07AW* NB0] AMNW09GDB*0 [MS09AW* NB0] AMNW12GDB*0 [MS12AW* NB0] AMNW18GDC*0 [MS18AW* NC0] AMNW24GDC*0 [MS24AW* NC0]</p> <p>* : Mirror(R), Silver(V), White(W)</p>	<ul style="list-style-type: none"> • Console <p>AQNH09GALA0 [CQ09 NA0] AQNH12GALA0 [CQ12 NA0] AQNH18GALA0 [CQ18 NA0]</p>
	<ul style="list-style-type: none"> • Floor Standing <p>APNH48GTLA0 [UP48 NT2]</p>

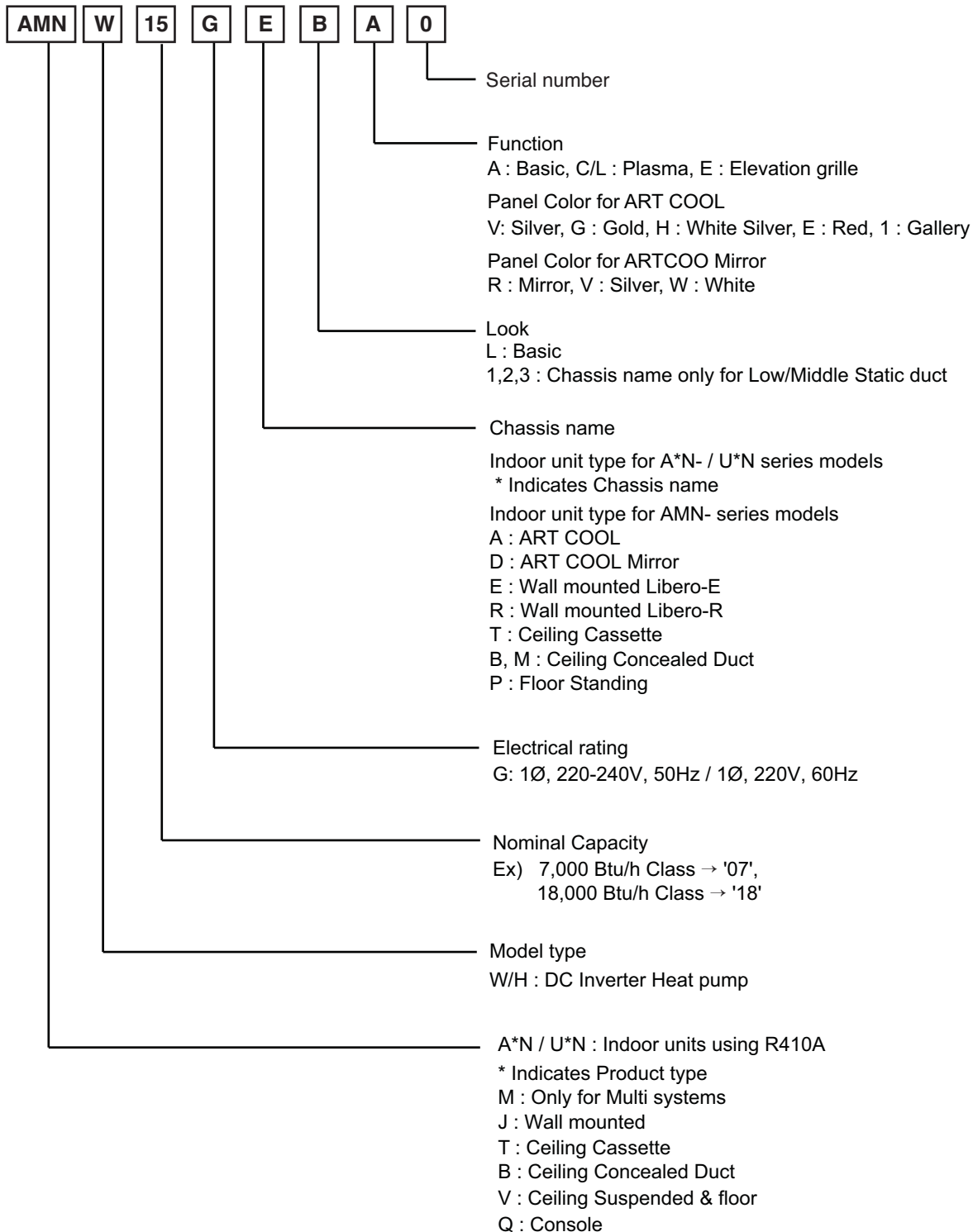
MULTI/SINGLE CAC Indoor unit**2. External Appearance****2.2 Control systems (standard)**

These controllers will be provided with the respective indoor units.

Type	Individual controller	Applicable model
Wired remote controller		Ceiling cassette Ceiling concealed duct
Wireless remote controller		ARTCOOL Ceiling & floor Ceiling Suspended Console Wall Mounted ARTCOOL Mirror
		Floor Standing

3. Nomenclature

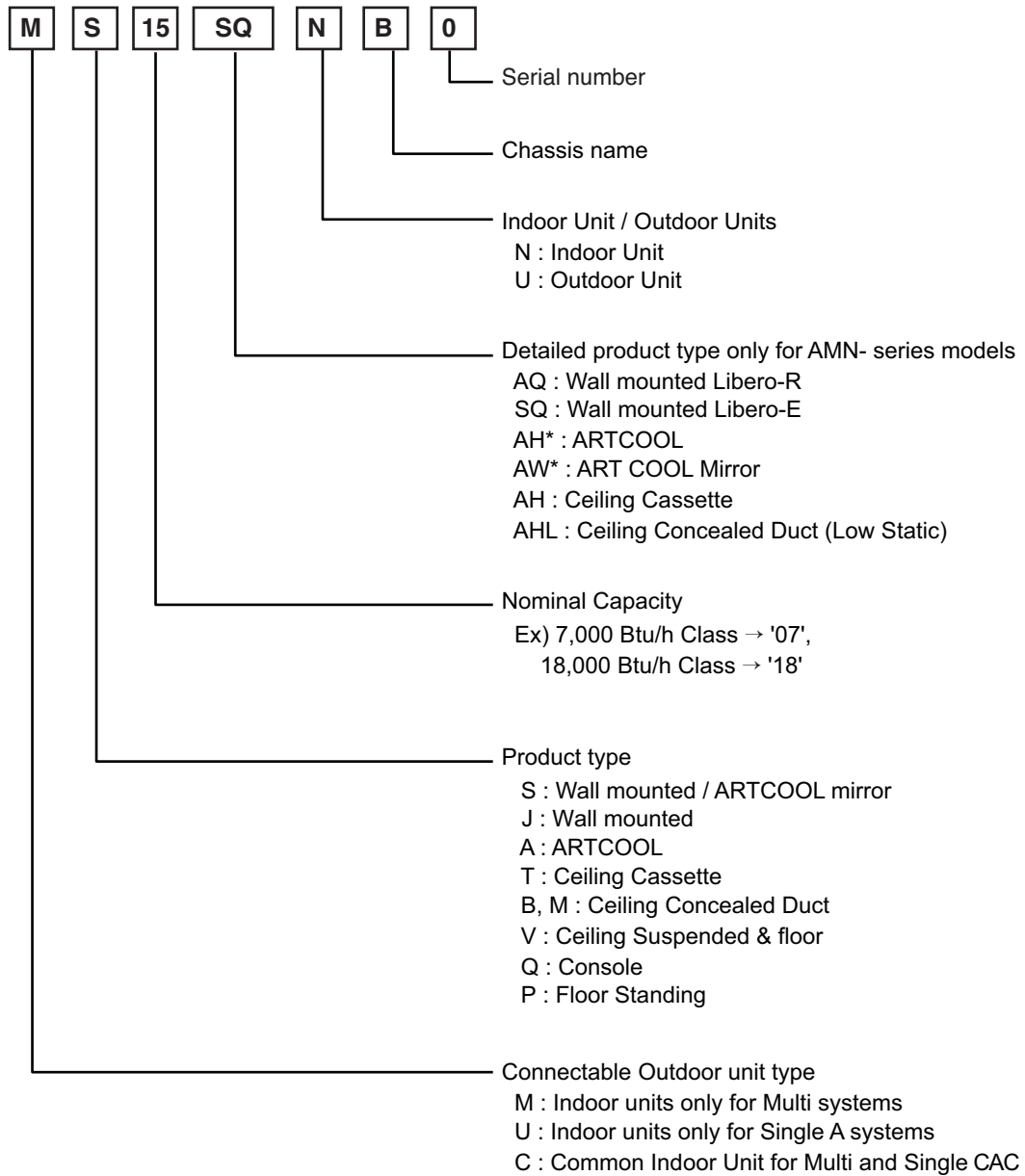
3.1 Global Name



MULTI/SINGLE CAC Indoor unit

3. Nomenclature

3.2 European Name



MULTI/SINGLE CAC

Indoor unit

- 1. Wall mounted**
- 2. ART COOL**
- 3. ART COOL Mirror**
- 4. Ceiling cassette 1-way**
- 5. Ceiling cassette 4-way**
- 6. Ceiling & floor**
- 7. Ceiling concealed duct - Middle static pressure**
- 8. Ceiling concealed duct - Low static pressure**
- 9. Console**
- 10. Floor Standing**
- 11. Ceiling concealed duct - High static pressure**
- 12. Ceiling cassette 4-way(2)**

MULTI/SINGLE CAC

Indoor unit

Wall mounted

- 1. List of functions**
- 2. Specifications**
- 3. Dimensions**
- 4. Piping diagrams**
- 5. Wiring Diagrams**
- 6. Air flow and temperature distributions (reference data)**
- 7. Sound levels**
- 8. Controller**
- 9. Installation**

1. Wall mounted

1.1 List of functions

Category	Functions	AMNW07GRBL0 [MS07AQ NB0], AMNW09GRBL0 [MS09AQ NB0], AMNW12GRBL0 [MS12AQ NB0], AMNW18GRCL0 [MS18AQ NC0], AMNW24GRCL0 [MS24AQ NC0]
Air flow	Air supply outlet	1
	Airflow direction control (left & right)	Auto
	Airflow direction control (up & down)	Auto
	Auto swing (left & right)	O
	Auto swing (up & down)	O
	Airflow steps (fan/cool/heat)	5 / 6 / 6
	Chaos wind(auto wind)	O
	Jet cool/heat	O / O
	Swirl wind	X
Air purifying	Triple filter (Deodorizing)	O
	Plasma air purifier	O
	Allergy Safe filter	O
	Long-life prefilter (washable / anti-fungus)	O
Installation	Drain pump	X
	E.S.P. control	X
	Electric heater	X
	High ceiling operation	X
	Auto Elevation Grille	X
Reliability	Hot start	O
	Self diagnosis	O
Convenience	Auto changeover	X
	Auto cleaning	O
	Auto operation(artificial intelligence)	O
	Auto Restart	O
	Child lock	X
	Forced operation	O
	Group control	X
	Sleep mode	O
	Timer(on/off)	O
	Timer(weekly)	X
	Two thermistor control	X
Individual controller	Wired remote controller	PQRCVSL0 / PQRCVSL0QW / PREMTB001 / PREMTBB01
	Premium Wired remote controller	PREMTA000 / PREMTA000A / PREMTA000B
	Simple wired remote controller	X
	Simple Wired remote controller(for hotel use)	X
	Wireless remote controller	O
Network Solution	General central controller (Non LGAP)	X
	Network Solution(LGAP)	O
	Simple Dry contact (outside AC 220V power source)	PQDSA / PDRYCB000
	2 Points Dry Contact (For setback)	PDRYCB400
	Dry contact for Thermostat	PDRYCB300
	PI 485(for Indoor Unit)	X
Special function kit	Zone controller	X
	CTI(Communication transfer interface)	X
	Electronic thermostat	X
Others	Remote temperature sensor	X
	Telecom shelter controller	X

Note

O : Applied X : Not applied

Accessory model name : Installed at field, ordered and purchased separately by the corresponding model name, supplied with separate package.

MULTI/SINGLE CAC Indoor unit

1. Wall mounted

Category	Functions	AMNW05GEWA0 [MS05SQ NW0], AMNW07GEWA0 [MS07SQ NW0] AMNW09GEBA0 [MS09SQ NB0], AMNW12GEBA0 [MS12SQ NB0] AMNW15GEBA0 [MS15SQNB0], AMNW18GECA0 [MS18SQ NC0], AMNW24GECA0 [MS24SQ NC0]
Air flow	Air supply outlet	1
	Airflow direction control (left & right)	Manual
	Airflow direction control (up & down)	Auto
	Auto swing (left & right)	X
	Auto swing (up & down)	O
	Airflow steps (fan/cool/heat)	3 / 4 / 4
	Chaos wind(auto wind)	O
	Jet cool/heat	O / O
	Swirl wind	X
Air purifying	Triple filter (Deodorizing)	O
	Plasma air purifier	X
	Allergy Safe filter	O
	Long-life prefilter (washable / anti-fungus)	O
Installation	Drain pump	X
	E.S.P. control	X
	Electric heater	X
	High ceiling operation	X
	Auto Elevation Grille	X
Reliability	Hot start	O
	Self diagnosis	O
Convenience	Auto changeover	X
	Auto cleaning	O
	Auto operation(artificial intelligence)	O
	Auto Restart	O
	Child lock	X
	Forced operation	O
	Group control	X
	Sleep mode	O
	Timer(on/off)	O
	Timer(weekly)	X
	Two thermistor control	X
Individual controller	Wired remote controller	PQRCVSL0 / PQRCVSL0QW / PREMTB001 / PREMTBB01
	Premium Wired remote controller	PREMTA000 / PREMTA000A / PREMTA000B
	Simple wired remote controller	X
	Simple Wired remote controller(for hotel use)	X
	Wireless remote controller	O
Network Solution	General central controller (Non LGAP)	X
	Network Solution(LGAP)	O
	Simple Dry contact (outside AC 220V power source)	PQDSA / PDRYCB000
	2 Points Dry Contact (For setback)	PDRYCB400
	Dry contact for Thermostat	PDRYCB300
	PI 485(for Indoor Unit)	X
Special function kit	Zone controller	X
	CTI(Communication transfer interface)	X
	Electronic thermostat	X
Others	Remote temperature sensor	X
	Telecom shelter controller	X

Note

O : Applied X : Not applied

Accessory model name : Installed at field, ordered and purchased separately by the corresponding model name, supplied with separate package.

2 _ Wall mounted

1. Wall mounted

Category	Functions	AJNW36GVLA0 [UJ36 NV2] AJNW30GVLA0 [UJ30 NV2]
Air flow	Air supply outlet	1
	Airflow direction control (left & right)	Manual
	Airflow direction control (up & down)	Auto
	Auto swing (left & right)	X
	Auto swing (up & down)	O
	Airflow steps (fan/cool/heat)	3 / 4 / 4
	Chaos wind(auto wind)	O
	Jet cool/heat	O / O
	Swirl wind	X
Air purifying	Triple filter (Deodorizing)	O
	Plasma air purifier	X
	Allergy Safe filter	X
	Long-life prefilter (washable / anti-fungus)	O
Installation	Drain pump	X
	E.S.P. control	X
	Electric heater	X
	High ceiling operation	X
	Auto Elevation Grille	X
Reliability	Hot start	O
	Self diagnosis	O
Convenience	Auto changeover**	O**
	Auto cleaning	X
	Auto operation(artificial intelligence)	X
	Auto Restart	O
	Child lock*	O
	Forced operation	O
	Group control	X
	Sleep mode	O
	Timer(on/off)	O
	Timer(weekly)	X
Individual control	Two thermistor control	X
	Wired remote controller	PQRCVSL0 / PQRCVSL0QW / PREMTB001 / PREMTBB01
	Premium Wired remote controller	PREMTA000 / PREMTA000A / PREMTA000B
	Simple wired remote controller	X
	Simple Wired remote controller(for hotel use)	X
Network Solution	Wireless remote controller	O
	General central controller (Non LGAP)	X
	Network Solution(LGAP)	O
	Simple Dry contact (outside AC 220V power source)	PQDSA / PDRYCB000
	2 Points Dry Contact (For setback)	PDRYCB400
Special function kit	Dry contact for Thermostat	PDRYCB300
	PI 485(for Indoor Unit)	X
	Zone controller	X
	CTI(Communication transfer interface)	X
	Electronic thermostat	X
Others	Telecom shelter controller	PQCSA001T0
	Independent Power Module	X
	CO ₂ Sensor	X
	Remote temperature sensor	X
	Group control wire	X

Note

1. * : These functions need to connect the wired remote controller.

2. ** : Auto Changeover function can be operated when connected with Single A.

O : Applied X : Not applied

Accessory model name : Installed at field, ordered and purchased separately by the corresponding model name, supplied with separate package.

MULTI/SINGLE CAC Indoor unit

1. Wall mounted

1.2 Specifications

Model Name				AMNW07GRBL0 [MS07AQ NB0]	AMNW09GRBL0 [MS09AQ NB0]	AMNW12GRBL0 [MS12AQ NB0]
Power Supply			V, Ø, Hz	220-240, 1, 50	220-240, 1, 50	220-240, 1, 50
				220, 1, 60	220, 1, 60	220, 1, 60
Power Input			W x No.	20 × 1	20 × 1	20 × 1
Running Current			A	0.1	0.2	0.2
Casing Color			-	White	White	White
Dimensions	Body	W x H x D	mm	895 × 289 × 210	895 × 289 × 210	895 × 289 × 210
		W x H x D	inch	35-1/4 x 11-3/8 x 8-9/32	35-1/4 x 11-3/8 x 8-9/32	35-1/4 x 11-3/8 x 8-9/32
Net Weight	Body		kg (lbs)	9.5(20.9)	9.5(20.9)	9.5(20.9)
Heat Exchanger	(Row x Column x Fins per inch) x No.		-	(2 x 16 x 23) x 1	(2 x 16 x 23) x 1	(2 x 16 x 23) x 1
	Face Area		m² (ft²)	0.22 (2.37)	0.22 (2.37)	0.22 (2.37)
Fan	Type		-	Cross Flow Fan	Cross Flow Fan	Cross Flow Fan
	Air Flow Rate	H / M / L	m³/min	5.6 / 5.0 / 4.6	7.0 / 6.5 / 6.0	9.5 / 9.0 / 8.5
		H / M / L	ft³/min	198 / 177 / 162	247 / 230 / 212	336 / 318 / 300
Fan Motor	Type		-	BLDC	BLDC	BLDC
	Output		W x No.	14.4 x 1	14.4 x 1	14.4 x 1
Sound Pressure Level		H / M / L	dB(A)	33 / 30 / 26	34 / 31 / 27	39 / 36 / 31
Sound Power Level		Max.	dB(A)	55	55	55
Piping Connections	Liquid		mm(inch)	Ø 6.35 (1/4)	Ø 6.35 (1/4)	Ø 6.35 (1/4)
	Gas		mm(inch)	Ø 9.52 (3/8)	Ø 9.52 (3/8)	Ø 9.52 (3/8)
	Drain (O.D. / I.D.)		mm	Ø 21.5 / 16.0	Ø 21.5 / 16.0	Ø 21.5 / 16.0
Safety Devices			-	Fuse		
			-	Thermal Protector for Fan Motor		
Power and Communication Cable (included Earth)			No. x mm² (AWG)	4C x 0.75 (18)	4C x 0.75 (18)	4C x 0.75 (18)

Notes :

1. Wiring cable size must comply with the applicable local and national code.
2. Due to our policy of innovation some specifications may be changed without notification.
3. Sound Level Values are measured at Anechoic chamber.
Therefore, these values can be increased owing to ambient conditions during operation.

1. Wall mounted

Model Name				AMNW18GRCL0 [MS18AQ NC0]	AMNW24GRCL0 [MS24AQ NC0]	AMNW05GEWA0 [MS05SQ NW0]
Power Supply			V, Ø, Hz	220-240, 1, 50	220-240, 1, 50	220-240, 1, 50
				220, 1, 60	220, 1, 60	220, 1, 60
Power Input			W x No.	40 x 1	60 x 1	-
Running Current			A	0.3	0.3	0.1
Casing Color			-	White	White	White
Dimensions	Body	W x H x D	mm	1,030 x 325 x 250	1,030 x 325 x 250	756 x 270 x 190
		W x H x D	inch	40-9/16 x 12-25/32 x 9-27/32	40-9/16 x 12-25/32 x 9-27/32	29-3/4 x 10-5/8 x 7-15/32
Net Weight	Body		kg (lbs)	13.8(30.4)	13.8(30.4)	7.2 (15.9)
Heat Exchanger	(Row x Column x Fins per inch) x No.		-	(3 x 18 x 22) x 1	(3 x 18 x 22) x 1	(2 x 12 x 20) x 1
	Face Area		m² (ft²)	0.29 (3.07)	0.29 (3.07)	0.14 (1.51)
Fan	Type		-	Cross Flow Fan	Cross Flow Fan	Cross Flow Fan
	Air Flow Rate	H / M / L	m³/min	16.2 / 14.2 / 12.3	20.4 / 17.0 / 13.2	8.1 / 6.9 / 6.3
		H / M / L	ft³/min	572 / 501 / 434	720 / 600 / 466	286 / 244 / 222
Fan Motor	Type		-	BLDC	BLDC	BLDC
	Output		W x No.	76 x 1	76 x 1	8.4 x 1
Sound Pressure Level		H / M / L	dB(A)	37 / 33 / 28	42 / 39 / 36	36 / 30 / 27
Sound Power Level		Max.	dB(A)	57	62	57
Piping Connections	Liquid		mm(inch)	Ø 6.35 (1/4)	Ø 6.35 (1/4)	Ø 6.35 (1/4)
	Gas		mm(inch)	Ø 12.7 (1/2)	Ø 12.7 (1/2)	Ø 9.52 (3/8)
	Drain (O.D. / I.D.)		mm	Ø 21.5 / 16.0	Ø 21.5 / 16.0	Ø 21.5 / 16.0
Safety Devices			-	Fuse		
			-	Thermal Protector for Fan Motor		
Power and Communication Cable (included Earth)			No. x mm² (AWG)	4C x 0.75 (18)	4C x 0.75 (18)	4C x 0.75 (18)

Notes :

1. Wiring cable size must comply with the applicable local and national code.
2. Due to our policy of innovation some specifications may be changed without notification.
3. Sound Level Values are measured at Anechoic chamber.
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MULTI/SINGLE CAC Indoor unit

1. Wall mounted

Model Name				AMNW07GEWA0 [MS07SQ NW0]	AMNW09GEBA0 [MS09SQ NB0]	AMNW12GEBA0 [MS12SQ NB0]
Power Supply			V, Ø, Hz	220-240, 1, 50	220-240, 1, 50	220-240, 1, 50
				220, 1, 60	220, 1, 60	220, 1, 60
Power Input			W x No.	20 x 1	20 x 1	20 x 1
Running Current			A	0.1	0.2	0.2
Casing Color			-	White	White	White
Dimensions	Body	W x H x D	mm	756 x 270 x 190	895 x 289 x 215	895 x 289 x 215
		W x H x D	inch	29-3/4 x 10-5/8 x 7-15/32	35-1/4 x 11-3/8 x 8-15/32	35-1/4 x 11-3/8 x 8-15/32
Net Weight	Body		kg (lbs)	7.2 (15.9)	9.0 (19.8)	9.0 (19.8)
Heat Exchanger	(Row x Column x Fins per inch) x No.		-	(2 x 12 x 20) x 1	(2 x 16 x 23) x 1	(2 x 16 x 23) x 1
	Face Area		m² (ft²)	0.14 (1.51)	0.22 (2.37)	0.22 (2.37)
Fan	Type		-	Cross Flow Fan	Cross Flow Fan	Cross Flow Fan
	Air Flow Rate	H / M / L	m³/min	8.1 / 6.9 / 6.3	7.0 / 6.5 / 6.0	9.5 / 9.0 / 8.5
		H / M / L	ft³/min	286 / 244 / 222	247 / 230 / 212	336 / 318 / 300
Fan Motor	Type		-	BLDC	BLDC	BLDC
	Output		W x No.	8.4 x 1	14.4 x 1	14.4 x 1
Sound Pressure Level		H / M / L	dB(A)	36 / 30 / 27	34 / 31 / 27	39 / 36 / 31
Sound Power Level		Max.	dB(A)	57	55	55
Piping Connections	Liquid		mm(inch)	Ø 6.35 (1/4)	Ø 6.35 (1/4)	Ø 6.35 (1/4)
	Gas		mm(inch)	Ø 9.52 (3/8)	Ø 9.52 (3/8)	Ø 9.52 (3/8)
	Drain (O.D. / I.D.)		mm	Ø 21.5 / 16.0	Ø 21.5 / 16.0	Ø 21.5 / 16.0
Safety Devices			-	Fuse		
			-	Thermal Protector for Fan Motor		
Power and Communication Cable (included Earth)			No. x mm² (AWG)	4C x 0.75 (18)	4C x 0.75 (18)	4C x 0.75 (18)

Notes :

1. Wiring cable size must comply with the applicable local and national code.
2. Due to our policy of innovation some specifications may be changed without notification.
3. Sound Level Values are measured at Anechoic chamber.
Therefore, these values can be increased owing to ambient conditions during operation.

1. Wall mounted

Model Name				AMNW15GEB A0 [MS15SQNB0]	AMNW18GEC A0 [MS18SQ NC0]	AMNW24GEC A0 [MS24SQ NC0]
Power Supply			V, Ø, Hz	220-240, 1, 50	220-240, 1, 50	220-240, 1, 50
				220, 1, 60	220, 1, 60	220, 1, 60
Power Input			W x No.	20 x 1	40 x 1	60 x 1
Running Current			A	0.2	0.3	0.3
Casing Color			-	White	White	White
Dimensions	Body	W x H x D	mm	895 x 289 x 215	1,030 x 325 x 255	1,030 x 325 x 255
		W x H x D	inch	35-1/4 x 11-3/8 x 8-15/32	40-9/16 x 12-25/32 x 10-1/32	40-9/16 x 12-25/32 x 10-1/32
Net Weight	Body		kg (lbs)	9.0 (19.8)	13.0 (28.7)	13.0 (28.7)
Heat Exchanger	(Row x Column x Fins per inch) x No.		-	(2 x 16 x 23) x 1	(3 x 18 x 22) x 1	(3 x 18 x 22) x 1
	Face Area		m² (ft²)	0.22 (2.37)	0.29 (3.07)	0.29 (3.07)
Fan	Type		-	Cross Flow Fan	Cross Flow Fan	Cross Flow Fan
	Air Flow Rate	H / M / L	m³/min	10.5 / 9.0 / 7.0	16.2 / 14.2 / 12.3	20.4 / 17.0 / 13.2
		H / M / L	ft³/min	371 / 318 / 247	572 / 501 / 434	720 / 600 / 466
Fan Motor	Type		-	BLDC	BLDC	BLDC
	Output		W x No.	14.4 x 1	76 x 1	76 x 1
Sound Pressure Level		H / M / L	dB(A)	43 / 39 / 34	37 / 33 / 28	42 / 39 / 36
Sound Power Level		Max.	dB(A)	55	57	62
Piping Connections	Liquid		mm(inch)	Ø 6.35 (1/4)	Ø 6.35 (1/4)	Ø 6.35 (1/4)
	Gas		mm(inch)	Ø 9.52 (3/8)	Ø 12.7 (1/2)	Ø 12.7 (1/2)
	Drain (O.D. / I.D.)		mm	Ø 21.5 / 16.0	Ø 21.5 / 16.0	Ø 21.5 / 16.0
Safety Devices			-	Fuse		
			-	Thermal Protector for Fan Motor		
Power and Communication Cable (included Earth)			No. x mm² (AWG)	4C x 0.75 (18)	4C x 0.75 (18)	4C x 0.75 (18)

Notes :

1. Wiring cable size must comply with the applicable local and national code.
2. Due to our policy of innovation some specifications may be changed without notification.
3. Sound Level Values are measured at Anechoic chamber.
Therefore, these values can be increased owing to ambient conditions during operation.

MULTI/SINGLE CAC Indoor unit

1. Wall mounted

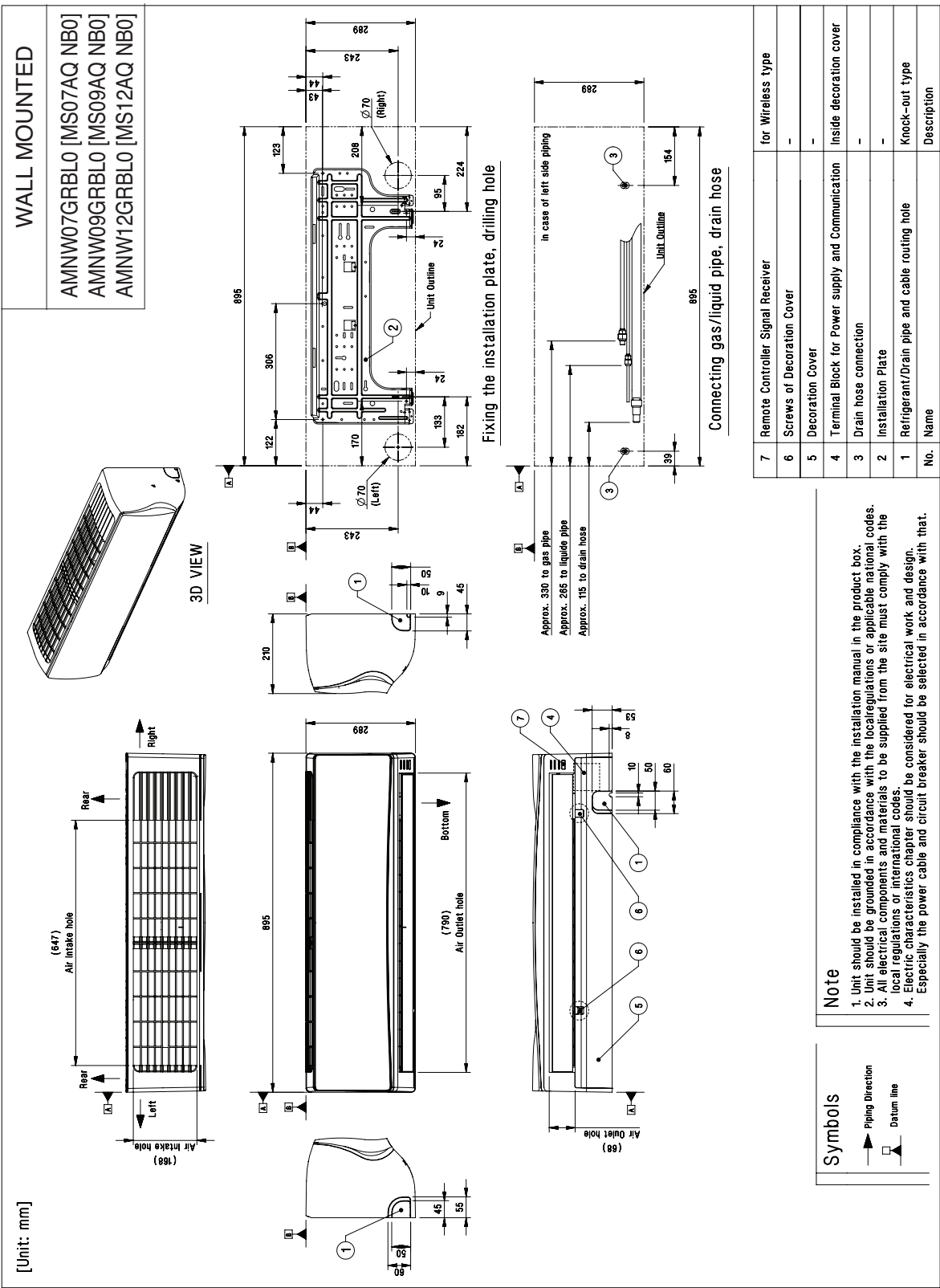
Model Name				AJNW30GVLA0 [UJ30 NV2]	AJNW36GVLA0 [UJ36 NV2]
Power Supply			V, Ø, Hz	220-240, 1, 50	220-240, 1, 50
				220, 1, 60	220, 1, 60
Power Input	Min/Nom/Max		W x No.	50 / 100 / 140	60 / 120 / 160
Running Current			A	0.5	0.6
Casing Color			-	-	-
Dimensions	Body	W x H x D	mm	1,190 x 346 x 265	1,190 x 346 x 265
		W x H x D	inch	46.8 x 13.6 x 10.4	46.8 x 13.6 x 10.4
Net Weight	Body		kg (lbs)	15.7 (34.6)	16.0 (35.3)
Heat Exchanger	1# (Row x Column x Fins per inch) x No.		-	(2 x 18 x 19) x 1	(2 x 18 x 19) x 1
	2# (Row x Column x Fins per inch) x No.			(1 x 6 x 19) x 1	(1 x 6 x 19) x 1
	Face Area		m² (ft²)	0.34(3.63)	0.34(3.63)
Fan	Type		-	Cross Flow Fan	Cross Flow Fan
	Air Flow Rate	H / M / L	m³/min	22.0 / 19.0 / 16.0	27.0 / 24.0 / 20.0
		H / M / L	ft³/min	777 / 671 / 565	953 / 847 / 706
Fan Motor	Type		-	BLDC	BLDC
	Output		W x No.	82.1 x 1	102.6 x 1
Sound Pressure Level		H / M / L	dB(A)	45 / 42 / 40	48 / 45 / 41
Sound Power Level		Max.	dB(A)	61	63
Piping Connections	Liquid		mm(inch)	Ø 9.52 (3/8)	Ø 9.52 (3/8)
	Gas		mm(inch)	Ø 15.88 (5/8)	Ø 15.88 (5/8)
	Drain (O.D. / I.D.)		mm	Ø 21.5 / 16.0	Ø 21.5 / 16.0
Safety Devices			-	Fuse	Fuse
			-	Thermal Protector for Fan Motor	Thermal Protector for Fan Motor
Power and Communication Cable (included Earth)			No. x mm² (AWG)	4C x 0.75 (18)	4C x 0.75 (18)

Notes :

1. Wiring cable size must comply with the applicable local and national code.
2. Due to our policy of innovation some specifications may be changed without notification.
3. Sound Level Values are measured at Anechoic chamber.
Therefore, these values can be increased owing to ambient conditions during operation.

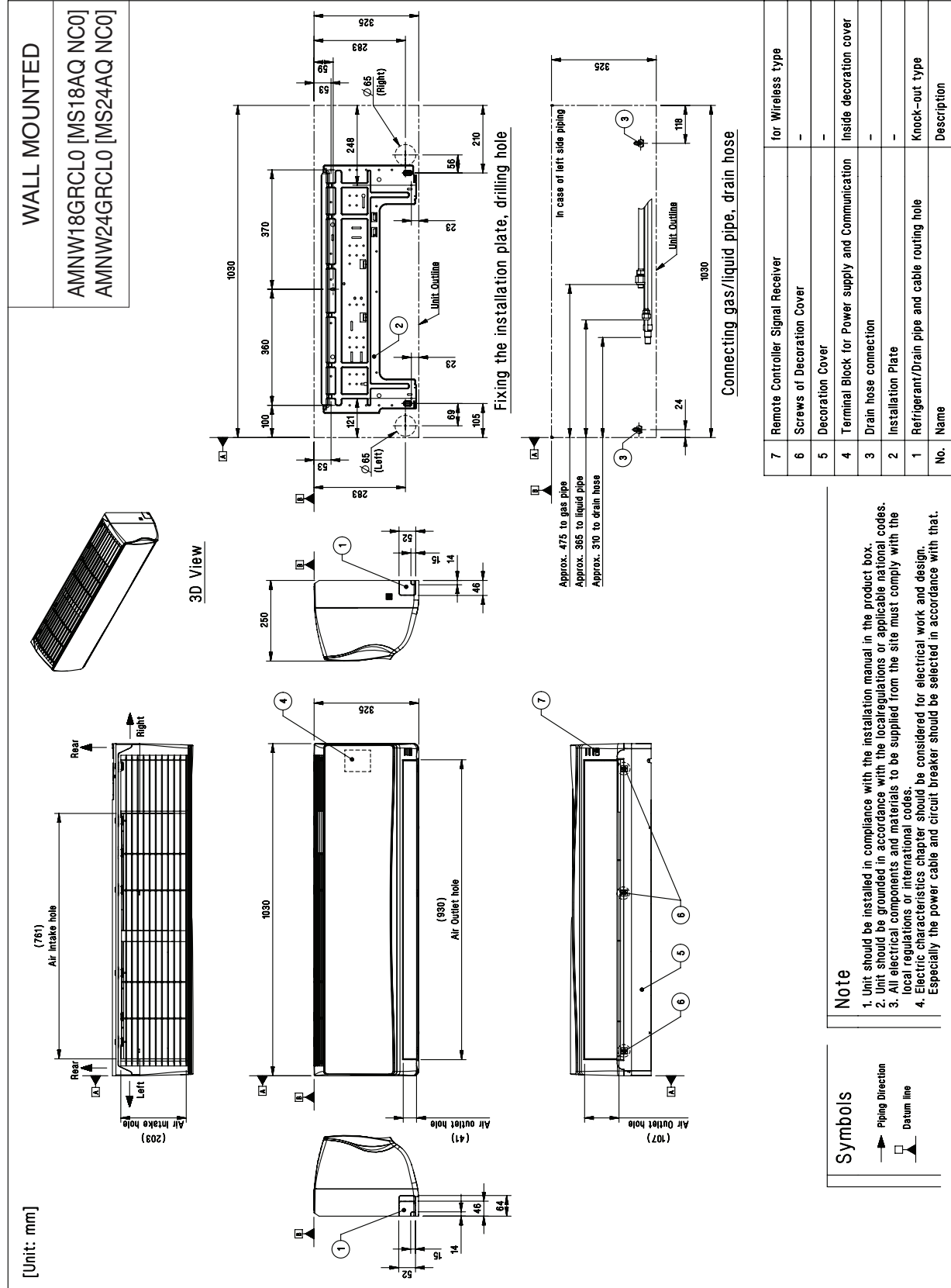
1. Wall mounted

1.3 Dimensions



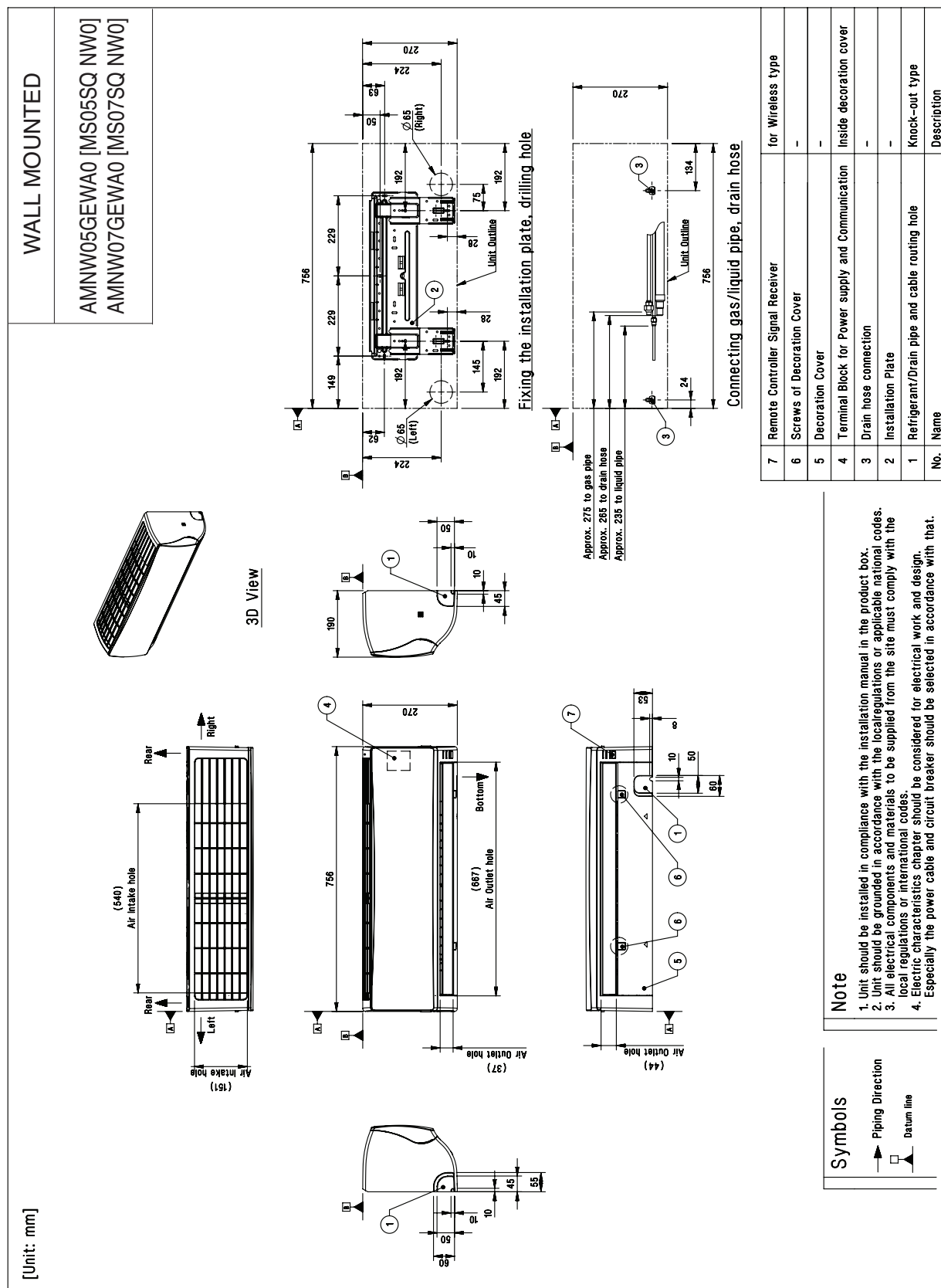
MULTI/SINGLE CAC Indoor unit

1. Wall mounted



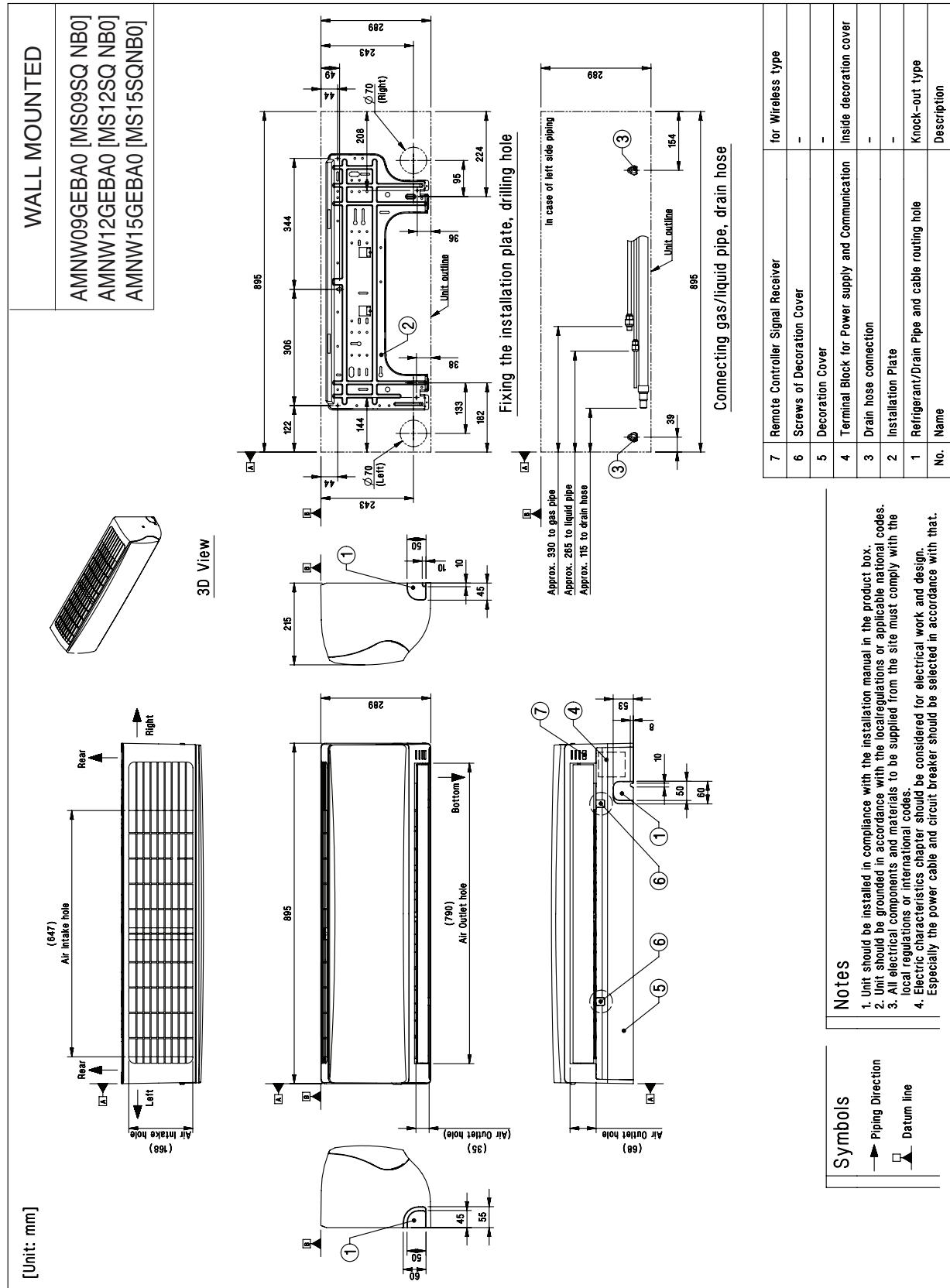
1. Wall mounted

1. Wall mounted



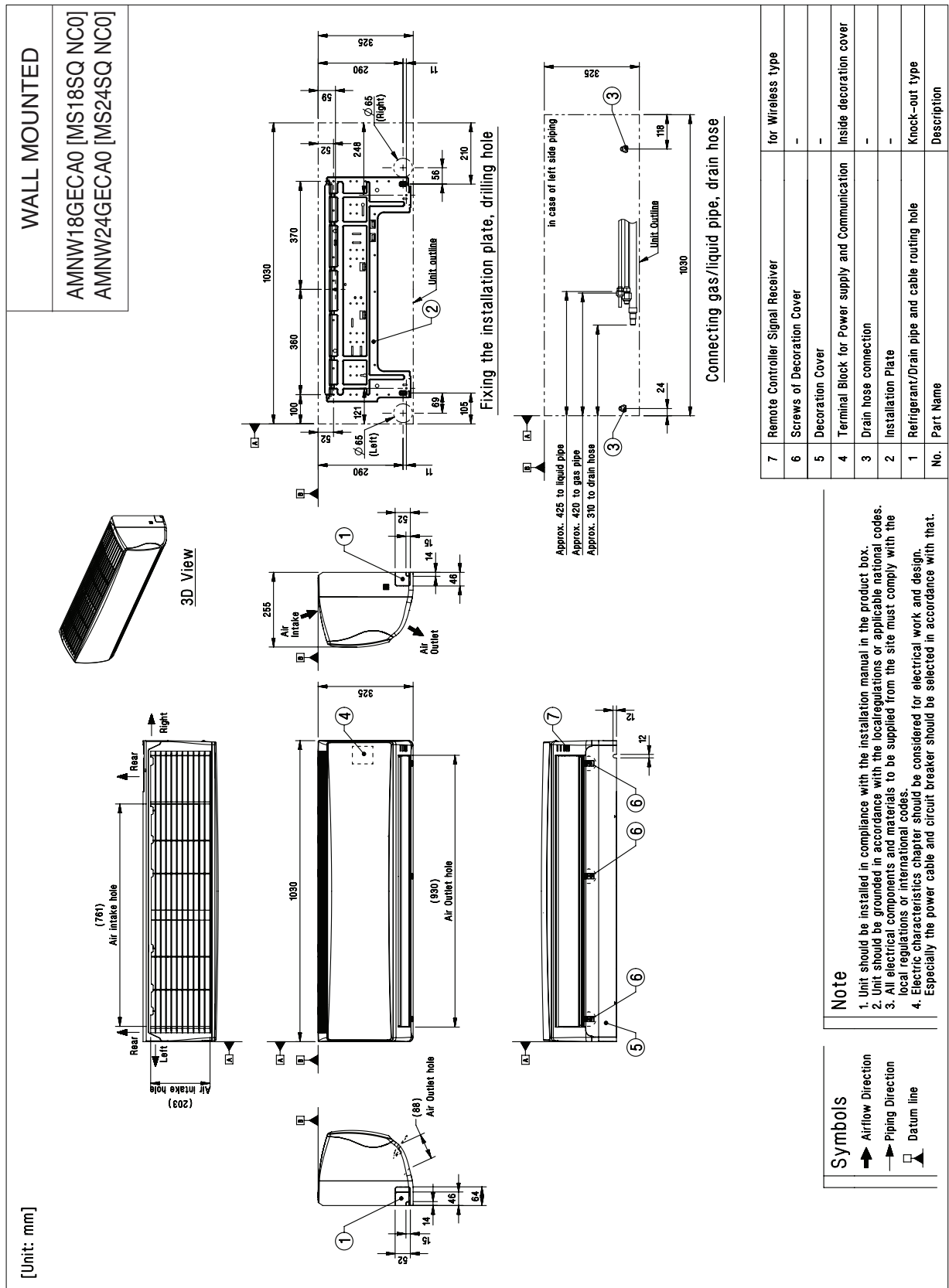
MULTI/SINGLE CAC Indoor unit

1. Wall mounted



MULTI/SINGLE CAC Indoor unit

1. Wall mounted



MULTI/SINGLE CAC Indoor unit

1. Wall mounted

WALL MOUNTED

AJNW30GVLA0 [UJ30 NV2]
AJNW36GVLA0 [UJ36 NV2]

1

285

346

1

1030

3

1190

2

1030

1

167

43

150

167

43

140

Unit Outline

Installation plate

Left rear piping

Right rear piping

Item No.

Part Name

Remark

1

Front Panel

2

Display & Signal Receiver

3

Air Suction Grille

4

Installation Plate

Note

1. Unit should be installed in compliance with the installation manual in the product box.

2. Unit shall be grounded in accordance with the local regulations or applicable national codes.

3. The Unit is powered from the outdoor unit. Therefore power cable should be connected with the outdoor unit.

[Unit : mm]

LG Electronics

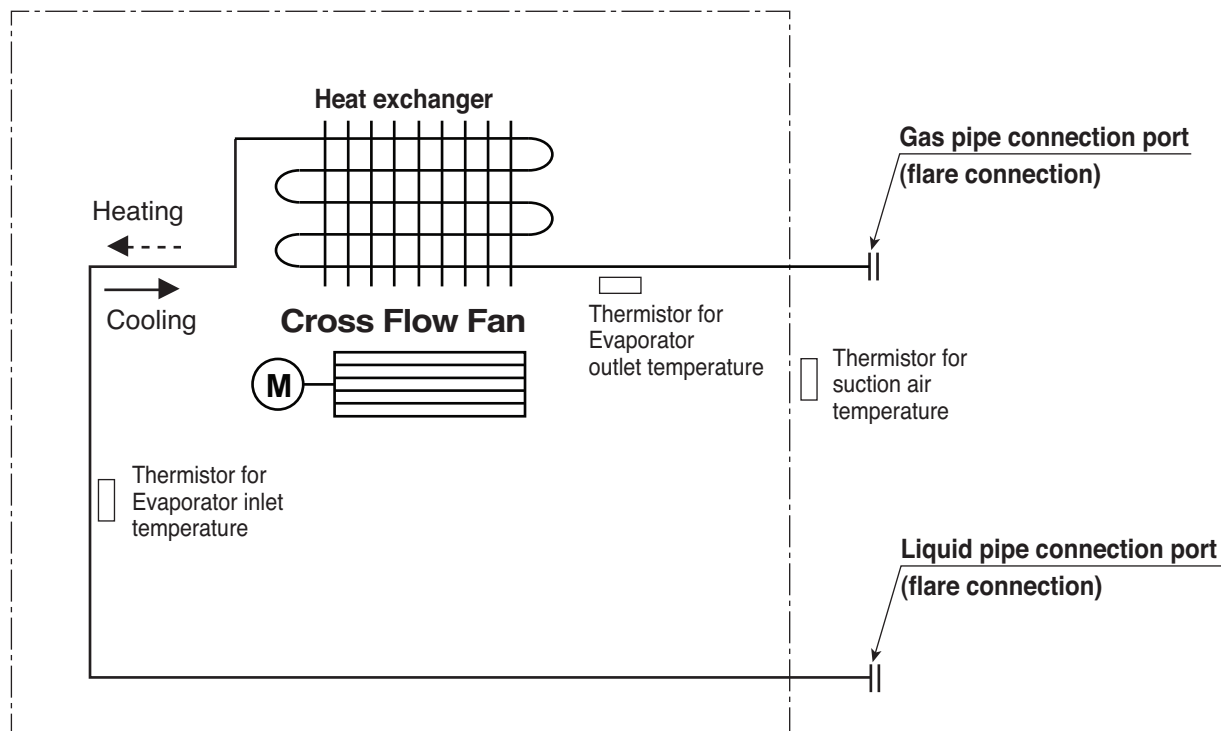
76, Seongsan-dong, Changwon City, Gyeongnam,
641-713, Korea
www.lge.com/airconditioner

CHASSIS CODE : SV

14 _ Wall mounted

1. Wall mounted

1.4 Piping diagrams



Description	PCB Connector
Thermistor for suction air temperature	CN-TH1
Thermistor for evaporator inlet temperature	
Thermistor for evaporator outlet temperature	CN-TH2

■ Refrigerant pipe connection port diameters

[Unit : mm]

Model	Gas	Liquid
AMNW07GRBL0[MS07AQ NB0] AMNW09GRBL0[MS09AQ NB0] AMNW12GRBL0[MS12AQ NB0] AMNW05GEWA0[MS05SQ NW0] AMNW07GEWA0[MS07SQ NW0] AMNW09GEBA0[MS09SQ NB0] AMNW12GEBA0[MS12SQ NB0] AMNW15GEBA0 [MS15SQNB0]	Ø9.52 (3/8)	Ø6.35 (1/4)
AMNW18GRCL0[MS18AQ NC0] AMNW24GRCL0[MS24AQ NC0] AMNW18GECA0[MS18SQ NC0] AMNW24GECA0[MS24SQ NC0]	Ø12.7 (1/2)	
AJNW30GVLA0 [UJ30 NV2] AJNW36GVLA0 [UJ36 NV2]	Ø 15.88 (5/8)	Ø 9.52 (3/8)

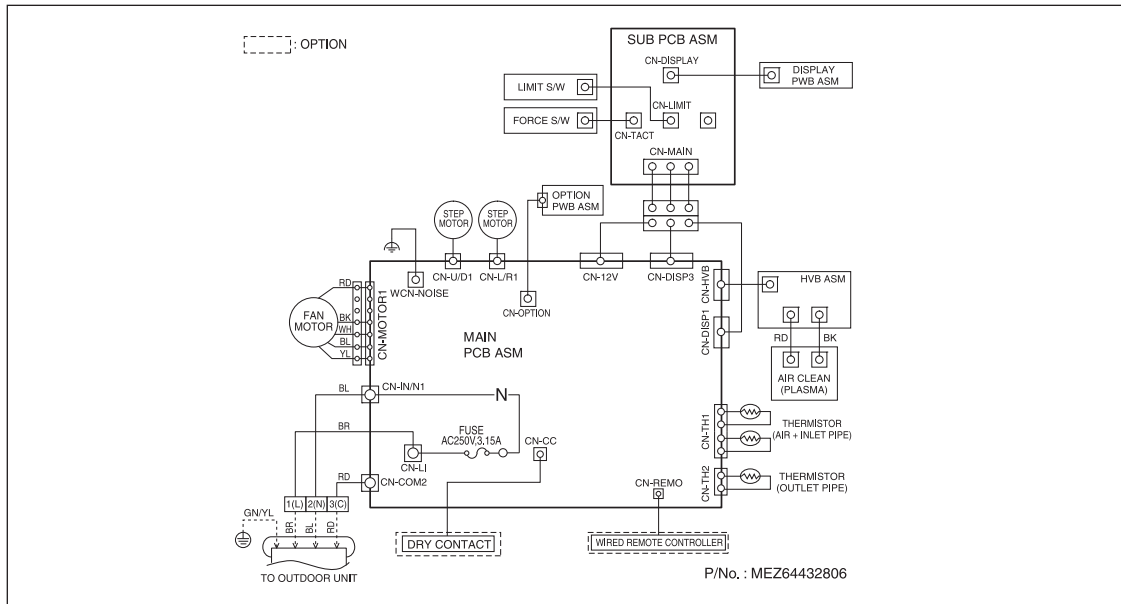
MULTI/SINGLE CAC Indoor unit

1. Wall mounted

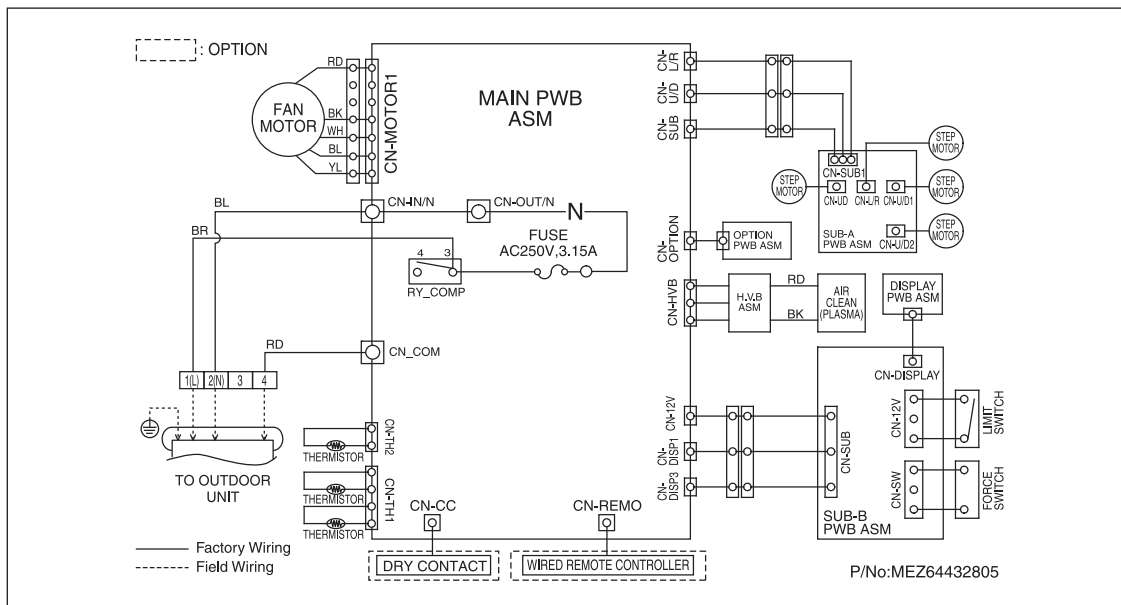
1.5 Wiring diagrams

1) Libero - R

Models: AMNW-RB [MS-AQ NB0]



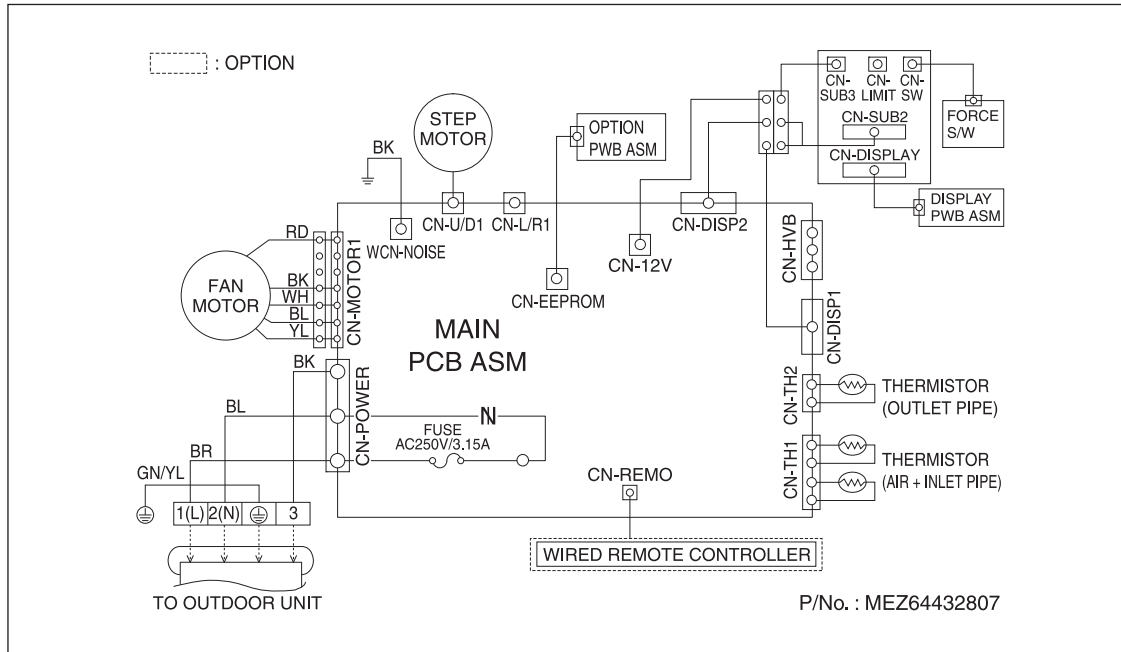
Models: AMNW-RC [MS-AQ NC0]



1. Wall mounted

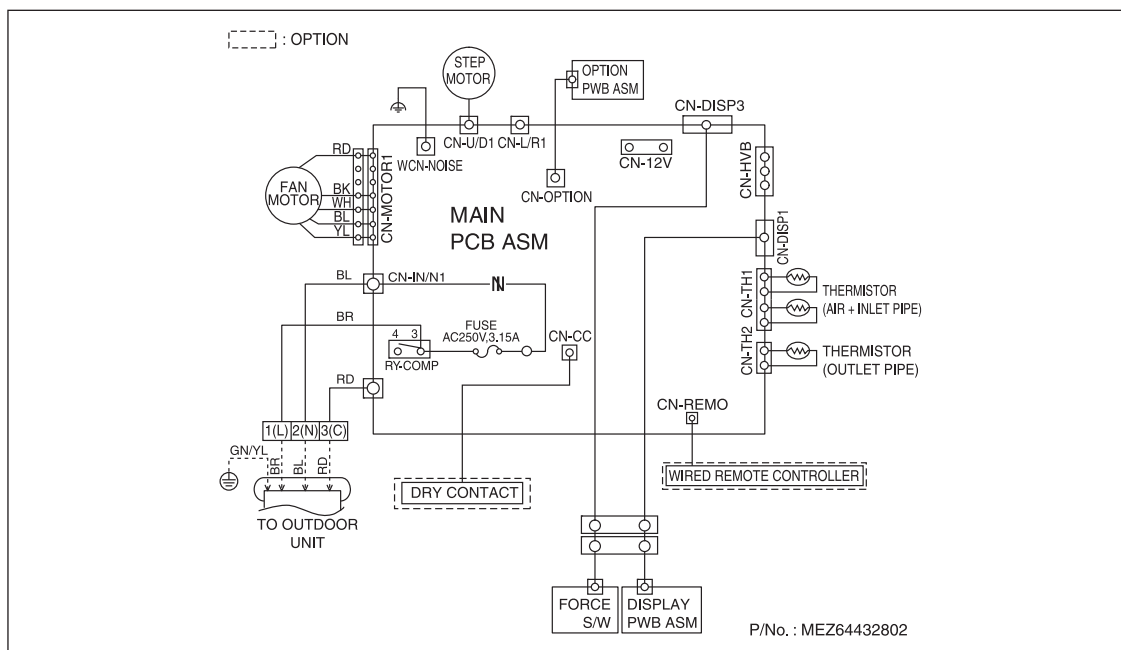
2) Libero - E

Models : AMNW-EW [MS-SQ NW0]



Indoor Units

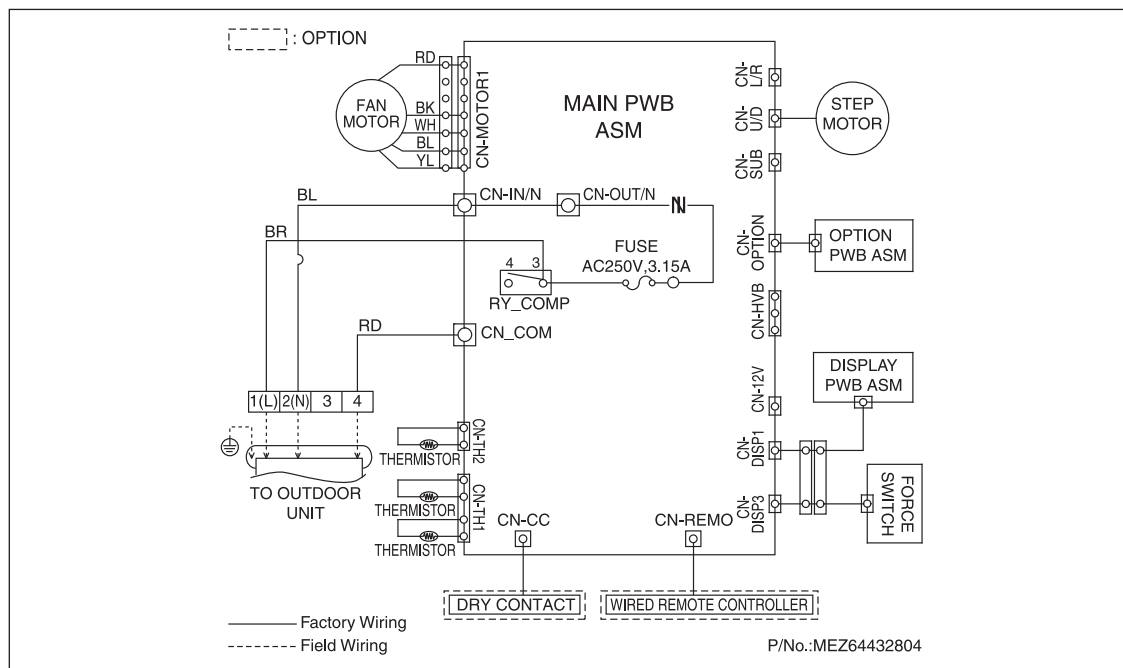
Models : AMNW-EB [MS-SQ NB0]



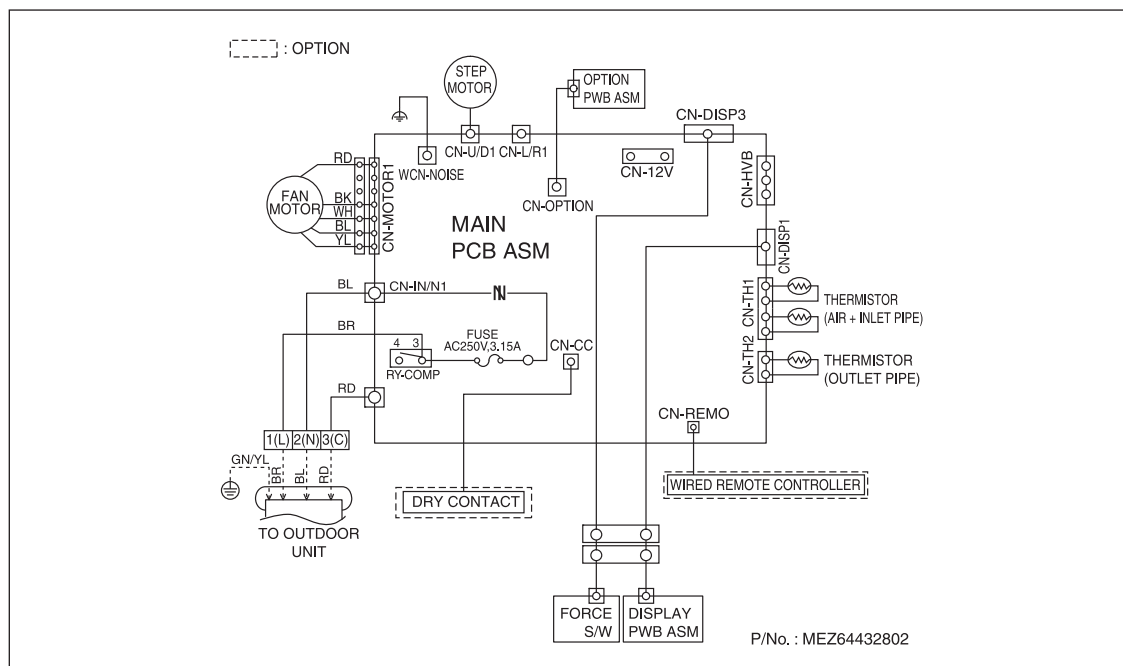
MULTI/SINGLE CAC Indoor unit

1. Wall mounted

Models : AMNW-EC [MS-SQ NC0]



Models : AJNW-VL [UJ- NV2]



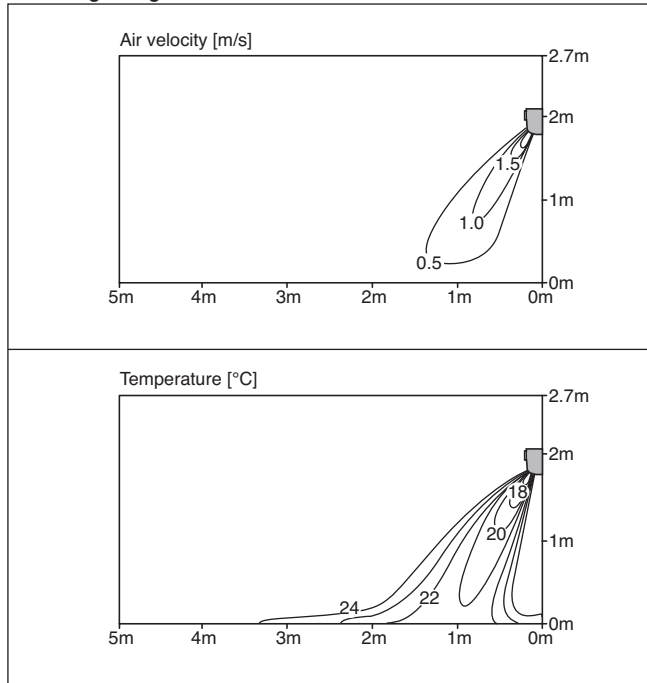
1. Wall mounted

1.6 Air flow and temperature distributions (reference data)

Model : AMNW07GRBL0 [MS07AQ NB0]

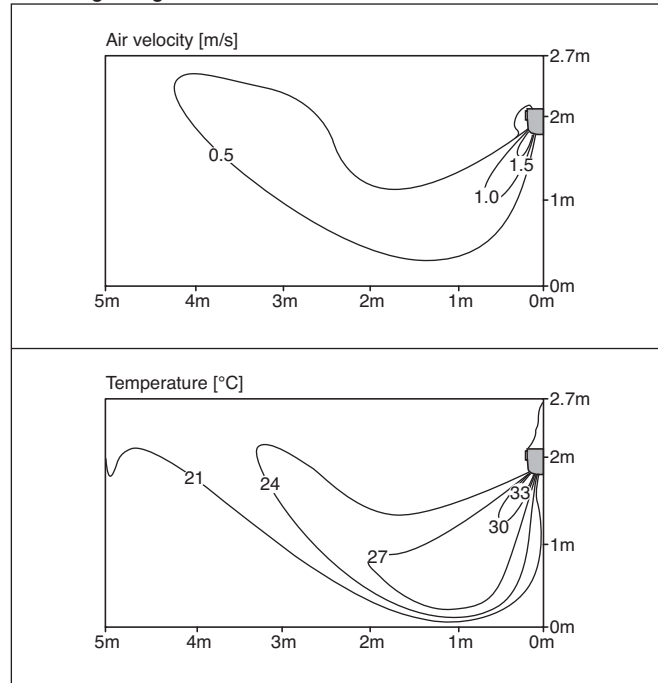
Cooling

Discharge angle: 40°



Heating

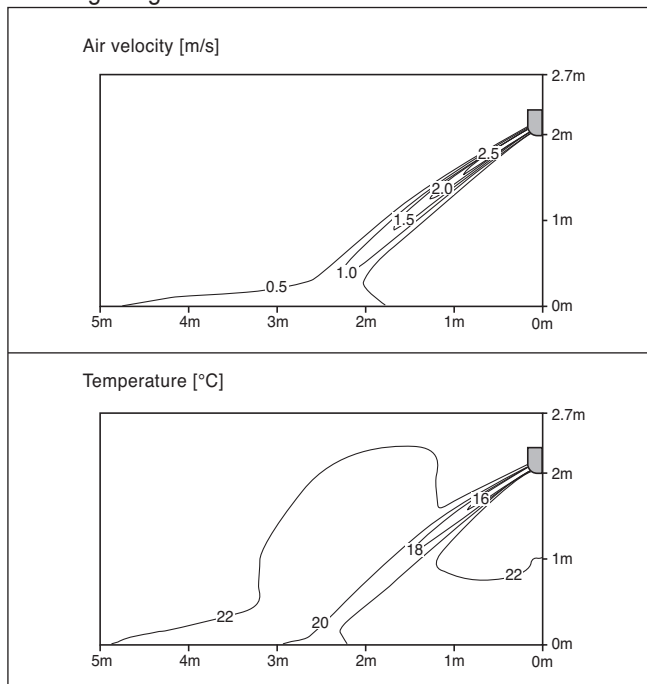
Discharge angle: 50°



Model : AMNW05GEWA0 [MS05SQ NW0], AMNW07GEWA0[MS07SQ NW0]

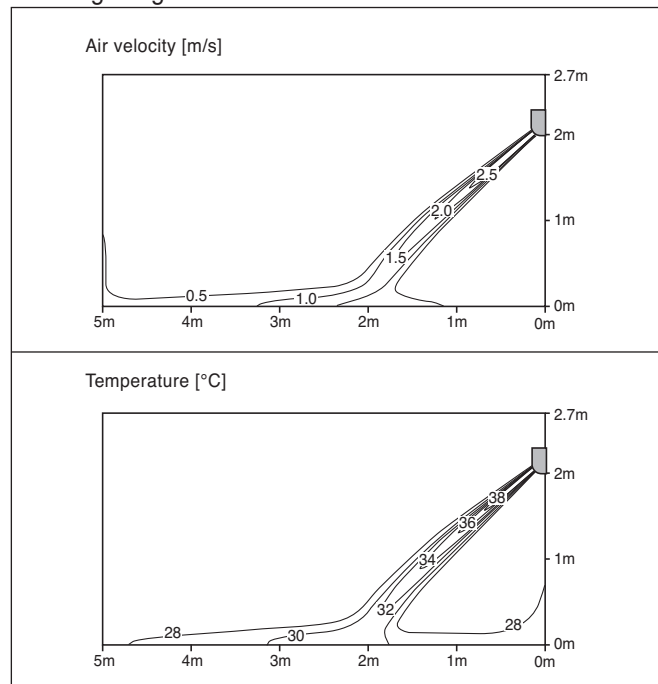
Cooling

Discharge angle: 30°



Heating

Discharge angle: 40°



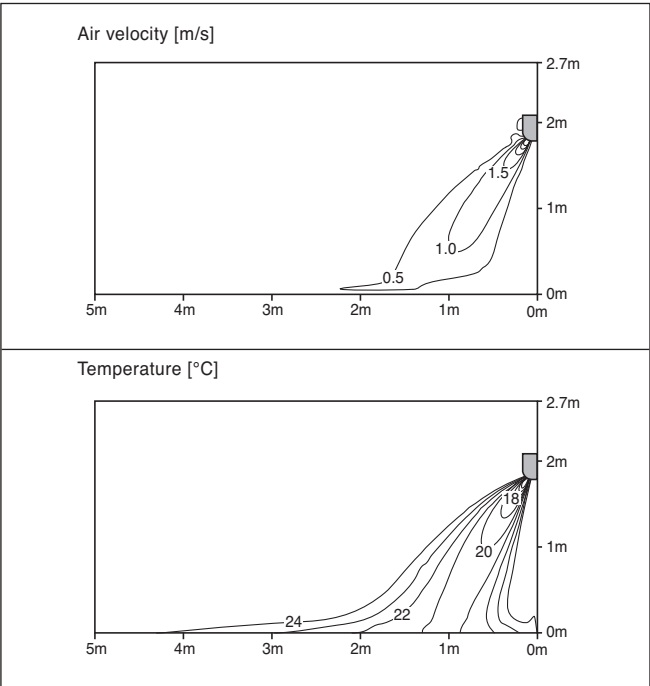
MULTI/SINGLE CAC Indoor unit

1. Wall mounted

Model : AMNW09GRBL0 [MS09AQ NB0], AMNW09GEBA0 [MS09SQ NB0]

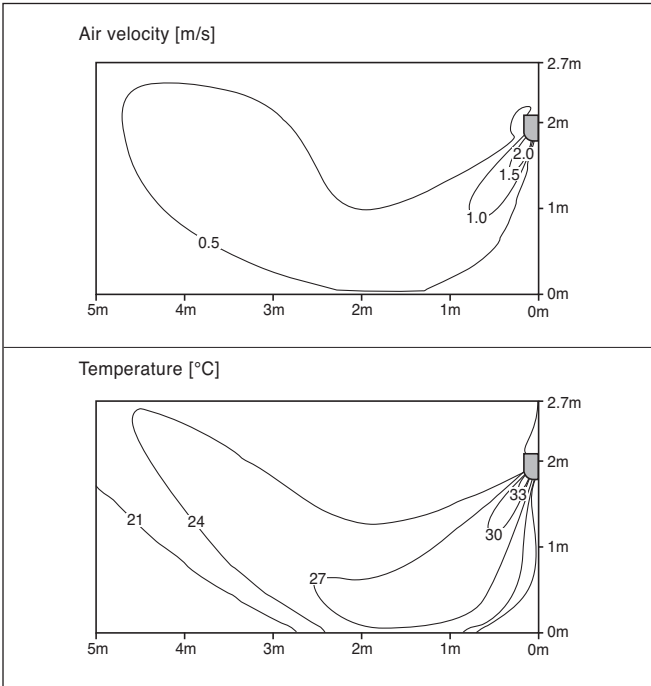
Cooling

Discharge angle: 40°



Heating

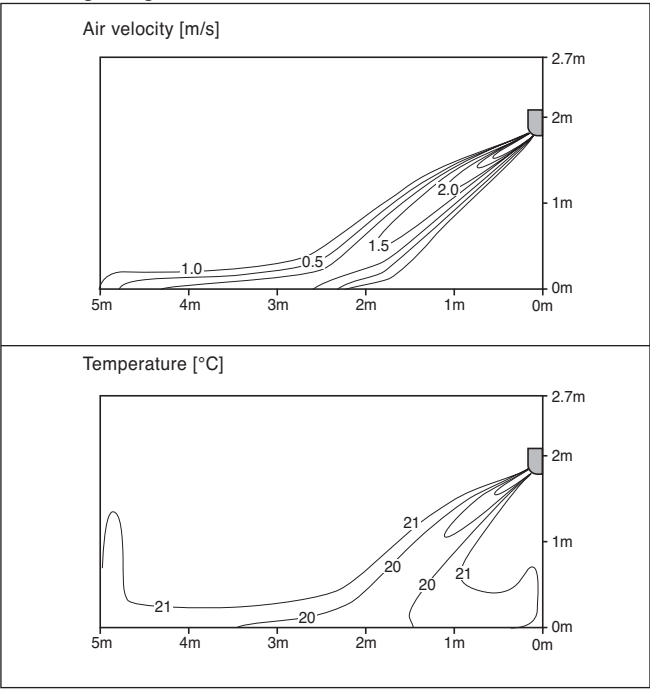
Discharge angle: 50°



Model : AMNW12GRBL0 [MS12AQ NB0], AMNW12GEBA0 [MS12SQ NB0]

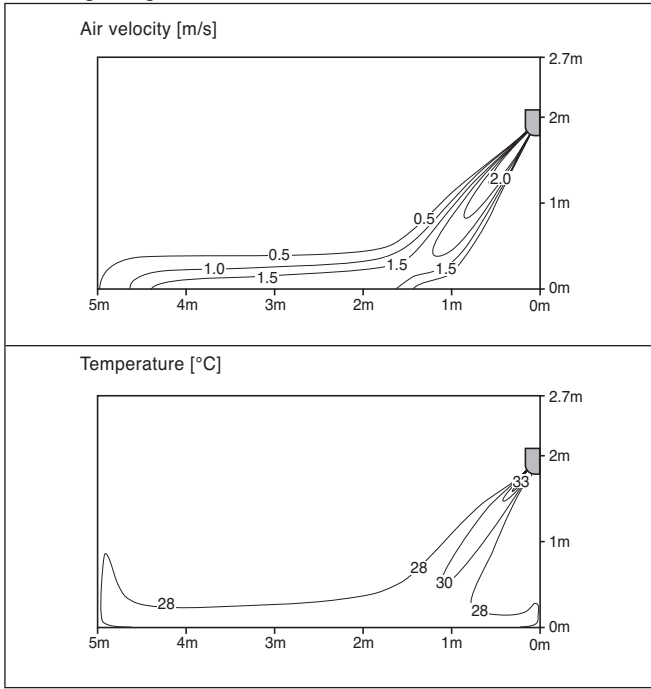
Cooling

Discharge angle: 40°



Heating

Discharge angle: 50°

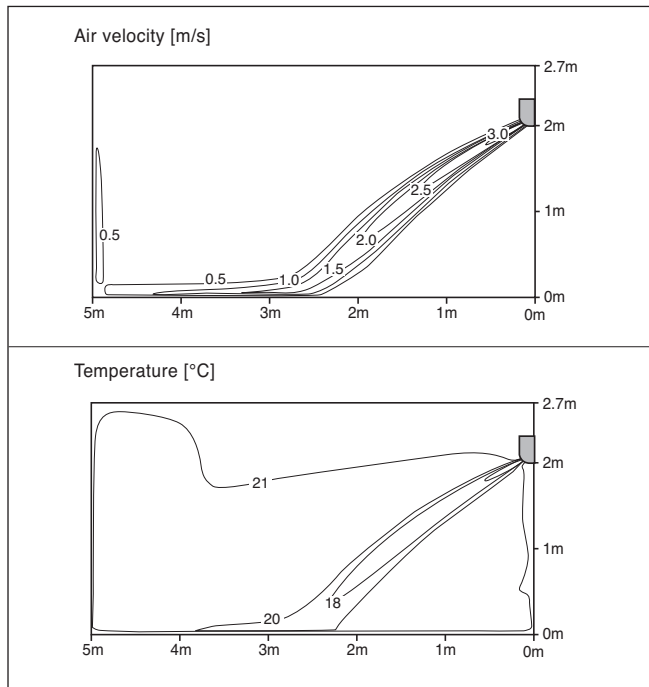


1. Wall mounted

Model : AMNW15GEBA0 [MS15SQNB0]

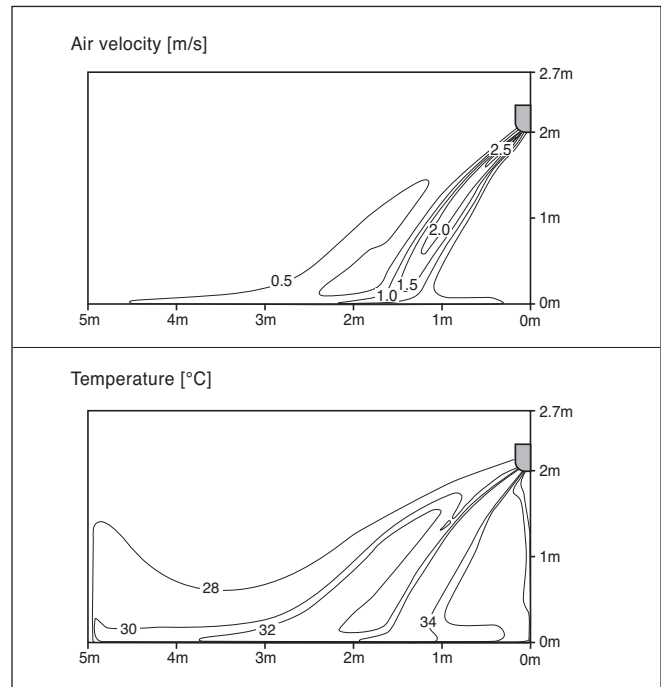
Cooling

Discharge angle: 40°



Heating

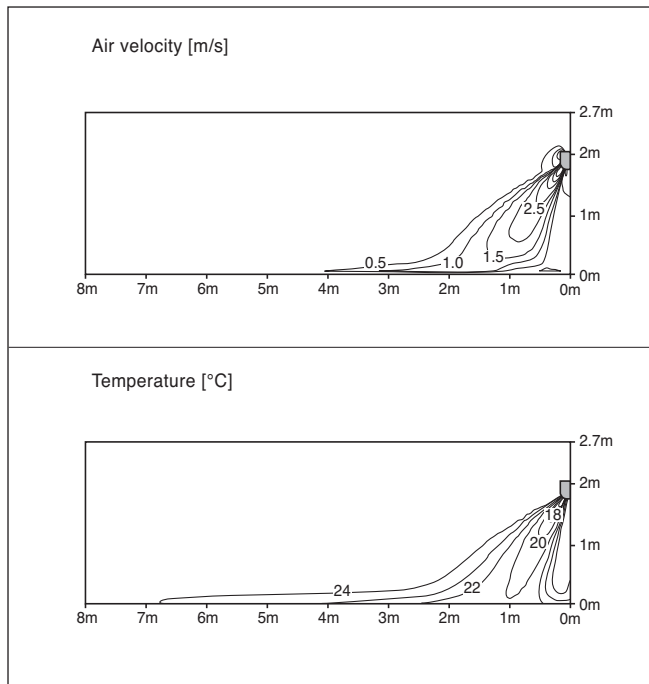
Discharge angle: 50°



Model : AMNW18GRCL0 [MS18AQ NC0], AMNW18GECA0 [MS18SQ NC0]

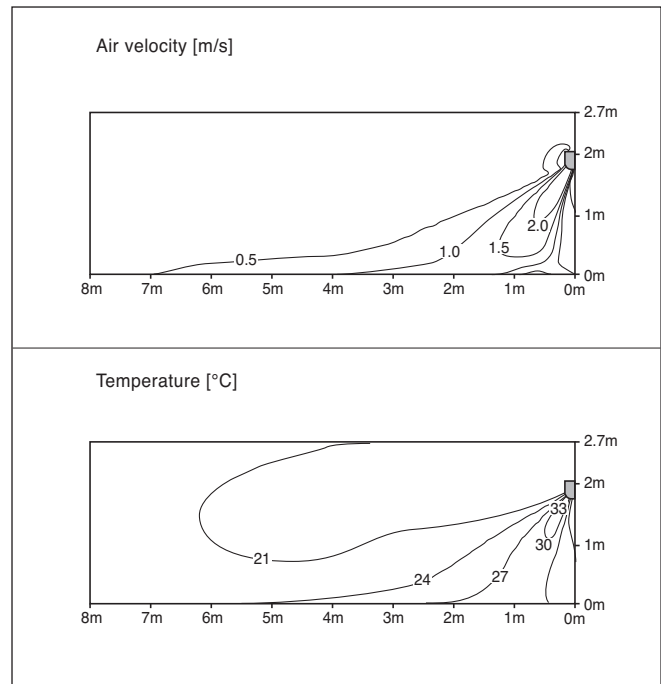
Cooling

Discharge angle: 40°



Heating

Discharge angle: 50°



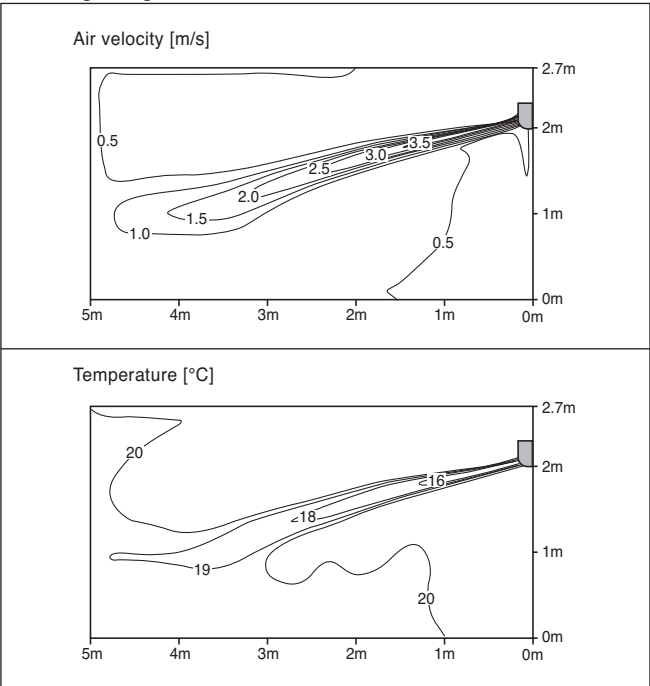
MULTI/SINGLE CAC Indoor unit

1. Wall mounted

Model : AMNW24GRCL0 [MS24AQ NC0]

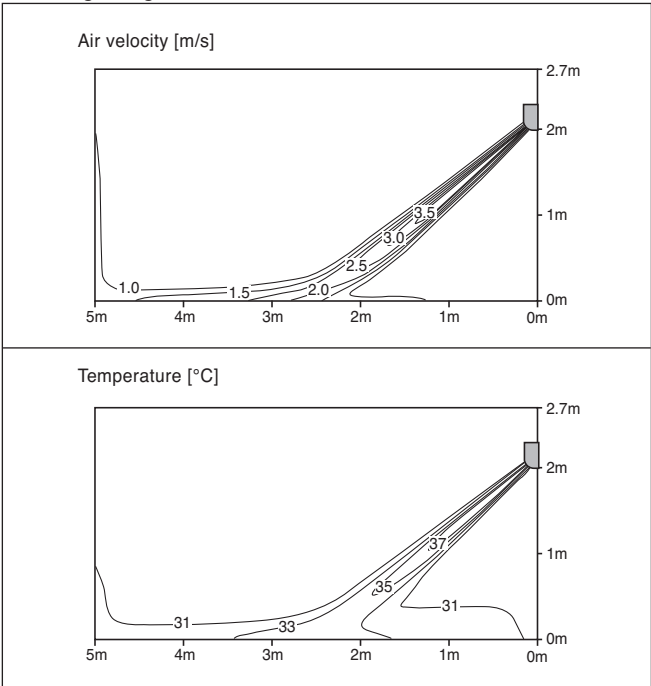
Cooling

Discharge angle: 30°



Heating

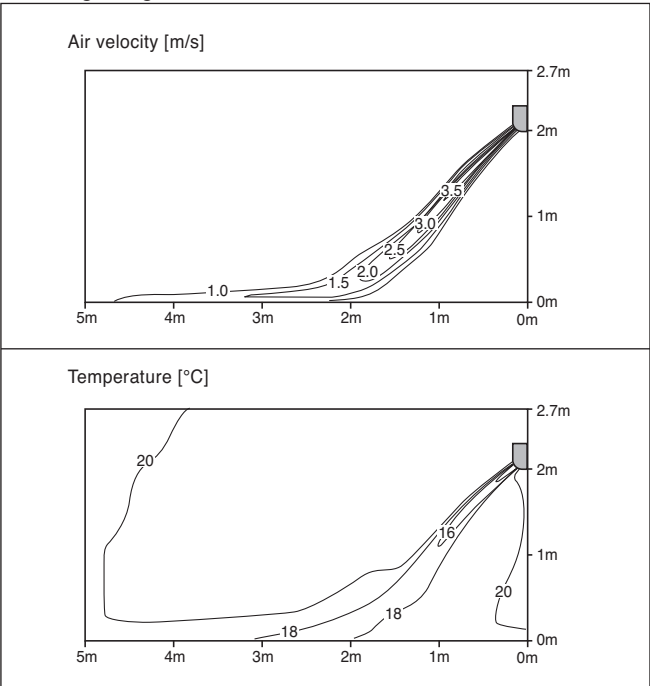
Discharge angle: 40°



Model : AMNW24GECA0 [MS24SQ NC0]

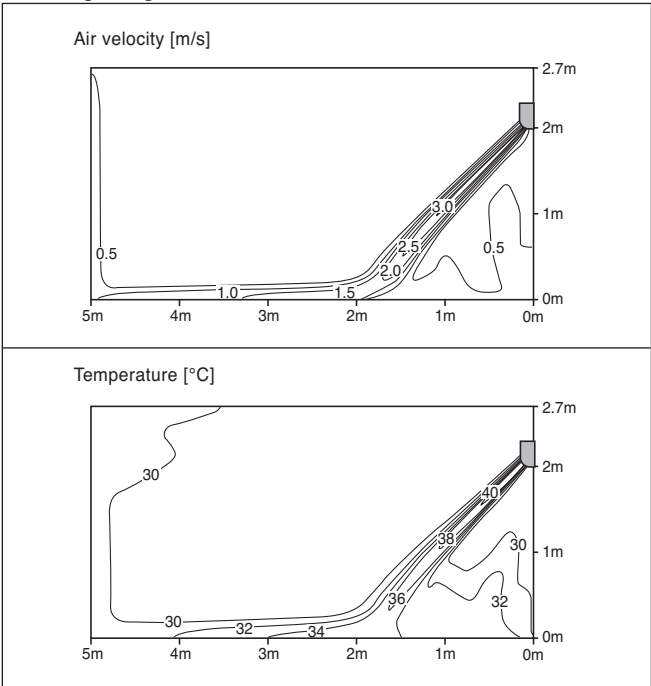
Cooling

Discharge angle: 30°



Heating

Discharge angle: 40°

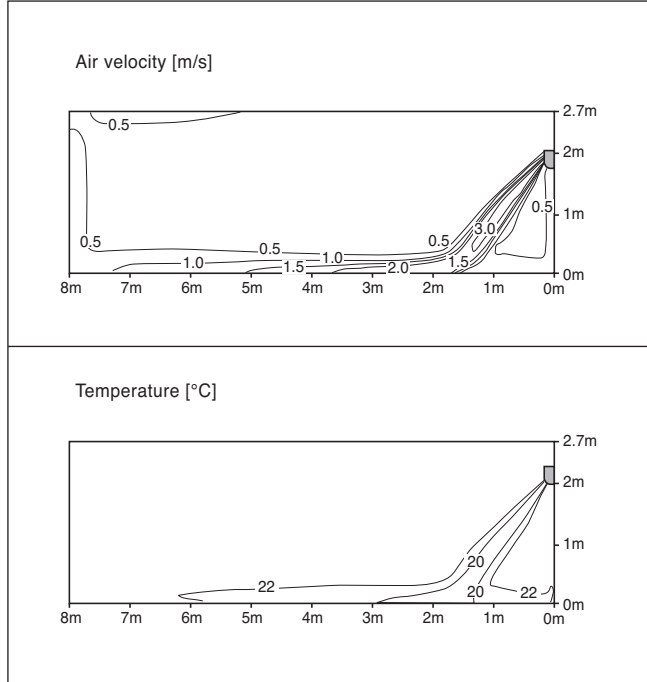


1. Wall mounted

Model : AJNW30GVLA0 [UJ30 NV2]

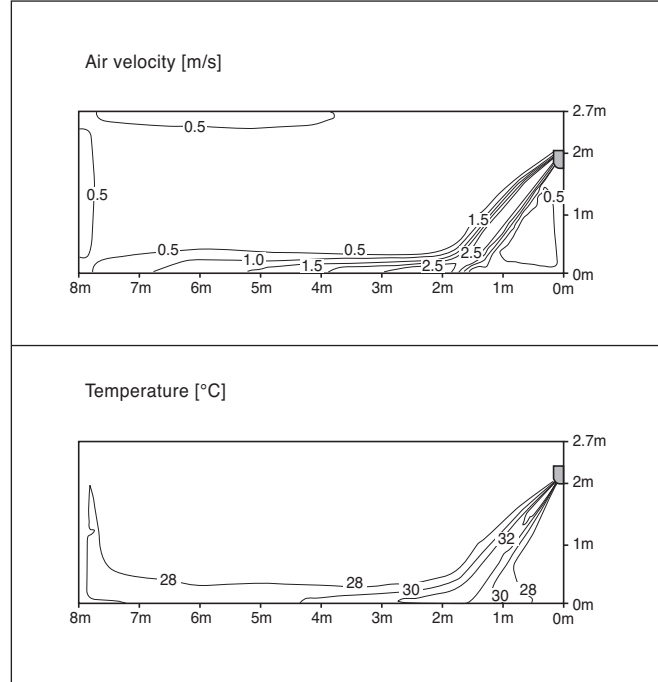
Cooling

Discharge angle: 25°



Heating

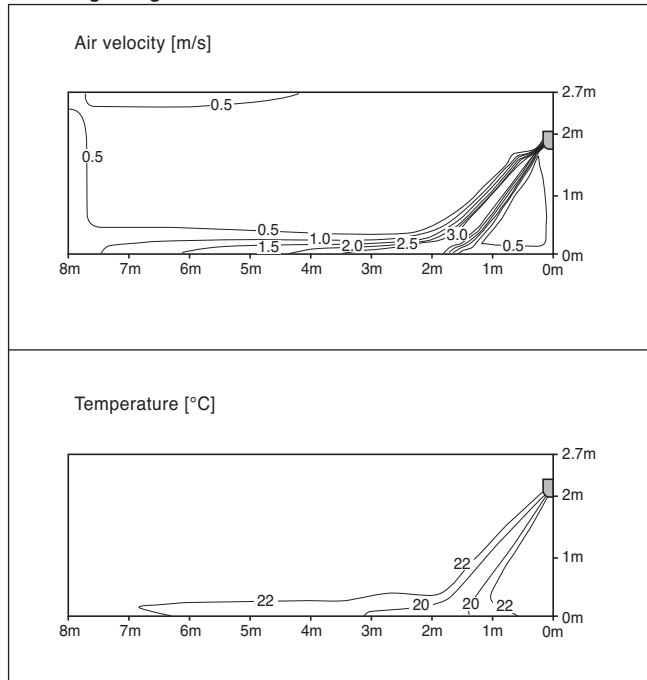
Discharge angle: 35°



Model : AJNW36GVLA0 [UJ36 NV2]

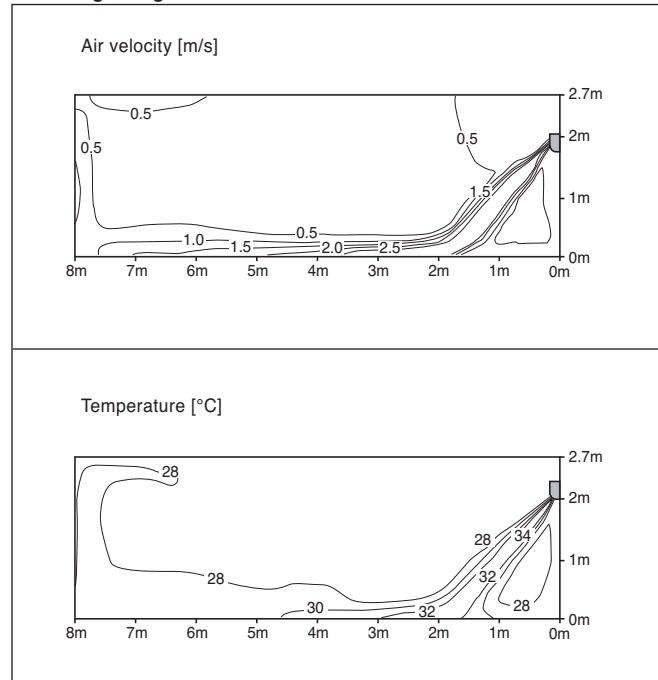
Cooling

Discharge angle: 25°



Heating

Discharge angle: 35°



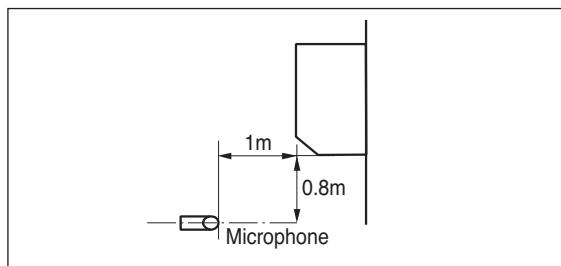
MULTI/SINGLE CAC Indoor unit

1. Wall mounted

1.7 Sound levels

1.7.1 Sound pressure level

Overall



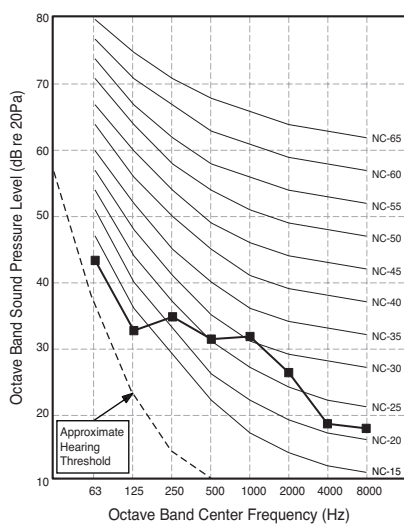
Notes:

- Sound measured at 1m away from the center of the unit.
- Data is valid at free field condition.
- Data is valid at nominal operation condition.
- Reference acoustic pressure 0dB=20μPa.
- Sound level will vary depending on a range of factors such as the construction(acoustic absorption coefficient) of particular room in which the equipment is installed.
- The operating conditions are assumed to be standard.

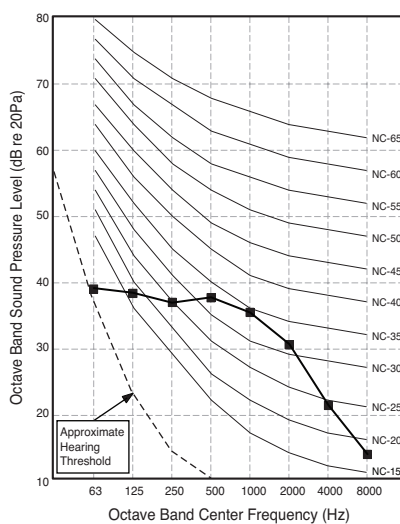
Model	50Hz, 220-240V		
	Sound pressure Levels [dB(A)]		
	H	M	L
AMNW07GRBL0 [MS07AQ NB0]	33	30	26
AMNW09GRBL0 [MS09AQ NB0]	34	31	27
AMNW12GRBL0 [MS12AQ NB0]	39	36	31
AMNW18GRCL0 [MS18AQ NC0]	37	33	28
AMNW24GRCL0 [MS24AQ NC0]	42	39	36

Model	50Hz, 220-240V		
	Sound pressure Levels [dB(A)]		
	H	M	L
AMNW05GEWA0 [MS05SQ NW0]	36	30	27
AMNW07GEWA0 [MS07SQ NW0]	36	30	27
AMNW09GEBA0 [MS09SQ NB0]	34	31	27
AMNW12GEBA0 [MS12SQ NB0]	39	36	31
AMNW15GEBA0 [MS15SQ NB0]	43	39	34
AMNW18GECA0 [MS18SQ NC0]	37	33	28
AMNW24GECA0 [MS24SQ NC0]	42	39	36
AJNW30GVLA0 [UJ30 NV2]	45	42	40
AJNW36GVLA0 [UJ36 NV2]	48	45	41

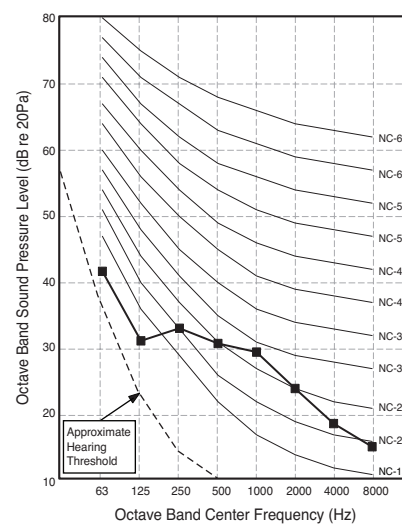
AMNW07GRBL0 [MS07AQ NB0]



AMNW05GEWA0 [MS05SQ NW0]
AMNW07GEWA0 [MS07SQ NW0]

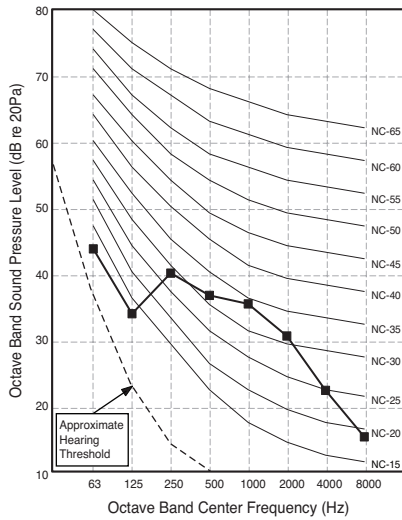


AMNW09GRBL0 [MS09AQ NB0]
AMNW09GEBA0 [MS09SQ NB0]

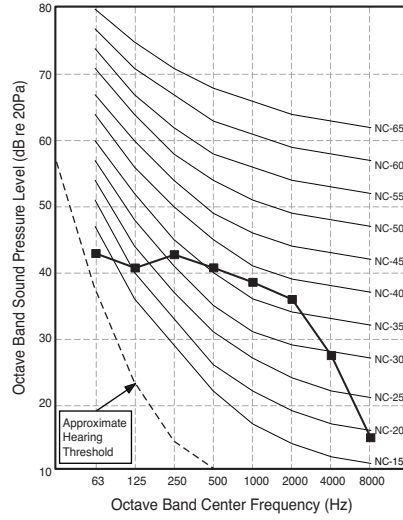


1. Wall mounted

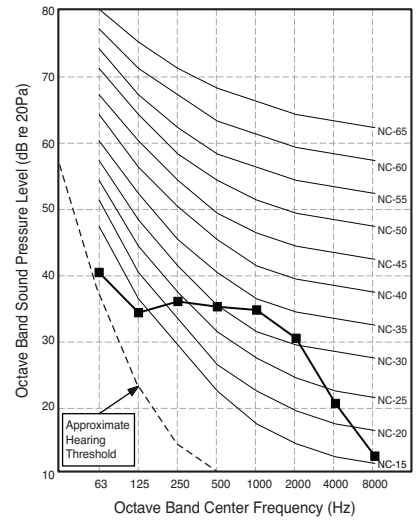
**AMNW12GRBL0 [MS12AQ NB0]
AMNW12GEB00 [MS12SQ NB0]**



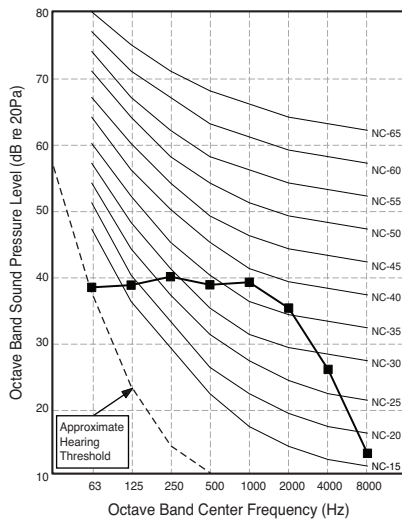
AMNW15GEB00 [MS15SQNB0]



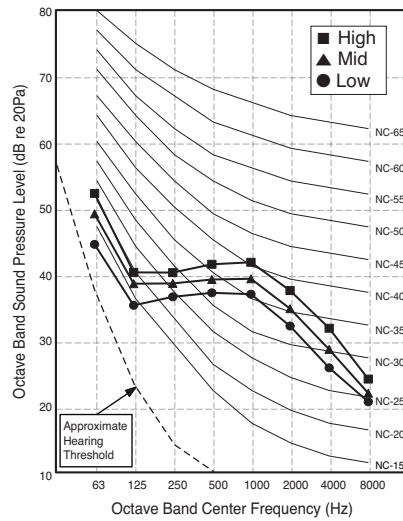
**AMNW18GRCL0 [MS18AQ NC0]
AMNW18GEC00 [MS18SQ NC0]**



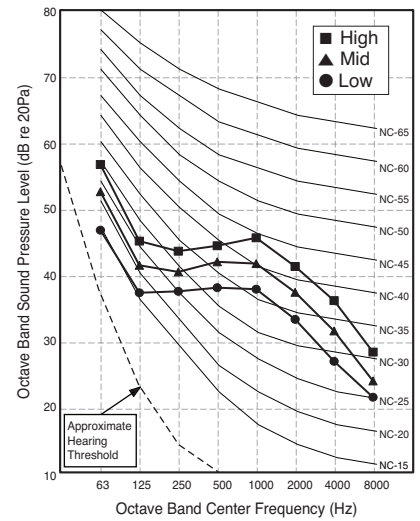
**AMNW24GRCL0 [MS24AQ NC0]
AMNW24GEC00 [MS24SQ NC0]**



AJNW30GVLA0 [UJ30 NV2]



AJNW36GVLA0 [UJ36 NV2]



1. Wall mounted

1.7.2 Sound power level

Notes:

1. Reference acoustic intensity 0dB = $10E-6\mu W/m^2$
2. Sound level will vary depending on a range of factors such as the construction (acoustic absorption coefficient) of particular room in which the equipment is installed.

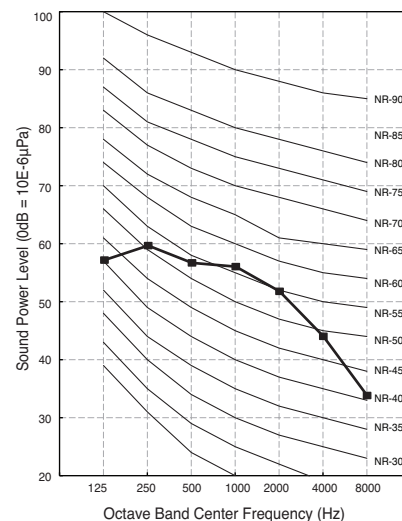
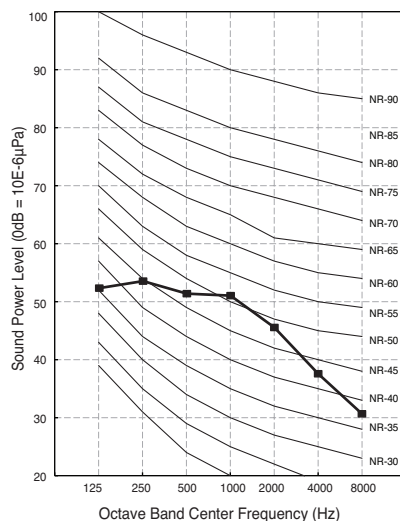
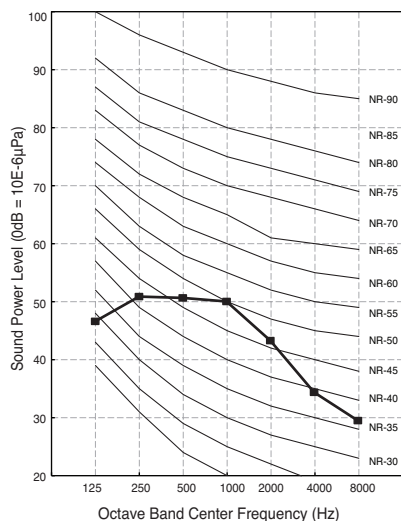
Model	Sound power level [dB(A)]
	H
AMNW07GRBL0 [MS07AQ NB0]	55
AMNW09GRBL0 [MS09AQ NB0]	55
AMNW12GRBL0 [MS12AQ NB0]	55
AMNW18GRCL0 [MS18AQ NC0]	57
AMNW24GRCL0 [MS24AQ NC0]	62

Model	Sound power level [dB(A)]
	H
AMNW05GEWA0 [MS05SQ NW0]	57
AMNW07GEWA0 [MS07SQ NW0]	57
AMNW09GEBA0 [MS09SQ NB0]	55
AMNW12GEBA0 [MS12SQ NB0]	55
AMNW15GEBA0 [MS15SQ NB0]	55
AMNW18GECA0 [MS18SQ NC0]	57
AMNW24GECA0 [MS24SQ NC0]	62
AJNW30GVLA0 [UJ30 NV2]	61
AJNW36GVLA0 [UJ36 NV2]	63

AMNW07GRBL0 [MS07AQ NB0]
 AMNW09GRBL0 [MS09AQ NB0]
 AMNW12GRBL0 [MS12AQ NB0]
 AMNW09GEBA0 [MS09SQ NB0]
 AMNW12GEBA0 [MS12SQ NB0]
 AMNW15GEBA0 [MS15SQ NB0]

AMNW18GRCL0 [MS18AQ NC0]
 AMNW18GECA0 [MS18SQ NC0]

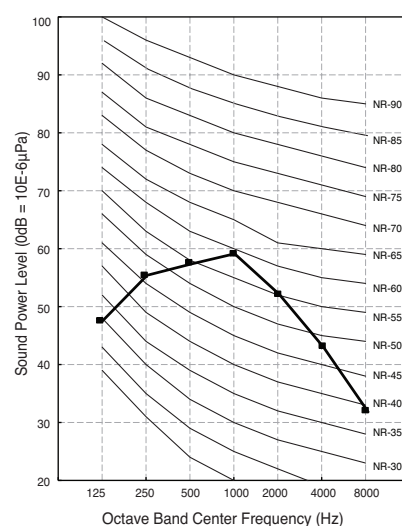
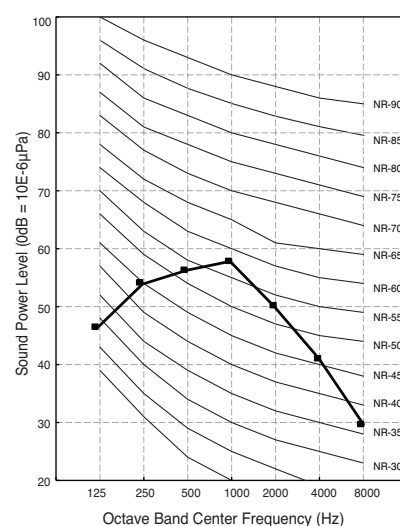
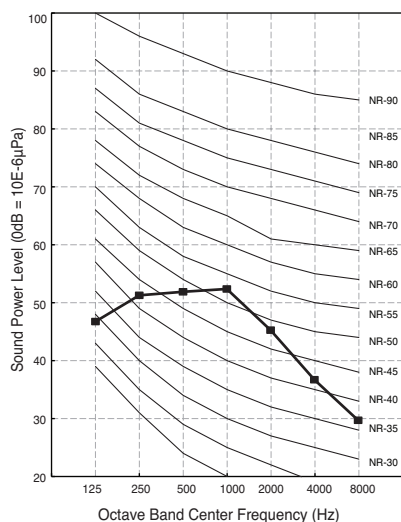
AMNW24GRCL0 [MS24AQ NC0]
 AMNW24GECA0 [MS24SQ NC0]



AMNW05GEWA0 [MS05SQ NW0]
 AMNW07GEWA0 [MS07SQ NW0]

AJNW30GVLA0 [UJ30 NV2]

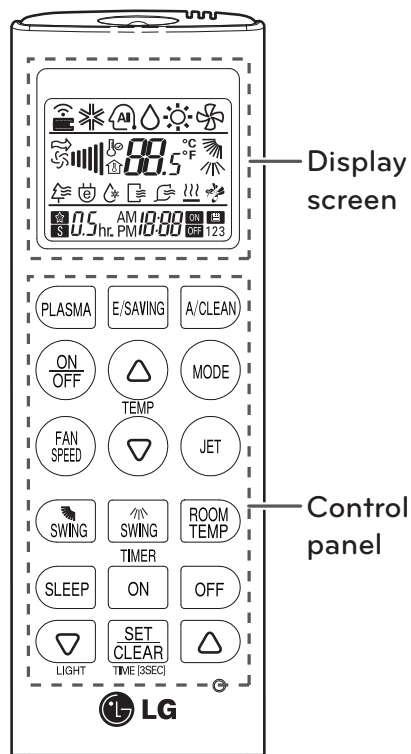
AJNW36GVLA0 [UJ36 NV2]



1. Wall mounted

1.8 Controller

Wireless remote control



Control panel	Display screen	Description
		Plasma button* : Purifies the air by removing particles that enter the indoor unit.
		Sleep mode auto button* : Sets the sleep mode auto operation.
		Temperature adjustment buttons : Adjusts the room temperature when cooling and heating.
	-	On/Off button : Turns the power on/off.
		Indoor fan speed button : Adjusts the fan speed.
		Operation mode selection button* : Selects the operation mode. Cooling operation (❄️) / Auto operation or auto changeover (⌂) / Dehumidifying operation (💧) / Heating operation (🔥) / Air circulation (🌀)
		Jet cooling/heating button* : Warms up or cools down the indoor temperature within a short period of time.
		Air flow direction button* : Adjusts the air flow direction vertically or horizontally.
		Temperature display button : Displays the room temperature.
		Timer button : Sets the current time and the start / end time.
		Navigation and functions button* : Adjusts the time and sets the special functions. ⌂: Auto clean / ⌂: Operates energy saving cooling / 🌞: Adjusts the brightness of the indoor unit display
	-	Set/clear button : Sets or cancels functions.
	-	Reset button : Resets the air conditioner settings.

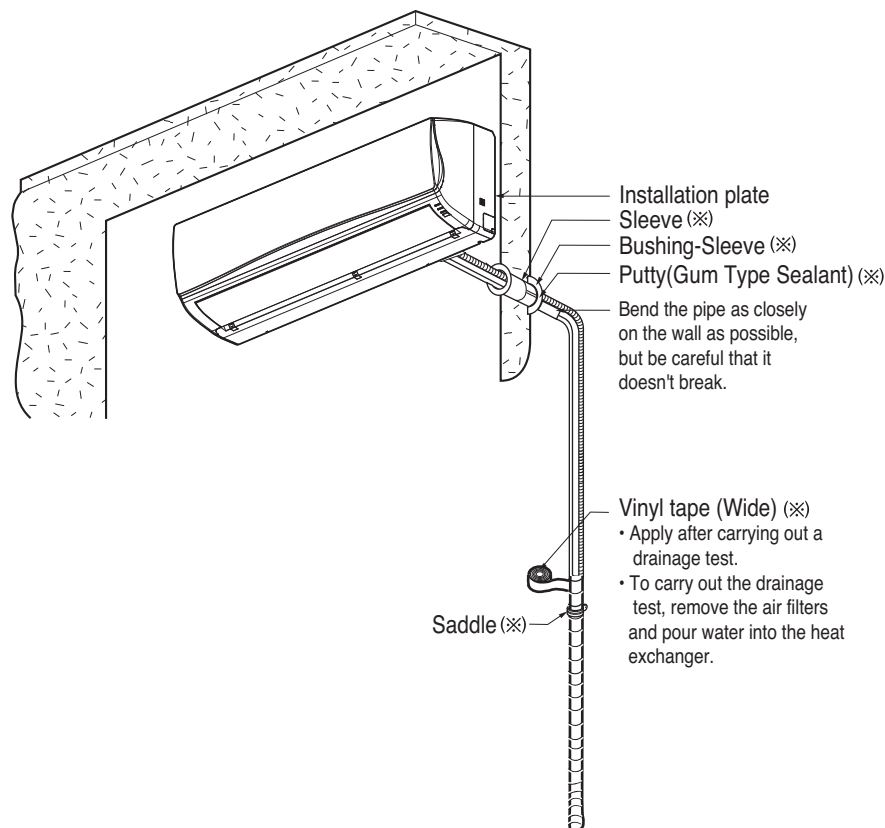
* Some functions may not be supported, depending on the model.

MULTI/SINGLE CAC Indoor unit

1. Wall mounted

1.9 Installation

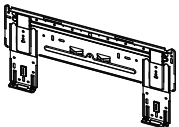
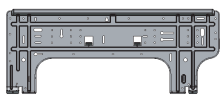
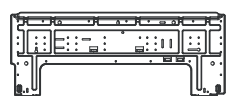
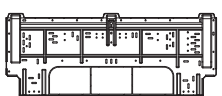







- Please read the instruction sheets completely before installing the product.
- When the power cord is damaged, replacement work shall be performed by authorized personnel only.
- Installation work must be performed in accordance with the national wiring standards by authorized personal only.



1.9.1 Accessories

The following accessories are included with your unit.

1) Standard accessories

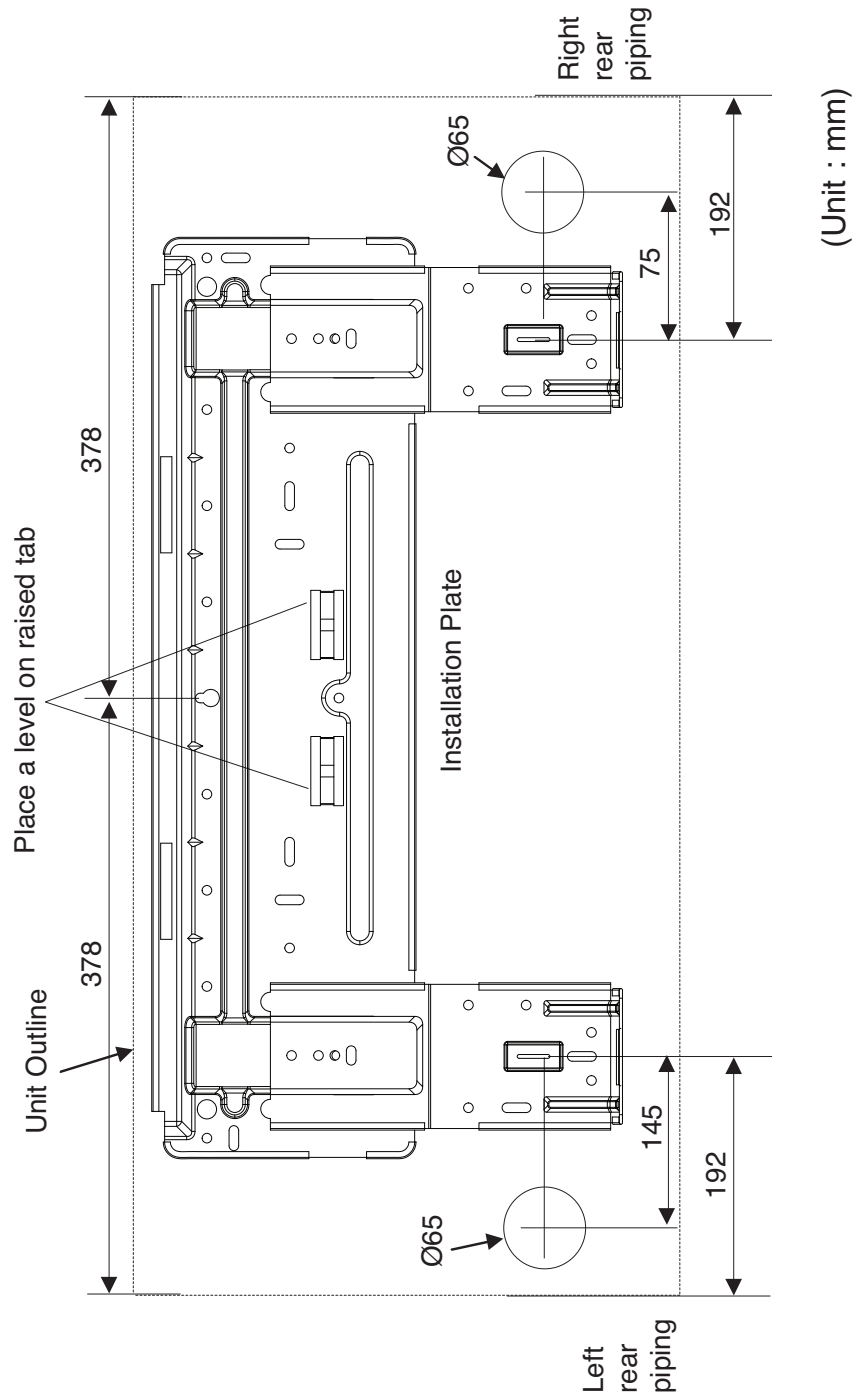
Name	Diagram			
	SW Chassis	SB Chassis	SC Chassis	SV Chassis
Installation Plate				
Type "A" Screws				
Type "B" Screws				 Screw and plastic anchor
Type "C" Screws				-
Remote Controller Holder				

※ The feature can be changed according a type of model.

1. Wall mounted

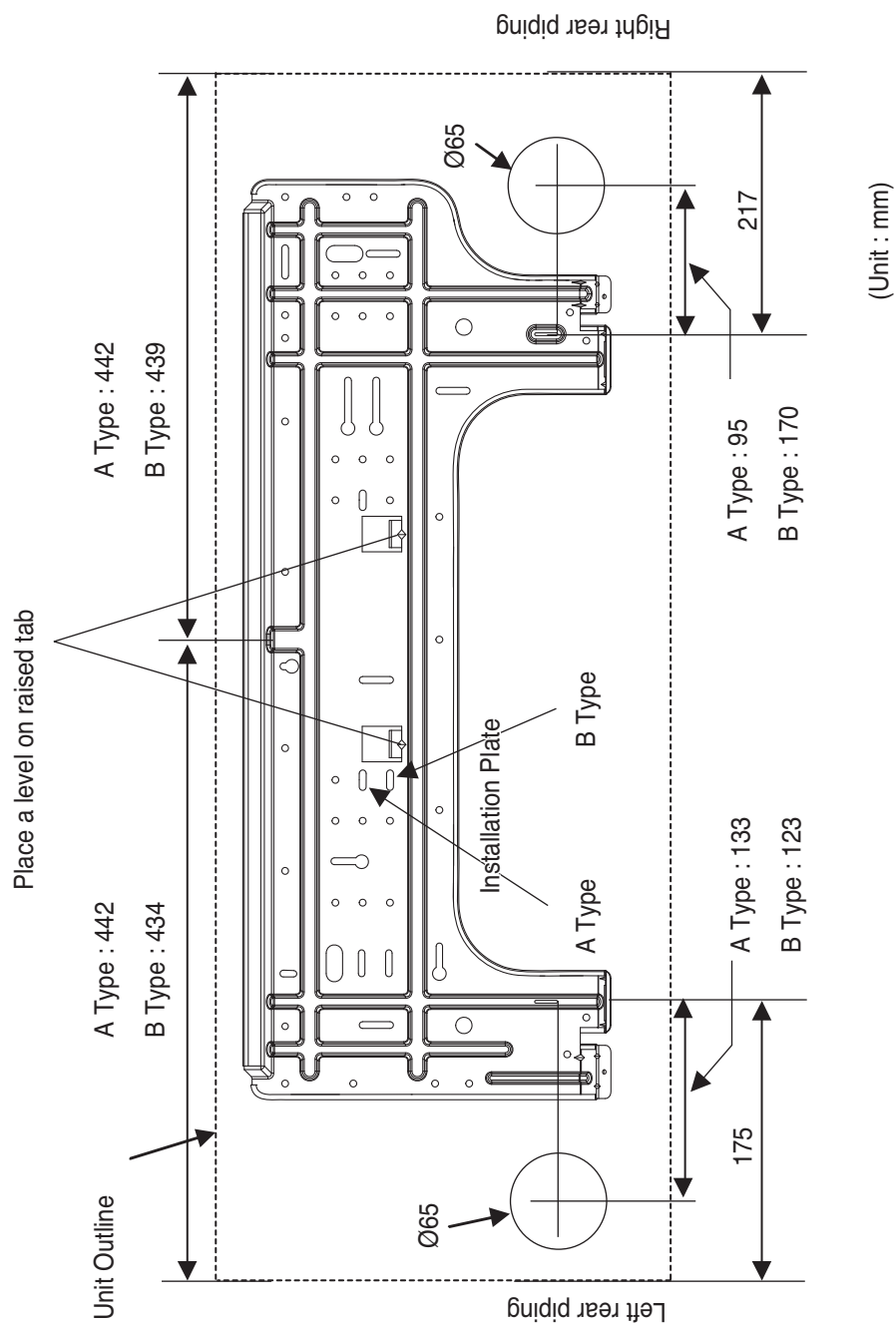
2) Installation plates dimensions

Type 1 : SW Chassis



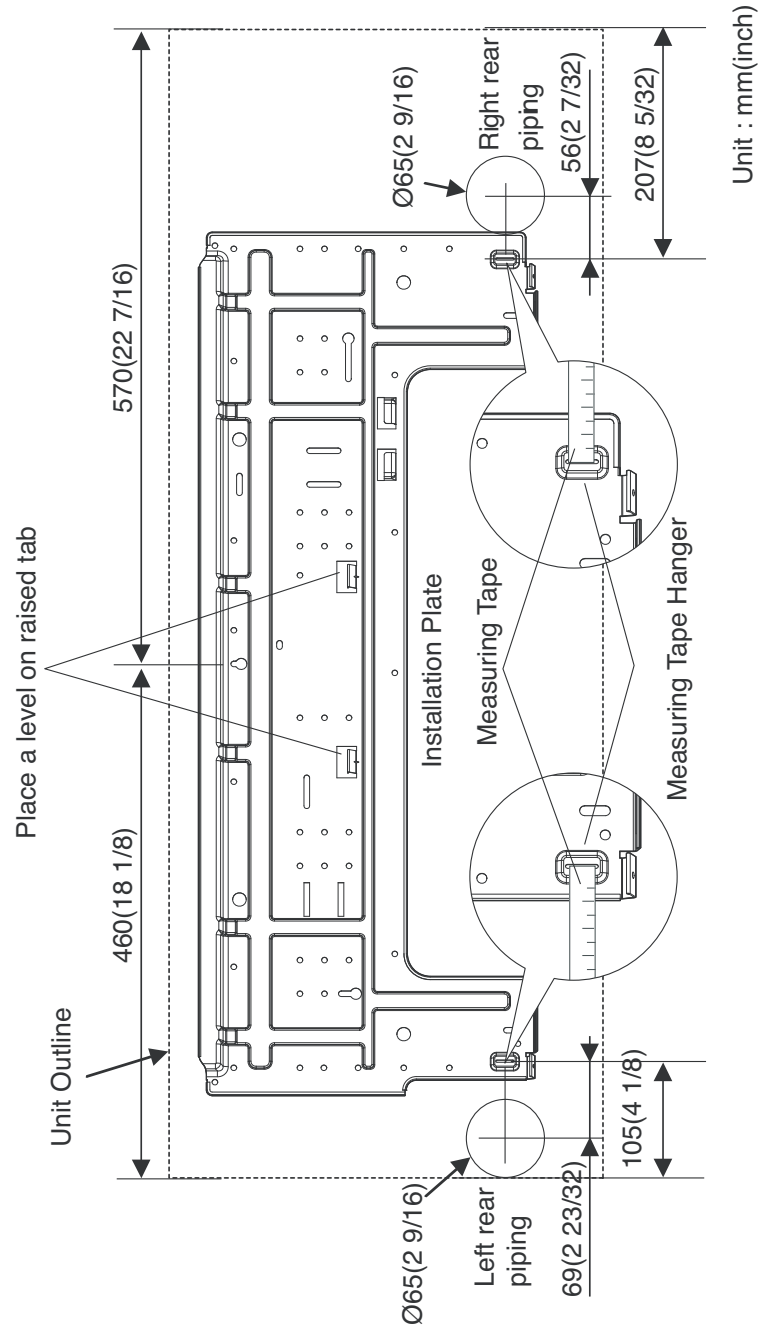
1. Wall mounted

Type 2 : SB Chassis



1. Wall mounted

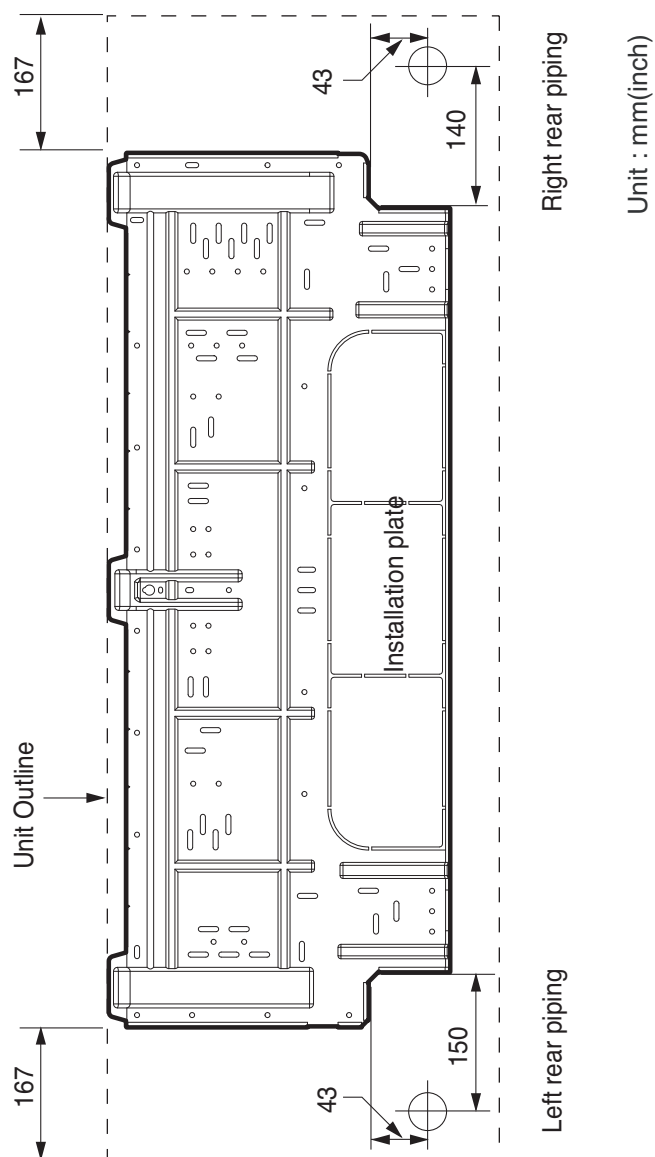
Type 3 : SC Chassis



MULTI/SINGLE CAC Indoor unit

1. Wall mounted

Type 4 : SV Chassis



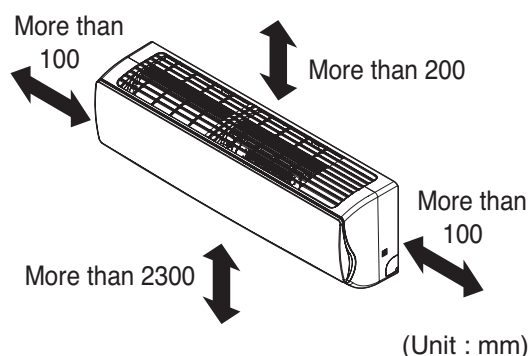
CAUTION

- Use only those accessories (Standard or optional) which have designated specifications

1. Wall mounted

1.9.2 Selection of the best location

- ① There should not be any heat or steam near the unit.
- ② Select a place where there are no obstacles around of the unit.
- ③ Make sure that condensation drainage can be conveniently routed away.
- ④ Do not install near a doorway.
- ⑤ Ensure that the interval between a wall and the left (or right) of the unit is more than 100mm(3 15/16 inch). The unit should be installed as high as possible on the wall, allowing a minimum of 200mm(7 7/8 inch) from ceiling.
- ⑥ Use a metal detector to locate studs to prevent unnecessary damage to the wall.

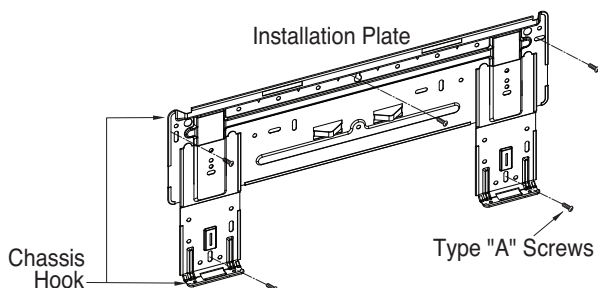


1.9.3 Fixing installation plate

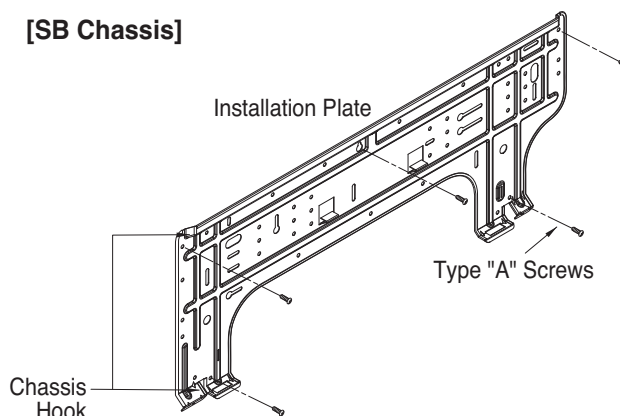
The wall you select should be strong and solid enough to prevent vibration

- ① Mount the installation plate on the wall with type "A" screws. If mounting the unit on a concrete wall, use anchor bolts.
 - Mount the installation plate horizontally by aligning the centerline using Horizontal meter .

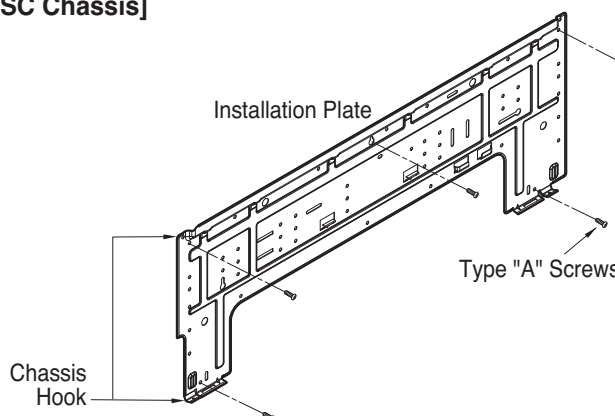
[SW Chassis]



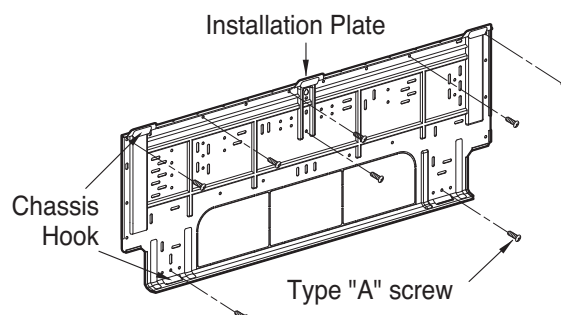
[SB Chassis]



[SC Chassis]



[SV Chassis]



- ② Measure the wall and mark the centerline. It is also important to use caution concerning the location of the installation plate. Routing of the wiring to power outlets is through the walls typically. Drilling the hole through the wall for piping connections must be done safely.

1.9.4 Before piping work

CAUTION

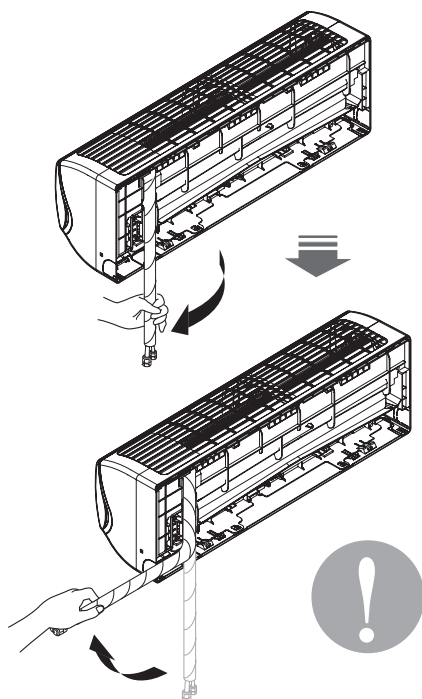
- Installation Information. For right piping. Follow the instruction given below.

MULTI/SINGLE CAC Indoor unit

1. Wall mounted

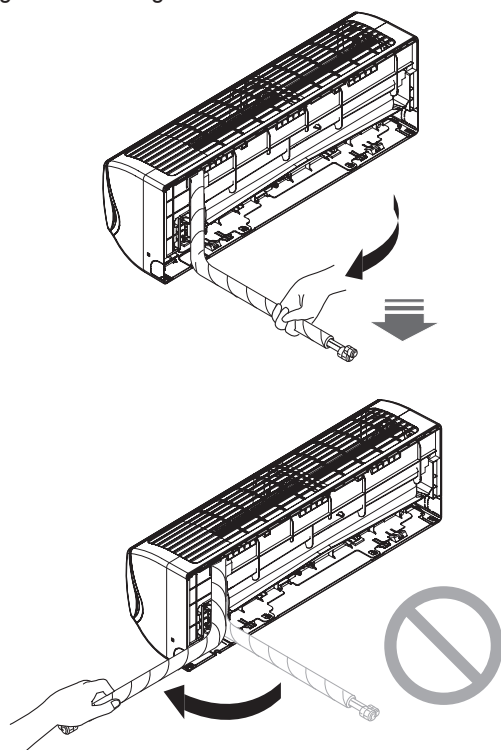
Good case

- Press on the upper side of clamp and unfold the tubing to downward slowly.



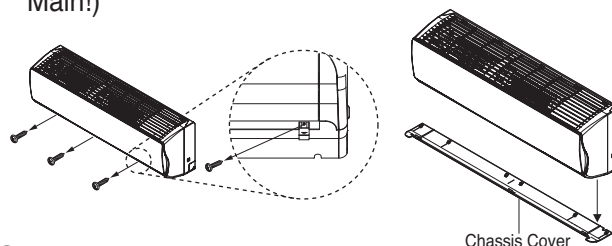
Wrong method

- Following bending type from left to right may cause damage to the tubing.

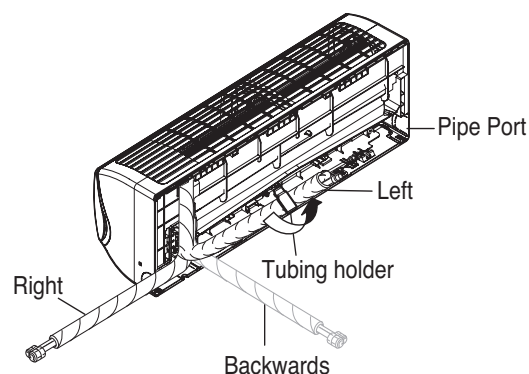


1.9.5 Connecting the piping

- Pull the screw cap at the bottom of the indoor unit
- Remove the chassis cover from the unit by loosening 3 screws (Be careful not to scratch Horizontal Vane Main!)

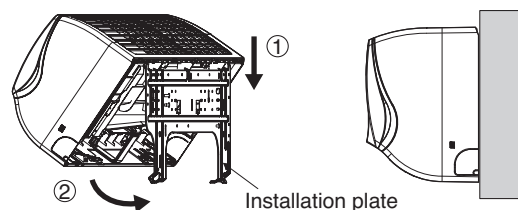


- Pull back the tubing holder.
- Remove pipe port cover and positioning the tubing

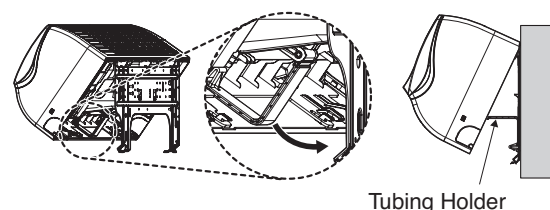


1) Installation of the Unit

- Hook the indoor unit onto the upper portion of the installation plate. (engage the three hooks at the top of the indoor unit with the upper edge of the installation plate) Ensure that the hooks are properly seated on the installation plate by moving it left and right



- Unlock the tubing holder from the chassis and mount between the chassis and installation plate in order to separate the bottom side of the indoor unit from the wall

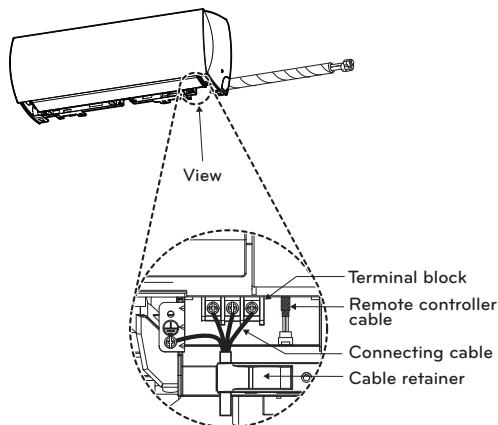


1. Wall mounted

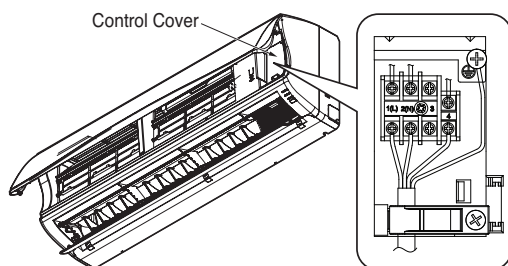
Piping

- ① Insert the connecting cable through the bottom side of indoor unit and connect the cable

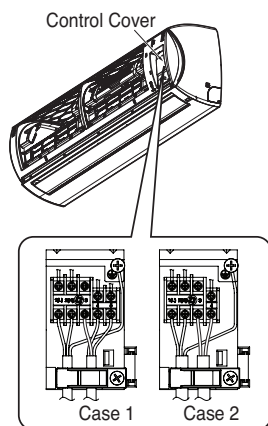
[SB Chassis]



[SC/SW Chassis]



[SV Chassis]



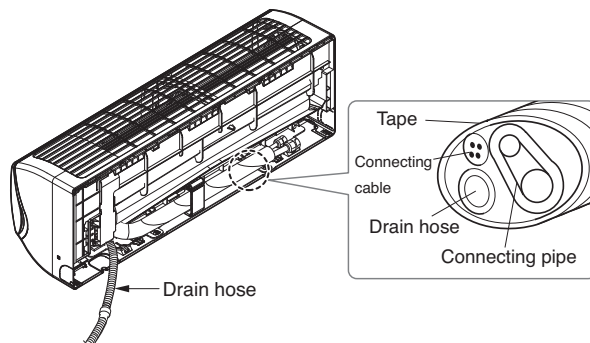
- Open the Front Grille
- Support the Front Grille with supporter
- Open the Control Cover
- Connect the connecting cable

CAUTION

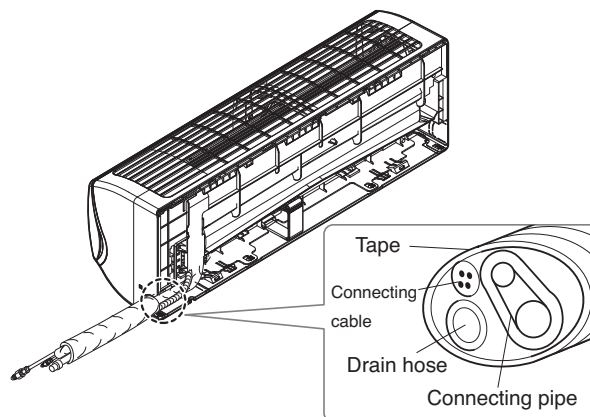
If the drain hose is routed inside the room insulate the hose with an insulation material* so that dripping from sweating (condensation) will not damage furniture or floors.

* Foamed polyethylene or equivalent is recommended.

<Left side piping>

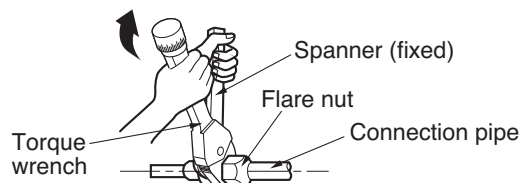
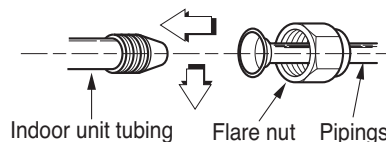


<Right side piping>



2) Connecting the installation pipe and drain hose to the indoor unit.

- ① Align the center of the pipes and sufficiently tighten the flare nut by hand
- ② Tighten the flare nut with a wrench

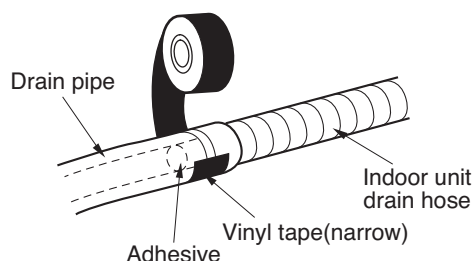


MULTI/SINGLE CAC Indoor unit

1. Wall mounted

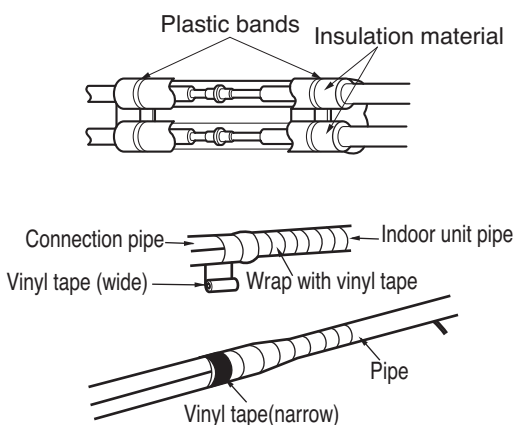
Outside diameter		Torque
mm	inch	N·m
Ø6.35	1/4	16 ± 2
Ø9.52	3/8	38 ± 4
Ø12.7	1/2	55 ± 6
Ø15.88	5/8	75 ± 7
Ø19.05	3/4	110 ± 10

- ③ When needed to extend the drain hose of indoor unit, assemble the drain pipe as shown on the drawing

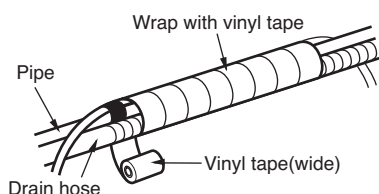


3) Wrap the insulation material around the connecting portion.

- ① Overlap the connection pipe heat insulation and the indoor unit pipe heat insulation material. Bind them together with vinyl tape so that there may be no gap.
- ② Wrap the area which accommodates the rear piping housing section with vinyl tape.

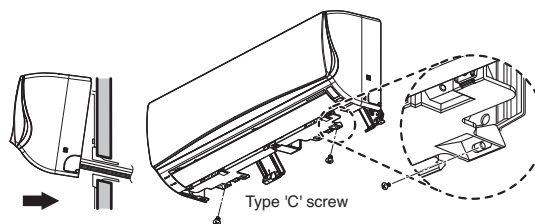


- ③ Bundle the piping and drain hose together by wrapping them with cloth tape over the range within which they fit into the rear piping housing section.



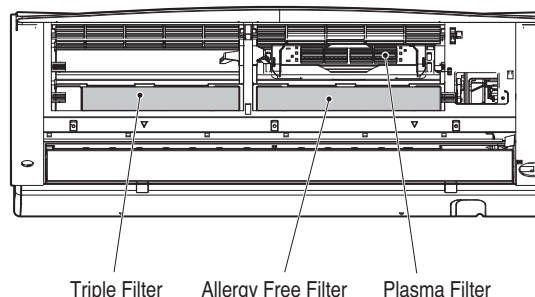
4) Finishing the indoor unit installation

- ① Mount the tubing holder in the original position.
- ② Ensure that the hooks are properly seated on the installation plate by moving it left and right.
- ③ Press the lower left and right sides of the unit against the installation plate until the hooks engage into their slots (clicking sound).
- ④ Finish the assembly by screwing the unit to the installation plate by using two pieces of type "C" screws. And assemble a chassis cover.



Installation of filters

- ① Pull out the triple filter and allergy free filter from the separately packed plastic bag.
- ② Insert the triple filter into the left case and insert the allergy free filter into the right case.
- ③ Detach two nitto tapes from the plasma filter.

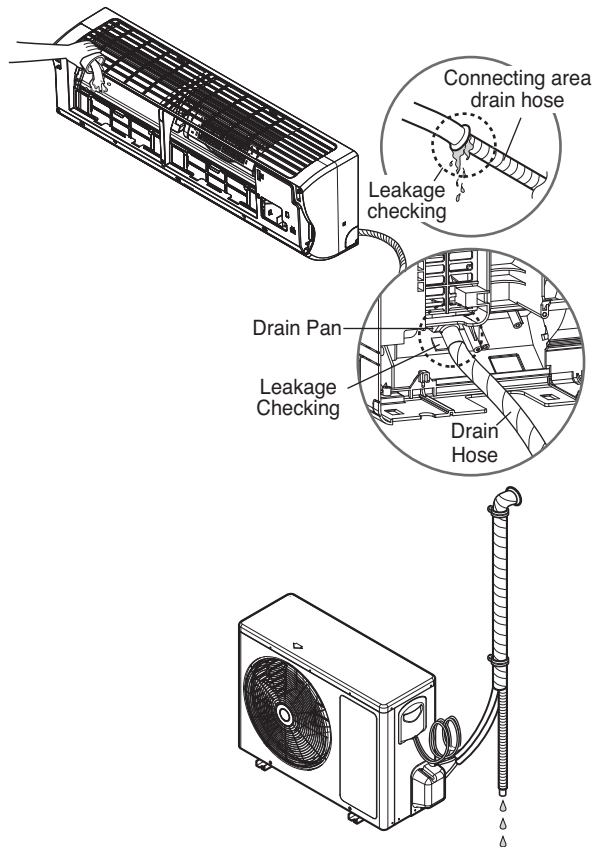


1. Wall mounted

1.9.6 Checking the Drainage

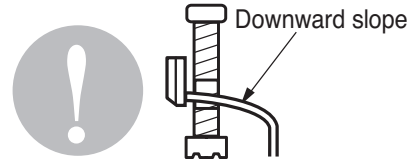
1) To check the drainage.

- ① Pour a glass of water on the evaporator.
- ② Ensure the water flows through the drain hose of the indoor unit without any leakage and goes out the drain exit.

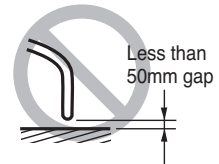
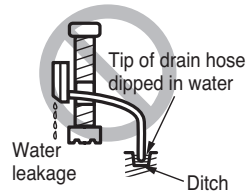
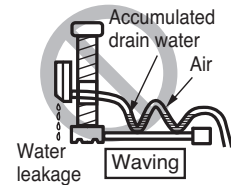
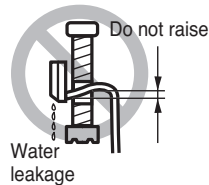


2) Drain piping

- ① The drain hose should point downward for easy drain flow.



- ② Do not make drain piping like the following.



MULTI/SINGLE CAC

Indoor unit

ART COOL

- 1. List of functions**
- 2. Specifications**
- 3. Dimensions**
- 4. Piping diagrams**
- 5. Wiring Diagrams**
- 6. Air flow and temperature distributions (reference data)**
- 7. Sound levels**
- 8. Controller**
- 9. Installation**

2. ART COOL

2.1 List of functions

Category	Functions	AMNH09GAF*1 [MA09AH* NF1], AMNH12GAF*1 [MA12AH* NF1]
Air flow	Air supply outlet	3
	Airflow direction control (left & right)	Auto
	Airflow direction control (up & down)	Auto
	Auto swing (left & right)	O
	Auto swing (up & down)	O
	Airflow steps (fan/cool/heat)	3 / 4 / 3
	Chaos wind(auto wind)	O
	Jet cool/heat	O / X
	Swirl wind	X
Air purifying	Triple filter (Deodorizing)	O
	Plasma air purifier	O
	Allergy Safe filter	X
	Long-life prefilter (washable / anti-fungus)	O
Installation	Drain pump	X
	E.S.P. control	X
	Electric heater	X
	High ceiling operation	X
	Auto Elevation Grille	X
Reliability	Hot start	O
	Self diagnosis	O
Convenience	Auto changeover	X
	Auto cleaning	O
	Auto operation(artificial intelligence)	O
	Auto Restart	O
	Child lock	X
	Forced operation	O
	Group control	X
	Sleep mode	O
	Timer(on/off)	O
	Timer(weekly)	X
	Two thermistor control	X
Individual controller	Wired remote controller	X
	Premium Wired remote controller	X
	Simple wired remote controller	X
	Simple Wired remote controller(for hotel use)	X
	Wireless remote controller	O
Network Solution	General central controller (Non LGAP)	X
	Network Solution(LGAP)	O
	Simple Dry contact (outside AC 220V power source)	PQDSA / PDRYCB000
	2 Points Dry Contact (For setback)	PDRYCB400
	Dry contact for Thermostat	PDRYCB300
Special function kit	PI 485(for Indoor Unit)	X
	Zone controller	X
	CTI(Communication transfer interface)	X
	Electronic thermostat	X
Others	Remote temperature sensor	X
	Telecom shelter controller	X

Note

O : Applied X : Not applied

Accessory model name : Installed at field, ordered and purchased separately by the corresponding model name, supplied with separate package.

2. ART COOL

2.2 Specification

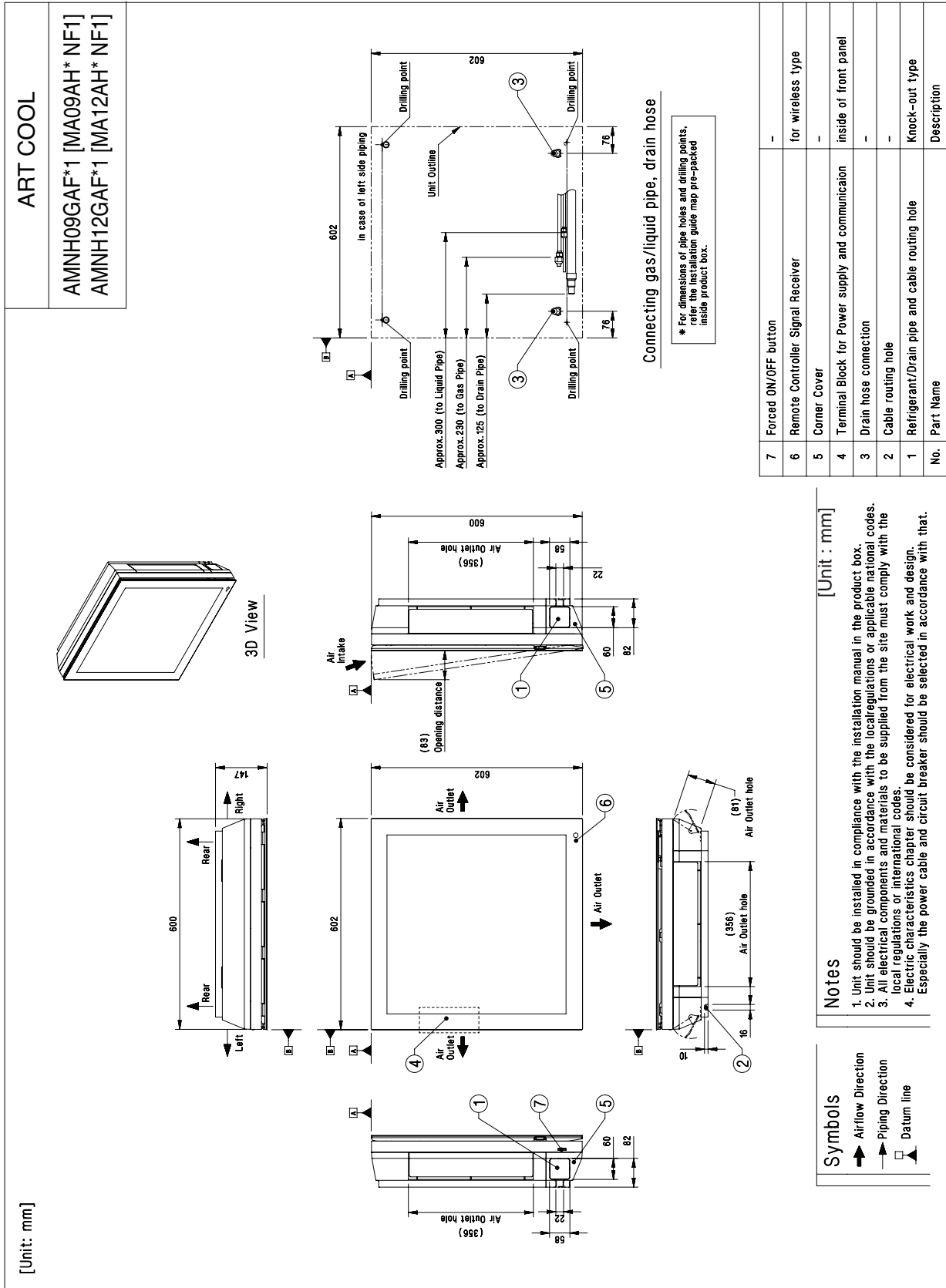
Model Name				AMNH09GAF*1 [MA09AH* NF1]	AMNH12GAF*1 [MA12AH* NF1]
Power Supply			V, Ø, Hz	220-240, 1, 50	220-240, 1, 50
				220, 1, 60	220, 1, 60
Power Input			W x No.	40 x 1	40 x 1
Running Current			A	0.1	0.1
Casing Color			-	Magic Gray	Magic Gray
Dimensions	Body	W x H x D	mm	600 x 600 x 145	600 x 600 x 145
		W x H x D	inch	23-5/8 x 23-5/8 x 5-23/32	23-5/8 x 23-5/8 x 5-23/32
Net Weight	Body		kg (lbs)	15.0 (33.1)	15.0 (33.1)
Heat Exchanger	(Row x Column x Fins per inch) x No.		-	(2 x 20 x 21) x 1	(2 x 20 x 21) x 1
	Face Area		m² (ft²)	0.18 (1.92)	0.18 (1.92)
Fan	Type		-	Turbo Fan	Turbo Fan
	Air Flow Rate	H / M / L	m³/min	7.7 / 5.9 / 4.4	8.9 / 7.3 / 5.6
		H / M / L	ft³/min	272 / 208 / 155	314 / 258 / 198
Fan Motor	Type		-	BLDC	BLDC
	Output		W x No.	24 x 1	24 x 1
Sound Pressure Level		H / M / L	dB(A)	38 / 32 / 27	44 / 38 / 32
Sound Power Level		Max.	dB(A)	52	54
Piping Connections	Liquid		mm(inch)	Ø 6.35 (1/4)	Ø 6.35 (1/4)
	Gas		mm(inch)	Ø 9.52 (3/8)	Ø 9.52 (3/8)
	Drain (O.D. / I.D.)		mm	Ø 21.5 / 16.0	Ø 21.5 / 16.0
Safety Devices			-	Fuse	Fuse
			-	Thermal Protector for Fan Motor	Thermal Protector for Fan Motor
Power and Communication Cable (included Earth)			No. x mm² (AWG)	4C x 0.75 (18)	4C x 0.75 (18)

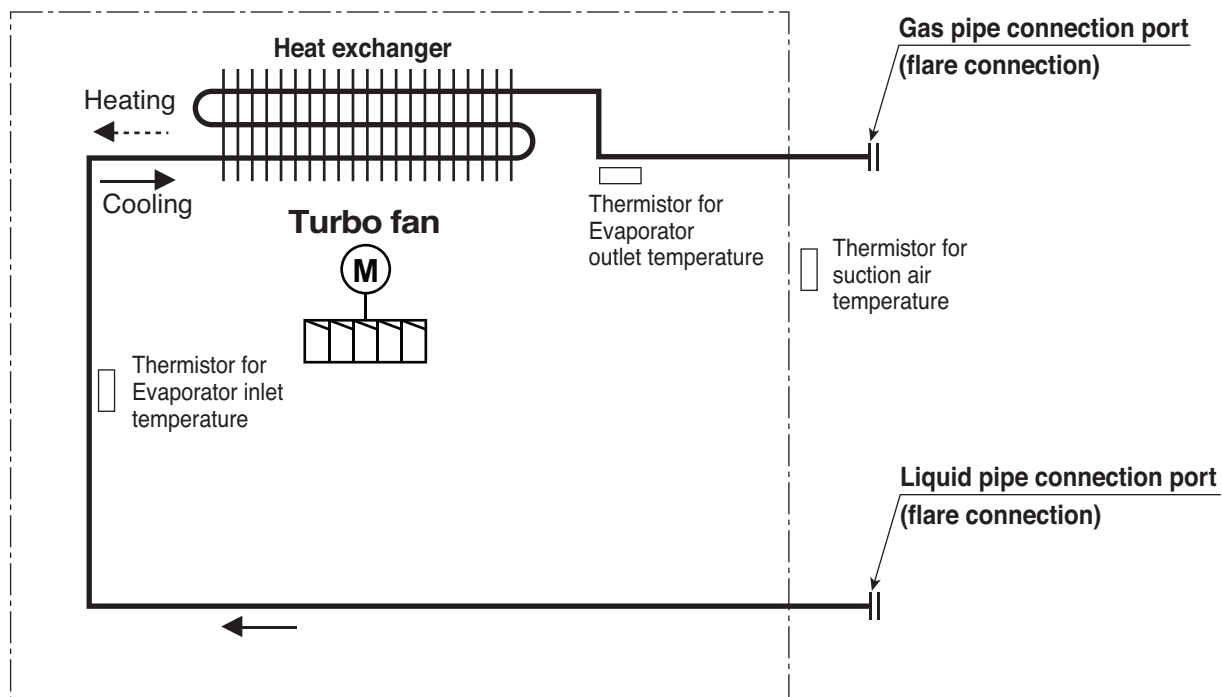
Notes :

1. Wiring cable size must comply with the applicable local and national code.
2. Due to our policy of innovation some specifications may be changed without notification.
3. Sound Level Values are measured at Anechoic chamber.
Therefore, these values can be increased owing to ambient conditions during operation.

2. ART COOL

2.3 Dimensions



MULTI/SINGLE CAC Indoor unit**2. ART COOL****2.4 Piping diagrams**

Description	PCB Connector
Thermistor for suction air temperature	CN-TH1
Thermistor for evaporator inlet temperature	
Thermistor for evaporator outlet temperature	CN-TH2

■ Refrigerant pipe connection port diameters

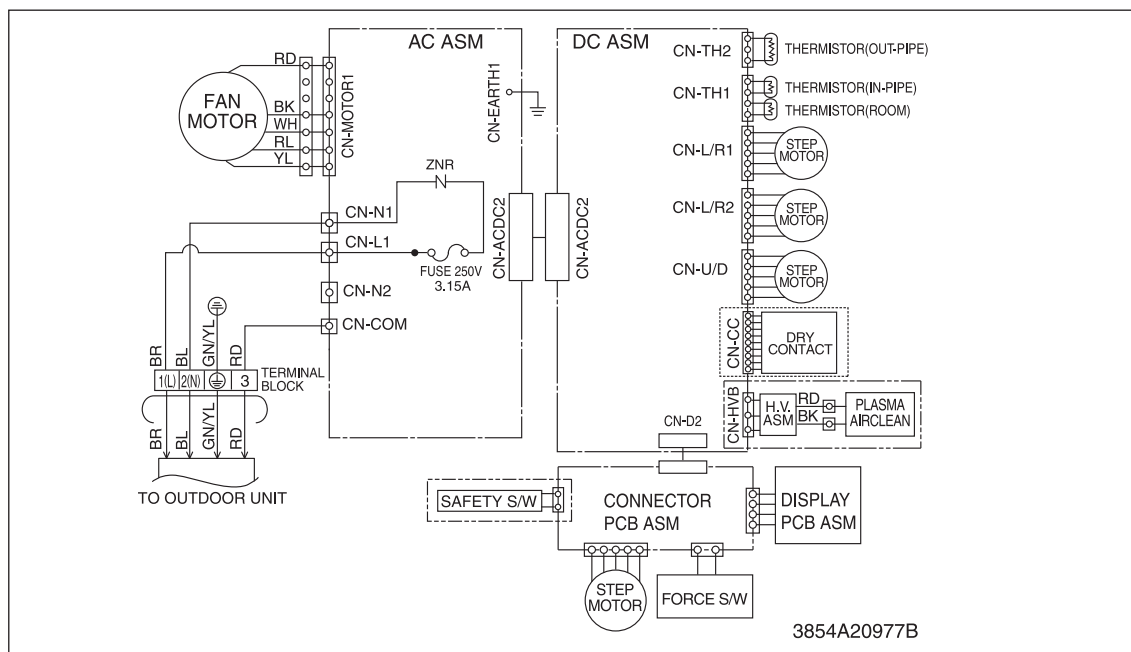
[Unit : mm]

Model	Gas	Liquid
AMNH09GAF*1 [MA09AH* NF1] AMNH12GAF*1 [MA12AH* NF1]	Ø9.52	Ø6.35

2. ART COOL

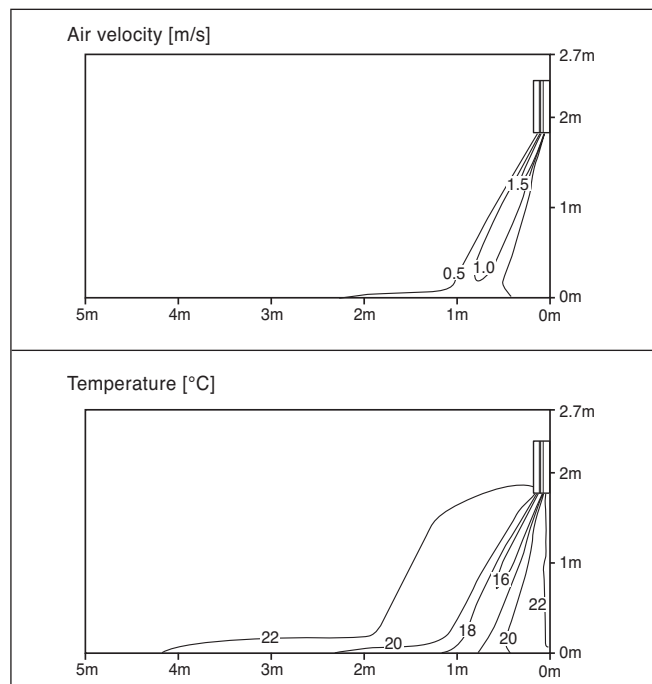
2.5 Wiring diagrams

Models : AMNH09GAF*1 [MA09AH* NF1], AMNH12GAF*1 [MA12AH* NF1]

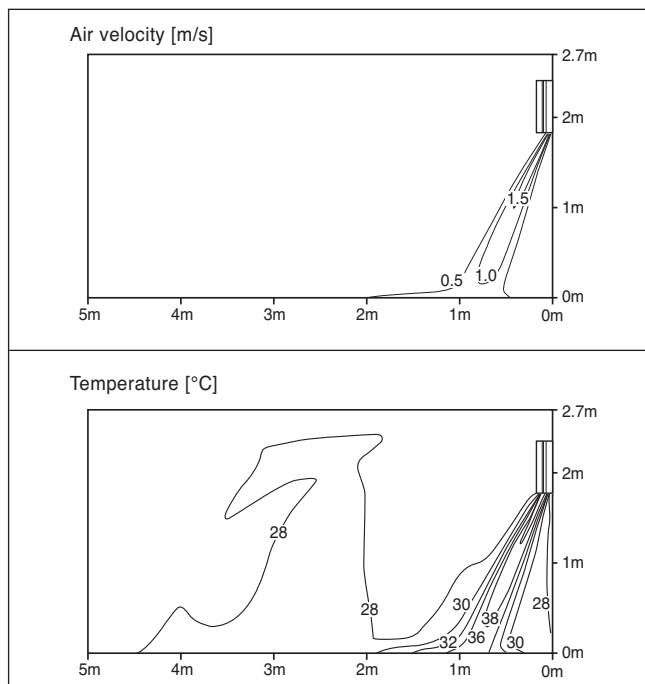


MULTI/SINGLE CAC Indoor unit**2. ART COOL****2.6 Air flow and temperature distributions (reference data)****Model : AMNH09GAF*1 [MA09AH* NF1]****Cooling**

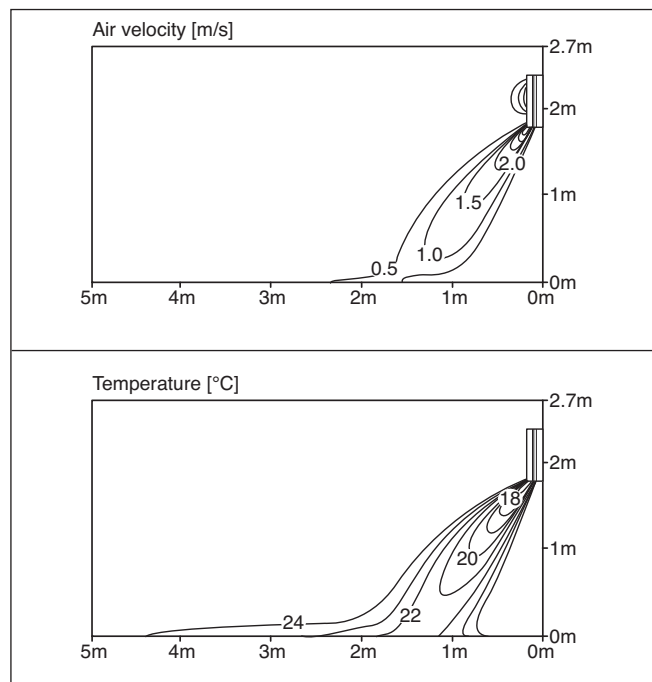
Discharge angle: 20°

**Heating**

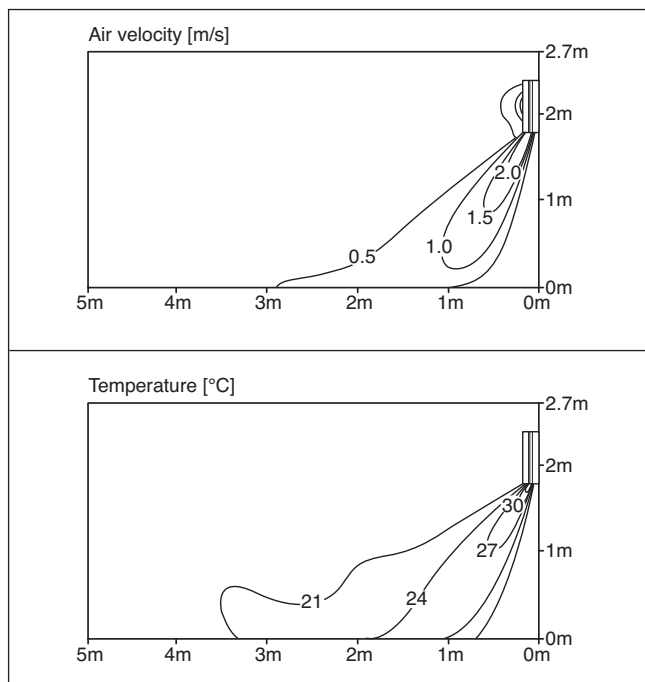
Discharge angle: 20°

**Model : AMNH12GAF*1 [MA12AH* NF1]****Cooling**

Discharge angle: 40°

**Heating**

Discharge angle: 50°

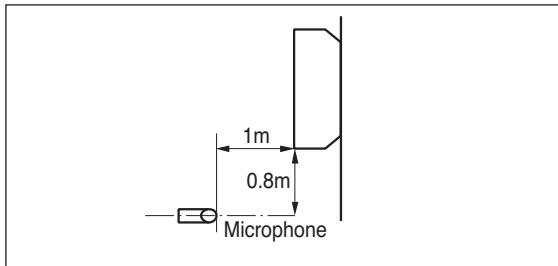


2. ART COOL

2.7 Sound levels

2.7.1 Sound pressure level

Overall

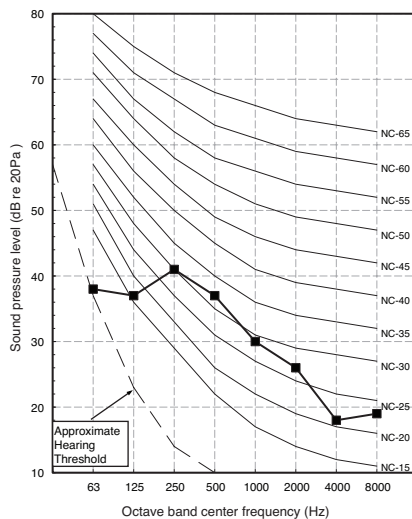


Notes:

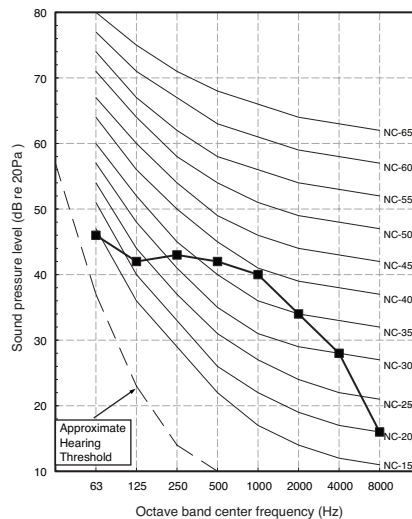
- Sound measured at 1m away from the center of the unit.
- Data is valid at free field condition.
- Data is valid at nominal operation condition.
- Reference acoustic pressure 0dB=20μPa.
- Sound level will vary depending on a range of factors such as the construction(acoustic absorption coefficient) of particular room in which the equipment is installed.
- The operating conditions are assumed to be standard.

Model	50Hz, 220-240V		
	Sound pressure Levels [dB(A)]		
	H	M	L
AMNH09GAF*1 [MA09AH* NF1]	38	32	27
AMNH12GAF*1 [MA12AH* NF1]	44	38	32

AMNH09GAF*1[MA09AH* NF1]



AMNH12GAF*1[MA12AH* NF1]



2. ART COOL

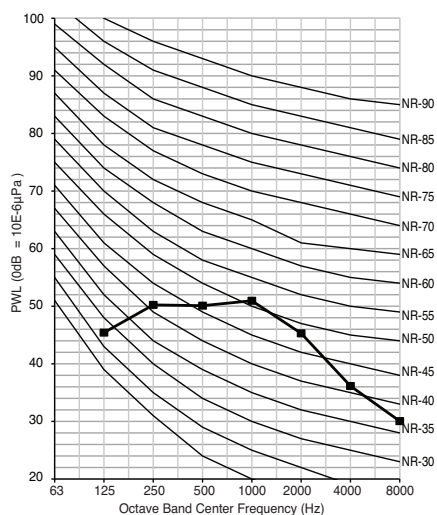
2.7.2 Sound power level

Notes:

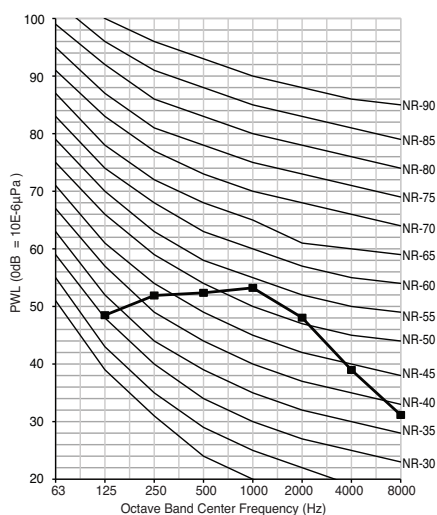
1. Reference acoustic intensity $0\text{dB} = 10\text{E-}6\mu\text{W/m}^2$
2. Sound level will vary depending on a range of factors such as the construction (acoustic absorption coefficient) of particular room in which the equipment is installed.

Model	Sound power level [dB(A)]
	H
AMNH09GAF*1 [MA09AH* NF1]	52
AMNH12GAF*1 [MA12AH* NF1]	54

AMNH09GAF*1 [MA09AH* NF1]



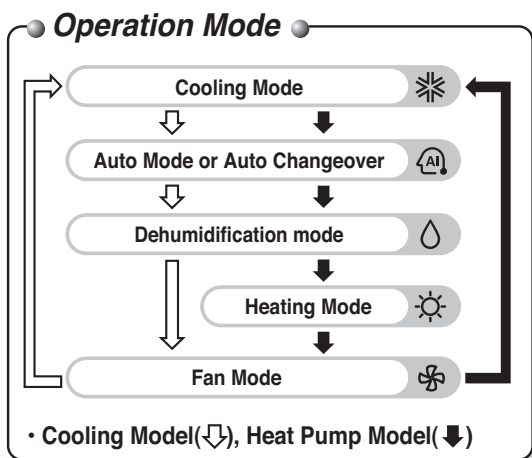
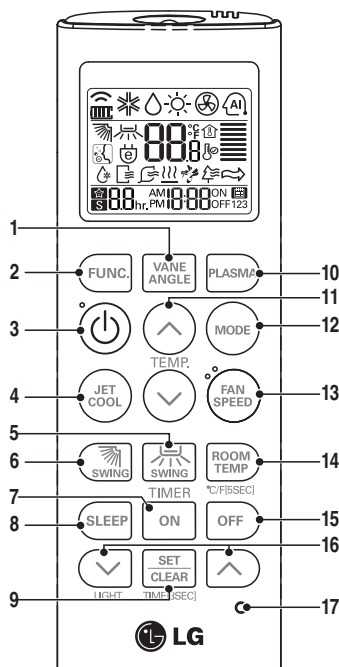
AMNH12GAF*1 [MA12AH* NF1]



2. ART COOL

2.8 Controller

Wireless remote control



1. VANE ANGLE Button

Used to set each vane angle.

2. FUNCTION SETTING Button

Used to set or clear Auto Clean, Smart Clean, Electric heater or Individual vane angle control.

3. ON/OFF Button

Used to turn on/off the unit.

4. JET COOL Button

Speed cooling operates super high fan speed.

5. LEFT/RIGHT AIRFLOW Button (OPTIONAL)

Used to set the desired left/right(horizontal) airflow direction.

6. UP/DOWN AIRFLOW Button

Used to stop or start louver movement and set the desired up/down airflow direction.

7. ON TIMER Button

Used to set the time of starting operation.

8. SLEEP TIMER Button

Used to set the time of sleeping operation.

9. SET / CLEAR Button

Used to set/clear the timer.

Used to set the current time(if it input for 3sec.)

10. PLASMA Button (OPTIONAL)

Used to start or stop the plasma-purification function.

11. ROOM TEMPERATURE SETTING Button

Used to select the room temperature.

12. OPERATION MODE SELECTION Button

Used to select the operation mode.

13. INDOOR FAN SPEED SELECTION Button

Used to select fan speed in four steps low, medium, high and chaos.

14. ROOM TEMPERATURE CHECKING Button

Used to check the room temperature.

15. OFF TIMER Button

Used to set the time of stopping operation.

16. TIMER SETTING(Up/Down)/LIGHT Button

Used to set the timer.

Used to adjust the brightness.(if it is not time adjust mode)

17. RESET Button

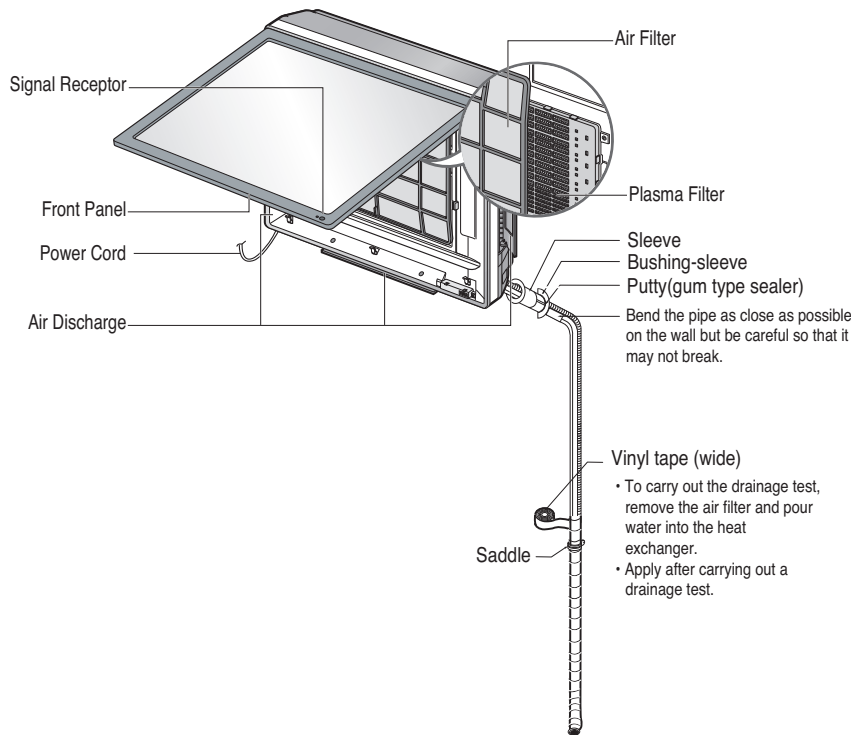
Used to reset the remote controller.

MULTI/SINGLE CAC Indoor unit

2. ART COOL

2.9 Installation

- Please read the instruction sheets completely before installing the product.
- When the power cord is damaged, replacement work shall be performed by authorized personnel only.
- Installation work must be performed in accordance with the national wiring standards by authorized personnel only.

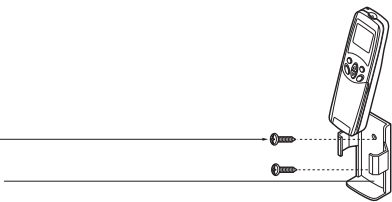


2.9.1 Accessories

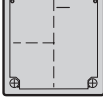

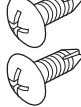
Check the following accessories are included with your unit.

1) Standard accessories

1. Type "B" screws
2. Holder remote control



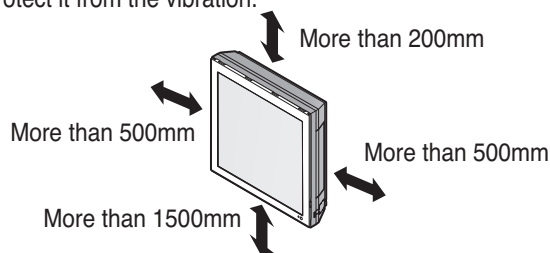
Cooling & heating model has included drain elbow.

Name	Installation guide map	Securing screws		(Other)
Quantity	1 EA	4 EA	2 EA	
Diagram		Type "A" screw plastic anchors 	Type "B" screw  M4 x 12L	
<ul style="list-style-type: none">• Owner's manual• Installation manual				

2. ART COOL

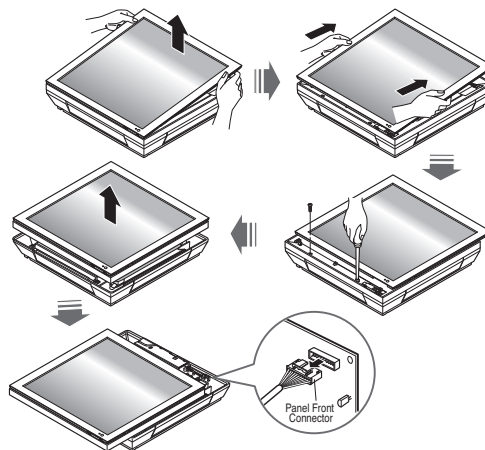
2.9.2 Selection of the best location

- Do not have any heat or steam near the unit.
- Select a place where there are no obstacles in front of the unit.
- Make sure that condensation drainage can be conveniently routed away.
- Do not install near a doorway.
- Ensure that the interval between a wall and the left (or right) of the unit is more than 500mm. The unit should be installed as high as possible on the wall, allowing a minimum of 200mm from ceiling.
- Use a stud finder to locate studs to prevent unnecessary damage to the wall.
- The mounting wall should be strong and solid enough to protect it from the vibration.



CAUTION

- Install the indoor unit on the wall where the height from the floors is more than 1.5 meters.

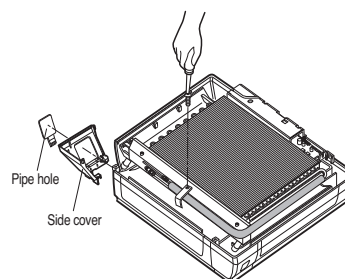


2) Removing pipe cover and side cover

- ① Remove the screw of the center tuning cover.
- ② Pull up the side cover of desired connecting direction, then cover side is separated.
- ③ Pick the pipe hole of the side cover

CAUTION

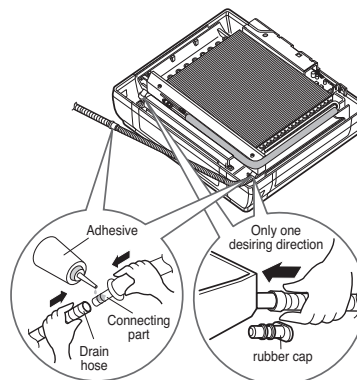
- After removing the pipe hole, cut the burr for safety.



When connecting pipe path through rear wall, don't remove the hole.

3) Drain hose junction

- ① Remove the rubber stopped in the desired drain direction.
- ② Insert drain hose into the handle of drain pan, and join drain hose and connecting hose according to the figure by.



2.9.3 Preparing work for installation

1) Open front panel

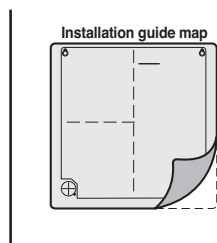
- ① Pull the upper part of the front panel
- ② Lift up the panel
- ③ To detach the front panel, remove the two screws at the lower part
- ④ Detach the front panel from the body
- ⑤ To detach the panel, disconnect the connector at the upper part

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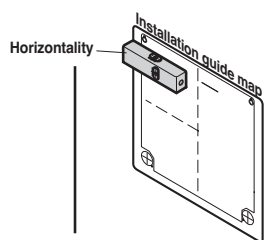
2. ART COOL

4) Sticking the installation guide map and fixing indoor unit

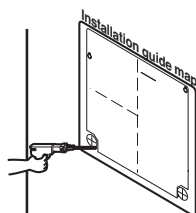
- ① Put up the installation guide map on the desired surface.



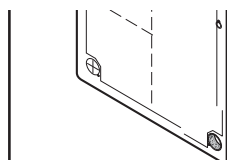
- ② Check the level by horizontal meter and fix lightly the map by adhesive tape.



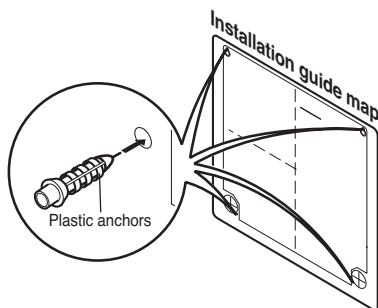
- ③ Make a hole with diameter of 6mm and depth of 30-35mm when piercing a screw point.



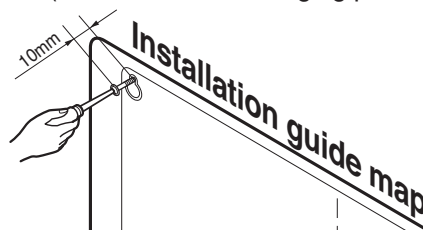
- ④ Drill the piercing part for connecting pipe as diameter 50mm. (In case of piercing rear surface)



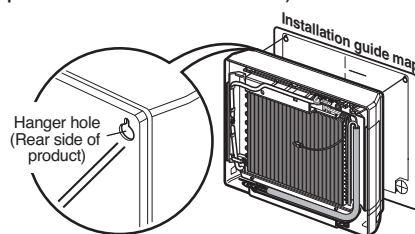
- ⑤ Drive the four plastic anchors into drilled points.



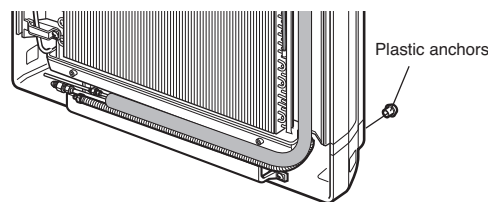
- ⑥ First, drive the two points of the upper parts by screws. (Leave 10mm for hanging product)



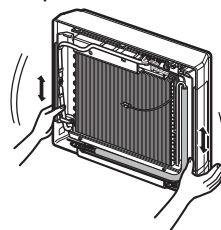
- ⑦ Hang the hole of product at the upper screws. (at this time, remove the map) (Make sure the product do not fall down)



- ⑧ Drive the lower parts after facing the hole of product with plastic anchors, and fix completely the upper screws.



- ⑨ Check if the product is fixed properly by slightly moving the product.



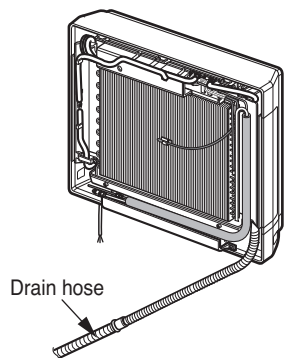
- ⑩ If nothing is wrong till now then connect the pipe and the wire. (Refer to the installation manual reference)

2. ART COOL

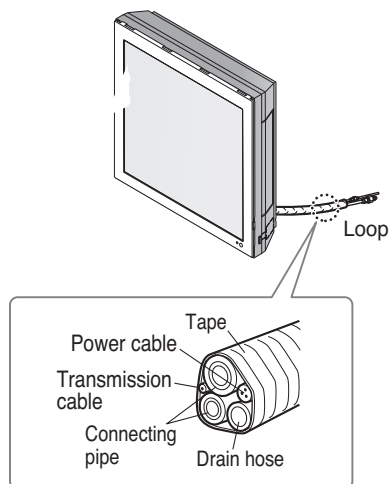
2.9.4 Connection of piping

- Preparing the indoor unit's piping and drain hose for installation through the wall.

1) Route the indoor tubing and the drain hose in the direction of rear left or right



2) Tape the tubing, drain hose and the connecting cable. Make sure that the drain hose is located at the lowest side of the bundle. Locating at the upper side can cause drain pan to overflow inside the unit.



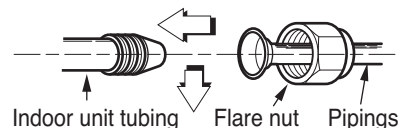
NOTE

If the drain hose is routed inside the room, insulate the hose with an insulation material* so that dripping from condensation will not damage furniture or floors.

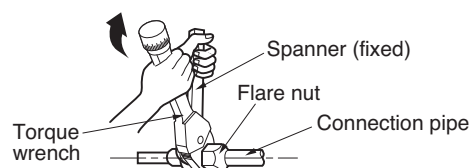
*Foamed polyethylene or equivalent is recommended.

3) Connecting the pipings to the indoor unit and drain hose to drain pipe

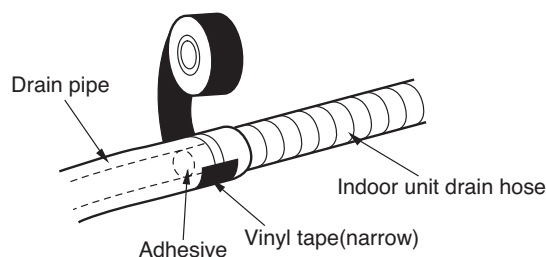
- Align the center of the pipings and sufficiently tighten the flare nut by hand.



- Tighten the flare nut with a wrench.

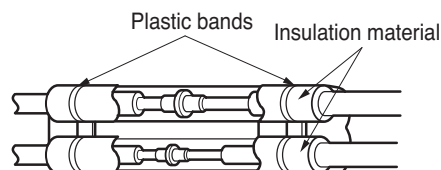


- When extending the drain hose at the indoor unit, install the drain pipe.



4) Wrap the insulation material around the connecting portion.

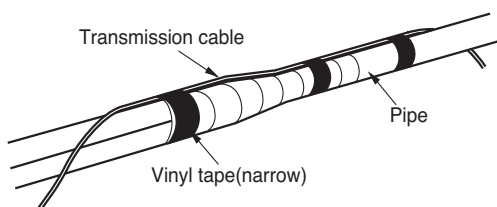
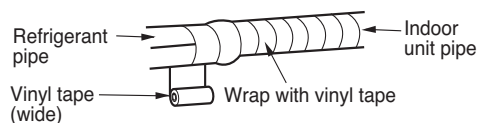
- Overlap the connection pipe insulation material and the indoor unit pipe insulation material. Bind them together with vinyl tape so that there is no gap.



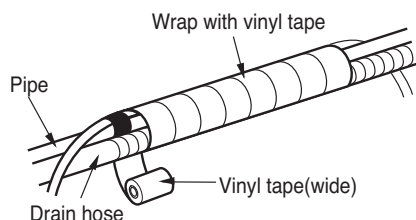
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2. ART COOL

- ② Wrap the area which accommodates the rear piping housing section with vinyl tape.



- ③ Bundle the piping and drain hose together by wrapping them with vinyl tape over the range within which they fit into the rear piping housing section.



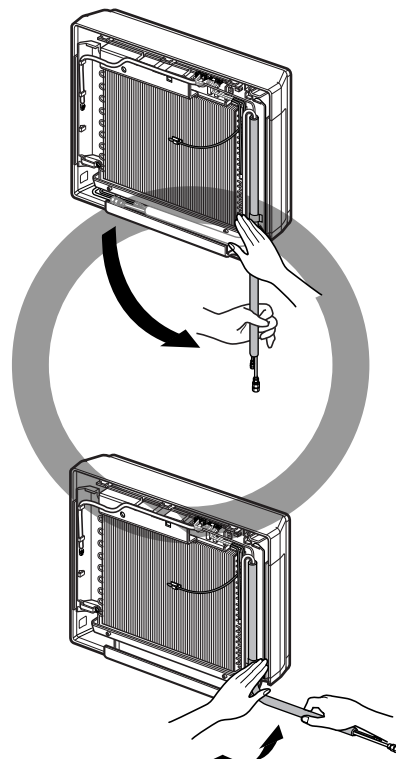
⚠ WARNING

Installation Information (For right piping)

• Correct method

For right piping, follow the instruction given below.

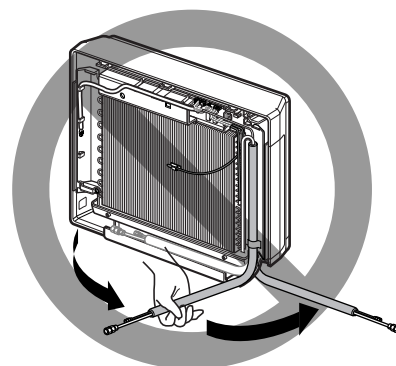
- 1 Press on the upper side of clamp and unfold the tubing to downward slowly.



- 2 Bend the tubing to the right side of chassis.

• Wrong method

- 1 Following bending type from left to right could cause problem of pipe damage.

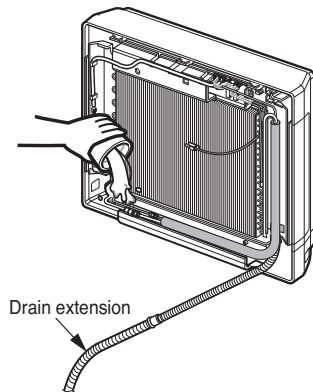


2. ART COOL

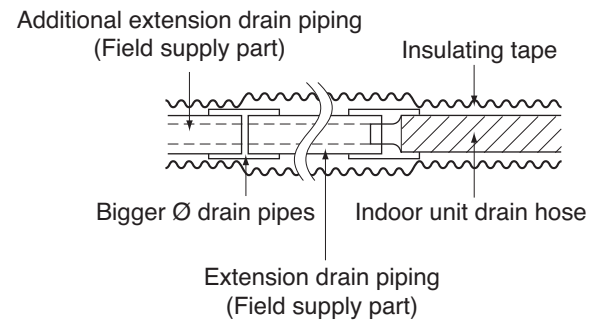
2.9.5 Checking the drainage

1) To check the drainage.

- ① Pour a glass of water on the evaporator.
- ② Ensure the water flows through the drain hose of the indoor unit without any leakage and goes out of the drain exit.
- ③ Do not use 'Anti freezing solution'



- When extending the drain hose, use a commercially available drain extension hose, and be sure to insulate the extended section of the drain hose which is indoors.

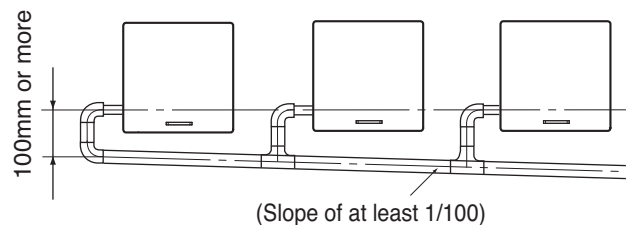
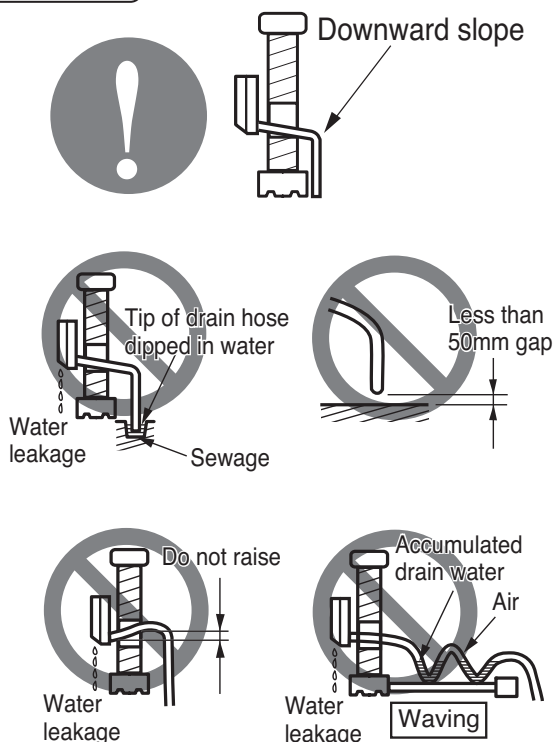


- Make sure the diameter of the extension drain piping is the same as the indoor unit drain hose size or bigger.
- In case of converging multiple drain pipes, install them referring to figure given below.
- Select diameter of drain piping which adapts to the capacity of the unit connected.

2) Drain piping

- The drain hose should point downward for easy drain flow.

CAUTION

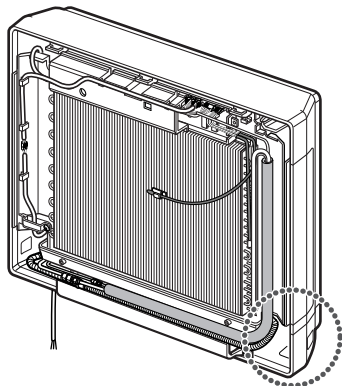


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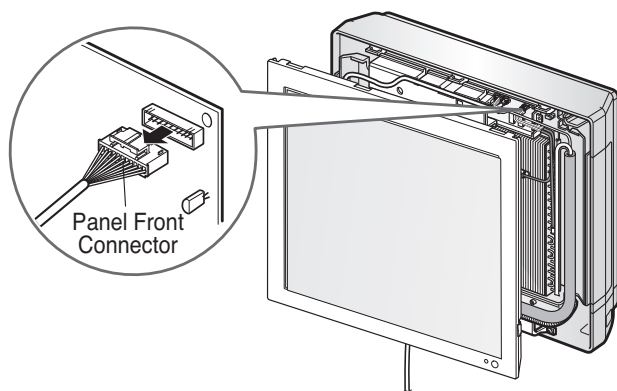
2. ART COOL

2.9.6 Front panel assembly

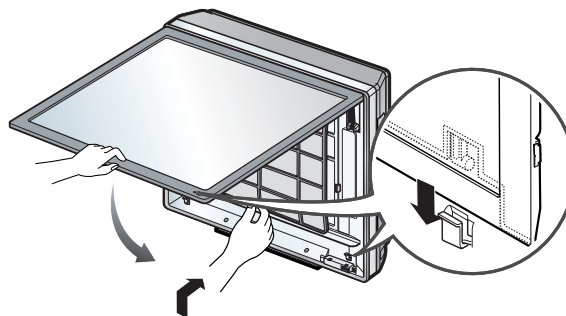
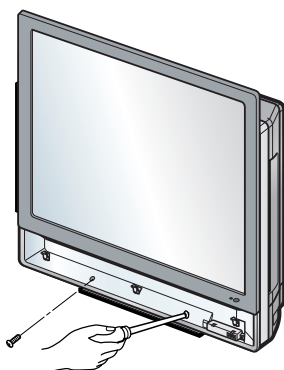
- ① First, check the side cover assembly exactly then fix power cord in the bottom groove of cover's left side.



- ② Assemble connecting lead wire with controller and first fix the upper part of panel front then match the lower part of panel front

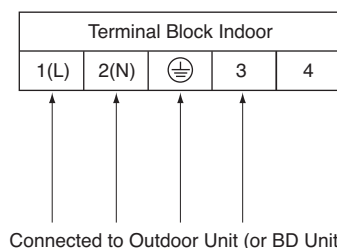


- ③ Screw up panel front, and suspend the Hook of panel front in the groove



2.9.7 Connecting the cable

- ① Connect the cable to the indoor unit by connecting the wires to the terminals on the control board individually according to the outdoor unit connection. (Ensure that the color of the wires of the outdoor unit and the terminal no. are the same as those of the indoor unit.)
The earth wire should be longer than the common wires.



- ② When installing, refer to the circuit diagram on the control box of indoor unit.
- When installing, refer to the wiring diagram on the control cover inside outdoor unit.

CAUTION

- The above circuit diagram is subject to change without notice.
- Be sure to connect wires according to the wiring diagram.
- Connect the wires firmly, so that it cannot be pulled out easily.
- Connect the wires according to color codes by referring to the wiring diagram.

2. ART COOL

CAUTION

After the confirmation of the above conditions, prepare the wiring as follows:

- 1) **Never fail to have an individual power circuit specifically for the air conditioner. As for the method of wiring, be guided by the circuit diagram posted on the inside of control cover.**
- 2) **The screw which fasten the wiring in the casing of electrical fittings are liable to become loose due from vibrations to which the unit is subjected during the course of transportation. Check them and make sure that they are all tightly fastened. (If they are loose, it could cause burn-out of the wires.)**
- 3) **Confirm the specification of power source.**
- 4) **Confirm that electrical capacity is sufficient.**
- 5) **See to that the starting voltage is maintained at more than 90 percent of the rated voltage marked on the name plate.**
- 6) **Confirm that the cable thickness is as specified in the power source specification.
(Particularly note the relation between cable length and thickness.)**
- 7) **Never fail to equip a leakage breaker where it is wet and moist area.**
- 8) **The following would be caused by voltage drop.**
 - **Vibration of a magnetic switch, which will damage the contact point, fuse breaking, disturbance of the normal function of the overload.**
- 9) **The means for disconnection from a power supply shall be incorporated in the fixed wiring and have an air gap contact separation of at least 3mm in each active(phase) conductors.**

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ART COOL Mirror

- 1. List of functions**
- 2. Specifications**
- 3. Dimensions**
- 4. Piping diagrams**
- 5. Wiring Diagrams**
- 6. Air flow and temperature distributions (reference data)**
- 7. Sound levels**
- 8. Controller**
- 9. Installation**

3. ART COOL Mirror

3.1 List of functions

Category	Functions	AMNW07GDB*0 [MS07AW* NB0] AMNW12GDB*0 [MS12AW* NB0] AMNW24GDC*0 [MS24AW* NC0]	AMNW09GDB*0 [MS09AW* NB0] AMNW18GDC*0 [MS18AW* NC0]
Air flow	Air supply outlet	1	
	Airflow direction control (left & right)	Auto	
	Airflow direction control (up & down)	Auto	
	Auto swing (left & right)	O	
	Auto swing (up & down)	O	
	Airflow steps (fan/cool/heat)	5 / 6 / 6	
	Chaos wind(auto wind)	O	
	Jet cool/heat	O / O	
	Swirl wind	X	
Air purifying	Triple filter (Deodorizing)	O	
	Plasma air purifier	O	
	Allergy Safe filter	O	
	Long-life prefilter (washable / anti-fungus)	O	
Installation	Drain pump	X	
	E.S.P. control	X	
	Electric heater	X	
	High ceiling operation	X	
	Auto Elevation Grille	X	
Reliability	Hot start	O	
	Self diagnosis	O	
Convenience	Auto changeover	X	
	Auto cleaning	O	
	Auto operation(artificial intelligence)	O	
	Auto Restart	O	
	Child lock	X	
	Forced operation	O	
	Group control	X	
	Sleep mode	O	
	Timer(on/off)	O	
	Timer(weekly)	X	
	Two thermistor control	X	
Individual controller	Wired remote controller	PQRCVSL0 / PQRCVSL0QW / PREMTB001 / PREMTBB01	
	Premium Wired remote controller	PREMTA000 / PREMTA000A / PREMTA000B	
	Simple wired remote controller	X	
	Simple Wired remote controller(for hotel use)	X	
	Wireless remote controller	O	
Network Solution	General central controller (Non LGAP)	X	
	Network Solution(LGAP)	O	
	Simple Dry contact (outside AC 220V power source)	PQDSA / PDRYCB000	
	2 Points Dry Contact (For setback)	PDRYCB400	
	Dry contact for Thermostat	PDRYCB300	
	PI 485(for Indoor Unit)	X	
Special function kit	Zone controller	X	
	CTI(Communication transfer interface)	X	
	Electronic thermostat	X	
Others	Remote temperature sensor	X	
	Telecom shelter controller	X	

Note

O : Applied X : Not applied

Accessory model name : Installed at field, ordered and purchased separately by the corresponding model name, supplied with separate package.

3. ART COOL Mirror

3.2 Specifications

Model Name				AMNW07GDB*0 [MS07AW* NB0]	AMNW09GDB*0 [MS09AW* NB0]	AMNW12GDB*0 [MS12AW* NB0]
Power Supply			V, Ø, Hz	220-240, 1, 50	220-240, 1, 50	220-240, 1, 50
				220, 1, 60	220, 1, 60	220, 1, 60
Power Input			W x No.	20 x 1	20 x 1	20 x 1
Running Current			A	0.1	0.2	0.2
Casing Color			-	Grace Dark Gray	Grace Dark Gray	Grace Dark Gray
Dimensions	Body	W x H x D	mm	895 x 289 x 205	895 x 289 x 205	895 x 289 x 205
		W x H x D	inch	35-1/4 x 11-3/8 x 8-1/16	35-1/4 x 11-3/8 x 8-1/16	35-1/4 x 11-3/8 x 8-1/16
Net Weight	Body		kg (lbs)	10.2 (22.5)	10.2 (22.5)	10.2 (22.5)
Heat Exchanger	(Row x Column x Fins per inch) x No.		-	(2 x 16 x 23) x 1	(2 x 16 x 23) x 1	(2 x 16 x 23) x 1
	Face Area		m² (ft²)	0.22 (2.37)	0.22 (2.37)	0.22 (2.37)
Fan	Type		-	Cross Flow Fan	Cross Flow Fan	Cross Flow Fan
	Air Flow Rate	H / M / L	m³/min	5.6 / 5.0 / 4.6	7.0 / 6.5 / 6.0	9.5 / 9.0 / 8.5
		H / M / L	ft³/min	198 / 177 / 162	247 / 230 / 212	336 / 318 / 300
Fan Motor	Type		-	BLDC	BLDC	BLDC
	Output		W x No.	14.4 x 1	14.4 x 1	14.4 x 1
Sound Pressure Level		H / M / L	dB(A)	33 / 30 / 26	34 / 31 / 27	39 / 36 / 31
Sound Power Level		Max.	dB(A)	55	55	55
Piping Connections	Liquid		mm(inch)	Ø 6.35 (1/4)	Ø 6.35 (1/4)	Ø 6.35 (1/4)
	Gas		mm(inch)	Ø 9.52 (3/8)	Ø 9.52 (3/8)	Ø 9.52 (3/8)
	Drain (O.D. / I.D.)		mm	Ø 21.5 / 16.0	Ø 21.5 / 16.0	Ø 21.5 / 16.0
Safety Devices			-	Fuse		
			-	Thermal Protector for Fan Motor		
Power and Communication Cable (included Earth)			No. x mm² (AWG)	4C x 0.75 (18)	4C x 0.75 (18)	4C x 0.75 (18)

Notes :

1. Wiring cable size must comply with the applicable local and national code.
2. Due to our policy of innovation some specifications may be changed without notification.
3. Sound Level Values are measured at Anechoic chamber.
Therefore, these values can be increased owing to ambient conditions during operation.

3. ART COOL Mirror

Model Name				AMNW18GDC*0 [MS18AW* NC0]	AMNW24GDC*0 [MS24AW* NC0]
Power Supply			V, Ø, Hz	220-240, 1, 50	220-240, 1, 50
				220, 1, 60	220, 1, 60
Power Input			W x No.	40 x 1	60 x 1
Running Current			A	0.3	0.3
Casing Color			-	White	White
Dimensions	Body	W x H x D	mm	1,030 x 325 x 245	1,030 x 325 x 245
		W x H x D	inch	40-9/16 x 12-25/32 x 9-21/32	40-9/16 x 12-25/32 x 9-21/32
Net Weight	Body		kg (lbs)	14.2 (31.3)	14.2 (31.3)
Heat Exchanger	(Row x Column x Fins per inch) x No.		-	(3 x 18 x 22) x 1	(3 x 18 x 22) x 1
	Face Area		m² (ft²)	0.29 (3.07)	0.29 (3.07)
Fan	Type		-	Cross Flow Fan	Cross Flow Fan
	Air Flow Rate	H / M / L	m³/min	16.2 / 14.2 / 12.3	20.4 / 17.0 / 13.2
		H / M / L	ft³/min	572 / 501 / 434	720 / 600 / 466
Fan Motor	Type		-	BLDC	BLDC
	Output		W x No.	76 x 1	76 x 1
Sound Pressure Level		H / M / L	dB(A)	37 / 33 / 28	42 / 39 / 36
Sound Power Level		Max.	dB(A)	57	62
Piping Connections	Liquid		mm(inch)	Ø 6.35 (1/4)	Ø 6.35 (1/4)
	Gas		mm(inch)	Ø 12.7 (1/2)	Ø 12.7 (1/2)
	Drain (O.D. / I.D.)		mm	Ø 21.5 / 16.0	Ø 21.5 / 16.0
Safety Devices			-	Fuse	Fuse
			-	Thermal Protector for Fan Motor	
Power and Communication Cable (included Earth)			No. x mm² (AWG)	4C x 0.75 (18)	4C x 0.75 (18)

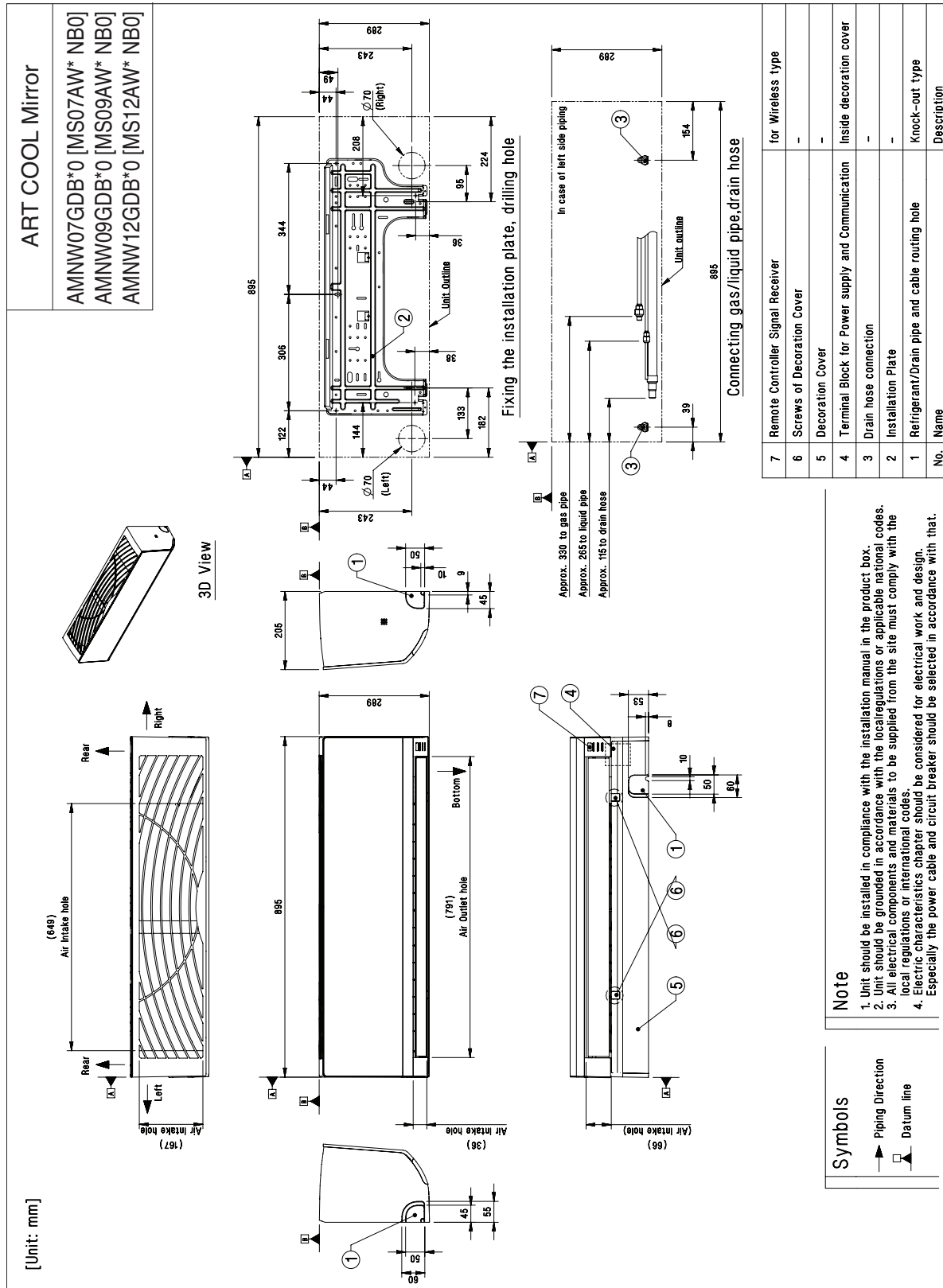
Notes :

1. Wiring cable size must comply with the applicable local and national code.
2. Due to our policy of innovation some specifications may be changed without notification.
3. Sound Level Values are measured at Anechoic chamber.
Therefore, these values can be increased owing to ambient conditions during operation.

MULTI/SINGLE CAC Indoor unit

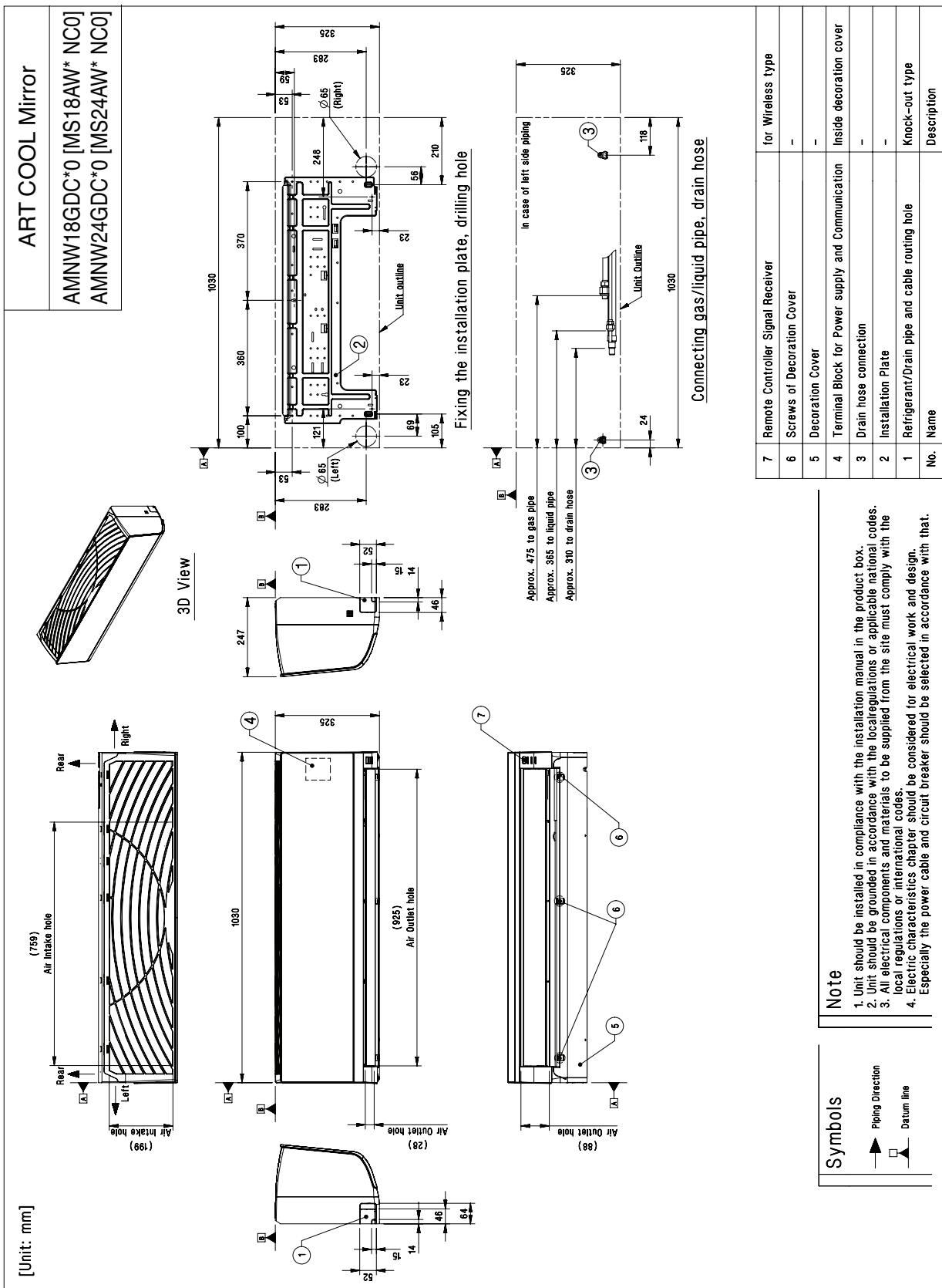
3. ART COOL Mirror

3.3 Dimensions



MULTI/SINGLE CAC Indoor unit

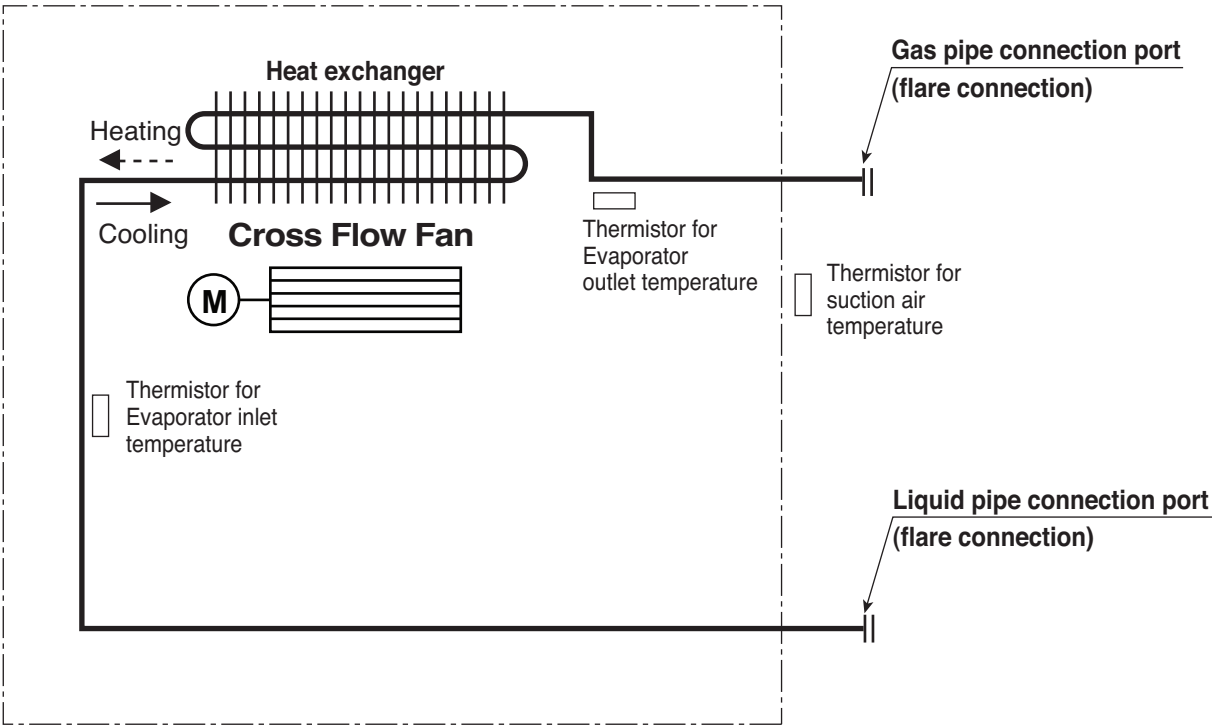
3. ART COOL Mirror



MULTI/SINGLE CAC Indoor unit

3. ART COOL Mirror

3.4 Piping diagrams



Description	PCB Connector
Thermistor for suction air temperature	CN-TH1(Indoor)
Thermistor for evaporator inlet temperature	
Thermistor for evaporator outlet temperature	CN-TH2(Indoor)

Refrigerant pipe connection port diameters

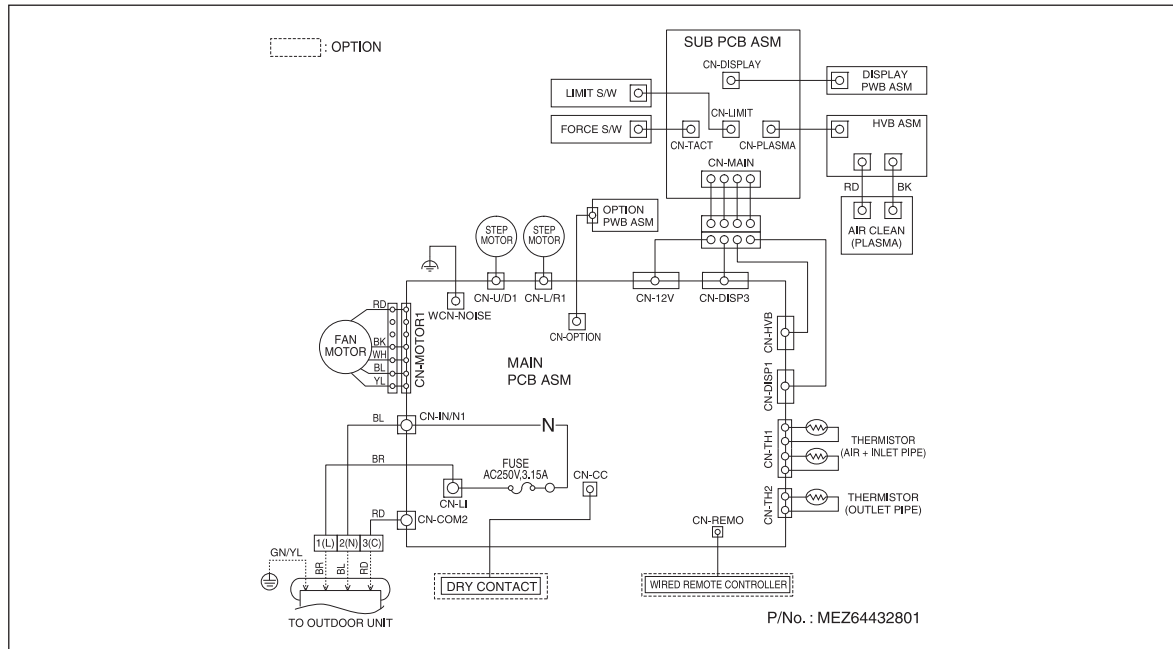
[Unit : mm]

Model	Gas	Liquid
AMNW07GDB*0 [MS07AW* NB0] AMNW09GDB*0 [MS09AW* NB0] AMNW12GDB*0 [MS12AW* NB0]	Ø9.52	Ø6.35
AMNW18GDC*0 [MS18AW* NC0] AMNW24GDC*0 [MS24AW* NC0]	Ø12.7	

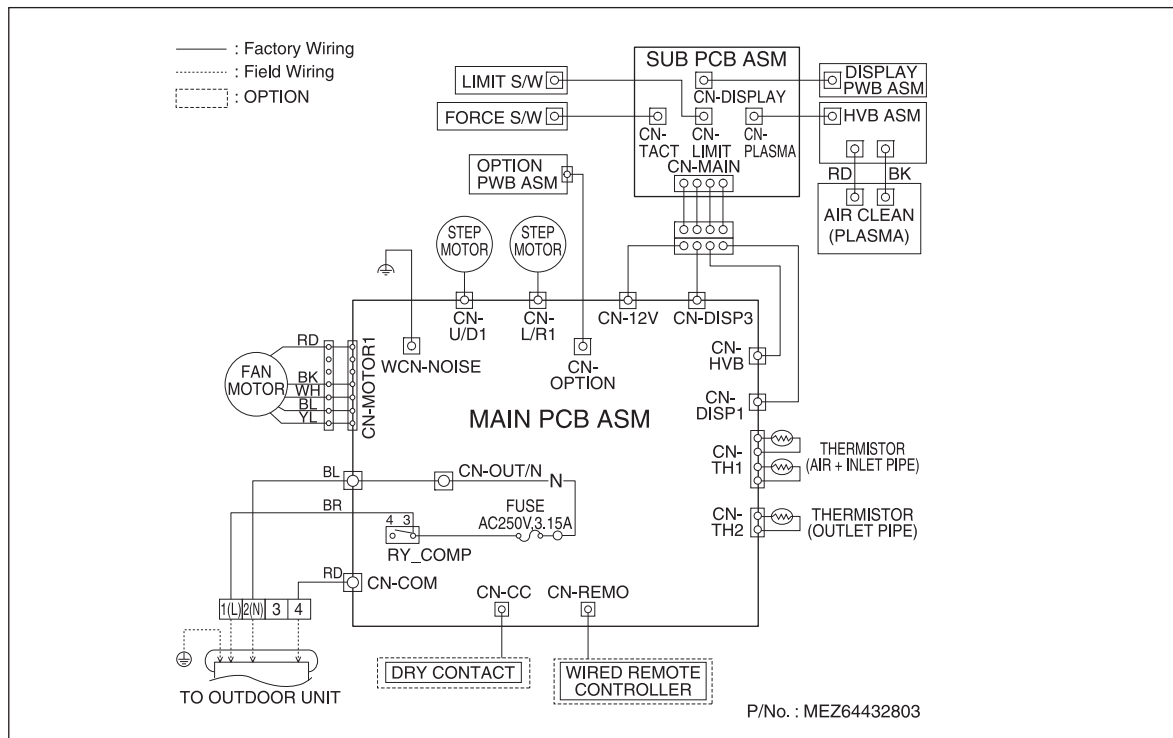
3. ART COOL Mirror

3.5 Wiring diagrams

Models: AMNW-DB [MS-AW NB0]



Models: AMNW-DC [MS-AW NC0]



MULTI/SINGLE CAC Indoor unit

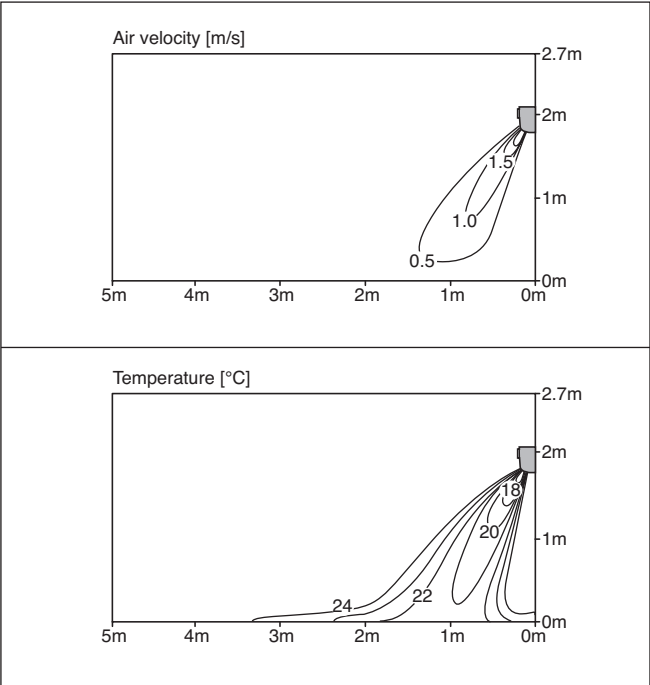
3. ART COOL Mirror

3.6 Air flow and temperature distributions (reference data)

Model : AMNW07GDB*0 [MS07AW* NB0]

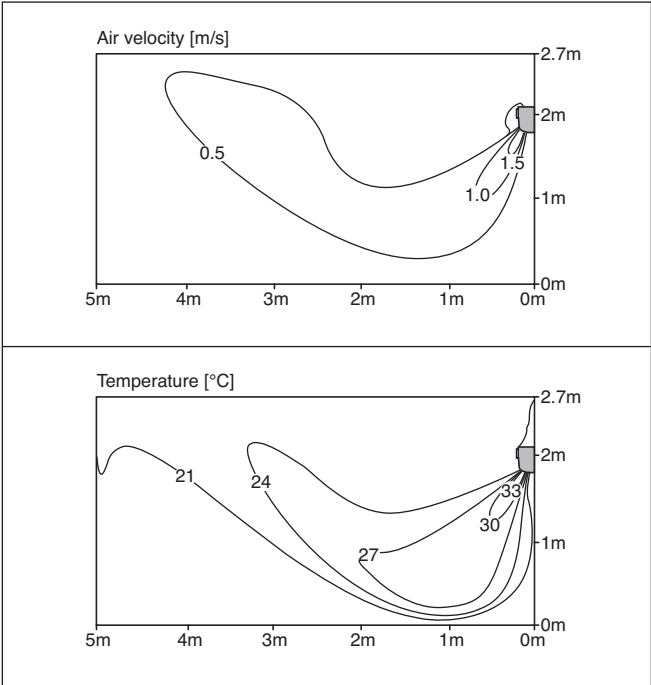
Cooling

Discharge angle: 40°



Heating

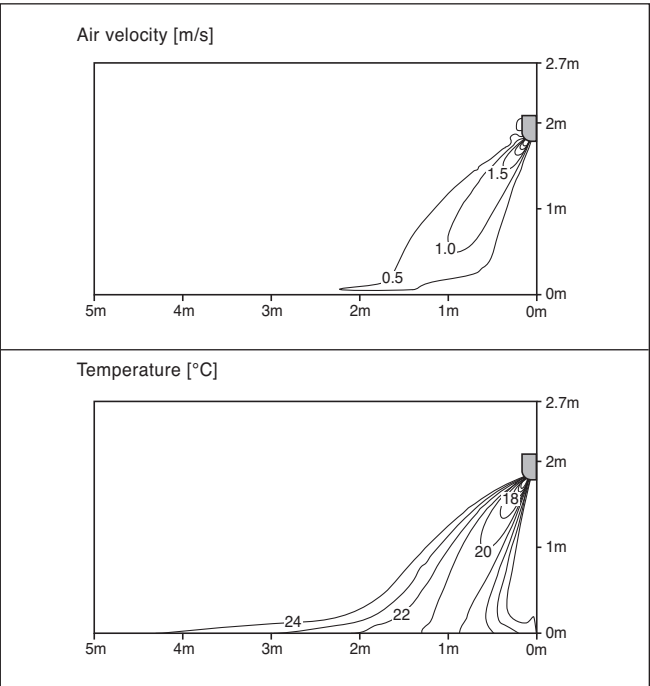
Discharge angle: 50°



Model : AMNW09GDB*0 [MS09AW* NB0]

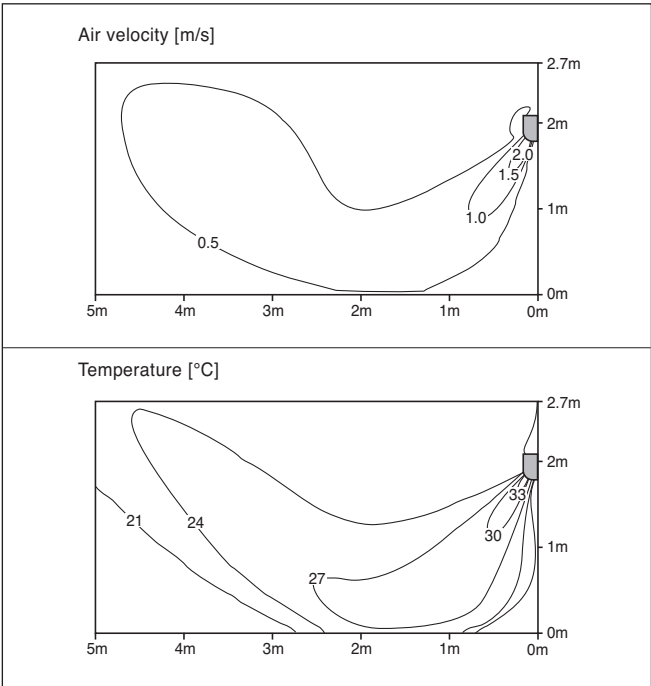
Cooling

Discharge angle: 40°



Heating

Discharge angle: 50°

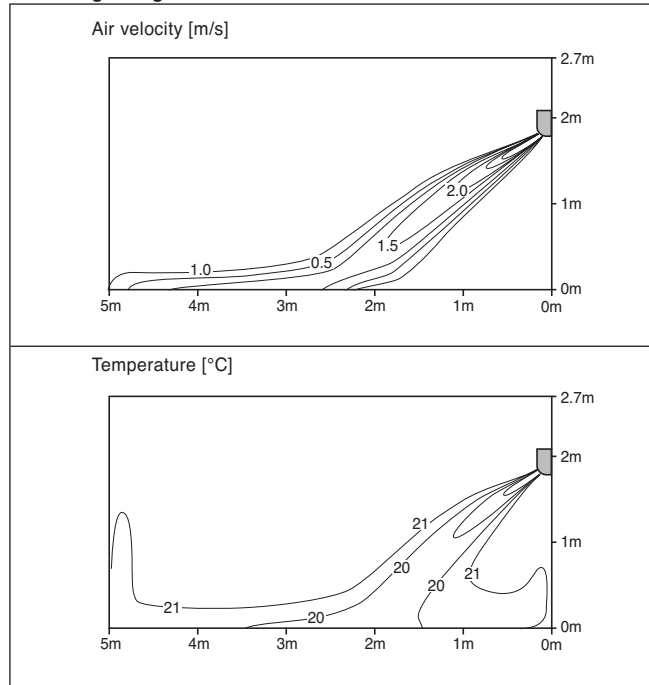


3. ART COOL Mirror

Model : AMNW12GDB*0 [MS12AW* NB0]

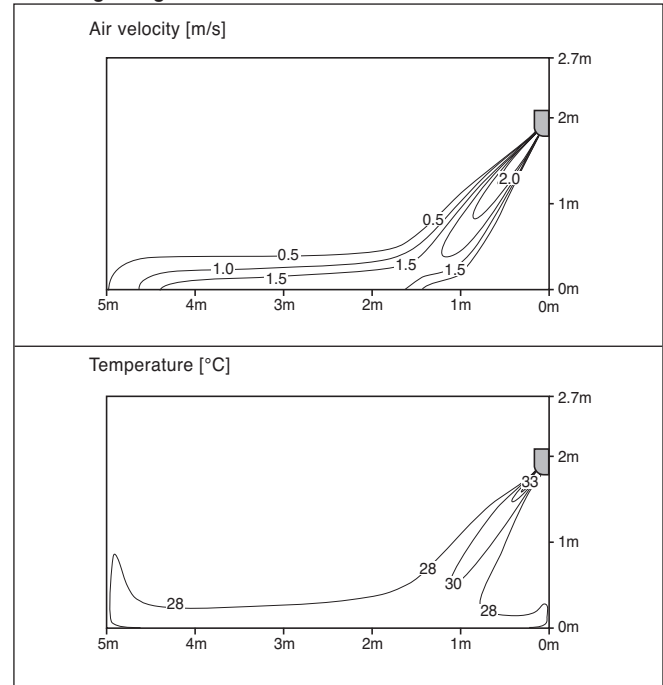
Cooling

Discharge angle: 40°



Heating

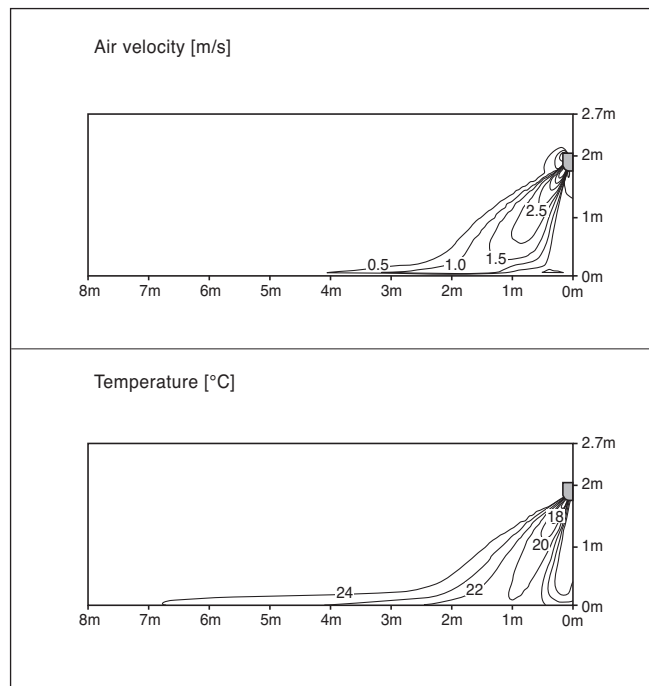
Discharge angle: 50°



Model : AMNW18GDC*0 [MS18AW* NC0]

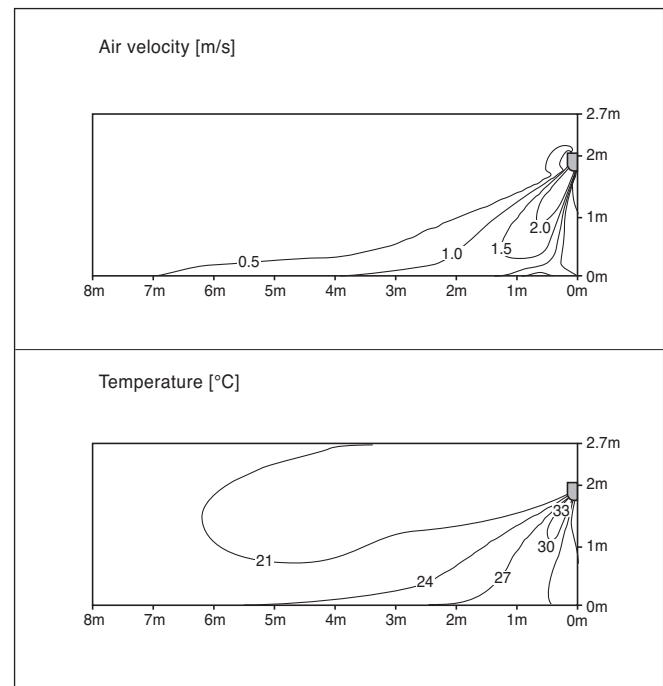
Cooling

Discharge angle: 40°



Heating

Discharge angle: 50°

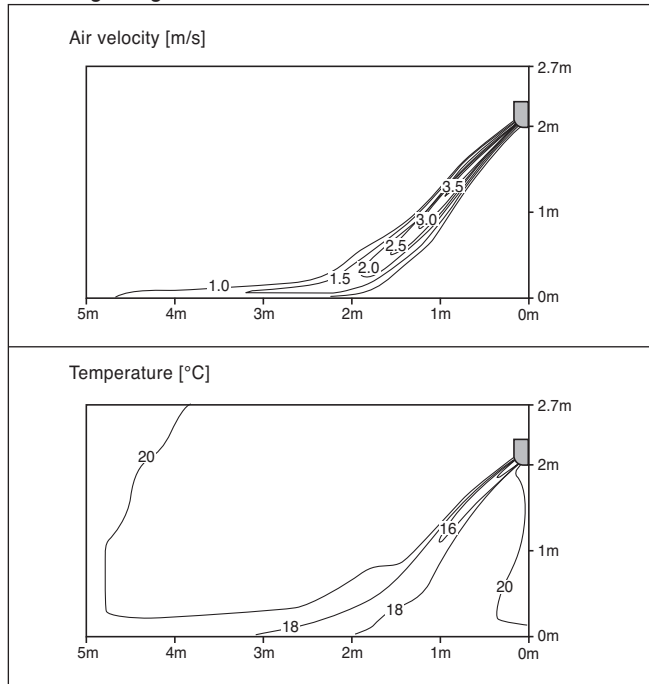


3. ART COOL Mirror

Model : AMNW24GDC*0 [MS24AW* NC0]

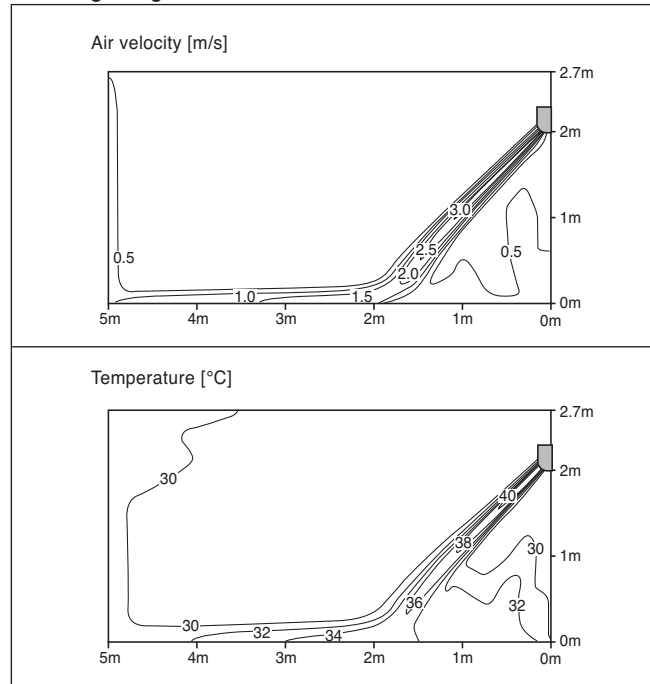
Cooling

Discharge angle: 30°



Heating

Discharge angle: 50°

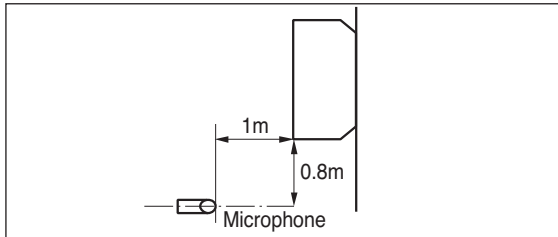


3. ART COOL Mirror

3.7 Sound levels

3.7.1 Sound pressure level

Overall

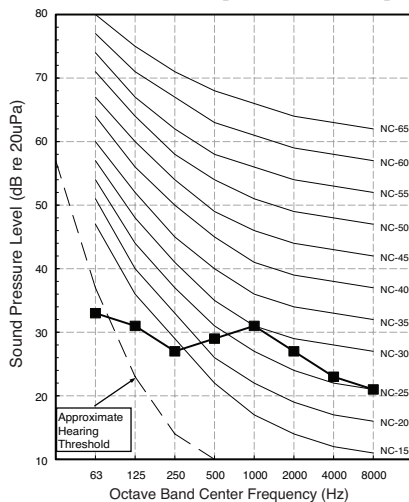


Notes:

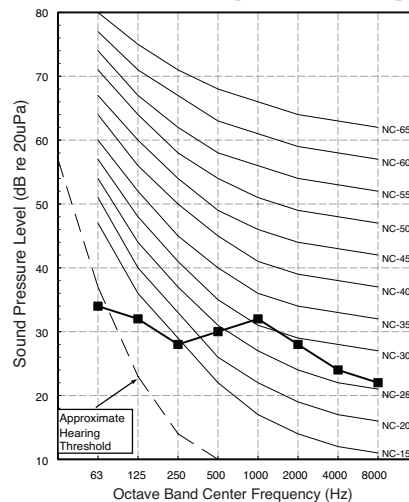
- Sound measured at 1m away from the center of the unit.
- Data is valid at free field condition.
- Data is valid at nominal operation condition.
- Reference acoustic pressure 0dB=20μPa.
- Sound level will vary depending on a range of factors such as the construction (acoustic absorption coefficient) of particular room in which the equipment is installed.
- The operating conditions are assumed to be standard.

Model	50Hz, 220-240V		
	Sound pressure Levels [dB(A)]		
	H	M	L
AMNW07GDB*0 [MS07AW* NB0]	33	30	26
AMNW09GDB*0 [MS09AW* NB0]	34	31	27
AMNW12GDB*0 [MS12AW* NB0]	39	36	31
AMNW18GDC*0 [MS18AW* NC0]	37	33	28
AMNW24GDC*0 [MS24AW* NC0]	42	39	36

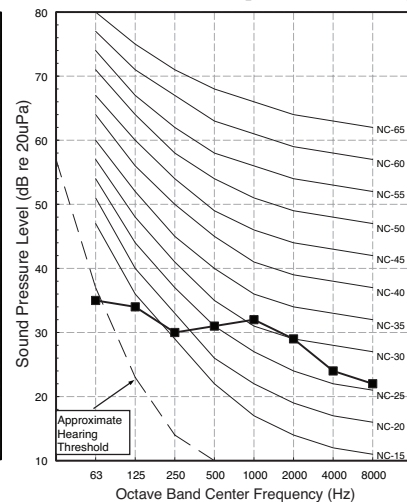
AMNW07GDB*0 [MS07AW* NB0]



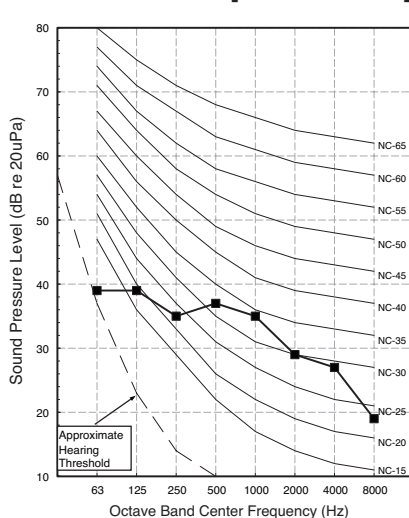
AMNW09GDB*0 [MS09AW* NB0]



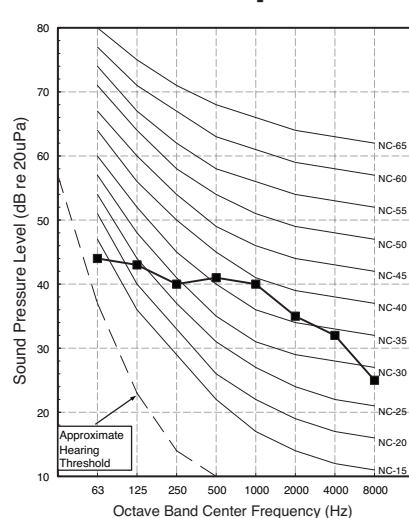
AMNW12GDB*0 [MS12AW* NB0]



AMNW18GDC*0 [MS18AW* NC0]



AMNW24GDC*0 [MS24AW* NC0]



3. ART COOL Mirror

3.7.2 Sound power level

Notes:

1. Reference acoustic intensity $0\text{dB} = 10\text{E-}6\mu\text{W/m}^2$
2. Sound level will vary depending on a range of factors such as the construction (acoustic absorption coefficient) of particular room in which the equipment is installed.

Model	Sound power level [dB(A)]
	H
AMNW07GDB*0 [MS07AW* NB0]	55
AMNW09GDB*0 [MS09AW* NB0]	55
AMNW12GDB*0 [MS12AW* NB0]	55
AMNW18GDC*0 [MS18AW* NC0]	57
AMNW24GDC*0 [MS24AW* NC0]	62

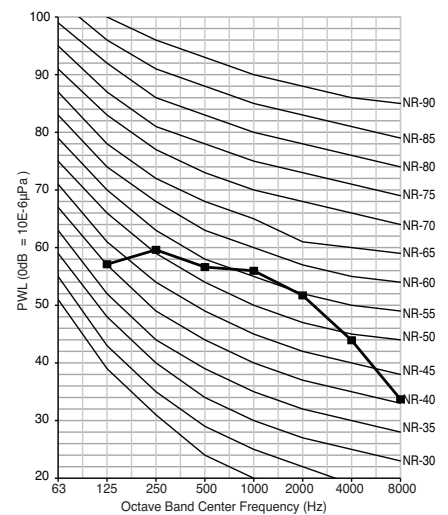
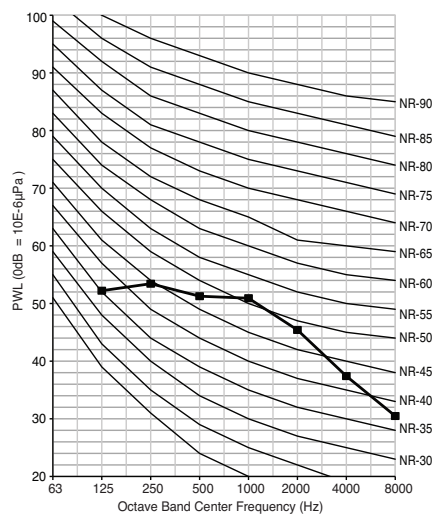
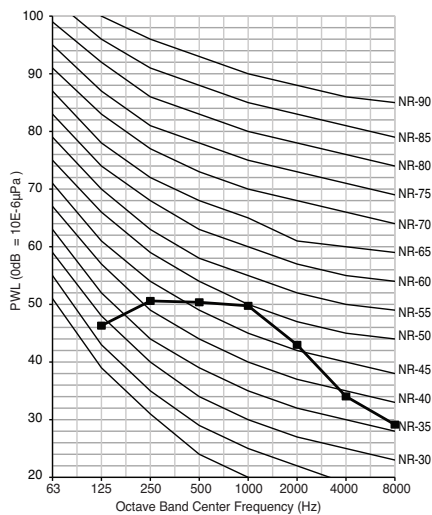
AMNW07GDB*0 [MS07AW* NB0]

AMNW09GDB*0 [MS09AW* NB0]

AMNW12GDB*0 [MS12AW* NB0]

AMNW18GDC*0 [MS18AW* NC0]

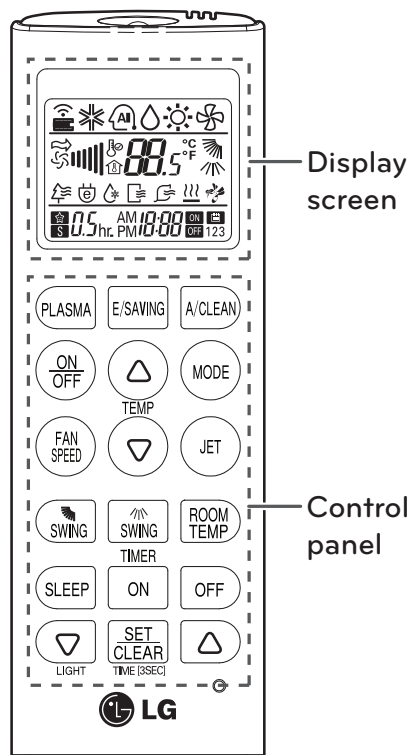
AMNW24GDC*0 [MS24AW* NC0]



3. ART COOL Mirror

3.8 Controller

Wireless remote control



Control panel	Display screen	Description
		Plasma button*: Purifies the air by removing particles that enter the indoor unit.
		Sleep mode auto button*: Sets the sleep mode auto operation.
		Temperature adjustment buttons: Adjusts the room temperature when cooling and heating.
	-	On/Off button: Turns the power on/off.
		Indoor fan speed button: Adjusts the fan speed.
		Operation mode selection button*: Selects the operation mode. Cooling operation (❄️) / Auto operation or auto changeover (🔄) / Dehumidifying operation (💧) / Heating operation (🔥) / Air circulation (🌀)
		Jet cooling/heating button*: Warms up or cools down the indoor temperature within a short period of time.
		Air flow direction button: Adjusts the air flow direction vertically or horizontally.
		Temperature display button: Displays the room temperature.
		Timer button: Sets the current time and the start / end time.
		Navigation and functions button*: Adjusts the time and sets the special functions. 📅: Auto clean / 🕒: Operates energy saving cooling / 🌞: Adjusts the brightness of the indoor unit display
	-	Set/clear button: Sets or cancels functions.
	-	Reset button: Resets the air conditioner settings.

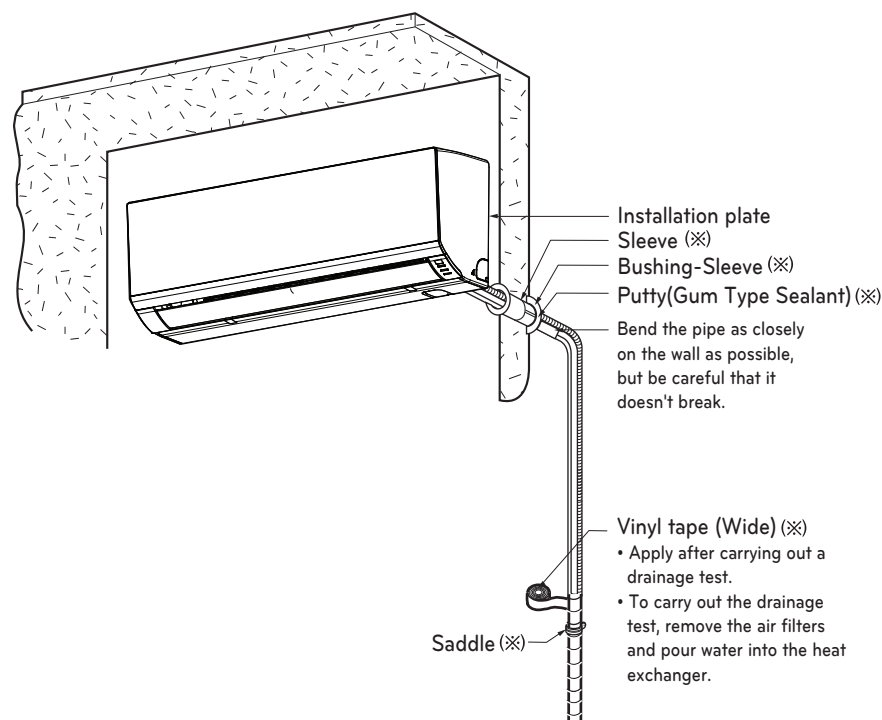
* Some functions may not be supported, depending on the model.

MULTI/SINGLE CAC Indoor unit

3. ART COOL Mirror

3.9 Installation

- Please read the instruction sheets completely before installing the product.
- When the power cord is damaged, replacement work shall be performed by authorized personnel only.
- Installation work must be performed in accordance with the national wiring standards by authorized personal only.



3.9.1 Accessories

The following accessories are included with your unit.

1) Standard accessories

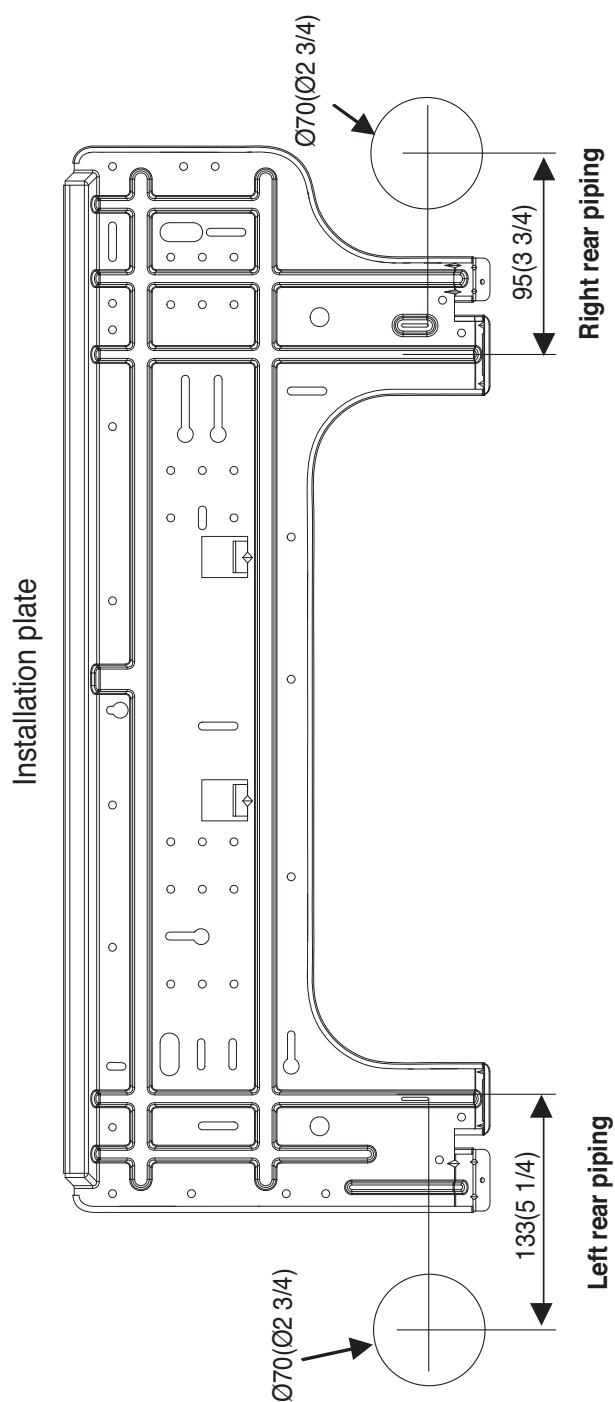
Name	Diagram	
	SB Chassis	SC Chassis
Installation Plate		
Type "A" Screws		
Type "B" Screws		
Type "C" Screws		
Remote Controller Holder		

※ The feature can be changed according a type of model.

3. ART COOL Mirror

2) Installation plates dimensions

Type 1: SB Chassis

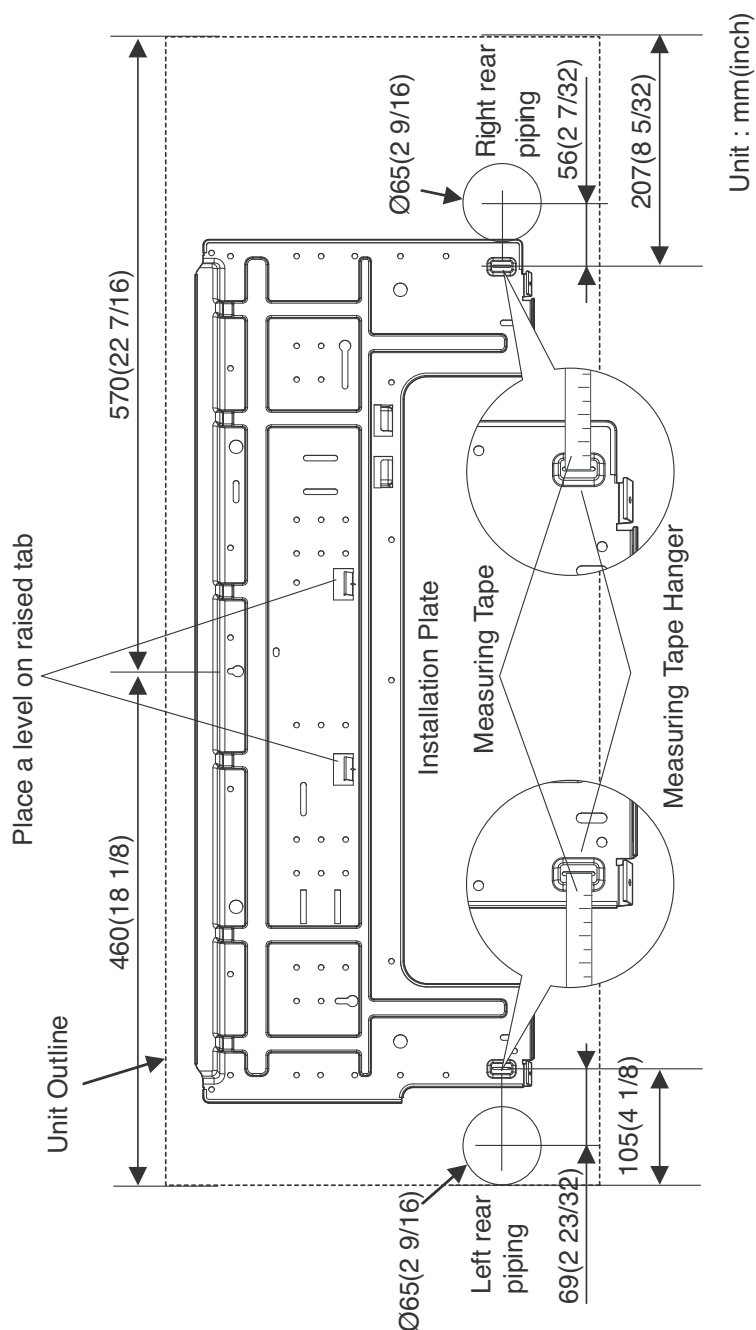


Unit : mm(inch)

MULTI/SINGLE CAC Indoor unit

3. ART COOL Mirror

Type 2: SC Chassis



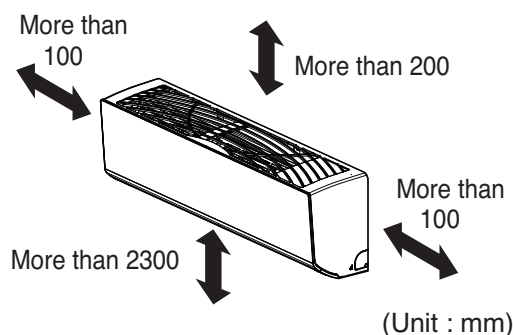
CAUTION

- Use only those accessories (Standard or optional) which have designated specifications

3. ART COOL Mirror

3.9.2 Selection of the best location

- ① There should not be any heat or steam near the unit.
- ② Select a place where there are no obstacles around of the unit.
- ③ Make sure that condensation drainage can be conveniently routed away.
- ④ Do not install near a doorway.
- ⑤ Ensure that the interval between a wall and the left (or right) of the unit is more than 100mm(3 15/16 inch). The unit should be installed as high as possible on the wall, allowing a minimum of 200mm(7 7/8 inch) from ceiling.
- ⑥ Use a metal detector to locate studs to prevent unnecessary damage to the wall.

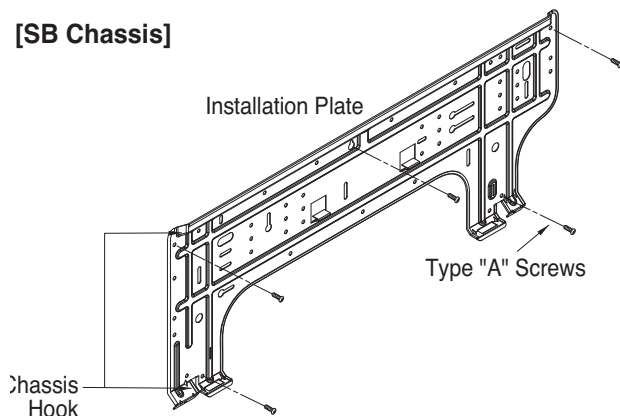


3.9.3 Fixing installation plate

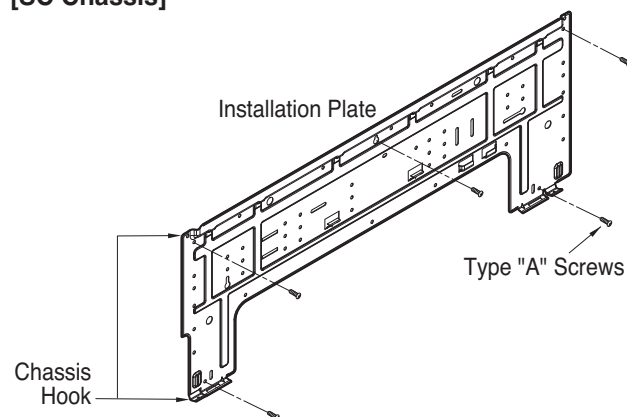
The wall you select should be strong and solid enough to prevent vibration

- ① Mount the installation plate on the wall with type "A" screws. If mounting the unit on a concrete wall, use anchor bolts.
 - Mount the installation plate horizontally by aligning the centerline using Horizontal meter .

[SB Chassis]



[SC Chassis]



- ② Measure the wall and mark the centerline. It is also important to use caution concerning the location of the installation plate. Routing of the wiring to power outlets is through the walls typically. Drilling the hole through the wall for piping connections must be done safely.

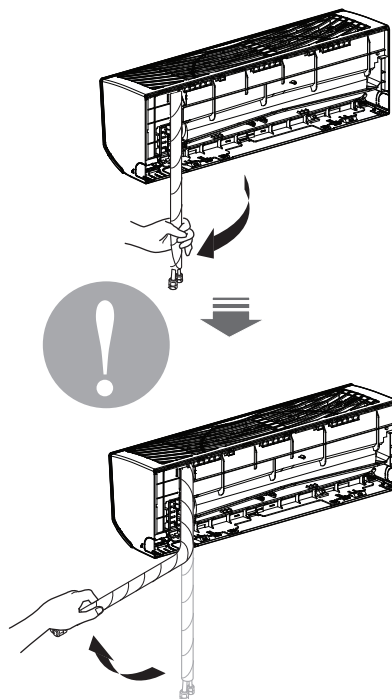
3.9.4 Before piping work

CAUTION

- Installation Information. For right piping. Follow the instruction given below.

Good case

- Press on the upper side of clamp and unfold the tubing to downward slowly.

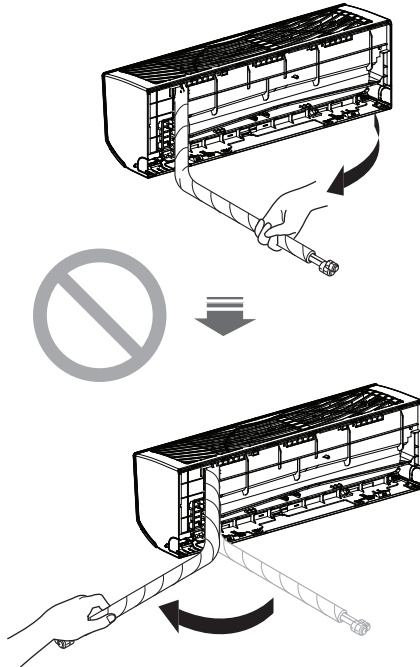


MULTI/SINGLE CAC Indoor unit

3. ART COOL Mirror

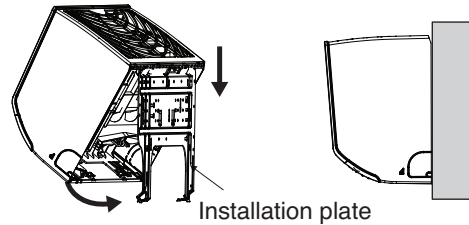
Wrong method

- Following bending type from left to right may cause damage to the tubing.

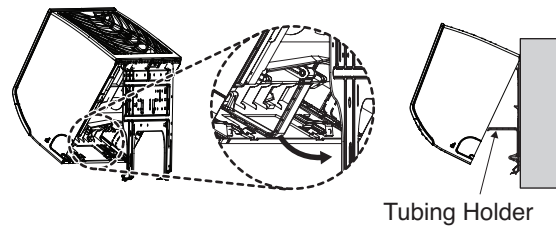


1) Installation of Indoor Unit

- Hook the indoor unit onto the upper portion of the installation plate. (engage the three hooks at the top of the indoor unit with the upper edge of the installation plate) Ensure that the hooks are properly seated on the installation plate by moving it left and right

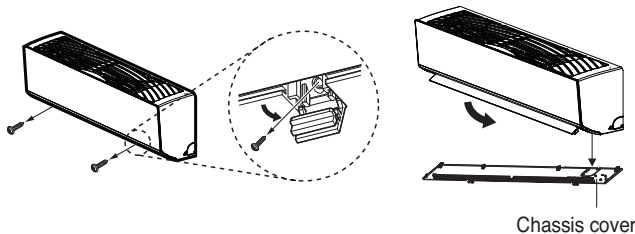


- Unlock the tubing holder from the chassis and mount between the chassis and installation plate in order to separate the bottom side of the indoor unit from the wall

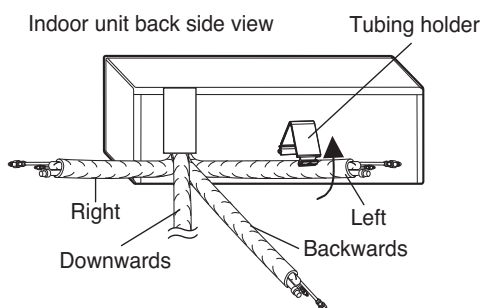


3.9.5 Connecting the piping

- Pull the screw cap at the bottom of the indoor unit
- Remove the chassis cover from the unit by loosening 2 screws



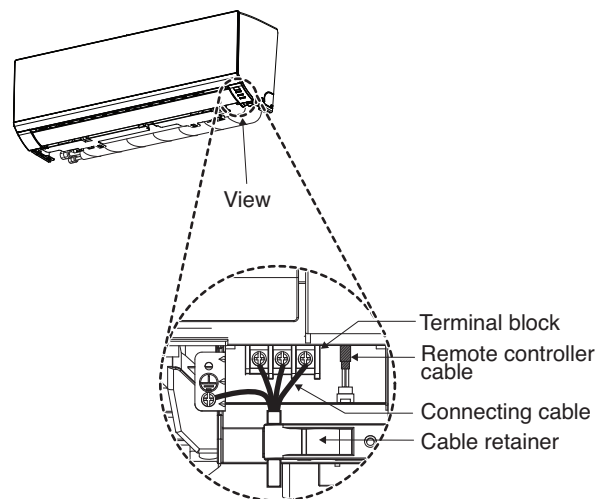
- Pull back the tubing holder.
- Remove pipe port cover and positioning the tubing



Piping

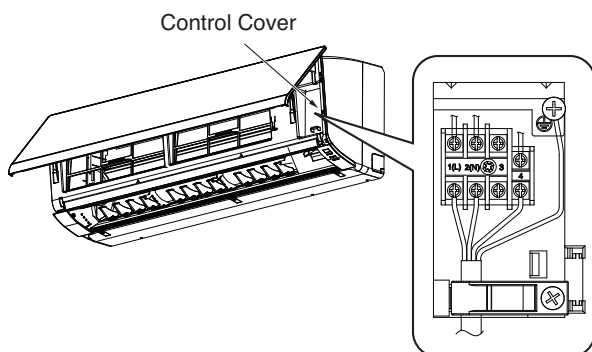
- Insert the connecting cable through the bottom side of indoor unit and connect the cable (You can see detail contents in 'Connecting the cables' section)

[SB Chassis]



3. ART COOL Mirror

[SC Chassis]



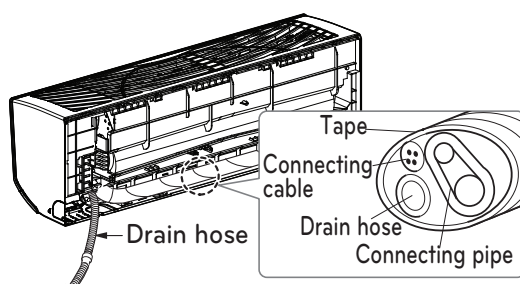
- ② Secure the cable onto the control board with the cable retainer.
- ③ Tape the tubing pipe, drain hose. Be sure that the drain hose is located at the lowest side of the bundle. Locating at the upper side can cause overflow from the drain pan through the inside of the unit.

CAUTION

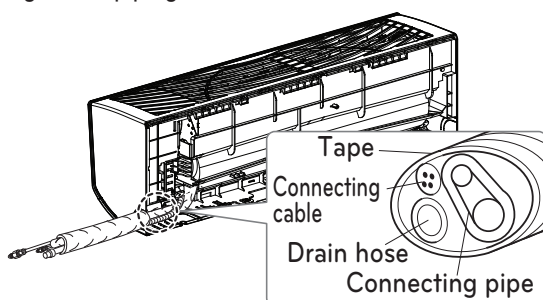
If the drain hose is routed inside the room insulate the hose with an insulation material* so that dripping from sweating (condensation) will not damage furniture or floors.

* Foamed polyethylene or equivalent is recommended.

<Left side piping>

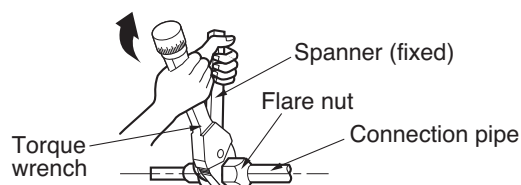
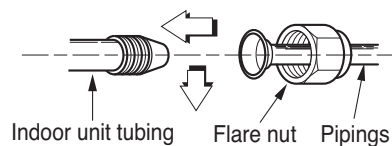


<Right side piping>



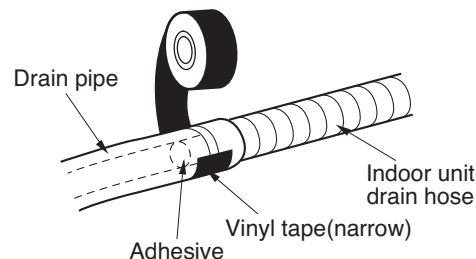
2) Connecting the installation pipe and drain hose to the indoor unit.

- ① Align the center of the pipes and sufficiently tighten the flare nut by hand
- ② Tighten the flare nut with a wrench



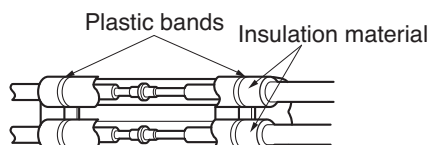
Outside diameter		Torque
mm	inch	N·m
Ø6.35	1/4	16 ± 2
Ø9.52	3/8	38 ± 4
Ø12.7	1/2	55 ± 6
Ø15.88	5/8	75 ± 7
Ø19.05	3/4	110 ± 10

- ③ When needed to extend the drain hose of indoor unit, assembly the drain pipe as shown on the drawing



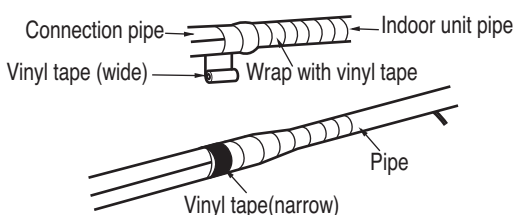
3) Wrap the insulation material around the connecting portion.

- ① Overlap the connection pipe heat insulation and the indoor unit pipe heat insulation material. Bind them together with vinyl tape so that there may be no gap.
- ② Wrap the area which accommodates the rear piping housing section with vinyl tape.

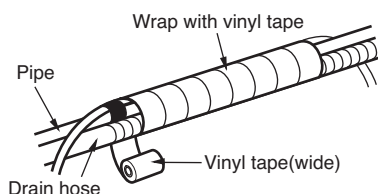


MULTI/SINGLE CAC Indoor unit

3. ART COOL Mirror

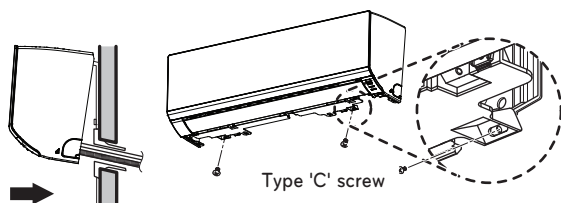


- ③ Bundle the piping and drain hose together by wrapping them with cloth tape over the range within which they fit into the rear piping housing section.



4) Finishing the indoor unit installation

- ① Mount the tubing holder in the original position.
- ② Ensure that the hooks are properly seated on the installation plate by moving it left and right.
- ③ Press the lower left and right sides of the unit against the installation plate until the hooks engage into their slots (clicking sound).
- ④ Finish the assembly by screwing the unit to the installation plate by using two pieces of type "C" screws. And assemble a chassis cover.



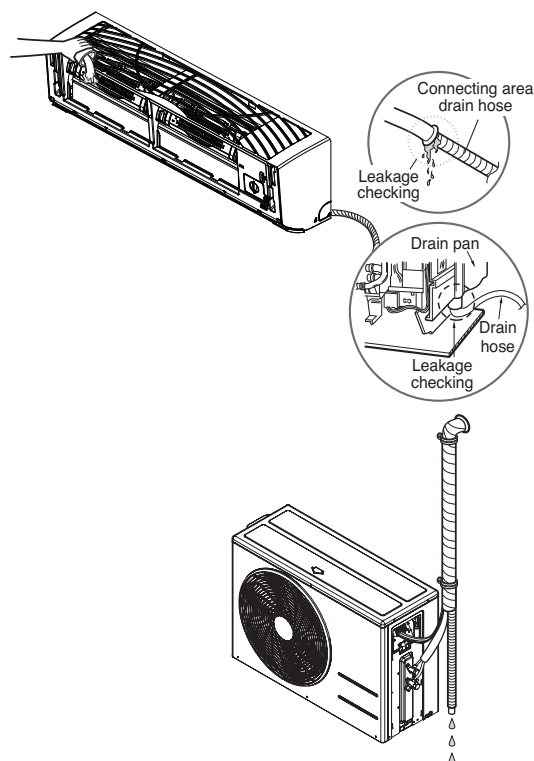
Installation of filters

- ① Pull out the [Allergy free filter + Triple Filter] from the separately packed plastic bag.
- ② Detach the two nitto tapes from the filter.
- ③ Insert the filter into the filter case.
- ④ Detach two nitto tapes from the plasma filter.

3.9.6 Checking the Drainage

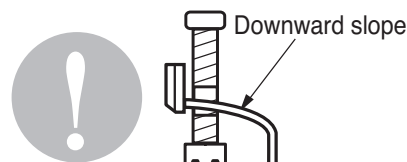
1) To check the drainage.

- ① Pour a glass of water on the evaporator.
- ② Ensure the water flows through the drain hose of the indoor unit without any leakage and goes out the drain exit.

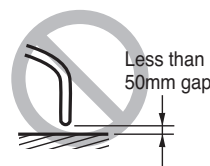
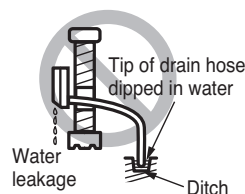
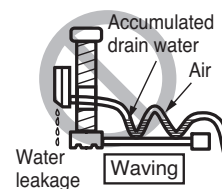


2) Drain piping

- ① The drain hose should point downward for easy drain flow.



- ② Do not make drain piping like the following.



MULTI/SINGLE CAC

Indoor unit

Ceiling cassette 1-way

- 1. List of functions**
- 2. Specifications**
- 3. Dimensions**
- 4. Piping diagrams**
- 5. Wiring Diagrams**
- 6. Air flow and temperature distributions (reference data)**
- 7. Sound levels**
- 8. Controller**
- 9. Installation**

4. Ceiling cassette 1-way

4.1 List of functions

Category	Functions	AMNH09GTUC0 [MT09AH NU1] AMNH12GTUC0 [MT11AH NU1]
Air flow	Air supply outlet	1
	Airflow direction control (left & right)	X
	Airflow direction control (up & down)	Auto
	Auto swing (left & right)	X
	Auto swing (up & down)	O
	Airflow steps (fan/cool/heat)	4 / 5 / 4
	Chaos wind(auto wind)	O
	Jet cool/heat	O / O
	Swirl wind	X
Air purifying	Triple filter (Deodorizing)	X
	Plasma air purifier	O
	Allergy Safe filter	X
	Long-life prefilter (washable / anti-fungus)	O
Installation	Drain pump	O
	E.S.P. control*	X
	Electric heater	X
	High ceiling operation*	O
	Auto Elevation Grille*	X
Reliability	Hot start	O
	Self diagnosis	O
Convenience	Auto changeover	X
	Auto cleaning	X
	Auto operation(artificial intelligence)	O
	Auto Restart	O
	Child lock*	O
	Forced operation	O
	Group control*	O
	Sleep mode	O
	Timer(on/off)	O
	Timer(weekly)*	O
	Two thermistor control*	O
Individual controller	Wired remote controller	PQRCVSL0 / PQRCVSL0QW** / PREMTB001 / PREMTBB01
	Premium Wired remote controller	PREMTA000 / PREMTA000A / PREMTA000B
	Simple wired remote controller	PQRCVCL0Q / PQRCVCL0QW
	Simple Wired remote controller(for hotel use)	PQRCHCA0Q / PQRCHCA0QW
	Wireless remote controller	PQWRHQ0FDB
Network Solution	General central controller (Non LGAP)	X
	Network Solution(LGAP)	O
	Simple Dry contact (outside AC 220V power source)	PQDSA / PDRYCB000
	2 Points Dry Contact (For setback)	PDRYCB400
	Dry contact for Thermostat	PDRYCB300
	PI 485(for Indoor Unit)	X
Special function kit	Zone controller	X
	CTI(Communication transfer interface)	X
	Electronic thermostat	X
Others	Remote temperature sensor	PQRSTA0
	Telecom shelter controller	X

Note

1. * : These functions need to connect the wired remote controller.

2. ** : It is included by default when the product is manufactured.

O : Applied X : Not applied

Accessory model name : Installed at field, ordered and purchased separately by the corresponding model name, supplied with separate package.

MULTI/SINGLE CAC Indoor unit

4. Ceiling cassette 1-way

4.2 Specifications

Model Name				AMNW09GTUC0 [MT09AH NU1]	AMNW12GTUC0 [MT11AH NU1]
Power Supply			V, Ø, Hz	220-240, 1, 50	220-240, 1, 50
				220, 1, 60	220, 1, 60
Power Input			W x No.	20 × 1	20 × 1
Running Current			A	0.2	0.2
Casing Color			-	-	-
Dimensions	Body	W x H x D	mm	860 × 132 × 450	860 × 132 × 450
		W x H x D	inch	33-27/32 x 5-3/16 x 17-23/32	33-27/32 x 5-3/16 x 17-23/32
Net Weight	Body		kg (lbs)	13.5 (29.8)	13.5 (29.8)
Heat Exchanger	(Row x Column x Fins per inch) x No.		-	(2 x 12 x 18) x 1	(2 x 12 x 18) x 1
	Face Area		m² (ft²)	0.18 (1.90)	0.18 (1.90)
Fan	Type		-	Cross Flow Fan	Cross Flow Fan
	Air Flow Rate	H / M / L	m³/min	7.5 / 7.3 / 6.8	8.1 / 7.4 / 7.0
		H / M / L	ft³/min	265 / 258 / 240	286 / 261 / 247
Fan Motor	Type		-	BLDC	BLDC
	Output		W x No.	20 x 1	20 x 1
Sound Pressure Level		H / M / L	dB(A)	36 / 34 / 32	37 / 36 / 33
Sound Power Level		Max.	dB(A)	54	57
Piping Connections	Liquid		mm(inch)	Ø 6.35 (1/4)	Ø 6.35 (1/4)
	Gas		mm(inch)	Ø 9.52 (3/8)	Ø 9.52 (3/8)
	Drain (O.D. / I.D.)		mm	Ø 32.0 / 25.0	Ø 32.0 / 25.0
Safety Devices			-	Fuse	Fuse
			-	Thermal Protector for Fan Motor	Thermal Protector for Fan Motor
Power and Communication Cable (included Earth)			No. x mm² (AWG)	4C x 0.75 (18)	4C x 0.75 (18)
Decoration Panel	Model Name		-	PT-UUC1	PT-UUC1
	Casing Color		-	Morning Fog	Morning Fog
	Dimensions	W x H x D	mm	1,100 × 34 × 500	1,100 × 34 × 500
		W x H x D	inch	43-5/16 x 1-11/32 x 19-11/16	43-5/16 x 1-11/32 x 19-11/16
	Net weight		kg (lbs)	4.4(9.7)	4.4(9.7)

Notes :

1. Wiring cable size must comply with the applicable local and national code.
2. Due to our policy of innovation some specifications may be changed without notification.
3. Sound Level Values are measured at Anechoic chamber.
Therefore, these values can be increased owing to ambient conditions during operation.

4. Ceiling cassette 1-way

4.3 Dimensions

Ceiling Cassette 1-way

AMNH09GTUC0 [MT09AH NU1]
AMNH12GTUC0 [MT11AH NU1]

[Unit : mm]

Number	Name	Description
1	Liquid pipe connection	
2	Gas pipe connection	
3	Air suction grill	
4	Air discharge grill	

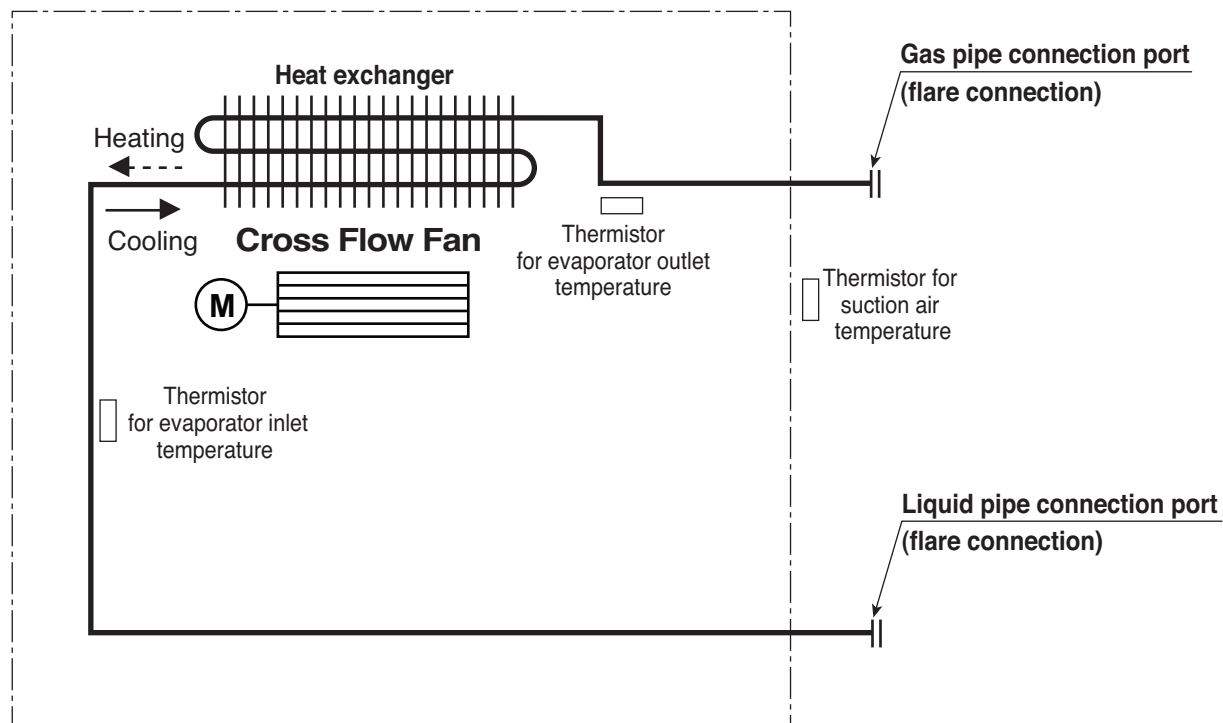
Note

- Unit should be installed in compliance with the installation manual in the product box.
- Unit shall be grounded in accordance with the local regulations or applicable national codes.
- The Unit is powered from the outdoor unit. Therefore power cable should be connected with the outdoor unit.

LG Electronics

76, Seongsan-dong, Changwon City, Gyeongnam,
641-713, Korea
www.lge.com/airconditioner

CHASSIS CODE: TU

MULTI/SINGLE CAC Indoor unit**4. Ceiling cassette 1-way****4.4 Piping diagrams**

Description	PCB Connector
Thermistor for suction air temperature	CN-ROOM
Thermistor for evaporator inlet temperature	CN-PIPE1
Thermistor for evaporator outlet temperature	CN-PIPE2

■ Refrigerant pipe connection port diameters

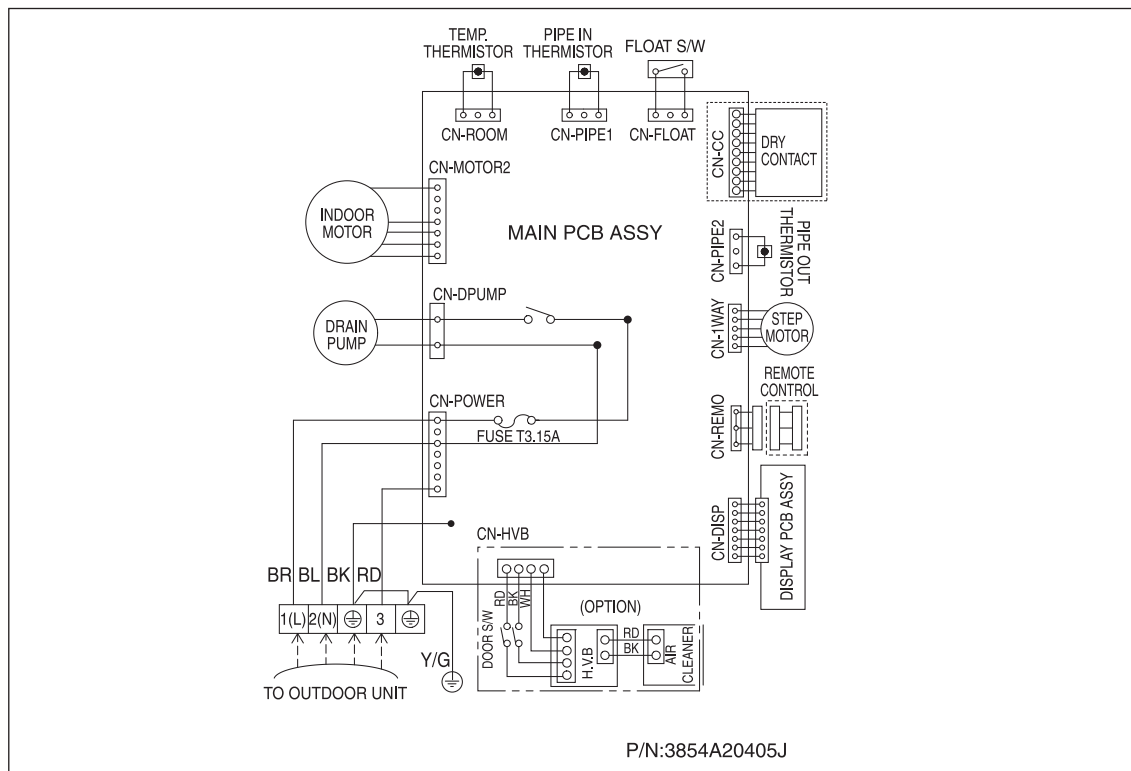
[Unit : mm]

Model	Gas	Liquid
AMNH09GTUC0 [MT09AH NU1] AMNH12GTUC0 [MT11AH NU1]	Ø9.52	Ø6.35

4. Ceiling cassette 1-way

4.5 Wiring diagrams

Models: AMNH-TU [MT-AH NU1]



MULTI/SINGLE CAC Indoor unit

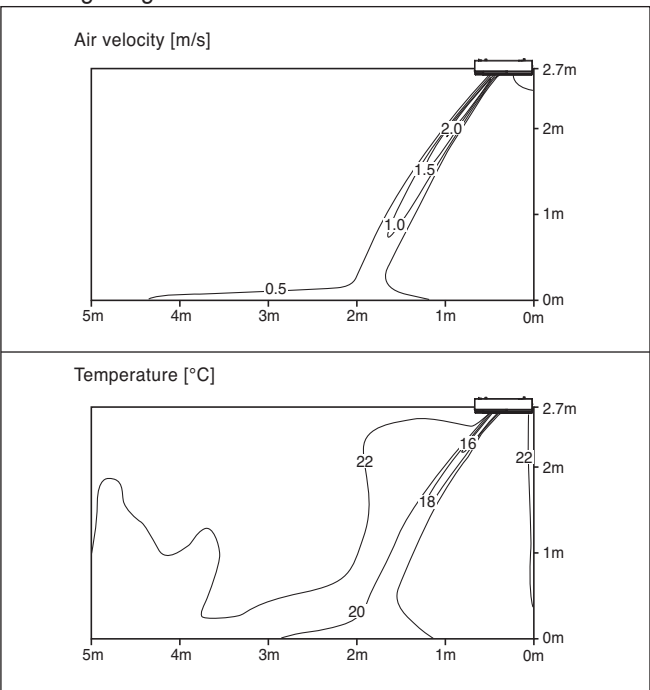
4. Ceiling cassette 1-way

4.6 Air flow and temperature distributions (reference data)

Model : AMNH09GTUC0 [MT09AH NU1]

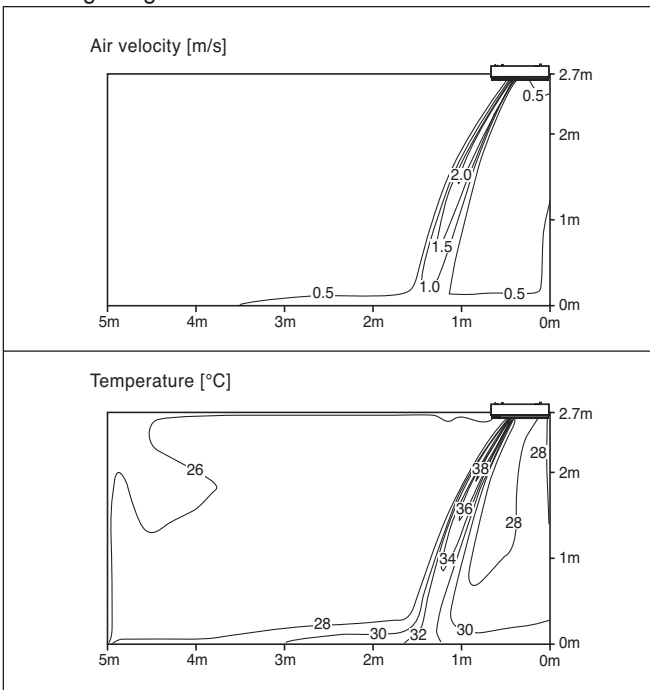
Cooling

Discharge angle: 50°



Heating

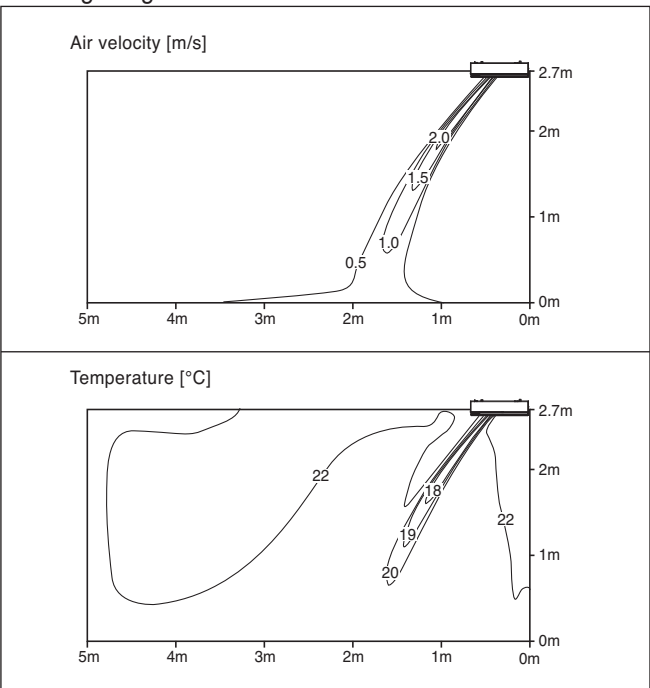
Discharge angle: 60°



Model : AMNH12GTUC0 [MT11AH NU1]

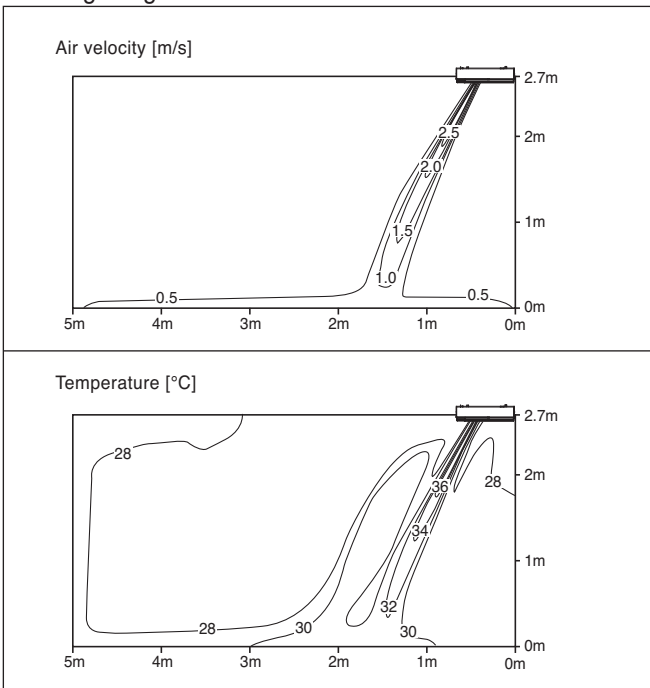
Cooling

Discharge angle: 50°



Heating

Discharge angle: 60°

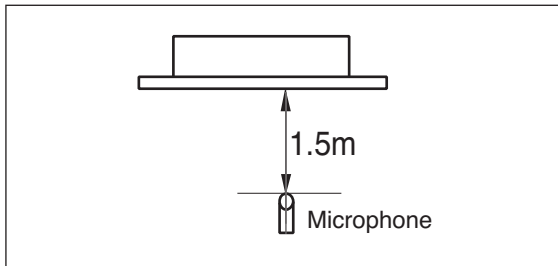


4. Ceiling cassette 1-way

4.7 Sound levels

4.7.1 Sound pressure level

Overall

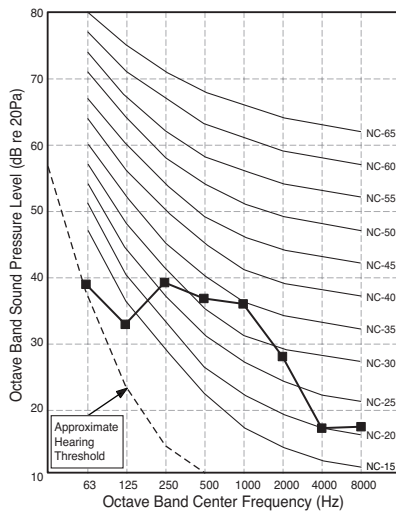


Notes:

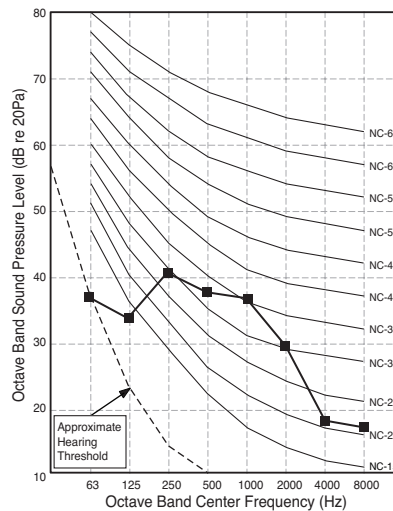
- Sound measured at 1m away from the center of the unit.
- Data is valid at free field condition.
- Data is valid at nominal operation condition.
- Reference acoustic pressure 0dB=20μPa.
- Sound level will vary depending on a range of factors such as the construction(acoustic absorption coefficient) of particular room in which the equipment is installed.
- The operating conditions are assumed to be standard.

Model	50Hz, 220-240V		
	Sound pressure Levels [dB(A)]		
	H	M	L
AMNH09GTUC0 [MT09AH NU1]	36	34	32
AMNH12GTUC0 [MT11AH NU1]	37	36	33

AMNH09GTUC0 [MT09AH NU1]



AMNH12GTUC0 [MT11AH NU1]



MULTI/SINGLE CAC Indoor unit

4. Ceiling cassette 1-way

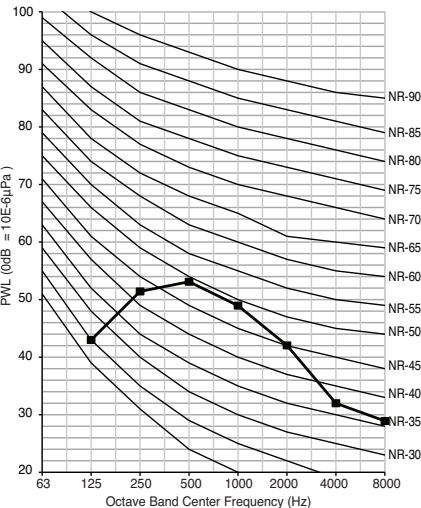
4.7.2 Sound power level

Notes:

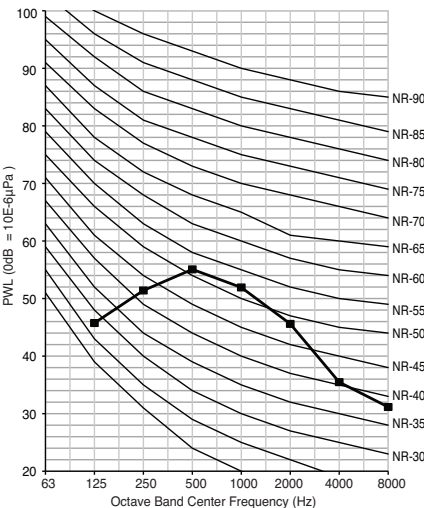
- 1. Reference acoustic intensity 0dB = 10E-6μW/m²
- 2. Sound level will vary depending on a range of factors such as the construction (acoustic absorption coefficient) of particular room in which the equipment is installed.

Model	Sound power level [dB(A)]
	H
AMNW09GTUC0 [MT09AH NU1]	54
AMNW12GTUC0 [MT11AH NU1]	57

AMNW09GTUC0 [MT09AH NU1]



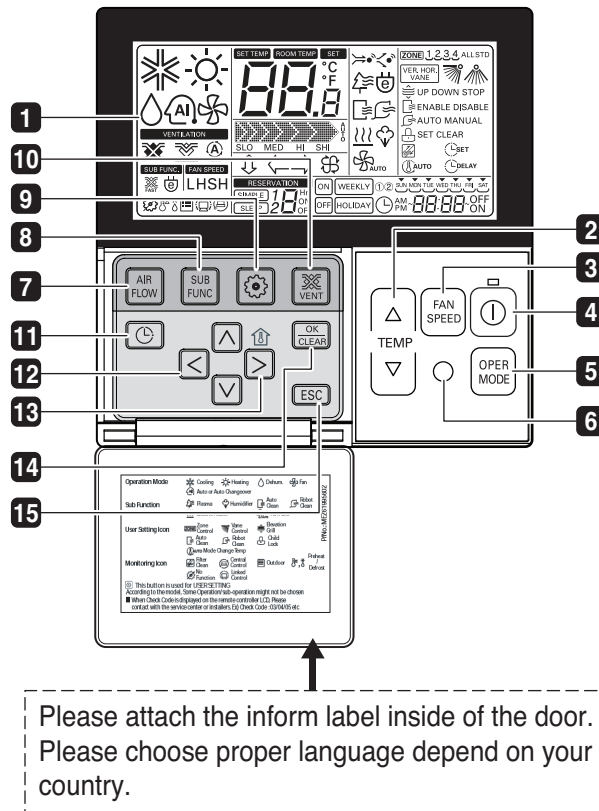
AMNW12GTUC0 [MT11AH NU1]



4. Ceiling cassette 1-way

4.8 Controller

Wired remote controller



- | | |
|---|---|
| 1 OPERATION INDICATION SCREEN | 9 FUNCTION SETTING Button |
| 2 SET TEMPERATURE Button | 10 VENTILATION Button |
| 3 FAN SPEED Button | 11 RESERVATION |
| 4 ON/OFF Button | 12 UP, DOWN, LEFT, RIGHT Button
• To check the indoor temperature, press button. |
| 5 OPERATION MODE SELECTION Button | 13 ROOM TEMPERATURE Button |
| 6 WIRELESS REMOTE CONTROLLER RECEIVER
• Some products don't receive the wireless signals. | 14 SETTING/CANCEL Button |
| 7 AIR FLOW Button | 15 EXIT Button |
| 8 SUBFUNCTION Button | |

※ Some functions may not be operated and displayed depending on the product type.

Note :

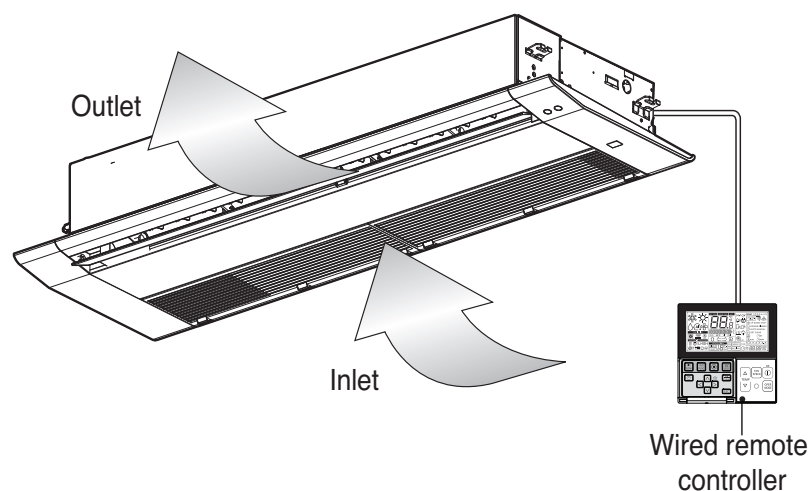
- ※ Display temperature can be different from actual room temperature if the remote controller is installed at the place where sun-rays are falling directly or the place nearby heat source.
- ※ The actual product can be different from above contents depending upon model type.
- ※ When using simultaneous operation system, whenever press remote controller button, system will approximately operate after 1~2 minutes.

MULTI/SINGLE CAC Indoor unit

4. Ceiling cassette 1-way

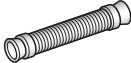


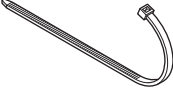
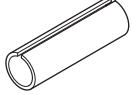

4.9 Installation



- Please read the instruction sheets completely before installing the product.
- When the power cord is damaged, replacement work shall be performed by authorized person only.
- Installation work must be performed in accordance with the national wiring standards by authorized person only.



4.9.1 Accessories

1) Standard accessories

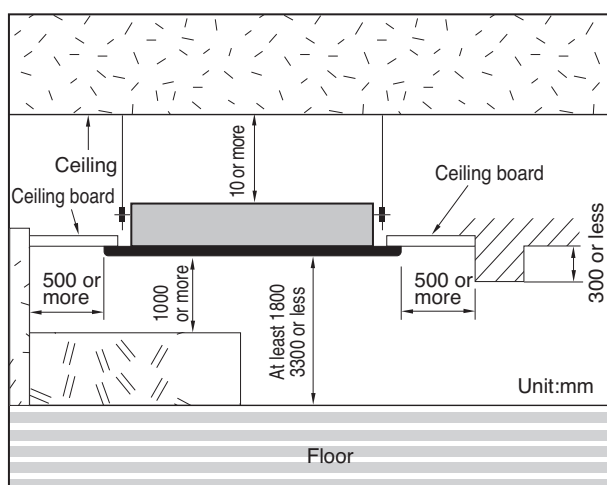
Name	Drain hose	Clamp metal	Washer for hanging bracket	Plastic band	Insulation for fitting
Quantity	1 EA	2 EA	8 EA	4 EA	1 SET
Diagram					 for gas pipe  for liquid pipe

Name	Paper pattern for installation	Installation and Owner's manual
Quantity	1EA	1EA
Shape		

4. Ceiling cassette 1-way

4.9.2 Selection of the best location

- ① There should not be any heat source or steam near the unit.
- ② There should not be any obstacles to the air circulation.
- ③ There should be provision of easy condensate drain.
- ④ Taking into accounting the noise prevention criteria, spot the installation location.
- ⑤ Do not install the unit near the door way.
- ⑥ Keep proper distances, of the unit, from ceiling, fence, floor, walls and other obstacles as shown in figure.
- ⑦ The indoor unit must have the maintenance space.
- ⑧ The mounting ceiling should be strong and solid enough protect it from the vibration.



NOTE

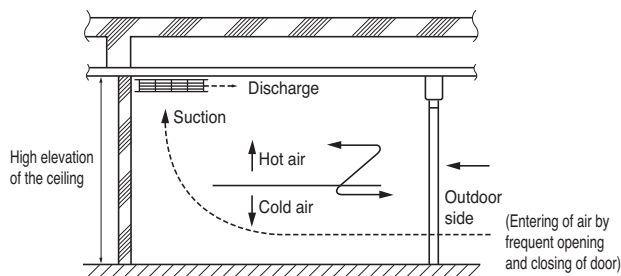
Above figure means minimum value. Please keep these value at least.

4.9.3 Precautions regarding cassette indoor unit installation

1) Main points about the indoor installation

- In case of high height ceiling

In general commercial places and offices though the height of the ceiling is 2.7 m, the ceiling height can be 3 m. In such cases because of the temperature difference with the floor the heating effect can fall down.

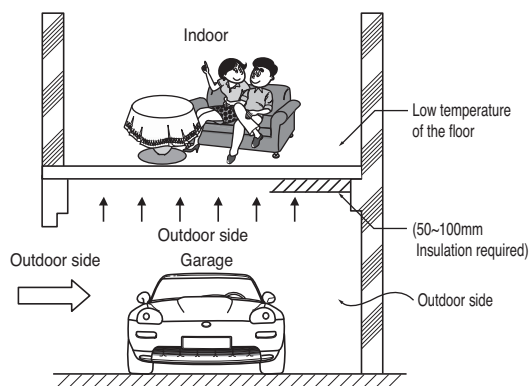


- Countermeasure method

- ① Air conditioner must be able to operate in high ceiling conditioner.
- ② Plan to install the circulator.
- ③ The air discharge port is made to give more airflow to the down wood directions.
- ④ The gate or exit of the building is protected by dual door system.

2) In case the floor or surfaces of the place to be air conditioned is in direct contact with the outdoor air

- The floor of the heating room in direct contact with the store room, garage or the outside air receives the cold air at the floor and the floor temperature decrease and will feel cold at the feet.



In such places where the feet comes in direct contact with floors will give a cold feeling to the foot.

MULTI/SINGLE CAC Indoor unit

4. Ceiling cassette 1-way

- Countermeasure:

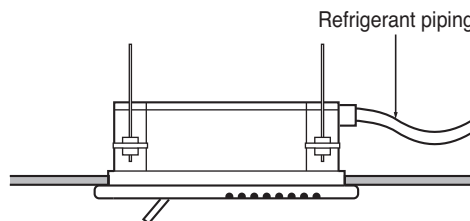
- Use the carpet on the floor
(compared to the tiles the carpet over it will have a 3 degree rise in temperature)
- Insulating the floor.
- Floor heating

⚠ CAUTION

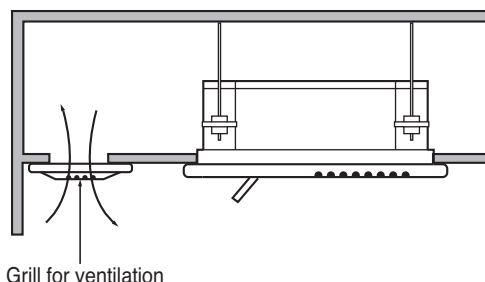
• Case of cold air intake:

The duct surface will have the dew drops so a insulation on the duct is a must.(Insulation material: a glass wool of thickness 25 mm will be appropriate.)

- Refrigerant piping: Increase the piping insulation thickness with thickness above 20 mm.

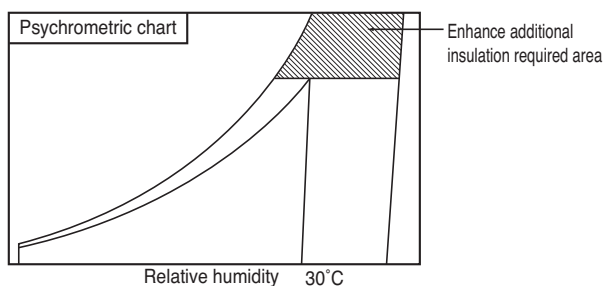


- Others: Inside the ceiling near the air tight seal places
(To escape of the humidity inside false ceiling)

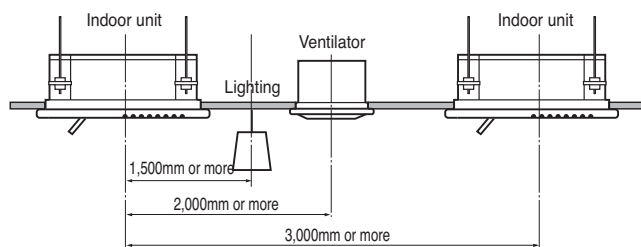


3) In case of high temperature or high humidity between the false ceiling and ceiling slab

- In case of temperature of 30 degree and humidity above 80%, the units body as well as the piping insulation should be strengthened.
Refer to the picture given below.



4) In case of multiple indoor cassette units (recommended)

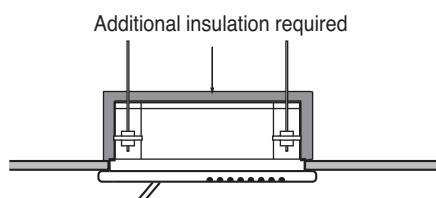


- Places having the temperature and humidity of the surrounding water sources(sea, river etc.)

In case the steam is generated between the false ceiling and the ceiling slab

Due to some nearby steam source.

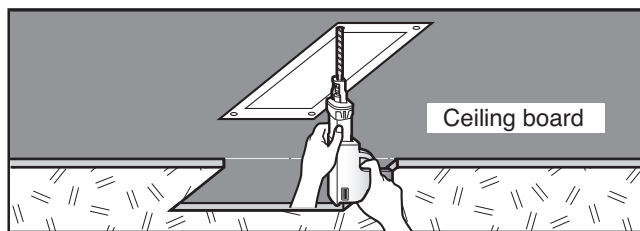
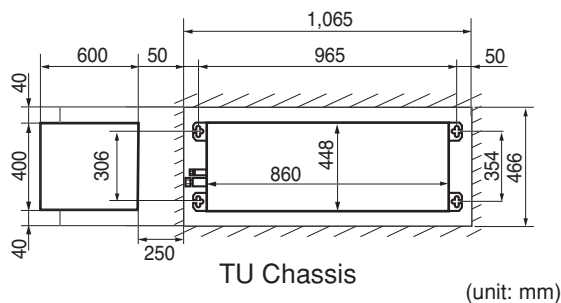
- Indoor unit: Insulate the unit body with some insulation like glass wool at least 10 mm in thickness.



4. Ceiling cassette 1-way

4.9.4 Ceiling opening dimensions and hanging bolt location

- ① The dimensions of the paper pattern for installation are the same as those of the ceiling opening dimensions.



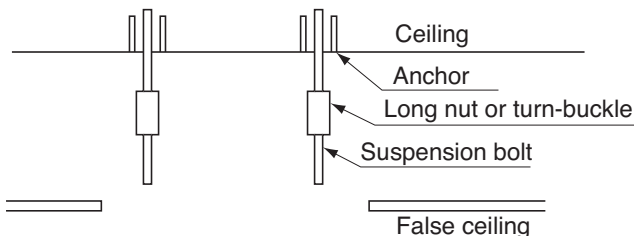
- ② Select and mark the position for fixing bolts and piping hole.
- ③ Decide the position for fixing bolts slightly tilted to the drain direction after considering the direction of drain hose.
- ④ Drill the hole for anchor bolt on the wall.

CAUTION

- This air-conditioner uses a drain pump.
- Install the unit horizontally using a level gauge.
- During the installation, care should be taken not to damage electric wires.

- Install the suspension bolts

(Use either a W3/8" or M10 size bolt) Use a hole-in anchor for existing ceilings, and a sunken insert, sunken anchor or other field supplied parts for new ceilings to reinforce the ceiling to bear the weight of the unit. Adjust clearance from the ceiling before proceeding further.

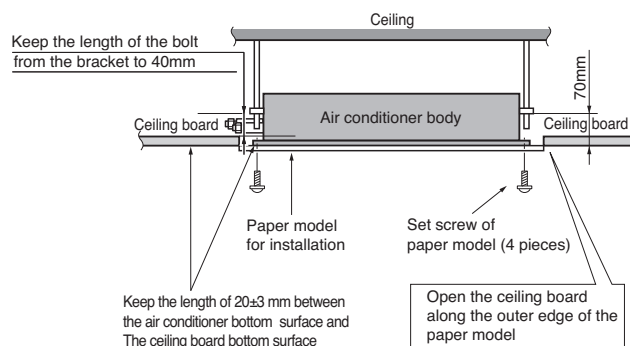
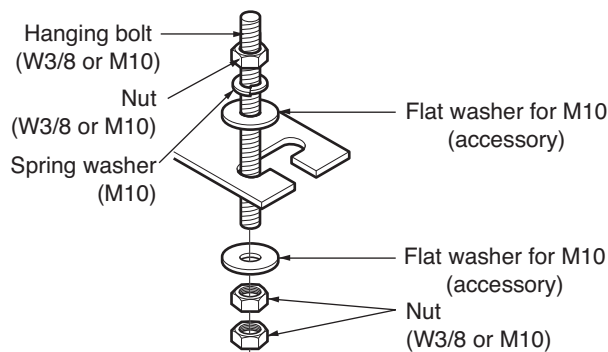


NOTE) All the above parts are field supplied.

4.9.5 Indoor unit installation

Installing of the accessories (except for the decoration panel) before installing the indoor unit is easier.

- ① Attach the hanger bracket to the suspension bolt. Be sure to fix it securely by using a nut and washer from the upper and lower sides of the hanger bracket.



MULTI/SINGLE CAC Indoor unit

4. Ceiling cassette 1-way

- The following parts are local purchasing.

- Hanging Bolt - W 3/8 or M10
- Nut - W 3/8 or M10
- Spring Washer - M10
- Plate Washer - M10

- Make sure to install heat insulation on the drain piping.

Heat insulation material: Polyethylene foam with thickness more than 8 mm.

- When extending the drain hose, use a commercially available drain extension hose, and be sure to insulate the extended section of the drain hose which is indoors. (Refer to the figure given below)

4.9.6 Connection pipes to the indoor unit

1) Refrigerant piping work

please refer "REFRIGERANT PIPING WORK".

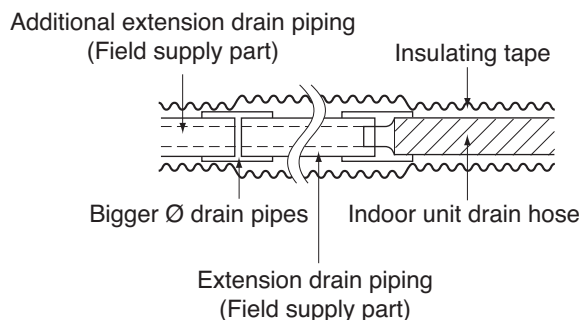
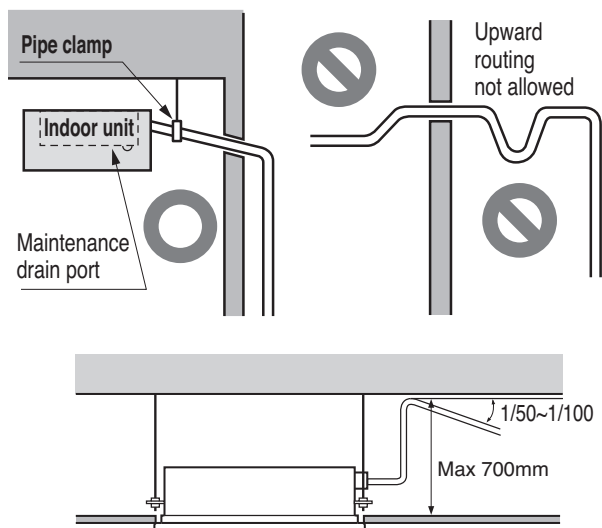
2) Piping insulation

- Perform heat insulation work completely on both gas and the liquid pipe, because improper insulation will result due condensate formation over pipe.
- Use the heat insulation material for the refrigerant piping which has an enough heat resistance.
- Precautions in high humidity circumstance:

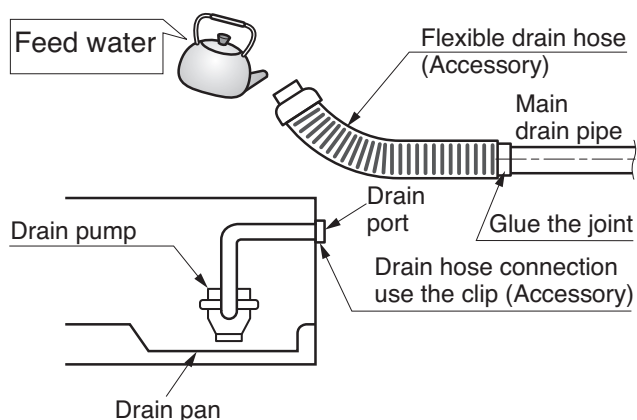
3) Indoor unit drain piping

- Drain piping must have downward slope (1/50 to 1/100): make sure not to provide up-and-down slope to prevent reverse flow.
- During drain piping connection, be careful not to exert extra force on the drain port on the indoor unit.
- The outside diameter of the drain connection on the unit is 32mm.

Piping material: Polyvinyl chloride pipe inner diameter Ø 25mm and pipe fittings



4) Drain test



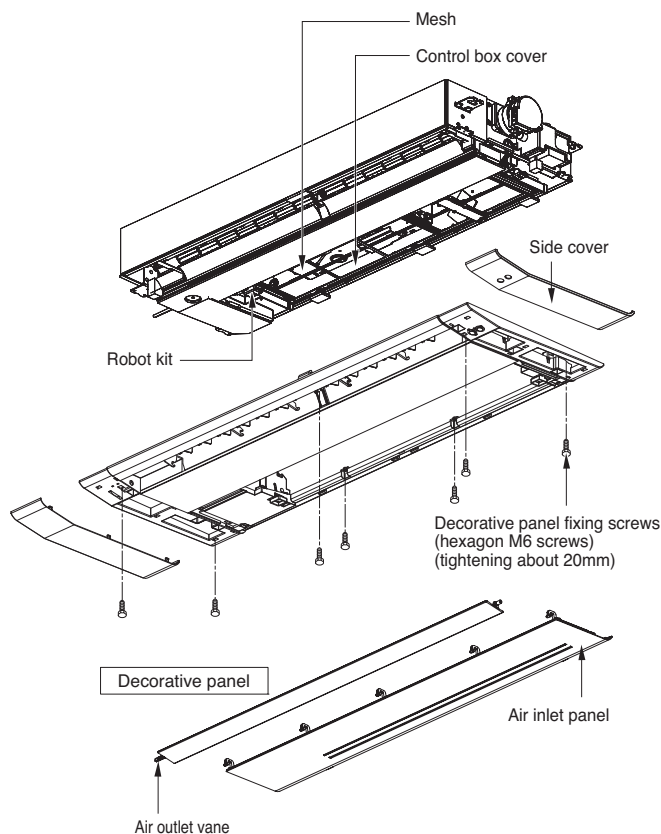
4. Ceiling cassette 1-way

4.9.7 Installation of Decoration Panel

1) Panel type

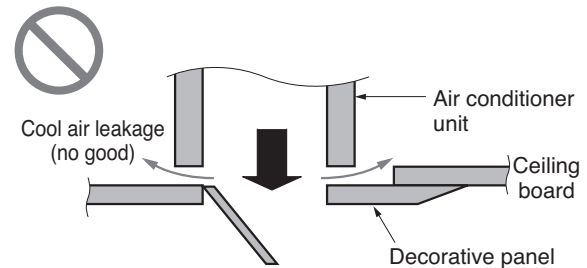
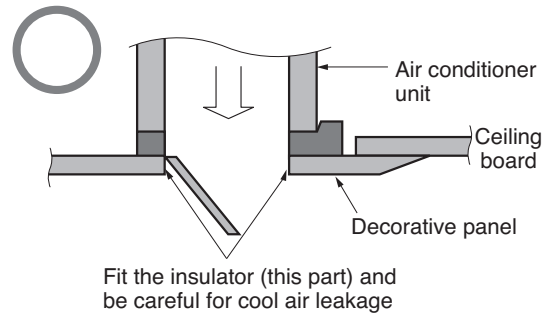
- The decoration panel has its installation direction.
- Before installing the decoration panel, always remove the paper template.

- ① Open the air outlet vane, and extract side covers.
- ② Remove the air inlet panel from the decoration panel.
- ③ Hook decoration panel to indoor unit, using hooks attached at the backside of both side of decoration panel.
- ④ Arrange wires not to get caught between decoration panel and indoor unit.
- ⑤ Screw 7 fixing screws. (7,9,12kBtu : 6 screws)
- ⑥ Connect the vane motor connector, display connector and air inlet panel connector.
- ⑦ Install the air inlet panel (including the air filter) and side covers.



CAUTION

- Install certainly the decoration panel. Cool air leakage causes sweating. ⇨ water drops fall.



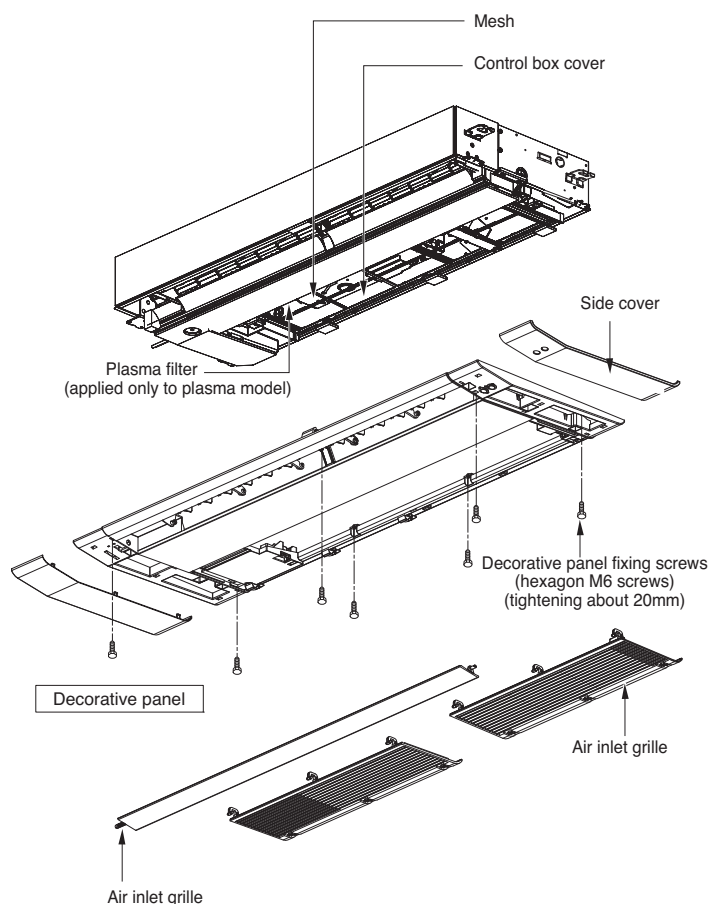
MULTI/SINGLE CAC Indoor unit

4. Ceiling cassette 1-way

2) Grill type

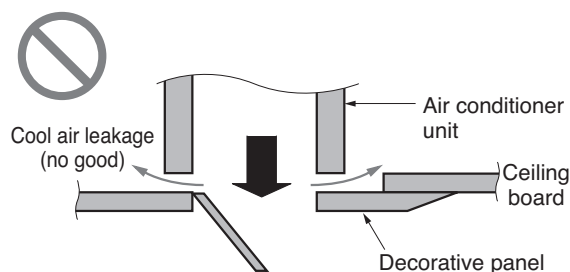
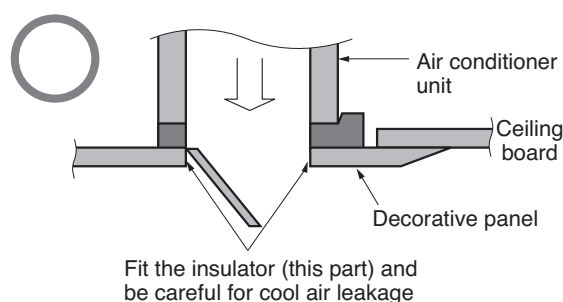
- The decoration panel has its installation direction.
- Before installing the decoration panel, always remove the paper template.

- ① Open the air outlet vane, and extract side covers.
- ② Remove the air inlet grille from the decoration panel.
- ③ Hook decoration panel to indoor unit, using hooks attached at the backside of both side of decoration panel.
- ④ Arrange wires not to get caught between decoration panel and indoor unit.
- ⑤ Screw 7 fixing screws. (7,9,12kBtu : 6 screws)
- ⑥ Connect the vane motor connector and display connector. (Plasma connector for plasma model)
- ⑦ Install the air inlet grille (including the air filter) and side covers.



CAUTION

- Install certainly the decoration panel. Cool air leakage causes sweating. ☞ water drops fall.



4.9.8 Electric wiring work

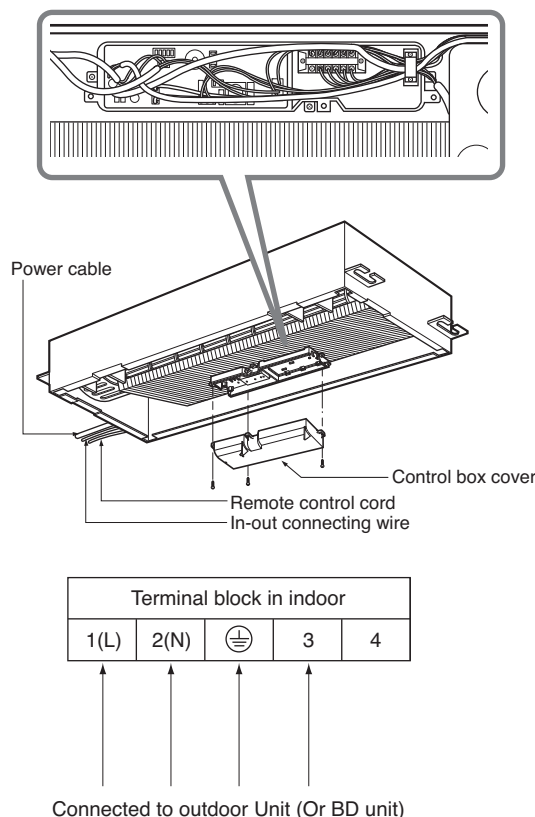
1) General instructions

- ① All field supplied parts and materials, electric works must conform to local codes.
Use copper wire only.
- ② Follow the "WIRING DIAGRAM" attached to the unit body to wire the outdoor unit, indoor units and the remote controller.
- ③ All wiring must be performed by an authorized electrician.
- ④ This system consists of multiple indoor units. Mark each indoor unit as unit A, unit B..., and be sure the terminal board wiring to the outdoor unit and indoor unit are properly matched. If wiring and piping between the outdoor unit and an indoor unit are mismatched, the system may cause a malfunction.
- ⑤ A circuit breaker capable of shutting down the power supply to the entire system must be installed.

4. Ceiling cassette 1-way

2) Wiring connection

- ① Open the control box cover and connect the remote control cable and Indoor power cable.



⚠ WARNING

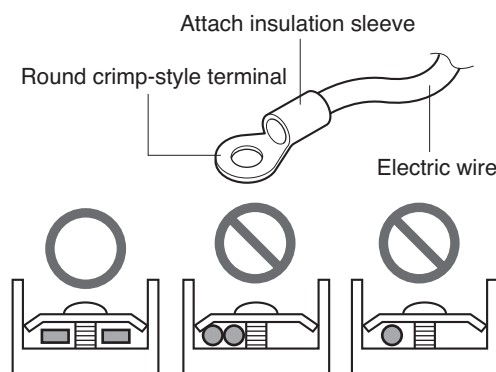
- Make sure that the screws of the terminal are not loose.

⚠ CAUTION

- Be sure to attach the sealing material or (field supplied) to hole of wiring to prevent the infiltration of foreign particle from outside. Otherwise a short-circuit may occur inside the electric parts box
- When clamping the wires, make sure no pressure is applied to the wire connections by using the included clamping material to make appropriate clamps. Also, when wiring, make sure the cover on the electric parts box fits snugly by arranging the wires neatly and attaching the electric parts box lid firmly. When attaching the electric parts box cover, make sure no wires get caught in the edges. Pass wiring through holes to prevent damage to them.
- Make sure the remote controller wiring, the wiring between the units, and other electrical wiring do not pass through the same locations outside of the unit, separating them properly, otherwise electrical noise (external static) could cause product malfunction.

NOTE

- ① Use round crimp-style terminals for connecting wires to the power supply terminal block. If unavailable, observe the following points when wiring.
 - Do not connect wires of different gauge to the same power supply terminal.
 - Use the specified electric wire. connect the wire securely to the terminal. lock the wire down without applying excessive force to the terminal.



Connect wires of the same gauge to both sides

- ② Tightening torque for the terminal screws.

- Use the correct screwdriver for tightening the terminal screws. If the blade of screwdriver is too small, the head of the screw might be damaged, and the screw will not be properly tightened.
- If the terminal screws are tightened too hard, screws might be damaged.

- ③ Do not connect wires of different gauge to the same grounding terminal. Loosen connection may deteriorate protection.

- ④ Never connect power supply wiring to the terminal block for remote controller wiring. A mistake of the sort could damage the entire system.

- ⑤ Use only specified wire and tightly connect wires to terminals. Be careful wires do not place external stress on terminals. Keep wiring in neat order and so as not to obstruct other equipment. Make sure that the lid closes tight. Incomplete connections could result in overheating, and in worst case, electric shock or fire.

MULTI/SINGLE CAC

Indoor unit

Ceiling cassette 4-way

- 1. List of functions**
- 2. Specifications**
- 3. Dimensions**
- 4. Piping diagrams**
- 5. Wiring Diagrams**
- 6. Air flow and temperature distributions (reference data)**
- 7. Sound levels**
- 8. Controller**
- 9. Installation**

5. Ceiling cassette 4-way

5.1 List of functions

Category	Functions	AMNH05GTRA0 [MT06AH NR0] AMNH07GTRA0 [MT08AH NR0] ATNH09GRLE2 [CT09 NR2] ATNH12GRLE2 [CT12 NR2]	ATNH18GQLE2 [CT18 NQ2]
Air flow	Air supply outlet	4	4
	Airflow direction control (left & right)	X	X
	Airflow direction control (up & down)	Auto	Auto
	Auto swing (left & right)	X	X
	Auto swing (up & down)	O	O
	Airflow steps (fan/cool/heat)	4 / 5 / 4	4 / 5 / 4
	Chaos wind(auto wind)	X	X
	Jet cool/heat	O / X	O / X
Air purifying	Swirl wind	O	O
	Triple filter (Deodorizing)	X	X
	Plasma air purifier	PTPKQ0	PTPKQ0
	Allergy Safe filter	X	X
Installation	Long-life prefilter (washable / anti-fungus)	O	O
	Drain pump	O	O
	E.S.P. control*	X	X
	Electric heater	X	X
	High ceiling operation*	O	O
	Auto Elevation Grille*	X	X
Reliability	Hot start	O	O
	Self diagnosis	O	O
Convenience	Auto changeover**	O**	O**
	Auto cleaning	X	X
	Auto operation(artificial intelligence)**	O**	O**
	Auto Restart	O	O
	Child lock*	O	O
	Forced operation	O	O
	Group control*	O	O
	Sleep mode	O	O
	Timer(on/off)	O	O
	Timer(weekly)*	O	O
Individual control	Two thermistor control*	O	O
	Wired remote controller	PQRCVSL0 / PQRCVSL0QW*** / PREMTB001 / PREMTB001	PQRCVSL0 / PQRCVSL0QW*** / PREMTB001 / PREMTB001
	Premium Wired remote controller	PREMTA000 / PREMTA000A / PREMTA000B	PREMTA000 / PREMTA000A / PREMTA000B
	Simple wired remote controller	PQRCVCL0Q / PQRCVCL0QW	PQRCVCL0Q / PQRCVCL0QW
	Simple Wired remote controller(for hotel use)	PQRCHCA0Q / PQRCHCA0QW	PQRCHCA0Q / PQRCHCA0QW
Network Solution	Wireless remote controller	PQWRHQ0FDB	PQWRHQ0FDB
	General central controller (Non LGAP)	X	X
	Network Solution(LGAP)	O	O
	Simple Dry contact (outside AC 220V power source)	PQDSA / PDRYCB000	PQDSA / PDRYCB000
	2 Points Dry Contact (For setback)	PDRYCB400	PDRYCB400
	Dry contact for Thermostat	PDRYCB300	PDRYCB300
	PI 485(for Indoor Unit)	X	X
Special function kit	Zone controller	X	X
	CTI(Communication transfer interface)	X	X
	Electronic thermostat	X	X
	Telecom shelter controller	X	PQCSA001T0**
	Independent Power Module	X	X
	CO ₂ Sensor	X	X
Others	Remote temperature sensor	PQRSTA0	PQRSTA0
	Group control wire	PZCWRCG3	PZCWRCG3

Note

- * : These functions need to connect the wired remote controller.
- ** : Auto Changeover function, Telecom shelter controller can be operated when connected with Single A.
Auto Operation function can be operated when connected with Multi F/FDX.
- *** : It is included by default when the product is manufactured.

- For synchro operation, some functions and accessories are not available. Check the outdoor unit's PDB.
O : Applied X : Not applied
Accessory model name : Installed at field, ordered and purchased separately by the corresponding model name, supplied with separate package

5. Ceiling cassette 4-way

Category	Functions	ATNH24GPLE2 [CT24 NP2], ATNH30GPLE2 [UT30 NP2], ATNH36GNLE2 [UT36 NN2], ATNH42GMLE2 [UT42 NM2], ATNH48GMLE2 [UT48 NM2], ATNH60GMLE2 [UT60 NM2]
Air flow	Air supply outlet	4
	Airflow direction control (left & right)	X
	Airflow direction control (up & down)	Auto
	Auto swing (left & right)	X
	Auto swing (up & down)	O
	Airflow steps (fan/cool/heat)	4 / 5 / 4
	Chaos wind(auto wind)	X
	Jet cool/heat	O / X
	Swirl wind	O
Air purifying	Triple filter (Deodorizing)	X
	Plasma air purifier	PTPKM0
	Allergy Safe filter	X
	Long-life prefilter (washable / anti-fungus)	O
Installation	Drain pump	O
	E.S.P. control*	X
	Electric heater	X
	High ceiling operation*	O
	Auto Elevation Grille*	PTEGM0
Reliability	Hot start	O
	Self diagnosis	O
Convenience	Auto changeover**	O**
	Auto cleaning	X
	Auto operation(artificial intelligence)**	O**
	Auto Restart	O
	Child lock*	O
	Forced operation	O
	Group control*	O
	Sleep mode	O
	Timer(on/off)	O
	Timer(weekly)*	O
Individual control	Two thermistor control*	O
	Wired remote controller	PQRCVSL0 / PQRCVSL0QW*** / PREMTB001 / PREMTBB01
	Premium Wired remote controller	PREMTA000 / PREMTA000A / PREMTA000B
	Simple wired remote controller	PQRCVCL0Q / PQRCVCL0QW
	Simple Wired remote controller(for hotel use)	PQRCHCA0Q / PQRCHCA0QW
	Wireless remote controller	PQWRHQ0FDB
Network Solution	General central controller (Non LGAP)	X
	Network Solution(LGAP)	O
	Simple Dry contact (outside AC 220V power source)	PQDSA / PDRYCB000
	2 Points Dry Contact (For setback)	PDRYCB400
	Dry contact for Thermostat	PDRYCB300
	PI 485(for Indoor Unit)	X
Special function kit	Zone controller	X
	CTI(Communication transfer interface)	X
	Electronic thermostat	X
	Telecom shelter controller	PQCSA001T0**
	Independent Power Module	X
	CO ₂ Sensor	X
Others	Remote temperature sensor	PQRSTA0
	Group control wire	PZCWRCG3

Note

- * : These functions need to connect the wired remote controller.
- ** : Auto Changeover function, Telecom shelter controller can be operated when connected with Single A.
Auto Operation function can be operated when connected with Multi F/FDX.
- *** : It is included by default when the product is manufactured.

- For synchro operation, some functions and accessories are not available. Check the outdoor unit's PDB.
O : Applied X : Not applied
Accessory model name : Installed at field, ordered and purchased separately by the corresponding model name, supplied with separate package

5. Ceiling cassette 4-way

5.2 Specifications

Model Name				AMNH05GTRA0 [MT06AH NR0]	AMNH07GTRA0 [MT08AH NR0]	ATNH09GRLE2 [CT09 NR2]
Power Supply			V, Ø, Hz	220-240, 1, 50	220-240, 1, 50	220-240, 1, 50
				220, 1, 60	220, 1, 60	220, 1, 60
Power Input	Min / Nom / Max		W	10 / 20 / 20	10 / 20 / 20	10 / 20 / 20
Running Current			A	0.4	0.4	0.4
Casing Color			-	-	-	-
Dimensions	Body	W x H x D	mm	570 × 214 × 570	570 × 214 × 570	570 × 214 × 570
		W x H x D	inch	22-7/16 x 8-7/16 x 22-7/16	22-7/16 x 8-7/16 x 22-7/16	22-7/16 x 8-7/16 x 22-7/16
Net Weight	Body		kg (lbs)	14.0 (30.9)	14.0 (30.9)	14.0 (30.9)
Heat Exchanger	(Row x Column x Fins per inch) x No.		-	(2 x 8 x 18) x 1	(2 x 8 x 18) x 1	(2 x 8 x 18) x 1
	Face Area		m² (ft²)	0.22 (2.40)	0.22 (2.40)	0.22 (2.40)
Fan	Type		-	Turbo Fan	Turbo Fan	Turbo Fan
	Air Flow Rate	H / M / L	m³/min	7.5 / 6.0 / 5.0	7.5 / 6.0 / 5.0	8.5 / 7.0 / 6.0
		H / M / L	ft³/min	265 / 212 / 177	265 / 212 / 177	300 / 265 / 230
Fan Motor	Type		-	BLDC	BLDC	BLDC
	Output		W x No.	43 x 1	43 x 1	43 x 1
Sound Pressure Level		H / M / L	dB(A)	31 / 27 / 24	31 / 27 / 24	36 / 33 / 30
Sound Power Level		Max.	dB(A)	48	48	48
Piping Connections	Liquid		mm(inch)	Ø 6.35 (1/4)	Ø 6.35 (1/4)	Ø 6.35 (1/4)
	Gas		mm(inch)	Ø 9.52 (3/8)	Ø 9.52 (3/8)	Ø 9.52 (3/8)
	Drain (O.D. / I.D.)		mm	Ø 32.0 / 25.0	Ø 32.0 / 25.0	Ø 32.0 / 25.0
Safety Devices			-	Fuse		
			-	Thermal Protector for Fan Motor		
Power and Communication Cable (included Earth)			No. x mm² (AWG)	4C x 0.75 (18)	4C x 0.75 (18)	4C x 0.75 (18)
Decoration Panel	Model Name		-	PT-UQC	PT-UQC	PT-UQC
	Casing Color		-	Morning Fog	Morning Fog	Morning Fog
	Dimensions	W x H x D	mm	700 × 22 × 700	700 × 22 × 700	700 × 22 × 700
		W x H x D	inch	27-9/16 x 7/8 x 27-9/16	27-9/16 x 7/8 x 27-9/16	27-9/16 x 7/8 x 27-9/16
	Net weight		kg (lbs)	3.0 (6.6)	3.0 (6.6)	3.0 (6.6)

Notes :

1. Wiring cable size must comply with the applicable local and national code.
2. Due to our policy of innovation some specifications may be changed without notification.
3. Sound Level Values are measured at Anechoic chamber.
Therefore, these values can be increased owing to ambient conditions during operation.

MULTI/SINGLE CAC Indoor unit

5. Ceiling cassette 4-way

Model Name				ATNH12GRLE2 [CT12 NR2]	ATNH18GQLE2 [CT18 NQ2]	ATNH24GPLE2 [CT24 NP2]	
Power Supply			V, Ø, Hz	220-240, 1, 50	220-240, 1, 50	220-240, 1, 50	
				220, 1, 60	220, 1, 60	220, 1, 60	
Power Input	Min / Nom / Max		W	10 / 20 / 20	10 / 30 / 40	20 / 50 / 60	
Running Current			A	0.4	0.4	0.6	
Casing Color			-	-	-	-	
Dimensions	Body	W x H x D	mm	570 × 214 × 570	570 × 256 × 570	840 × 204 × 840	
		W x H x D	inch	22-7/16 x 8-7/16 x 22-7/16	22-7/16 x 10-3/32 x 22-7/16	33-1/16 x 8-1/32 x 33-1/16	
Net Weight	Body		kg (lbs)	14.0 (30.9)	15.5 (34.2)	20.5 (45.2)	
Heat Exchanger	(Row x Column x Fins per inch) x No.		-	(2 x 8 x 18) x 1	(2 x 10 x 18) x 1	(2 x 8 x 19) x 1	
	Face Area		m² (ft²)	0.22 (2.40)	0.28 (3.00)	0.35 (3.77)	
Fan	Type		-	Turbo Fan	Turbo Fan	Turbo Fan	
	Air Flow Rate	H / M / L	m³/min	9.5 / 8.0 / 7.0	13.0 / 12.0 / 11.0	17.0 / 15.0 / 13.0	
		H / M / L	ft³/min	336 / 283 / 230	459 / 424 / 353	600 / 530 / 459	
Fan Motor	Type		-	BLDC	BLDC	BLDC	
	Output		W x No.	43 x 1	43 x 1	60 x 1	
Sound Pressure Level		H / M / L	dB(A)	38 / 35 / 32	41 / 39 / 36	38 / 36 / 34	
Sound Power Level		Max.	dB(A)	51	55	57	
Piping Connections	Liquid		mm(inch)	Ø 6.35 (1/4)	Ø 6.35 (1/4)	Ø 9.52 (3/8)	Ø 6.35 (1/4)*
	Gas		mm(inch)	Ø 9.52 (3/8)	Ø 12.7 (1/2)	Ø 15.88 (5/8)	Ø 12.7 (1/2)*
	Drain (O.D. / I.D.)		mm	Ø 32.0 / 25.0	Ø 32.0 / 25.0	Ø 32.0 / 25.0	
Safety Devices			-	Fuse			
			-	Thermal Protector for Fan Motor			
Power and Communication Cable (included Earth)			No. x mm² (AWG)	4C x 0.75 (18)	4C x 0.75 (18)	4C x 0.75 (18)	
Decoration Panel	Model Name		-	PT-UQC	PT-UQC	PT-UMC(1)	
	Casing Color		-	Morning Fog	Morning Fog	Morning Fog	
	Dimensions	W x H x D	mm	700 × 22 × 700	700 × 22 × 700	950 × 25 × 950	
		W x H x D	inch	27-9/16 x 7/8 x 27-9/16	27-9/16 x 7/8 x 27-9/16	37-13/32 x 31/32 x 37-13/32	
	Net weight		kg (lbs)	3.0 (6.6)	3.0 (6.6)	5.0 (11.0)	

Notes :

1. Wiring cable size must comply with the applicable local and national code.
2. Due to our policy of innovation some specifications may be changed without notification.
3. Sound Level Values are measured at Anechoic chamber.
Therefore, these values can be increased owing to ambient conditions during operation.
4. * : For combined with Multi F/Fdx system, socket provided with indoor units should be connected.

5. Ceiling cassette 4-way

Model Name				ATNH30GPLE2 [UT30 NP2]	ATNH36GNLE2 [UT36 NN2]	ATNH42GMLE2 [UT42 NM2]
Power Supply			V, Ø, Hz	220-240, 1, 50	220-240, 1, 50	220-240, 1, 50
				220, 1, 60	220, 1, 60	220, 1, 60
Power Input	Min / Nom / Max		W	30 / 70 / 80	40 / 130 / 140	70 / 190 / 210
Running Current			A	0.6	0.6	1.0
Casing Color			-	-	-	-
Dimensions	Body	W x H x D	mm	840 × 204 × 840	840 × 246 × 840	840 × 288 × 840
		W x H x D	inch	33-1/16 x 8-1/32 x 33-1/16	33-1/16 x 9-11/16 x 33-1/16	33-1/16 x 11-11/32 x 33-1/16
Net Weight	Body		kg (lbs)	20.5 (45.2)	22.3 (49.2)	24.6 (54.2)
Heat Exchanger	(Row x Column x Fins per inch) x No.		-	(2 x 8 x 19) x 1	(2 x 10 x 19) x 1	(2 x 12 x 21) x 1
	Face Area		m² (ft²)	0.35 (3.77)	0.44 (4.71)	0.53 (5.65)
Fan	Type		-	Turbo Fan	Turbo Fan	Turbo Fan
	Air Flow Rate	H / M / L	m³/min	19.0 / 17.0 / 15.0	24.0 / 22.0 / 19.0	30.0 / 28.0 / 26.0
		H / M / L	ft³/min	671 / 600 / 530	848 / 777 / 671	1,060 / 989 / 918
Fan Motor	Type		-	BLDC	BLDC	BLDC
	Output		W x No.	60 x 1	124 x 1	124 x 1
Sound Pressure Level		H / M / L	dB(A)	40 / 37 / 35	43 / 40 / 37	46 / 44 / 43
Sound Power Level		Max.	dB(A)	57	62	65
Piping Connections	Liquid		mm(inch)	Ø 9.52 (3/8)	Ø 9.52 (3/8)	Ø 9.52 (3/8)
	Gas		mm(inch)	Ø 15.88 (5/8)	Ø 15.88 (5/8)	Ø 15.88 (5/8)
	Drain (O.D. / I.D.)		mm	Ø 32.0 / 25.0	Ø 32.0 / 25.0	Ø 32.0 / 25.0
Safety Devices			-	Fuse		
			-	Thermal Protector for Fan Motor		
Power and Communication Cable (included Earth)			No. x mm² (AWG)	4C x 0.75 (18)	4C x 0.75 (18)	4C x 0.75 (18)
Decoration Panel	Model Name		-	PT-UMC(1)	PT-UMC(1)	PT-UMC(1)
	Casing Color		-	Morning Fog	Morning Fog	Morning Fog
	Dimensions	W x H x D	mm	950 × 25 × 950	950 × 25 × 950	950 × 25 × 950
		W x H x D	inch	37-13/32 x 31/32 x 37-13/32	37-13/32 x 31/32 x 37-13/32	37-13/32 x 31/32 x 37-13/32
	Net weight		kg (lbs)	5.0 (11.0)	5.0 (11.0)	5.0 (11.0)

Notes :

1. Wiring cable size must comply with the applicable local and national code.
2. Due to our policy of innovation some specifications may be changed without notification.
3. Sound Level Values are measured at Anechoic chamber.
Therefore, these values can be increased owing to ambient conditions during operation.

MULTI/SINGLE CAC Indoor unit

5. Ceiling cassette 4-way

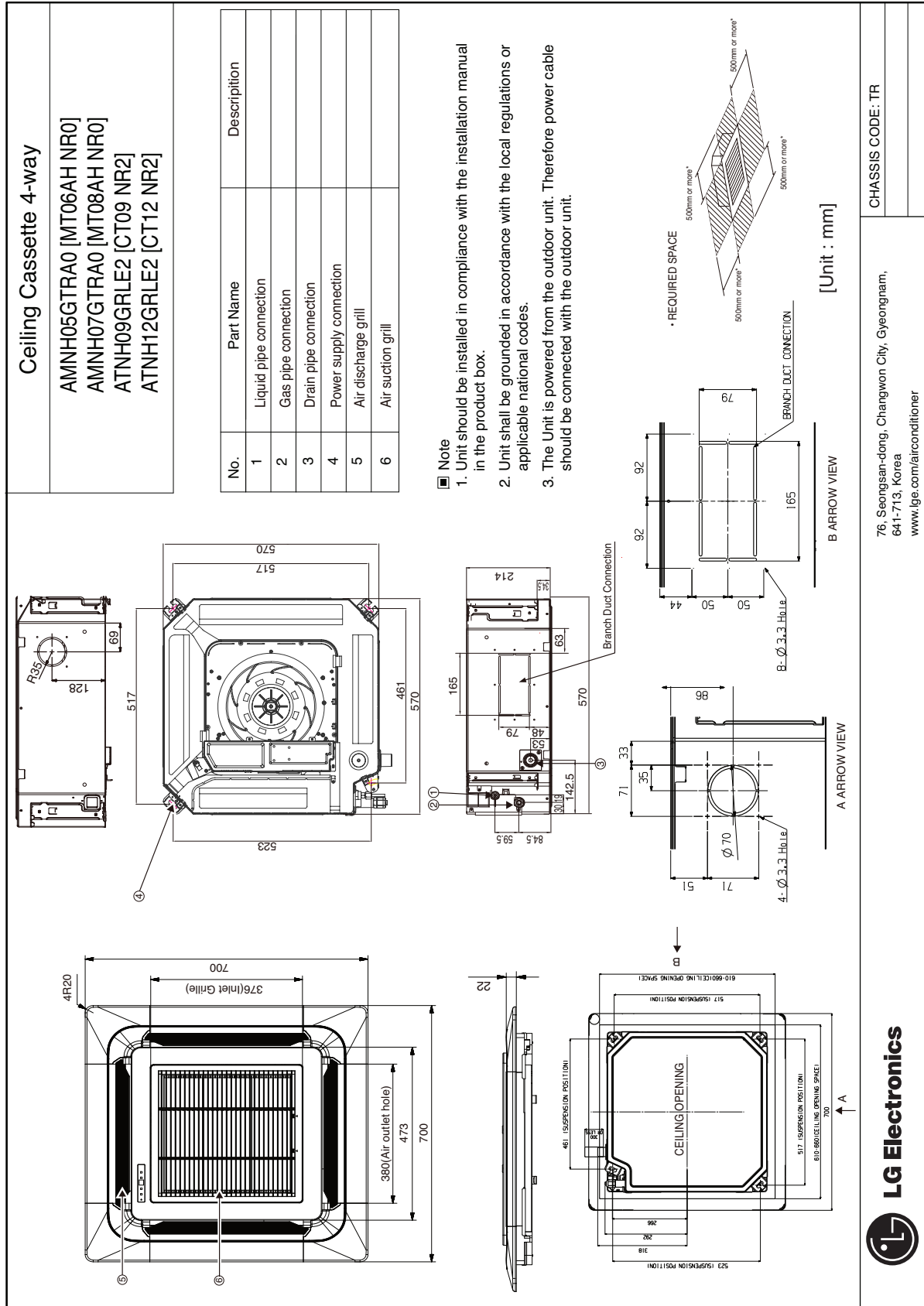
Model Name				ATNH48GMLE2 [UT48 NM2]	ATNH60GMLE2 [UT60 NM2]
Power Supply			V, Ø, Hz	220-240, 1, 50	220-240, 1, 50
				220, 1, 60	220, 1, 60
Power Input	Min / Nom / Max		W	80 / 190 / 210	80 / 190 / 210
Running Current			A	1.0	1.0
Casing Color			-	-	-
Dimensions	Body	W x H x D	mm	840 x 288 x 840	840 x 288 x 840
		W x H x D	inch	33-1/16 x 11-11/32 x 33-1/16	33-1/16 x 11-11/32 x 33-1/16
Net Weight	Body		kg (lbs)	24.6 (54.2)	24.6 (54.2)
Heat Exchanger	(Row x Column x Fins per inch) x No.		-	(2 x 12 x 21) x 1	(2 x 12 x 21) x 1
	Face Area		m² (ft²)	0.53 (5.65)	0.53 (5.65)
Fan	Type		-	Turbo Fan	Turbo Fan
	Air Flow Rate	H / M / L	m³/min	34.0 / 32.0 / 30.0	34.0 / 32.0 / 30.0
		H / M / L	ft³/min	1,201 / 1,130 / 1,060	1,201 / 1,130 / 1,060
Fan Motor	Type		-	BLDC	BLDC
	Output		W x No.	124 x 1	124 x 1
Sound Pressure Level		H / M / L	dB(A)	49 / 47 / 45	49 / 47 / 45
Sound Power Level		Max.	dB(A)	66	66
Piping Connections	Liquid		mm(inch)	Ø 9.52 (3/8)	Ø 9.52 (3/8)
	Gas		mm(inch)	Ø 15.88 (5/8)	Ø 15.88 (5/8)
	Drain (O.D. / I.D.)		mm	Ø 32.0 / 25.0	Ø 32.0 / 25.0
Safety Devices			-	Fuse	
			-	Thermal Protector for Fan Motor	
Power and Communication Cable (included Earth)			No. x mm² (AWG)	4C x 0.75 (18)	4C x 0.75 (18)
Decoration Panel	Model Name		-	PT-UMC(1)	PT-UMC(1)
	Casing Color		-	Morning Fog	Morning Fog
	Dimensions	W x H x D	mm	950 x 25 x 950	950 x 25 x 950
		W x H x D	inch	37-13/32 x 31/32 x 37-13/32	37-13/32 x 31/32 x 37-13/32
	Net weight		kg (lbs)	5.0 (11.0)	5.0 (11.0)

Notes :

1. Wiring cable size must comply with the applicable local and national code.
2. Due to our policy of innovation some specifications may be changed without notification.
3. Sound Level Values are measured at Anechoic chamber.
Therefore, these values can be increased owing to ambient conditions during operation.

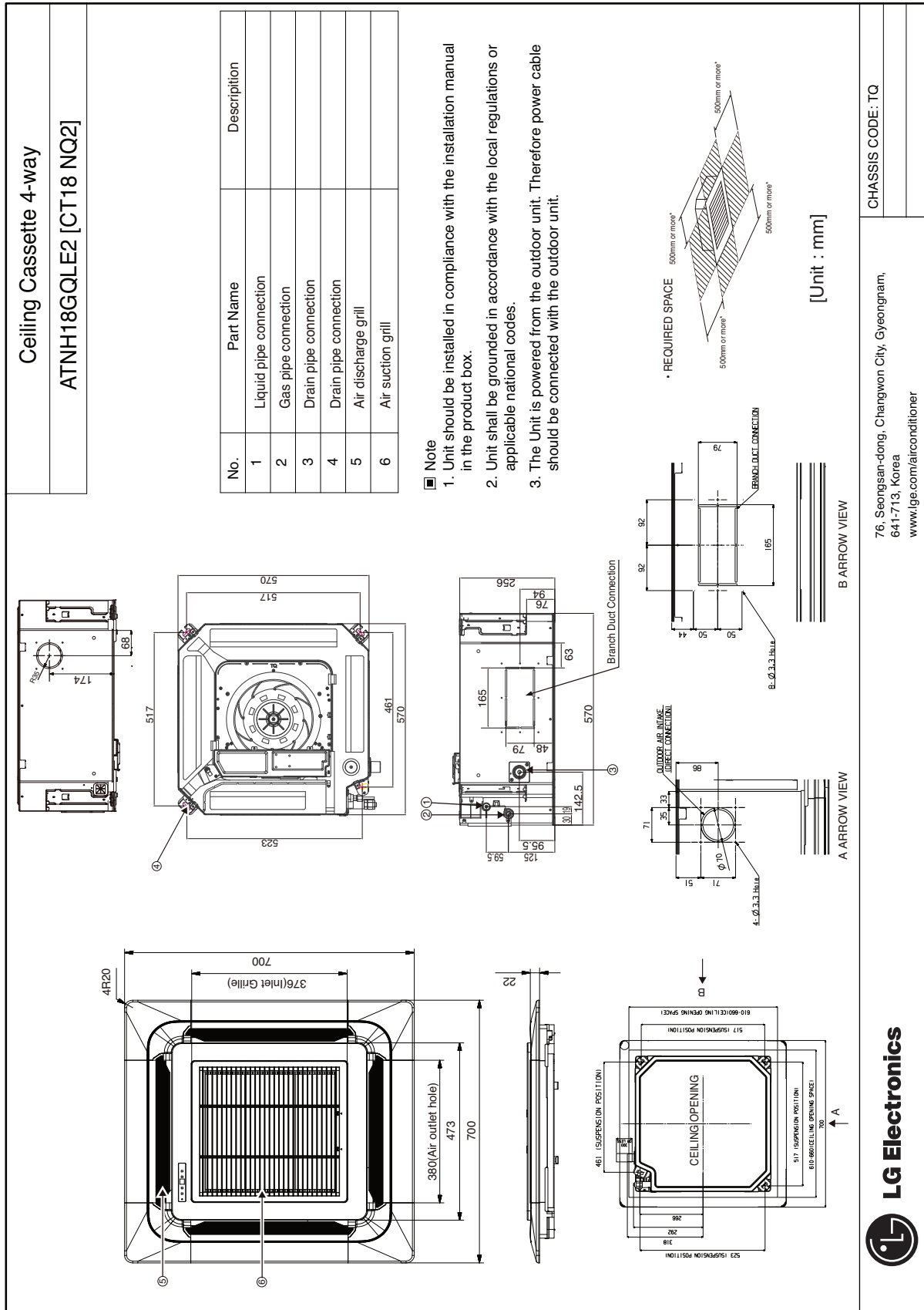
5. Ceiling cassette 4-way

5.3 Dimensions

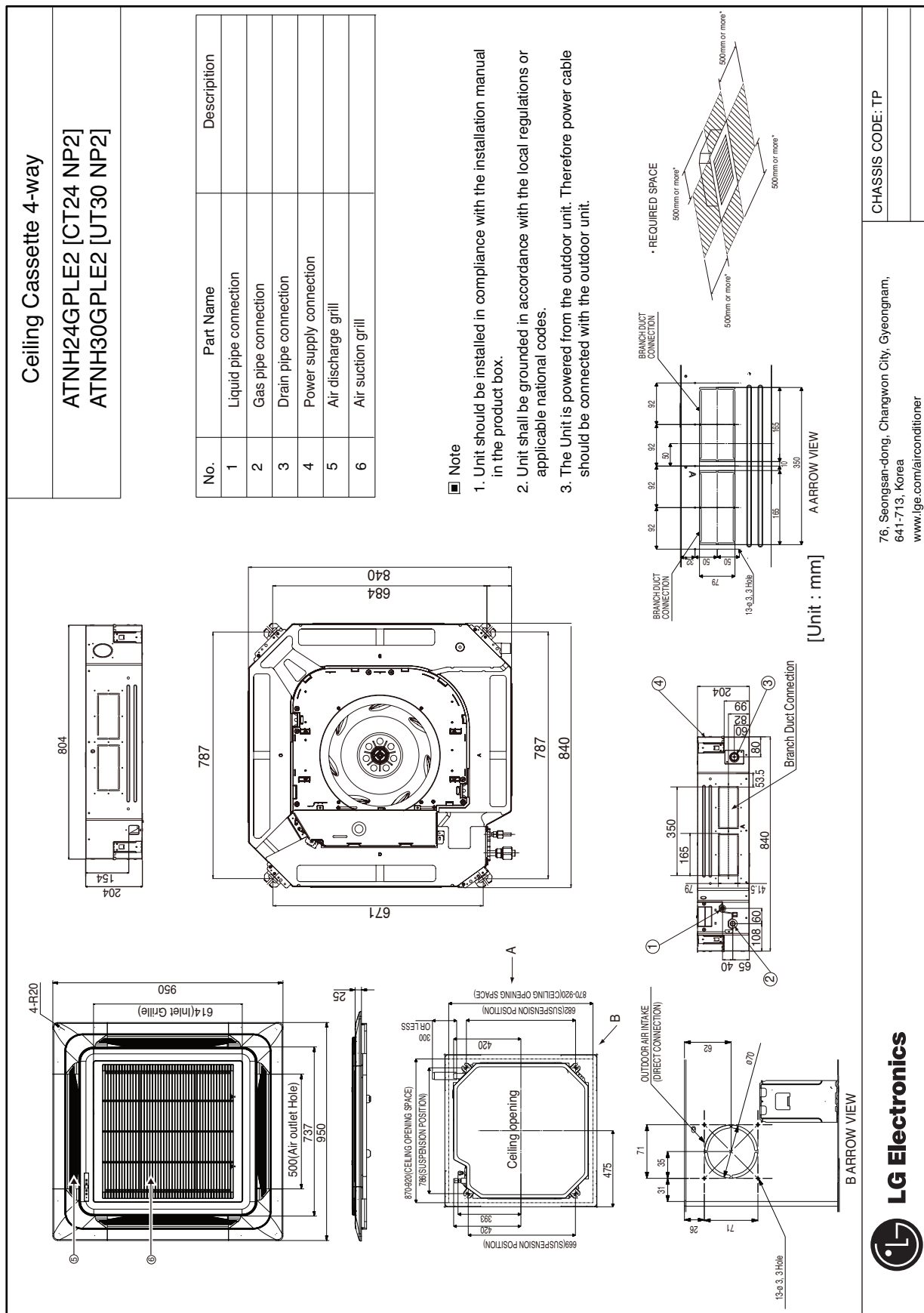


MULTI/SINGLE CAC Indoor unit

5. Ceiling cassette 4-way

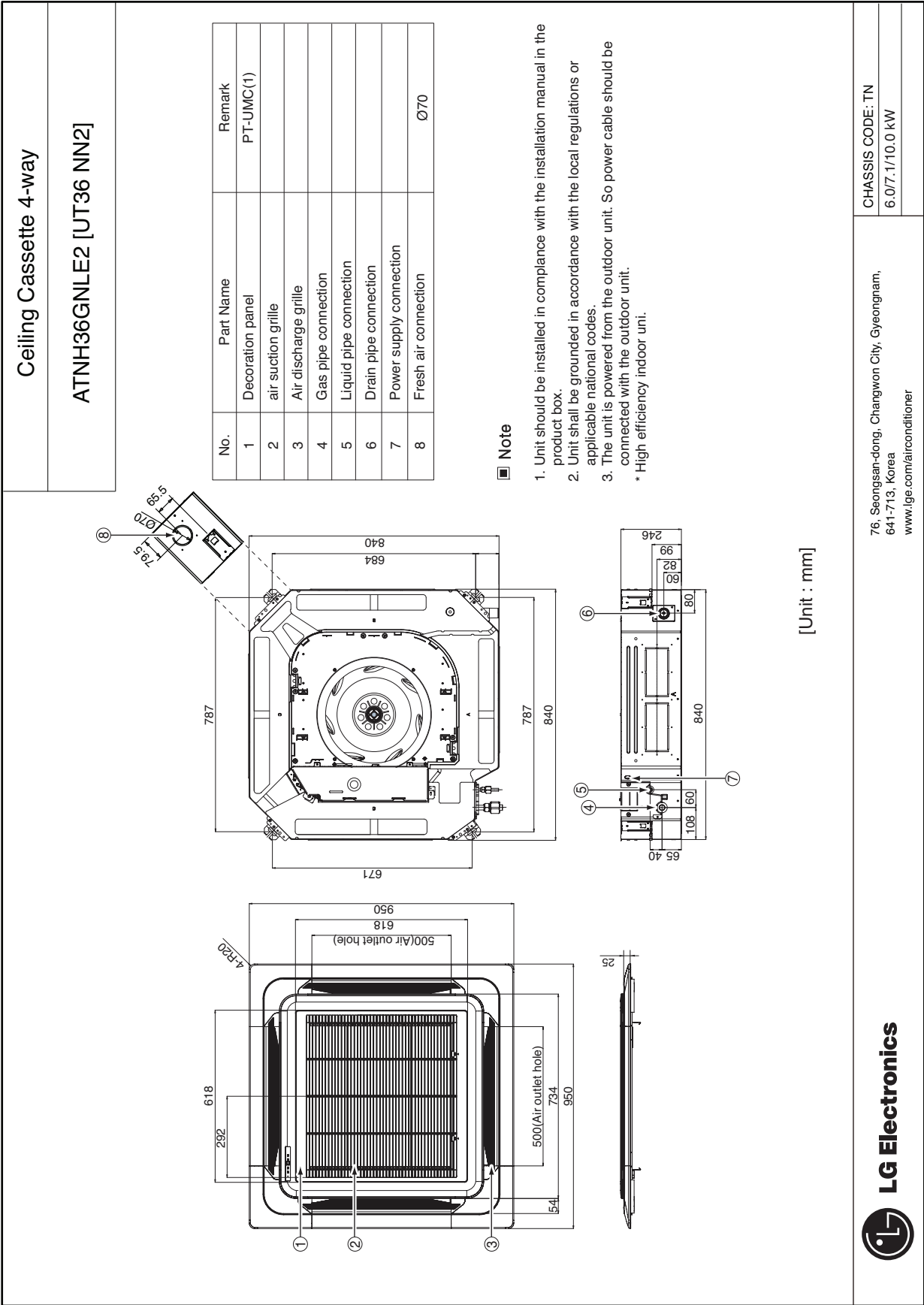


5. Ceiling cassette 4-way



MULTI/SINGLE CAC Indoor unit

5. Ceiling cassette 4-way



5. Ceiling cassette 4-way

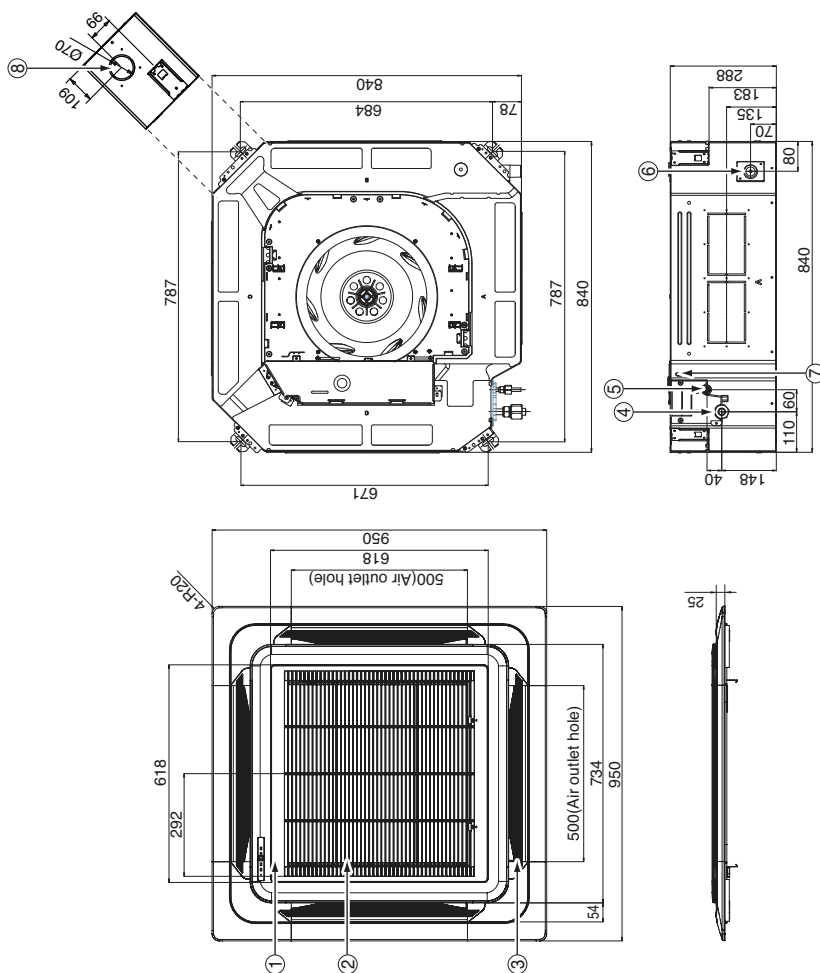
Ceiling Cassette 4-way

ATNH42GMLE2 [UT42 NM2]
ATNH48GMLE2 [UT48 NM2]
ATNH60GMLE2 [UT60 NM2]

No.	Part Name	Remark
1	Decoration panel	PT-UMC(1)
2	air suction grille	
3	Air discharge grille	
4	Gas pipe connection	
5	Liquid pipe connection	
6	Drain pipe connection	
7	Power supply connection	
8	Fresh air connection	Ø70

Note

1. Unit should be installed in compliance with the installation manual in the product box.
2. Unit shall be grounded in accordance with the local regulations or applicable national codes.
3. The Unit is powered from the outdoor unit. So power cable should be connected with the outdoor unit.



[Unit : mm]



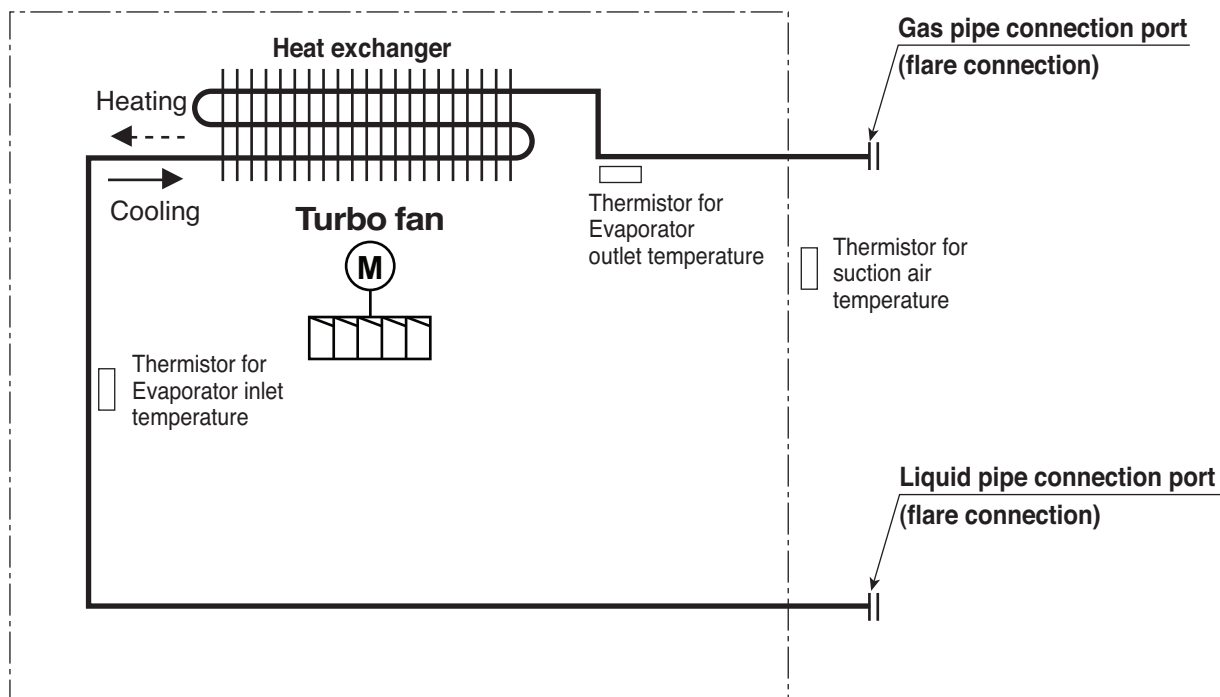
LG Electronics

76, Seongsan-dong, Changwon City, Gyeongnam,
641-713, Korea
www.lge.com/airconditioner

CHASSIS CODE: TM
12.5/14.0/15.0 KW

5. Ceiling cassette 4-way

5.4 Piping diagrams



Description	PCB Connector
Thermistor for suction air temperature	CN-ROOM
Thermistor for evaporator inlet temperature	CN-PIPE / IN
Thermistor for evaporator outlet temperature	CN-PIPE / OUT

■ Refrigerant pipe connection port diameters

[Unit : mm]

Model	Gas	Liquid
AMNH05GTRA0 [MT06AH NR0] AMNH07GTRA0 [MT08AH NR0] ATNH09GRLE2 [CT09 NR2] ATNH12GRLE2 [CT12 NR2]	Ø9.52	Ø6.35
ATNH18GQLE2 [CT18 NQ2]	Ø12.7	
ATNH24GPLE2 [CT24 NP2]	Ø15.88	Ø9.52
	*Ø12.7	*Ø6.35
ATNH30GPLE2 [UT30 NP2] ATNH36GNLE2 [UT36 NN2] ATNH42GMLE2 [UT42 NM2] ATNH48GMLE2 [UT48 NM2] ATNH60GMLE2 [UT60 NM2]	Ø15.88	Ø9.52

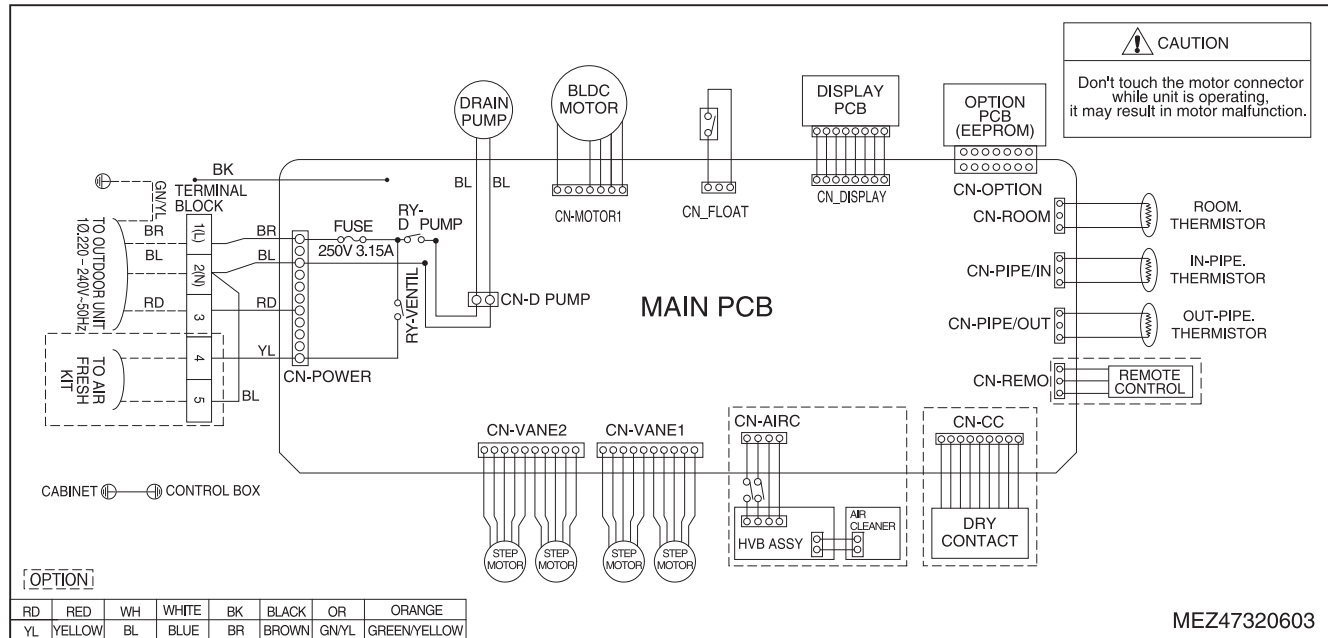
* : For combined with Multi F/FDX system, socket provided with indoor units should be connected.

MULTI/SINGLE CAC Indoor unit

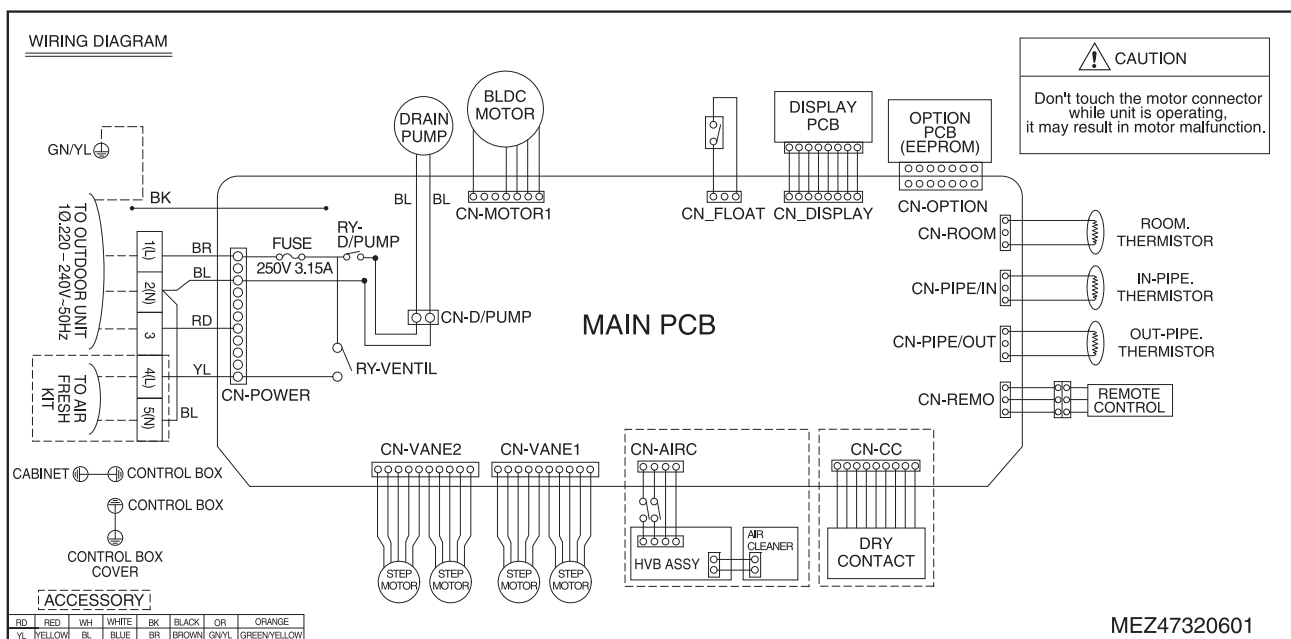
5. Ceiling cassette 4-way

5.5 Wiring diagrams

Models: AMNH-TR [MT-AH NR0]/ATNH-RL [CT- NR2]/ATNH-QL [CT- NQ2]



Models : ATNH-PL [CT- NP2]/ATNH-NL [CT- NN2]/ATNH-ML [CT- NM2]



MULTI/SINGLE CAC Indoor unit

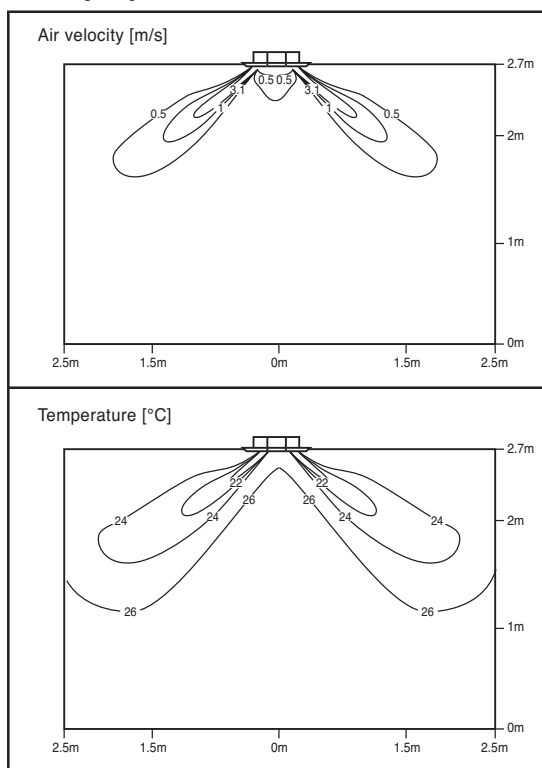
5. Ceiling cassette 4-way

5.6 Air flow and temperature distributions (reference data)

Model : AMNH05GTRA0 [MT06AH NR0], AMNH07GTRA0 [MT08AH NR0]

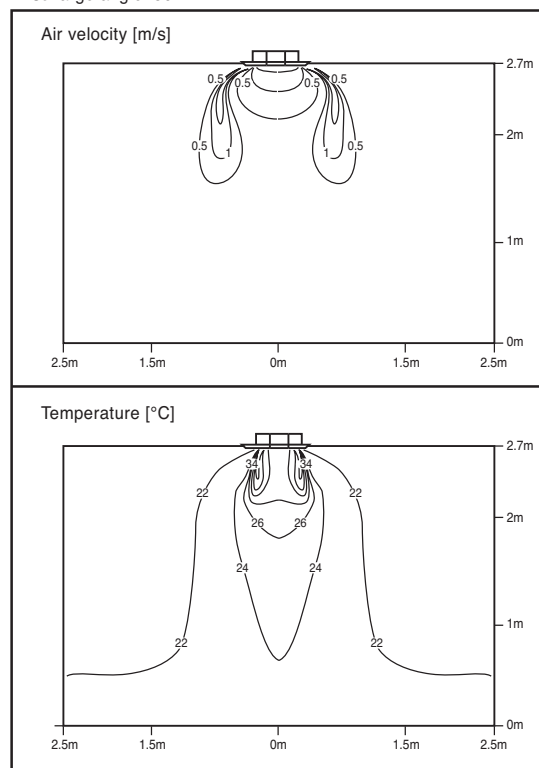
Cooling

Discharge angle: 40°



Heating

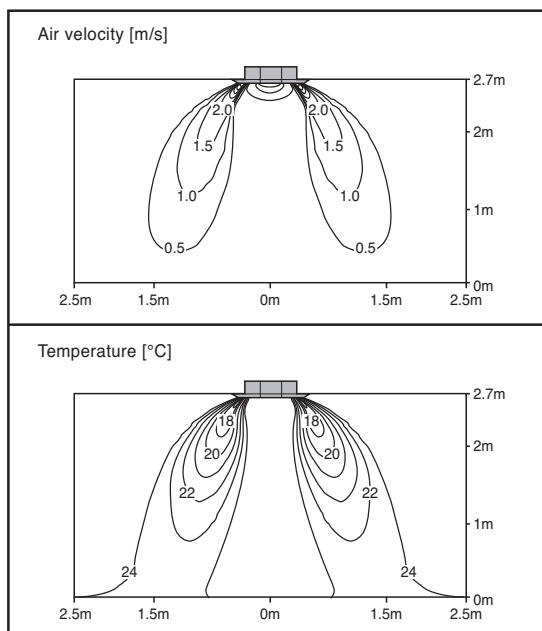
Discharge angle: 50°



Model : ATNH09GRLE2 [CT09 NR2], ATNH12GRLE2 [CT12 NR2]

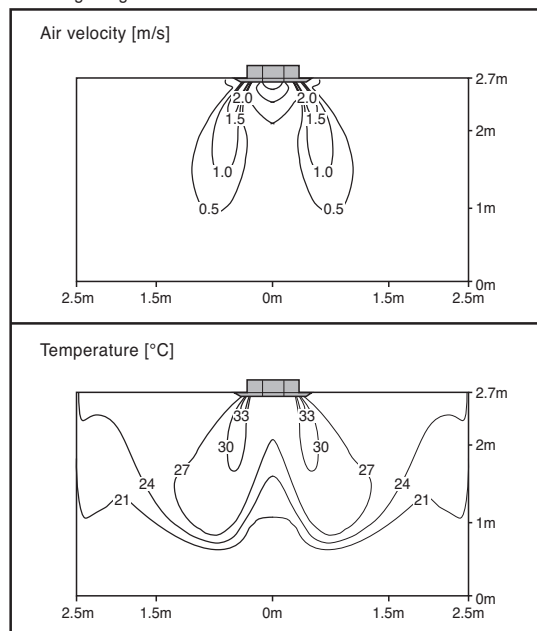
Cooling

Discharge angle: 40°



Heating

Discharge angle: 50°



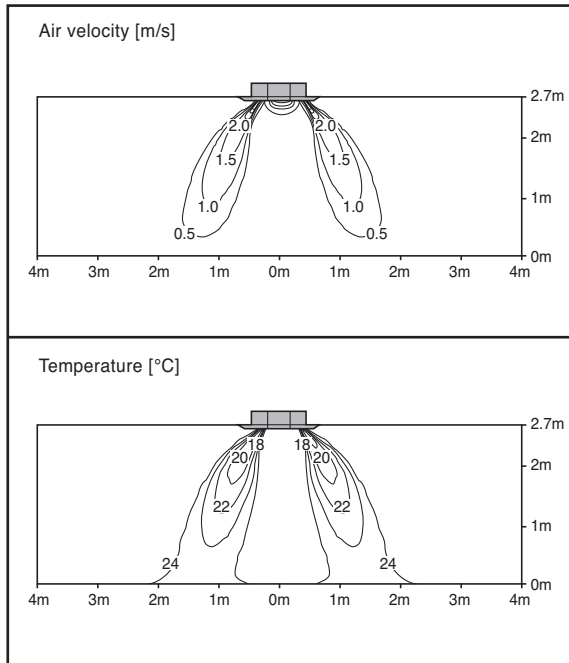
MULTI/SINGLE CAC Indoor unit

5. Ceiling cassette 4-way

Model : ATNH18GQLE2 [CT18 NQ2]

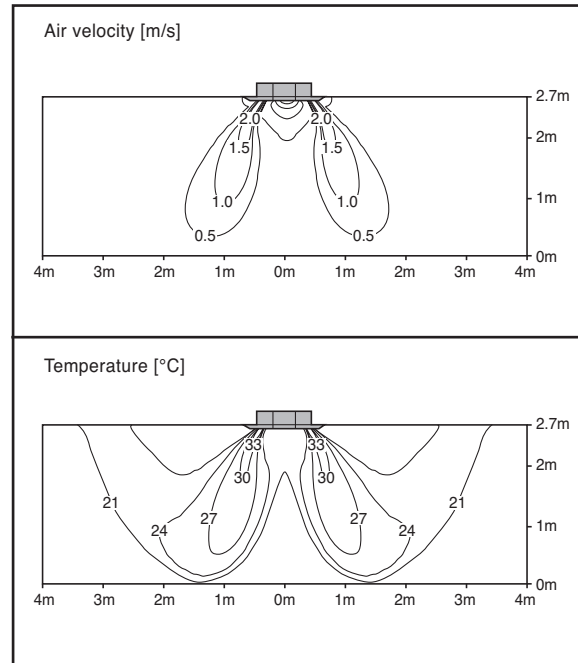
Cooling

Discharge angle: 40°



Heating

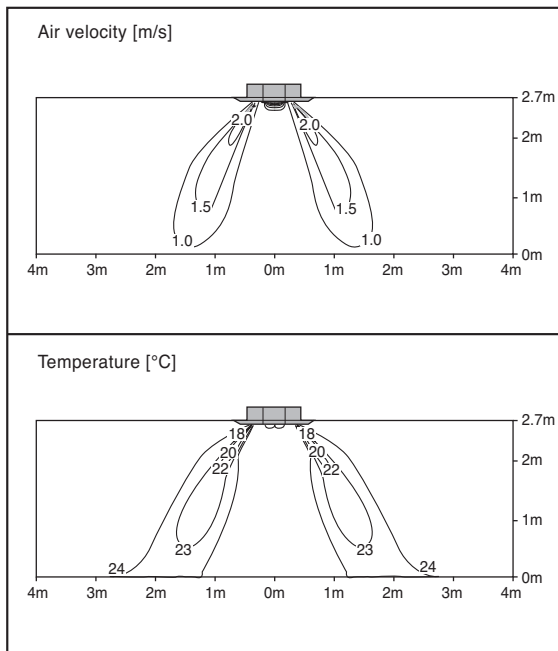
Discharge angle: 50°



Model : ATNH24GPLE2 [CT24 NP2]

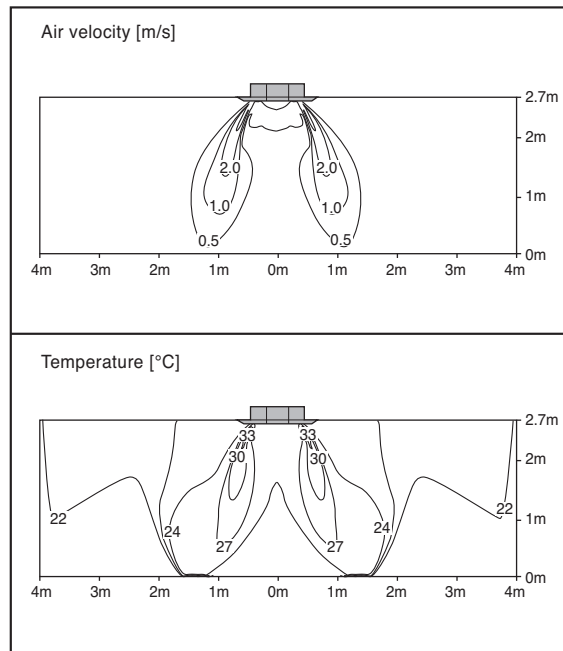
Cooling

Discharge angle: 40°



Heating

Discharge angle: 50°



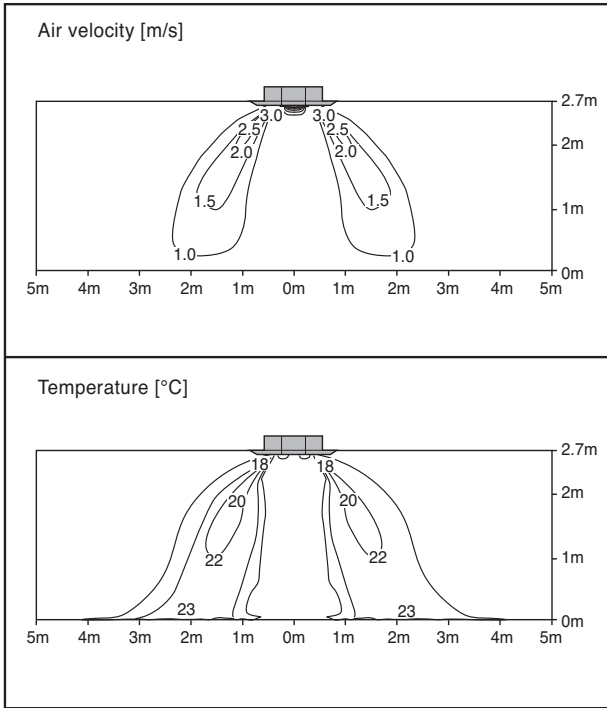
MULTI/SINGLE CAC Indoor unit

5. Ceiling cassette 4-way

Model : ATNH30GPLE2 [UT30 NP2]

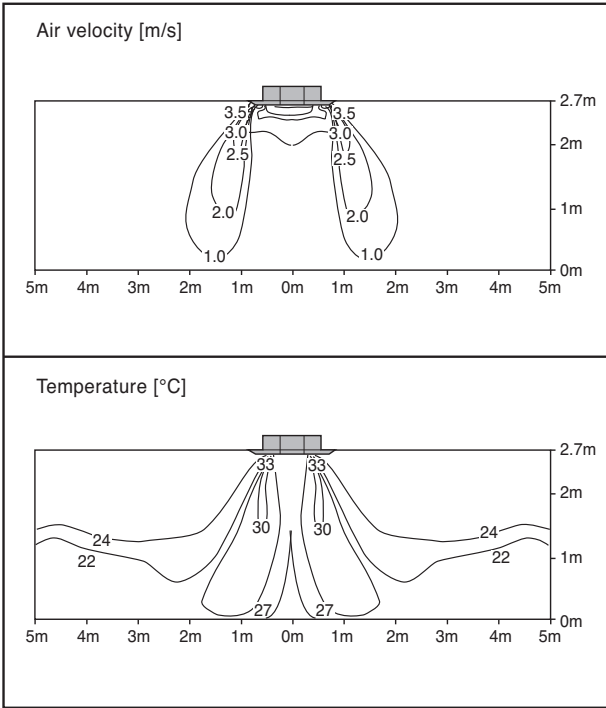
Cooling

Discharge angle: 40°



Heating

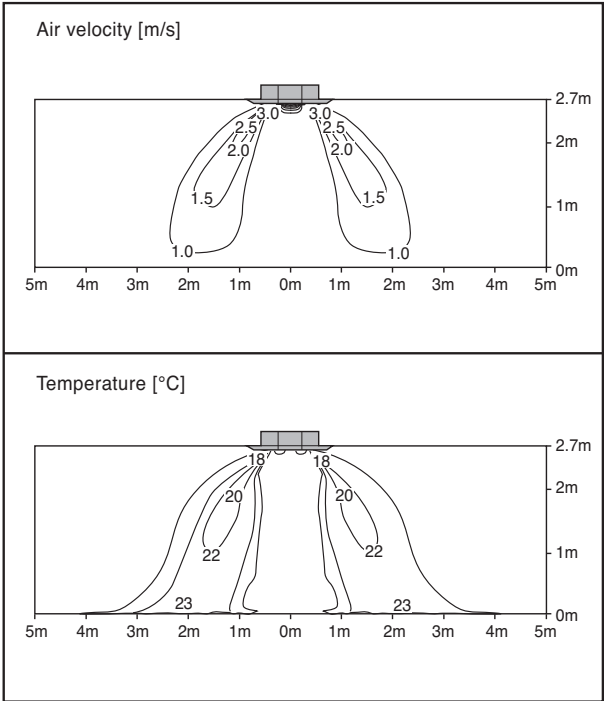
Discharge angle: 50°



Model : ATNH36GNLE2 [UT36 NN2]

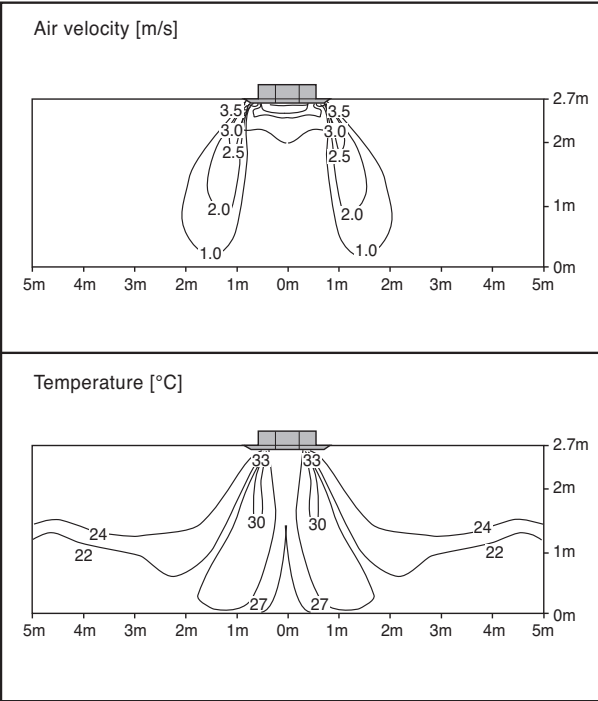
Cooling

Discharge angle: 40°



Heating

Discharge angle: 50°



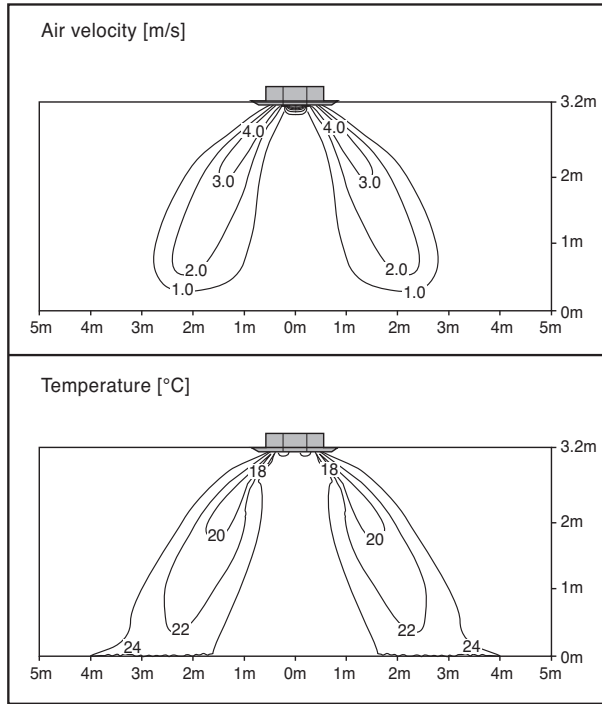
MULTI/SINGLE CAC Indoor unit

5. Ceiling cassette 4-way

Model : ATNH42GMLE2 [UT42 NM2]

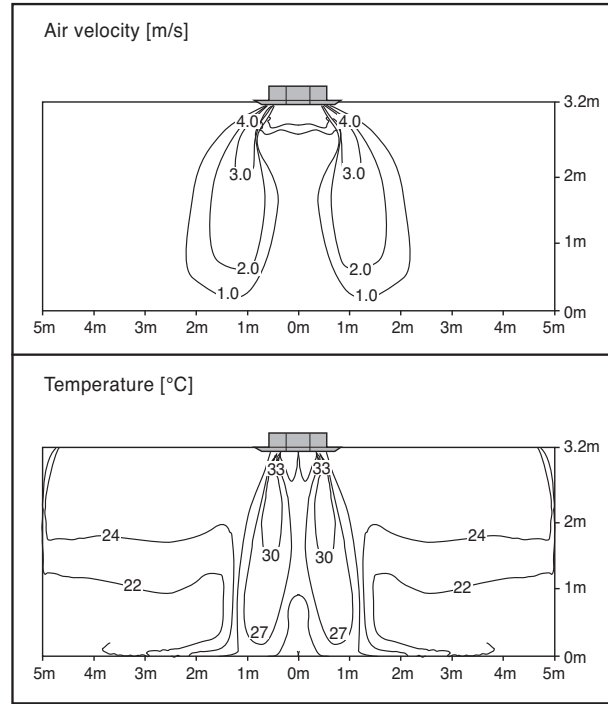
Cooling

Discharge angle: 40°



Heating

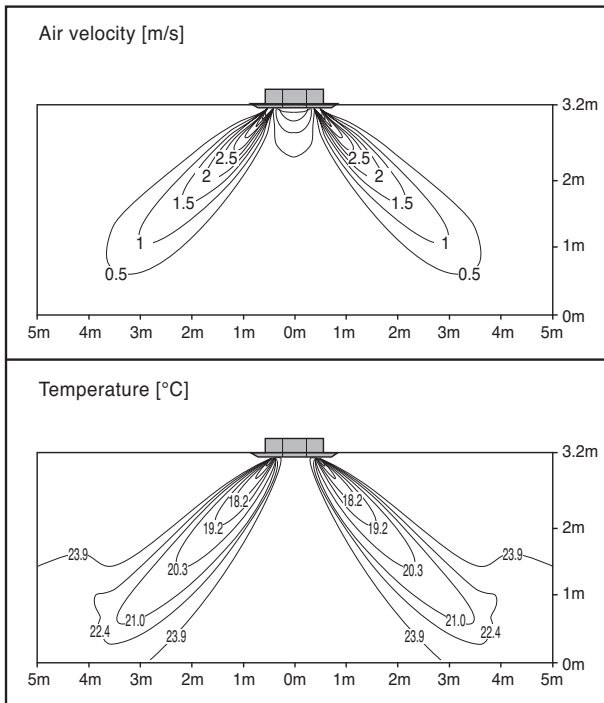
Discharge angle: 50°



Model : ATNH48GMLE2 [UT48 NM2], ATNH60GMLE2 [UT60 NM2]

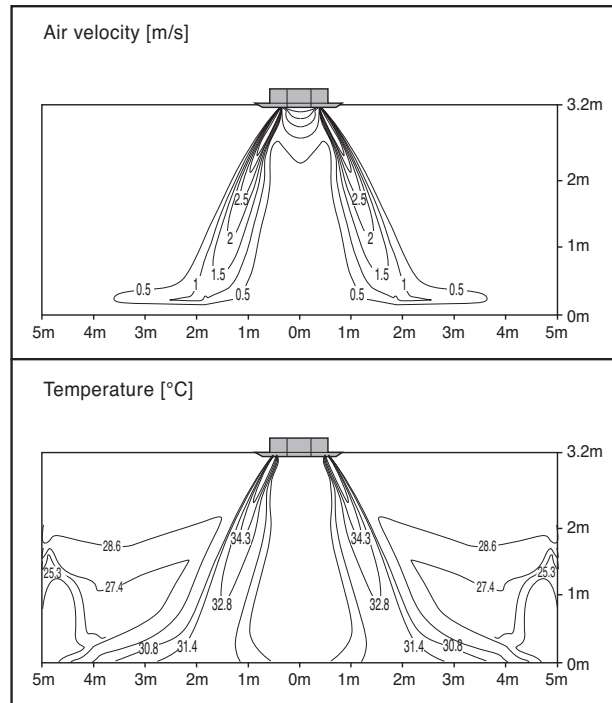
Cooling

Discharge angle: 40°



Heating

Discharge angle: 50°



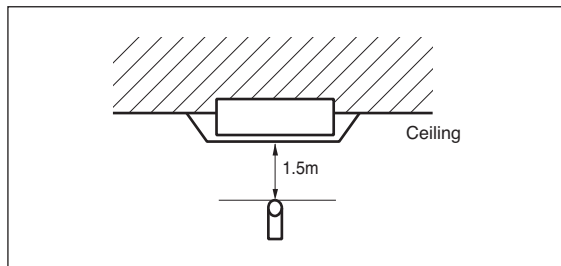
MULTI/SINGLE CAC Indoor unit

5. Ceiling cassette 4-way

5.7 Sound levels

5.7.1 Sound pressure level

Overall



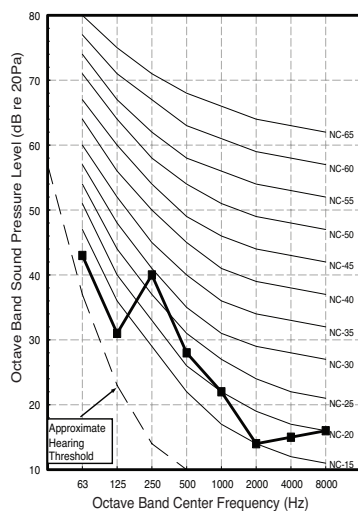
Notes:

- Sound measured at 1.5m away from the center of the unit.
- Data is valid at free field condition.
- Data is valid at nominal operation condition.
- Reference acoustic pressure 0dB=20μPa.
- Sound level will vary depending on a range of factors such as the construction(acoustic absorption coefficient) of particular room in which the equipment is installed.
- The operating conditions are assumed to be standard.

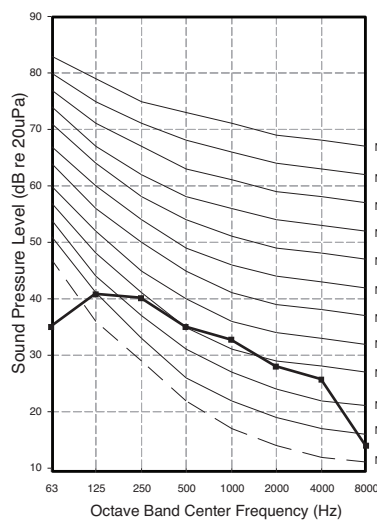
Model	50Hz, 220-240V		
	Sound pressure Levels [dB(A)]		
	H	M	L
AMNH05GTRA0 [MT06AH NR0]	31	27	24
AMNH07GTRA0 [MT08AH NR0]	31	27	24
ATNH09GRLE2 [CT09 NR2]	36	33	30
ATNH12GRLE2 [CT12 NR2]	38	35	32
ATNH18GQLE2 [CT18 NQ2]	41	39	36

Model	50Hz, 220-240V		
	Sound pressure Levels [dB(A)]		
	H	M	L
ATNH24GPLE2 [CT24 NP2]	38	36	34
ATNH30GPLE2 [UT30 NP2]	40	37	35
ATNH36GNLE2 [UT36 NN2]	43	40	37
ATNH42GMLE2 [UT42 NM2]	46	44	43
ATNH48GMLE2 [UT48 NM2]	49	47	45
ATNH60GMLE2 [UT60 NM2]	49	47	45

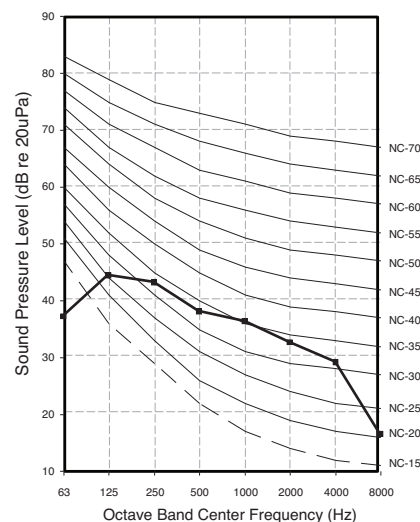
AMNH05GTRA0[MT06AH NR0]
AMNH07GTRA0[MT08AH NR0]



ATNH09GRLE2 [CT09 NR2]
ATNH12GRLE2 [CT12 NR2]

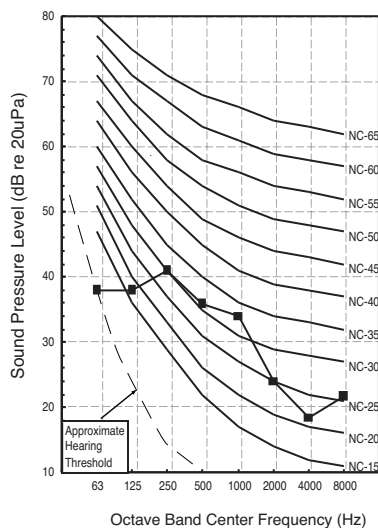


ATNH18GQLE2 [CT18 NQ2]

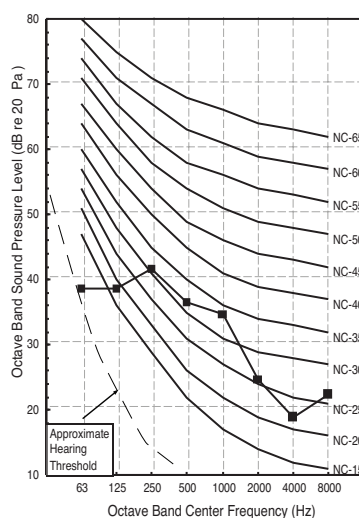


5. Ceiling cassette 4-way

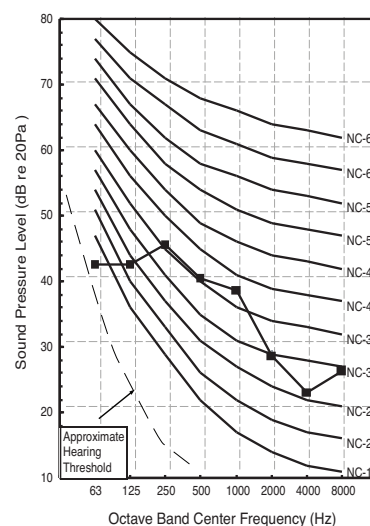
ATNH24GPLE2 [CT24 NP2]



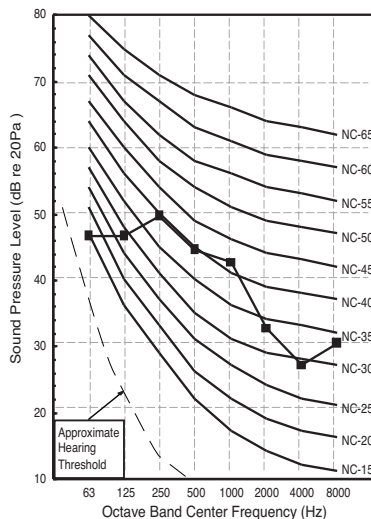
ATNH30GPLE2 [UT30 NP2]



ATNH36GNLE2 [UT36 NN2]

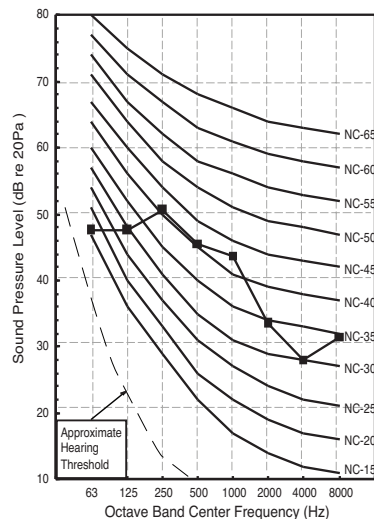


ATNH42GMLE2 [UT42 NM2]



ATNH48GMLE2 [UT48 NM2]

ATNH60GMLE2 [UT60 NM2]



5. Ceiling cassette 4-way

5.7.2 Sound power level

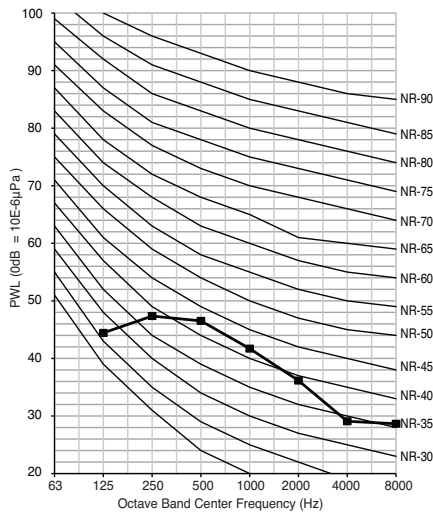
Notes:

1. Reference acoustic intensity 0dB = $10E-6\mu W/m^2$
2. Sound level will vary depending on a range of factors such as the construction (acoustic absorption coefficient) of particular room in which the equipment is installed.

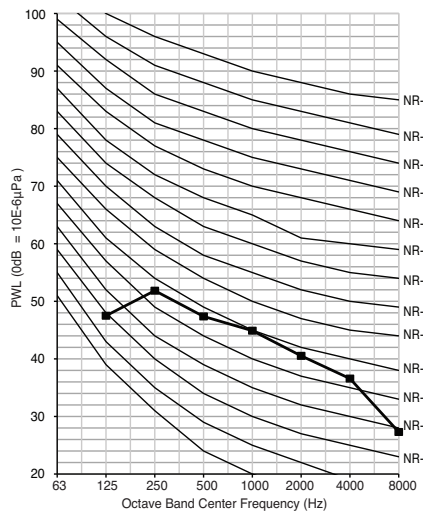
Model	Sound power level [dB(A)]
	H
AMNH05GTRA0 [MT06AH NR0]	48
AMNH07GTRA0 [MT08AH NR0]	48
ATNH09GRLE2 [CT09 NR2]	48
ATNH12GRLE2 [CT12 NR2]	51
ATNH18GQLE2 [CT18 NQ2]	55

Model	Sound power level [dB(A)]
	H
ATNH24GPLE2 [CT24 NP2]	57
ATNH30GPLE2 [UT30 NP2]	57
ATNH36GNLE2 [UT36 NN2]	62
ATNH42GMLE2 [UT42 NM2]	65
ATNH48GMLE2 [UT48 NM2]	66
ATNH60GMLE2 [UT60 NM2]	66

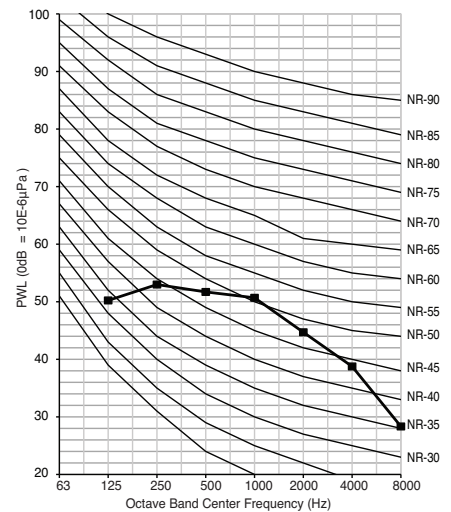
**AMNH05GTRA0 [MT06AH NR0]
AMNH07GTRA0 [MT08AH NR0]
ATNH09GRLE2 [CT09 NR2]**



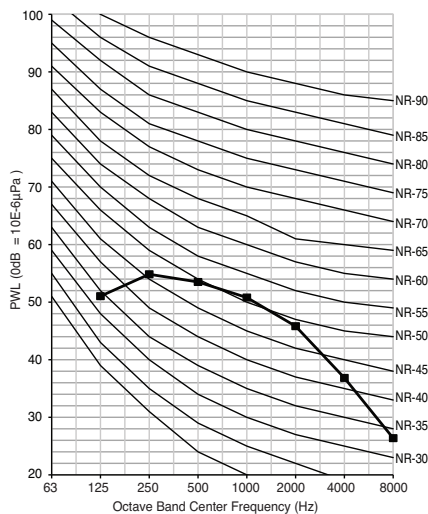
ATNH12GRLE2 [CT12 NR2]



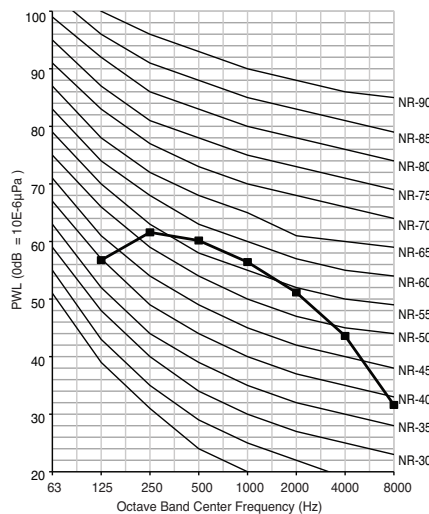
ATNH18GQLE2 [CT18 NQ2]



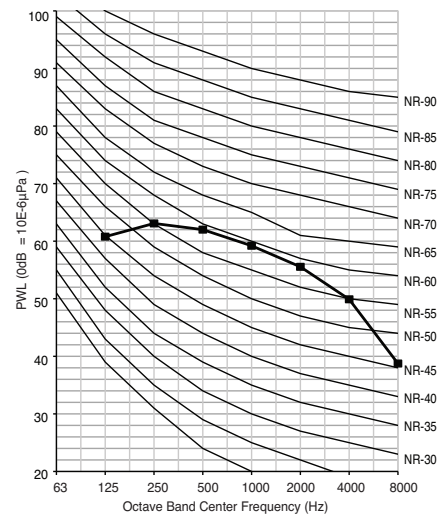
**ATNH24GPLE2 [CT24 NP2]
ATNH30GPLE2 [UT30 NP2]**



ATNH36GNLE2 [UT36 NN2]



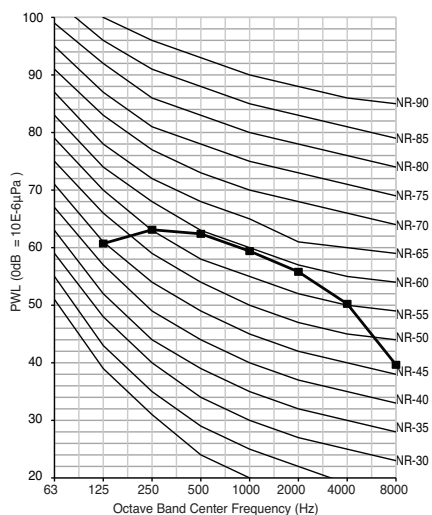
ATNH42GMLE2 [UT42 NM2]



5. Ceiling cassette 4-way

ATNH48GMLE2 [UT48 NM2]

ATNH60GMLE2 [UT60 NM2]

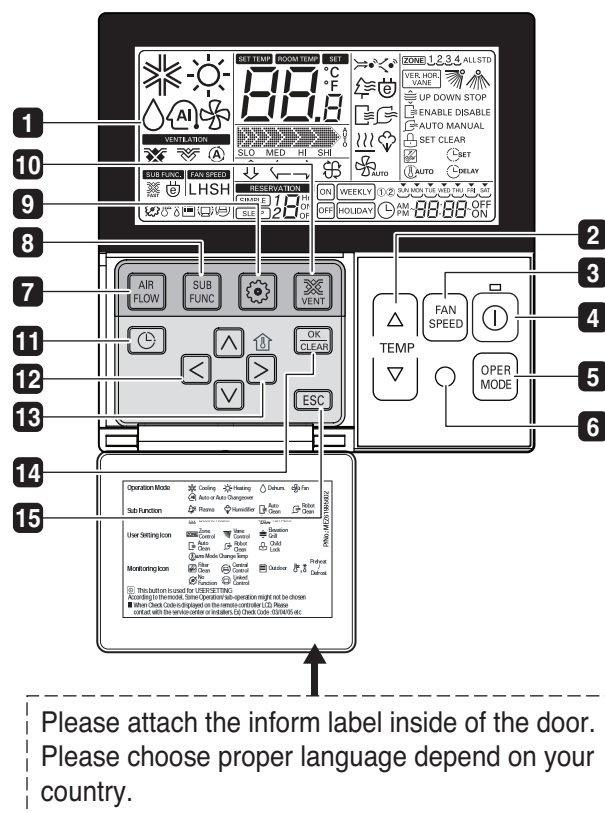


MULTI/SINGLE CAC Indoor unit

5. Ceiling cassette 4-way

5.8 Controller

Wired remote controller



- | | |
|---|--|
| 1 OPERATION INDICATION SCREEN | 9 FUNCTION SETTING Button |
| 2 SET TEMPERATURE Button | 10 VENTILATION Button |
| 3 FAN SPEED Button | 11 RESERVATION |
| 4 ON/OFF Button | 12 UP,DOWN,LEFT,RIGHT Button
• To check the indoor temperature, press button. |
| 5 OPERATION MODE SELECTION Button | 13 ROOM TEMPERATURE Button |
| 6 WIRELESS REMOTE CONTROLLER RECEIVER
• Some products don't receive the wireless signals. | 14 SETTING/CANCEL Button |
| 7 AIR FLOW Button | 15 EXIT Button |
| 8 SUBFUNCTION Button | |

* Some functions may not be operated and displayed depending on the product type.

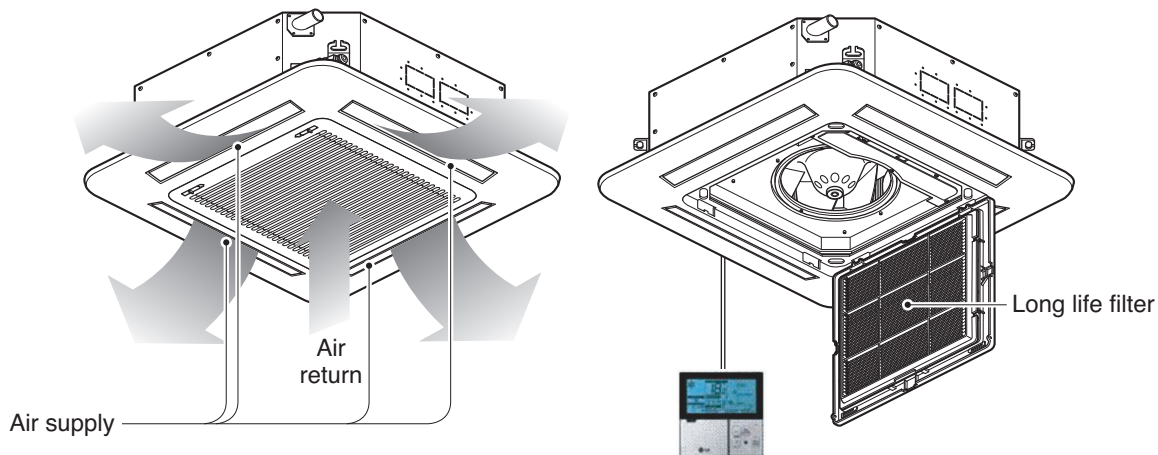
Note :

- * Display temperature can be different from actual room temperature if the remote controller is installed at the place where sun-rays are falling directly or the place nearby heat source.
- * The actual product can be different from above contents depending upon model type.
- * When using simultaneous operation system, whenever press remote controller button, system will approximately operate after 1~2 minutes.

5. Ceiling cassette 4-way

5.9 Installation

- Please read the instruction sheets completely before installing the product.
- When the power cord is damaged, replacement work shall be performed by authorized personnel only.
- Installation work must be performed in accordance with the national wiring standards by authorized personnel only.



5.9.1 Accessories

Check whether the following accessories are included with your unit.

1) Standard accessories

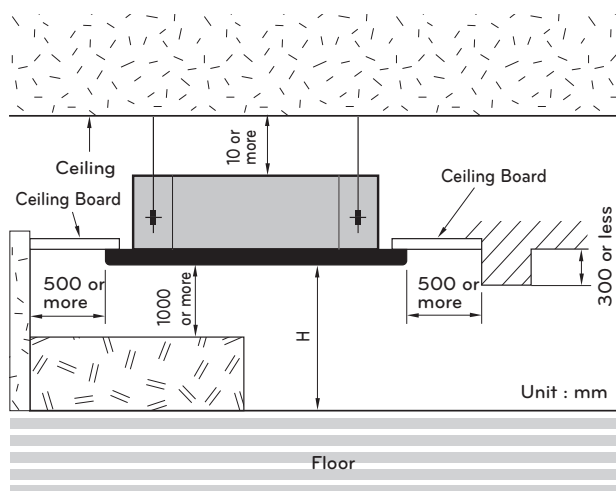
Name	Drain hose	Clamp metal	Washer for hanging bracket	Clamp	Insulation for fitting	(Other)
Quantity	1 EA	1 EA	8 EA	8 EA	1 SET	
Diagram					 for gas pipe for liquid pipe	• Paper pattern for installation • Owner's manual • Installation manual

MULTI/SINGLE CAC Indoor unit

5. Ceiling cassette 4-way

5.9.2 Selection of the best location

- There should not be any heat source or steam near the unit.
- There should not be any obstacles to the air circulation.
- There should be provision of easy condensate drain.
- Taking into accounting the noise prevention criteria, spot the installation location.
- Do not install the unit near the door way.
- Keep proper distances, of the unit, from ceiling, fence, floor, walls and other obstacles as shown in figure.
- The indoor unit must have the maintenance space.



NOTE

Above figure means minimum value. Please keep these value at least.

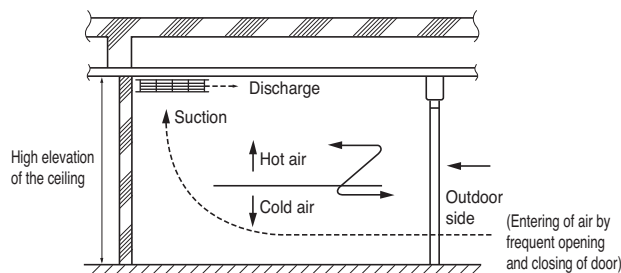
- below 30kBtu/h (TR/Q/P Chassis) model H
= At least 1800(70-7/8) , 3600(141-23/32) or less
- over 30kBtu/h (TN/M Chassis) model H
= At least 1800(70-7/8) , 4200(165-11/32) or less

5.9.3 Precautions regarding cassette indoor unit installation

1) Main points about the indoor installation

- In case of high height ceiling

In general commercial places and offices though the height of the ceiling is 2.7 m, the ceiling height can be 3 m. In such cases because of the temperature difference with the floor the heating effect can fall down.

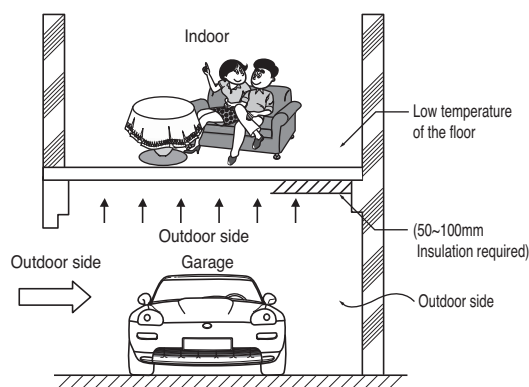


- Countermeasure method

- ① Air conditioner must be able to operate in high ceiling conditioner.
- ② Plan to install the circulator.
- ③ The air discharge port is made to give more airflow to the down wood directions.
- ④ The gate or exit of the building is protected by dual door system.

2) In case the floor or surfaces of the place to be air conditioned is in direct contact with the outdoor air

- The floor of the heating room indirect contact with the storeroom, garage or the outside air receives the cold air at the floor and the floor temperature decrease will feel cold at the feet.



In such places where the feet comes in direct contact with floors will give a cold feeling to th floor.

5. Ceiling cassette 4-way

- Countermeasure:

- Use the carpet on the floor (compared to the tiles the carpet over it will have a 3 degree rise in temperature)
- Insulating the floor.
- Floor heating

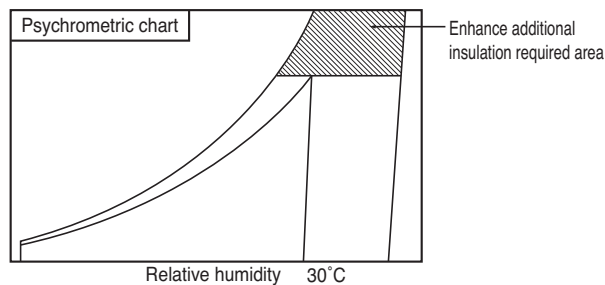
⚠ CAUTION

• Case of cold air intake:

The duct surface will have the dew drops so a insulation on the duct is a must.(Insulation material: a glass wool of thickness 25 mm will be appropriate.)

3) In case of high temperature or high humidity between the false ceiling and ceiling slab(near by the sea, river, lake, spa)

- In case of temperature of 30 degree and humidity above 80%, the units body as well as the piping insulation should be strengthened.
Refer to the picture given below.

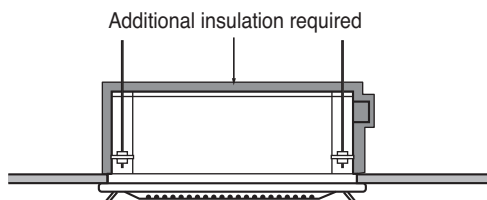


- Places having the temperature and humidity of the surrounding water sources(sea, river etc.)

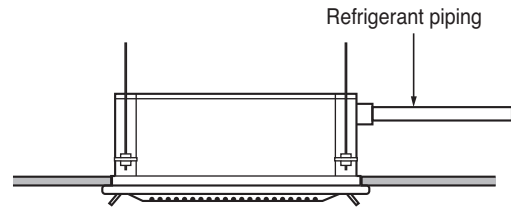
In case the steam is generated between the false ceiling and the ceiling slab

Due to some nearby by steam source.

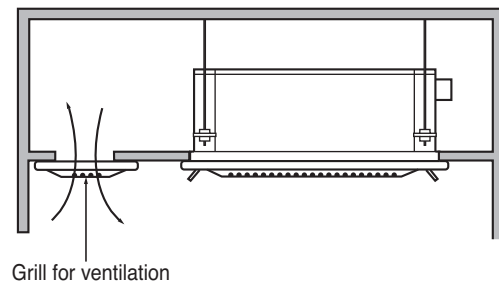
- Indoor unit: Insulate the unit body with some insulation like glass wool at least 10 mm in thickness.



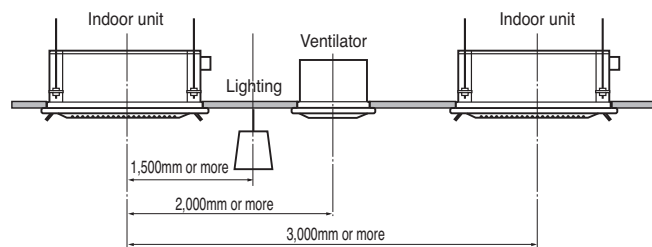
- Refrigerant piping: Increase the piping insulation thickness with thickness above 20 mm.



- Others: Inside the ceiling near th air tight seal places (To escape of the humidity inside false ceiling)



4) In case of multiple indoor cassette units (recommended)

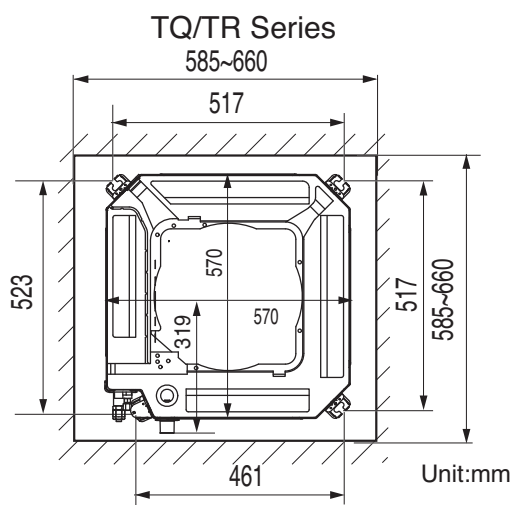
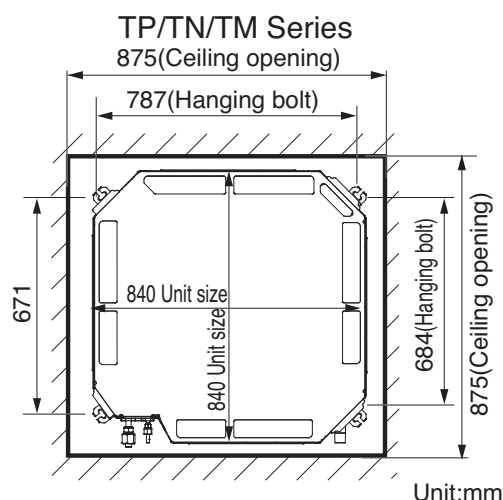


MULTI/SINGLE CAC Indoor unit

5. Ceiling cassette 4-way

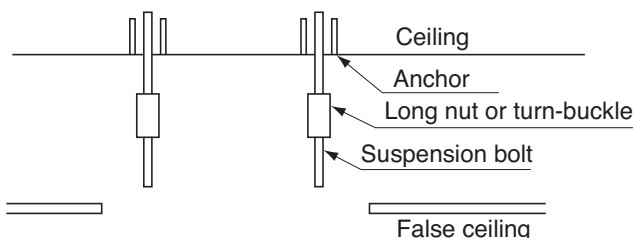
5.9.4 Ceiling opening dimensions and hanging bolt location

- ① The dimensions of the paper pattern for installation are the same as those of the ceiling opening dimensions.
- ② Select and mark the position for fixing bolts and piping hole.
- ③ Decide the position for fixing bolts slightly tilted to the drain direction after considering the direction of drain hose.
- ④ Drill the hole for anchor bolt on the wall.



1) Install the suspension bolts.

(Use either a W3/8" or M10 size bolt) Use a hole-in anchor for existing ceilings, and a sunken insert, sunken anchor or other field supplied parts for new ceilings to reinforce the ceiling to bear the weight of the unit. Adjust clearance from the ceiling before proceeding further.



NOTE

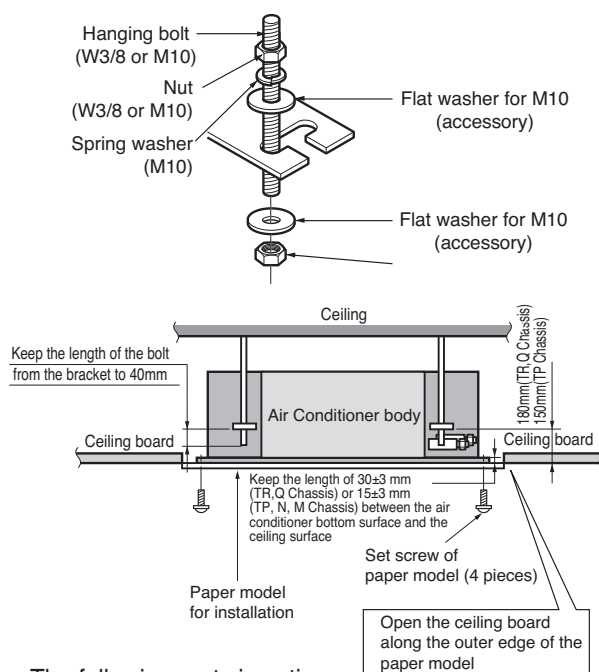
All the above parts are field supplied.

5.9.5 Indoor unit installation

- Installation of the accessories (except for the decoration panel) before installing the indoor unit is easier.

1) Install the indoor unit.

- Attach the hanger bracket to the suspension bolt. Be sure to fix it securely by using a nut and washer from the upper and lower sides of the hanger bracket.



- The following parts is option.
- Hanging Bolt - W 3/8 or M10
- Nut - W 3/8 or M10
- Spring Washer - M10
- Plate Washer - M10

Drill the piping hole on the wall slightly tilted to the outdoor side using a Ø 70 hole-core drill.

5. Ceiling cassette 4-way

2) For new ceilings

- ① **Refer to the paper pattern for ceiling opening dimension.**
 - The center of the ceiling opening is indicated on the paper pattern for installation.
 - The center of the unit is indicated on the label attached to the unit and on the paper pattern for installation.
- First remove paper packaging material from the 4 corners of the paper pattern for installation, fix the paper pattern to the unit with screws.
- Ceiling height is shown on the side of the paper pattern for installation. Adjust the height of the unit according to this indication.

<Ceiling work>

- ② **Adjust the unit to the right position for installation.**
- ③ **Assure that the unit is horizontal.**
 - The indoor unit is equipped with a built-in drain pump and float switch. At each of the unit's 3 corners, verify that it is levelled by using a water-level or a water-filled vinyl tube. (Otherwise it will result in the malfunctioning of unit and cause water to drip.)
- ④ **Remove the washer fixing plate used for preventing the washer from falling and tighten the upper nut.**

5) Remove the paper pattern for installation

2) For existing ceilings

- ① **Adjust the height and position of the unit.**
- ② **Perform steps 3 and 4 in "5.1 For new ceilings".**

5.9.6 Connecting pipes to the indoor unit

1) Refrigerant piping work

please refer "REFRIGERANT PIPING WORK".

2) Piping insulation

- ① Perform heat insulation work completely on both gas and the liquid pipe. Because improper insulation will result in condensate formation over pipe.
- ② Use the heat insulation material for refrigerant piping which has an excellent heat resistance (over 120°C).
- ③ Precautions in high humidity circumstance:
- ④ Refer to insulation work

⚠ CAUTION

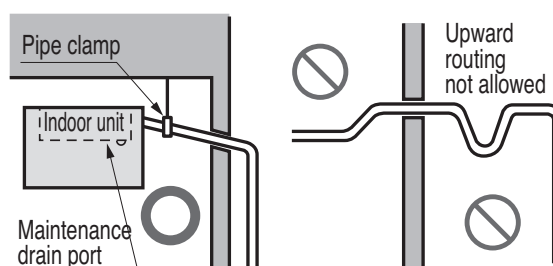
- Make sure to insulate any field piping all the way to the piping connection inside the unit. Any exposed piping may cause condensation or burns if touched.

3) Indoor unit drain piping

- Drain piping must have downward slope (1/50 to 1/100): be sure not to provide up-and-down slope to prevent reverse flow.
- During drain piping connection, be careful not to exert extra force on the drain port of the indoor unit.
- The outside diameter of the drain connection on the indoor unit is 32mm.

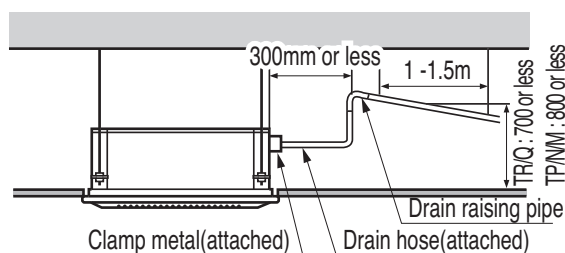
Piping material: Polyvinyl chloride pipe VP-25 and pipe fittings

- Be sure to execute heat insulation on the drain piping.
- Install the drain raising pipes at a right angle to the indoor unit and no more than 300mm from the unit.



MULTI/SINGLE CAC Indoor unit

5. Ceiling cassette 4-way



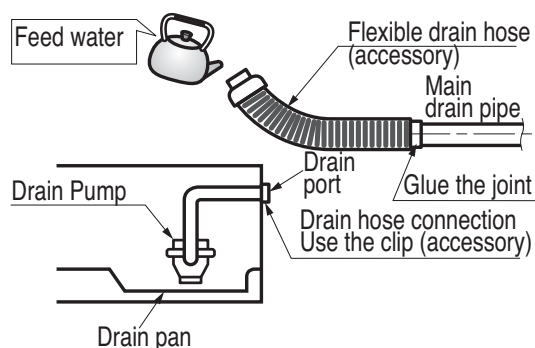
Heat insulation material: Polyethylene foam with thickness more than 8 mm.

4) Drain test

The air conditioner uses a drain pump to drain water.

Use the following procedure to test the drain pump operation:

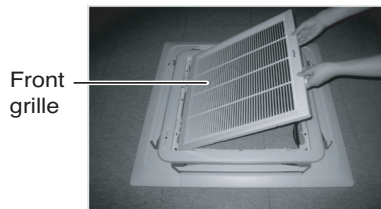
- Connect the main drain pipe to the exterior and leave it provisionally until the test comes to an end.
- Feed water to the flexible drain hose and check the piping for leakage.
- Be sure to check the drain pump for normal operating and noise when electrical wiring is complete.
- When the test is complete, connect the flexible drain hose to the drain port on the indoor unit.



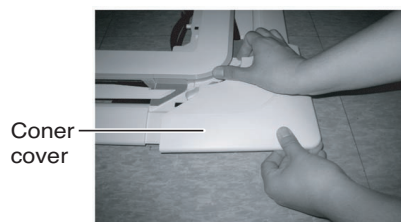
5.9.7 Installation of decoration panel

The decorative panel has its installation direction. Before installing the decorative panel, always remove the paper template.

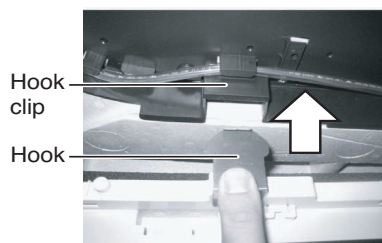
1. Remove the packing and take out air inlet grille from front panel.



2. Remove the Corner covers of the panel.

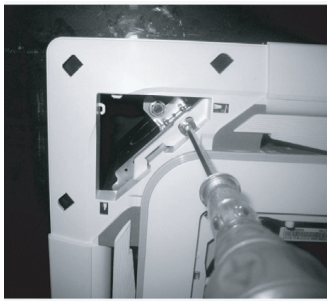


3. Fit the panel on the unit by inserting hooks as shown in picture.

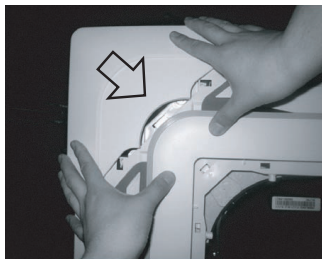


4. Insert two screws on diagonal corners of panel. Do not tighten the bolts completely. (The fixing screws are included in the indoor unit box.) Check the alignment of panel with the ceiling. Height can be adjusted using hanging bolts as shown in picture. Insert the other two screws and tighten all screws completely.

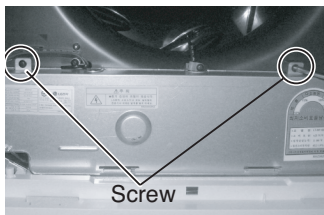
5. Ceiling cassette 4-way



5. Fit the corner covers.



6. Open two screws of control panel cover.

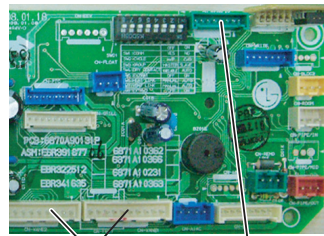


7. Connect one display connector and two vane control connectors of front panel to indoor unit PCB.

The position marking on PCB is as:

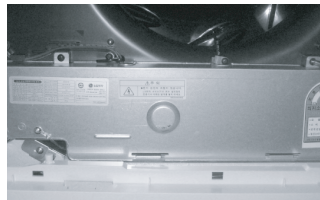
Display connector : CN-DISPLAY

Vane control connector: CN-VANE 1,2

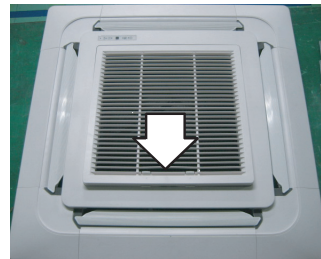


CN-VANE 1,2 CN-DISPLAY

8. Close the cover for control box.



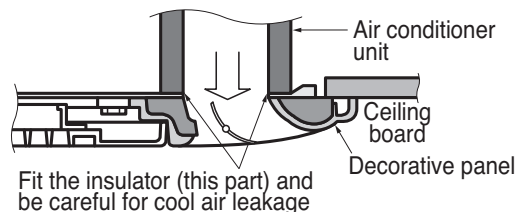
9. Install the air inlet grille and Filter on the panel.



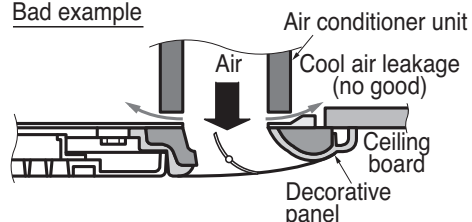
CAUTION

- Install certainly the decorative panel.
Cool air leakage causes sweating. ⇨ Water drops fall.

Good example



Bad example



MULTI/SINGLE CAC Indoor unit

5. Ceiling cassette 4-way

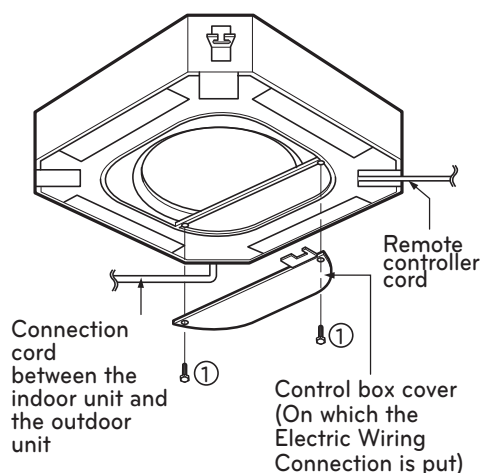
5.9.8 Electric wiring work

1) General instructions

- ① All field supplied parts and materials, electric works must conform to local codes.
Use copper wire only.
- ② Follow the "WIRING DIAGRAM" attached to the unit body to wire the outdoor unit, indoor units and the remote controller.
- ③ All wiring must be performed by an authorized electrician.
- ④ This system consists of multiple indoor units. Mark each indoor unit as unit A, unit B..., and make sure the terminal board wiring to the outdoor unit and indoor units are properly matched. If wiring and piping between the outdoor unit and an indoor units are mismatched, the system may malfunction.
- ⑤ A circuit breaker capable of shutting down the power supply to the entire system must be installed.

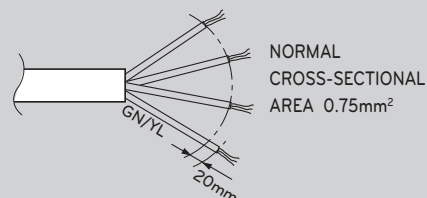
2) Wiring Connection

- ① Open the control box cover and connect the Remote controller cord and Indoor power wires.
- ② Remove the control box cover for electrical connection between the indoor and outdoor unit.
(Remove screws ①)
- ③ Use the cord clumper to fix the cord.



⚠ CAUTION

- The connecting cable connected to the indoor and outdoor unit should be complied with the following specifications (This equipment shall be provided with a cord set complying with the national regulation).



If the supply cord is damaged, it must be replaced by a special cord or assembly available from the manufacturer of its service agent.

⚠ CAUTION

- The Power cord connected to the unit should be selected according to the following specifications.

3) Precautions when laying power wiring

- ① Use round pressure terminals for connections to the power terminal block.



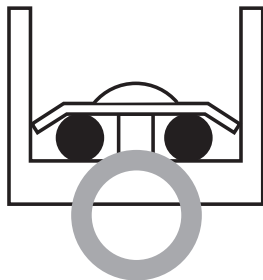
- ② When none are available, follow the instructions below.

- Do not connect wiring of different thicknesses to the power terminal block. (Slack in the power wiring may cause abnormal heat.)
- When connecting wiring which is the same thickness, do as shown in the figure below.

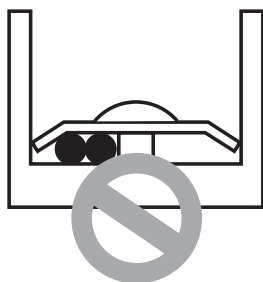
5. Ceiling cassette 4-way

- For wiring, use the designated power wire and connect firmly, then secure to prevent outside pressure being exerted on the terminal block.
- Use an appropriate screwdriver for tightening the terminal screws. A screwdriver with a small head will strip the head and make proper tightening impossible.
- Over-tightening the terminal screws may break them.

Connect same thickness wiring to both sides.



It is forbidden to connect two to one side.



It is forbidden to connect wiring of different thicknesses.



MULTI/SINGLE CAC

Indoor unit

Ceiling & Floor / Ceiling Suspended

- 1. List of functions**
- 2. Specifications**
- 3. Dimensions**
- 4. Piping diagrams**
- 5. Wiring Diagrams**
- 6. Air flow and temperature distributions (reference data)**
- 7. Sound levels**
- 8. Controller**
- 9. Installation**

6. Ceiling & Floor / Ceiling Suspended

6.1 List of functions

Type		Ceiling & floor	Ceiling Suspended
Category	Functions	AVNH09GELA2 [CV09 NE2] AVNH12GELA2 [CV12 NE2]	UVNH18GJLA2 [CV18 NJ2] UVNH24GJLA2 [CV24 NJ2] UVNH30GJLA2 [UV30 NJ2] UVNH36GKLA2 [UV36 NK2] UVNH42GLLA2 [UV42 NL2] UVNH60GLLA2 [UV60 NL2]
Air flow	Air supply outlet	1	1
	Airflow direction control (left & right)	Manual	Manual
	Airflow direction control (up & down)	Auto	Auto
	Auto swing (left & right)	X	X
	Auto swing (up & down)	O	O
	Airflow steps (fan/cool/heat)	4 / 5 / 4	4 / 5 / 4
	Chaos wind(auto wind)	X	X
	Jet cool/heat	O / X	O / X
Air purifying	Swirl wind	X	X
	Triple filter (Deodorizing)	X	X
	Plasma air purifier	X	X
	Allergy Safe filter	X	X
Installation	Long-life prefilter (washable / anti-fungus)	O	O
	Drain pump	X	X
	E.S.P. control*	X	X
	Electric heater	X	X
	High ceiling operation*	X	X
Reliability	Auto Elevation Grille*	X	X
	Hot start	O	O
Convenience	Self diagnosis	O	O
	Auto changeover**	O**	O**
	Auto cleaning	X	X
	Auto operation(artificial intelligence)**	O**	O**
	Auto Restart	O	O
	Child lock*	O	O
	Forced operation	O	O
	Group control*	O	O
	Sleep mode	O	O
	Timer(on/off)	O	O
Individual control	Timer(weekly)*	O	O
	Two thermistor control*	O	O
	Wired remote controller	PQRCVSL0 / PQRCVSL0QW / PREMTB001 / PREMTB01	PQRCVSL0 / PQRCVSL0QW / PREMTB001 / PREMTB01
	Premium Wired remote controller	PREMTA000 / PREMTA000A / PREMTA000B	PREMTA000 / PREMTA000A / PREMTA000B
	Simple wired remote controller	PQRCVCL0Q / PQRCVCL0QW	PQRCVCL0Q / PQRCVCL0QW
Network Solution	Simple Wired remote controller(for hotel use)	PQRCHCA0Q / PQRCHCA0QW	PQRCHCA0Q / PQRCHCA0QW
	Wireless remote controller	O	O
	General central controller (Non LGAP)	X	X
	Network Solution(LGAP)	O	O
	Simple Dry contact (outside AC 220V power source)	PQDSA / PDRYCB000	PQDSA / PDRYCB000
Special function kit	2 Points Dry Contact (For setback)	PDRYCB400	PDRYCB400
	Dry contact for Thermostat	PDRYCB300	PDRYCB300
	PI 485(for Indoor Unit)	X	X
	Zone controller	X	X
	CTI(Communication transfer interface)	X	X
Others	Electronic thermostat	X	X
	Telecom shelter controller	X	PQCSA001T0**
	Independent Power Module	X	X
	CO ₂ Sensor	X	X
	Remote temperature sensor	PQRSTA0	PQRSTA0
	Group control wire	PZCWRCG3	PZCWRCG3

Note

1. * : These functions need to connect the wired remote controller.

2. ** : Auto Changeover function, Telecom shelter controller can be operated when connected with Single A.
Auto Operation function can be operated when connected with Multi F/FDX.

3. For synchro operation, some functions and accessories are not available.

Check the outdoor unit's PDB.

O : Applied X : Not applied

Accessory model name : Installed at field, ordered and purchased separately by the corresponding model name, supplied with separate package

6. Ceiling & Floor / Ceiling Suspended

6.2 Specifications

Type				Ceiling & floor		Ceiling Suspended
Model Name				AVNH09GELA2 [CV09 NE2]	AVNH12GELA2 [CV12 NE2]	UVNH18GJLA2 [CV18 NJ2]
Power Supply			V, Ø, Hz	220-240, 1, 50	220-240, 1, 50	220-240, 1, 50
				220, 1, 60	220, 1, 60	220, 1, 60
Power Input	Min / Max		W	10 / 30	20 / 40	30 / 50
Running Current			A	0.4	0.4	0.4
Casing Color			-	Morning Fog	Morning Fog	Morning Fog
Dimensions	Body	W x H x D	mm	900 x 490 x 200	900 x 490 x 200	950 x 650 x 220
		W x H x D	inch	35-7/16 x 19-9/32 x 7-7/8	35-7/16 x 19-9/32 x 7-7/8	37-13/32 x 25-19/32 x 8-21/32
Net Weight	Body		kg (lbs)	13.7 (30.2)	13.7 (30.2)	22.0 (48.5)
Heat Exchanger	(Row x Column x Fins per inch) x No.		-	(2 x 12 x 20) x 1	(2 x 12 x 20) x 1	(2 x 14 x 17) x 1
	Face Area		m² (ft²)	0.17 (1.87)	0.17 (1.87)	0.20 (2.15)
Fan	Type		-	Cross Flow Fan	Cross Flow Fan	Cross flow Fan
	Air Flow Rate	H / M / L	m³/min	7.6 / 6.9 / 6.2	9.2 / 7.6 / 6.6	12.4 / 11.4 / 10.4
		H / M / L	ft³/min	268 / 244 / 219	325 / 268 / 219	438 / 403 / 367
Fan Motor	Type		-	BLDC	BLDC	BLDC
	Output		W x No.	20 x 1	20 x 1	43.1 x 1
Sound Pressure Level		H / M / L	dB(A)	38 / 35 / 32	40 / 36 / 31	42 / 40 / 39
Sound Power Level		Max.	dB(A)	52	56	57
Piping Connections	Liquid		mm(inch)	Ø 6.35 (1/4)	Ø 6.35 (1/4)	Ø 6.35 (1/4)
	Gas		mm(inch)	Ø 9.52 (3/8)	Ø 9.52 (3/8)	Ø 12.7 (1/2)
	Drain (O.D. / I.D.)		mm	Ø 21.5 / 16.0	Ø 21.5 / 16.0	Ø 21.5 / 16.0
Safety Devices			-	Fuse		
			-	Thermal Protector for Fan Motor		
Power and Communication Cable (included Earth)			No. x mm² (AWG)	4C x 0.75 (18)	4C x 0.75 (18)	4C x 0.75 (18)

Notes :

1. Wiring cable size must comply with the applicable local and national code.
2. Due to our policy of innovation some specifications may be changed without notification.
3. Sound Level Values are measured at Anechoic chamber.
Therefore, these values can be increased owing to ambient conditions during operation.

6. Ceiling & Floor / Ceiling Suspended

Type				Ceiling Suspended			
Model Name				UVNH24GJLA2 [CV24 NJ2]		UVNH30GJLA2 [UV30 NJ2]	UVNH36GKLA2 [UV36 NK2]
Power Supply			V, Ø, Hz	220-240, 1, 50		220-240, 1, 50	220-240, 1, 50
				220, 1, 60		220, 1, 60	220, 1, 60
Power Input	Min / Max		W	40 / 60		40 / 60	40 / 90
Running Current			A	0.6		0.6	0.7
Casing Color			-	Morning Fog		Morning Fog	Morning Fog
Dimensions	Body	W x H x D	mm	950 × 650 × 220		950 × 650 × 220	1,350 × 650 × 220
		W x H x D	inch	37-13/32 x 25-19/32 x 8-21/32		37-13/32 x 25-19/32 x 8-21/32	53-5/32 x 25-19/32 x 8-21/32
Net Weight	Body		kg (lbs)	23.0 (50.7)		23.0 (50.7)	34.1 (75.2)
Heat Exchanger	(Row x Column x Fins per inch) x No.		-	(3 x 14 x 17) x 1		(3 x 14 x 17) x 1	(3 x 14 x 17) x 1
	Face Area		m² (ft²)	0.20 (2.15)		0.20 (2.15)	0.32 (3.42)
Fan	Type		-	Cross flow Fan		Cross flow Fan	Cross flow Fan
	Air Flow Rate	H / M / L	m³/min	13.9 / 12.9 / 11.9		13.9 / 12.9 / 11.9	21.4 / 19.8 / 18.2
		H / M / L	ft³/min	491 / 456 / 420		491 / 456 / 420	756 / 699 / 643
Fan Motor	Type		-	BLDC		BLDC	BLDC
	Output		W x No.	43.1 x 1		43.1 x 1	43.1 x 2
Sound Pressure Level		H / M / L	dB(A)	44 / 43 / 41		44 / 43 / 41	45 / 44 / 41
Sound Power Level		Max.	dB(A)	61		62	63
Piping Connections	Liquid		mm(inch)	Ø 9.52 (3/8)	Ø 6.35 (1/4)*	Ø 9.52 (3/8)	Ø 9.52 (3/8)
	Gas		mm(inch)	Ø 15.88 (5/8)	Ø 12.7 (1/2)*	Ø 15.88 (5/8)	Ø 15.88 (5/8)
	Drain (O.D. / I.D.)		mm	Ø 21.5 / 16.0		Ø 21.5 / 16.0	Ø 21.5 / 16.0
Safety Devices			-	Fuse			
			-	Thermal Protector for Fan Motor			
Power and Communication Cable (included Earth)			No. x mm² (AWG)	4C x 0.75 (18)		4C x 0.75 (18)	4C x 0.75 (18)

Notes :

1. Wiring cable size must comply with the applicable local and national code.
2. Due to our policy of innovation some specifications may be changed without notification.
3. Sound Level Values are measured at Anechoic chamber.
Therefore, these values can be increased owing to ambient conditions during operation.
4. * : For combined with Multi F/Fdx system, socket provided with indoor units should be connected.

6. Ceiling & Floor / Ceiling Suspended

Type				Ceiling Suspended		
Model Name				UVNH42GLLA2 [UV42 NL2]	UVNH48GLLA2 [UV48 NL2]	UVNH60GLLA2 [UV60 NL2]
Power Supply			V, Ø, Hz	220-240, 1, 50	220-240, 1, 50	220-240, 1, 50
				220, 1, 60	220, 1, 60	220, 1, 60
Power Input	Min / Max		W	80 / 130	90 / 140	100 / 150
Running Current			A	1.0	1.1	1.2
Casing Color			-	Morning Fog	Morning Fog	Morning Fog
Dimensions	Body	W x H x D	mm	1,750 × 650 × 220	1,750 × 650 × 220	1,750 × 650 × 220
		W x H x D	inch	68-29/32 x 25-19/32 x 8-21/32	68-29/32 x 25-19/32 x 8-21/32	68-29/32 x 25-19/32 x 8-21/32
Net Weight	Body		kg (lbs)	42.5 (93.7)	42.5 (93.7)	42.5 (93.7)
Heat Exchanger	(Row x Column x Fins per inch) x No.		-	(3 x 14 x 17) x 1	(3 x 14 x 17) x 1	(3 x 14 x 17) x 1
	Face Area		m² (ft²)	0.44 (4.68)	0.44 (4.68)	0.44 (4.68)
Fan	Type		-	Cross flow Fan	Turbo Fan	Cross flow Fan
	Air Flow Rate	H / M / L	m³/min	28.6 / 26.9 / 25.2	30.0 / 28.3 / 26.6	31.5 / 29.7 / 28.0
		H / M / L	ft³/min	1,010 / 950 / 890	1,060 / 999 / 939	1,112 / 1,049 / 989
Fan Motor	Type		-	BLDC	BLDC	BLDC
	Output		W x No.	43.1 x 2	43.1 x 2	43.1 x 2
Sound Pressure Level		H / M / L	dB(A)	46 / 44 / 43	47 / 46 / 44	48 / 47 / 45
Sound Power Level		Max.	dB(A)	63	63	63
Piping Connections	Liquid		mm(inch)	Ø 9.52 (3/8)	Ø 9.52 (3/8)	Ø 9.52 (3/8)
	Gas		mm(inch)	Ø 15.88 (5/8)	Ø 15.88 (5/8)	Ø 15.88 (5/8)
	Drain (O.D. / I.D.)		mm	Ø 21.5 / 16.0	Ø 21.5 / 16.0	Ø 21.5 / 16.0
Safety Devices			-	Fuse		
			-	Thermal Protector for Fan Motor		
Power and Communication Cable (included Earth)			No. x mm² (AWG)	4C x 0.75 (18)	4C x 0.75 (18)	4C x 0.75 (18)

Notes :

1. Wiring cable size must comply with the applicable local and national code.
2. Due to our policy of innovation some specifications may be changed without notification.
3. Sound Level Values are measured at Anechoic chamber.
Therefore, these values can be increased owing to ambient conditions during operation.

6. Ceiling & Floor / Ceiling Suspended

6.3 Dimensions

CEILING & FLOOR

AVNH09GELA2 [CV09 NE2]
AVNH12GELA2 [CV12 NE2]

No.	Part Name	Remark
1	Front air discharge grille	
2	Display & Signal Receiver	
3	Air Suction Grille	
4	Knockout hole	
5	Installation Plate	

Note

1. Unit should be installed in compliance with the installation manual in the product box.
2. Unit shall be grounded in accordance with the local regulations or applicable national codes.
3. The Unit is powered from the outdoor unit. Therefore power cable should be connected with the outdoor unit.

[Unit : mm]

LG Electronics

76, Seongsan-dong, Changwon City, Gyeongnam,
641-713, Korea
www.lge.com/airconditioner

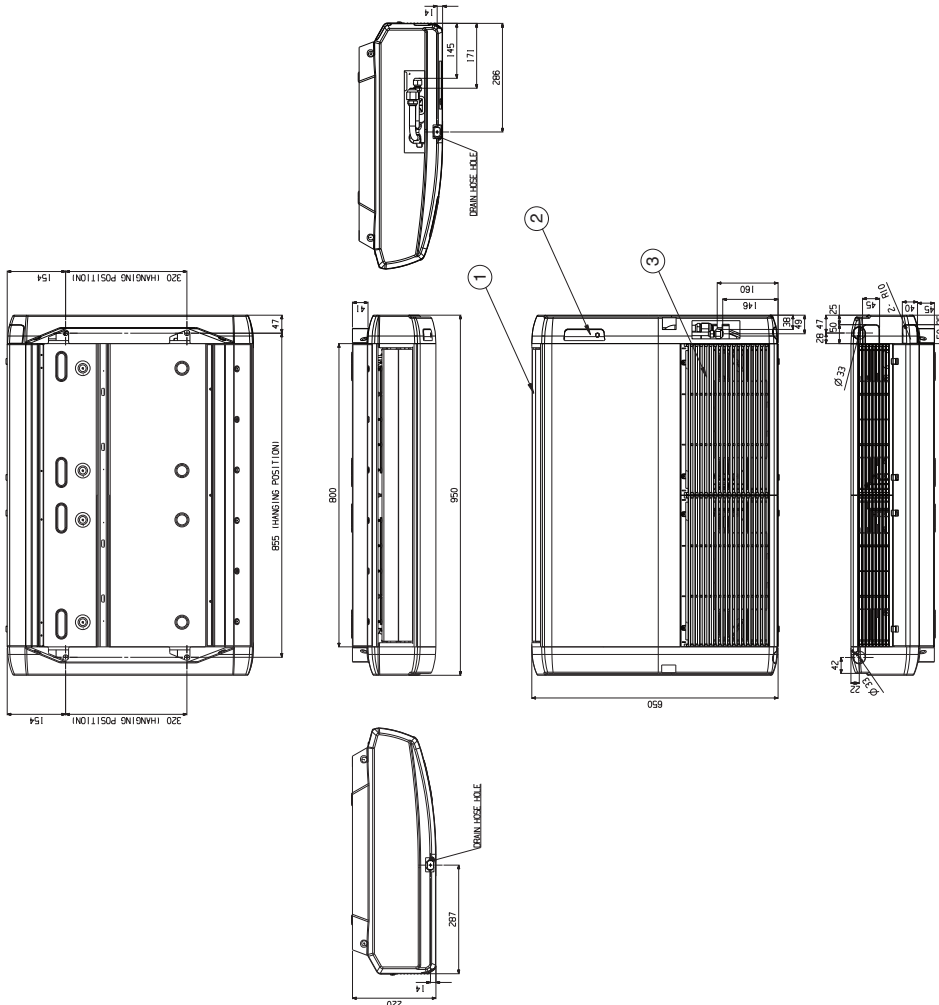
CHASSIS CODE: VE

6. Ceiling & Floor / Ceiling Suspended

CEILING SUSPENDED

UVNH18GJLA2 [CV18 NJ2]
UVNH24GJLA2 [CV24 NJ2]
UVNH30GJLA2 [UV30 NJ2]

No.	Part Name	Remark
1	Front air discharge grille	
2	Display & signal receiver	
3	Air suction grille	



□ **Note**

1. Unit should be installed in compliance with the installation manual in the product box.
2. Unit shall be grounded in accordance with the local regulations or applicable national codes.
3. The unit is powered from the outdoor unit. So power cable should be connected with the outdoor unit.

[Unit : mm]



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641-713, Korea
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CHASSIS CODE: VJ

6. Ceiling & Floor / Ceiling Suspended

CEILING SUSPENDED

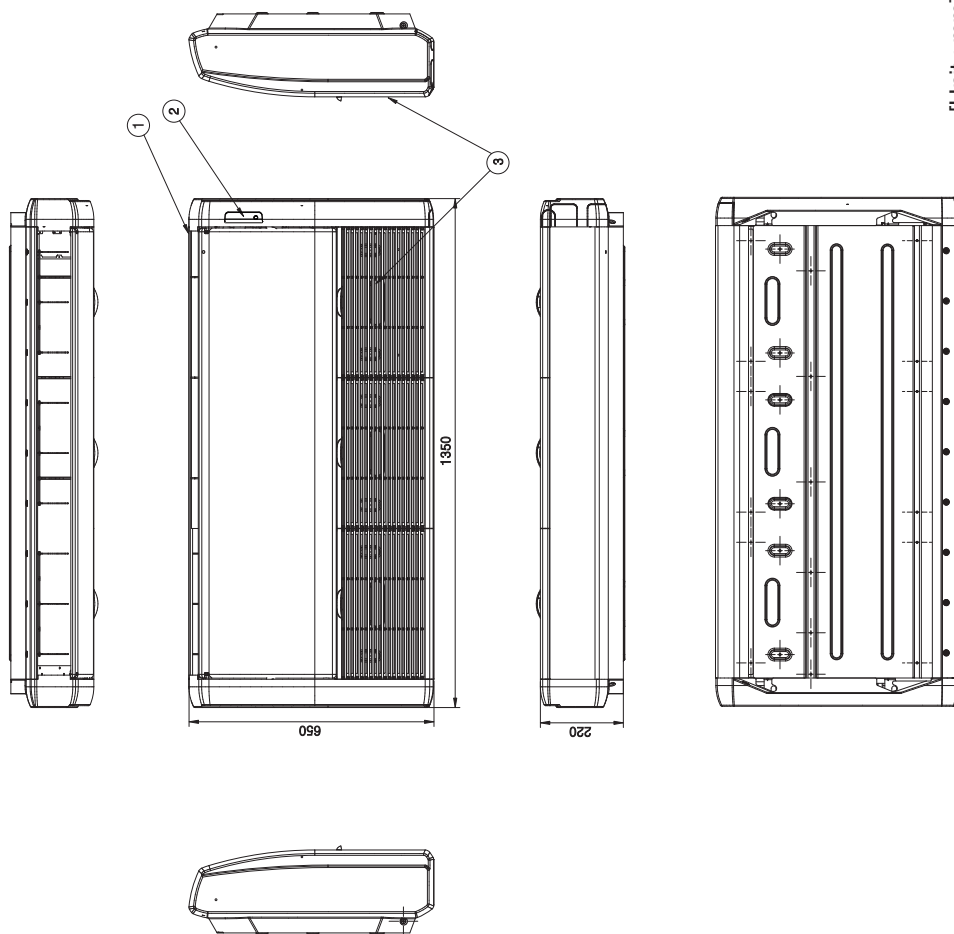
UVNH36GKLA2 [UV36 NK2]

No.	Part Name	Remark
1	Front air discharge grille	
2	Display & signal receiver	
3	Air suction grille	

Note

1. Unit should be installed in compliance with the installation manual in the product box.
2. Unit shall be grounded in accordance with the local regulations or applicable national codes.
3. The Unit is powered from the outdoor unit. So power cable should be connected with the outdoor unit.

[Unit : mm]



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CHASSIS CODE: VK

MULTI/SINGLE CAC Indoor unit

6. Ceiling & Floor / Ceiling Suspended

CEILING SUSPENDED

UVNH42GLLA2 [UV42 NL2]
UVNH48GLLA2 [UV48 NL2]
UVNH60GLLA2 [UV60 NL2]

No.	Part Name	Remark
1	Front air discharge grille	
2	Display & signal receiver	
3	Air suction grille	

■ Note

1. Unit should be installed in compliance with the installation manual in the product box.
2. Unit shall be grounded in accordance with the local regulations or applicable national codes.
3. The Unit is powered from the outdoor unit. So power cable should be connected with the outdoor unit.

[Unit : mm]

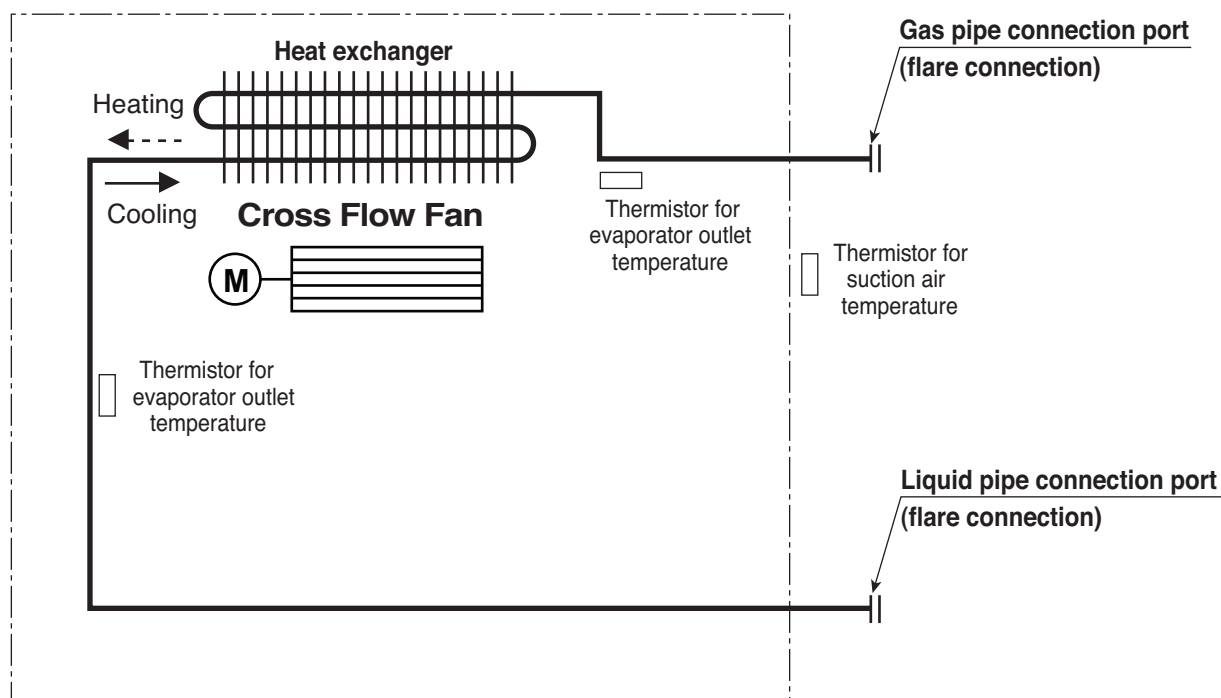
76, Seongsan-dong, Changwon City, Gyeongnam,
641-713, Korea
www.lge.com/airconditioner

CHASSIS CODE: VL

6. Ceiling & Floor / Ceiling Suspended

6.4 Piping diagrams

Models : AVNH-EL [CV- NE2]



Description	PCB Connector
Thermistor for suction air temperature	CN-ROOM
Thermistor for evaporator inlet temperature	CN-PIPE / IN
Thermistor for evaporator outlet temperature	CN-PIPE / OUT

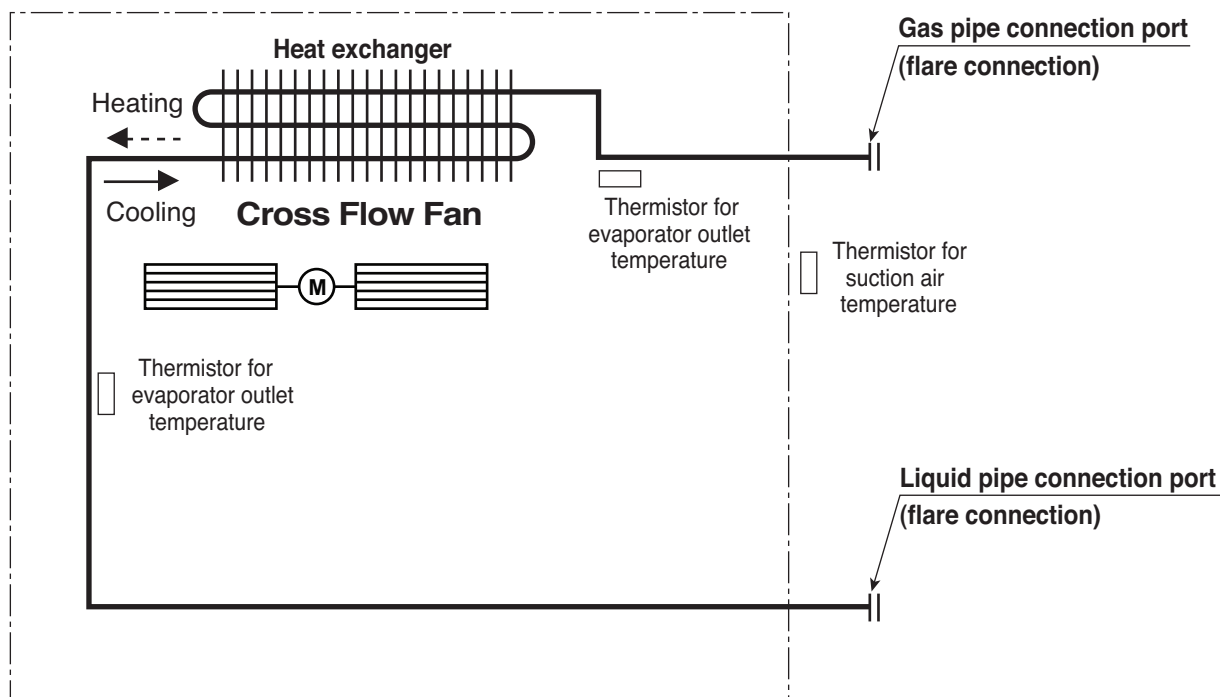
■ Refrigerant pipe connection port diameters

[Unit : mm]

Model	Gas	Liquid
AVNH09GELA2 [CV09 NE2]	Ø9.52	Ø6.35
AVNH12GELA2 [CV12 NE2]		

6. Ceiling & Floor / Ceiling Suspended

Models : UVNH-JL [CV- NJ2] / UVNH-JL [UV- NJ2]



Description	PCB Connector
Thermistor for suction air temperature	CN-ROOM
Thermistor for evaporator inlet temperature	CN-PIPE / IN
Thermistor for evaporator outlet temperature	CN-PIPE / OUT

Refrigerant pipe connection port diameters

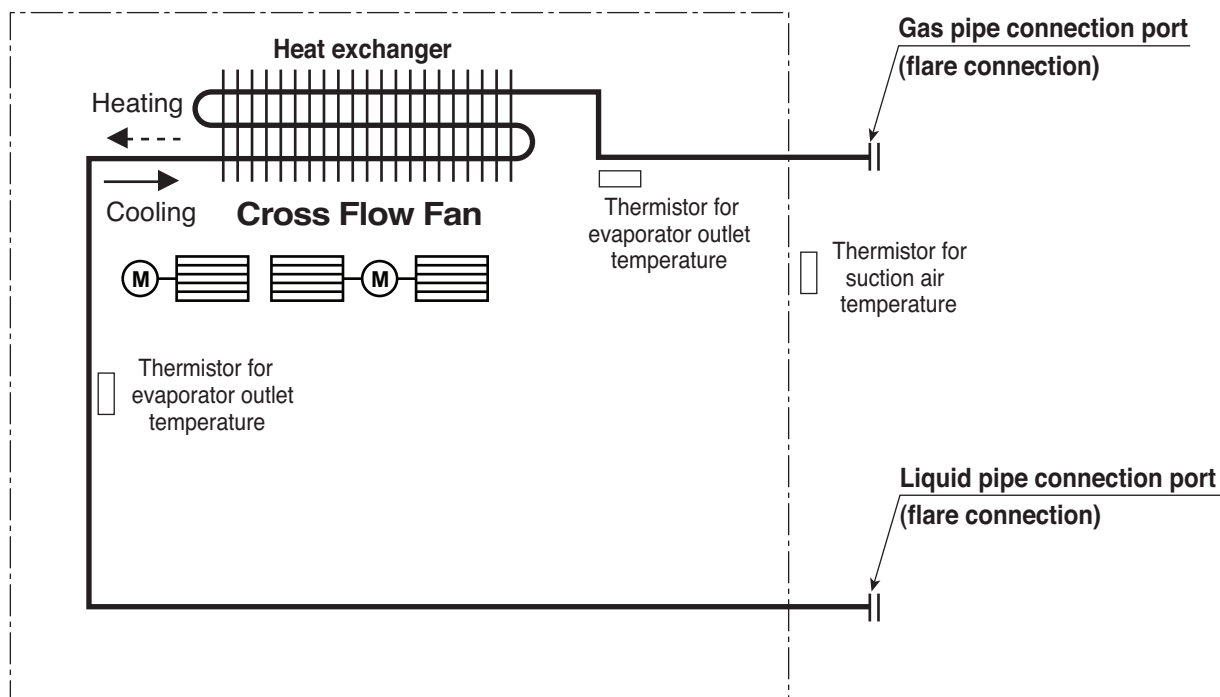
[Unit : mm]

Model	Gas	Liquid
UVNH18GJLA2 [CV18 NJ2]	Ø12.7	Ø6.35
UVNH24GJLA2 [CV24 NJ2]	Ø15.88	Ø9.52
	* Ø12.7	* Ø6.35
UVNH30GJLA2 [UV30 NJ2]	Ø15.88	Ø9.52

* : For combined with Multi F/FDX system, socket provided with indoor units should be connected.

6. Ceiling & Floor / Ceiling Suspended

Models : UVNH-KL [UV- NK2]



Description	PCB Connector
Thermistor for suction air temperature	CN-ROOM
Thermistor for evaporator inlet temperature	CN-PIPE / IN
Thermistor for evaporator outlet temperature	CN-PIPE / OUT

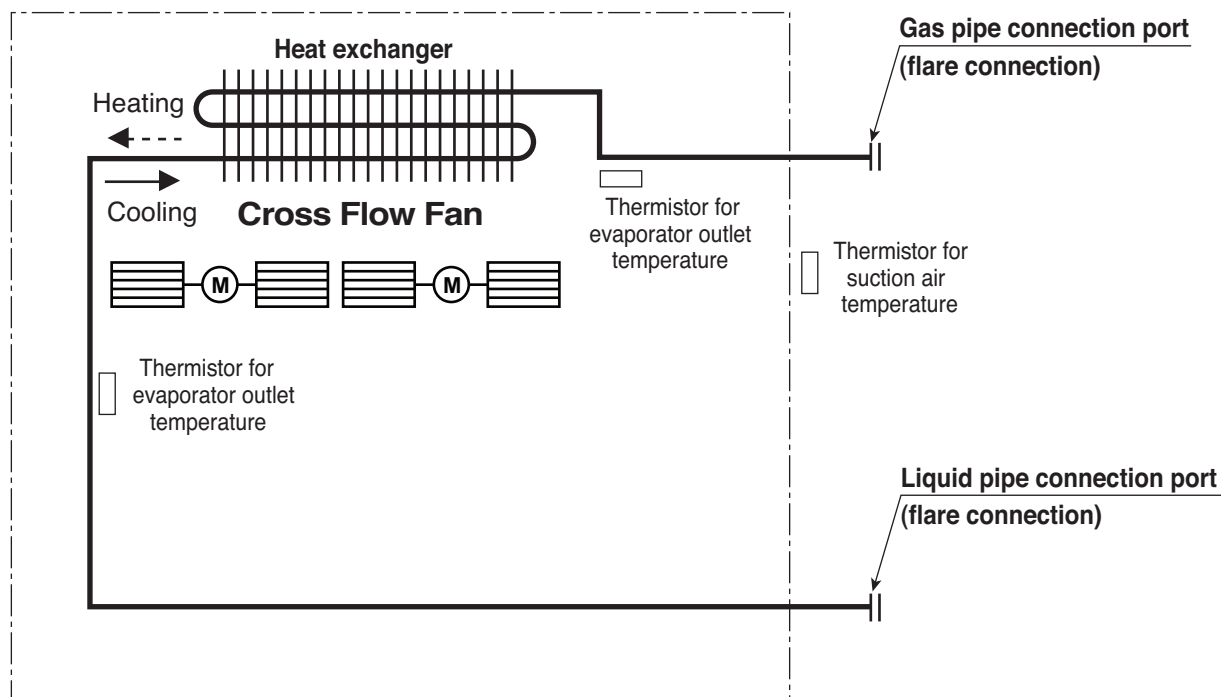
■ Refrigerant pipe connection port diameters

[Unit : mm]

Model	Gas	Liquid
UVNH36GKLA2 [UV36 NK2]	Ø15.88	Ø9.52

MULTI/SINGLE CAC Indoor unit**6. Ceiling & Floor / Ceiling Suspended**

Models : UVNH-LL [UV- NL2]



Description	PCB Connector
Thermistor for suction air temperature	CN-ROOM
Thermistor for evaporator inlet temperature	CN-PIPE / IN
Thermistor for evaporator outlet temperature	CN-PIPE / OUT

Refrigerant pipe connection port diameters

[Unit : mm]

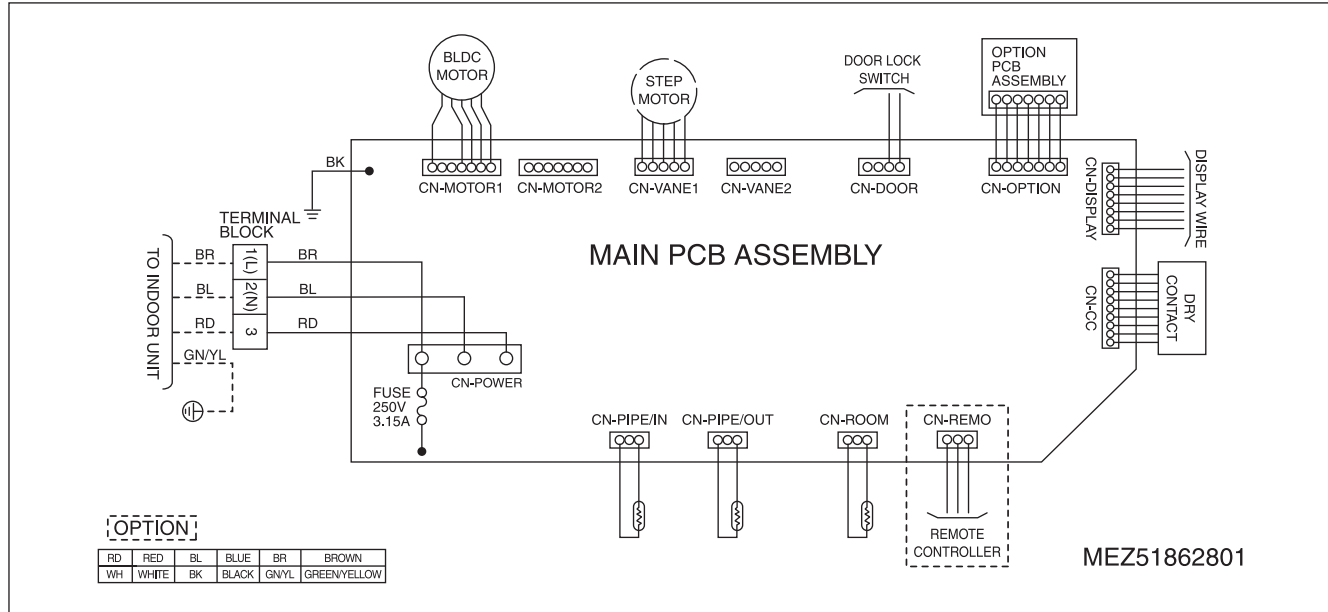
Model	Gas	Liquid
UVNH42GLLA2 [UV42 NL2] UVNH48GLLA2 [UV48 NL2] UVNH60GLLA2 [UV60 NL2]	Ø15.88	Ø9.52

MULTI/SINGLE CAC Indoor unit

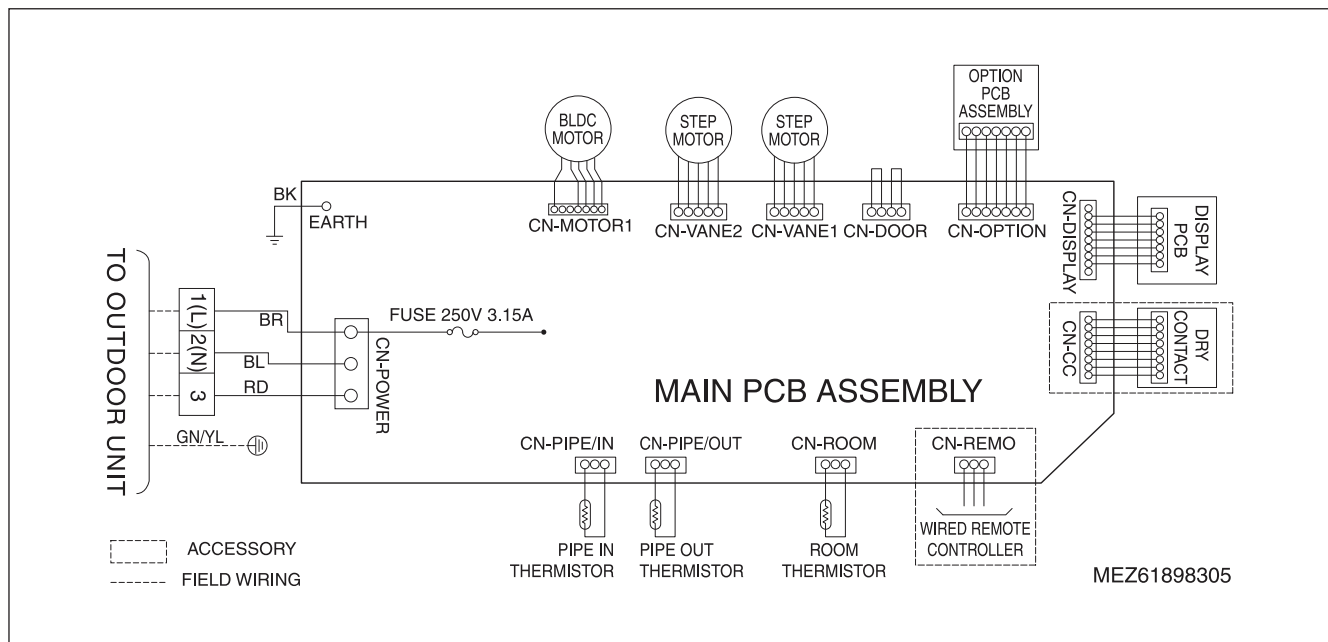
6. Ceiling & Floor / Ceiling Suspended

6.5 Wiring diagrams

Models : AVNH-EL [CV- NE2]



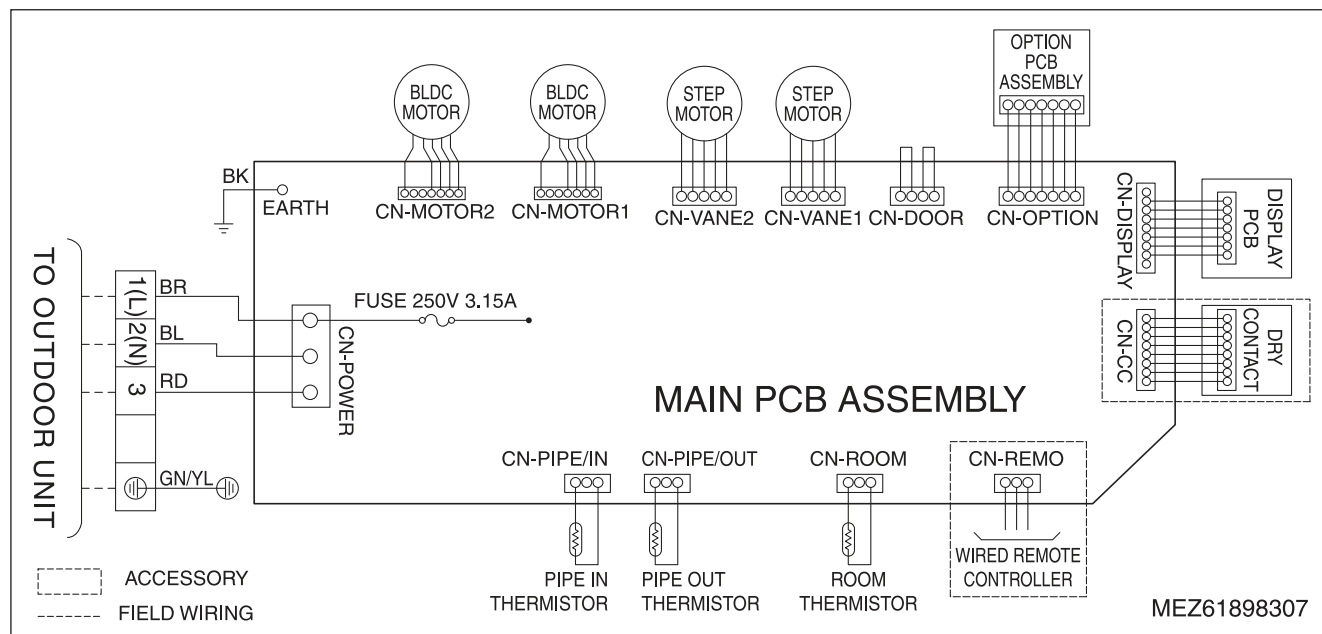
Models : UVNH-JL [CV- NJ2]/UVNH-JL [UV- NJ2]



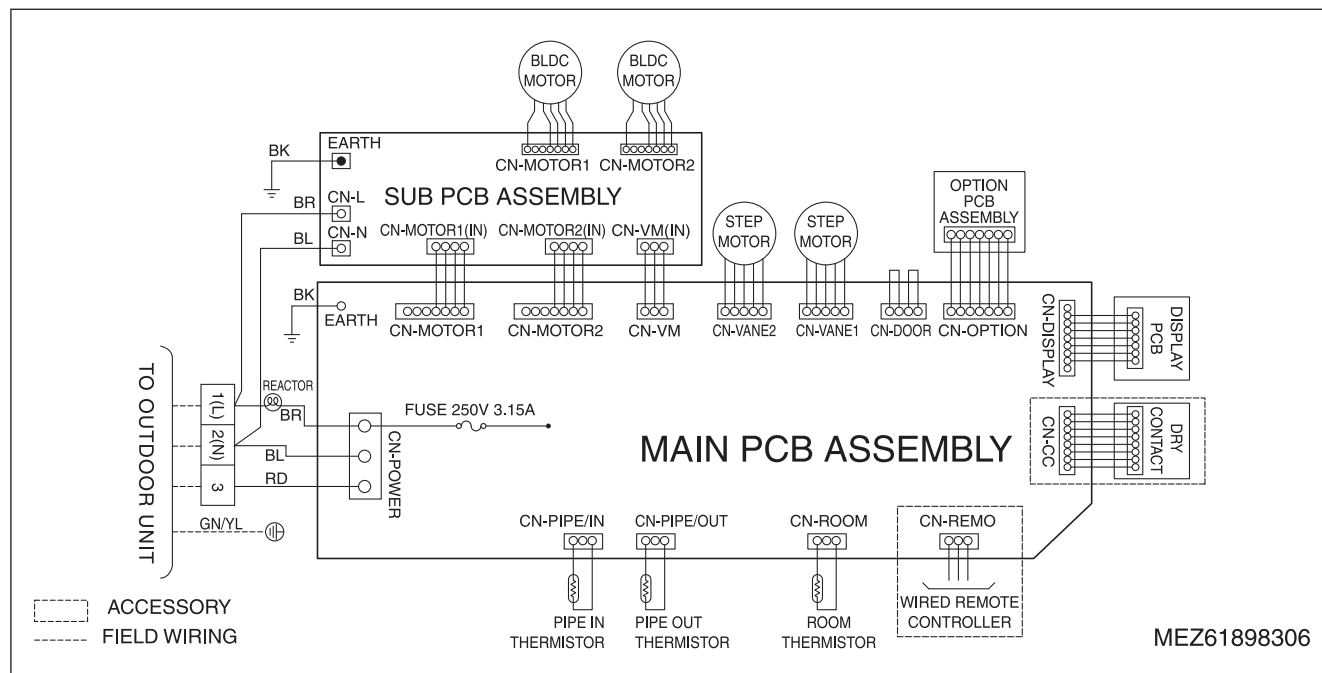
MULTI/SINGLE CAC Indoor unit

6. Ceiling & Floor / Ceiling Suspended

Models : UVNH-KL [UV- NK2]



Models : UVNH-LL [UV- NL2]



6. Ceiling & Floor / Ceiling Suspended

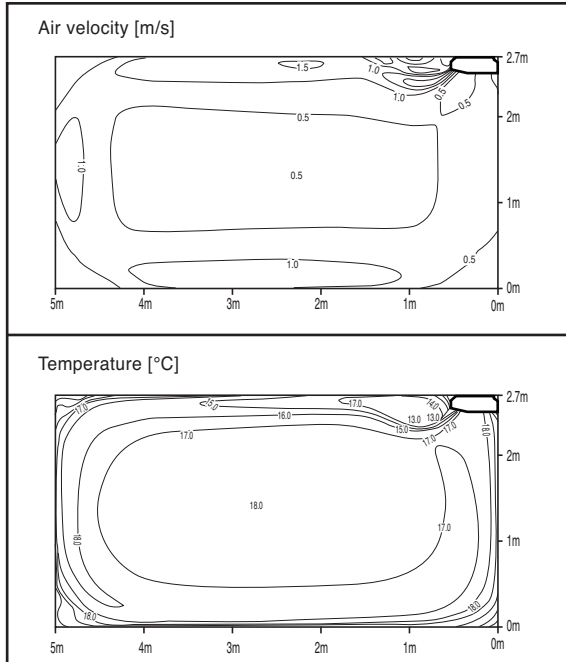
6.6 Air flow and temperature distributions (reference data)

Model : AVNH09GELA2 [CV09 NE2]

■ Ceiling

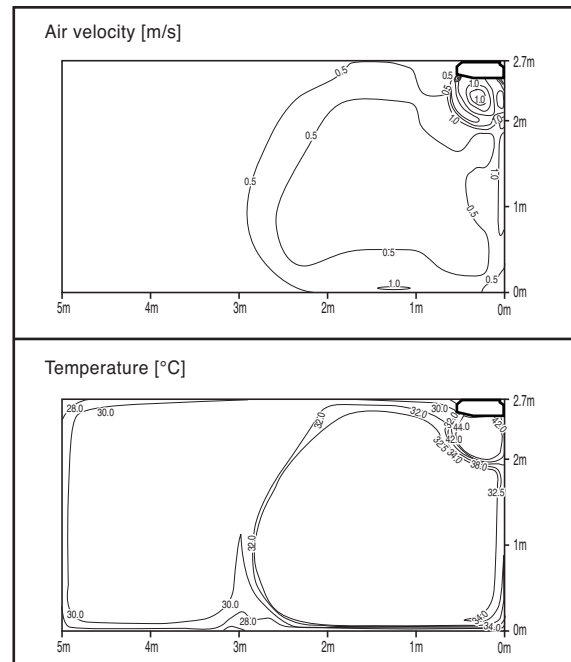
Cooling

Discharge angle:50°



Heating

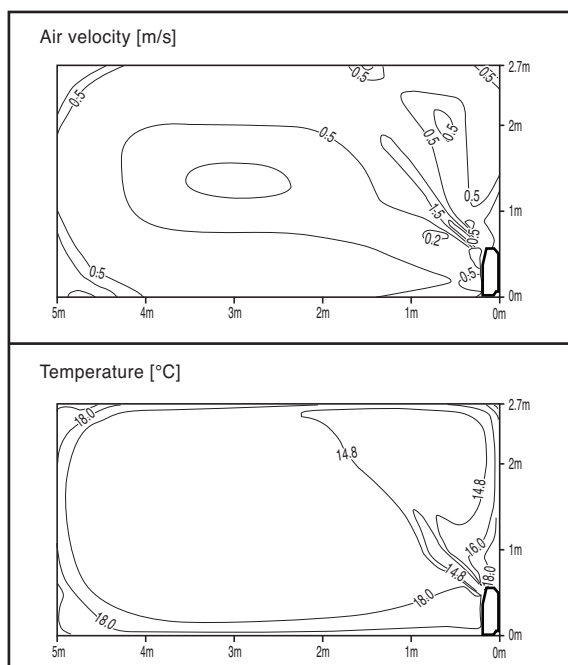
Discharge angle:60°



■ Floor

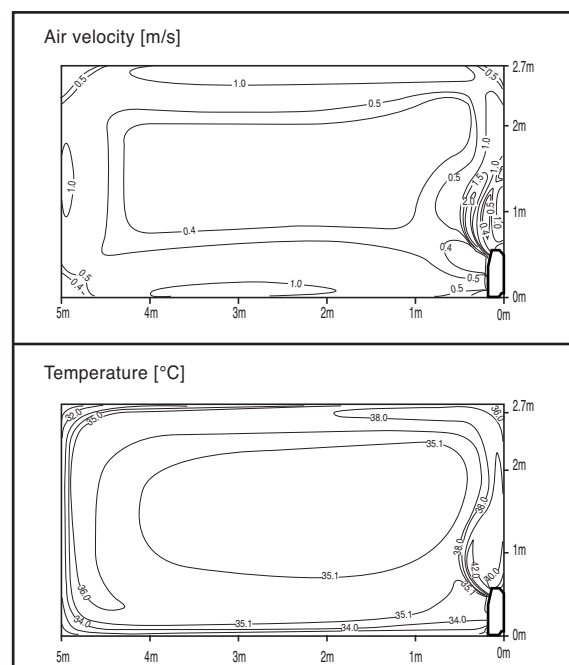
Cooling

Discharge angle:45°



Heating

Discharge angle:50°



MULTI/SINGLE CAC Indoor unit

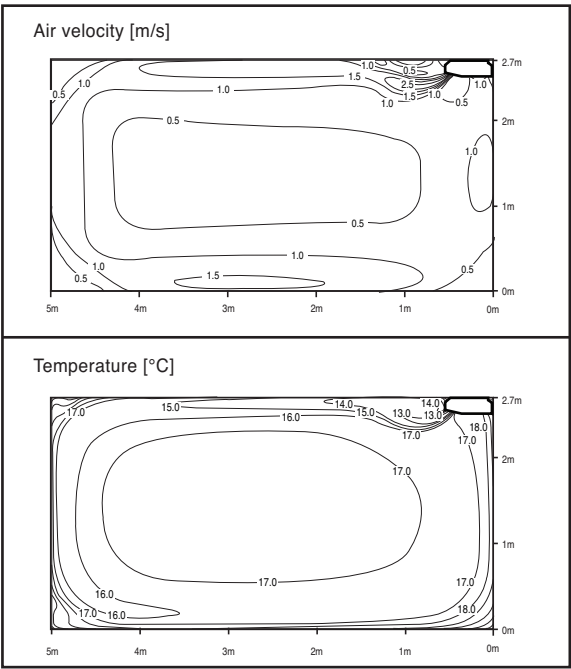
6. Ceiling & Floor / Ceiling Suspended

Model : AVNH12GELA2 [CV12 NE2]

■ Ceiling

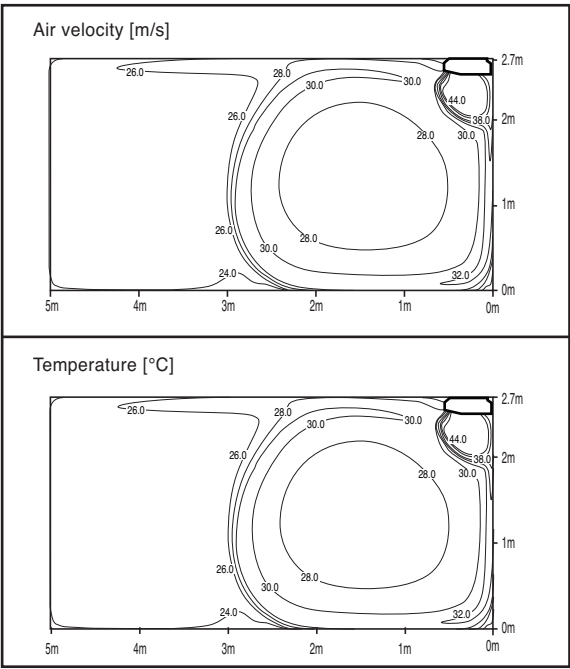
Cooling

Discharge angle:50°



Heating

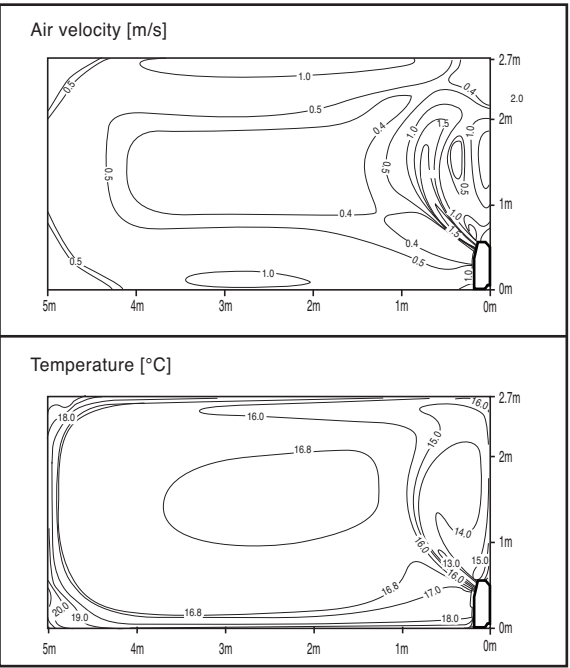
Discharge angle:60°



■ Floor

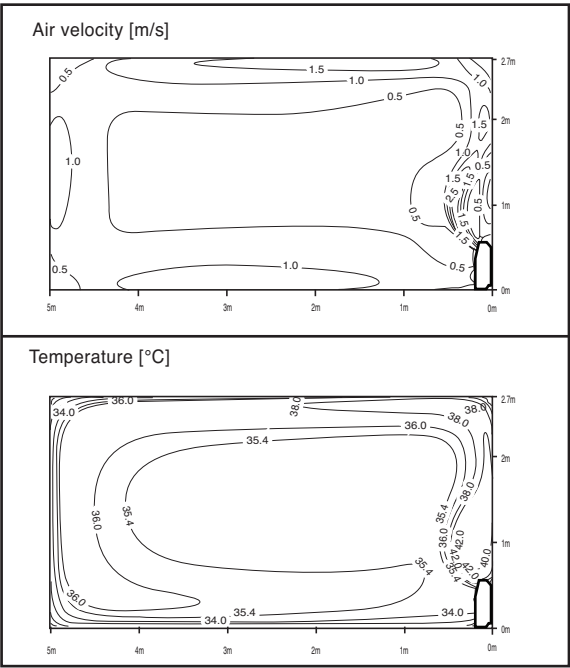
Cooling

Discharge angle:50°



Heating

Discharge angle:60°

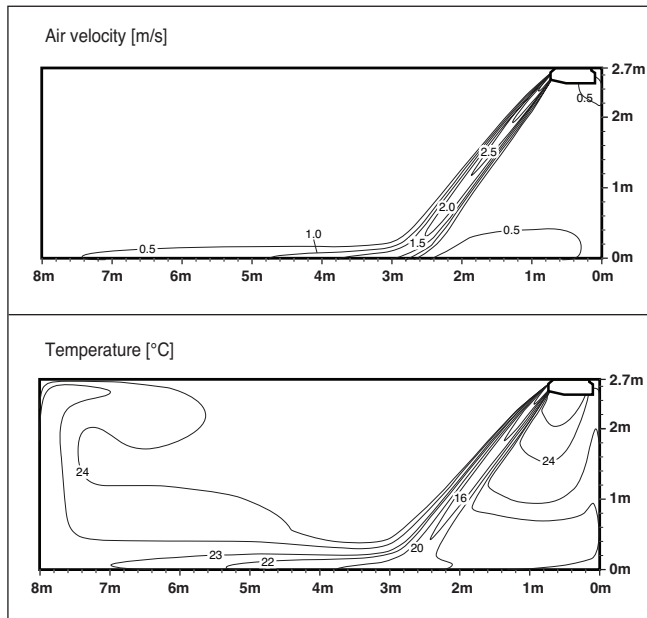


6. Ceiling & Floor / Ceiling Suspended

Model : UVNH18GJLA2 [CV18 NJ2]

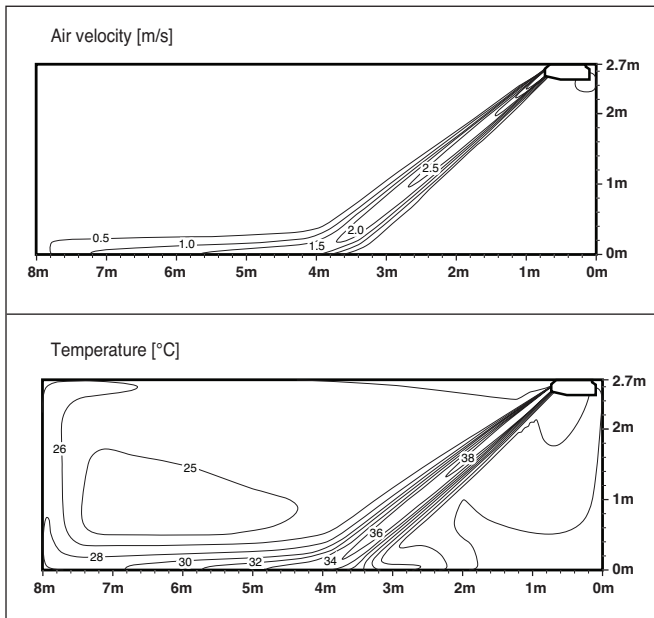
Cooling

Discharge angle:40°



Heating

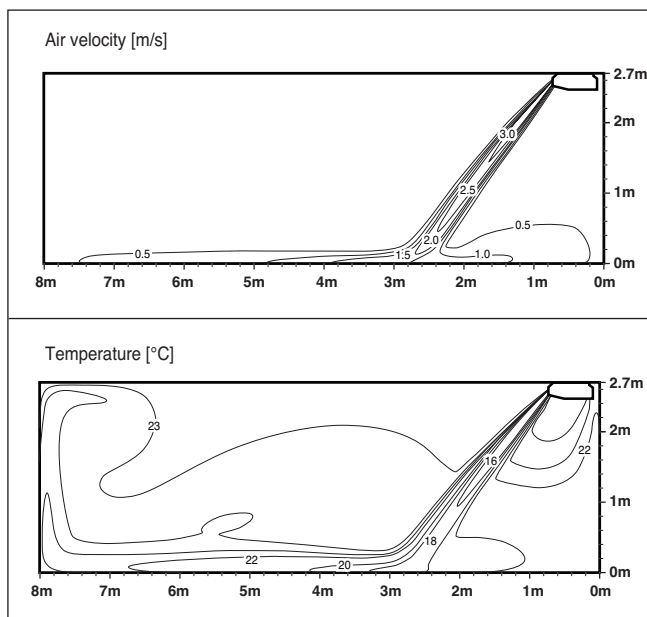
Discharge angle:50°



Model : UVNH24GJLA2 [CV24 NJ2] / UVNH30GJLA2 [UV30 NJ2]

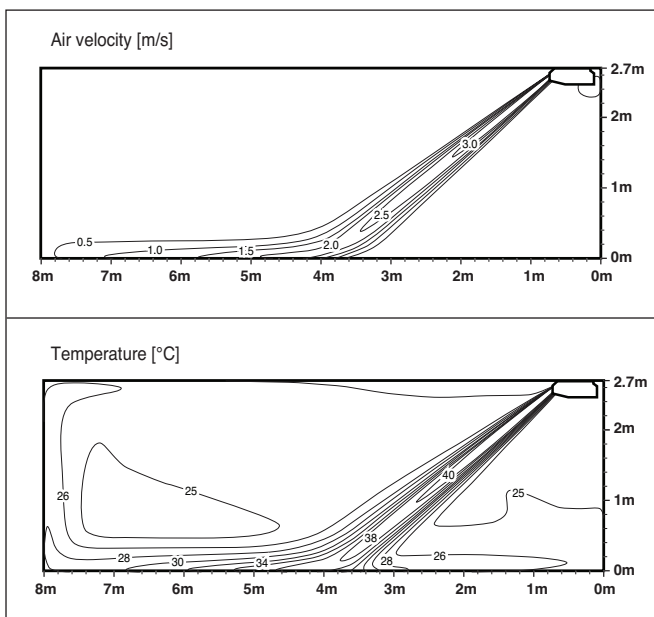
Cooling

Discharge angle:40°



Heating

Discharge angle:50°



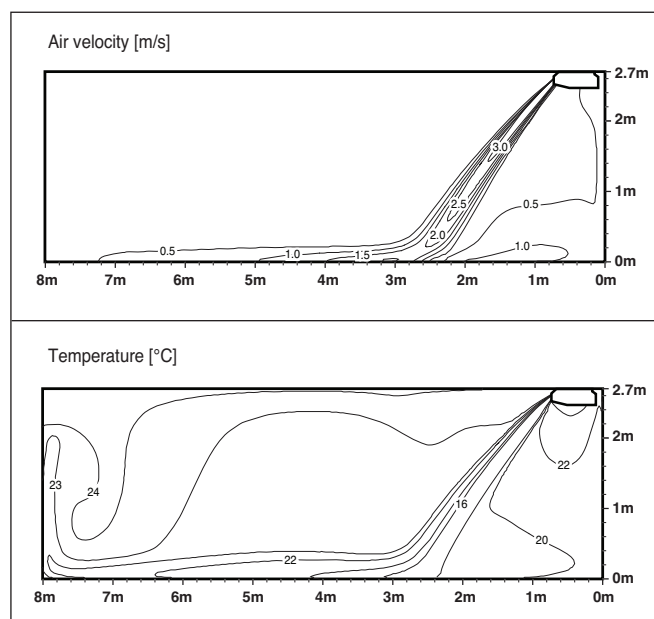
MULTI/SINGLE CAC Indoor unit

6. Ceiling & Floor / Ceiling Suspended

Model : UVNH36GKLA2 [UV36 NK2]

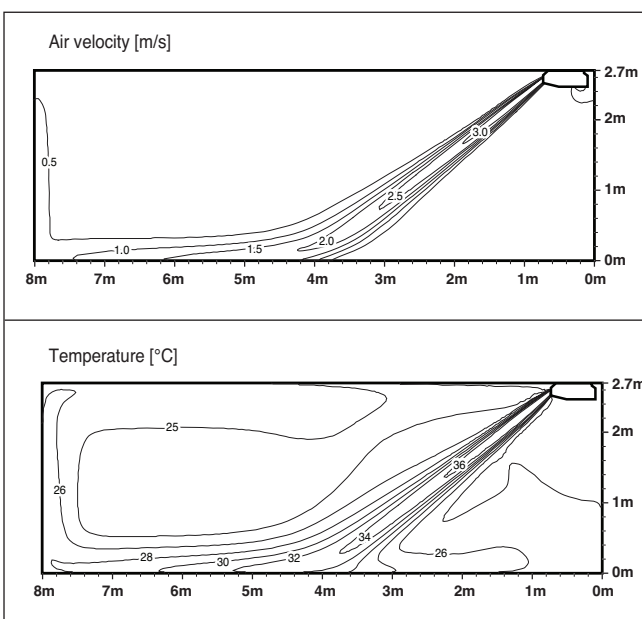
Cooling

Discharge angle:40°



Heating

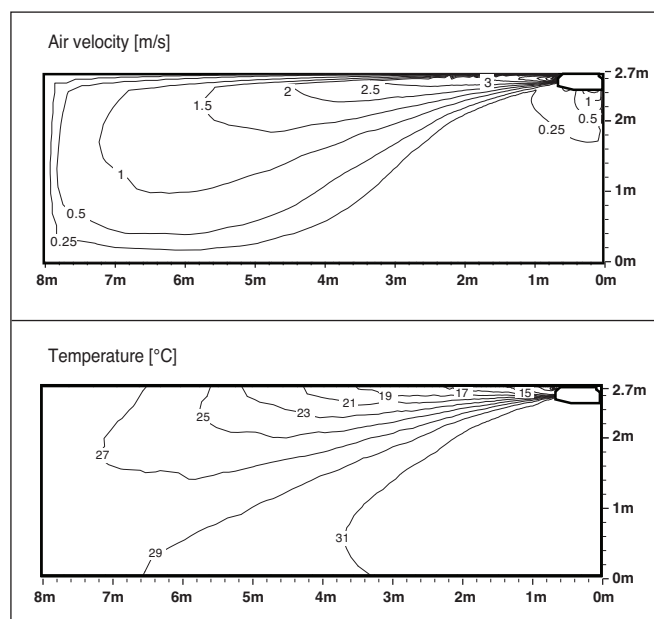
Discharge angle:50°



Model : UVNH42GLLA2 [UV42 NL2]

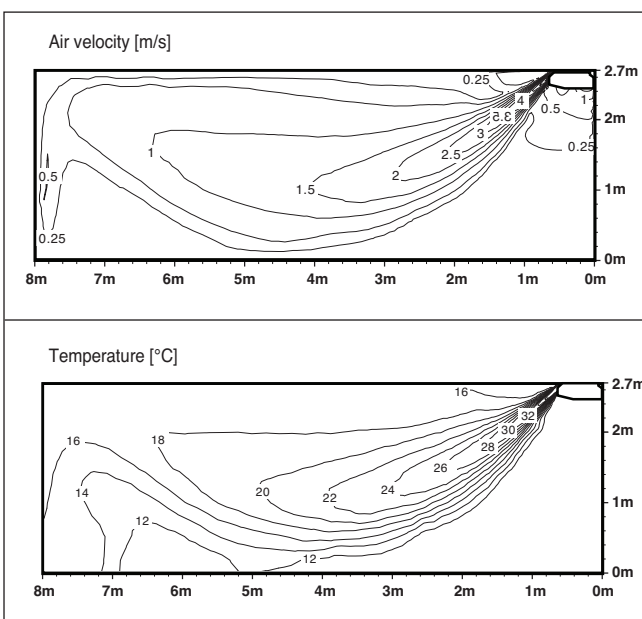
Cooling

Discharge angle:10°



Heating

Discharge angle:45°

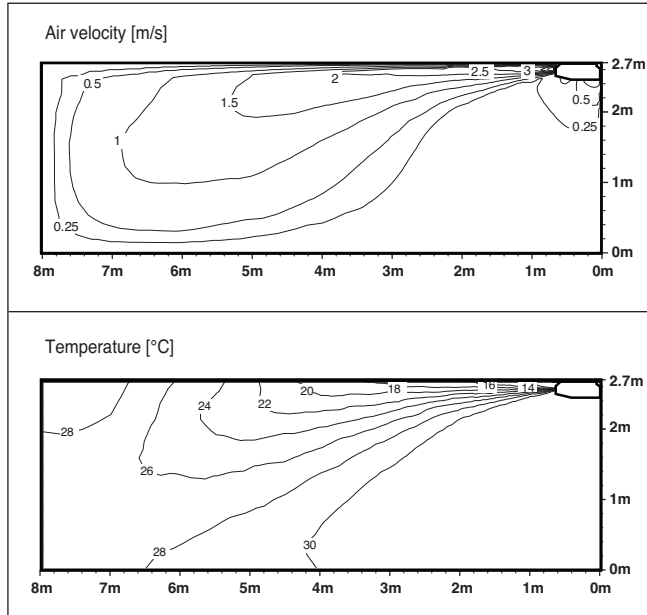


6. Ceiling & Floor / Ceiling Suspended

Model : UVNH48GLLA2 [UV48 NL2]

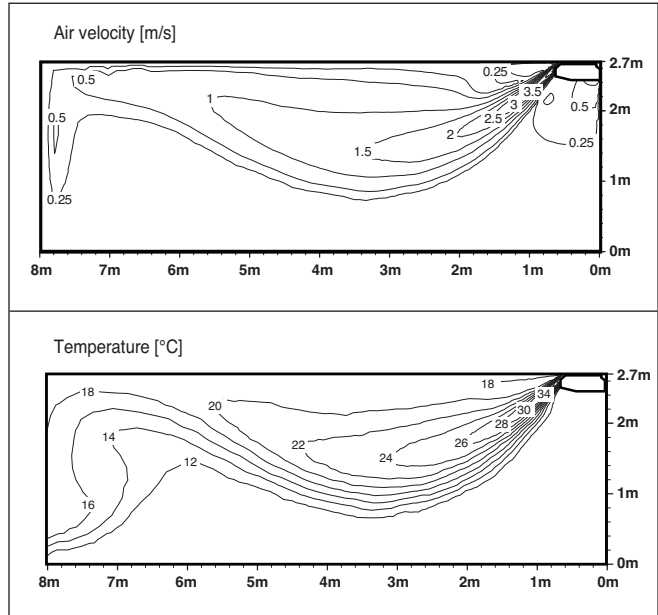
Cooling

Discharge angle:10°



Heating

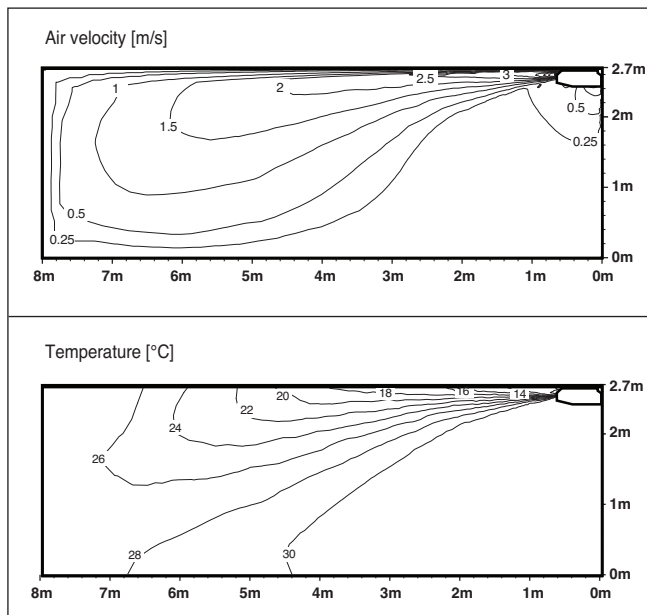
Discharge angle:45°



Model : UVNH60GLLA2 [UV60 NL2]

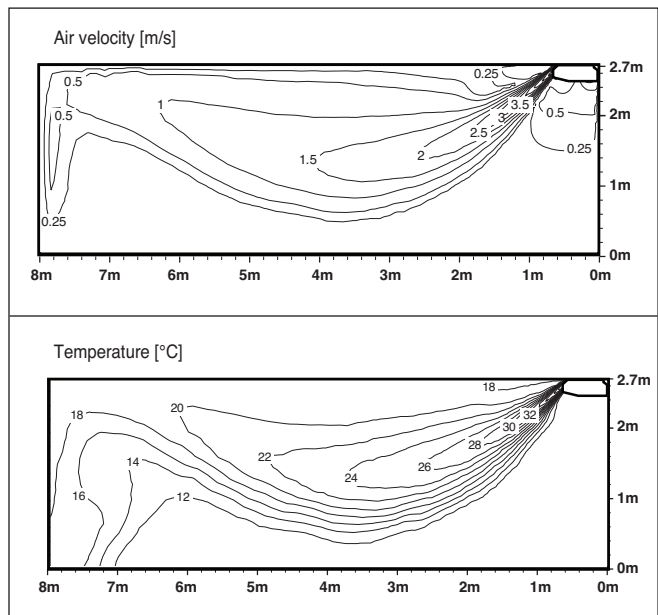
Cooling

Discharge angle:10°



Heating

Discharge angle:45°



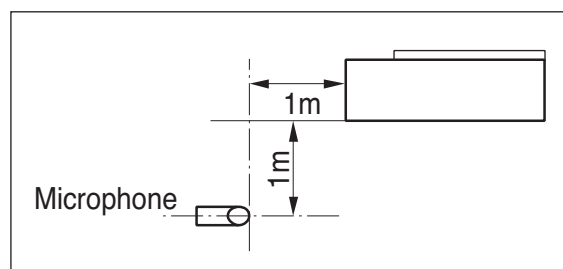
MULTI/SINGLE CAC Indoor unit

6. Ceiling & Floor / Ceiling Suspended

6.7 Sound levels

6.7.1 Sound pressure level

Overall



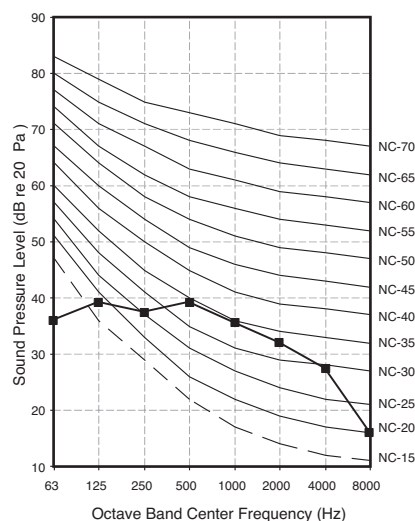
Notes:

- Data is valid at nominal operation condition
- Reference acoustic pressure $0\text{dB} = 20\mu\text{Pa}$.
- Sound level will vary depending on a range of factors such as the construction (acoustic absorption coefficient) of particular room in which the equipment is installed.
- The operating conditions are assumed to be standard.

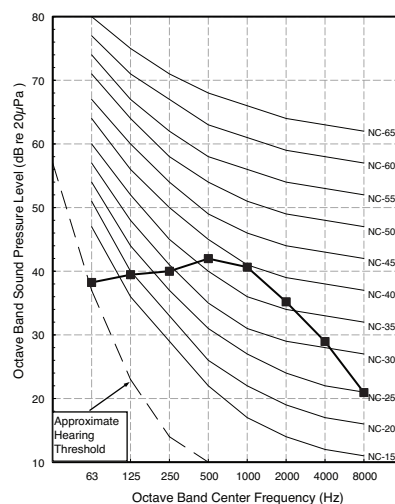
Model	50Hz, 220-240V		
	Sound pressure Levels [dB(A)]		
	H	M	L
AVNH09GELA2 [CV09 NE2]	38	35	32
AVNH12GELA2 [CV12 NE2]	40	36	31
UVNH18GJLA2 [CV18 NJ2]	42	40	39
UVNH24GJLA2 [CV24 NJ2]	44	43	41
UVNH30GJLA2 [UV30 NJ2]	44	43	41

Model	50Hz, 220-240V		
	Sound pressure Levels [dB(A)]		
	H	M	L
UVNH36GKLA2 [UV36 NK2]	45	44	41
UVNH42GLLA2 [UV42 NL2]	46	44	43
UVNH48GLLA2 [UV48 NL2]	47	46	44
UVNH60GLLA2 [UV60 NL2]	48	47	45

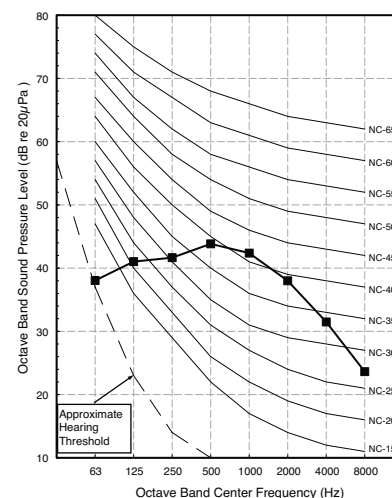
AVNH09GELA2 [CV09 NE2]
AVNH12GELA2 [CV12 NE2]



UVNH18GJLA2 [CV18 NJ2]

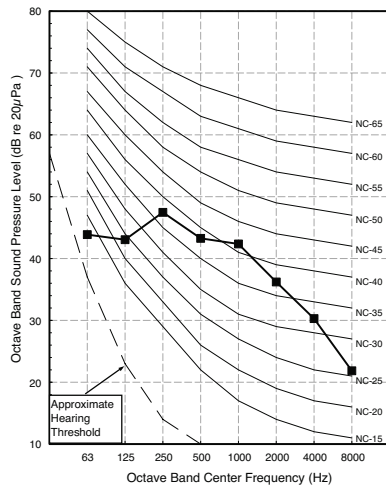


UVNH24GJLA2 [CV24 NJ2]
UVNH30GJLA2 [CV30 NJ2]

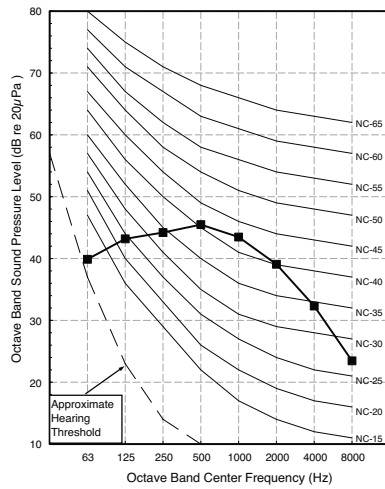


6. Ceiling & Floor / Ceiling Suspended

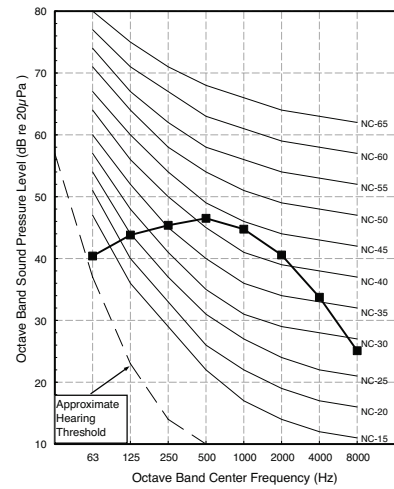
UVNH36GKLA2 [UV36 NK2]



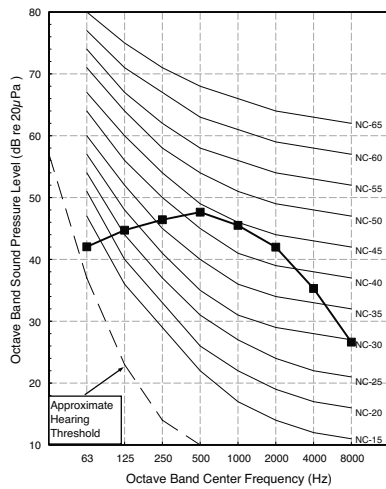
UVNH42GLLA2 [UV42 NL2]



UVNH48GLLA2 [UV48 NL2]



UVNH60GLLA2 [UV60 NL2]



6. Ceiling & Floor / Ceiling Suspended

6.7.2 Sound power level

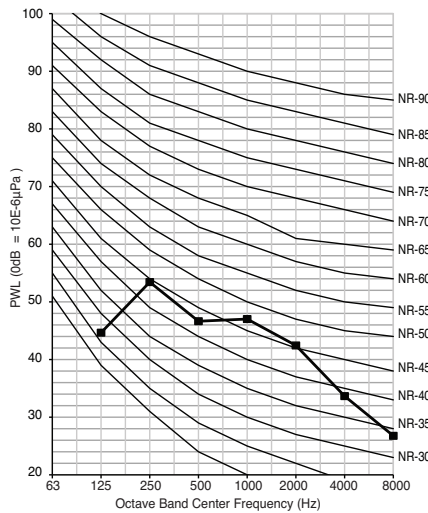
Notes:

1. Reference acoustic intensity 0dB = $10E-6 \mu W/m^2$
2. Sound level will vary depending on a range of factors such as the construction (acoustic absorption coefficient) of particular room in which the equipment is installed.

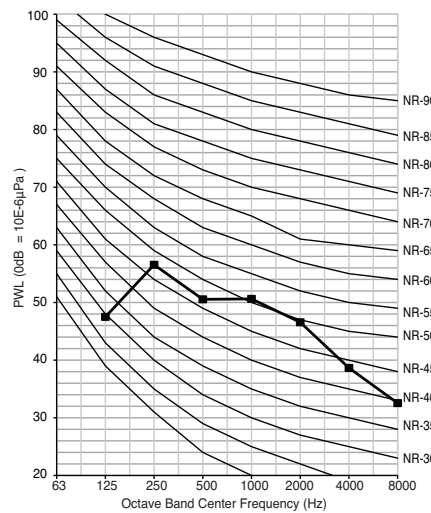
Model	Sound power level [dB(A)]
	H
AVNH09GELA2 [CV09 NE2]	52
AVNH12GELA2 [CV12 NE2]	56
UVNH18GJLA2 [CV18 NJ2]	57
UVNH24GJLA2 [CV24 NJ2]	61
UVNH30GJLA2 [UV30 NJ2]	62

Model	Sound power level [dB(A)]
	H
UVNH36GKLA2 [UV36 NK2]	63
UVNH42GLLA2 [UV42 NL2]	63
UVNH48GLLA2 [UV48 NL2]	63
UVNH60GLLA2 [UV60 NL2]	63

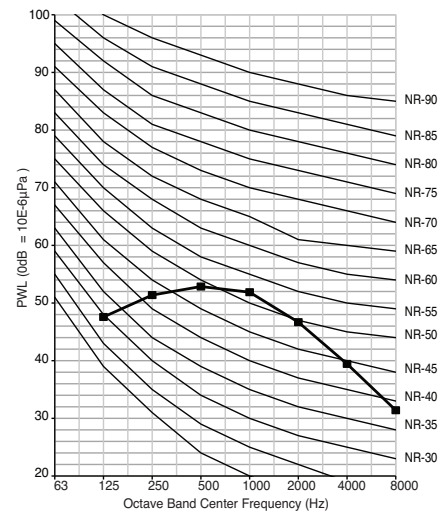
AVNH09GELA2 [CV09 NE2]



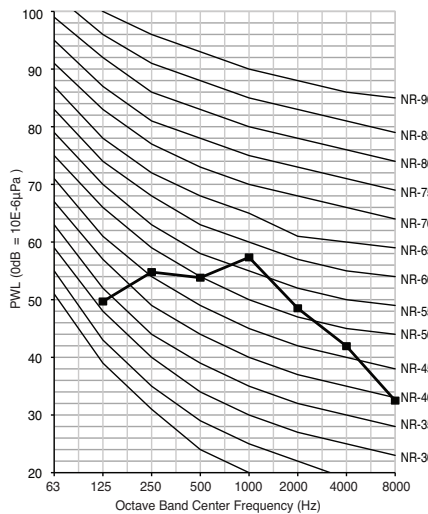
AVNH12GELA2 [CV12 NE2]



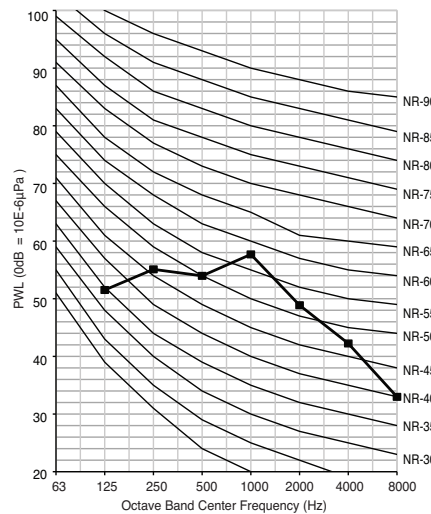
UVNH18GJLA2 [CV18 NJ2]



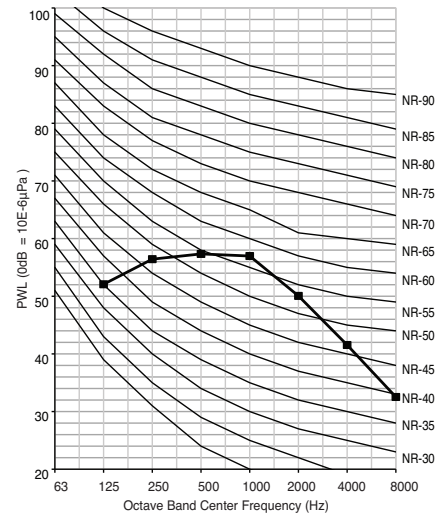
UVNH24GJLA2 [CV24 NJ2]



UVNH30GJLA2 [UV30 NJ2]



UVNH36GKLA2 [UV36 NK2]

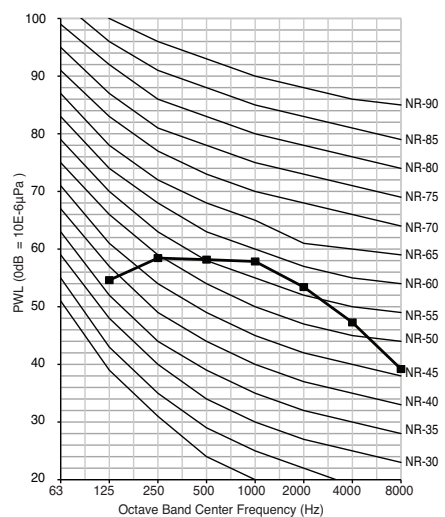


6. Ceiling & Floor / Ceiling Suspended

UVNH42GLLA2 [UV42 NL2]

UVNH48GLLA2 [UV48 NL2]

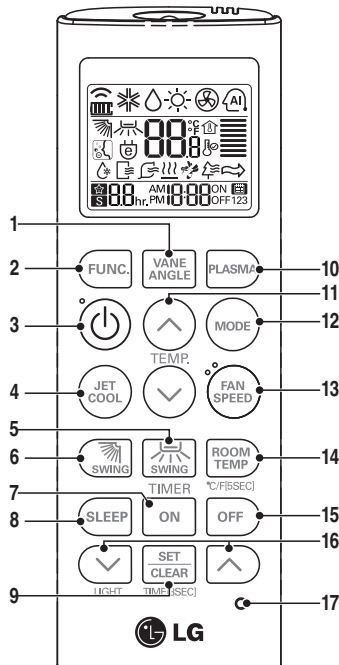
UVNH60GLLA2 [UV60 NL2]



6. Ceiling & Floor / Ceiling Suspended

6.8 Controller

Wireless remote control



1. VANE ANGLE Button

Used to set each vane angle.

2. FUNCTION SETTING Button

Used to set or clear Auto Clean, Smart Clean, Electric heater or Individual vane angle control.

3. ON/OFF Button

Used to turn on/off the unit.

4. JET COOL Button

Speed cooling operates super high fan speed.

5. LEFT/RIGHT AIRFLOW Button (OPTIONAL)

Used to set the desired left/right(horizontal) airflow direction.

6. UP/DOWN AIRFLOW Button

Used to stop or start louver movement and set the desired up/down airflow direction.

7. ON TIMER Button

Used to set the time of starting operation.

8. SLEEP TIMER Button

Used to set the time of sleeping operation.

9. SET / CLEAR Button

Used to set/clear the timer.

Used to set the current time(if it input for 3sec.)

10. PLASMA Button (OPTIONAL)

Used to start or stop the plasma-purification function.

11. ROOM TEMPERATURE SETTING Button

Used to select the room temperature.

12. OPERATION MODE SELECTION Button

Used to select the operation mode.

13. INDOOR FAN SPEED SELECTION Button

Used to select fan speed in four steps low, medium, high and chaos.

14. ROOM TEMPERATURE CHECKING Button

Used to check the room temperature.

15. OFF TIMER Button

Used to set the time of stopping operation.

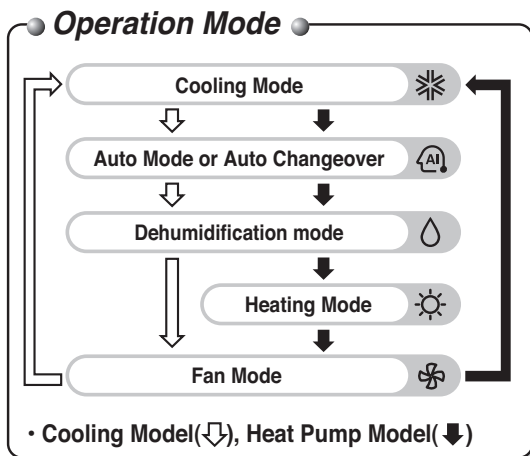
16. TIMER SETTING(Up/Down)/LIGHT Button

Used to set the timer.

Used to adjust the brightness.(if it is not time adjust mode)

17. RESET Button

Used to reset the remote controller.



6. Ceiling & Floor / Ceiling Suspended

6.9 Installation

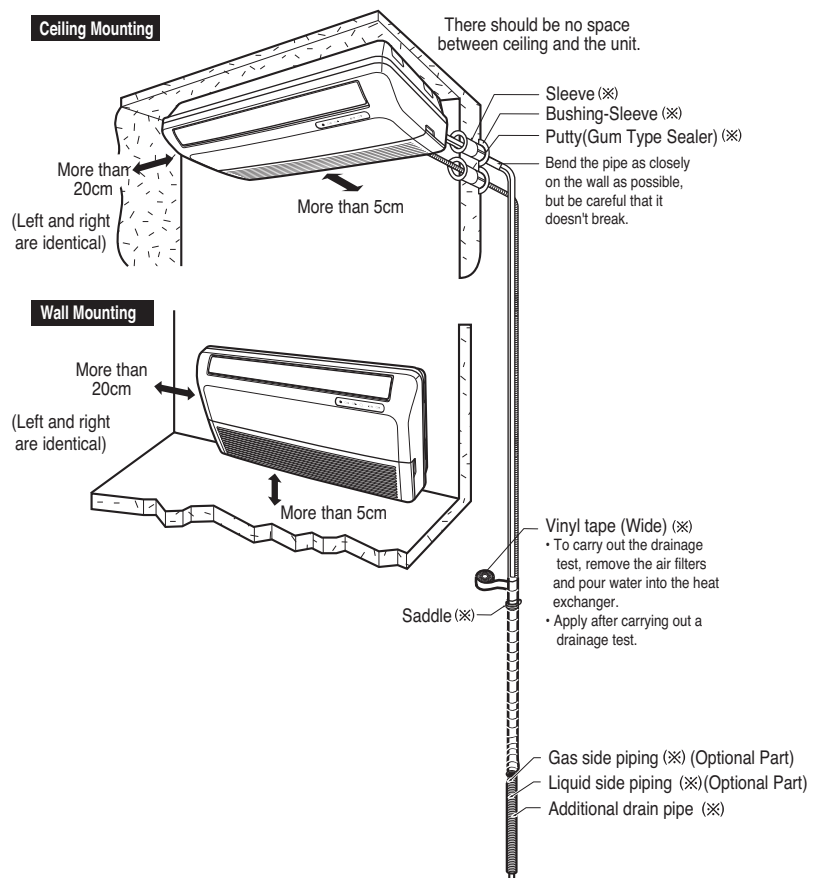
- Please read the instruction sheets completely before installing the product.
- When the power cord is damaged, replacement work shall be performed by authorized personnel only.
- Installation work must be performed in accordance with the national wiring standards by authorized personnel only.

1) Installation parts provided

- Installation Plate (VE, 1pcs)
- Washer Bolt (M8 × L25, 4pcs, type "A")
- Floor Mount Bracket (1pcs)
- Drain Hose, Insulated
- Drain Hose Hanger and screw

2) The other installation parts needed

- Suspension Bolt
- Bolts for Mount Bracket
- Connecting Tube(mm)
 - Gas side : Ø9.52, Ø12.7
 - Liquid side : Ø6.35
- Connecting Cable
- Drain Hose Extended



6.9.1 Accessories

Check the following accessories are included with your unit.

1) Standard accessories

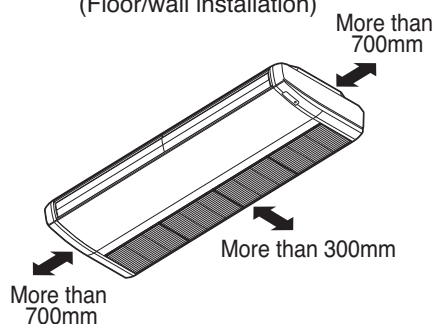
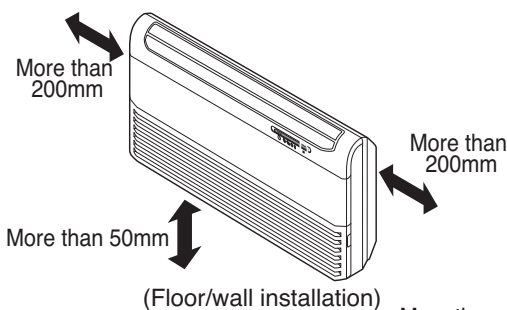
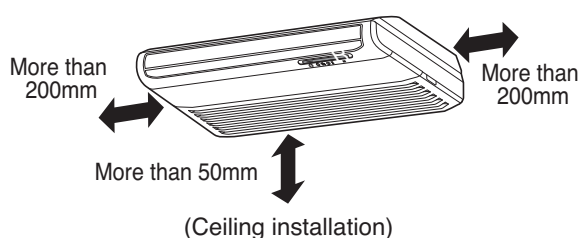
Name	Drain hose	Clamp metal	Washer for hanging basket	Clamp	Insulation for fitting	(Other)
Quantity	1 EA	1 EA	8 EA	6 EA	1 set	
Diagram					 for gas pipe for liquid pipe	<ul style="list-style-type: none"> • Owner's manual • Installation manual

MULTI/SINGLE CAC Indoor unit

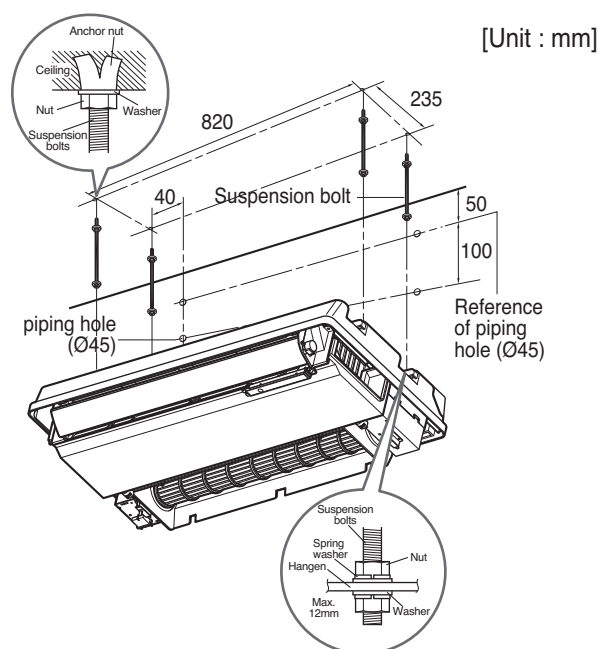
6. Ceiling & Floor / Ceiling Suspended

6.9.2 Selection of the best location

- There should not be any heat source or steam near the unit.
- There should not be any obstacles to the air circulation.
- There should be provision of easy condensate drain.
- Taking into accounting the noise prevention criteria, spot the installation location.
- Do not install the unit near the door way.
- Keep proper distances, of the unit, from ceiling, fence, floor, walls and other obstacles as shown in figure.
- The indoor unit must have the maintenance space.
- The mounting ceiling or wall should be strong and solid enough to protect it from the vibration.



- ③ Insert the nuts and washer onto the suspension bolts for locking the suspension bolts on the ceiling.
- ④ Mount the suspension bolts to the anchor-nuts firmly.
- ⑤ Secure the hangers onto the suspension bolts (adjust level roughly) using nuts, washers and spring washers.
- ⑥ Adjust a level with a level gauge on the direction of left-right, back-forth by adjusting suspension bolts.
- ⑦ Adjust a level on the direction of top-bottom by adjusting suspension bolts. Then the unit will be declined to the bottomside so as to drain well.



CAUTION

- Tighten the nut and bolt to prevent unit from falling.

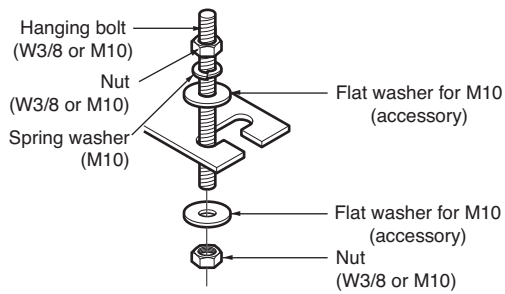
6.9.3 Installation

VE Chassis

1) Installation on the ceiling

- ① Prepare 4 suspension bolts (Each bolts length should be same.)
- ② Measure and mark the position for the suspension bolts and the piping hole.

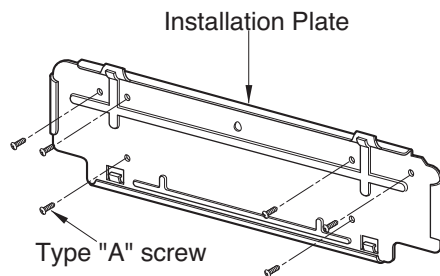
6. Ceiling & Floor / Ceiling Suspended



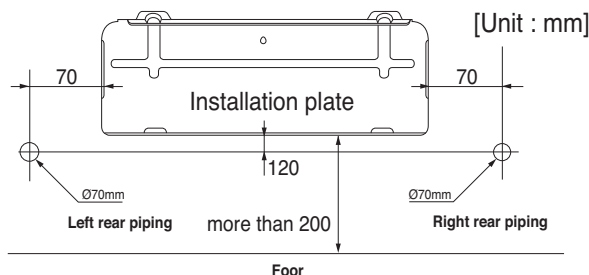
2) Installation on the wall

The wall you select should be strong and so cover enough to prevent vibration

- ① Mount the installation plate on the wall with type "A" screws. If mounting the unit on a concrete wall, use anchor bolts.
- ② Mount the installation plate horizontally by aligning the centerline using a level.



- ③ Measure the wall and mark the centerline. It is also important to use caution concerning the location of the installation plate—routing of the wiring to power outlets is through the walls typically. Drilling the hole through the wall for piping connections must be done safely.



VJ/K/L Chassis

1) Open the cover

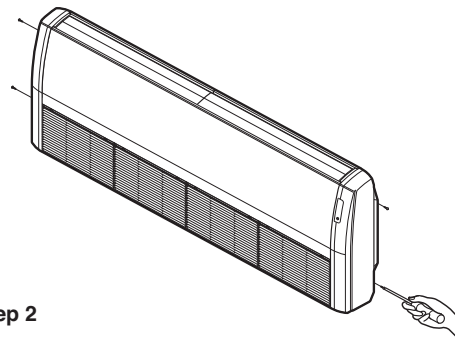
The wall you select should

- ① Remove four screws from side-cover.
- ② Unlock side-cover from side panel slightly (Tap the side-cover with your palm on the backside)
- ③ Knock out the pipe hole from the left sidecover with nipper/plier.

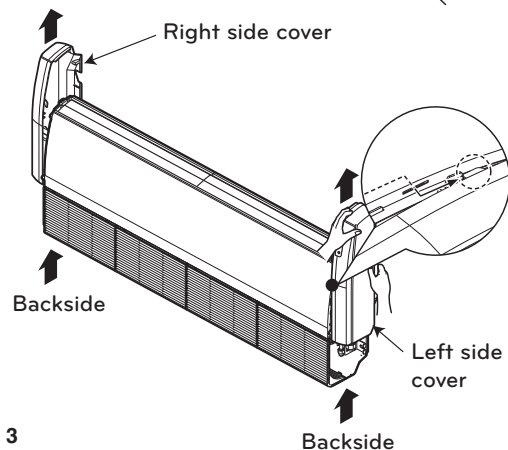
CAUTION

- Hold the side-cover with other hand while tapping to prevent it to fall down.

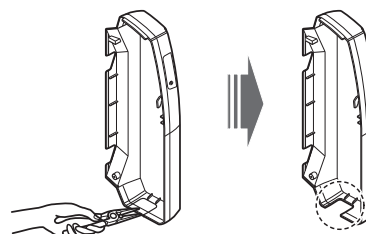
Step 1



Step 2



Step 3

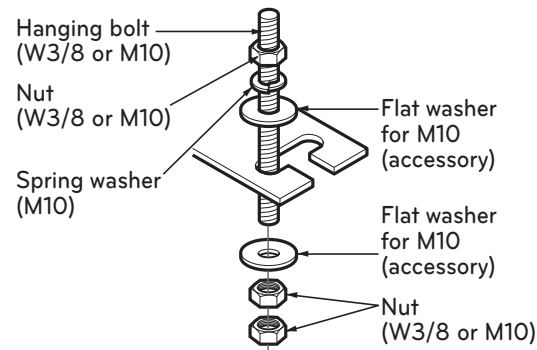


MULTI/SINGLE CAC Indoor unit

6. Ceiling & Floor / Ceiling Suspended

2) Mounting the anchor nut and bolt

- ① Prepare 4 suspension bolts. (Each bolts length should be same.)
- ② Measure and mark the position for the Suspension bolts and the piping hole.
- ③ Drill the hole for anchor nut on the ceiling.
- ④ Insert the nuts and washer onto the suspension bolts for locking the suspension bolts on the ceiling.
- ⑤ Mount the suspension bolts to the anchor-nuts firmly.
- ⑥ Secure the hangers onto the Suspension bolts (adjust level roughly.) using nuts, washers and spring washers.
- ⑦ Adjust a level with a level gauge on the direction of left-right, back-forth by adjusting suspension bolts.
- ⑧ Adjust a level on the direction of top-bottom by adjusting suspension bolts. Then the unit will be declined to the bottomside so as to drain well.



- The following parts is option.

Hanging Bolt - W 3/8 or M10

Nut - W 3/8 or M10

Spring Washer - M10

Plate Washer - M10

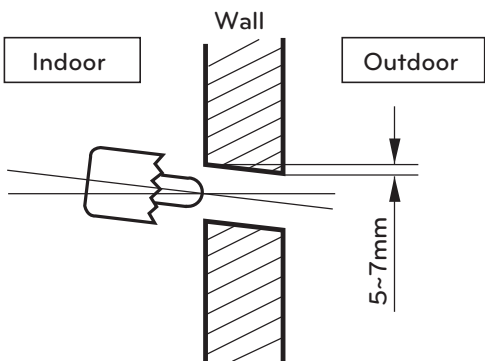
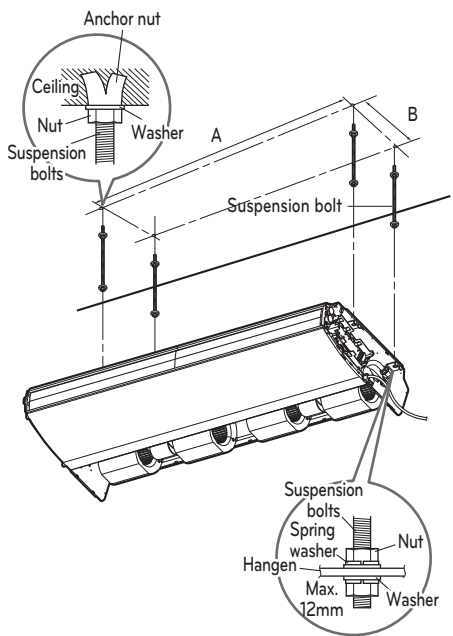
[Unit : mm]

DIMENSION	A	B
MODEL		
VL	1655	320
VK	1255	320
VJ	855	320

CAUTION

Tighten the nut and bolt to prevent unit falling.

- Drill the piping hole on the wall slightly tilted to the outdoor side using a Ø 70 hole-core drill.



6. Ceiling & Floor / Ceiling Suspended

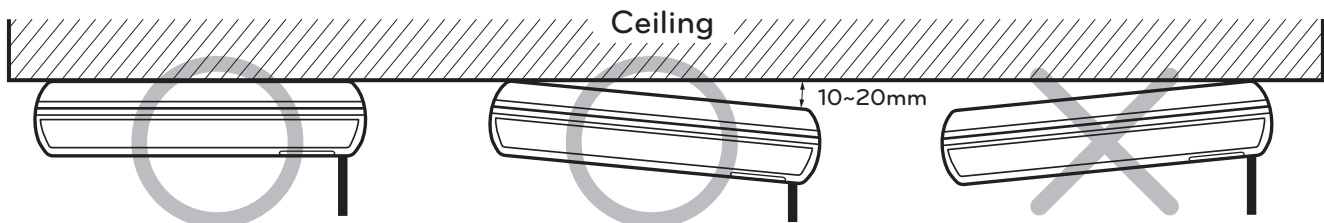
⚠ CAUTION

Installation Information For Declination

- Install declination of the indoor unit is very important for the drain of the convertible type air conditioner.
- Minimum thickness of the insulation for the connecting pipe shall be 10mm.
- If the Installation Plates are fixed to horizontal line, the indoor unit after installing will be declined to the bottomside.

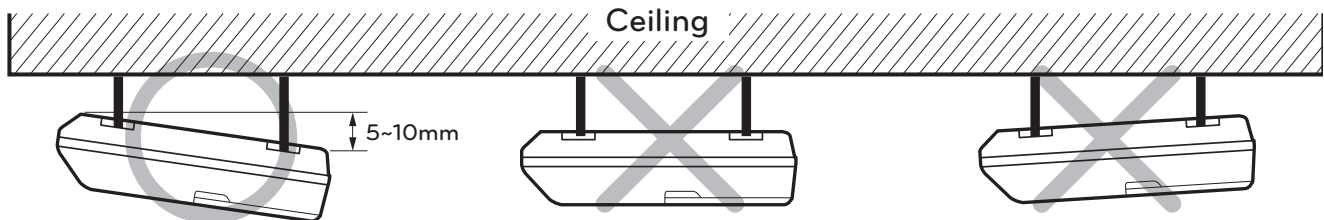
Front of view

- The unit must be horizontal or inclined at angle.
- The inclination should be less than or equal to 1° or in between 10 to 20mm inclined in drain direction as shown in fig.



Side of view

- The unit must be declined to the bottomside of the unit when finished installation.



MULTI/SINGLE CAC Indoor unit

6. Ceiling & Floor / Ceiling Suspended

6.9.4 Piping and drainage

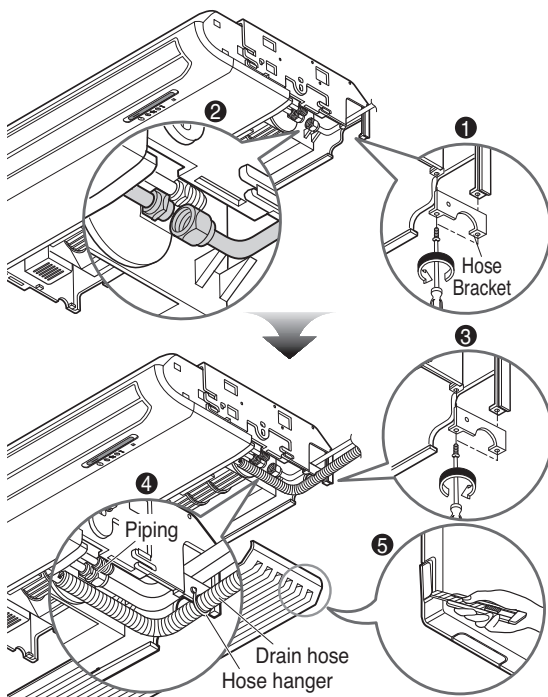
1) Installation on the ceiling

• Connecting the pipes to the indoor unit

The pipe can be connected to right side, bottom or back of the unit.

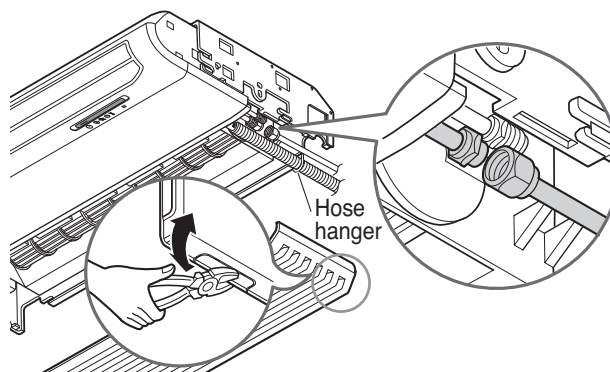
- For the right side piping

- ① After bending an end of the connecting tube, align the center of the pipings and sufficiently tighten the flare nut with fingers.
- ② Finally, tighten the flare nut with torque wrench until the wrench clicks.
- ③ Connect the drain hose insulated to the drain outlet. Drain hose should go under the hose bracket as shown in figure ④.
- ④ Hang the drain hose on the hose hanger and fix it to the hole of the hose bracket with a screw.



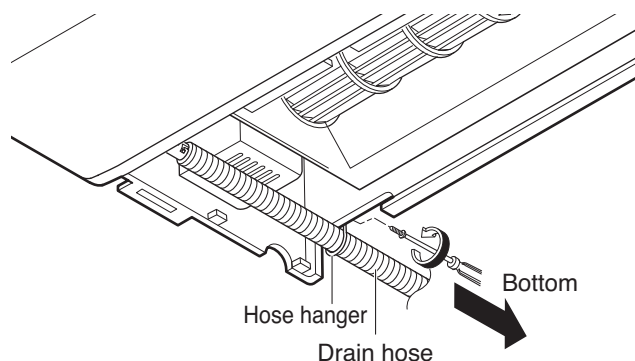
- For the bottom side piping

- ① Remove the knock-out from the bottomside of inlet grille
- ② Align the center of the pipings and sufficiently tighten the flare nut with fingers.
- ③ Finally, tighten the flare nut with torque wrench until the wrench clicks.
- ④ Connect the drain hose insulated to the drain outlet.
- ⑤ Hang the drain hose on the hose hanger and fix it to the hole of cabinet bottom with a screw.



• Connecting the drain hose

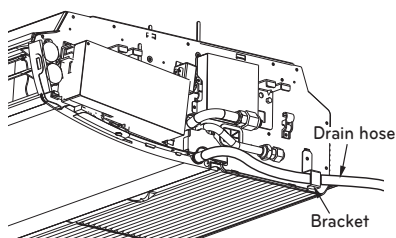
- ① The drain hose can be connected to not only the right side but also left side of the unit.
- ② If the drain hose is connected to the left side, it should go through the cabinet bottom.
- ③ Hang the drain hose on the hose hanger and fix it to the hole of cabinet bottom with a screw.



• Indoor Unit Drain Piping

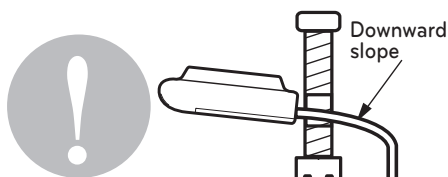
- Drain piping must have down-slope (1/50 to 1/100): be sure not to provide up-and-down slope to prevent reversal flow.
- During drain piping connection, be careful not to exert extra force on the drain port on the indoor unit.
- Remove the rubber stopple before connecting drain hose.
- Hook on the bracket after connecting the drain hose as below.

6. Ceiling & Floor / Ceiling Suspended

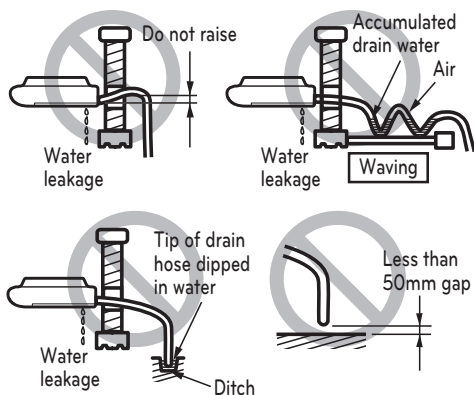


• Drain piping

- The drain hose should point downward for easy drain flow.



- Do not make drain piping like the following.

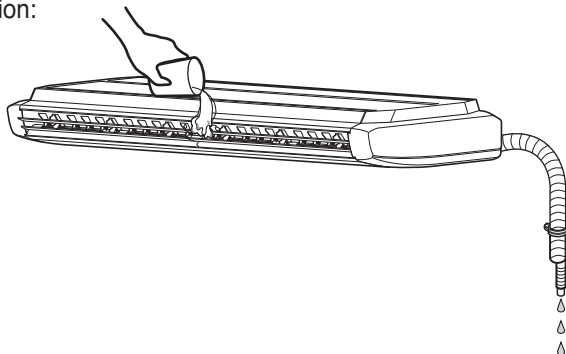


- Be sure to execute heat insulation on the drain piping.

Heat insulation material: Polyethylene foam with thickness more than 8 mm.

• Drain test

- Use the following procedure to test the drain pump operation:



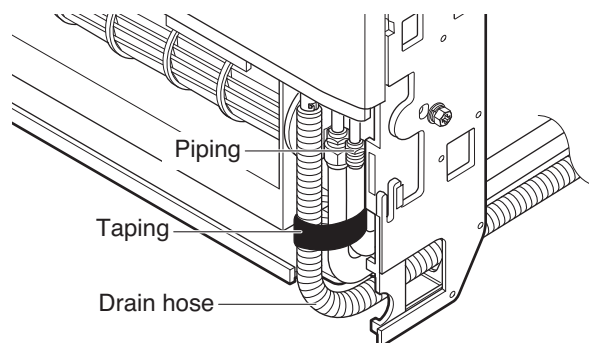
- Set the air direction louvers up-and-down to the position(horizontally) by hand.
- Pour a glass of water on the evaporator using a kettle.
- Ensure the water flows through the drain hose of the indoor unit without any leakage and goes out the drain exit.

2) Installation on the wall or floor

• Connecting the pipes to the indoor unit

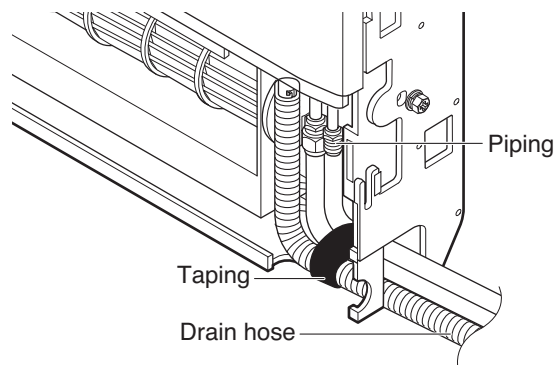
- For the right rear piping

- ① Remove the knock-out from the back side of the cabinet.
- ② After bending an end of the connecting tube, align the center of the pipings and sufficiently tighten the flare nut with fingers.
- ③ Finally, tighten the flare nut with torque wrench until the wrench clicks.
- ④ Connect the drain hose to the drain outlet.
- ⑤ Tape the drain hose to the pipings to avoid coming off of the drain-outlet.



- For the right side piping

- ① After bending an end of the connecting tube, align the center of the pipings and sufficiently tighten the flare nut with fingers.
- ② Finally, tighten the flare nut with torque wrench until the wrench clicks.
- ③ Connect the drain hose to the drain outlet.
- ④ Tape the drain hose to the pipings to avoid coming off the drain-outlet.

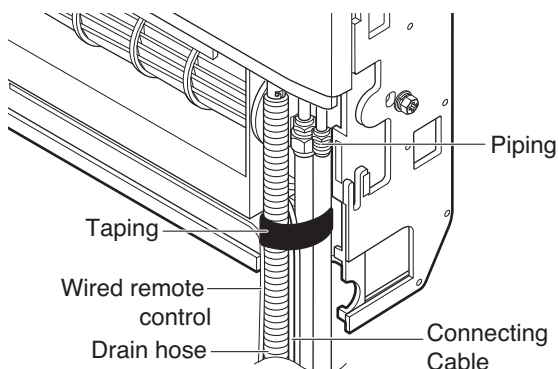


MULTI/SINGLE CAC Indoor unit

6. Ceiling & Floor / Ceiling Suspended

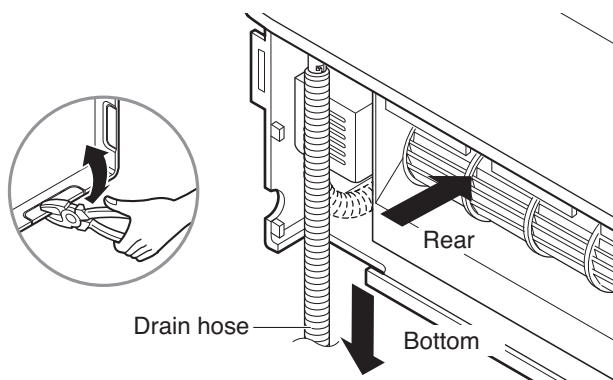
- For the right bottom piping

- ① Align the center of the pipings and sufficiently tighten the flare nut with fingers.
- ② Finally, tighten the flare nut with torque wrench until the wrench clicks.
- ③ Connect the drain hose to the drain outlet.



• Connecting the drain hose

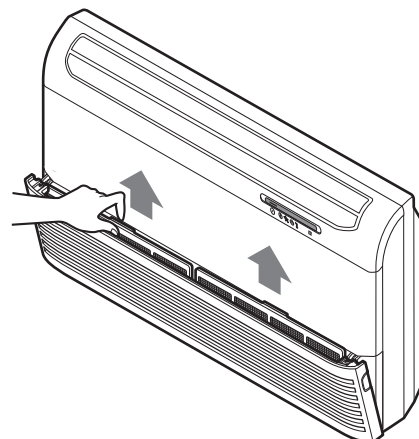
- ① The drain hose can be connected to not only right side but also left side of the unit.



3) Checking the drainage

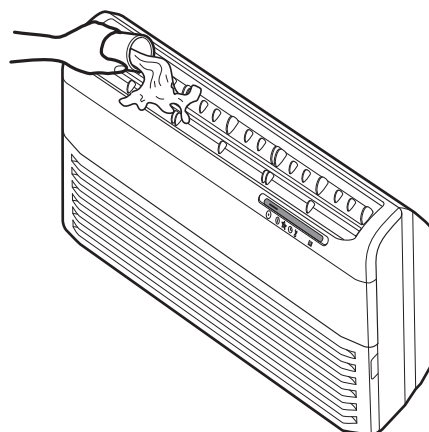
- Remove the air filter.

- ① To remove air filter, take hold of tab and pull slightly upwards.



- Check the drainage.

- ① Spray one or two glasses of water upon the evaporator.
- ② Ensure that water flows through drain hose of indoor unit without any leakage.



6. Ceiling & Floor / Ceiling Suspended

6.9.5 Electric wiring work

1) General instructions

- ① All field supplied parts and materials, electric works must conform to local codes.
Use copper wire only.
- ② Follow the "WIRING DIAGRAM" attached to the unit body to wire the outdoor unit, indoor units and the remote controller.
- ③ All wiring must be performed by an authorized electrician.
- ③ This system consists of multiple indoor units. Mark each indoor unit as unit A, unit B..., and be sure the terminal board wiring to the outdoor unit and indoor unit are properly matched. If wiring and piping between the outdoor unit and an indoor unit are mismatched, the system may cause a malfunction.
- ④ A circuit breaker capable of shutting down the power supply to the entire system must be installed.

2) Wiring connection

- Connecting cables to the indoor unit

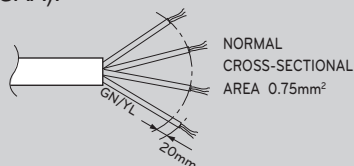
- ① Remove the air guide - L by loosening 2 screws after removing the inlet grille from the Indoor unit.
- ② Connect the wires to the terminals on the control board individually according to the outdoor unit connection.
 - Ensure that the color of the wires of outdoor unit and the terminal No. are the same as those of indoor unit respectively

- Wiring Connection

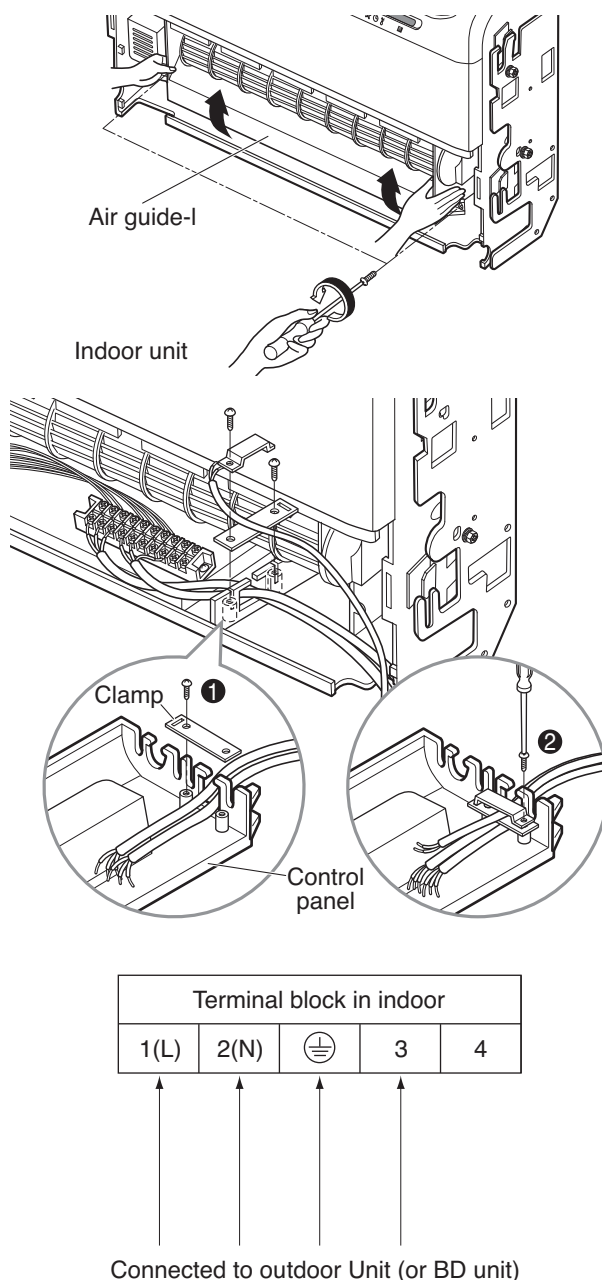
- ① Connect the wires to the terminals on the control board individually according to the outdoor unit connection.

⚠ CAUTION

- The connecting cable connected to the indoor and outdoor unit should be complied with the following specifications (Rubber insulation, type H05RN-F approved by HAR or SAA).



- If the supply cord is damaged, it must be replaced by a special cord or assembly available from the manufacturer of its service agent.



⚠ CAUTION

- Make sure that the screws of the terminal are fixed tightly.

MULTI/SINGLE CAC Indoor unit

6. Ceiling & Floor / Ceiling Suspended

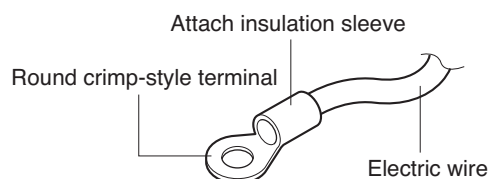
⚠ CAUTION

- Make sure to attach the sealing material (field supplied) to hole of wiring to prevent the infiltration of foreign particle from outside. Otherwise a short-circuit may occur inside the electric parts box
- When clamping the wires, be sure no pressure is applied to the wire connections by using the included clamping material to make appropriate clamps. Also, when wiring, make sure the cover on the electric parts box fits snugly by arranging the wires neatly and attaching the electric parts box cover firmly. When attaching the electric parts box cover, make sure no wires get caught in the edges. Pass wiring through the holes to prevent damage to them.
- Make sure the remote controller wiring, the wiring between the units, and other electrical wiring do not pass through the same locations outside of the unit, separating them properly, otherwise electrical noise (external static) could cause mistaken operation or breakage.

NOTE

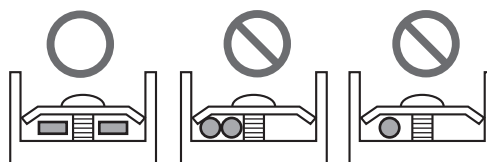
1. **Use round crimp-style terminals for connecting wires to the power supply terminal block. If unavailable, observe the following points when wiring.**

- ① Do not connect wires of different gauge to the same power supply terminal.
- ② Use the specified electric wire. connect the wire securely to the terminal. Lock the wire down without applying excessive force to the terminal.



2. **Tightening torque for the terminal screws.**

- ① Use the correct screw driver for tightening the terminal screws. If the blade of screwdriver is too small, the head of the screw might be damaged, and the screw will not be properly tightened.
 - ② If the terminal screws are tightened too hard, screws might be damaged.
3. **Do not connect wires of different gauge to the same grounding terminal. Loose connection may deteriorate protection.**




Connect wires of the same gauge to both sides

4. **Outside of the unit, keep proper separation between transmission and power supply wiring. The equipment may malfunction if subjected to electrical (external) noise.**
5. **Never connect power supply wiring to the terminal block for remote controller wiring. A mistake of the sort could damage the entire system.**
6. **Use only specified wire and tightly connect wires to terminals. Be careful wires do not place external stress on terminals. Keep wiring in neat order and so as not to obstruct other equipment such as popping open the electric parts box cover. Make sure the cover closes tight. Incomplete connections could result in overheating, and in worse case, electric shock or fire.**

MULTI/SINGLE CAC

Indoor unit

Ceiling concealed duct - Middle static pressure

- 1. List of functions**
- 2. Specifications**
- 3. Dimensions**
- 4. Piping diagrams**
- 5. Wiring Diagrams**
- 6. External pressure setting for  EzTuning**
- 7. Sound levels**
- 8. Controller**
- 9. Installation**

7. Ceiling concealed duct - Middle static pressure

7.1 List of functions

Category	Functions	ABNW18GM1A0 [CM18 N14], ABNW24GM1A0 [CM24 N14] ABNW30GM1A0 [UM30 N14], ABNW36GM2A0 [UM36 N24] ABNW42GM2A0 [UM42 N24], ABNW48GM3A0 [UM48 N34] ABNW60GM3A0 [UM60 N34]
Air flow	Air supply outlet	1
	Airflow direction control (left & right)	X
	Airflow direction control (up & down)	X
	Auto swing (left & right)	X
	Auto swing (up & down)	X
	Airflow steps (fan/cool/heat)	3 / 3 / 3
	Chaos wind(auto wind)	X
	Jet cool/heat	X / X
	Swirl wind	X
Air purifying	Triple filter (Deodorizing)	X
	Plasma air purifier	X
	Allergy Safe filter	X
	Long-life prefilter (washable / anti-fungus)	O
Installation	Drain pump	ABDPG
	E.S.P. control*	O
	Electric heater	X
	High ceiling operation*	X
	Auto Elevation Grille*	X
Reliability	Hot start	O
	Self diagnosis	O
Convenience	Auto changeover**	O**
	Auto cleaning	X
	Auto operation(artificial intelligence)**	O**
	Auto Restart	O
	Child lock*	O
	Forced operation	X
	Group control*	O
	Sleep mode	O
	Timer(on/off)	O
	Timer(weekly)*	O
Individual control	Wired remote controller	PQRCVSL0 / PQRCVSL0QW*** / PREMTB001 / PREMTBB01
	Premium Wired remote controller	PREMTA000 / PREMTA000A / PREMTA000B
	Simple wired remote controller	PQRCVCL0Q / PQRCVCL0QW
	Simple Wired remote controller(for hotel use)	PQRCHCA0Q / PQRCHCA0QW
	Wireless remote controller*	PQWRHQ0FDB
Network Solution	General central controller (Non LGAP)	X
	Network Solution(LGAP)	O
	Simple Dry contact (outside AC 220V power source)	PQDSA / PDRYCB000
	2 Points Dry Contact (For setback)	PDRYCB400
	Dry contact for Thermostat	PDRYCB300
	PI 485(for Indoor Unit)	X
	Zone controller*	ABZCA
Special function kit	CTI(Communication transfer interface)	X
	Electronic thermostat	X
	Telecom shelter controller	PQCSA001T0**
	Independent Power Module	X
	CO ₂ Sensor	X
Others	Remote temperature sensor	PQRSTA0
	Group control wire	PZCWRCG3

Note

- * : These functions need to connect the wired remote controller.
- ** : Auto Changeover function, Telecom shelter controller can be operated when connected with Single A.
Auto Operation function can be operated when connected with Multi F/FDX.
- *** : It is included by default when the product is manufactured.

- For synchro operation, some functions and accessories are not available. Check the outdoor unit's PDB.
O : Applied X : Not applied
Accessory model name : Installed at field, ordered and purchased separately by the corresponding model name, supplied with separate package

7. Ceiling concealed duct - Middle static pressure

7.2 Specifications

Model Name				ABNW18GM1A0 [CM18 N14]		ABNW24GM1A0 [CM24 N14]		
Power Supply			V, Ø, Hz	220-240, 1, 50		220-240, 1, 50		
				220, 1, 60		220, 1, 60		
Power Input			W	80		90		
Running Current			A	0.40		0.50		
Dimensions	Body	W x H x D	mm	900 x 270 x 700		900 x 270 x 700		
		W x H x D	inch	35-7/16 x 10-5/8 x 27-9/16		35-7/16 x 10-5/8 x 27-9/16		
Net Weight	Body		kg (lbs)	23.8 (52.5)		24.2 (53.4)		
Heat Exchanger	(Row x Column x Fins per inch) x No.		-	(2 x 13 x 18) x 1		(2 x 13 x 18) x 1		
	Face Area		m² (ft²)	0.21 (2.25)		0.21 (2.25)		
Fan	Type		-	Sirocco Fan		Sirocco Fan		
	Air Flow Rate	High-static Mode (Factory Set)	H / M / L	m³/min	16.5 / 14.5 / 13.0		18.0 / 16.5 / 14.5	
			H / M / L	ft³/min	582 / 512 / 459		635 / 582 / 512	
			External Static Pressure	Pa (mmAq)	58.8 (6)		58.8 (6)	
Fan Motor	Type		-	BLDC		BLDC		
	Output		W x No.	136.5 x 1		136.5 x 1		
Sound Pressure Level		H / M / L	dB(A)	34 / 32 / 30		35 / 34 / 32		
Sound Power Level		Max.	dB(A)	59		60		
Piping Connections	Liquid		mm(inch)	Ø 6.35 (1/4)		Ø 9.52 (3/8)	Ø 6.35 (1/4)*	
	Gas		mm(inch)	Ø 12.7 (1/2)		Ø 15.88 (5/8)	Ø 12.7 (1/2)*	
	Drain (O.D. / I.D.)		mm(inch)	Ø 32.0(1-1/4) / 25.0(31/32)		Ø 32.0(1-1/4) / 25.0(31/32)		
Safety Devices			-	Fuse		Fuse		
			-	-		-		
Power and Communication Cable (included Earth)			No. x mm² (AWG)	4C x 0.75 (18)		4C x 0.75 (18)		

Notes :

1. Wiring cable size must comply with the applicable local and national code.
2. Due to our policy of innovation some specifications may be changed without notification.
3. Sound Level Values are measured at Anechoic chamber.
Therefore, these values can be increased owing to ambient conditions during operation.
4. * : For combined with Multi F/Fdx system, socket provided with indoor units should be connected.

7. Ceiling concealed duct - Middle static pressure

Model Name				ABNW30GM1A0 [UM30 N14]		ABNW36GM2A0 [UM36 N24]		
Power Supply			V, Ø, Hz	220-240, 1, 50		220-240, 1, 50		
				220, 1, 60		220, 1, 60		
Power Input			W	150		210		
Running Current			A	0.80		1.30		
Dimensions	Body	W x H x D	mm	900 x 270 x 700		1,250 x 270 x 700		
		W x H x D	inch	35-7/16 x 10-5/8 x 27-9/16		49-7/32 x 10-5/8 x 27-9/16		
Net Weight	Body		kg (lbs)	25.3 (55.8)		36.0 (79.4)		
Heat Exchanger	(Row x Column x Fins per inch) x No.		-	(3 x 13 x 18) x 1		(2 x 13 x 18) x 1		
	Face Area		m² (ft²)	0.21 (2.25)		0.30 (3.27)		
Fan	Type		-	Sirocco Fan		Sirocco Fan		
	Air Flow Rate	High-static Mode (Factory Set)	H / M / L	m³/min	22.0 / 20.0 / 18.0		32.0 / 28.0 / 24.0	
			H / M / L	ft³/min	777 / 706 / 635		1,130 / 988 / 847	
			External Static Pressure	Pa (mmAq)	58.8 (6)		58.8 (6)	
Fan Motor	Type		-	BLDC		BLDC		
	Output		W x No.	136.5 x 1		295 x 1		
Sound Pressure Level		H / M / L	dB(A)	37 / 35 / 34		36 / 34 / 33		
Sound Power Level		Max.	dB(A)	62		60		
Piping Connections	Liquid		mm(inch)	Ø 9.52 (3/8)		Ø 9.52 (3/8)		
	Gas		mm(inch)	Ø 15.88 (5/8)		Ø 15.88 (5/8)		
	Drain (O.D. / I.D.)		mm(inch)	Ø 32.0(1-1/4) / 25.0(31/32)		Ø 32.0(1-1/4) / 25.0(31/32)		
Safety Devices			-	Fuse		Fuse		
			-	-		-		
Power and Communication Cable (included Earth)			No. x mm² (AWG)	4C x 0.75 (18)		4C x 0.75 (18)		

Notes :

1. Wiring cable size must comply with the applicable local and national code.
2. Due to our policy of innovation some specifications may be changed without notification.
3. Sound Level Values are measured at Anechoic chamber.

Therefore, these values can be increased owing to ambient conditions during operation.

7. Ceiling concealed duct - Middle static pressure

Model Name				ABNW42GM2A0 [UM42 N24]		ABNW48GM3A0 [UM48 N34]		ABNW60GM3A0 [UM60 N34]		
Power Supply				V, Ø, Hz	220-240, 1, 50		220-240, 1, 50		220-240, 1, 50	
					220, 1, 60		220, 1, 60		220, 1, 60	
Power Input				W	260		180		290	
Running Current				A	1.50		1.10		1.65	
Dimensions	Body		W x H x D	mm	1,250 × 270 × 700		1,250 × 360 × 700		1,250 × 360 × 700	
			W x H x D	inch	49-7/32 x 10-5/8 x 27-9/16		49-7/32 x 14-3/16 x 27-9/16		49-7/32 x 14-3/16 x 27-9/16	
Net Weight	Body			kg (lbs)	37.0 (81.6)		42.5 (93.7)		42.5 (93.7)	
Heat Exchanger	(Row x Column x Fins per inch) x No.			-	(3 x 13 x 18) x 1		(3 x 16 x 18) x 1		(3 x 16 x 18) x 1	
	Face Area			m² (ft²)	0.30 (3.27)		0.36 (3.85)		0.36 (3.85)	
Fan	Type			-	Sirocco Fan		Sirocco Fan		Sirocco Fan	
	Air Flow Rate	High-static Mode (Factory Set)	H / M / L	m³/min	38.0 / 33.0 / 28.0		40.0 / 34.0 / 28.0		50.0 / 45.0 / 40.0	
			H / M / L	ft³/min	1,341 / 1,165 / 988		1,412 / 1,200 / 988		1,765 / 1,589 / 1,412	
			External Static Pressure	Pa (mmAq)	58.8 (6)		58.8 (6)		58.8 (6)	
Fan Motor	Type			-	BLDC		BLDC		BLDC	
	Output			W x No.	295 x 1		290 x 1		290 x 1	
Sound Pressure Level			H / M / L	dB(A)	38 / 36 / 34		39 / 37 / 35		42 / 40 / 39	
Sound Power Level			Max.	dB(A)	62		65		66	
Piping Connections	Liquid			mm(inch)	Ø 9.52 (3/8)		Ø 9.52 (3/8)		Ø 9.52 (3/8)	
	Gas			mm(inch)	Ø 15.88 (5/8)		Ø 15.88 (5/8)		Ø 15.88 (5/8)	
	Drain (O.D. / I.D.)			mm(inch)	Ø 32.0(1-1/4) / 25.0(31/32)		Ø 32.0(1-1/4) / 25.0(31/32)		Ø 32.0(1-1/4) / 25.0(31/32)	
Safety Devices				-	Fuse		Fuse		Fuse	
				-	-		-		-	
Power and Communication Cable (included Earth)				No. x mm² (AWG)	4C x 0.75 (18)		4C x 0.75 (18)		4C x 0.75 (18)	

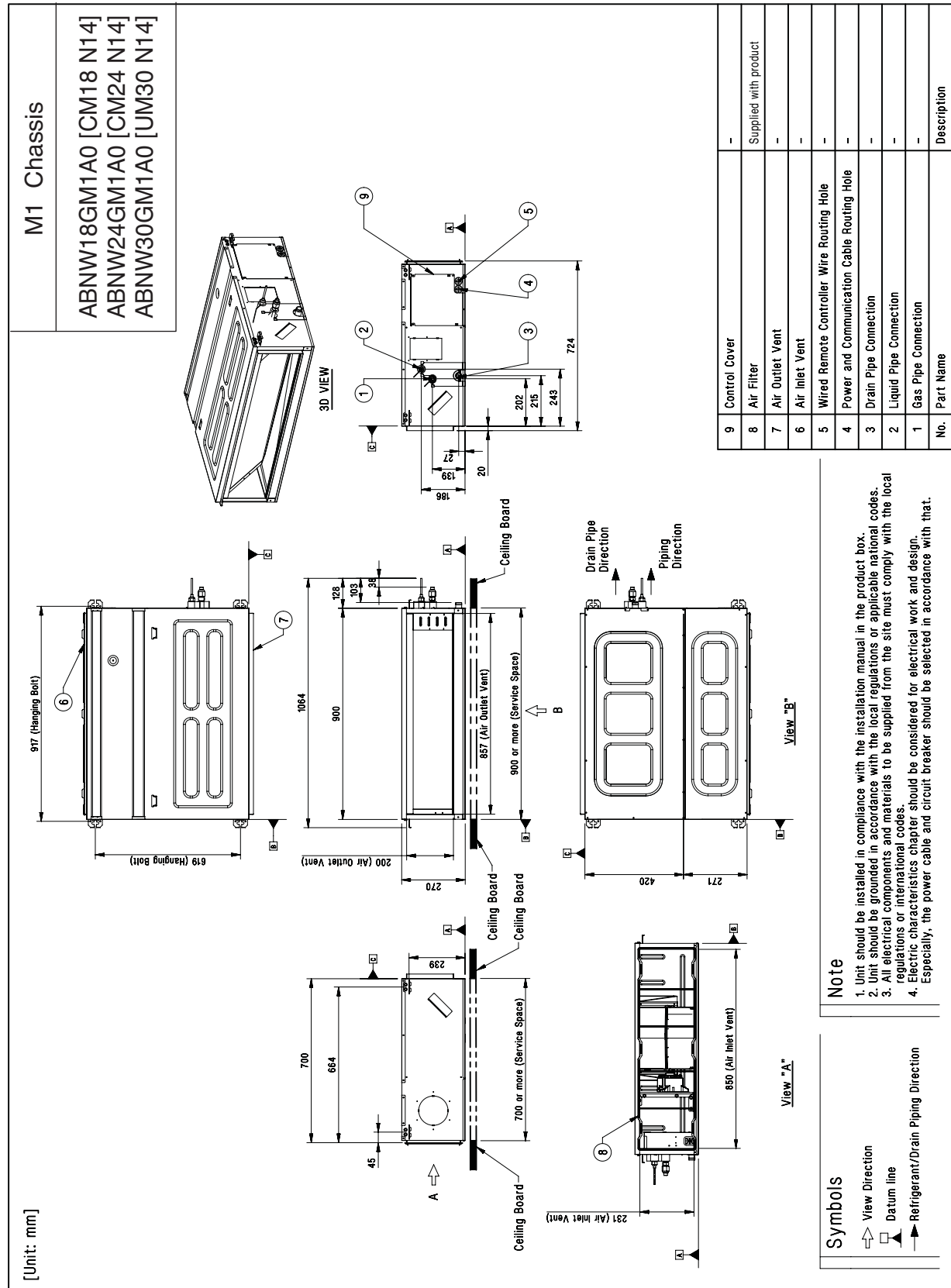
Notes :

1. Wiring cable size must comply with the applicable local and national code.
2. Due to our policy of innovation some specifications may be changed without notification.
3. Sound Level Values are measured at Anechoic chamber.

Therefore, these values can be increased owing to ambient conditions during operation.

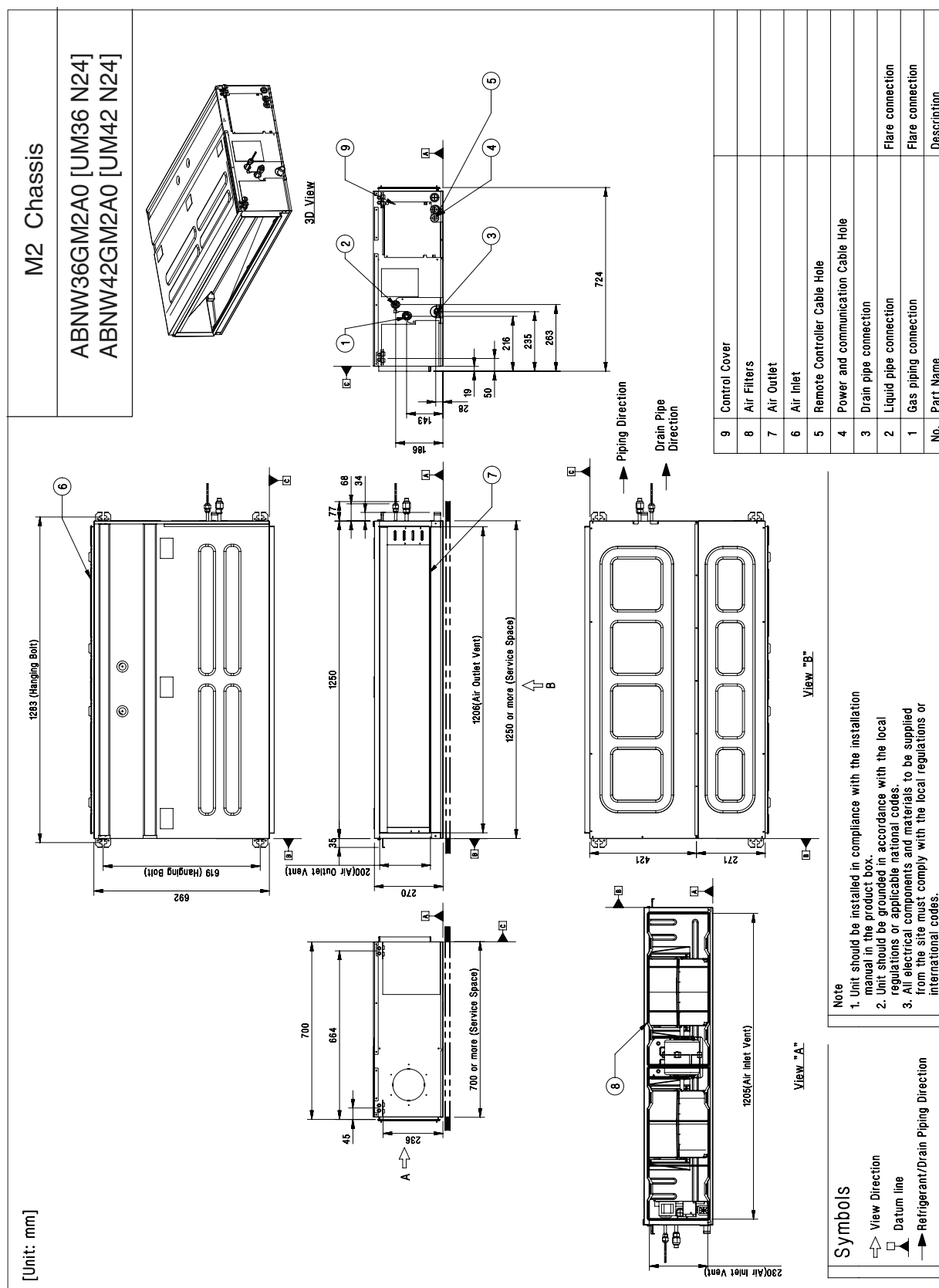
7. Ceiling concealed duct - Middle static pressure

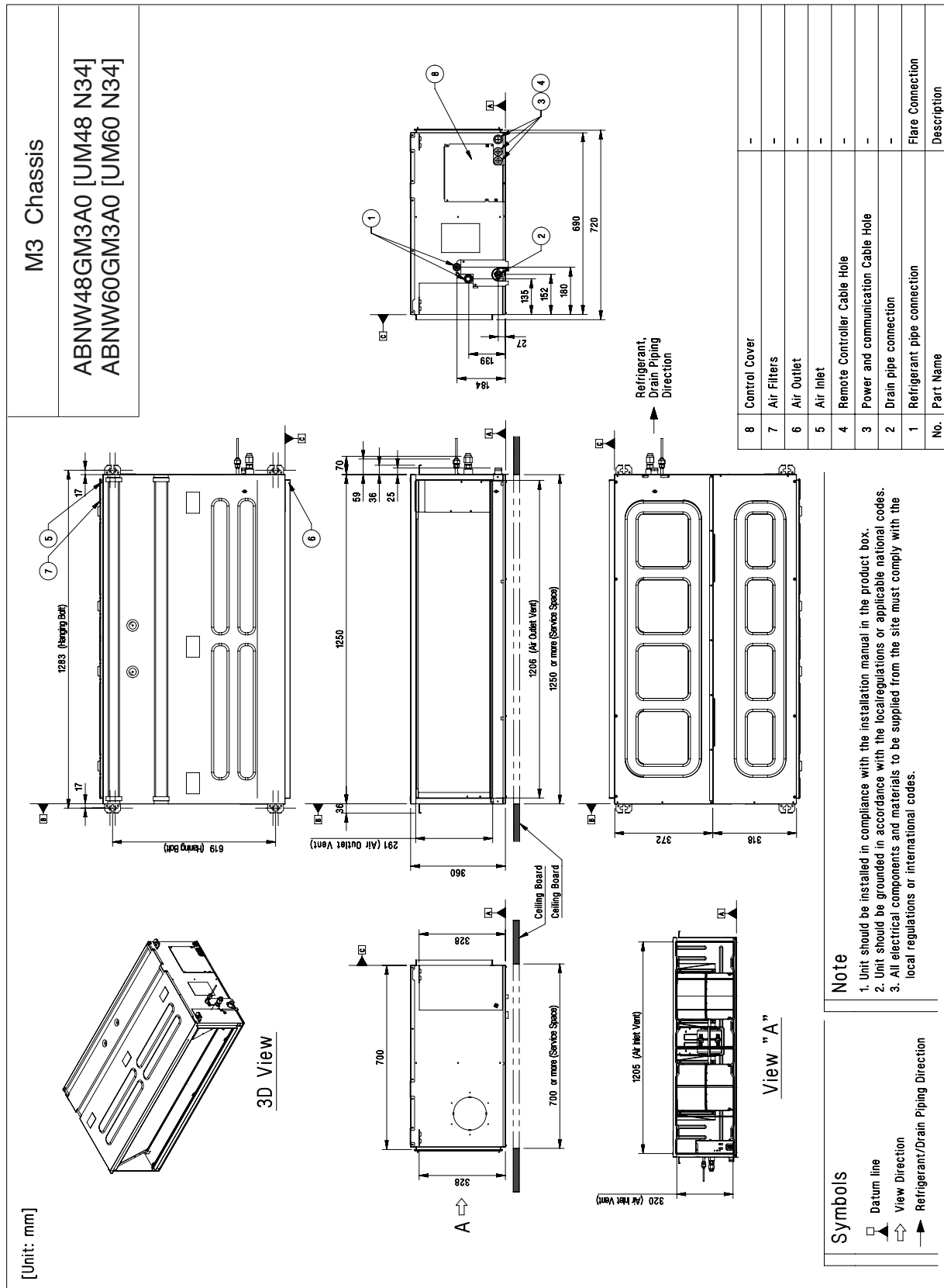
7.3 Dimensions



7. Ceiling concealed duct - Middle static pressure

7. Ceiling concealed duct - Middle static pressure

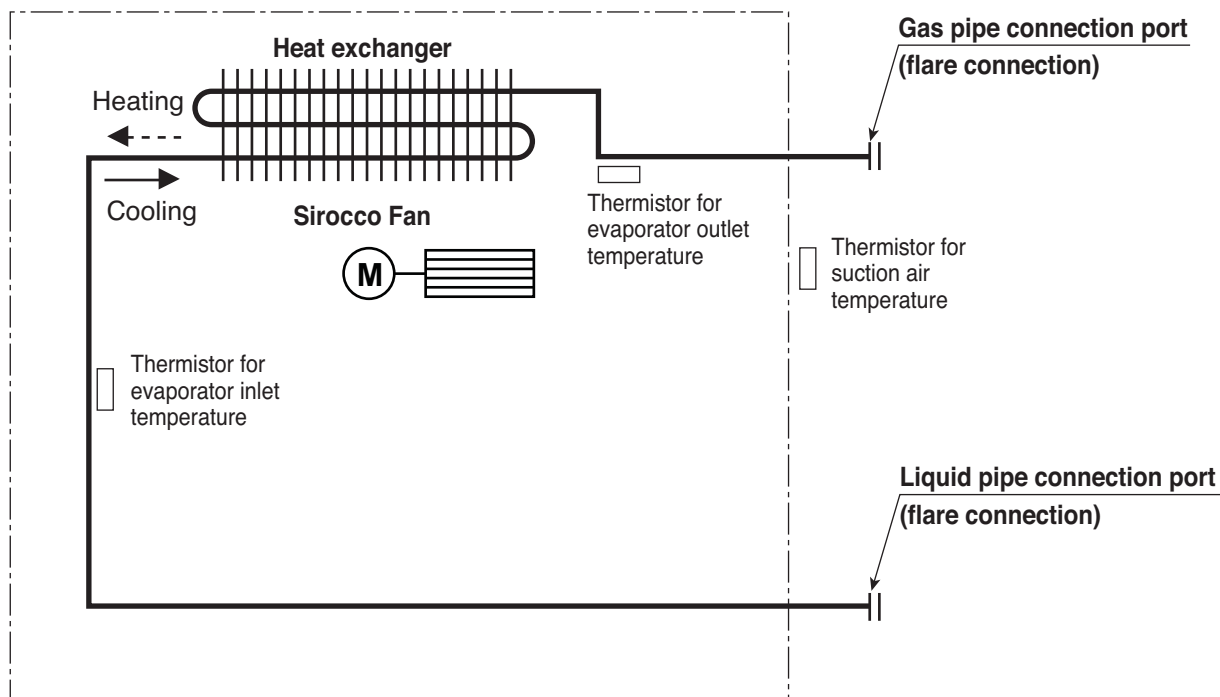




7. Ceiling concealed duct - Middle static pressure

7.4 Piping diagrams

Model : ABNW-GM1A0 [CM- N14]



Description	PCB Connector
Thermistor for suction air temperature	CN-ROOM
Thermistor for evaporator inlet temperature	CN-PIPE / IN
Thermistor for evaporator outlet temperature	CN-PIPE / OUT

■ Refrigerant pipe connection port diameters

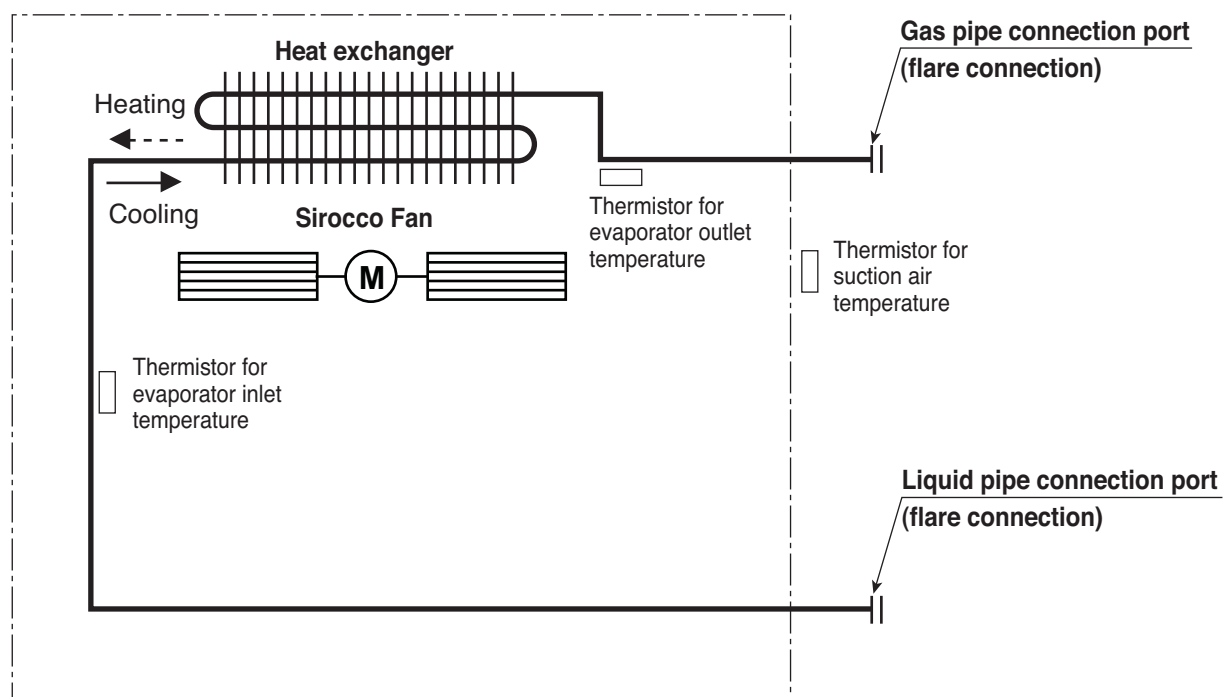
[Unit : mm]

Model	Gas	Liquid
ABNW18GM1A0 [CM18 N14]	Ø12.7	Ø6.35
ABNW24GM1A0 [CM24 N14]	Ø15.88	Ø9.52
	* Ø12.7	* Ø6.35
ABNW30GM1A0 [CM30 N14]	Ø15.88	Ø9.52

* : For combined with Multi F/FDX system, socket provided with indoor units should be connected.

7. Ceiling concealed duct - Middle static pressure

Models : ABNW-GM2A0 [CM- N24], ABNW-GM3A0 [CM- N34]



Description	PCB Connector
Thermistor for suction air temperature	CN-ROOM
Thermistor for evaporator inlet temperature	CN-PIPE / IN
Thermistor for evaporator outlet temperature	CN-PIPE / OUT

■ Refrigerant pipe connection port diameters

[Unit : mm]

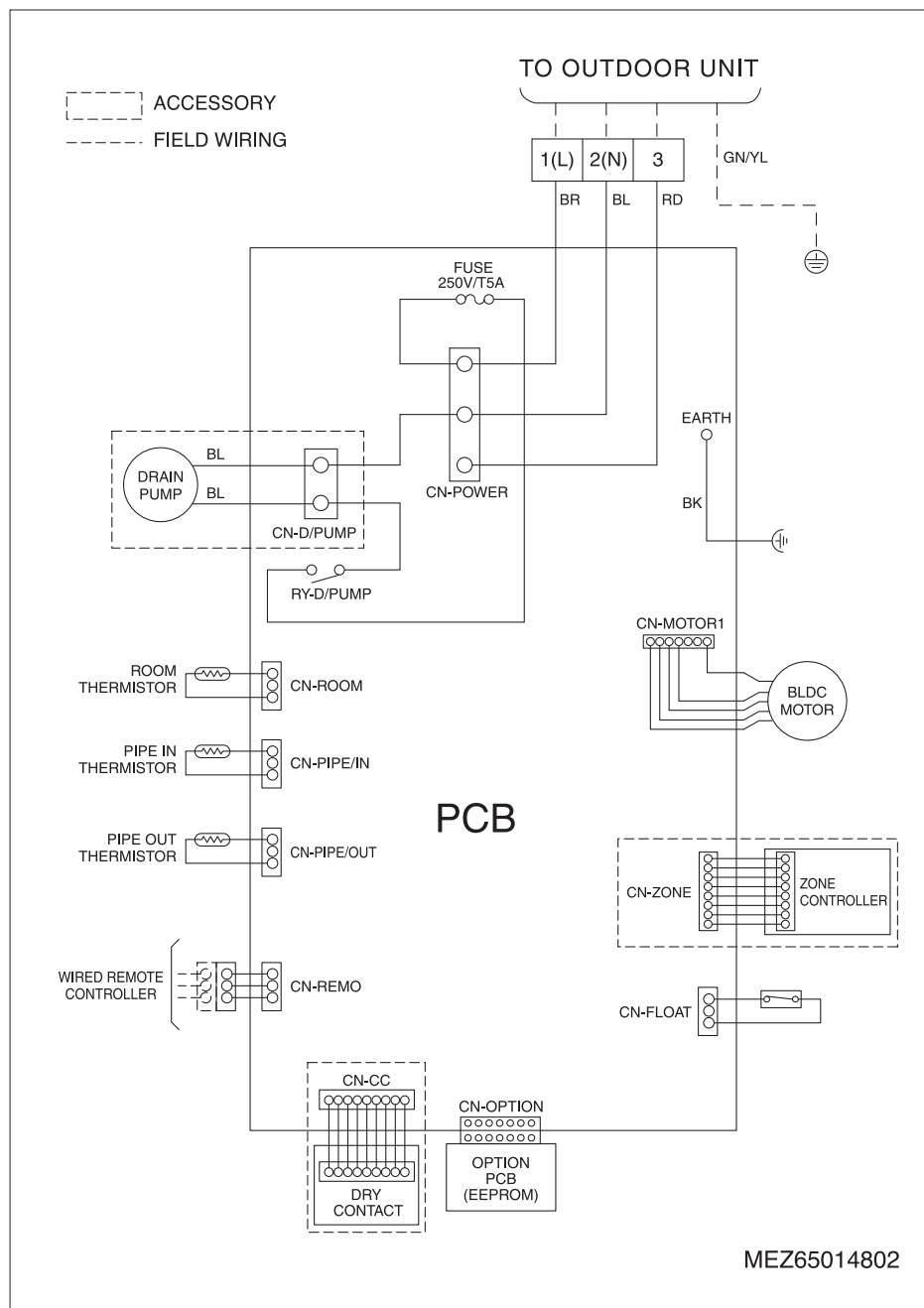
Model	Gas	Liquid
ABNW36GM2A0 [CM36 N24] ABNW42GM2A0 [CM42 N24] ABNW48GM3A0 [CM48 N34] ABNW60GM3A0 [CM60 N34]	Ø15.88	Ø9.52

MULTI/SINGLE CAC Indoor unit

7. Ceiling concealed duct - Middle static pressure

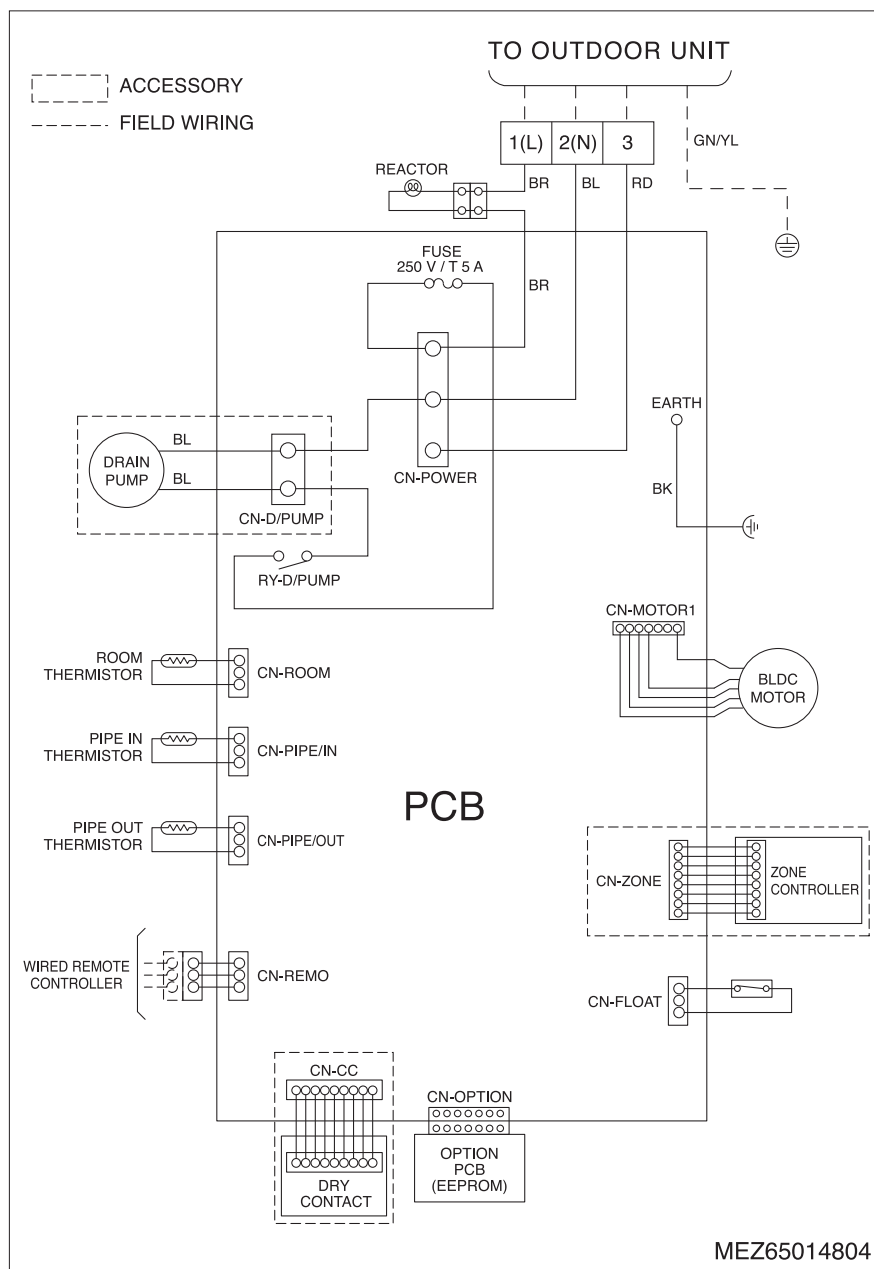
7.5 Wiring diagrams

Model : ABNW18GM1A0 [CM18 N14]



7. Ceiling concealed duct - Middle static pressure

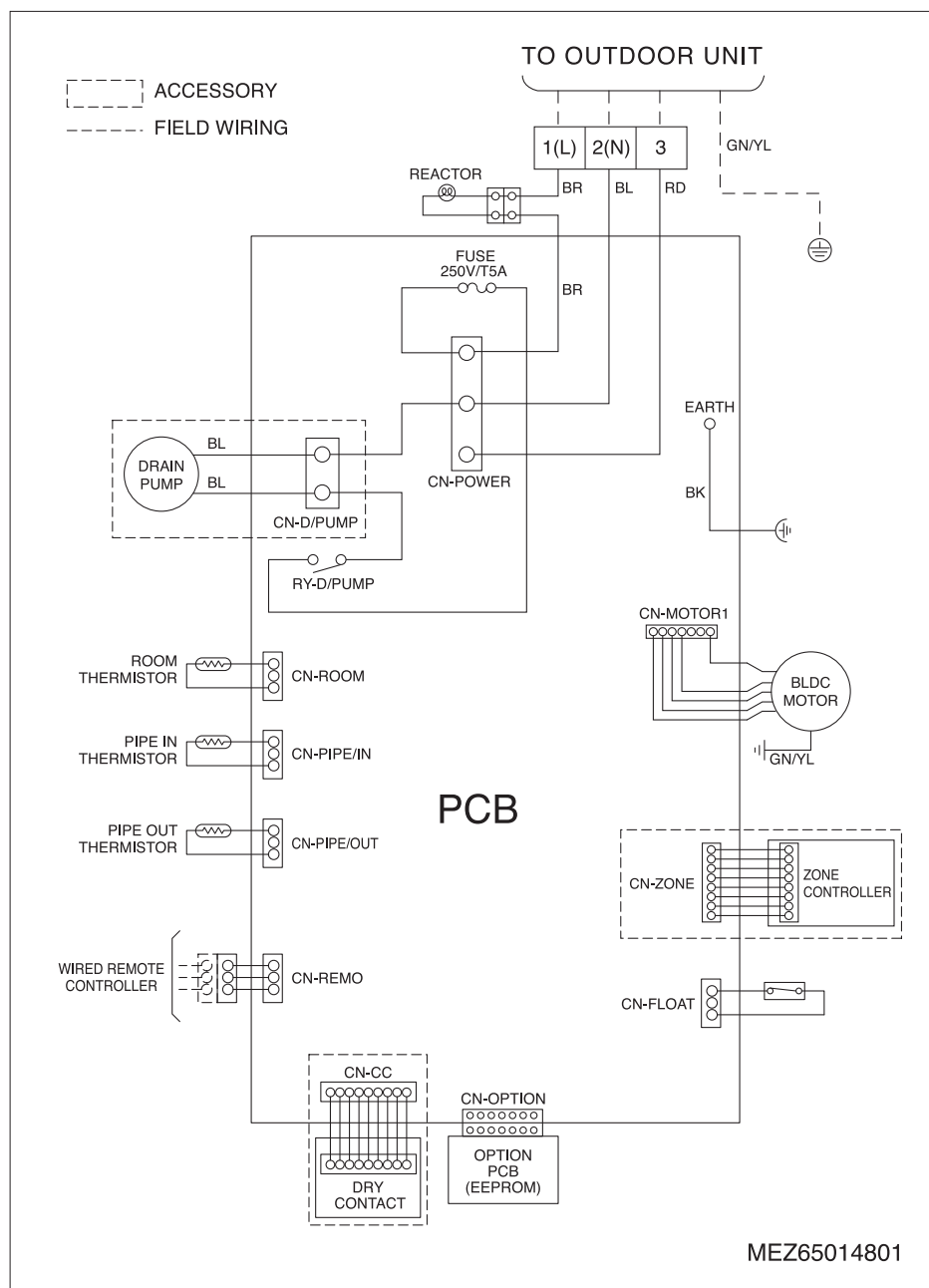
Model : ABNW24GM1A0 [CM24 N14], ABNW30GM1A0 [CM30 N14]



MULTI/SINGLE CAC Indoor unit

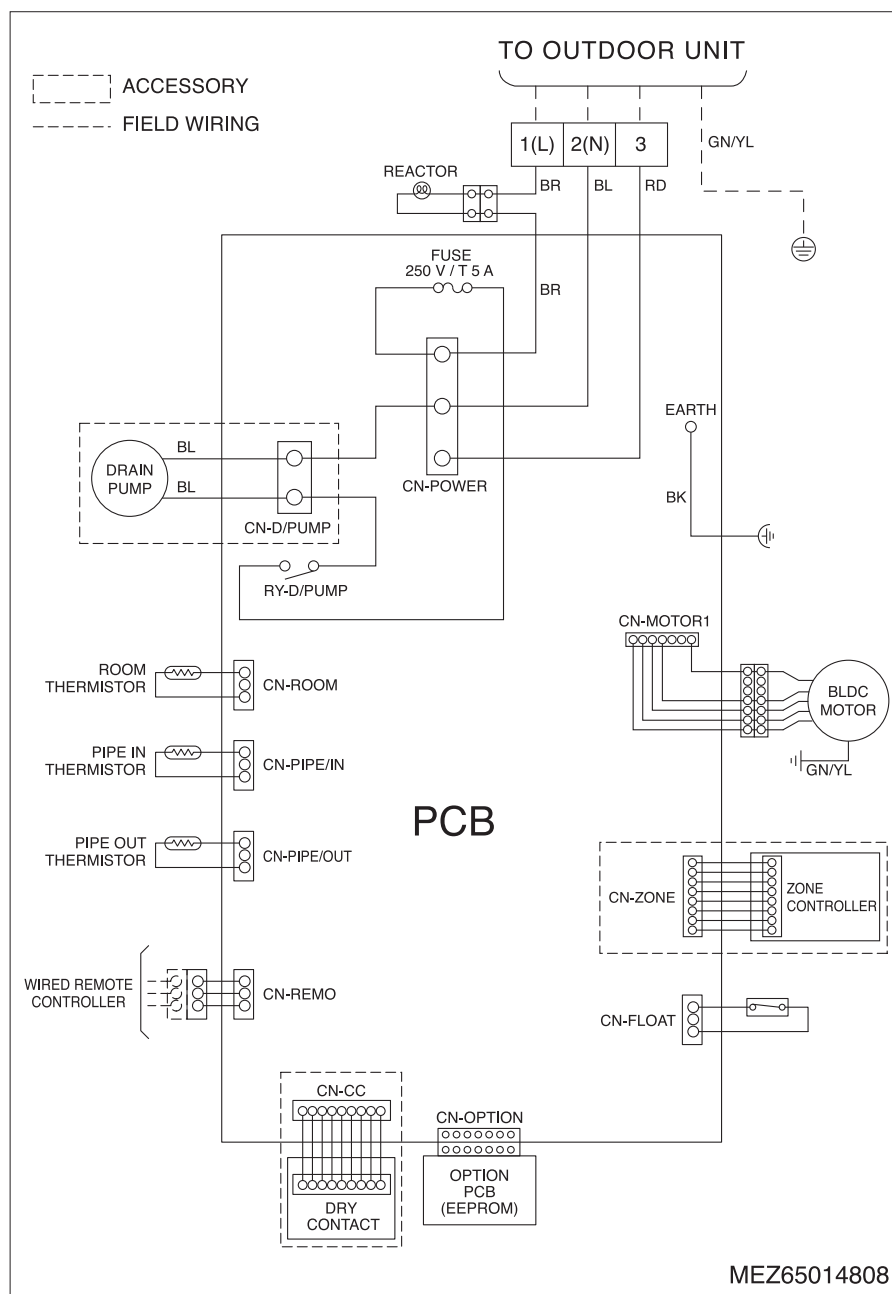
7. Ceiling concealed duct - Middle static pressure

Model : ABNW36GM2A0 [CM36 N24], ABNW42GM2A0 [CM42 N24]



7. Ceiling concealed duct - Middle static pressure

Model : ABNW48GM3A0 [CM48 N34], ABNW60GM3A0 [CM60 N34]



7. Ceiling concealed duct - Middle static pressure

7.6 External pressure setting for

 (E.S.P. Control) provide required constant air volume irrespective of E.S.P. charge.

(1) Open the rear cover of the wired remote-controller to set the mode.

(2) Select one of three selectable modes as follows.

■ Without zone system

1. Position V-H, F-H:
 - This position sets the maximum E.S.P. as a default set.
2. Position V-L:
 - This position sets the minimum E.S.P. as a default set.

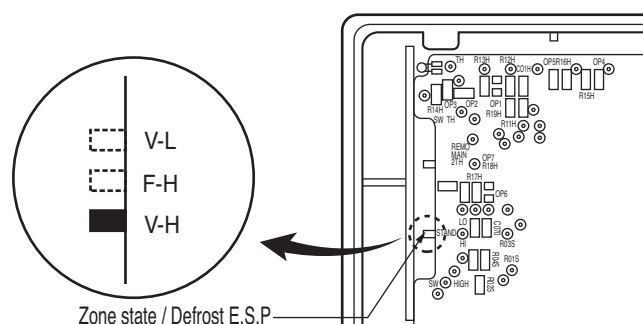
■ With zone system

1. Position V-H:
 - Maximum E.S.P. setting & Fan speed is varied according to the state of dampers by micom.
2. Position F-H:
 - Maximum E.S.P. setting & Fan speed doesn't vary according to the opening & closing of dampers.
3. Position V-L:
 - Minimum E.S.P. setting & Fan speed is varied according to the state of dampers by micom.

*Maximum: 18/24k - 8mmAq

Minimum: All-0mmAq

(3) Move the slide switch to set position.



(4) Close the rear cover and check if it works normally.

CAUTION

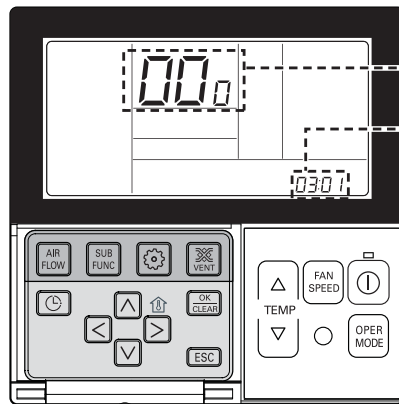
- Select the position after checking duct work and E.S.P. of the unit.
- Manufactured in the position F-H.



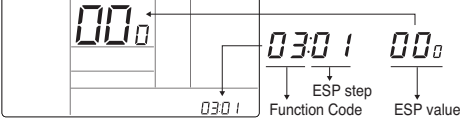
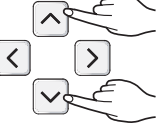
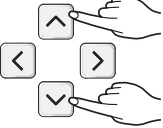

7. Ceiling concealed duct - Middle static pressure

How to Set E.S.P. on the remote controller?

This is the function that decides the strength of the wind for each wind level and because this function is to make the installation easier.

- If you set ESP incorrectly, the air conditioner may malfunction.
- This setting must be carried out by a certificated-technician.



<p>1 If pressing button long for 3 seconds, it enters into remote controller setter setup mode. - If pressing once shortly, it enters into user setup mode. Please press more than 3 seconds for sure.</p> 	<p>4 Move to ESP value setting by pressing button. (It is 000 when delivering from the warehouse.)</p>  <p>0301 000</p>
<p>2 If entering into ESP setup mode by using button, it indicates as the picture below.</p> 	<p>5 Press button to setup ESP value. (It is possible to setup ESP value from 1 to 255, and 1 is the smallest and 255 is the biggest.)</p> 
<p>3 Select ESP fan step by pressing button. (01: very low, 02: low, 03: medium, 04: high, 05: very high)</p>  <p>0301</p>	<p>6 Select ESP fan step again by using button and setup ESP value, as No. 4 and 5, that corresponds each wind flow</p> <p>7 Press button to save.</p>  <p>8 Press button to exit. * After setup, it automatically gets out of setup mode if there is no button input for 25 seconds. * When exiting without pressing set button, the manipulated value is not reflected.</p>

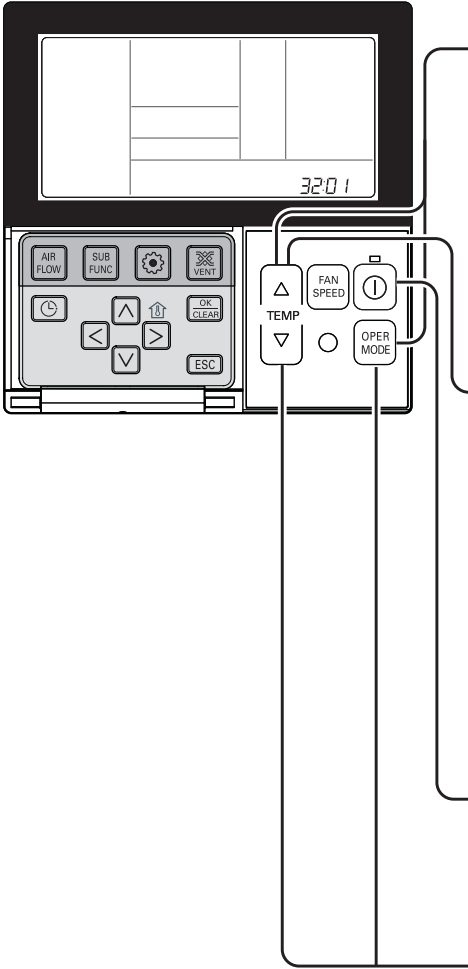
- When setting ESP value on the product without very weak wind or power wind function, it may not work.
- Please be careful not to change the ESP value for each fan step.
- It does not work to setup ESP value for very low/power step for some products.
- ESP value is available for specific range belongs to the product.



MULTI/SINGLE CAC Indoor unit**7. Ceiling concealed duct - Middle static pressure****Installer Setting - Static Pressure Step Setting**


This function is applied to only duct type. Setting this in other cases will cause malfunction.

This function is only available on some products.

This is the function that static pressure of the product is divided in 11 steps for setting.




1 When pressing the  button and  button simultaneously for more than 3 seconds, the system will be entered into the installer setting mode.

- After entering into the installer setting mode, select the static pressure step setting code value by pressing the  button.


* Static pressure step setting code value : 32



2 Select the desired setting value with the temperature up(s), down(t) button.



Function Code Existing condition

00: use static pressure (code 06) set value
01~ 11: static pressure step (code 32) set value

3 When pressing  button, currently established static pressure value will be set up.

4 When pressing the  button and  button simultaneously for more than 3 seconds after the setting has been completed, the setting mode will be released.

- If there isn't any button input for more than 25 seconds, the installer setting mode will also be released.

- Static Pressure (Code 06) setting will not be used if Static Pressure Step (Code 32) setting is being used.
- For the static pressure value for each step, refer to the next page Table. 1

7. Ceiling concealed duct - Middle static pressure

Table 1

Model	Step	CMM	Static Pressure[mmAq(Pa)]										
			2(20)	2.5(25)	3(29)	4(39)	6(59)	8(78)	10(98)	12(118)	13(127)	14(137)	15(147)
			Setting Value										
			32:01	32:02	32:03	32:04	32:05	32:06	32:07	32:08	32:09	32:10	32:11
ABNW18GM1A0 [CM18 N14]	LOW	13.0	74	76	79	85	93	103	111	117	120	125	128
	MID	14.5	79	81	84	89	97	107	114	121	125	128	131
	HIGH	16.5	85	87	90	94	103	110	118	125	128	131	134
ABNW24GM1A0 [CM24 N14]	LOW	14.5	79	81	84	89	97	107	114	121	125	128	131
	MID	16.5	85	87	90	94	103	110	118	125	128	131	134
	HIGH	18.0	90	92	95	99	108	115	122	129	132	135	138

Model	Step	CMM	Static Pressure[mmAq(Pa)]										
			2.5(25)	4(39)	5(49)	6(59)	7(69)	8(78)	9(88)	10(98)	11(108)	13(127)	15(147)
			Setting Value										
			32:01	32:02	32:03	32:04	32:05	32:06	32:07	32:08	32:09	32:10	32:11
ABNW30GM1A0 [UM30 N14]	LOW	18.0	96	102	107	104	114	118	122	125	127	132	134
	MID	20.0	102	110	114	110	121	125	127	130	133	135	137
	HIGH	22.0	110	117	121	118	127	130	133	136	137	138	140

Model	Step	CMM	Static Pressure[mmAq(Pa)]										
			4(39)	5(49)	6(59)	7(69)	8(78)	9(88)	10(98)	11(108)	12(118)	13(127)	15(147)
			Setting Value										
			32:01	32:02	32:03	32:04	32:05	32:06	32:07	32:08	32:09	32:10	32:11
ABNW36GM2A0 [UM36 N24]	LOW	24.0	88	91	95	100	101	108	113	115	118	118	118
	MID	28.0	93	97	101	105	108	115	118	120	124	124	124
	HIGH	32.0	101	105	109	112	115	119	123	126	128	128	128

Model	Step	CMM	Static Pressure[mmAq(Pa)]										
			5(49)	6(59)	7(69)	8(78)	9(88)	10(98)	11(108)	12(118)	13(127)	14(137)	15(147)
			Setting Value										
			32:01	32:02	32:03	32:04	32:05	32:06	32:07	32:08	32:09	32:10	32:11
ABNW42GM2A0 [UM42 N24]	LOW	28.0	100	103	106	110	114	118	121	125	128	133	136
	MID	33.0	108	111	114	118	122	125	128	131	134	138	141
	HIGH	38.0	117	120	124	127	130	133	135	138	141	144	147

7. Ceiling concealed duct - Middle static pressure

Model	Step	CMM	Static Pressure[mmAq(Pa)]										
			4(39)	5(49)	6(59)	7(68)	8(78)	9(88)	10(98)	11(108)	12(118)	13(127)	15(147)
			Setting Value										
			32:01	32:02	32:03	32:04	32:05	32:06	32:07	32:08	32:09	32:10	32:11
ABNW48GM3A0	LOW	28	74	76	79	82	89	92	94	96	99	102	107
	MID	34	78	82	84	89	94	96	98	101	104	106	112
	HIGH	40	83	89	92	94	98	1000	102	105	108	110	116

Model	Step	CMM	Static Pressure[mmAq(Pa)]										
			4(39)	5(49)	6(59)	7(68)	8(78)	9(88)	10(98)	11(108)	12(118)	13(127)	15(147)
			Setting Value										
			32:01	32:02	32:03	32:04	32:05	32:06	32:07	32:08	32:09	32:10	32:11
ABNW60GM3A0	LOW	40	82	89	92	94	98	100	102	105	108	110	113
	MID	45	90	92	96	98	102	104	106	109	112	114	117
	HIGH	50	94	97	1000	104	107	109	112	115	117	119	121

NOTE

1. Be sure to set the value referring table 1. Unexpected set value will cause mal-function.
2. Table 1 is based at 230V. According to the fluctuation of voltage, air flow rate varies.
3. Factory Set(External Static Pressure) each Model

Model	Factory set (E.S.P.) mmAq(Pa)
ABNW18GM1A0	6(59)
ABNW24GM1A0	
ABNW30GM1A0	
ABNW36GM2A0	
ABNW42GM2A0	
ABNW48GM3A0	
ABNW60GM3A0	

* If it is zero static pressure, please set value below Maximum value.

Model	Maximum value
ABNW18GM1A0	115
ABNW24GM1A0	
ABNW30GM1A0	
ABNW36GM2A0	120
ABNW42GM2A0	
ABNW48GM3A0	
ABNW60GM3A0	98

7. Ceiling concealed duct - Middle static pressure

Table 2
ABNW18GM1A0 [CM18 N14], ABNW24GM1A0 [CM24 N14]

(Unit : CMM)

Setting value	Static Pressure (mmAq(Pa))							
	2.5(25)	4(39)	6(59)	8(78)	10(98)	12(118)	14(137)	15(147)
700	11.3							
750	12.8							
800	14.4	11.4						
850	15.9	13.2	10.2					
900	17.5	15.0	12.0					
950	19.0	16.7	13.7	10.7				
1000	20.6	18.5	15.5	12.5				
1050	22.1	20.3	17.3	14.3	11.1			
1100	23.7	22.1	19.0	16.1	13.1	10.0		
1150		23.8	20.8	17.9	15.1	12.2		
1200			22.6	19.7	17.1	14.3	11.3	
1250				21.5	19.1	16.5	13.6	11.9
1300				23.3	21.2	18.7	15.8	14.3
1350					23.2	20.8	18.0	16.7
1400						23.0	20.3	19.1
1450							22.5	21.5
1500								23.8

ABNW30GM1A0 [CM30 N14]

(Unit : CMM)

Setting value	Static Pressure (mmAq(Pa))							
	2.5(25)	4(39)	6(59)	8(78)	10(98)	12(118)	14(137)	15(147)
850	16.8	14.6						
900	18.1	15.9						
950	19.4	17.2	15.0					
1000	20.7	18.5	16.3	13.9				
1050	22.0	19.8	17.7	15.3	13.0			
1100	23.3	21.1	19.1	16.8	14.6			
1150	24.6	22.4	20.5	18.3	16.3	14.2		
1200	25.9	23.7	21.8	19.7	17.9	15.9	13.3	
1250		25.1	23.2	21.2	19.6	17.5	15.2	14.6
1300			24.6	22.7	21.2	19.2	17.1	16.3
1350				24.2	22.9	20.9	19.0	18.1
1400					24.5	22.6	20.9	19.9

Note : The above table shows the correlation between the air rates and E.S.P.

7. Ceiling concealed duct - Middle static pressure

ABNW36GM2A0 [CM36 N24]

(Unit : CMM)

Setting value	Static Pressure (mmAq(Pa))						
	4(39)	6(59)	8(78)	10(98)	12(118)	14(137)	15(147)
850	24.9						
900	27.6	22.7					
950	30.4	25.7	20.7				
1000	33.1	28.7	24.0				
1050	35.9	31.7	27.3	20.8			
1100	38.6	34.7	30.5	24.3	20.6		
1150		37.8	33.8	27.9	23.8		
1200			37.1	31.4	27.0	22.4	20.5
1250				35.0	30.1	25.7	23.7
1280				37.1	32.0	27.6	25.7

ABNW42GM2A0 [CM42 N24]

(Unit : CMM)

Setting value	Static Pressure (mmAq(Pa))						
	5(49)	6(59)	8(78)	10(98)	12(118)	14(137)	15(147)
900	22.2						
950	25.1	22.3					
1000	28.0	25.4					
1050	30.9	28.5	23.3				
1100	33.8	31.6	26.8				
1150	36.7	34.8	30.3	24.4			
1200	39.7	37.9	33.8	28.3	23.5		
1250	42.6	41.0	37.3	32.2	27.5		
1300		44.1	40.8	36.1	31.6	26.1	
1350			44.3	40.0	35.6	30.4	28.0
1400				43.9	39.7	34.6	32.4
1450					43.7	38.9	36.8
1500						43.1	41.2
1550							45.6

Note : The above table shows the correlation between the air rates and E.S.P.

7. Ceiling concealed duct - Middle static pressure

ABNW48GM3A0, ABNW60GM3A0

(Unit : CMM)

Setting value	Static Pressure (mmAq(Pa))						
	5(49)	6(59)	8(78)	10(98)	12(118)	14(137)	15(147)
700	25.1						
750	29.5	26.1					
800	34.0	30.8	25.9				
850	38.4	35.4	30.6	23.2			
900	42.9	40.1	35.2	28.1	21.0		
950	47.3	44.8	39.9	33.1	26.3	19.5	
1000	51.8	49.4	44.6	38.0	31.7	25.2	22.6
1050	56.2	54.1	49.2	43.0	37.1	31.0	28.5
1100		58.8	53.9	47.9	42.4	36.7	34.4
1150			58.6	52.9	47.8	42.5	40.3
1200				57.8	53.1	48.2	46.1
1210					54.2	49.4	47.3

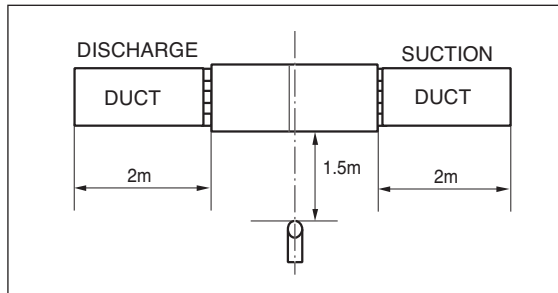
Note : The above table shows the correlation between the air rates and E.S.P.

7. Ceiling concealed duct - Middle static pressure

7.7 Sound levels

7.7.1 Sound pressure level

Overall



Notes:

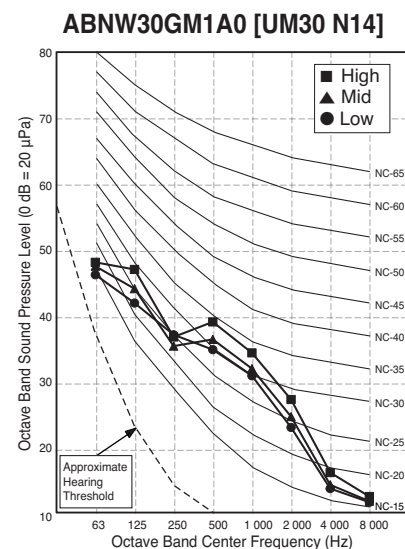
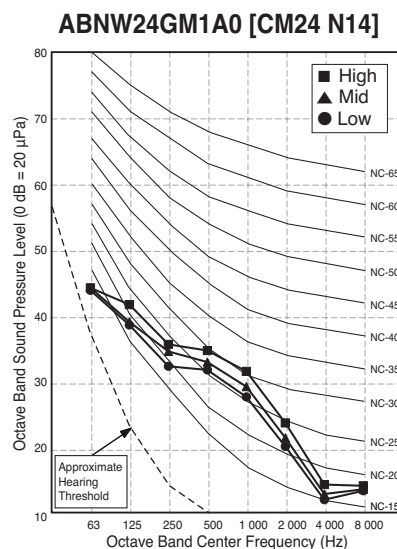
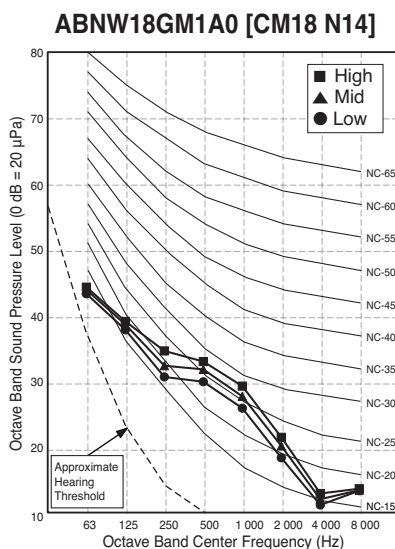
1. Sound measured at 1.5m away from the center of the unit.
2. Operating condition
 - Power source : 220-240V 50Hz / 220V 60Hz
 - Cooling : Indoor temperature (27°C DB, 19°C WB), Outdoor temperature (35°C DB, 24°C WB)
 - Heating : Indoor temperature (20°C DB, 15°C WB), Outdoor temperature (7°C DB, 6°C WB)
3. Reference acoustic intensity 0dB = 10E-6μW/m²
4. Sound level will vary depending on a range of factors such as the construction (acoustic absorption coefficient) of particular room in which the equipment is installed.

Model	Sound Pressure Levels (dB(A),H-M-L)				
	External Static Pressure [mmAq(Pa)]				
	2.5(25)	5(49)	7(69)	10(98)	15(147)
ABNW18GM1A0[CM18 N14]	34-32-30	35-33-32	36-35-34	38-37-36	40-39-38
ABNW24GM1A0[CM24 N14]	35-34-32	36-35-34	37-36-35	39-38-37	41-40-39

Model	Sound Pressure Levels (dB(A),H-M-L)					
	External Static Pressure [mmAq(Pa)]					
	2.5(25)	4(39)	5(49)	7(69)	10(98)	15(147)
ABNW30GM1A0UM30 N14]	37-35-34	39-37-35	40-38-36	41-39-38	42-41-39	43-42-41
ABNW36GM2A0UM36 N24]	-	36-34-33	37-36-34	38-37-35	39-38-37	42-40-39
ABNW42GM2A0UM42 N24]	-	-	38-36-34	40-39-37	41-40-39	44-43-42
ABNW48GM3A0UM48 N34]	-	-	39-37-35	40-38-36	41-39-37	43-42-41
ABNW60GM3A0UM60 N34]	-	-	42-40-39	43-41-40	44-42-40	45-44-43

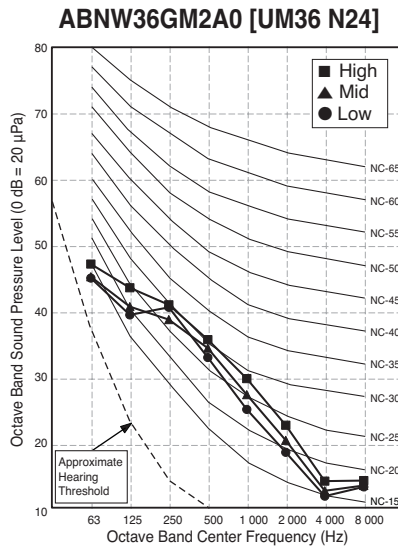
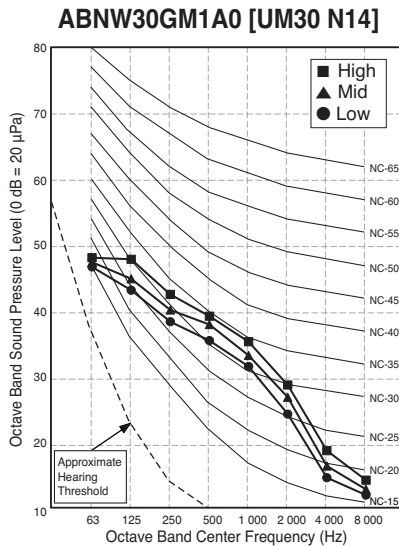
※ indicates values at 'Standard Mode'.

External Static Pressure 2.5(25) [mmAq(Pa)]

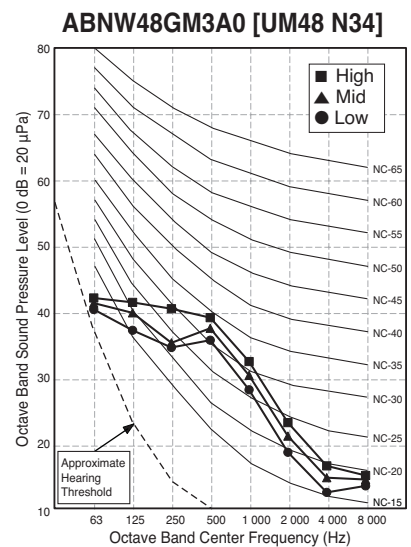
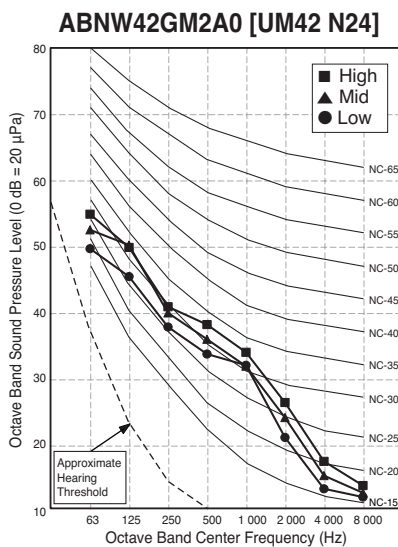
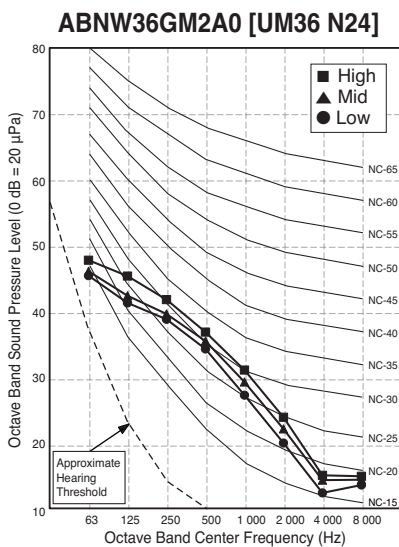
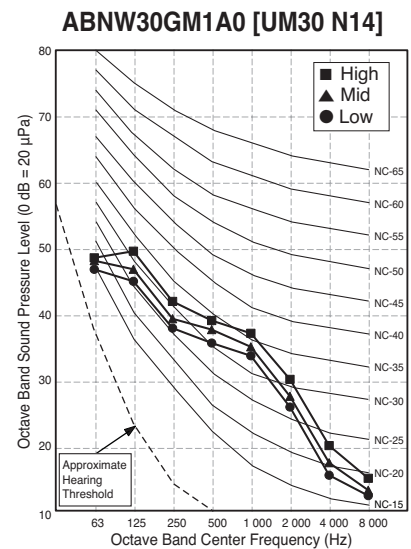
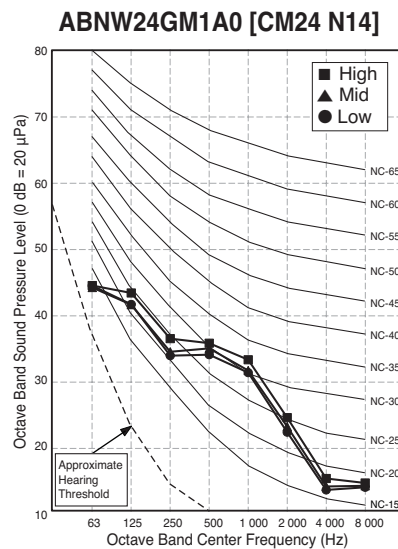
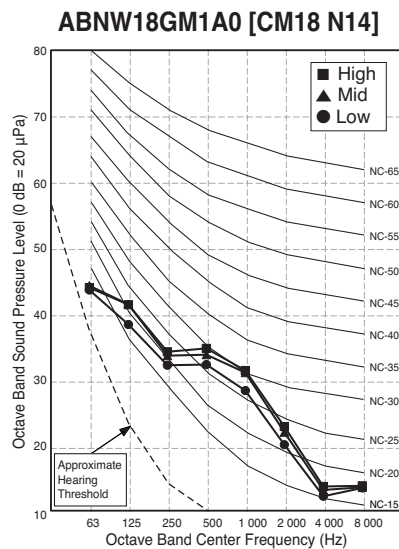


7. Ceiling concealed duct - Middle static pressure

External Static Pressure 4(39) [mmAq(Pa)]

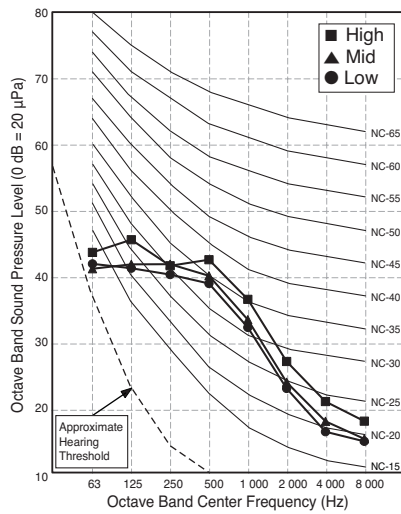


External Static Pressure 5(49) [mmAq(Pa)]



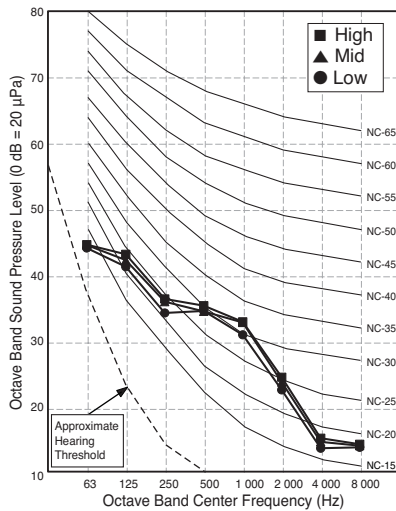
7. Ceiling concealed duct - Middle static pressure

ABNW60GM3A0 [UM60 N34]

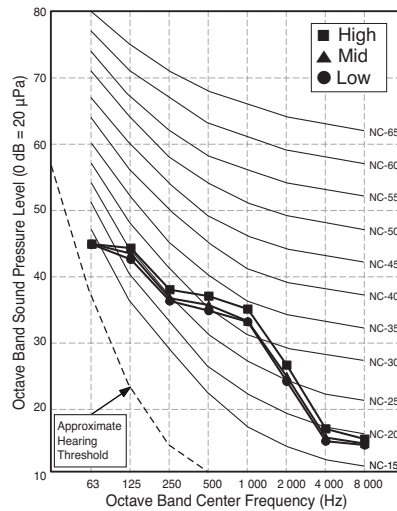


External Static Pressure 7(69) [mmAq(Pa)]

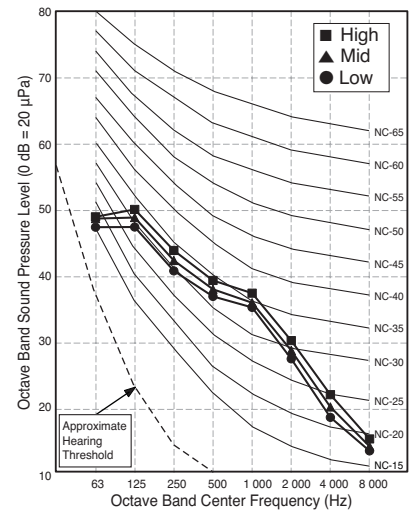
ABNW18GM1A0 [CM18 N14]



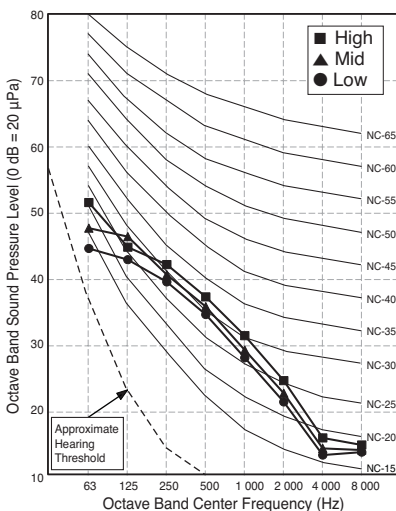
ABNW24GM1A0 [CM24 N14]



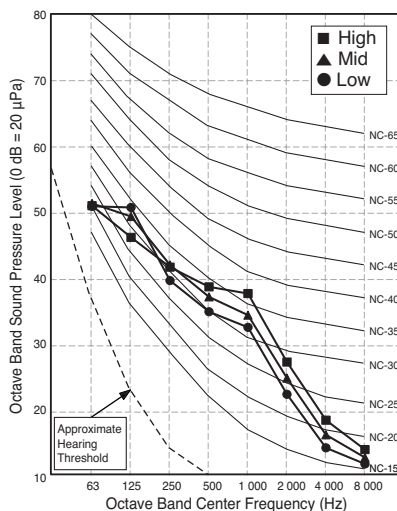
ABNW30GM1A0 [UM30 N14]



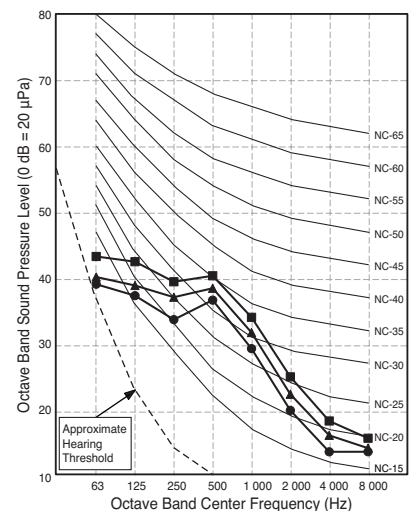
ABNW36GM2A0 [UM36 N24]



ABNW42GM2A0 [UM42 N24]

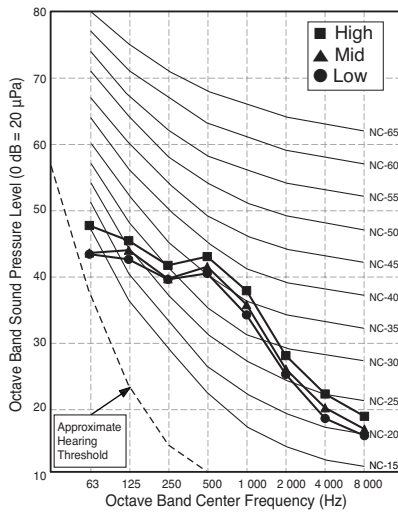


ABNW48GM3A0 [UM48 N34]



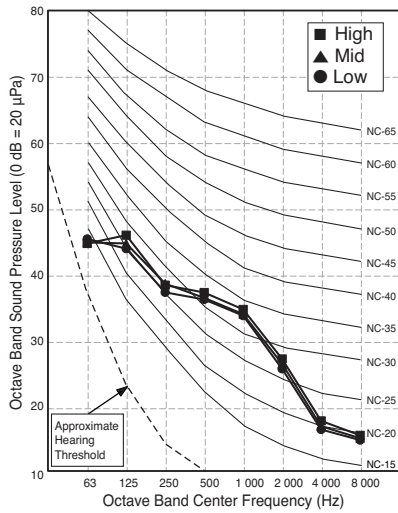
7. Ceiling concealed duct - Middle static pressure

ABNW60GM3A0 [UM60 N34]

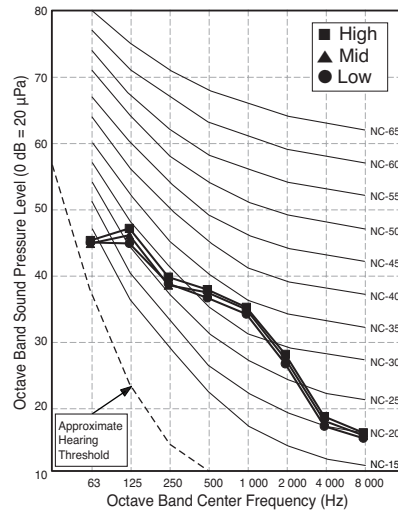


External Static Pressure 10(98) [mmAq(Pa)]

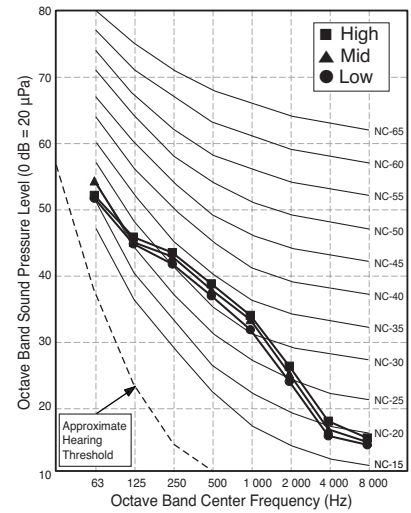
ABNW18GM1A0 [CM18 N14]



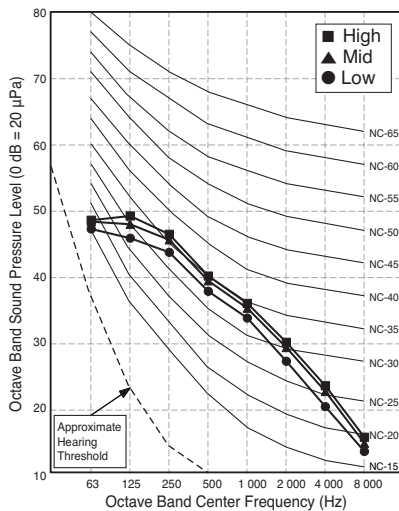
ABNW24GM1A0 [CM24 N14]



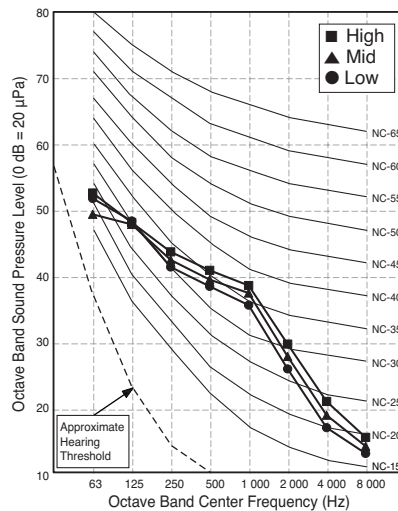
ABNW36GM2A0 [UM36 N24]



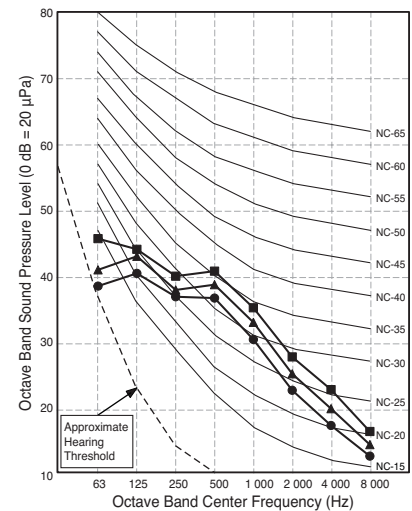
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ABNW42GM2A0 [UM42 N24]

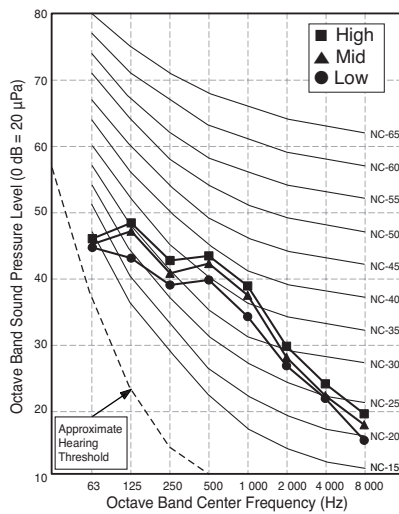


ABNW48GM3A0 [UM48 N34]



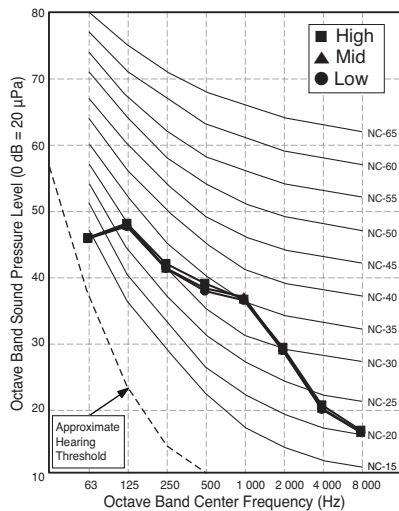
7. Ceiling concealed duct - Middle static pressure

ABNW60GM3A0 [UM60 N34]

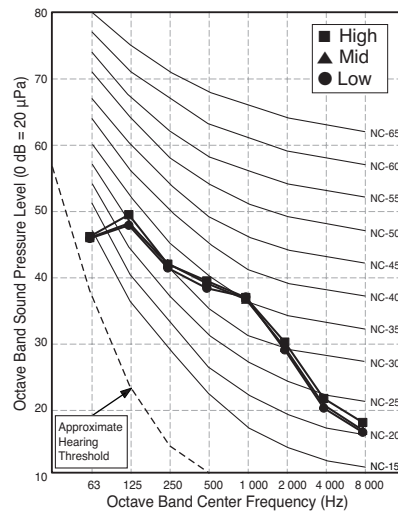


External Static Pressure 15(147) [mmAq(Pa)]

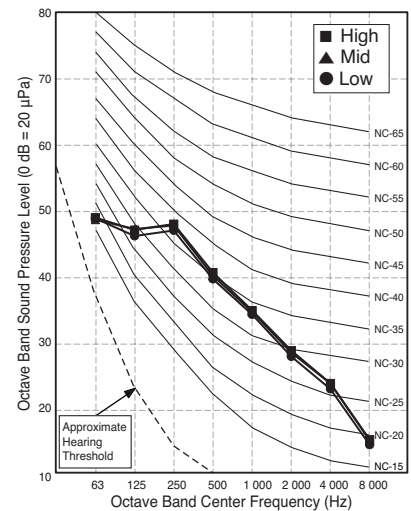
ABNW18GM1A0 [CM18 N14]



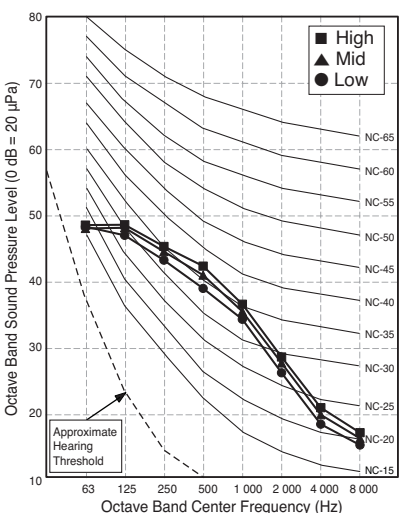
ABNW24GM1A0 [CM24 N14]



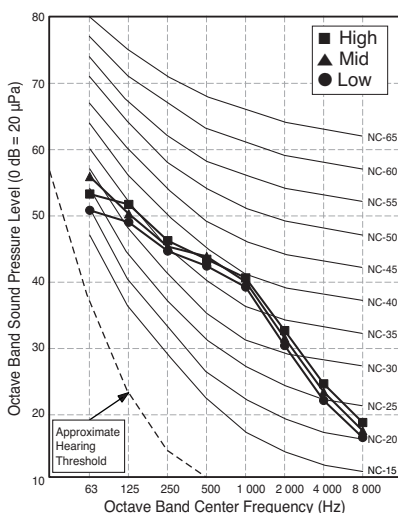
ABNW30GM1A0 [UM30 N14]



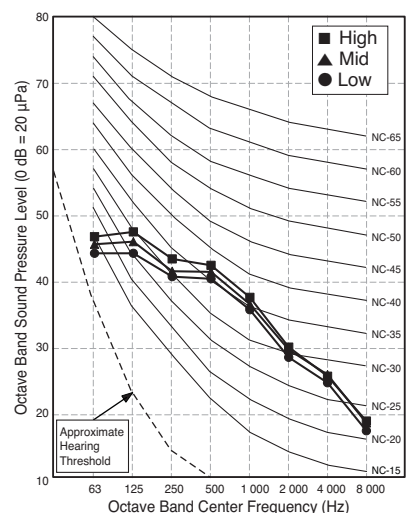
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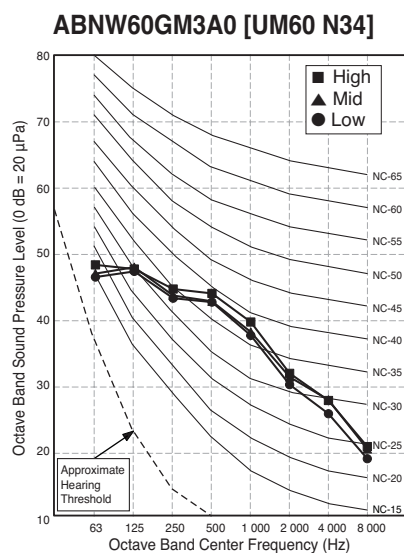
ABNW42GM2A0 [UM42 N24]



ABNW48GM3A0 [UM48 N34]



7. Ceiling concealed duct - Middle static pressure



MULTI/SINGLE CAC Indoor unit

7. Ceiling concealed duct - Middle static pressure

7.7.2 Sound power level

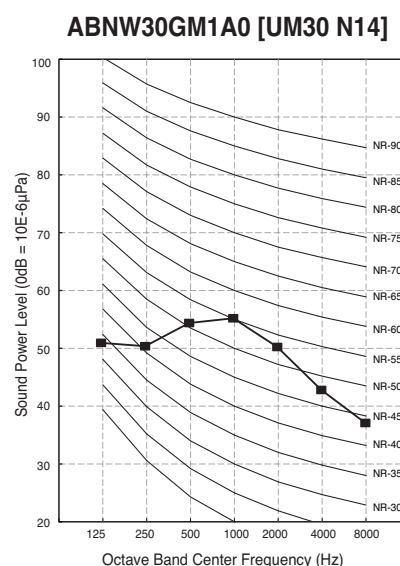
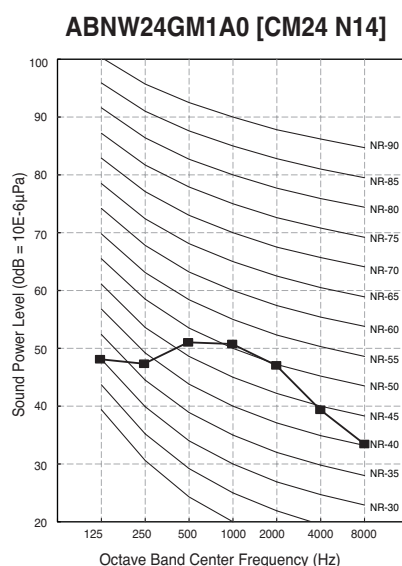
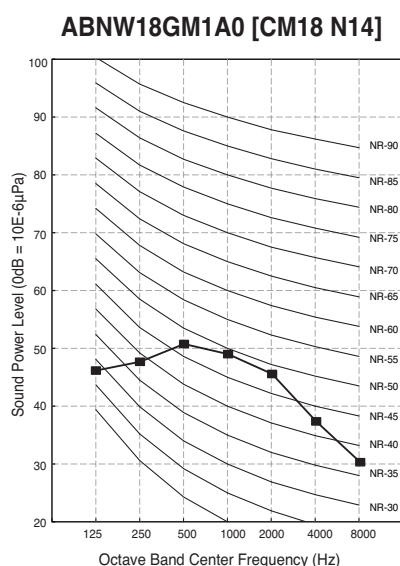
Notes:

- Operating condition
 - Power source : 220-240V 50Hz / 220V 60Hz
 - Cooling : Indoor temperature (27°C DB, 19°C WB), Outdoor temperature (35°C DB, 24°C WB)
 - Heating : Indoor temperature (20°C DB, 15°C WB), Outdoor temperature (7°C DB, 6°C WB)
 - External static pressure is according to "Standard mode" value. Refer the specifications.
- Reference acoustic intensity $0\text{dB} = 10\text{E-}6\mu\text{W/m}^2$
- Sound level will vary depending on a range of factors such as the construction (acoustic absorption coefficient) of particular room in which the equipment is installed.

Model	Sound Pressure Levels (dB(A),H-M-L)	
	External Static Pressure [mmAq(Pa)]	
	2.5(25)	
ABNW18GM1A0CM18 N14]	59	
ABNW24GM1A0CM24 N14]	60	
ABNW30GM1A0UM30 N14]	62	

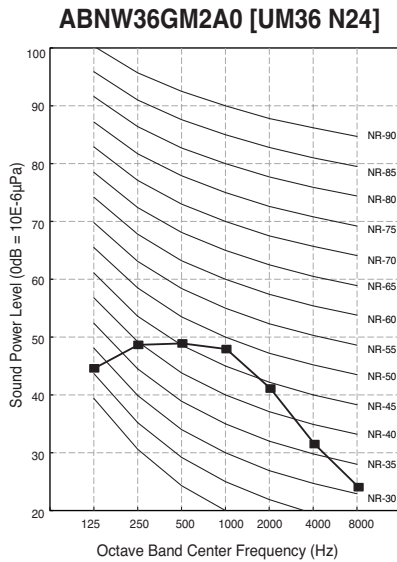
Model	Sound Pressure Levels (dB(A),H-M-L)	
	External Static Pressure [mmAq(Pa)]	
	4(39)	5(49)
ABNW36GM2A0UM36 N24]	60	-
ABNW42GM2A0UM42 N24]	-	62
ABNW48GM3A0UM48 N34]	-	65
ABNW60GM3A0UM60 N34]	-	66

External Static Pressure 2.5(25) [mmAq(Pa)]

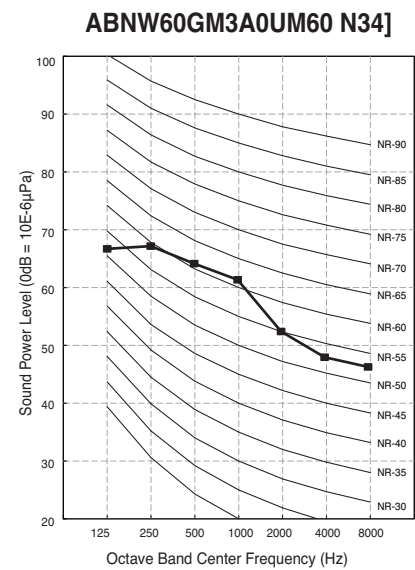
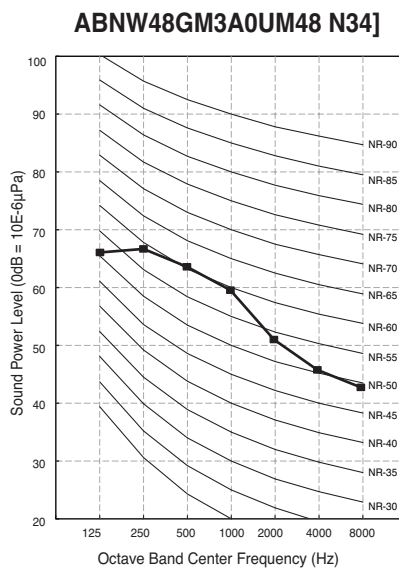
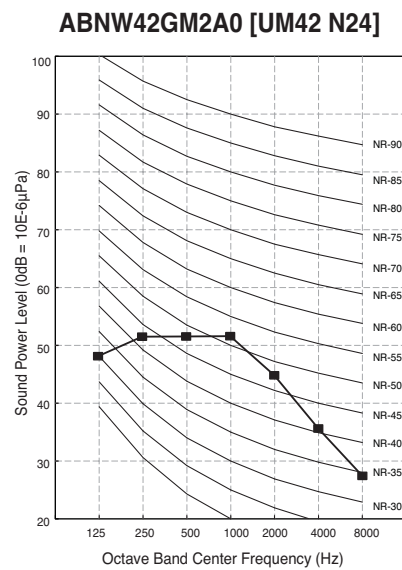


7. Ceiling concealed duct - Middle static pressure

External Static Pressure 4(39) [mmAq(Pa)]

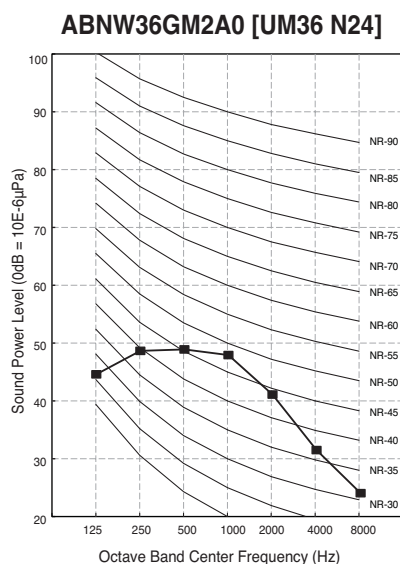


External Static Pressure 5(49) [mmAq(Pa)]

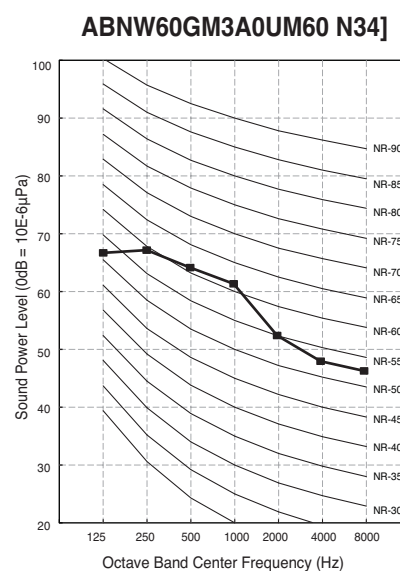
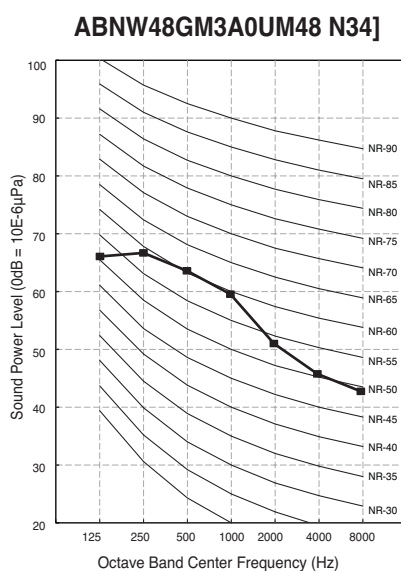
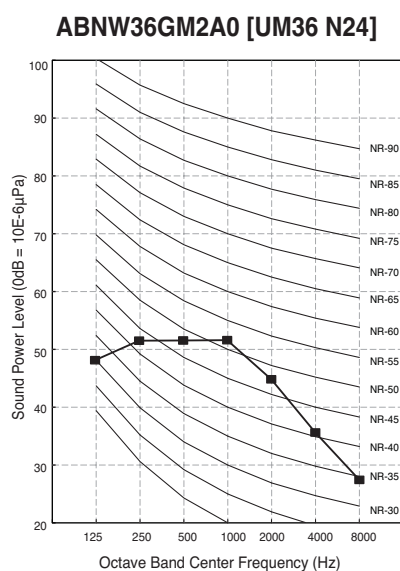


7. Ceiling concealed duct - Middle static pressure

External Static Pressure 4(39) [mmAq(Pa)]



External Static Pressure 5(49) [mmAq(Pa)]

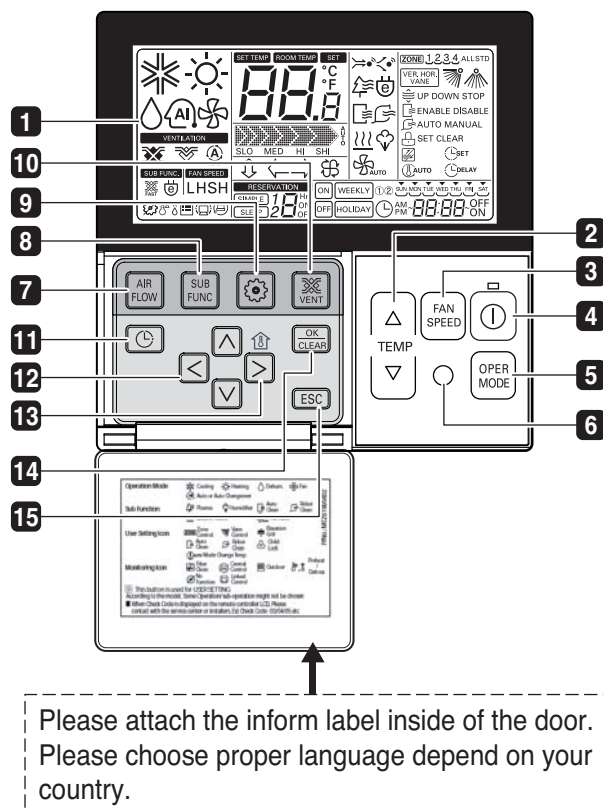


MULTI/SINGLE CAC Indoor unit

7. Ceiling concealed duct - Middle static pressure

7.8 Controller

Wired remote controller



- | | |
|---|--|
| 1 OPERATION INDICATION SCREEN | 9 FUNCTION SETTING Button |
| 2 SET TEMPERATURE Button | 10 VENTILATION Button |
| 3 FAN SPEED Button | 11 RESERVATION |
| 4 ON/OFF Button | 12 UP,DOWN,LEFT,RIGHT Button
• To check the indoor temperature, press button. |
| 5 OPERATION MODE SELECTION Button | 13 ROOM TEMPERATURE Button |
| 6 WIRELESS REMOTE CONTROLLER RECEIVER
• Some products don't receive the wireless signals. | 14 SETTING/CANCEL Button |
| 7 AIR FLOW Button | 15 EXIT Button |
| 8 SUBFUNCTION Button | |

* Some functions may not be operated and displayed depending on the product type.

Note :

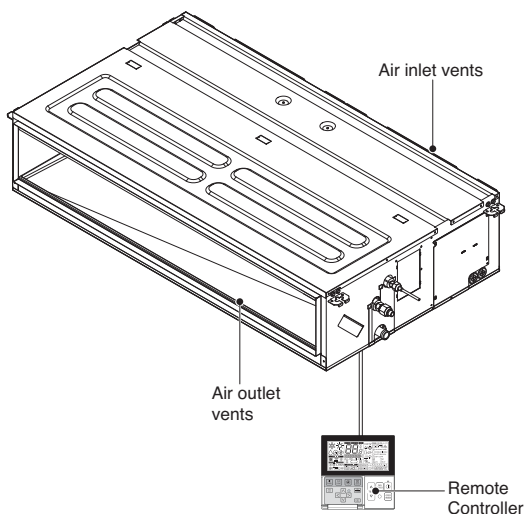
- * Display temperature can be different from actual room temperature if the remote controller is installed at the place where sun-rays are falling directly or the place nearby heat source.
- * The actual product can be different from above contents depending upon model type.
- * When using simultaneous operation system, whenever press remote controller button, system will approximately operate after 1~2 minutes.

MULTI/SINGLE CAC Indoor unit

7. Ceiling concealed duct - Middle static pressure

7.9 Installation

- Please read the instruction sheets completely before installing the product.
- When the power cord is damaged, replacement work shall be performed by authorized personnel only.
- Installation work must be performed in accordance with the national wiring standards.

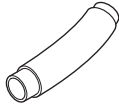


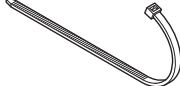

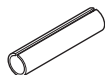


7.9.1 Accessories

Check the following accessories are included with your unit.

1) Standard accessories

M1/M2/M3 Chassis

Name	Drain hose	Clamp metal	Washer for hanging bracket	Clamp (Tie Wrap)	Insulation for fitting	Other
Quantity	1 EA	2 EA	8 EA	4 EA	1 set	
Shape					 for gas pipe  for liquid pipe	• Owner's manual • Installation manual

- Screws for fixing panels are attached to decoration panel.

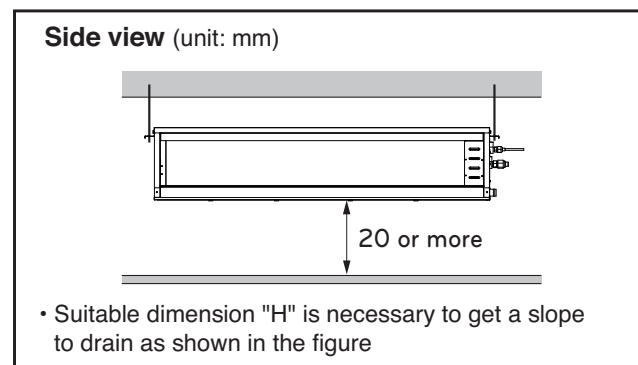
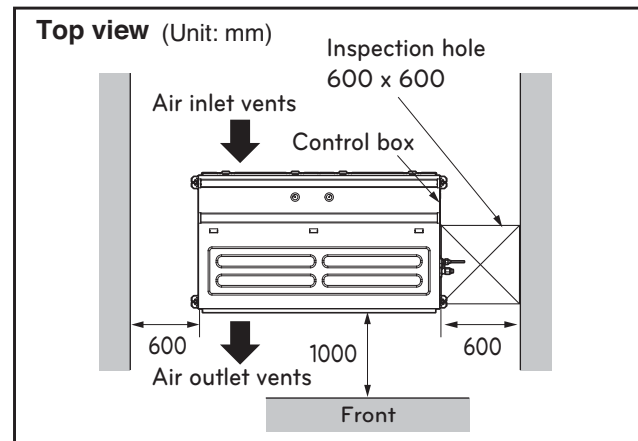
MULTI/SINGLE CAC Indoor unit

7. Ceiling concealed duct - Middle static pressure

7.9.2 Selection of the best location

Install the air conditioner in the location that satisfies the following conditions.

- The place shall easily bear a load exceeding four times the indoor unit's weight.
- The place shall be able to inspect the unit as given in the figure.
- The place where the unit shall be leveled.
- The place shall allow easy water drainage.
(Suitable dimension "H" is necessary to get a slope to drain as figure.)
- The place shall easily connect with the outdoor unit.
- The place where the unit is not affected by an electrical noise.
- The place where air circulation in the room will be good .
- There should not be any heat source or steam near the unit.
- The servicing inspection hole in the ceiling should be as large as the product.
- The selection of the servicing hole should be approved by the customer.



7. Ceiling concealed duct - Middle static pressure

7.9.3 Ceiling dimension and hanging bolt location and service space

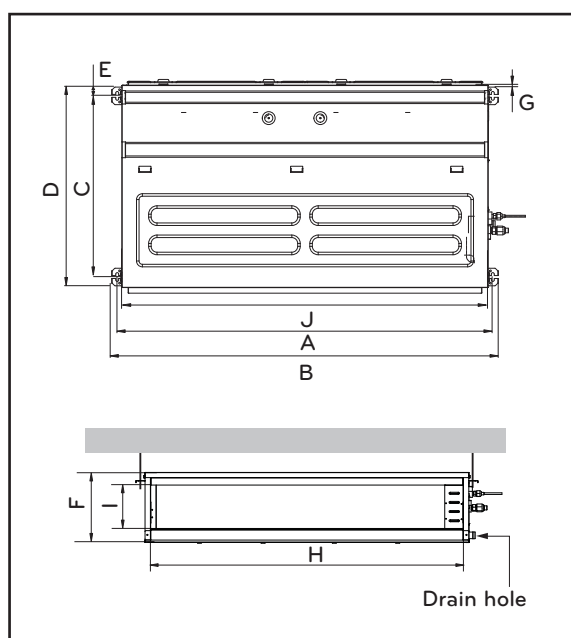
■ Installation of Unit

Install the unit above the ceiling correctly.

CASE 1

Position of suspension Bolt

- Apply a joint-canvas between the unit and duct to absorb unnecessary vibration.
- Install the unit leaning to a drainage hole side as a figure for easy water drainage.



(Unit:mm)

Dimension Chassis name	A	B	C	D	E	F	G	H	I	J
M1	933.4	971.6	619.2	700	30	270	15.2	858	201.4	900
M2	1283.4	1321.6	619.2	689.6	30	270	15.2	1208	201.4	1250
M3	1283.4	1321.6	619.2	689.6	30	360	15.2	1208	291.4	1250

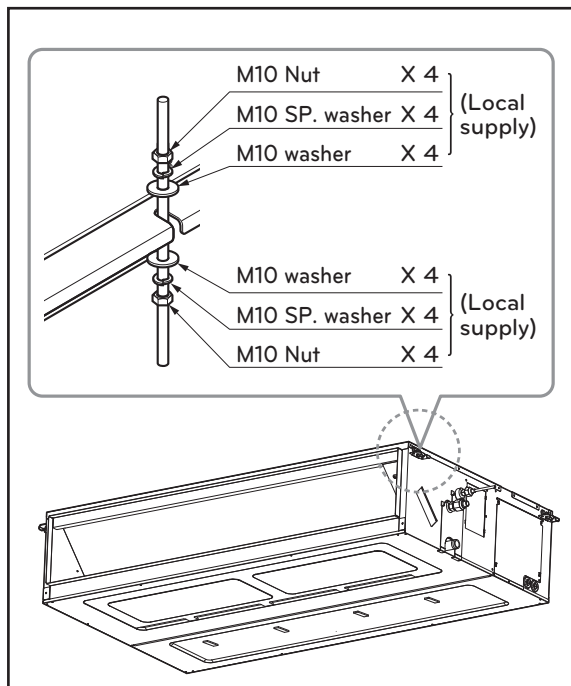
MULTI/SINGLE CAC Indoor unit

7. Ceiling concealed duct - Middle static pressure

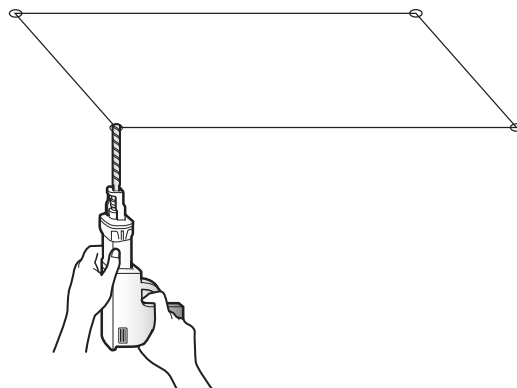
CASE 2

Position of console Bolt

- ① A place where the unit will be leveled and that can support the weight of the unit.
- ② A place where the unit can withstand its vibration.
- ③ A place where service can be easily performed.



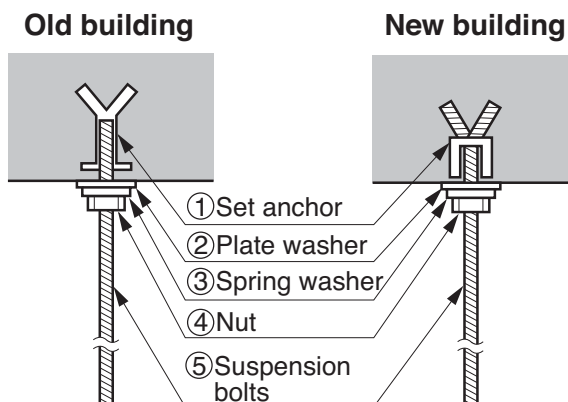
- ④ Select and mark the position for fixing bolts.
- ⑤ Drill the hole for set anchor on the face of ceiling.



CAUTION

- Tighten the nut and bolt to prevent the unit falling.

- ⑥ Insert the set anchor and washer onto the suspension bolts for locking the suspension bolts on the ceiling.
- ⑦ Mount the suspension bolts to the set anchor firmly.
- ⑧ Secure the installation plates onto the suspension bolts (adjust level roughly) using nuts, washers and spring washers.



7. Ceiling concealed duct - Middle static pressure

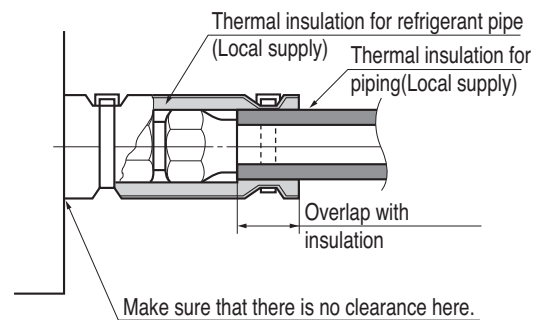
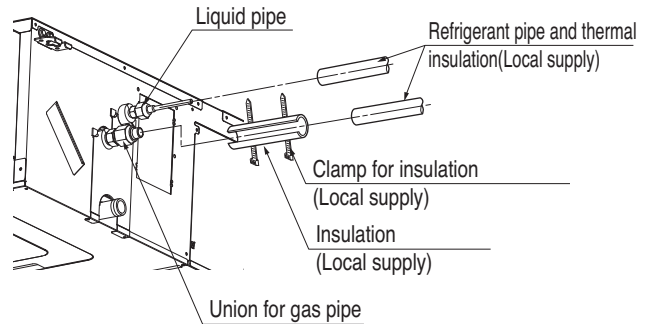
7.9.4 Connecting pipes to the indoor unit

1) Refrigerant piping work

please refer "REFRIGERANT PIPING WORK".

2) Piping insulation

- ① Perform heat insulation work completely on both gas and the liquid pipe. Because improper insulation will result condensate formation over pipe.
Use the heat insulation material for the refrigerant piping which has an excellent heat resistance (over 248°F).
- ② Precautions in high humidity circumstance: This air conditioner has been tested according to the "KS Conditions" and confirmed that there is not any default. However, if it is operated for a long time in high humid atmosphere (dew point temperature: more than 73°F), water drops are liable to fall. In this case, add heat insulation material according to the following procedure:
- ③ Heat insulation material : Adiabatic glass wool with thickness 13/32 to 13/16 inch.
- ④ Stick glass wool on all air conditioners that are located in ceiling atmosphere.



CAUTION

- Make sure to insulate any field piping all the way to the piping connection inside the unit. Any exposed piping may cause condensation or burns if touched.

MULTI/SINGLE CAC Indoor unit

7. Ceiling concealed duct - Middle static pressure

3) Indoor unit drain piping

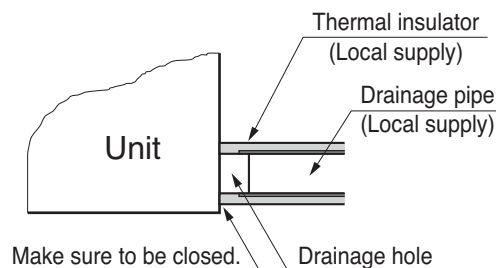
- ① Drain piping must have down-slope (1/50 to 1/100): be sure not to provide up-and-down slope to prevent reversal flow.
- ② During drain piping connection, be careful not to exert extra force on the drain port on the indoor unit.
- ③ The outside diameter of the drain connection on the indoor unit is 1 1/4 inch.

Piping material: Polyvinyl chloride pipe inner diameter ϕ 1 inch and pipe fittings

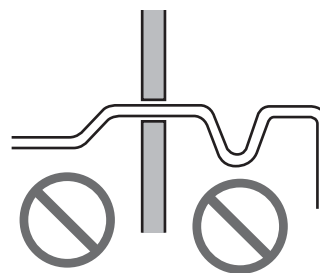
CAUTION

1. Decline Installation of indoor unit is very important for the drain of the duct type air conditioner.
2. Minimum thickness of the insulation for the connecting pipe should be 7/32 inch.

- Lay the drain hose with a downware inclination so water will drain out.



Wrong method

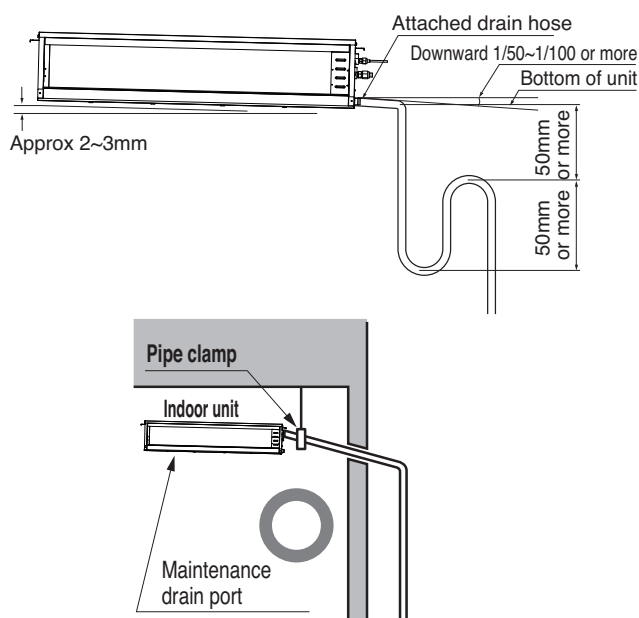


4) Caution for gradient of unit and drain piping

- Without drain pump:

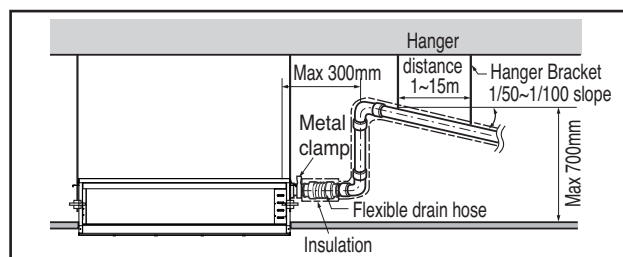
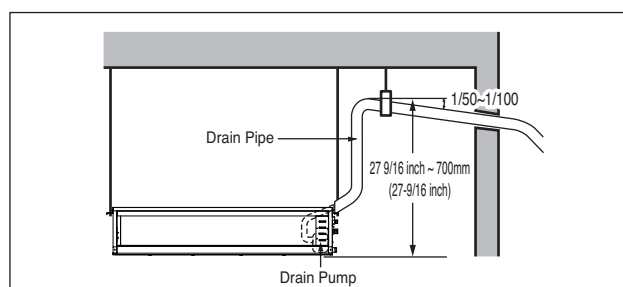
- Always lay the drain with downward inclination (1/50 to 1/100). Prevent any upward flow or reverse flow in any part.
- 7/32 inch or thicker formed thermal insulation shall always be provided for the drain pipe.

Correct method

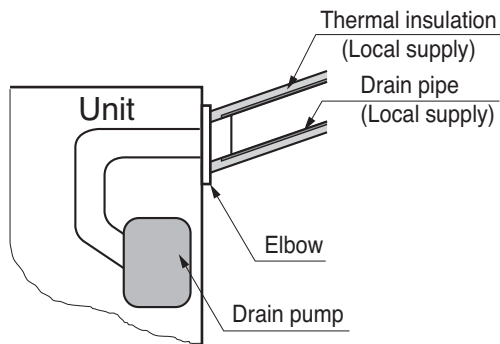


- With drain pump

- ① Possible drain head height is upto 27 6/19 inch. So the drain head should be below 27 6/19 inch.
- ② Keep the drain hose downward upto 1/50~1/100 inclination. Prevent any upward flow or reverse flow in any part.
- ③ 7/32 inch or thicker insulation should be provided for the drain pipe.

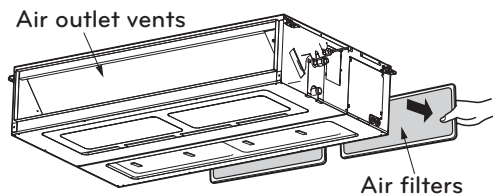


7. Ceiling concealed duct - Middle static pressure



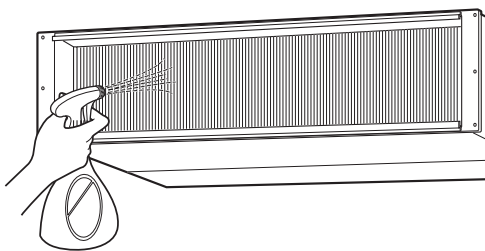
5) Checking the drainage

① Remove the air filter.



② Check the drainage

- Spray one or two glasses of water on the evaporator.
- Ensure that water flows through the drain hose from indoor unit without any leakage.



7.9.5 Electric wiring work

1) General instructions

- ① All field supplied parts and materials, electric works must conform to local codes.
Use copper wire only.
- ② Follow the "WIRING DIAGRAM" attached to the unit body to wire the outdoor unit, indoor units and the remote controller.
- ③ All wiring must be performed by an authorized electrician.
- ④ This system consists of multiple indoor units. Mark each indoor unit as unit A, unit B..., and be sure the terminal board wiring to the outdoor unit and ID unit are properly matched. If wiring and piping between the outdoor unit and an indoor unit are mismatched, the system may cause a malfunction.
- ⑤ A circuit breaker capable of shutting down the power supply to the entire system must be installed.

2) Wiring connection

Connect the wires to the terminals on the control board individually according to the outdoor unit connection.


- Ensure that the color of the wires of outdoor unit and the terminal No. are the same as those of indoor unit respectively

Terminal Block Indoor		
1(L)	2(N)	3
↑	↑	↑

MULTI/SINGLE CAC

Indoor unit

Ceiling concealed duct - Low static pressure

- 1. List of functions**
- 2. Specifications**
- 3. Dimensions**
- 4. Piping diagrams**
- 5. Wiring Diagrams**
- 6. External pressure setting for  EZ Tuning**
- 7. Sound levels**
- 8. Controller**
- 9. Installation**

8. Ceiling concealed duct - Low static pressure

8.1 List of functions

Category	Functions	ABNH09GL1A2 [CB09L N12] ABNH12GL2A2 [CB12L N22]	ABNH18GL2A2 [CB18L N22] ABNH24GL3A2 [CB24L N32]
Air flow	Air supply outlet	1	1
	Airflow direction control (left & right)	X	X
	Airflow direction control (up & down)	X	X
	Auto swing (left & right)	X	X
	Auto swing (up & down)	X	X
	Airflow steps (fan/cool/heat)	3 / 3 / 3	3 / 3 / 3
	Chaos wind(auto wind)	X	X
	Jet cool/heat	X / X	X / X
	Swirl wind	X	X
Air purifying	Triple filter (Deodorizing)	X	X
	Plasma air purifier	X	X
	Allergy Safe filter	X	X
	Long-life prefilter (washable / anti-fungus)	O	O
Installation	Drain pump	O	O
	E.S.P. control*	O	O
	Electric heater	X	X
	High ceiling operation*	X	X
	Auto Elevation Grille*	X	X
Reliability	Hot start	O	O
	Self diagnosis	O	O
Convenience	Auto changeover**	O**	O**
	Auto cleaning	X	X
	Auto operation(artificial intelligence)**	O**	O**
	Auto Restart	O	O
	Child lock*	O	O
	Forced operation	X	X
	Group control*	O	O
	Sleep mode	O	O
	Timer(on/off)	O	O
	Timer(weekly)*	O	O
Individual control	Two thermistor control*	O	O
	Wired remote controller	PQRCVSL0 / PQRCVSL0QW*** / PREMTB001 / PREMTBB01	PQRCVSL0 / PQRCVSL0QW*** / PREMTB001 / PREMTBB01
	Premium Wired remote controller	PREMTA000 / PREMTA000A / PREMTA000B	PREMTA000 / PREMTA000A / PREMTA000B
	Simple wired remote controller	PQRCVCL0Q / PQRCVCL0QW	PQRCVCL0Q / PQRCVCL0QW
	Simple Wired remote controller(for hotel use)	PQRCHCA0Q / PQRCHCA0QW	PQRCHCA0Q / PQRCHCA0QW
Network Solution	Wireless remote controller*	PQWRHQFDB	PQWRHQFDB
	General central controller (Non LGAP)	X	X
	Network Solution(LGAP)	O	O
	Simple Dry contact (outside AC 220V power source)	PQDSA / PDRYCB000	PQDSA / PDRYCB000
	2 Points Dry Contact (For setback)	PDRYCB400	PDRYCB400
	Dry contact for Thermostat	PDRYCB300	PDRYCB300
	PI 485(for Indoor Unit)	X	X
Special function kit	Zone controller	ABZCA	ABZCA
	CTI(Communication transfer interface)	X	X
	Electronic thermostat	X	X
	Telecom shelter controller	X	PQCSA001T0**
	Independent Power Module	X	X
	CO ₂ Sensor	X	X
Others	Remote temperature sensor	PQRSTA0	PQRSTA0
	Group control wire	PZCWRCG3	PZCWRCG3

Note

- * : These functions need to connect the wired remote controller.
- ** : Auto Changeover function, Telecom shelter controller can be operated when connected with Single A.
Auto Operation function can be operated when connected with Multi F/FDX.

3. *** : It is included by default when the product is manufactured.

4. For synchro operation, some functions and accessories are not available. Check the outdoor unit's PDB.

O : Applied X : Not applied

Accessory model name : Installed at field, ordered and purchased separately by the corresponding model name, supplied with separate package.

8. Ceiling concealed duct - Low static pressure

8.2 Specifications

Model Name				ABNH09GL1A2 [CB09L N12]	ABNH12GL2A2 [CB12L N22]	
Power Supply			V, Ø, Hz	220-240, 1, 50	220-240, 1, 50	
				220, 1, 60	220, 1, 60	
Power Input			W	50	95	
Running Current			A	0.40	0.80	
Dimensions	Body	W x H x D	mm	700 x 190 x 700	900 x 190 x 700	
		W x H x D	inch	27-9/16 x 7-15/32 x 27-9/16	35-7/16 x 7-15/32 x 27-9/16	
Net Weight	Body		kg (lbs)	17.5 (38.6)	23.0 (50.7)	
Heat Exchanger	(Row x Column x Fins per inch) x No.		-	(2 x 11 x 14) x 1	(2 x 11 x 18) x 1	
	Face Area		m² (ft²)	0.12 (1.32)	0.17 (1.81)	
Fan	Type		-	Sirocco	Sirocco	
	Air Flow Rate	High-static Mode (Factory Set)	H / M / L	m³/min	9.0 / 7.0 / 5.5	10.0 / 8.5 / 7.0
			H / M / L	ft³/min	318 / 247 / 194	353 / 300 / 247
			External Static Pressure	Pa (mmAq)	24.5 (2.5)	24.5 (2.5)
Fan Motor	Type		-	BLDC	BLDC	
	Output		W x No.	19 x 1	19 x 1 + 5 x 1	
Dehumidification Rate			l / h (pts/h)	1.1 (2.3)	1.2 (2.6)	
Sound Pressure Level		H / M / L	dB(A)	30 / 26 / 23	31 / 28 / 27	
Sound Power Level		Max.	dB(A)	49	52	
Piping Connections	Liquid		mm(inch)	Ø 6.35 (1/4)	Ø 6.35 (1/4)	
	Gas		mm(inch)	Ø 9.52 (3/8)	Ø 9.52 (3/8)	
	Drain (O.D. / I.D.)		mm(inch)	Ø 32.0(1-1/4) / 25.0(31/32)	Ø 32.0(1-1/4) / 25.0(31/32)	
Safety Devices			-	Fuse	Fuse	
			-	-	-	
Power and Communication Cable (included Earth)			No. x mm² (AWG)	4C x 0.75 (18)	4C x 0.75 (18)	

Note :

1. Wiring cable size must comply with the applicable local and national codes.
2. Due to our policy of innovation some specifications may be changed without notifications.
3. Sound Level Values are measured at Anechoic chamber.
Therefore, these values can be increased owing to ambient conditions during operation.

8. Ceiling concealed duct - Low static pressure

Model Name				ABNH18GL2A2 [CB18L N22]	ABNH24GL3A2 [CB24L N32]	
Power Supply			V, Ø, Hz	220-240, 1, 50	220-240, 1, 50	
				220, 1, 60	220, 1, 60	
Power Input			W	120	150	
Running Current			A	0.80	1.00	
Dimensions	Body		W x H x D	mm	900 x 190 x 700	
			W x H x D	inch	35-7/16 x 7-15/32 x 27-9/16	
Net Weight	Body		kg (lbs)	23.0 (50.7)	27.0 (59.5)	
Heat Exchanger	(Row x Column x Fins per inch) x No.		-	(2 x 11 x 18) x 1	(3 x 11 x 18) x 1	
	Face Area		m² (ft²)	0.17 (1.81)	0.21 (2.31)	
Fan	Type		-	Sirocco	Sirocco	
	Air Flow Rate	High-static Mode (Factory Set)	H / M / L	m³/min	15.0 / 12.5 / 10.0	
			H / M / L	ft³/min	530 / 441 / 353	
			External Static Pressure	Pa (mmAq)	24.5 (2.5)	
Fan Motor	Type		-	BLDC	BLDC	
	Output		W x No.	19 x 1 + 5 x 1	19 x 2	
Dehumidification Rate			l / h (pts/h)	1.7 (3.6)	2.2 (4.7)	
Sound Pressure Level		H / M / L	dB(A)	36 / 34 / 31	39 / 35 / 32	
Sound Power Level		Max.	dB(A)	54	58	
Piping Connections	Liquid		mm(inch)	Ø 6.35 (1/4)	Ø 9.52 (3/8)	Ø 6.35 (1/4)*
	Gas		mm(inch)	Ø 12.7 (1/2)	Ø 15.88 (5/8)	Ø 12.7 (1/2)*
	Drain (O.D. / I.D.)		mm(inch)	Ø 32.0(1-1/4) / 25.0(31/32)		Ø 32.0(1-1/4) / 25.0(31/32)
Safety Devices			-	Fuse	Fuse	
			-	-	-	
Power and Communication Cable (included Earth)			No. x mm² (AWG)	4C x 0.75 (18)	4C x 0.75 (18)	

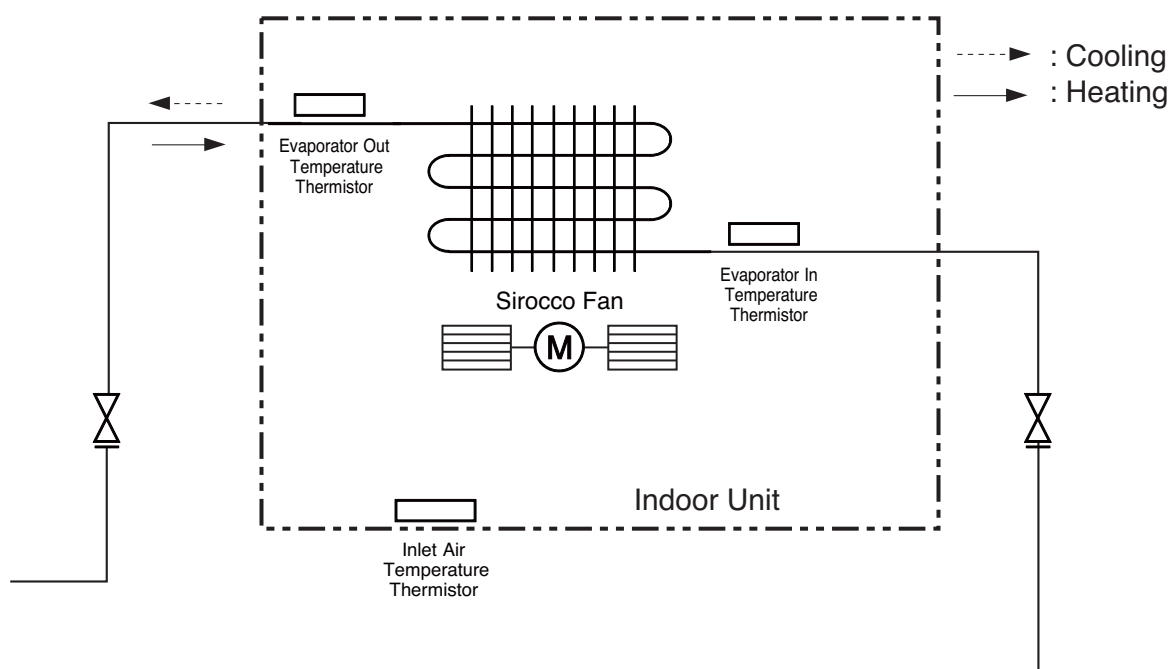
Note :

1. Wiring cable size must comply with the applicable local and national codes.
2. Due to our policy of innovation some specifications may be changed without notifications.
3. Sound Level Values are measured at Anechoic chamber.
Therefore, these values can be increased owing to ambient conditions during operation.
4. * : For combined with Multi F/FDX system, socket provided with indoor units should be connected.

8. Ceiling concealed duct - Low static pressure

8.4 Piping diagrams

Models : ABNH09GL1A2 [CB09L N12]



Description	PCB Connector
Inlet Air Temperature Thermistor	CN-ROOM
Evaporator In Temperature Thermistor	CN-PIPE/IN
Evaporator Out Temperature Thermistor	CN-PIPE/OUT

■ Refrigerant pipe connection port diameters

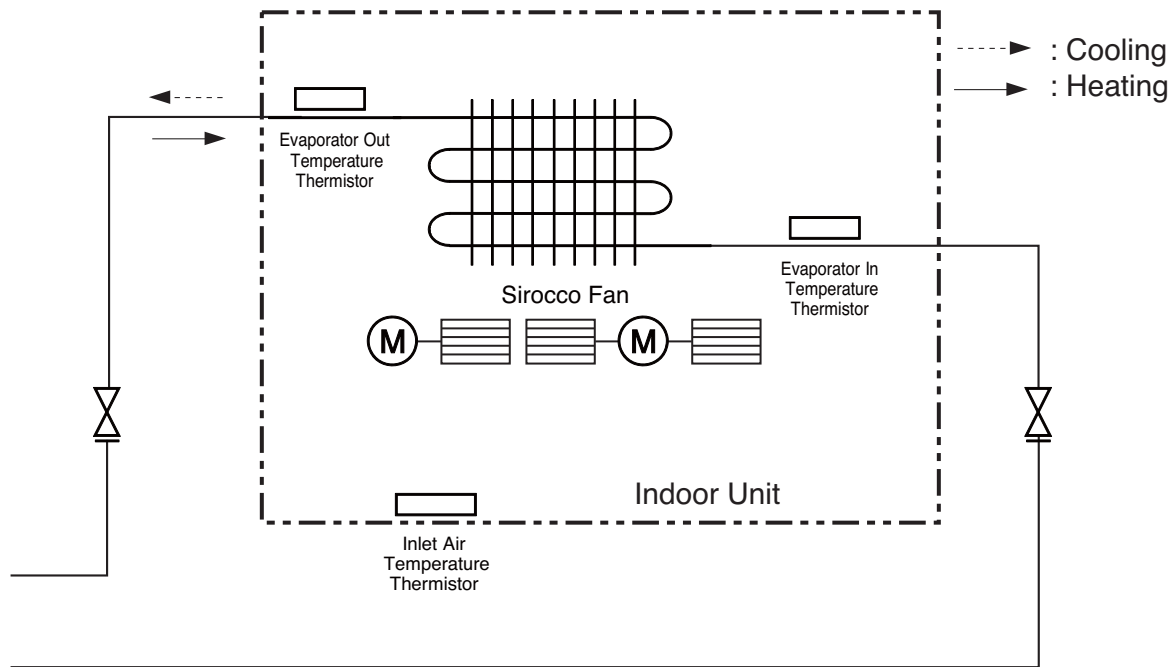
[Unit : mm]

Model	Gas	Liquid
ABNH09GL1A2 [CB09L N12]	Ø9.52	Ø6.35

MULTI/SINGLE CAC Indoor unit

8. Ceiling concealed duct - Low static pressure

Models : ABNH12GL2A2 [CB12L N22] / ABNH18GL2A2 [CB18L N22]



Description	PCB Connector
Inlet Air Temperature Thermistor	CN-ROOM
Evaporator In Temperature Thermistor	CN-PIPE/IN
Evaporator Out Temperature Thermistor	CN-PIPE/OUT

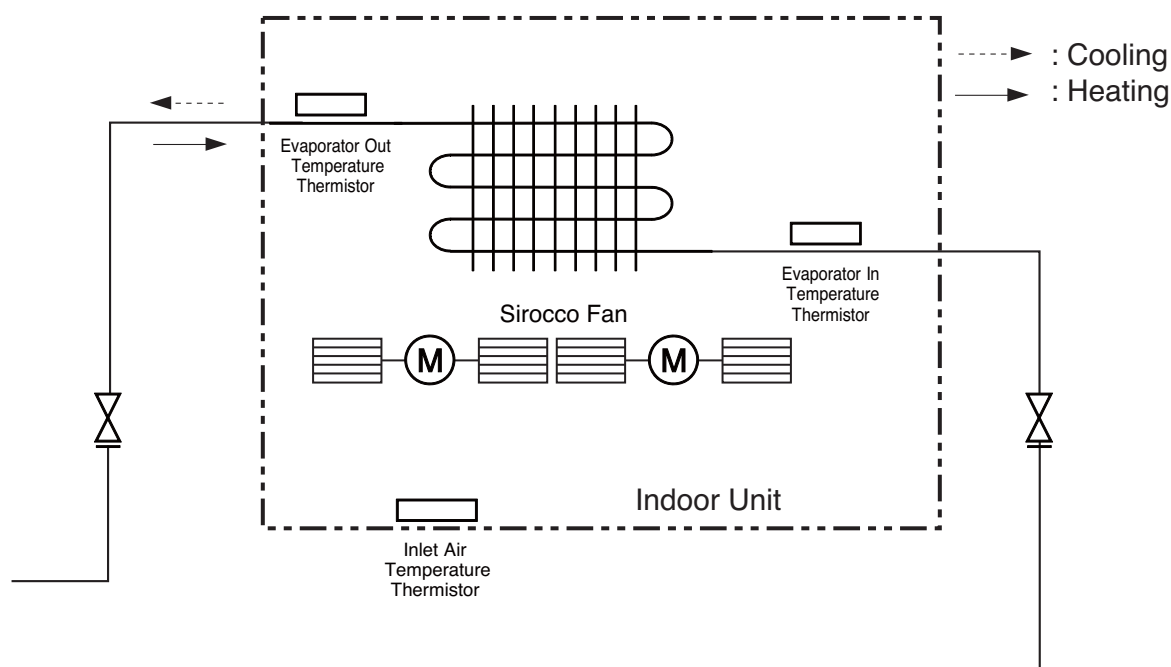
Refrigerant pipe connection port diameters

[Unit : mm]

Model	Gas	Liquid
ABNH12GL2A2 [CB12L N22]	Ø9.52	Ø6.35
ABNH18GL2A2 [CB18L N22]	Ø12.7	

8. Ceiling concealed duct - Low static pressure

Models : ABNH24GL3A2 [CB24L N32]



Description	PCB Connector
Inlet Air Temperature Thermistor	CN-ROOM
Evaporator In Temperature Thermistor	CN-PIPE/IN
Evaporator Out Temperature Thermistor	CN-PIPE/OUT

Refrigerant pipe connection port diameters

[Unit : mm]

Model	Gas	Liquid
ABNH24GL3A2 [CB24L N32]	Ø15.88	Ø9.52
	Ø 12.7 (1/2)*	Ø 6.35 (1/4)*

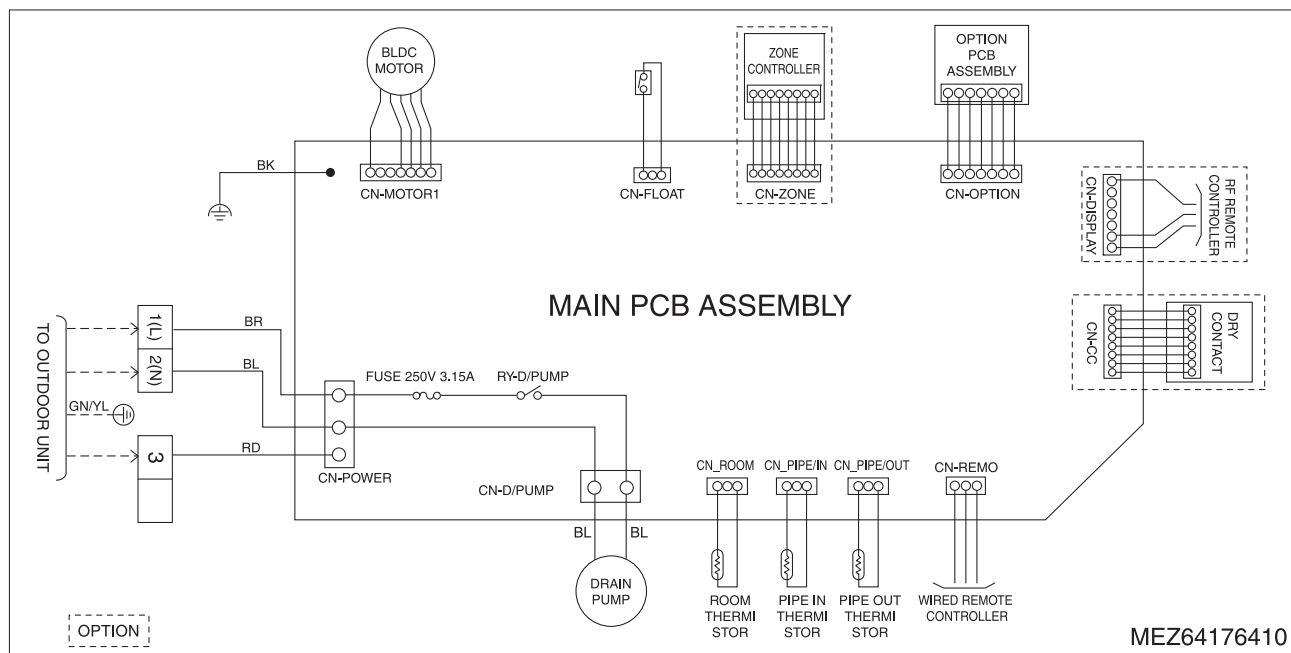
* : For combined with Multi F/FDX system, socket provided with indoor units should be connected.

MULTI/SINGLE CAC Indoor unit

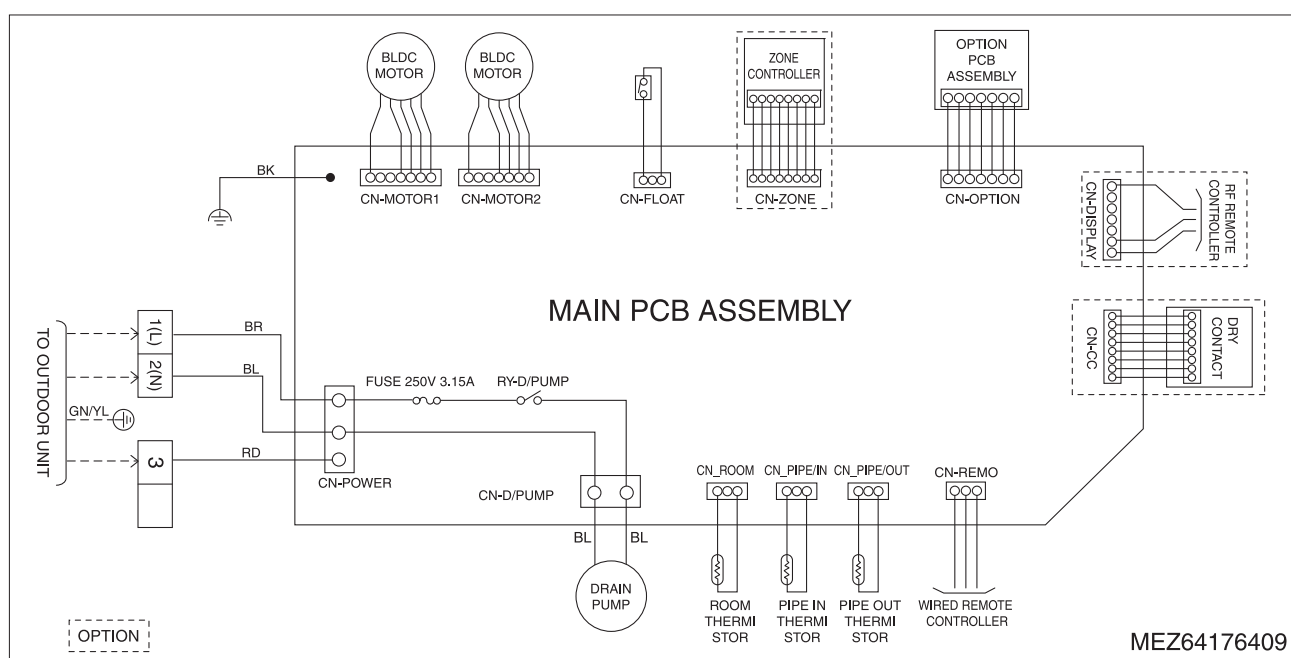
8. Ceiling concealed duct - Low static pressure

8.5 Wiring diagrams

Models: ABNH09GL1A2 [CB09L N12]



Models: ABNH12GL2A2 [CB12L N22] / ABNH18GL2A2 [CB18L N22] / ABNH24GL3A2 [CB24L N32]



8. Ceiling concealed duct - Low static pressure

8.6 External pressure setting for

 (E.S.P. Control) provide required constant air flow rate irrespective of E.S.P. charge.

(1) Open the rear cover of the wired remote-controller to set the mode.

(2) Select one of three selectable modes as follows.

■ Without zone system

1. Position V-H, F-H:
 - This position sets the maximum E.S.P. as a default set.
2. Position V-L:
 - This position sets the minimum E.S.P. as a default set.

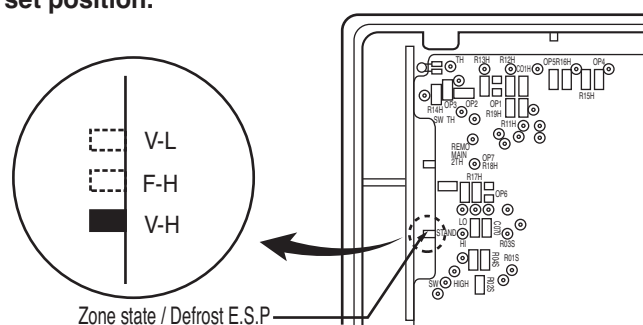
■ With zone system

1. Position V-H:
 - Maximum E.S.P. setting & Fan speed is varied according to the state of dampers by micom.
2. Position F-H:
 - Maximum E.S.P. setting & Fan speed doesn't vary according to the opening & closing of dampers.
3. Position V-L:
 - Minimum E.S.P. setting & Fan speed is varied according to the state of dampers by micom.

*Maximum: 18/24k - 2mmAq

Minimum: All-0mmAq

(3) Move the slide switch to set position.



(4) Close the rear cover and check if it works normally.

⚠ CAUTION

- Select the position after checking duct work and E.S.P. of the unit.
- Manufactured in the position F-H.

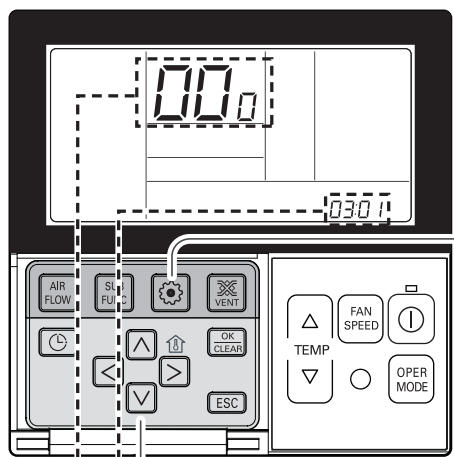
MULTI/SINGLE CAC Indoor unit

8. Ceiling concealed duct - Low static pressure

How to Set E.S.P. on the remote controller?




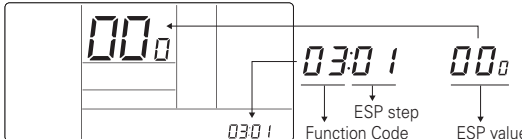



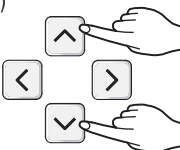


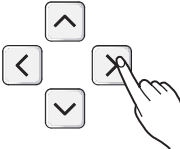


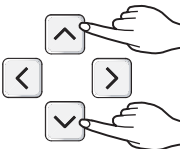
This is the function that decides the strength of the wind for each wind level and because this function is to make the installation easier.

- If you set ESP incorrectly, the air conditioner may malfunction.
- This setting must be carried out by a certificated-technician.



Function code, ESP code

ESP value

- 1 If pressing  button long for 3 seconds, it enters into remote controller setter setup mode.
- If pressing once shortly, it enters into user setup mode. Please press more than 3 seconds for sure. 
- 2 If entering into ESP setup mode by using  button, it indicates as the picture below.

- 3 Select ESP fan step by pressing   button. (01: very low, 02: low, 03: medium, 04: high, 05: power)
 
- 4 Move to ESP value setting by pressing  button.
(It is 000 when delivering from the warehouse.)
 
- 5 Press   button to setup ESP value.
(It is possible to setup ESP value from 1 to 255, and 1 is the smallest and 255 is the biggest.)


- When setting ESP value on the product without very weak wind or power wind function, it may not work.

8. Ceiling concealed duct - Low static pressure

Models: ABNH09GL1A2 [CB09L N12]

(Unit : CMM)

Setting Value	Static Pressure(mmAq(Pa))					
	0 (0)	1 (10)	2 (20)	3 (30)	4 (40)	5 (50)
60	-	-	-	-	-	-
65	5.03	-	-	-	-	-
70	5.60	4.85	-	-	-	-
75	6.19	5.44	4.57	-	-	-
80	6.79	6.05	5.17	-	-	-
85	7.41	6.67	5.80	4.80	-	-
90	8.05	7.31	6.43	5.44	-	-
95	8.71	7.96	7.09	6.09	4.97	-
100	9.38	8.63	7.76	6.76	5.64	-
105	10.07	9.32	8.45	7.45	6.33	5.08
110	-	10.03	9.16	8.16	7.04	5.79
115	-	-	9.88	8.88	7.76	6.51
120	-	-	-	9.62	8.50	7.25
125	-	-	-	10.38	9.26	8.01
130	-	-	-	-	10.03	8.78

Models: ABNH12GL2A2 [CB12L N22] / ABNH18GL2A2 [CB18L N22]

(Unit : CMM)

Setting Value	Static Pressure(mmAq(Pa))					
	0 (0)	1 (10)	2 (20)	3 (30)	4 (40)	5 (50)
75	6.50	-	-	-	-	-
80	7.34	6.70	-	-	-	-
85	8.20	7.55	6.69	-	-	-
90	9.07	8.43	7.56	6.47	-	-
95	9.96	9.32	8.45	7.36	-	-
100	10.87	10.22	9.36	8.27	6.96	-
105	11.79	11.15	10.28	9.19	7.89	6.35
110	12.73	12.09	11.22	10.14	8.83	7.30
115	13.69	13.05	12.18	11.09	9.78	8.25
120	14.67	14.02	13.16	12.07	10.76	9.23
125	15.66	15.01	14.15	13.06	11.75	10.22
130	16.67	16.02	15.16	14.07	12.76	11.23
135	-	-	16.18	15.10	13.79	12.26
140	-	-	-	16.14	14.83	13.30
145	-	-	-	-	15.89	14.36

Models: ABNH24GL3A2 [CB24L N32]

(Unit : CMM)

Setting Value	Static Pressure(mmAq(Pa))					
	0 (0)	1 (10)	2 (20)	3 (30)	4 (40)	5 (50)
85	10.19	-	-	-	-	-
90	12.18	10.71	11.09	-	-	-
95	13.81	12.34	12.19	-	-	-
100	15.16	13.69	13.38	10.71	-	-
105	16.30	14.83	14.36	11.85	-	-
110	17.31	15.85	15.23	12.86	10.97	-
115	18.27	16.80	16.07	13.82	11.93	-
120	19.26	17.79	16.93	14.80	12.91	10.49
125	20.34	18.87	17.89	15.88	13.99	11.57
130	21.60	20.13	19.01	17.14	15.25	12.83
135	-	21.64	20.36	18.66	16.76	14.35
140	-	-	22.01	20.50	18.61	16.19
145	-	-	-	22.75	20.86	18.44

Note :

1. The above table shows the correlation between the air rates and E.S.P.

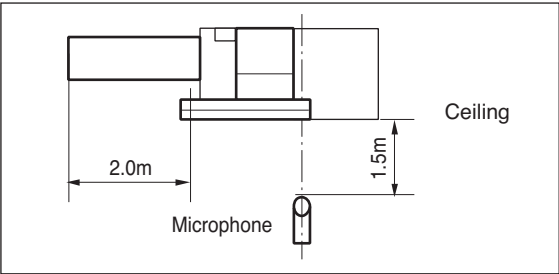
MULTI/SINGLE CAC Indoor unit

8. Ceiling concealed duct - Low static pressure

8.7 Sound levels

8.7.1 Sound pressure level

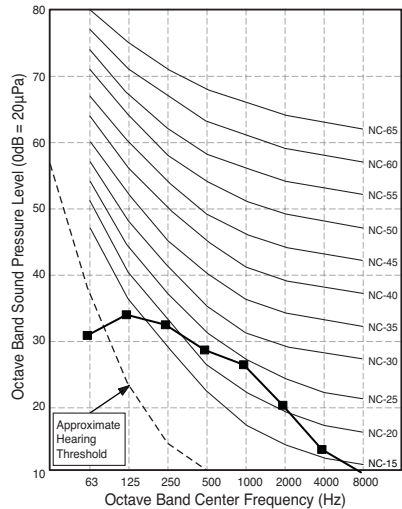
Overall



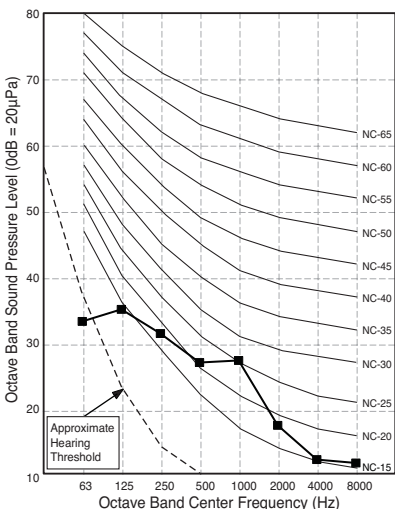
- Notes:**
- Data is valid at nominal operation condition
 - Reference accoustic pressure 0dB = 20μPa.
 - Sound level will vary depending on a range of factors such as the construction(acoustic absorption coefficient) of particular room in which the equipment is installed.
 - The operating conditions are assumed to be standard.

Model	50Hz, 220-240V		
	Sound Level [dB(A)]		
	H	M	L
ABNH09GL1A2 [CB09L N12]	30	26	23
ABNH12GL2A2 [CB12L N22]	31	28	27
ABNH18GL2A2 [CB18L N22]	36	34	31
ABNH24GL3A2 [CB24L N32]	39	35	32

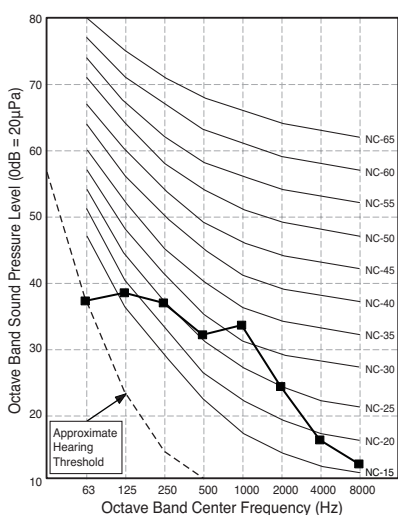
ABNH09GL1A2 [CB09L N12]



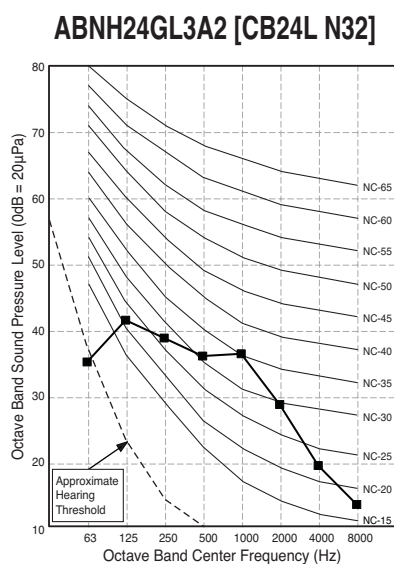
ABNH12GL2A2 [CB12L N22]



ABNH18GL2A2 [CB18L N22]



8. Ceiling concealed duct - Low static pressure



8. Ceiling concealed duct - Low static pressure

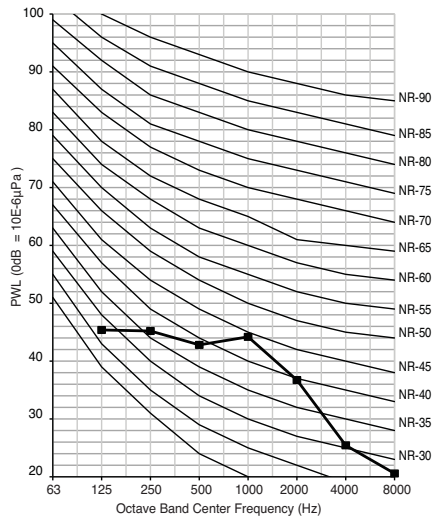
8.7.2 Sound power level

Notes:

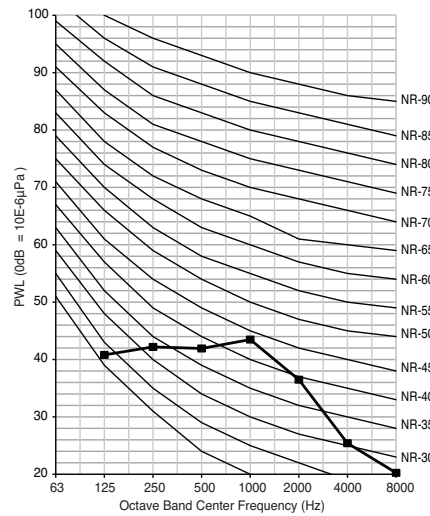
1. Reference acoustic intensity $0\text{dB} = 10\text{E-}6\mu\text{W/m}^2$
2. Sound level will vary depending on a range of factors such as the construction (acoustic absorption coefficient) of particular room in which the equipment is installed.

Model	Sound power level [dB(A)]
	H
ABNH09GL1A2 [CB09L N12]	49
ABNH12GL2A2 [CB12L N22]	52
ABNH18GL2A2 [CB18L N22]	54
ABNH24GL3A2 [CB24L N32]	58

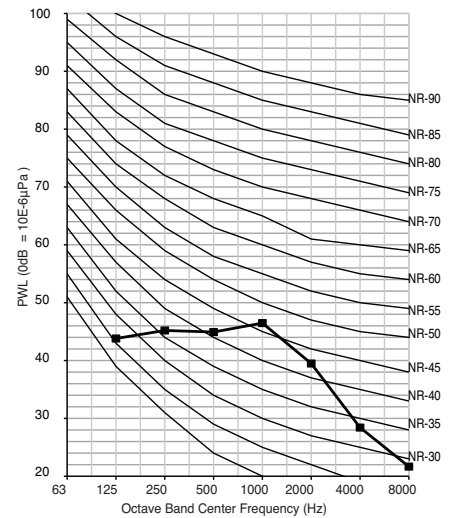
ABNH09GL1A2 [CB09L N12]



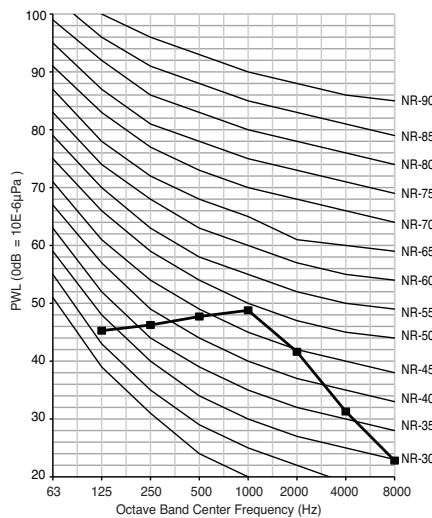
ABNH12GL2A2 [CB12L N22]



ABNH18GL2A2 [CB18L N22]



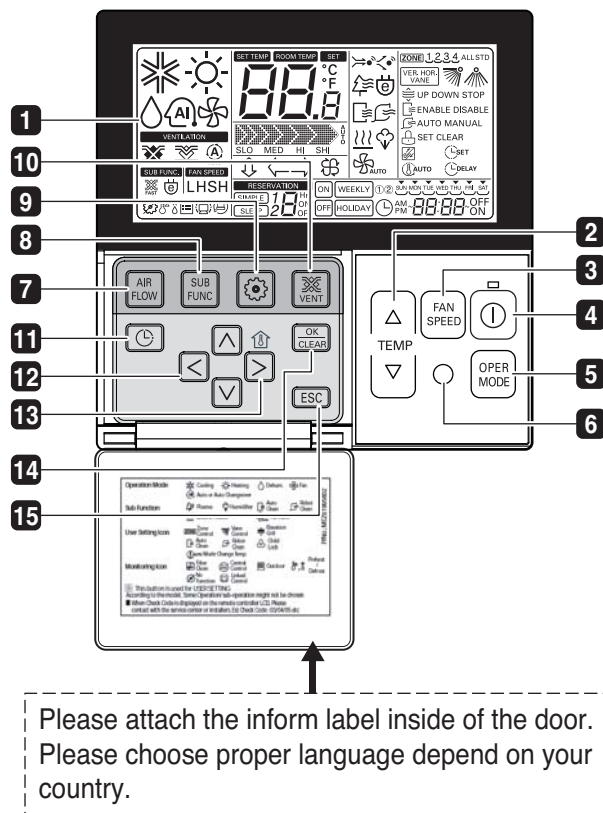
ABNH24GL3A2 [CB24L N32]



8. Ceiling concealed duct - Low static pressure

8.8 Controller

Wired remote controller



- | | |
|---|---|
| 1 OPERATION INDICATION SCREEN | 9 FUNCTION SETTING Button |
| 2 SET TEMPERATURE Button | 10 VENTILATION Button |
| 3 FAN SPEED Button | 11 RESERVATION |
| 4 ON/OFF Button | 12 UP,DOWN,LEFT,RIGHT Button |
| 5 OPERATION MODE SELECTION Button | • To check the indoor temperature, press button. |
| 6 WIRELESS REMOTE CONTROLLER RECEIVER | 13 ROOM TEMPERATURE Button |
| • Some products don't receive the wireless signals. | 14 SETTING/CANCEL Button |
| 7 AIR FLOW Button | 15 EXIT Button |
| 8 SUBFUNCTION Button | |

* Some functions may not be operated and displayed depending on the product type.

Note :

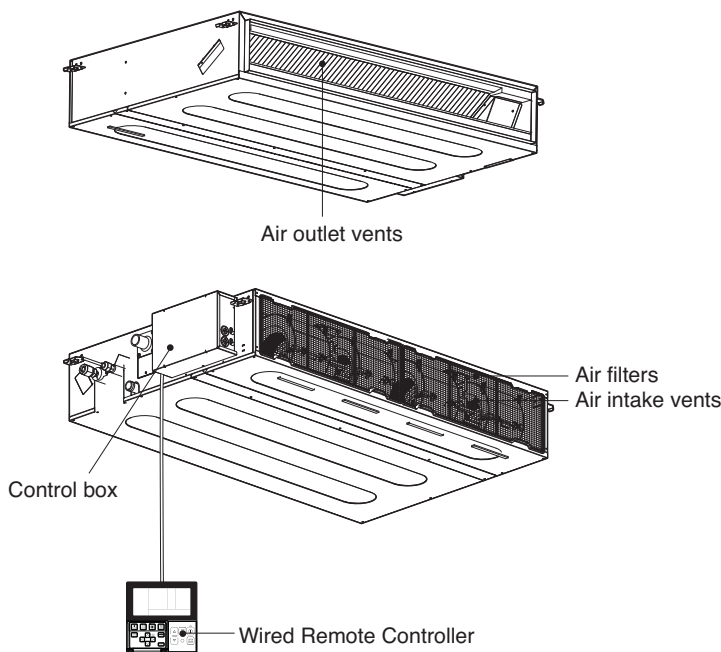
- * Display temperature can be different from actual room temperature if the remote controller is installed at the place where sun-rays are falling directly or the place nearby heat source.
- * The actual product can be different from above contents depending upon model type.
- * When using simultaneous operation system, whenever press remote controller button, system will approximately operate after 1~2 minutes.

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8. Ceiling concealed duct - Low static pressure

8.9 Installation

- Please read the instruction sheets completely before installing the product.
- When the power cord is damaged, replacement work shall be performed by authorized personnel only.
- Installation work must be performed in accordance with the national wiring standards.




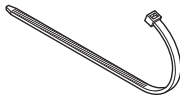

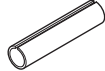


8.9.1 Accessories

Check the following accessories are included with your unit.

1) Standard accessories

L1 / L2 / L3 Chassis

Name	Drain hose	Clamp metal	Washer for hanging bracket	Clamp (Tie Wrap)	Insulation for fitting	Other
Quantity	1 EA	2 EA	8 EA	4 EA	1 set	
Shape					 for gas pipe  for liquid pipe	• Owner's manual • Installation manual

- Screws for fixing panels are attached to decoration panel.

8. Ceiling concealed duct - Low static pressure

8.9.2 Selection of the best location

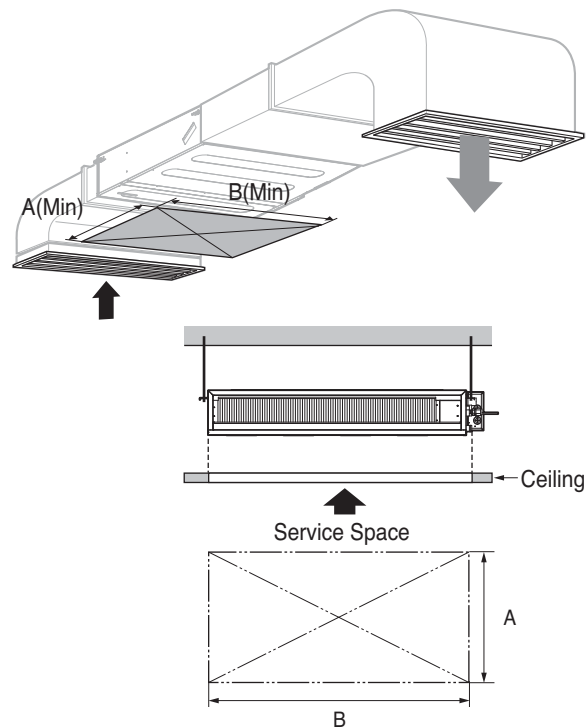
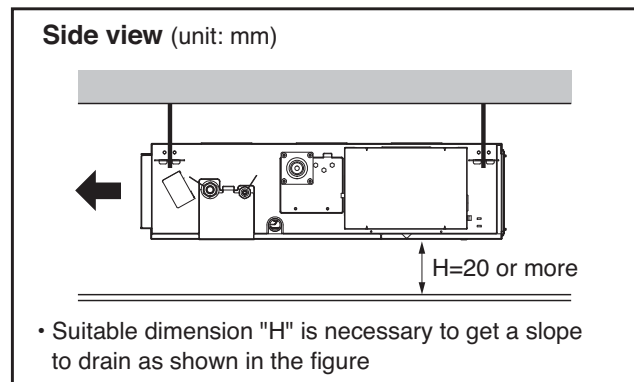
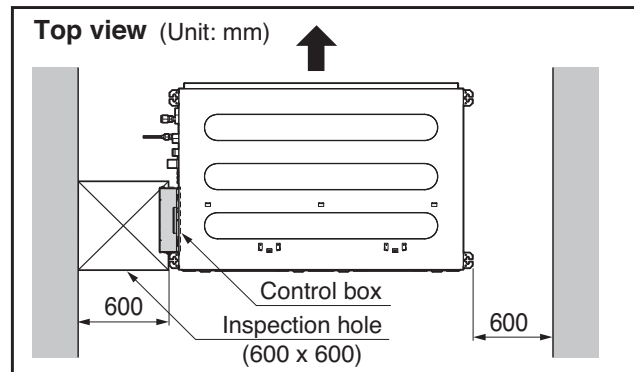
Install the air conditioner in the location that satisfies the following conditions.

- The place shall easily bear a load exceeding four times the indoor unit's weight.
- The place shall be able to inspect the unit as given in the figure.
- The place where the unit shall be leveled.
- The place shall allow easy water drainage.
(Suitable dimension "H" is necessary to get a slope to drain as figure.)
- The place shall easily connect with the outdoor unit.
- The place where the unit is not affected by an electrical noise.
- The place where air circulation in the room will be good .
- There should not be any heat source or steam near the unit.
- The servicing inspection hole in the ceiling should be as large as the product.
- The selection of the servicing hole should be approved by the customer.

[L1/L2/L3 Chassis]

(Unit: mm)

Capacity (kBtu/h)	A	B
9	800	800
12/18	800	1000
24	800	1200



MULTI/SINGLE CAC Indoor unit

8. Ceiling concealed duct - Low static pressure

8.9.3 Ceiling dimension and hanging bolt location and service space

■ Installation of Unit

Install the unit above the ceiling correctly.

CASE 1

Position of suspension Bolt

- Apply a joint-canvas between the unit and duct to absorb unnecessary vibration.
- Install the unit leaning to a drainage hole side as a figure for easy water drainage.

CASE 2

Position of console Bolt

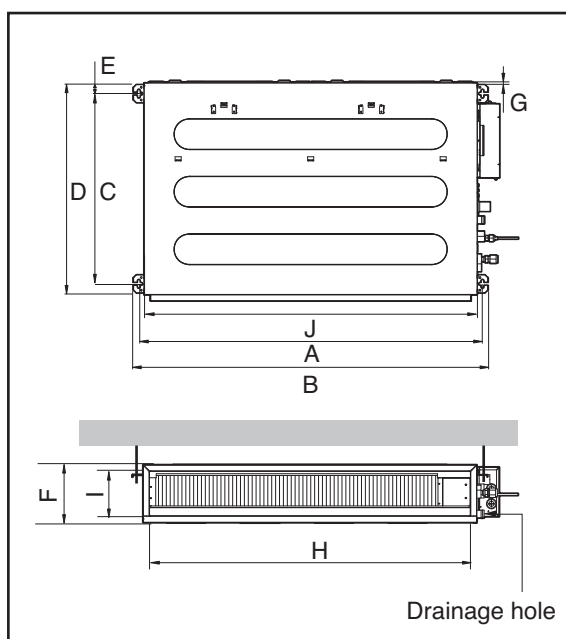
- A place where the unit will be leveled and that can support the weight of the unit.
- A place where the unit can withstand its vibration.
- A place where service can be easily performed.

• L1 / L2 / L3 Chassis

(Unit:mm)

Dimension Capacity	A	B	C	D	E	F	G	H	I	J
9 kBTu/h	733	772	628	700	36	190	20	660	155	700
12/18 kBTu/h	933	972	628	700	36	190	20	860	155	900
24 kBTu/h	1133	1172	628	700	36	190	20	1060	155	1100

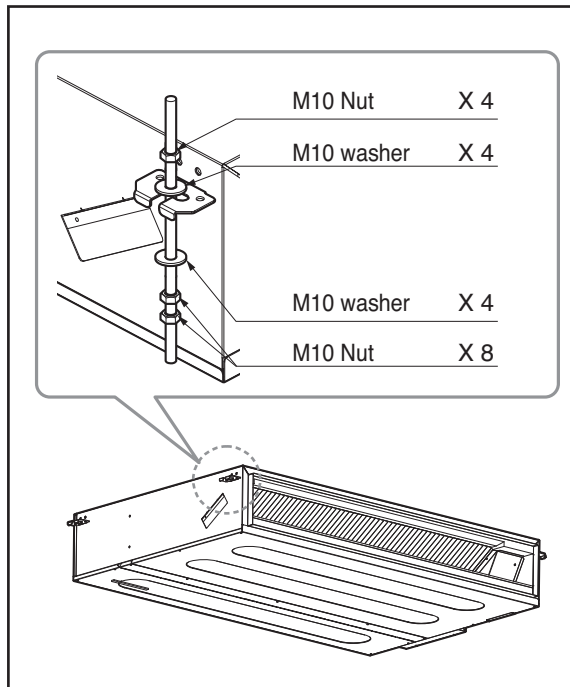
• L1 / L2 / L3 Chassis



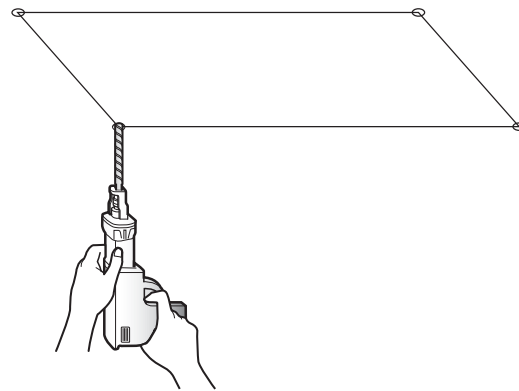
8. Ceiling concealed duct - Low static pressure

8.9.4 Position of suspension bolt

- ① A place where the unit will be leveled and that can support the weight of the unit.
- ② A place where the unit can withstand its vibration.
- ③ A place where service can be easily performed.



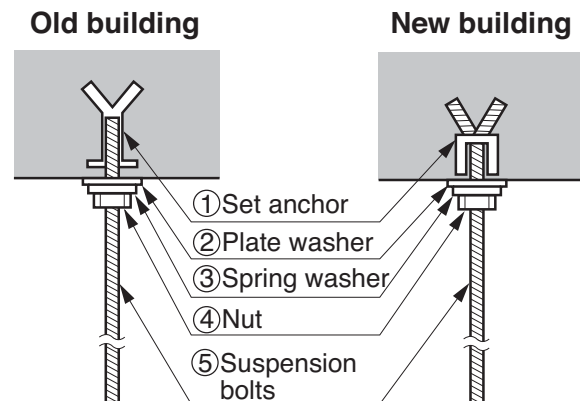
- ④ Select and mark the position for fixing bolts.
- ⑤ Drill the hole for set anchor on the face of ceiling.



CAUTION

- Tighten the nut and bolt to prevent the unit falling.

- ⑥ Insert the set anchor and washer onto the suspension bolts for locking the suspension bolts on the ceiling.
- ⑦ Mount the suspension bolts to the set anchor firmly.
- ⑧ Secure the installation plates onto the suspension bolts (adjust level roughly) using nuts, washers and spring washers.



MULTI/SINGLE CAC Indoor unit

8. Ceiling concealed duct - Low static pressure

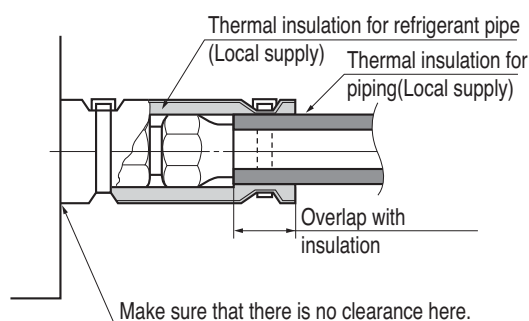
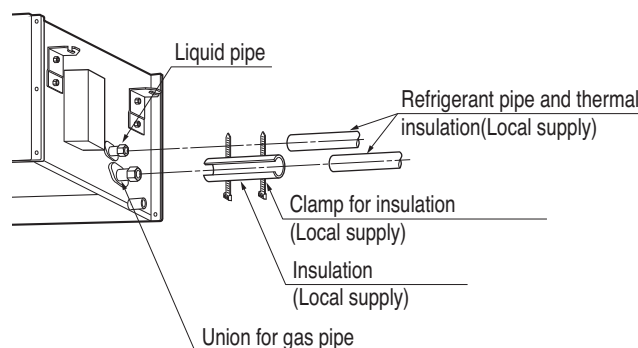
8.9.5 Connecting pipes to the indoor unit

1) Refrigerant piping work

please refer "REFRIGERANT PIPING WORK".

2) Piping insulation

- ① Perform heat insulation work completely on both gas and the liquid pipe. Because improper insulation will result condensate formation over pipe.
Use the heat insulation material for the refrigerant piping which has an excellent heat resistance (over 248°F).
- ② Precautions in high humidity circumstance: This air conditioner has been tested according to the "KS Conditions" and confirmed that there is not any default. However, if it is operated for a long time in high humid atmosphere (dew point temperature: more than 73°F), water drops are liable to fall. In this case, add heat insulation material according to the following procedure:
- ③ Heat insulation material : Adiabatic glass wool with thickness 13/32 to 13/16 inch.
- ④ Stick glass wool on all air conditioners that are located in ceiling atmosphere.



CAUTION

- Make sure to insulate any field piping all the way to the piping connection inside the unit. Any exposed piping may cause condensation or burns if touched.

8. Ceiling concealed duct - Low static pressure

3) Indoor unit drain piping

- ① Drain piping must have down-slope (1/50 to 1/100): be sure not to provide up-and-down slope to prevent reversal flow.
- ② During drain piping connection, be careful not to exert extra force on the drain port on the indoor unit.
- ③ The outside diameter of the drain connection on the indoor unit is 1 1/4 inch.

Piping material: Polyvinyl chloride pipe inner diameter Ø1 inch and pipe fittings

⚠ CAUTION

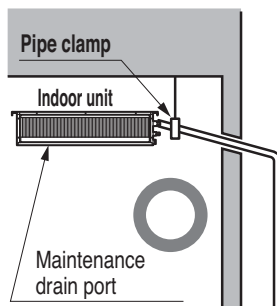
1. Decline Installation of indoor unit is very important for the drain of the duct type air conditioner.
2. Minimum thickness of the insulation for the connecting pipe should be 7/32 inch.

4) Caution for gradient of unit and drain piping

- Without drain pump:

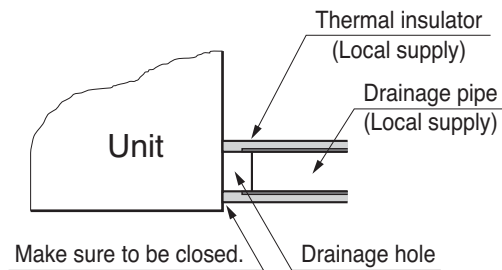
- Always lay the drain with downward inclination (1/50 to 1/100). Prevent any upward flow or reverse flow in any part.
- 7/32 inch or thicker formed thermal insulation shall always be provided for the drain pipe.

Correct method

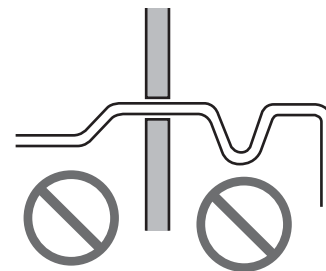


* U-trap is not required for low static model in which the external static pressure is below 50 pa(5mm Aq)

- Lay the drain hose with a downware inclination so water will drain out.

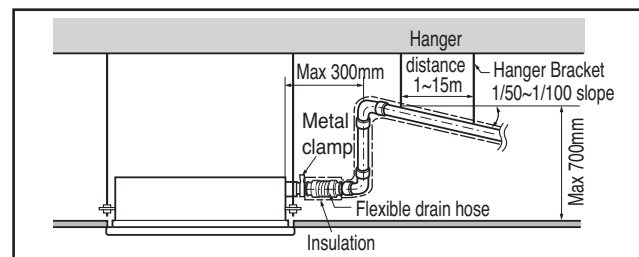


Wrong method

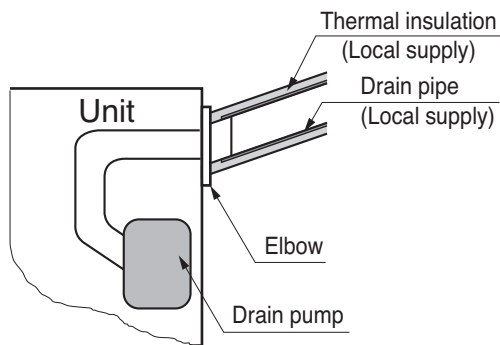


- With drain pump

- ① Possible drain head height is upto 27 6/19 inch. So the drain head should be below 27 6/19 inch.
- ② Keep the drain hose downward upto 1/50~1/100 inclination. Prevent any upward flow or reverse flow in any part.
- ③ 7/32 inch or thicker insulation should be provided for the drain pipe.

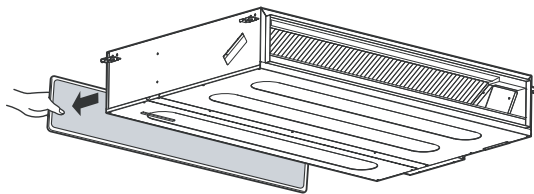


8. Ceiling concealed duct - Low static pressure



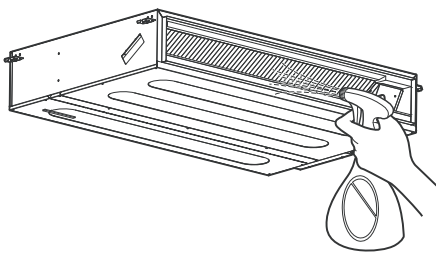
5) Checking the drainage

① Remove the air filter.



② Check the drainage

- Spray one or two glasses of water on the evaporator.
- Ensure that water flows through the drain hose from indoor unit without any leakage.



8.9.6 Electric wiring work

1) General instructions

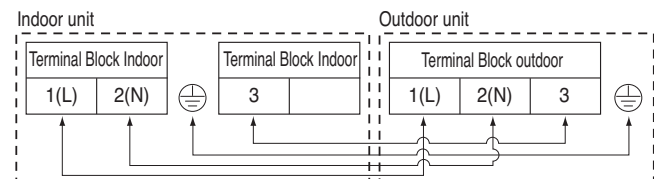
- ① All field supplied parts and materials, electric works must conform to local codes.
Use copper wire only.
- ② Follow the "WIRING DIAGRAM" attached to the unit body to wire the outdoor unit, indoor units and the remote controller.
- ③ All wiring must be performed by an authorized electrician.
- ④ This system consists of multiple indoor units. Mark each indoor unit as unit A, unit B..., and be sure the terminal board wiring to the outdoor unit and ID unit are properly matched. If wiring and piping between the outdoor unit and an indoor unit are mismatched, the system may cause a malfunction.
- ⑤ A circuit breaker capable of shutting down the power supply to the entire system must be installed.

2) Wiring connection

Connect the wires to the terminals on the control board individually according to the outdoor unit connection.

- Ensure that the color of the wires of outdoor unit and the terminal No. are the same as those of indoor unit respectively

• L1 / L2 / L3 Chassis



8. Ceiling concealed duct - Low static pressure

Clamping of cables

- ① Arrange 2 power cables on the control panel.
- ② First, fasten the steel clamp with a screw to the inner boss of control panel.
- ③ For the cooling model, fix the other side of the clamp with a screw strongly. For the heat pump model, put the 0.75mm² cable (thinner cable) on the clamp and tighten it with a plastic clamp to the other boss of the control panel.
- ④ In Australia, the length of power supply cord measured from the entry of the power supply cord to the middle of live pin on the power plug should be over 5.9ft.

CAUTION

- Make sure that the screws of the terminal are fixed tightly.

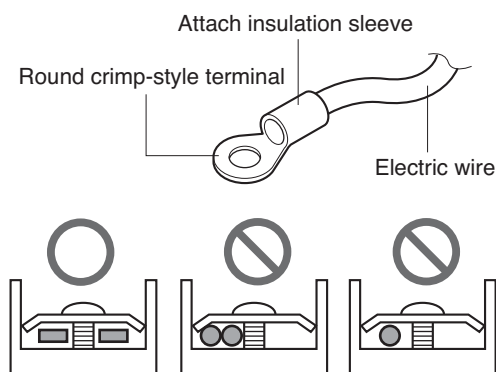
CAUTION

- Make sure to attach the sealing material or (field supplied) to hole of wiring to prevent the infiltration of foreign particle from outside. Otherwise a short-circuit may occur inside the electric parts box
- When clamping the wires, be sure no pressure is applied to the wire connections by using the included clamping material to make appropriate clamps. Also, when wiring, make sure the cover on the electric parts box fits snugly by arranging the wires neatly and attaching the electric parts box cover firmly. When attaching the electric parts box cover, make sure no wires get caught in the edges. Pass wiring through the wiring through holes to prevent damage to them.
- Make sure the remote controller wiring, the wiring between the units, and other electrical wiring do not pass through the same locations outside of the unit, separating them properly, otherwise electrical noise (external static) could cause product malfunction.

NOTE

1. **Use round crimp-style terminals for connecting wires to the power supply terminal block. If unavailable, observe the following points when wiring.**

- Do not connect wires of different gauge to the same power supply terminal.
- Use the specified electric wire. Connect the wire securely to the terminal. Lock the wire down without applying excessive force to the terminal.



Connect wires of the same gauge to both sides

2. **Tightening torque for the terminal screws.**

- Use the correct screwdriver for tightening the terminal screws. If the blade of screwdriver is too small, the head of the screw might be damaged, and the screw will not be properly tightened.
- If the terminal screws are tightened too hard, screws might be damaged.

3. **Do not connect wires of different gauge to the same grounding terminal. Loose connection may deteriorate protection.**

4. **Outside of the unit, keep proper separation between transmission and power supply wiring. The equipment may malfunction if subjected to electrical (external) noise.**

5. **Never connect power supply wiring to the terminal block for remote controller wiring. A mistake of the sort could damage the entire system.**

6. **Use only specified wire and tightly connect wires to terminals. Be careful wires do not place external stress on terminals. Keep wiring in neat order and so as not to obstruct other equipment such as popping open the electric parts box cover. Make sure the cover closes tight. Incomplete connections could result in overheating, and in worse case, electric shock or fire.**

MULTI/SINGLE CAC

Indoor unit

Console

- 1. List of functions**
- 2. Specifications**
- 3. Dimensions**
- 4. Piping diagrams**
- 5. Wiring Diagrams**
- 6. Air flow and temperature distributions (reference data)**
- 7. Sound levels**
- 8. Controller**
- 9. Installation**

9. Console

9.1 List of functions

Category	Functions	AQNH09GALA0 [CQ09 NA0] AQNH12GALA0 [CQ12 NA0]	AQNH18GALA0 [CQ18 NA0]
Air flow	Air supply outlet	2	2
	Airflow direction control (left & right)	Manual	Manual
	Airflow direction control (up & down)	Auto	Auto
	Auto swing (left & right)	X	X
	Auto swing (up & down)	O	O
	Airflow steps (fan/cool/heat)	4 / 5 / 4	4 / 5 / 4
	Chaos wind(auto wind)	X	X
	Jet cool/heat	O / X	O / X
Air purifying	Swirl wind	X	X
	Triple filter (Deodorizing)	X	X
	Plasma air purifier	X	X
	Allergy Safe filter	X	X
	Long-life prefilter (washable / anti-fungus)	O	O
Installation	Drain pump	X	X
	E.S.P. control*	X	X
	Electric heater	X	X
	High ceiling operation*	X	X
	Auto Elevation Grille*	X	X
Reliability	Hot start	O	O
	Self diagnosis	O	O
Convenience	Auto changeover**	O**	O**
	Auto cleaning	X	X
	Auto operation(artificial intelligence)**	O**	O**
	Auto Restart	O	O
	Child lock*	O	O
	Forced operation	O	O
	Group control*	O	O
	Sleep mode	O	O
	Timer(on/off)	O	O
	Timer(weekly)*	O	O
Individual control	Two thermistor control*	O	O
	Wired remote controller	PQRCVSL0 / PQRCVSL0QW / PREMTB001 / PREMTB01	PQRCVSL0 / PQRCVSL0QW / PREMTB001 / PREMTB01
	Premium Wired remote controller	PREMTA000 / PREMTA000A / PREMTA000B	PREMTA000 / PREMTA000A / PREMTA000B
	Simple wired remote controller	PQRCVCL0Q / PQRCVCL0QW	PQRCVCL0Q / PQRCVCL0QW
	Simple Wired remote controller(for hotel use)	PQRCHCA0Q / PQRCHCA0QW	PQRCHCA0Q / PQRCHCA0QW
Network Solution	Wireless remote controller	O	O
	General central controller (Non LGAP)	X	X
	Network Solution(LGAP)	O	O
	Simple Dry contact (outside AC 220V power source)	PQDSA / PDRYCB000	PQDSA / PDRYCB000
	2 Points Dry Contact (For setback)	PDRYCB400	PDRYCB400
	Dry contact for Thermostat	PDRYCB300	PDRYCB300
Special function kit	PI 485(for Indoor Unit)	X	X
	Zone controller	X	X
	CTI(Communication transfer interface)	X	X
	Electronic thermostat	X	X
	Telecom shelter controller	X	PQCSA001T0**
	Independent Power Module	X	X
Others	CO ₂ Sensor	X	X
	Remote temperature sensor	PQRSTA0	PQRSTA0
	Group control wire	PZCWRCG3	PZCWRCG3

Note

- * : These functions need to connect the wired remote controller.
- ** : Auto Changeover function, Telecom shelter controller can be operated when connected with Single A.
Auto Operation function can be operated when connected with Mutli F/FDX.

O : Applied X : Not applied
Accessory model name : Installed at field, ordered and purchased separately by the corresponding model name, supplied with separate package.

9. Console

9.2 Specifications

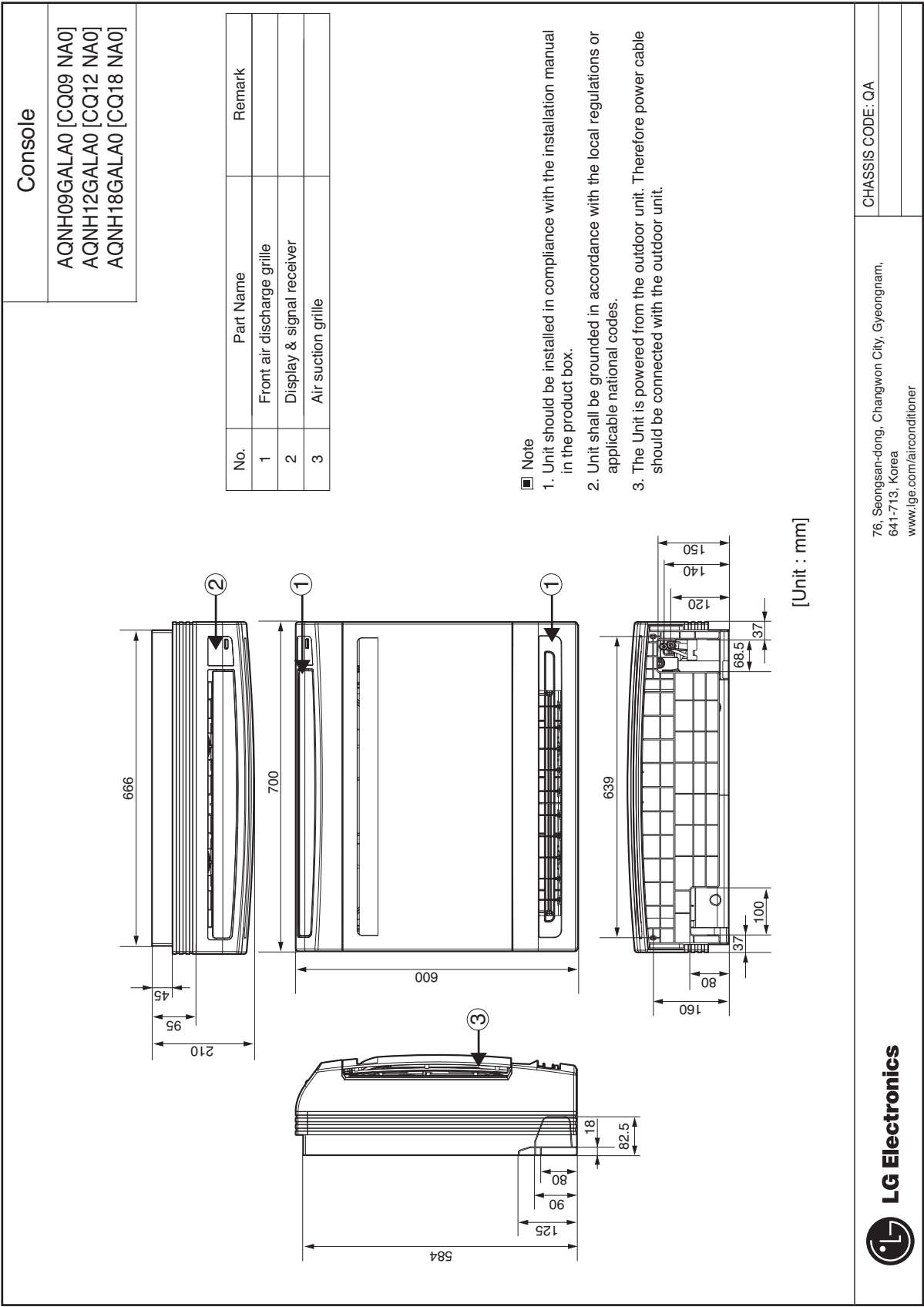
Model Name				AQNH09GALA0 [CQ09 NA0]	AQNH12GALA0 [CQ12 NA0]	AQNH18GALA0 [CQ18 NA0]
Power Supply			V, Ø, Hz	220-240, 1, 50	220-240, 1, 50	220-240, 1, 50
				220, 1, 60	220, 1, 60	220, 1, 60
Power Input	Min / Max		W	10 / 20	10 / 30	20 / 40
Running Current			A	0.6	0.6	0.7
Casing Color			-	Morning Fog	Morning Fog	Morning Fog
Dimensions	Body	W x H x D	mm	700 × 600 × 210	700 × 600 × 210	700 × 600 × 210
		W x H x D	inch	27-9/16 x 23-5/8 x 8-9/32	27-9/16 x 23-5/8 x 8-9/32	27-9/16 x 23-5/8 x 8-9/32
Net Weight	Body		kg (lbs)	14.0 (30.9)	14.0 (30.9)	14.0 (30.9)
Heat Exchanger	(Row x Column x Fins per inch) x No.		-	(2 x 19 x 19) x 1	(2 x 19 x 19) x 1	(2 x 19 x 19) x 1
	Face Area		m² (ft²)	0.20 (2.15)	0.20 (2.15)	0.20 (2.15)
Fan	Type		-	Turbo Fan	Turbo Fan	Turbo Fan
	Air Flow Rate	H / M / L	m³/min	8.5 / 6.7 / 5.0	9.0 / 6.9 / 5.2	10.1 / 8.6 / 7.2
		H / M / L	ft³/min	300 / 237 / 177	318 / 244 / 184	357 / 304 / 254
Fan Motor	Type		-	BLDC	BLDC	BLDC
	Output		W x No.	48 x 1	48 x 1	48 x 1
Sound Pressure Level		H / M / L	dB(A)	38 / 32 / 27	39 / 32 / 27	44 / 39 / 35
Sound Power Level		Max.	dB(A)	53	56	60
Piping Connections	Liquid		mm(inch)	Ø 6.35 (1/4)	Ø 6.35 (1/4)	Ø 6.35 (1/4)
	Gas		mm(inch)	Ø 9.52 (3/8)	Ø 9.52 (3/8)	Ø 12.7 (1/2)
	Drain (O.D. / I.D.)		mm	Ø 21.5 / 16.0	Ø 21.5 / 16.0	Ø 21.5 / 16.0
Safety Devices			-	Fuse		
			-	Thermal Protector for Fan Motor		
Power and Communication Cable (included Earth)			No. x mm² (AWG)	4C x 0.75 (18)	4C x 0.75 (18)	4C x 0.75 (18)

Notes :

1. Wiring cable size must comply with the applicable local and national code.
2. Due to our policy of innovation some specifications may be changed without notification.
3. Sound Level Values are measured at Anechoic chamber.
Therefore, these values can be increased owing to ambient conditions during operation.

9. Console

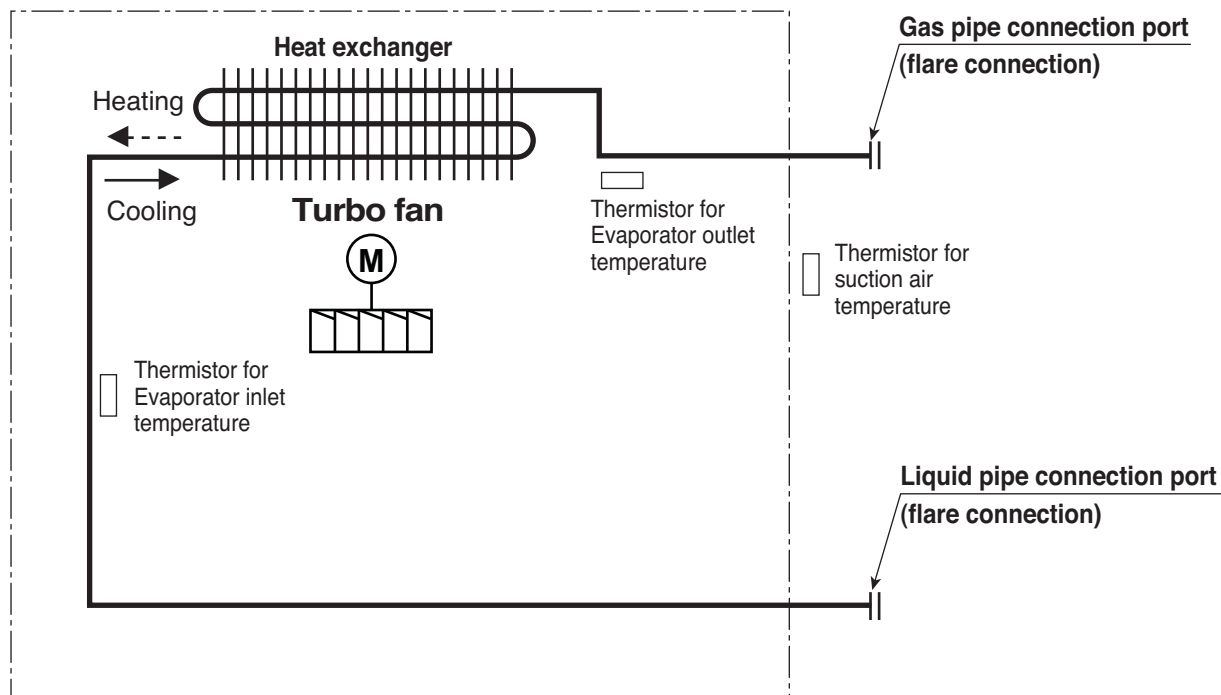
9.3 Dimensions



MULTI/SINGLE CAC Indoor unit

9. Console

9.4 Piping diagrams



Description	PCB Connector
Thermistor for suction air temperature	CN-ROOM
Thermistor for evaporator inlet temperature	CN-PIPE / IN
Thermistor for evaporator outlet temperature	CN-PIPE / OUT

■ Refrigerant pipe connection port diameters

[Unit:mm]

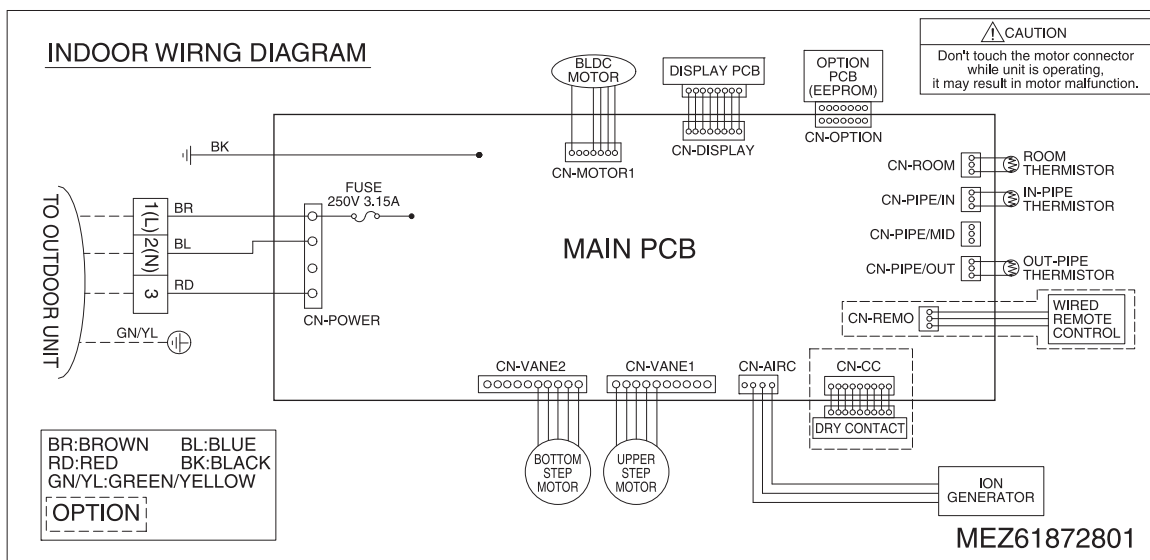
Model	Gas	Liquid
AQNH09GALA0 [CQ09 NA0]	Ø9.52	Ø6.35
AQNH12GALA0 [CQ12 NA0]		
AQNH18GALA0 [CQ18 NA0]	Ø12.7	Ø6.35

9. Console

9.5 Wiring diagrams

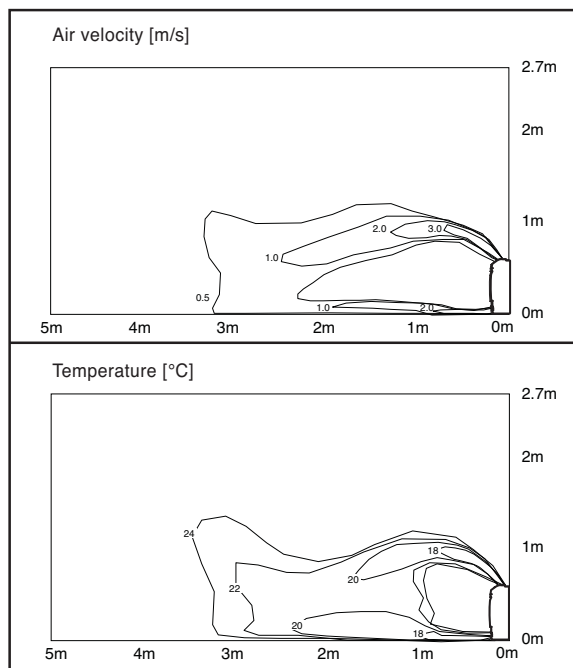
1) Wiring diagrams

Models : AQNH-AL [CQ- NA0]

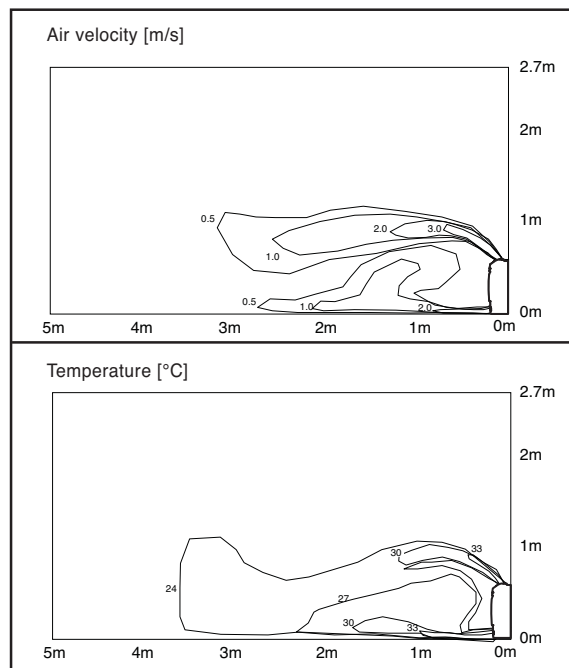


MULTI/SINGLE CAC Indoor unit**9. Console****9.6 Air flow and temperature distributions (reference data)****Model : AQNH09GALA0 [CQ09 NA0], AQNH12GALA0 [CQ12 NA0]****Cooling**

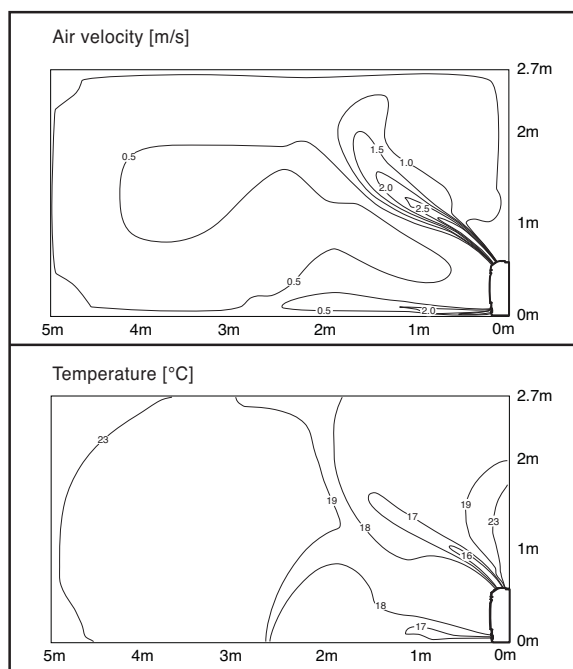
Discharge angle: 40°

**Heating**

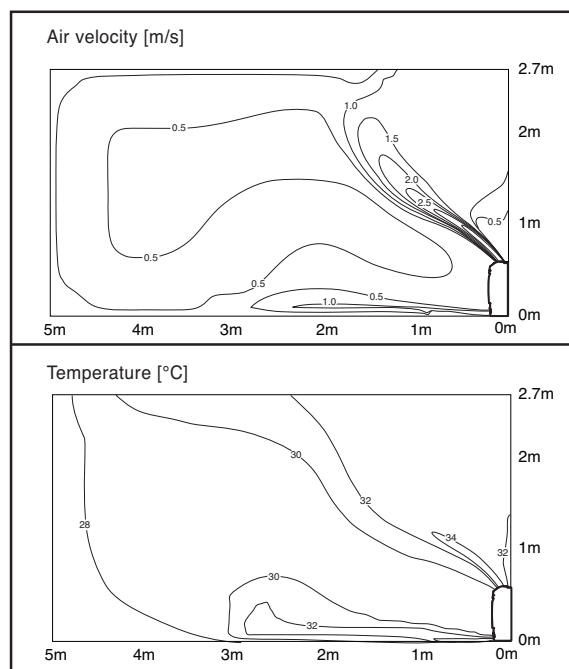
Discharge angle: 50°

**Models : AQNH18GALA0 [CQ18 NA0]****Cooling**

Discharge angle: 40°

**Heating**

Discharge angle: 50°

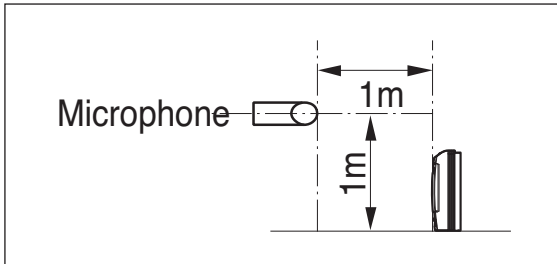


9. Console

9.7 Sound levels

9.7.1 Sound pressure level

Overall

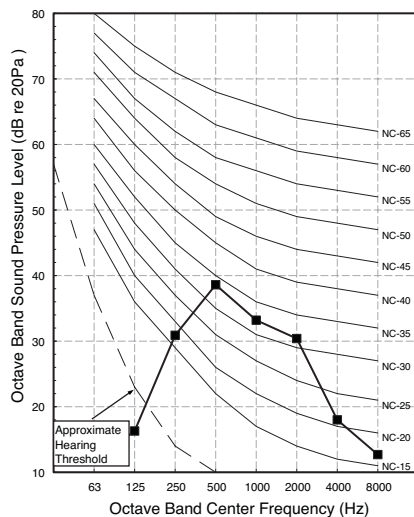


Notes:

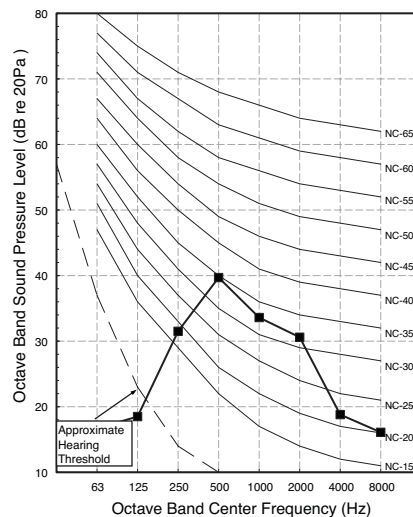
- Data is valid at nominal operation condition
- Reference acoustic pressure 0dB = 20Pa
- Sound level will vary depending on a range of factors such as the construction(acoustic absorption coefficient) of particular room in which the equipment is installed.
- The operating conditions are assumed to be standard.

Model	50Hz, 220-240V		
	Sound pressure Levels [dB(A)]		
	H	M	L
AQNH09GALA0 [CQ09 NA0]	38	32	27
AQNH12GALA0 [CQ12 NA0]	39	32	27
AQNH18GALA0 [CQ18 NA0]	44	39	35

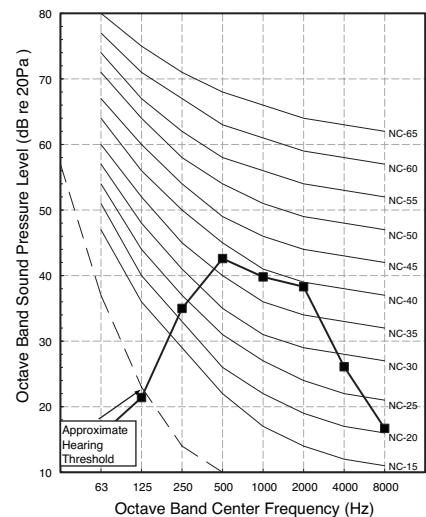
AQNH09GALA0 [CQ09 NA0]



AQNH12GALA0 [CQ12 NA0]



AQNH18GALA0 [CQ18 NA0]



9. Console

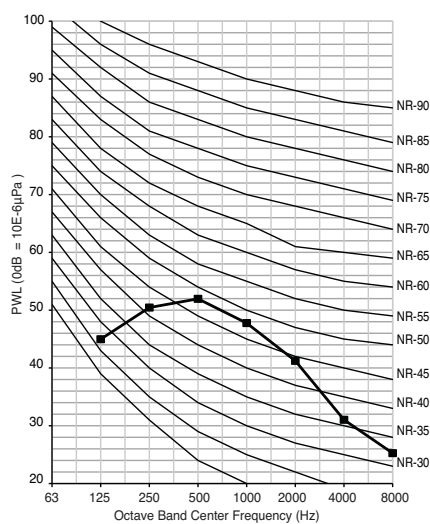
9.7.2 Sound power level

Notes:

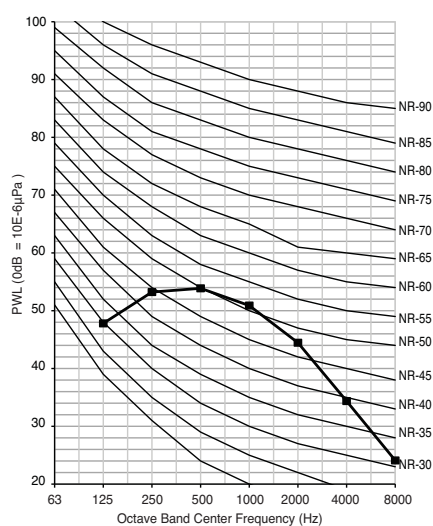
1. Reference acoustic intensity $0\text{dB} = 10\text{E-}6\mu\text{W/m}^2$
2. Sound level will vary depending on a range of factors such as the construction (acoustic absorption coefficient) of particular room in which the equipment is installed.

Model	Sound power level [dB(A)]
	H
AQNH09GALA0 [CQ09 NA0]	53
AQNH12GALA0 [CQ12 NA0]	56
AQNH18GALA0 [CQ18 NA0]	60

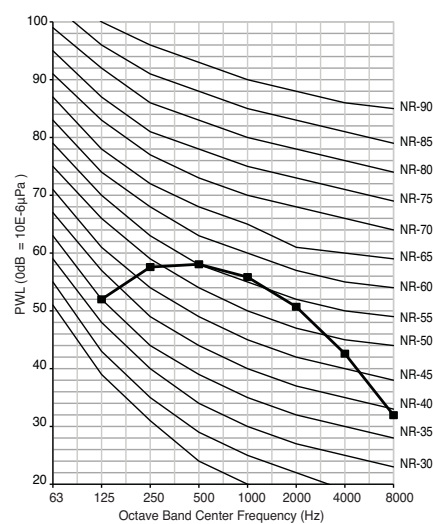
AQNH09GALA0 [CQ09 NA0]



AQNH12GALA0 [CQ12 NA0]



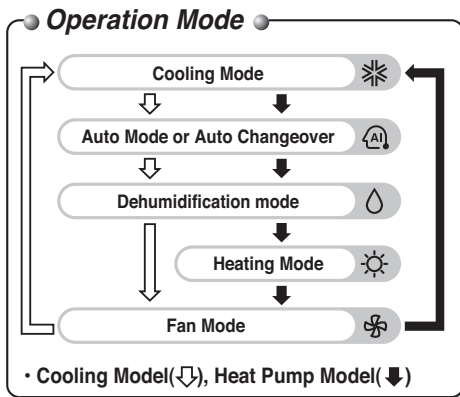
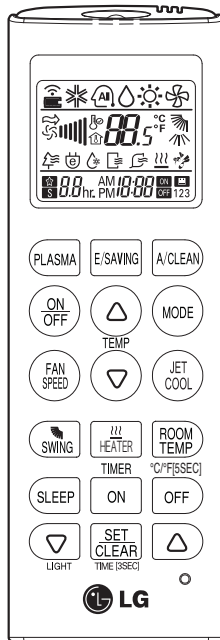
AQNH18GALA0 [CQ18 NA0]



9. Console

9.8 Controller

Wireless remote control



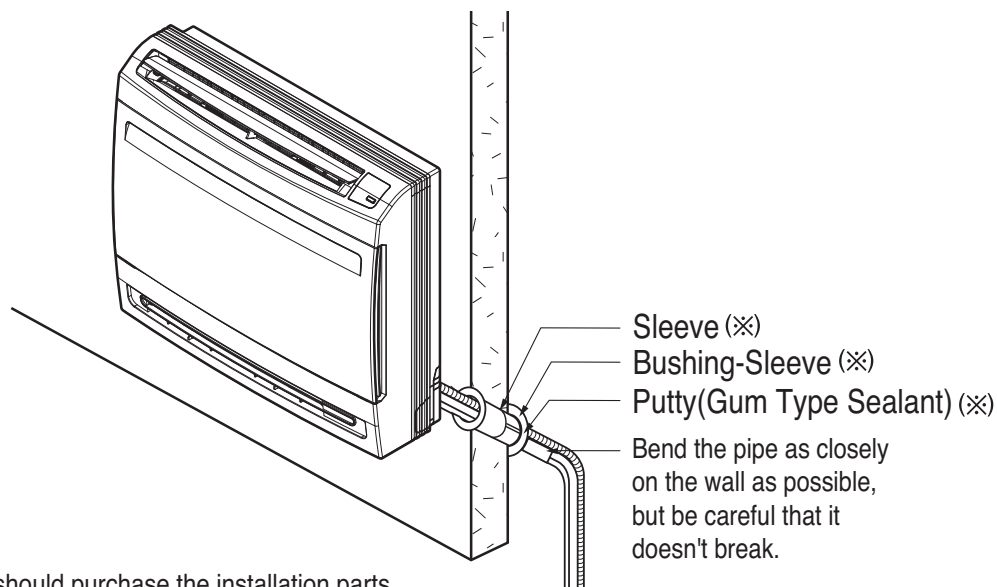
Control panel	Display screen	Description
		Plasma button* : Purifies the air by removing particles that enter the indoor unit.
		Floor heating mode button : Used to start or stop the Floor Heating mode.
		Sleep mode auto button* : Sets the sleep mode auto operation.
		Temperature adjustment buttons : Adjusts the room temperature when cooling and heating.
	-	On/Off button : Turns the power on/off.
		Indoor fan speed button : Adjusts the fan speed.
		Operation mode selection button* : Selects the operation mode. Cooling operation (❄️) / Auto operation or auto changeover (🌙/☀️) / Dehumidifying operation (💧) / Heating operation (☀️) / Air circulation (🌀)
		Jet cooling/heating button* : Warms up or cools down the indoor temperature within a short period of time.
		Air flow direction button : Adjusts the air flow direction vertically or horizontally.
		Temperature display button : Displays the room temperature.
		Timer button : Sets the current time and the start / end time.
		Functions button* : Adjusts the time and sets the special functions. 🕒: Auto clean / ⏰: Operates energy saving cooling / 🌞: Adjusts the brightness of the indoor unit display
	-	Set/clear button : Sets or cancels functions.
	-	Reset button : Initialize the air conditioner settings.

* Some functions may not be supported, depending on the model.

MULTI/SINGLE CAC Indoor unit

9. Console

9.9 Installation



※ You should purchase the installation parts.

9.9.1 Accessories

Check whether the following accessories are included with your unit.

1) Standard accessories

Name	Install plate	Drain hose	Remote controller & Holder	Allergy filter	Screw	(Other)
Quantity	1 EA	1 EA	1 set	1 EA	1 set	
Diagram					<ul style="list-style-type: none"> • Fixing Screw for R. Controller Holder • Fixing Screw for Install Plate 4 x 25mm • Wood Screw for Indoor fixation 	<ul style="list-style-type: none"> • Owner's manual • Installation manual • Washers (8 pcs.)

9. Console

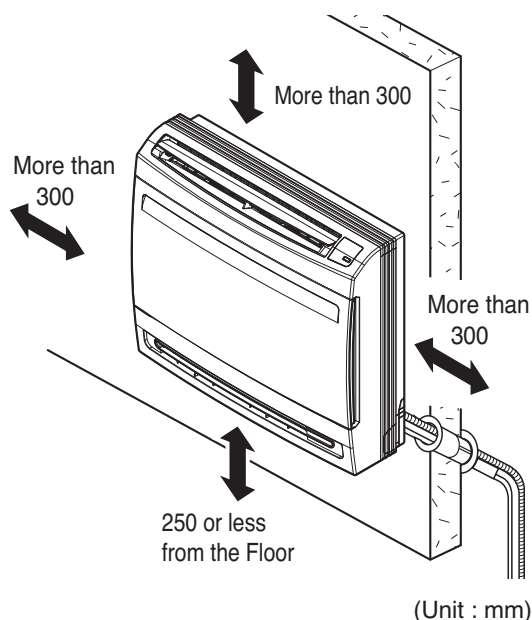
9.9.2 Selection of the best location

Install the air conditioner in the location that satisfies the following conditions.

1. There should not be any heat or steam near the unit.
2. Select a place where there are no obstacles around of the unit.
3. Make sure that condensation drainage can be conveniently routed away.
4. Do not install near a doorway.
5. Ensure that the interval between a wall and the left (or right) of the unit is more than 300mm.
6. Use a metal detector to locate studs to prevent unnecessary damage to the wall.
7. It is away from electronic ignition type fluorescent lamps as they may shorten the remote controller range.
8. Please check at least 1m away from television or radio. (It cause interference with the picture or sound)

NOTE

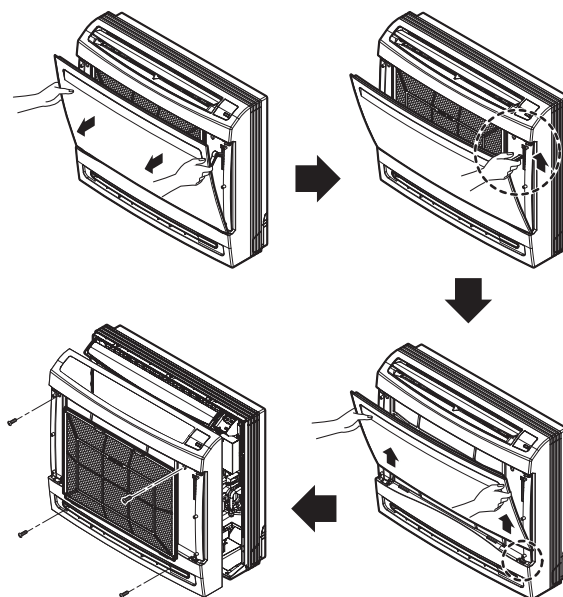
- Before choosing the installation site, please obtain user approval
- If the unit is installed below a window, check the interference of window curtain. (more than 300mm)
- Because of dust problem, If the bottom height "H" is less than 100mm, Keep the bottom vane close not to make dust from the bottom.



9.9.3 Installation

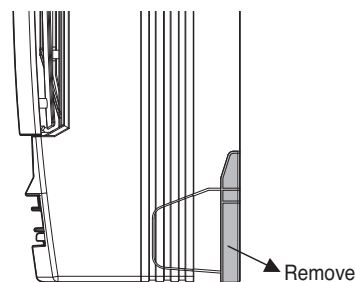
1) Preparation / Removing front panel

- ① Open the front grille by pulling forward
- ② Then pull out the link of grille from groove in front panel.
- ③ Then pull out 2 hinges of grille from grooves in front panel.
- ④ Then remove 4 screws, dismount the front panel while pulling it forward.



2) Preparation / For Moldings , Side Piping, and Concealed Installation

- ① For Moldings
 - Remove the slit portions on the Rear Panel.

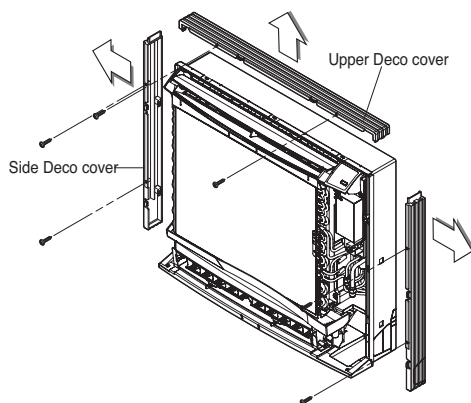


MULTI/SINGLE CAC Indoor unit

9. Console

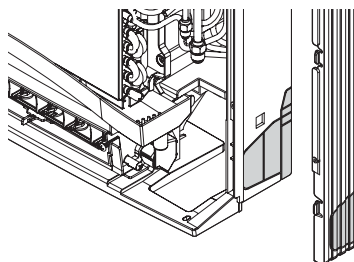
② For Concealed Installation

- Remove the 6 screws.
- Remove the Upper Deco cover.
- Remove the Side Deco covers.




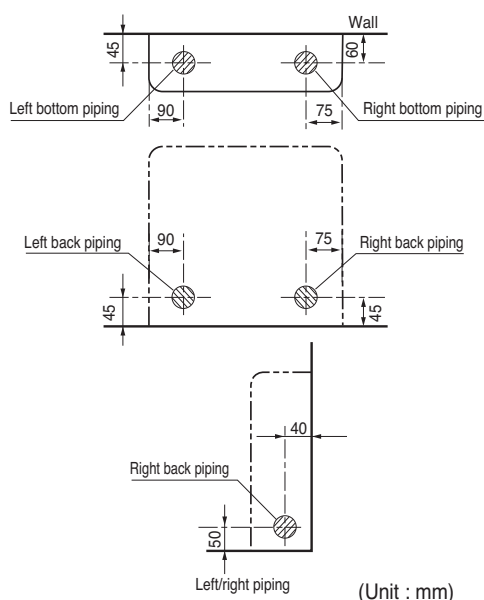
③ For Side Piping (Reference ②)

- Remove the Deco Covers.
- Remove the slit portions
- Assemble the Deco Covers.



3) Refrigerant Piping

- ① The location of hole is different depending on which side of the pipe is taken out.
- ② Drill a hole (Ø70mm) in the point indicated by  symbol in the illustration as below

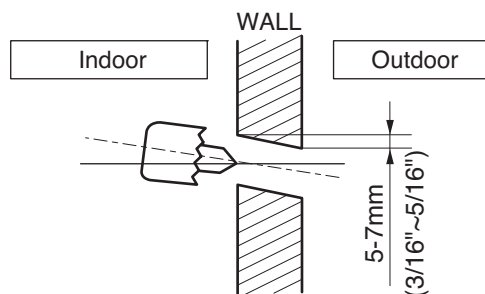


NOTE

The suggested shortage pipe length is 5m, in order to avoid noise from the outdoor unit and vibration.

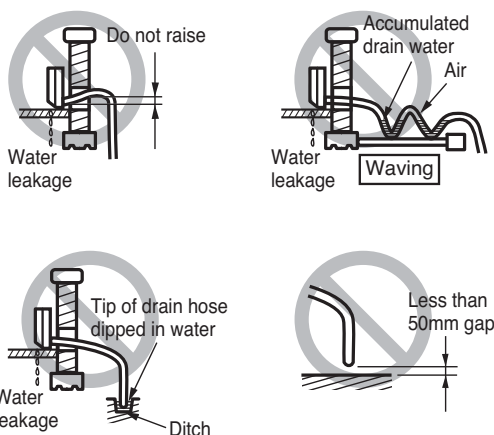
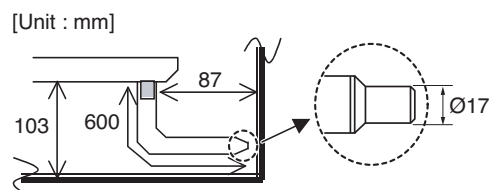
4) Drill a Hole in the wall

- Drill the piping hole with a Ø70mm hole core drill. Drill the piping hole at either the right or the left with the hole slightly slanted to the outdoor side.



5) Drain piping

- ① The Outer diameter of Drain Hose (which is supplied with indoor unit) is 17mm at connecting end, 600mm long.
- ② Use commercial rigid PVC pipe for extension.
- ③ Insulate the indoor drain pipe with 10mm or more of insulation material to prevent condensation.



NOTE

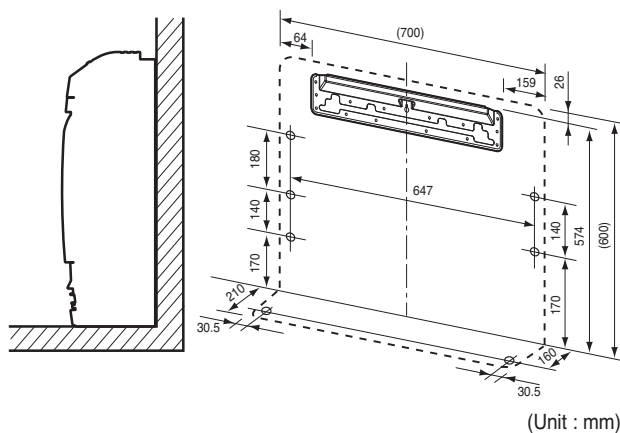
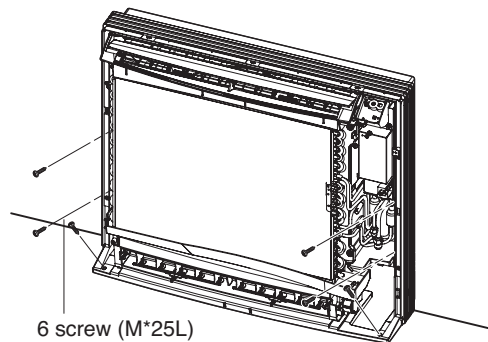
The drain pipe should be inclined downward so that water will flow smoothly without any accumulation.

9. Console

6) Installing Indoor unit

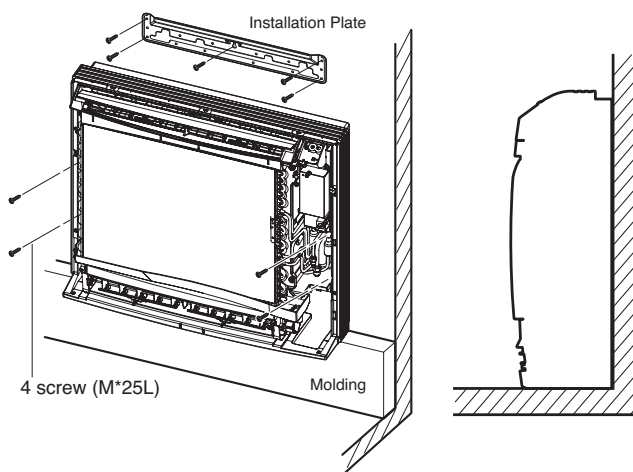
① Installation on the Floor.

- Fix up using 6 screws for floor installation.



② Installation on the Wall

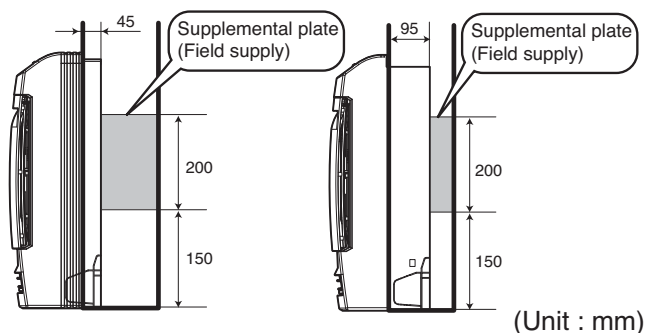
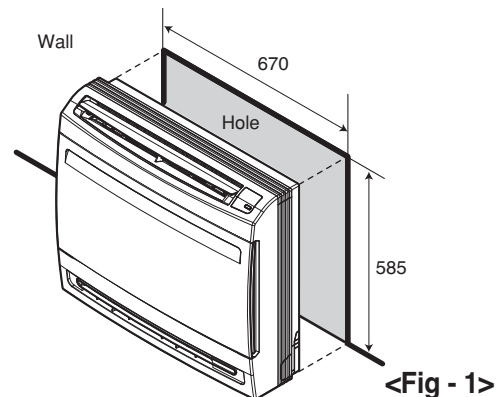
- Fix up the installation plate using 5 screws and the indoor unit using 4 screws.
- The installation plate should be fixed on a wall which can



support the weight of the indoor unit.

③ Half concealed installation.

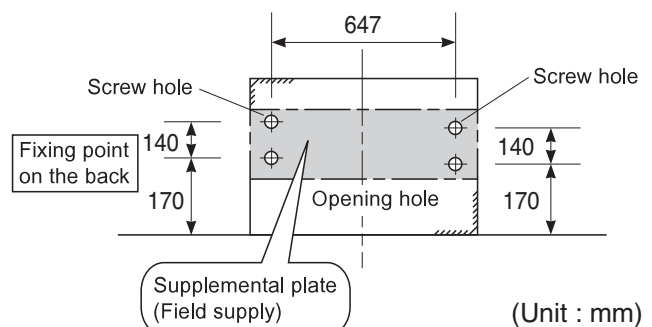
- Make a wall hole of the size shown Fig-1.



1) Normal concealed

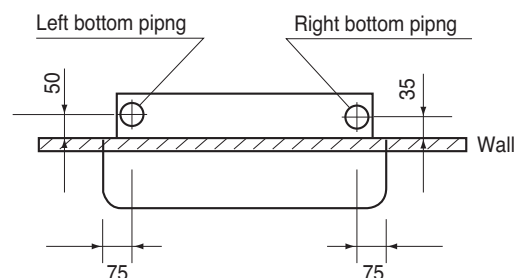
2) Deep concealed

- Installation of supplemental plate for attaching main unit
- The rear of the unit can be fixed with screws at the points shown in the Fig-2. Be sure to install the supplemental plate in accordance with the depth of the inner wall.

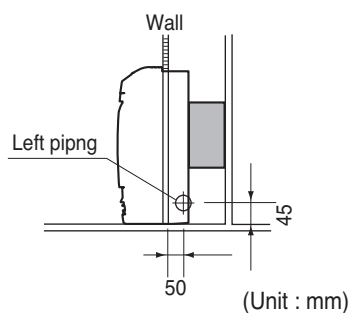


<Fig-2>

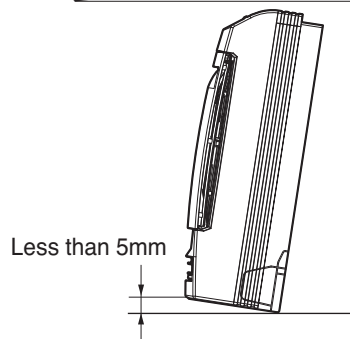
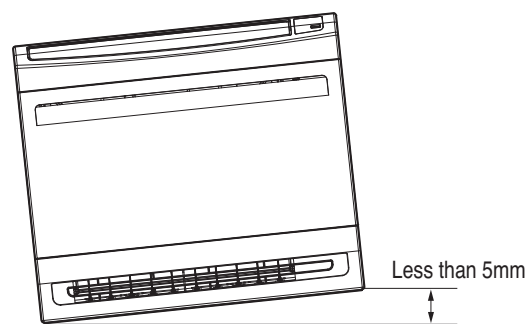
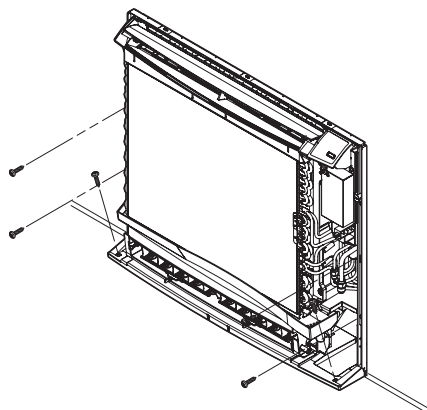
• Piping Hole



9. Console

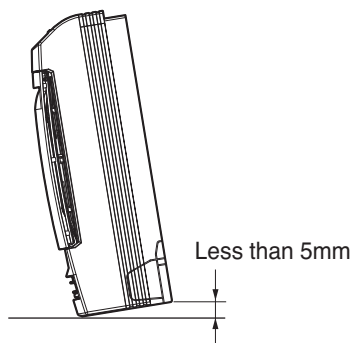
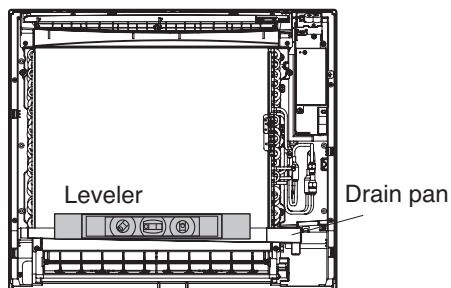


- Remove the Deco Covers and Fixing Indoor Unit
Remove the Deco Covers. (Reference ② of 2))
Insert the Indoor Unit to the Wall hole.
Secure using 6 screws. (shown the illustration)



NOTE

Check the horizon of Indoor unit with the wall. Please use the Leveler on the drain pan guide.



9. Console

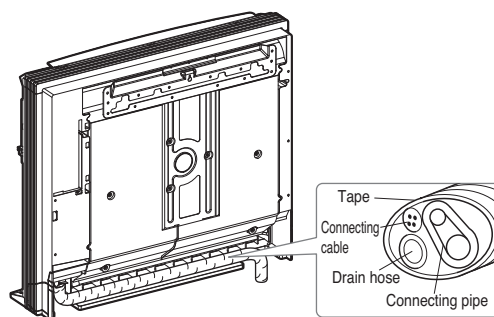
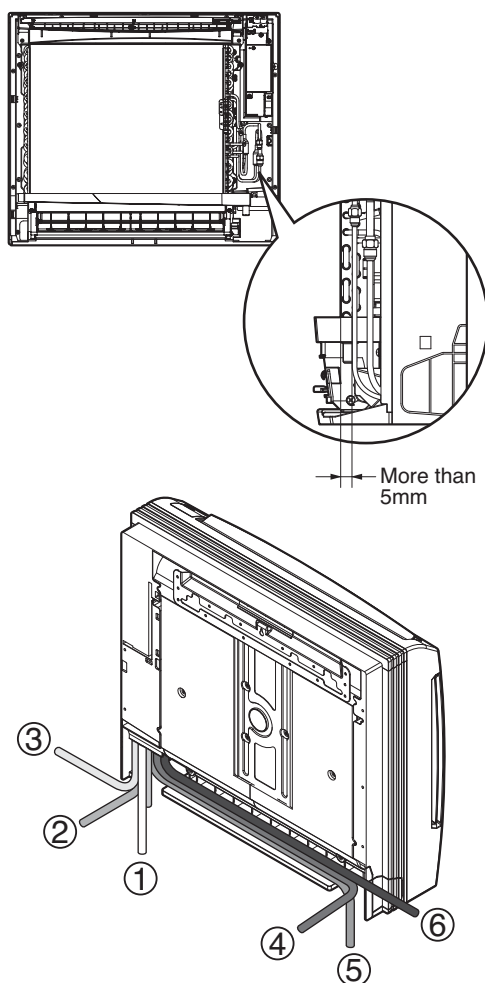
9.9.4 Connection pipes to the indoor unit

1) Refrigerant piping work

please refer "REFRIGERANT PIPING WORK".

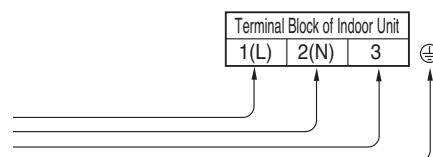
2) Piping connection

- ① When you connect the refrigerant pipe, it is easier that connect the gas pipe first.
- ② The direction of piping is available for six way as below illustration.
- ③ Remove the pillars of side covers and rear panel what you need to cut.

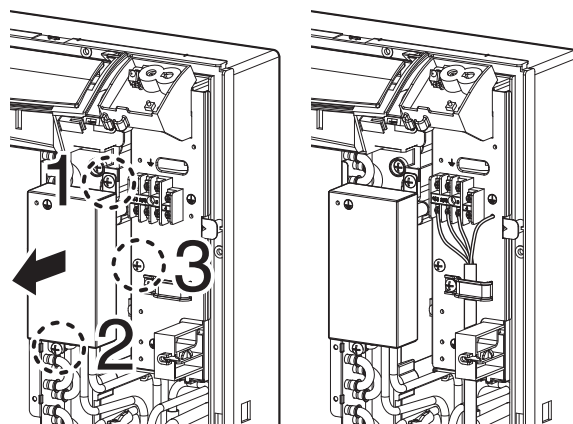


9.9.5 Wiring connection

- 1) Loosen No 1,2 screws of control box cover.
- 2) Connect the cable followed by circuit diagram.



- 3) If it is needed for indoor units setting, loosen No.3 screw and lift up the PCB.



(option: usage of bottom vanes, limit angle of top vane)

CAUTION

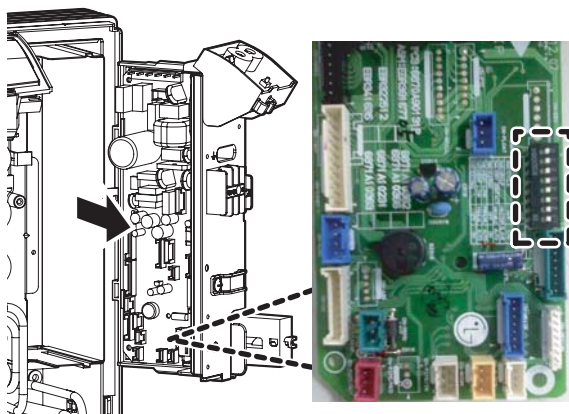
- If the drain hose is routed inside the room insulate the hose with an insulation material* so that dripping from sweating (condensation) will not damage furniture or floors.

* Foamed polyethylene or equivalent is recommended.

Dip S/W	Description	S/W OFF	S/W ON
S/W 5	Install scene	Exposed	Half Concealed
S/W 7	Vane	Top+Bottom vane	Top vane only

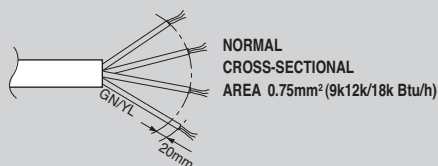
MULTI/SINGLE CAC Indoor unit

9. Console



CAUTION

The connecting cable connected to the indoor and outdoor unit should be complied with the following specifications (Rubber insulation, type H05RN-F approved by HAR or SAA).



If the supply cord is damaged, it must be replaced by a special cord or assembly available from the manufacturer of its service agent.

WARNING

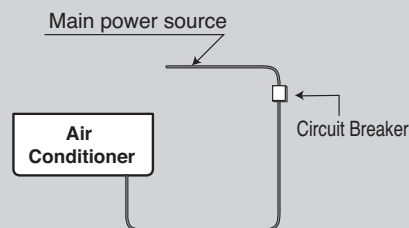
Make sure that the screws of the terminal are free from looseness.

4) Electrical wiring

- ① All wiring must comply with LOCAL REGULATIONS.
- ② Select a power source that is capable of supplying the current required by the air conditioner.
- ③ Feed the power source to the unit via a distribution switch board designed for this purpose.
- ④ The terminal screws inside the control box may be loose due to vibration during transport.
Check the screws for loose connection.
(Running the air conditioner with loose connection can overload and damage electrical components.)
- ⑤ Always ground the air conditioner with a grounding wire and connector to meet the LOCAL REGULATION.

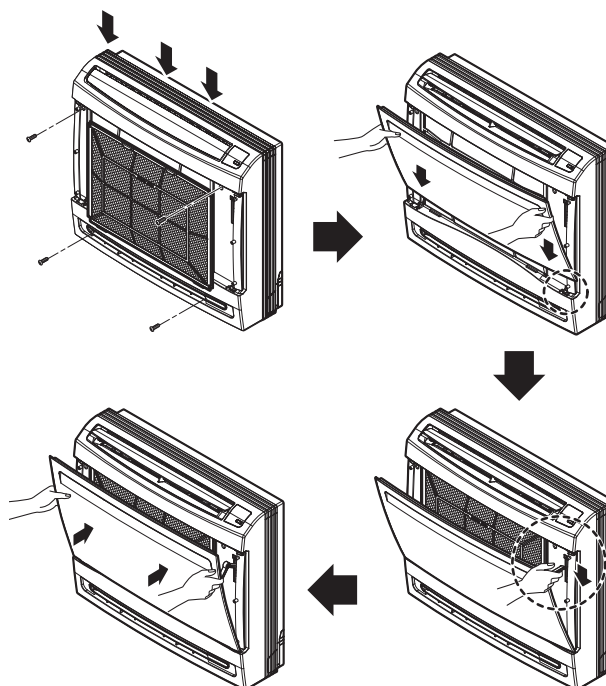
CAUTION

- The circuit diagram is not subject to change without notice.
- Be sure to connect wires according to the wiring diagram.
- Connect the wires firmly, so that not to be pulled out easily.
- Connect the wires according to color codes by referring the wiring diagram.



9.9.6 Installation front panel

- ① Fit the Front Panel onto the indoor unit and push the upper area that are marked with arrows
- ② Check the air sensor and install the 4 screws
- ③ Then assemble the front grille and put the hinges
- ④ Close the grille.



MULTI/SINGLE CAC

Indoor unit

Floor Standing

- 1. List of functions**
- 2. Specifications**
- 3. Dimensions**
- 4. Piping diagrams**
- 5. Wiring Diagrams**
- 6. Air flow and temperature distributions (reference data)**
- 7. Sound levels**
- 8. Controller**
- 9. Installation**

10. Floor Standing

10.1 List of functions

Category	Functions	APNH48GTLA0 [UP48 NT2]
Air flow	Air supply outlet	1
	Airflow direction control (left & right)	Auto
	Airflow direction control (up & down)	Auto
	Auto swing (left & right)	O
	Auto swing (up & down)	O
	Airflow steps (fan/cool/heat)	4 / 4 / 4
	Chaos wind(auto wind)	X
	Jet cool/heat	O / O
Air purifying	Swirl wind	X
	Triple filter (Deodorizing)	X
	Plasma air purifier	X
	Allergy Safe filter	X
	Long-life prefilter (washable / anti-fungus)	O
Installation	Drain pump	X
	E.S.P. control	X
	Electric heater	X
	High ceiling operation	X
	Auto Elevation Grille	X
Reliability	Hot start	O
	Self diagnosis	O
Convenience	Auto changeover	O
	Auto cleaning	X
	Auto operation(artificial intelligence)	X
	Auto Restart	O
	Child lock	O
	Forced operation	O
	Group control	X
	Sleep mode	X
	Timer(on/off)	O
	Timer(weekly)	X
Individual control	Two thermistor control	X
	Wired remote controller	X
	Premium wired remote controller	X
	Simple wired remote controller	X
	Simple Wired remote controller(for hotel use)	X
	Wireless remote controller	O
Network Solution	General central controller (Non LGAP)	X
	Network Solution(LGAP)	O
	Simple Dry contact (outside AC 220V power source)	PQDSA / PDRYCB000
	2 Points Dry Contact (For setback)	PDRYCB400
	Dry contact for Thermostat	PDRYCB300
	PI 485(for Indoor Unit)	X
Special function kit	Zone controller	X
	CTI(Communication transfer interface)	X
	Electronic thermostat	X
	Telecom shelter controller	PQCSA001T0
	Independent Power Module	X
	CO ₂ Sensor	X
Others	Remote temperature sensor	X
	Group control wire	X

Note

O : Applied X : Not applied

Accessory model name : Installed at field, ordered and purchased separately by the corresponding model name, supplied with separate package.

10. Floor Standing

10.2 Specifications

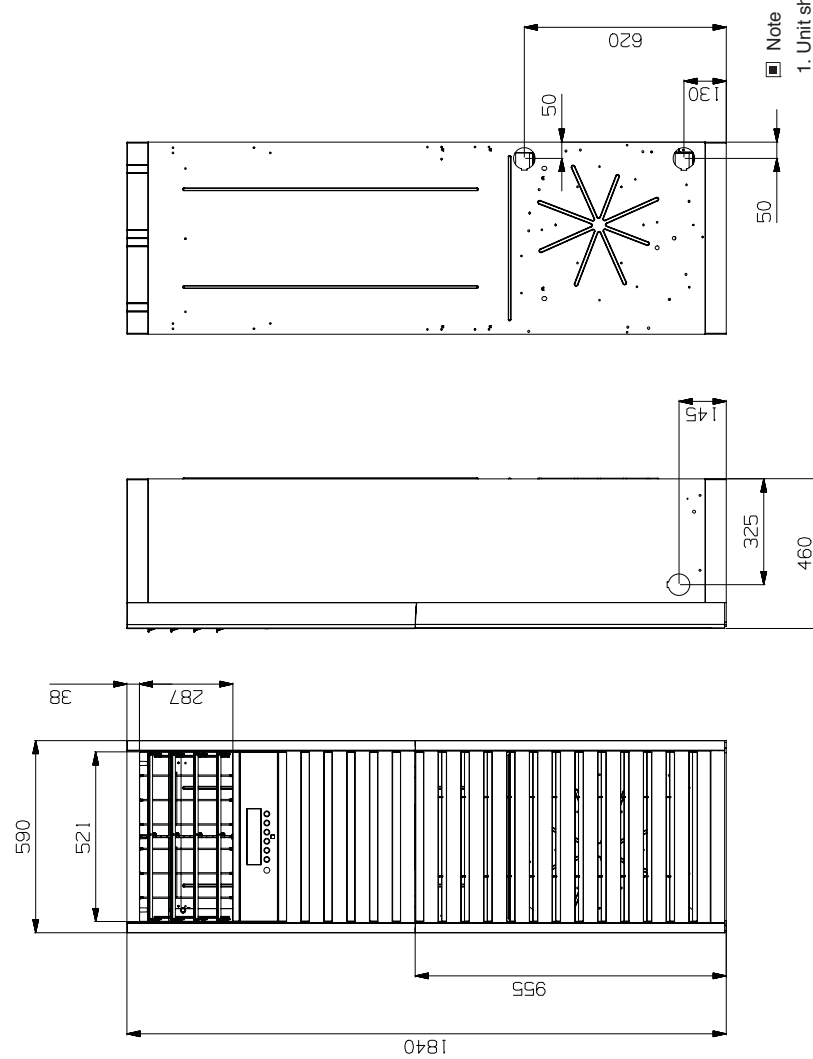

Model Name				APNH48GTLA0[UP48 NT2]
Power Supply		V, Ø, Hz	220-240, 1, 50	
Power Input		W x No.	220, 1, 60	
Running Current		A	150 x 1	
Electric Heater	Power Supply	V, Ø, Hz	0.90	
	Power Cable	No. x mm ² (AWG)	-	
	Capacity	kW	-	
		Btu/h	-	
	Power Input	W	-	
	Running Current	A	-	
Casing Color		-	-	
Dimensions	Body	W x H x D	mm	590 x 1,840 x 460
		W x H x D	inch	23-7/32 x 72-7/16 x 18-1/8
Net Weight	Body	kg (lbs)	50.0 (110.2)	
Heat Exchanger	(Row x Column x Fins per inch) x No.		-	(3 x 38 x 19) x 1
	Face Area		m ² (ft ²)	0.39 (4.17)
Fan	Type		-	Sirocco
	Air Flow Rate	SH / H / M / L	m ³ /min	36.0 / 31.0 / 27.0 / 23.0
		SH / H / M / L	ft ³ /min	1,271 / 1,095 / 954 / 812
Fan Motor	Type		-	BLDC
	Output		W x No.	224 x 1
Dehumidification Rate		l / h (pts/h)	5.0 (10.6)	
Sound Pressure Level		SH / H / M / L	dB(A)	55 / 52 / 49 / 45
Sound Power Level		Max.	dB(A)	59
Piping Connections	Liquid		mm(inch)	Ø 9.52 (3/8)
	Gas		mm(inch)	Ø 15.88 (5/8)
	Drain (O.D. / I.D.)		mm(inch)	Ø 32.0(1-1/4) / 25.0(31/32)
Safety Devices		-	Fuse	
		-	-	
Power and Communication Cable (included Earth)		No. x mm ² (AWG)	4C x 0.75 (18)	

Notes :

1. Wiring cable size must comply with the applicable local and national code.
2. Due to our policy of innovation some specifications may be changed without notification.
3. Sound Level Values are measured at Anechoic chamber.
Therefore, these values can be increased owing to ambient conditions during operation.

10. Floor Standing

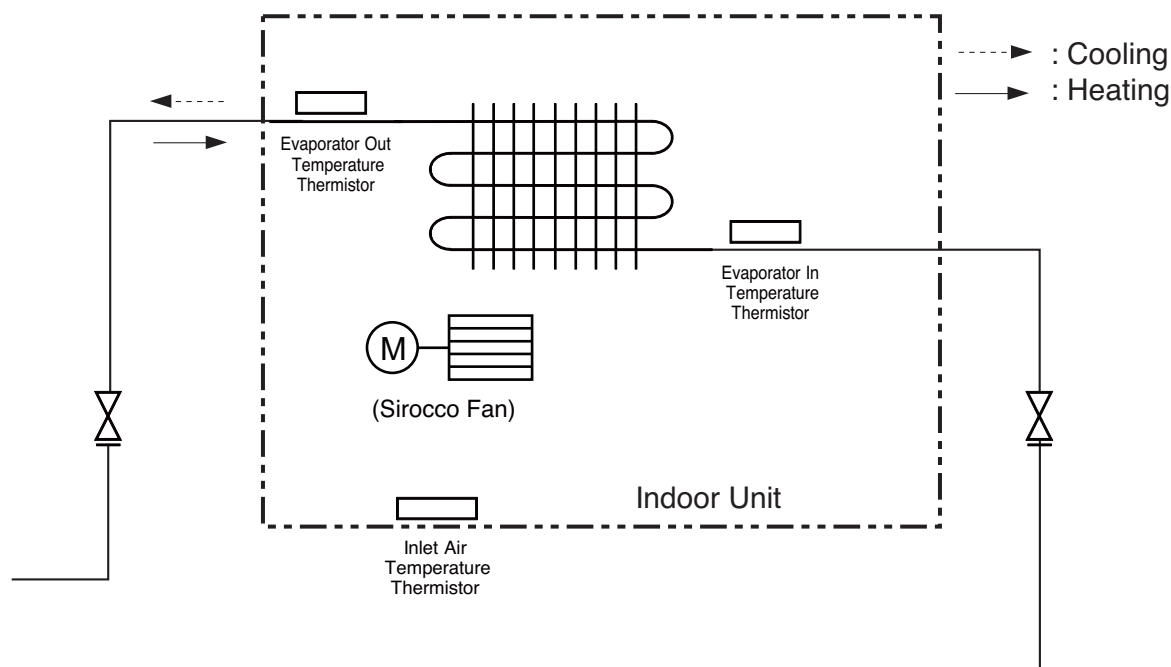
10.3 Dimensions

Floor Standing	APNH48GTLA0 [UP48 NT2]	<div><p>1840 590 521 38 287 955 460 325 145 620 130 50 50</p><p>Note</p><ol style="list-style-type: none">1. Unit should be installed in compliance with the installation manual in the product box.2. Unit should be grounded in accordance with the local regulations or applicable national codes.3. All electrical components and materials to be supplied on the site must comply with the local regulations or international codes.4. Electrical characteristics chapter should be considered for electrical work and design. Especially the capacity of power cable and circuit breaker for outdoor unit should be more than that of electrical characteristics chapter.<p>[Unit : mm]</p></div>	<div>LG Electronics</div>	CHASSIS CODE: PT2

MULTI/SINGLE CAC Indoor unit

10. Floor Standing

10.4 Piping diagrams



Description	PCB Connector
Inlet Air Temperature Thermistor	CN-ROOM
Evaporator In Temperature Thermistor	CN-EVA/TH(WH)
Evaporator Out Temperature Thermistor	CN-EVA/TH2(RD)

■ Refrigerant pipe connection port diameters

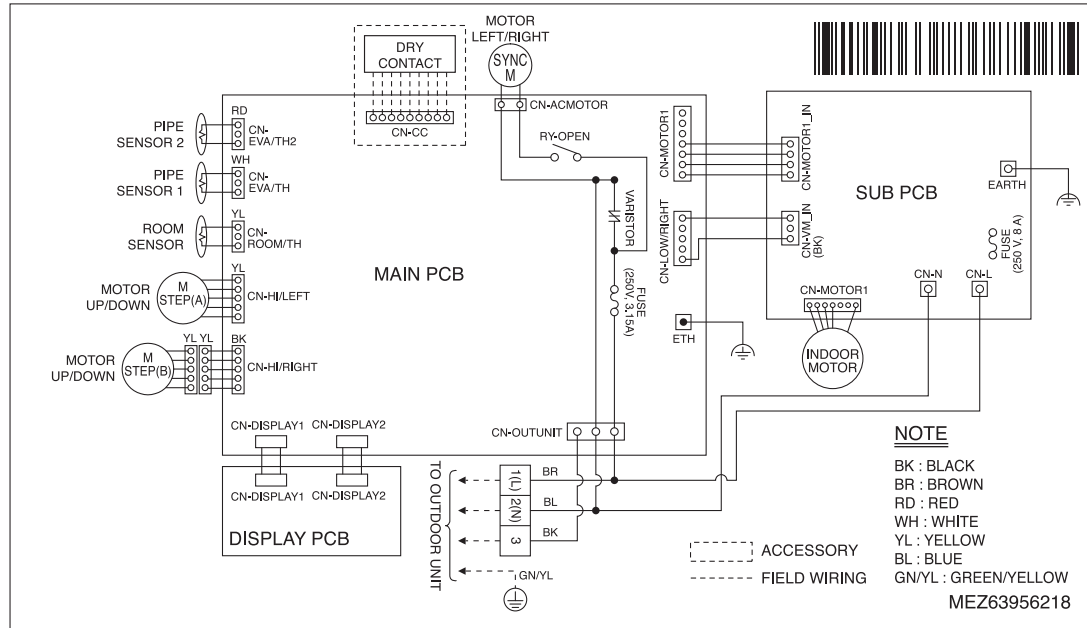
[Unit:mm]

Model	Gas	Liquid
APNH48GTLA0 [UP48 NT2]	Ø15.88	Ø9.52

10. Floor Standing

10.5 Wiring diagrams

Models : APNH48GTLA0 [UP48 NT2]



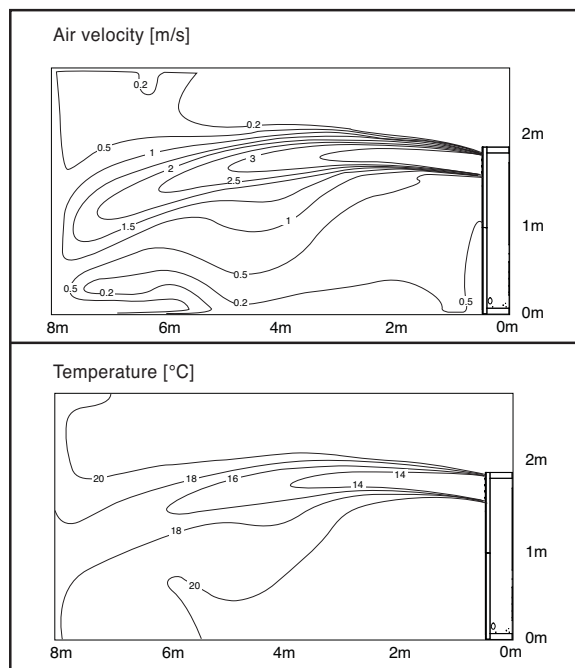
10. Floor Standing

10.6 Air flow and temperature distributions (reference data)

Model : APNH48GTLA0 [UP48 NT2]

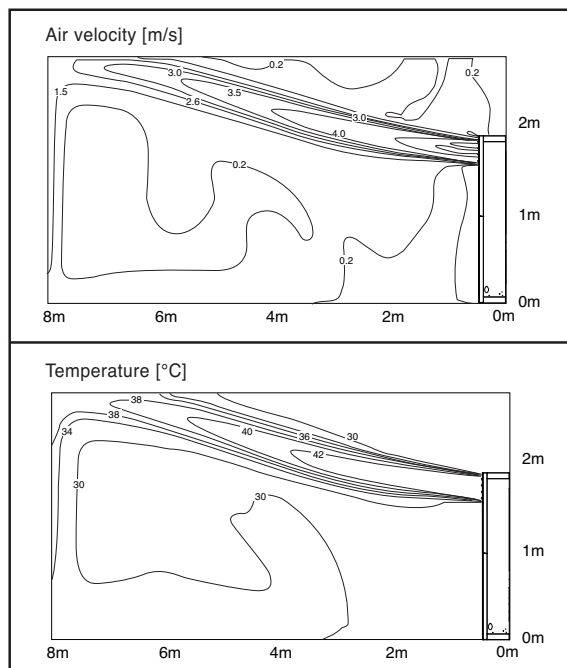
Cooling

Discharge angle: 90°



Heating

Discharge angle: 90°

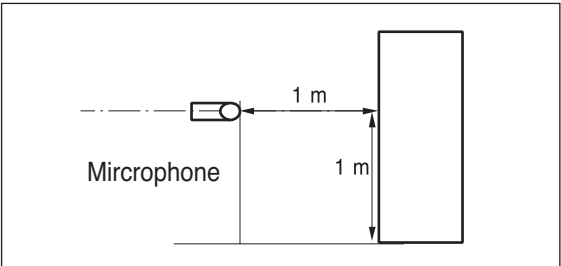


10. Floor Standing

10.7 Sound levels

10.7.1 Sound Pressure Level

Overall

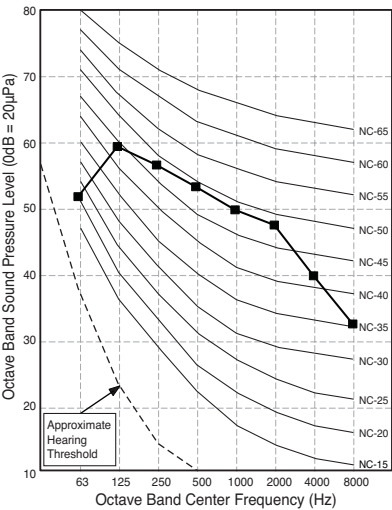


Notes:

- Data is valid at nominal operation condition
- Reference accoustic pressure 0dB = 20Pa
- Sound level will vary depending on a range of factors such as the construction(acoustic absorption coefficient) of particular room in which the equipment is installed.
- The operating conditions are assumed to be standard.

Model	Sound Levels dB(A)			
	SH	H	M	L
APNH48GTLA0 [UP48 NT2]	55	52	49	45

APNH48GTLA0 [UP48 NT2]

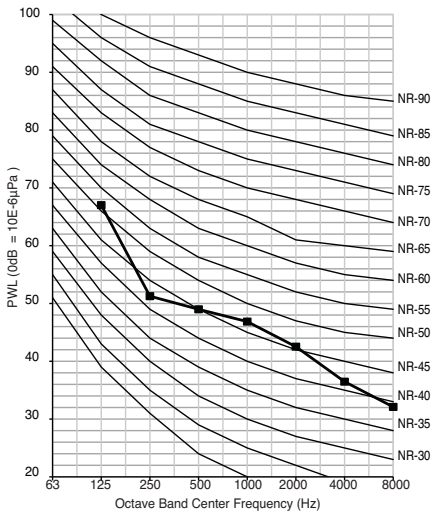


10.7.2 Sound power level

- Notes:
- 1. Reference acoustic intensity 0dB = 10E-6μW/m²
 - 2. Sound level will vary depending on a range of factors such as the construction (acoustic absorption coefficient) of particular room in which the equipment in installed.

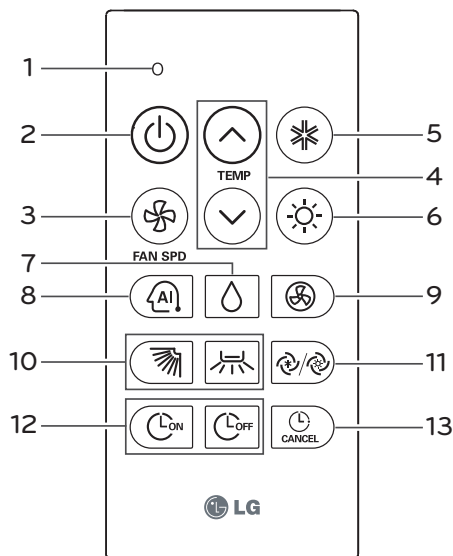
Model	Sound power level [dB(A)]
	H
APNH48GTLA0 [UP48 NT2]	59

APNH48GTLA0 [UP48 NT2]



10. Floor Standing

10.8 Controller



No.	Control panel	Description
1	○	Remote controller operation lamp
2		Power ON/OFF button : Operation will start when this button is pressed, and stop when the button is pressed again.
3	 FAN SPD	Indoor fan speed button : To select the desired fan speed.
4		Temperature setting button
5		Cooling button
6		Heating button
7		Dehumidification button : Can effectively remove humidity when at the time of rainy season or high humidity.
8		Auto operation button : Auto heating and cooling operation is conducted in accordance with setting temperature.
9		Fan mode button
10		Air flow direction button(Up/down, Left/right) : Adjust air flow direction vertically or horizontally.
11		Power cooling/heating mode button : Powerful cooling/heating are performed within short time
12		ON/OFF timer setting button : Set the time of starting or stopping
13		Timer cancel button

Handling the remote control

- Aim at the signal receptor on the floor standing type air conditioner when operating.
- The remote control signal can be received at a distance of up to about 7 meters.
- Be sure that there are no obstructions between the remote control and the signal receptor.
- Do not drop or throw the remote control.
- Do not place the remote control in a location exposed to direct sunlight, or next to a heating unit, or other heat source.

MULTI/SINGLE CAC Indoor unit

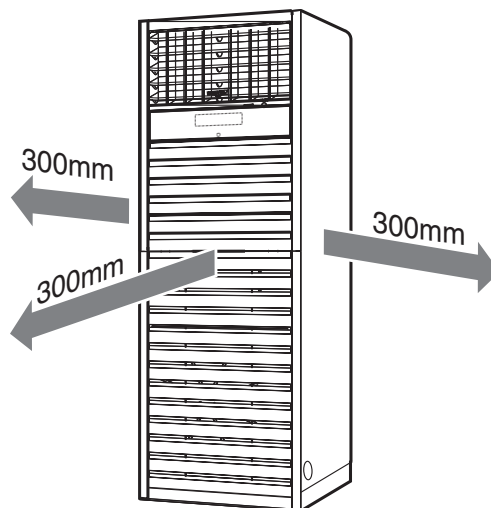
10. Floor Standing

10.9 Installation

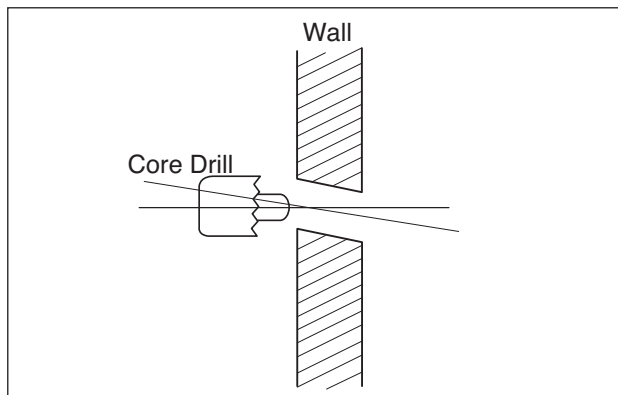
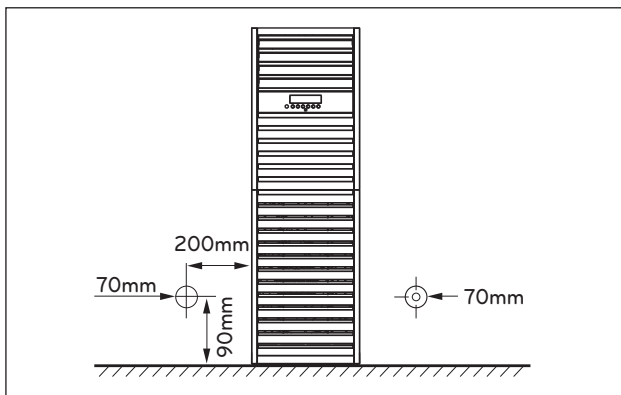
- Please read this instruction sheet completely before installing the product.
- When the power cord is damaged, replacement work shall be performed by authorized personnel only.
- Installation work must be performed in accordance with the national wiring standards by authorized personnel only.

10.9.1 Select the best location

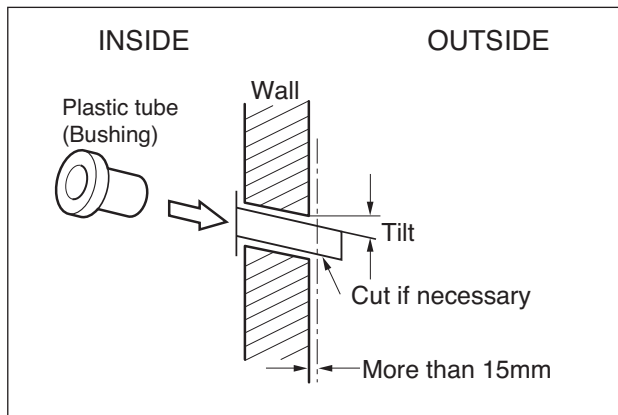
- There should not be any heat source or steam near the unit.
- There should not be any obstacles to prevent the air circulation.
- A place where air circulation in the room will be good.
- A place where drainage can be easily obtained.
- A place where noise prevention is taken into consideration.
- Do not install the unit near the door way.
- Ensure the spaces indicated by arrows from the wall, ceiling, or other obstacles.
- The indoor unit must keep the maintenance space.



10.9.2 Installation of Indoor unit

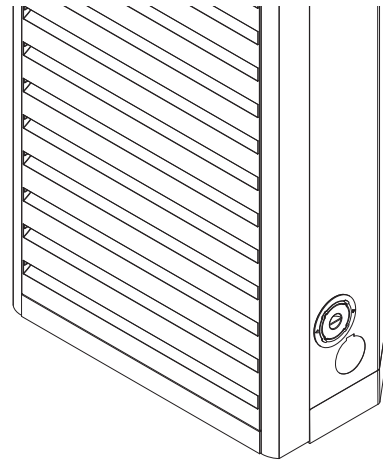


1. The mounting floor should be strong and solid enough to prevent it from vibration.
2. Drill the piping hole with 70mm diameter hole-core drill at either the right or the left of indoor unit. The hole should be slightly slant to the outdoor side.
3. Insert the plastic tube through the hole.
4. Cut the extruded outside part of the plastic tube, if necessary.



10. Floor Standing

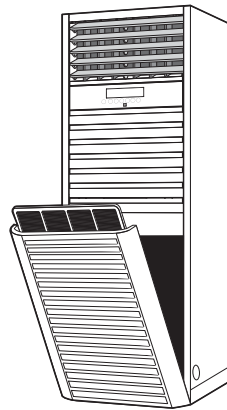
- When using knock-out hole to route the piping, insert the plastic cover in knock-out hole in order to prevent the piping from damaged by sharp edge of the hole.



10.9.3 Installation of Indoor unit

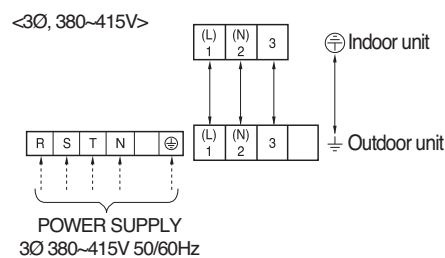
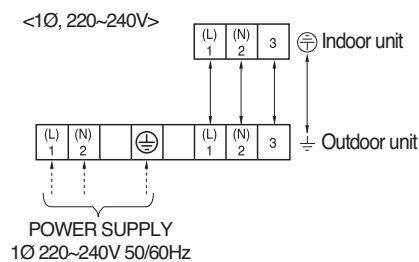
* The inside and outside connecting cable can be connected after opening the inlet grille.

1. Open the inlet grille manually.



2. Open the control cover with Driver(⊕)

3. Connect the cables to the connector in the control box.




4. Secure the control cover to the original position with the screw.
5. Close the inlet grille.

MULTI/SINGLE CAC

Indoor unit

Ceiling concealed duct - High static pressure

- 1. List of functions**
- 2. Specifications**
- 3. Dimensions**
- 4. Piping diagrams**
- 5. Wiring Diagrams**
- 6. External pressure setting for EZ Tuning**
- 7. Sound levels**
- 8. Controller**
- 9. Installation**

11. Ceiling concealed duct - High static pressure

11.1 List of functions

Category	Functions	ABNW70GB9A0 [UB70 N94] ABNW85GB9A0 [UB85 N94]
Air flow	Air supply outlet	1
	Airflow direction control (left & right)	X
	Airflow direction control (up & down)	X
	Auto swing (left & right)	X
	Auto swing (up & down)	X
	Airflow steps (fan/cool/heat)	3 / 3 / 3
	Chaos wind(auto wind)	X
	Jet cool/heat	X / X
	Swirl wind	X
Air purifying	Triple filter (Deodorizing)	X
	Plasma air purifier	X
	Allergy Safe filter	X
	Long-life prefilter (washable / anti-fungus)	O
Installation	Drain pump	PBDP9
	E.S.P. control*	O
	Electric heater	X
	High ceiling operation*	X
	Auto Elevation Grille*	X
Reliability	Hot start	O
	Self diagnosis	O
Convenience	Auto changeover	O
	Auto cleaning	X
	Auto operation(artificial intelligence)	X
	Auto Restart	O
	Child lock*	O
	Forced operation	X
	Group control*	O
	Sleep mode	O
	Timer(on/off)	O
	Timer(weekly)*	O
Individual control	Two thermistor control*	O
	Wired remote controller	PQRCVSL0 / PQRCVSL0QW** / PREMTB001 / PREMTBB01
	Premium Wired remote controller	PREMTA000 / PREMTA000A / PREMTA000B
	Simple wired remote controller	PQRCVCL0Q / PQRCVCL0QW
	Simple Wired remote controller(for hotel use)	PQRCHCA0Q / PQRCHCA0QW
Network Solution	Wireless remote controller*	PQWRHQ0FDB
	General central controller (Non LGAP)	X
	Network Solution(LGAP)	O
	Simple Dry contact (outside AC 220V power source)	PQDSA / PDRYCB000
	2 Points Dry Contact (For setback)	PDRYCB400
	Dry contact for Thermostat	PDRYCB300
Special function kit	PI 485(for Indoor Unit)	X
	Zone controller	ABZCA
	CTI(Communication transfer interface)	X
	Electronic thermostat	X
	Telecom shelter controller	PQCSA001T0
	Independent Power Module	X
Others	CO ₂ Sensor	X
	Remote temperature sensor	PQRSTA0
	Group control wire	PZCWRCG3

Note

- * : These functions need to connect the wired remote controller.
- ** : It is included by default when the product is manufactured.

O : Applied

X : Not applied

Accessory model name : Installed at field, ordered and purchased separately by the corresponding model name, supplied with separate package

11. Ceiling concealed duct - High static pressure

11.2 Specifications

Model Name				ABNW70GB9A0 [UB70 N94]		ABNW85GB9A0 [UB85 N94]			
Power Supply			V, Ø, Hz	220-240, 1, 50		220-240, 1, 50			
Power Input			W	-		-			
Running Current			A	3.00		3.00			
Dimensions	Body	W x H x D	mm	1,563 x 458 x 791		1,563 x 458 x 791			
		W x H x D	inch	61-17/32 x 18-1/32 x 31-5/32		61-17/32 x 18-1/32 x 31-5/32			
Net Weight	Body		kg (lbs)	90 (198)		90(198)			
Heat Exchanger	(Row x Column x Fins per inch) x No.		-	(3 x 20x 18) x 1		(3 x 20x 18) x 1			
	Face Area		m² (ft²)	0.58 (6.28)		0.58 (6.28)			
Fan	Type		-	Sirocco Fan		Sirocco Fan			
	Air Flow Rate	High-static Mode	H / M / L	m³/min	70.0 / 65.0 / 60.0		80.0 / 72.0 / 64.0		
		(Factory Set)		H / M / L	ft³/min	2,472 / 2,542 / 2,260		2,825 / 2,542 / 2,260	
			External Static Pressure	Pa (mmAq)	127(13)		127 (13)		
Fan Motor	Type		-	BLDC		BLDC			
	Output		W x No.	375 x 2		375 x 2			
Dehumidification Rate			l / h (pts/h)	1.81 (4.2)		5.14 (11.9)			
Sound Pressure Level		H / M / L	dB(A)	43 / 41 / 40		43 / 41 / 40			
Sound Power Level		Max.	dB(A)	61		61			
Piping Connections	Liquid		mm(inch)	Ø 9.52 (1/4)		Ø 12.7 (1/2)			
	Gas		mm(inch)	Ø 25.4 (1/1)		Ø 22.2 (7/8)			
	Drain (O.D. / I.D.)		mm(inch)	Ø 32.0 / 25.0		Ø 32.0 / 25.0			
Safety Devices			-	Fuse		Fuse			
			-	Thermal Protector for Fan Motor		Thermal Protector for Fan Motor			
Power and Communication Cable (included Earth)			No. x mm² (AWG)	4C x 1.0 (16)		4C x 1.0 (16)			

Notes :

1. Wiring cable size must comply with the applicable local and national code.
2. Due to our policy of innovation some specifications may be changed without notification.
3. Sound Level Values are measured at Anechoic chamber.
Therefore, these values can be increased owing to ambient conditions during operation.
4. These models are connectable only with Single CAC outdoor units.
5. Sound pressure, sound power is measured at the 6mmAq.

11. Ceiling concealed duct - High static pressure

11.3 Dimensions

[Unit: mm]

B9 Chassis

ABNW70GB9A0 [UB70 N94]
ABNW85GB9A0 [UB85 N94]

VIEW "A"

Note

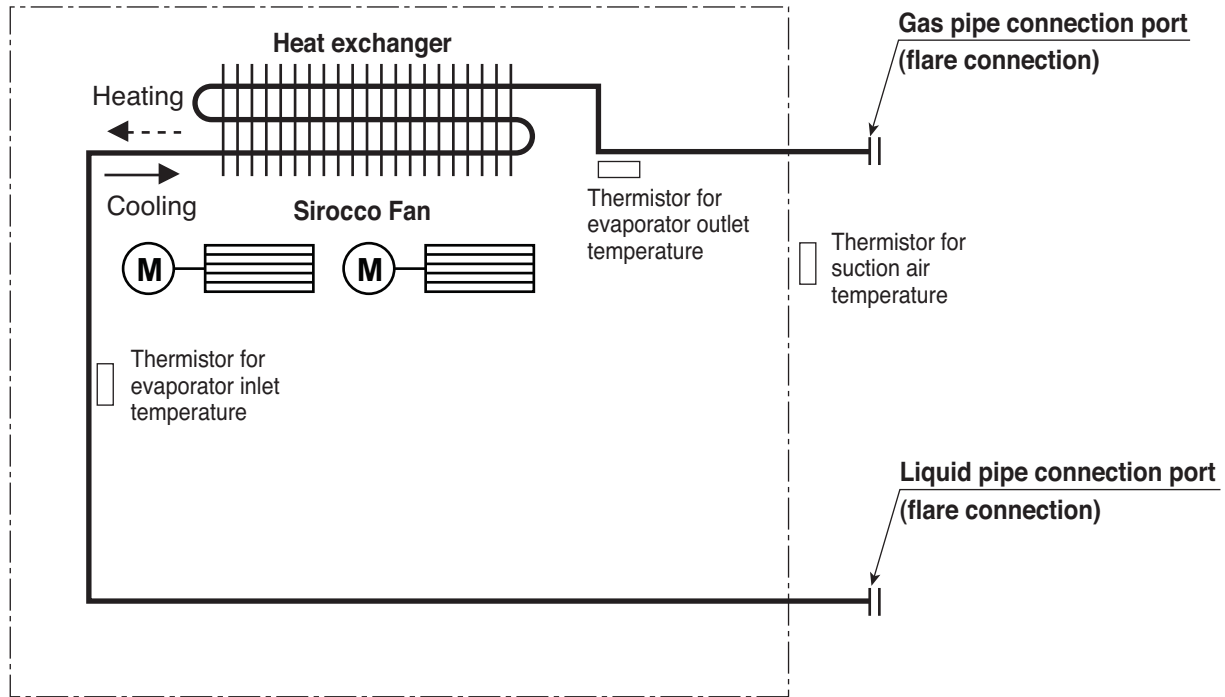
1. Unit should be installed in compliance with the installation manual in the product box.
2. Unit should be grounded in accordance with the local regulations or applicable national codes.
3. All electrical components and materials to be supplied from the site must comply with the local regulations or international codes.

No.	Part Name	Description
6	Drain pipe connection	-
5	Liquid pipe connection	-
4	Gas pipe connection	-
3	Control Box	-
2	Air discharge flange	-
1	Air suction flange	-

11. Ceiling concealed duct - High static pressure

11.4 Piping diagrams

Model : ABNW70GB9A0 [UB70 N94], ABNW85GB9A0 [UB85 N94]



Description	PCB Connector
Thermistor for suction air temperature	CN-ROOM
Thermistor for evaporator inlet temperature	CN-PIPE / IN
Thermistor for evaporator outlet temperature	CN-PIPE / OUT

■ Refrigerant pipe connection port diameters

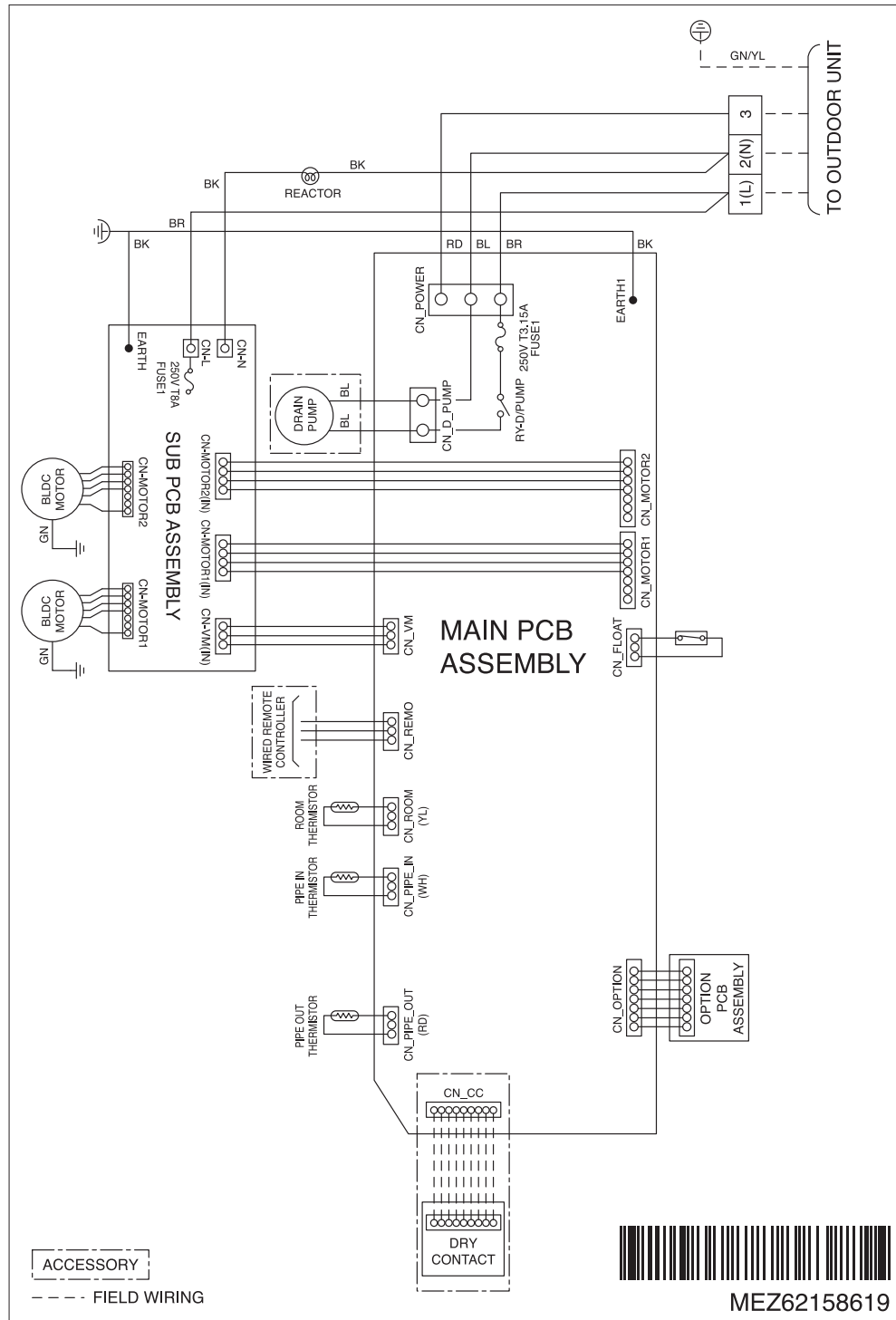
[Unit : mm]

Model	Gas	Liquid
ABNW70GB9A0 [UB70 N94]	Ø25.4	Ø9.52
ABNW85GB9A0 [UB85 N94]	Ø22.2	Ø12.7

11. Ceiling concealed duct - High static pressure

11.5 Wiring diagrams

Model : ABNW70GB9A0 [UB70 N94], ABNW85GB9A0 [UB85 N94]



11. Ceiling concealed duct - High static pressure

11.6 External pressure setting for

 (E.S.P. Control) provide required constant air volume irrespective of E.S.P. charge.

(1) Open the rear cover of the wired remote-controller to set the mode.

(2) Select one of three selectable modes as follows.

■ Without zone system

1. Position V-H, F-H:
 - This position sets the maximum E.S.P. as a default set.
2. Position V-L:
 - This position sets the minimum E.S.P. as a default set.

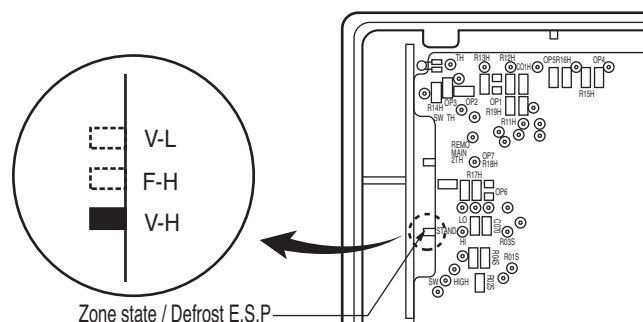
■ With zone system

1. Position V-H:
 - Maximum E.S.P. setting & Fan speed is varied according to the state of dampers by micom.
2. Position F-H:
 - Maximum E.S.P. setting & Fan speed doesn't vary according to the opening & closing of dampers.
3. Position V-L:
 - Minimum E.S.P. setting & Fan speed is varied according to the state of dampers by micom.

*Maximum: 18/24k - 8mmAq

Minimum: All-0mmAq

(3) Move the slide switch to set position.



(4) Close the rear cover and check if it works normally.

⚠ CAUTION

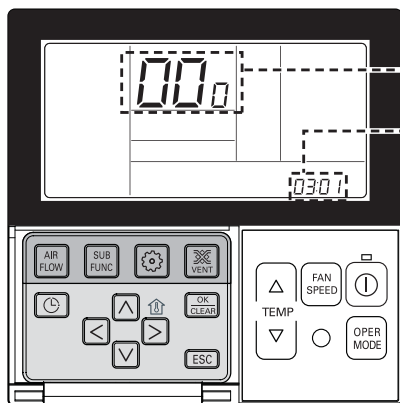
- Select the position after checking duct work and E.S.P. of the unit.
- Manufactured in the position F-H.

11. Ceiling concealed duct - High static pressure

How to Set E.S.P. on the remote controller?

This is the function that decides the strength of the wind for each wind level and because this function is to make the installation easier.

- If you set ESP incorrectly, the air conditioner may malfunction.
- This setting must be carried out by a certificated-technician.



<p>1 If pressing button long for 3 seconds, it enters into remote controller setter setup mode. - If pressing once shortly, it enters into user setup mode. Please press more than 3 seconds for sure.</p>	<p>4 Move to ESP value setting by pressing button. (It is 000 when delivering from the warehouse.)</p> <p>0301 000</p>
<p>2 If entering into ESP setup mode by using button, it indicates as the picture below.</p>	<p>5 Press button to setup ESP value. (It is possible to setup ESP value from 1 to 255, and 1 is the smallest and 255 is the biggest.)</p>
<p>3 Select ESP fan step by pressing button. (01: very low, 02: low, 03: medium, 04: high, 05: very high)</p> <p>0301</p>	<p>6 Select ESP fan step again by using button and setup ESP value, as No. 4 and 5, that corresponds each wind flow</p> <p>7 Press button to save.</p> <p>8 Press button to exit. * After setup, it automatically gets out of setup mode if there is no button input for 25 seconds. * When exiting without pressing set button, the manipulated value is not reflected.</p>

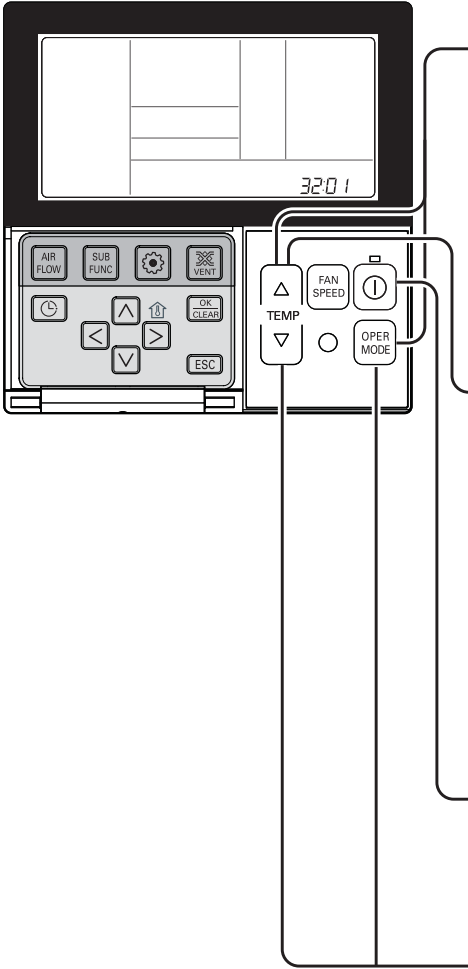
- When setting ESP value on the product without very weak wind or power wind function, it may not work.
- Please be careful not to change the ESP value for each fan step.
- It does not work to setup ESP value for very low/power step for some products.
- ESP value is available for specific range belongs to the product.



MULTI/SINGLE CAC Indoor unit**11. Ceiling concealed duct - High static pressure****Installer Setting - Static Pressure Step Setting**


This function is applied to only duct type. Setting this in other cases will cause malfunction.

This function is only available on some products.

This is the function that static pressure of the product is divided in 11 steps for setting.




1 When pressing the  button and  button simultaneously for more than 3 seconds, the system will be entered into the installer setting mode.

- After entering into the installer setting mode, select the static pressure step setting code value by pressing the  button.


* Static pressure step setting code value : 32



2 Select the desired setting value with the temperature up(s), down(t) button.



Function Code Existing condition

00: use static pressure (code 06) set value
01~ 11: static pressure step (code 32) set value

3 When pressing  button, currently established static pressure value will be set up.

4 When pressing the  button and  button simultaneously for more than 3 seconds after the setting has been completed, the setting mode will be released.

- If there isn't any button input for more than 25 seconds, the installer setting mode will also be released.

- Static Pressure (Code 06) setting will not be used if Static Pressure Step (Code 32) setting is being used.
- For the static pressure value for each step, refer to the next page Table. 1

11. Ceiling concealed duct - High static pressure

Table 1

ABNW70GB9A0[UB70 N94], ABNW85GB9A0 [UB85 N94]

Setting value	Static Pressure (mmAq(Pa))								
	6(59)	8(78)	10(98)	13(127)	15(147)	18(176)	20(196)	22(215)	24(235)
74	64.7	58.6	45.8	-	-	-	-	-	-
78	72.6	67.4	55.3	39.6	-	-	-	-	-
82	79.5	74.1	67.8	55.5	35.2	-	-	-	-
84	81.8	75.4	69.7	63.4	48.5	36.7	-	-	-
89	86	83	79.4	71.6	60.2	44.9	33.1	-	-
94	93.3	91.5	87.5	77.7	68.5	60.3	44.6	30.4	-
95	95.2	92.5	89.1	79.6	72.9	64.8	50.2	36.4	-
100	97.3	94.1	92.8	87.5	82.5	73	60.8	48.2	35.5
105	98.6	94.5	93.2	91.2	87.6	79.8	70.7	62.5	50.5

NOTE

1. Be sure to set the value referring table 1. Unexpected set value will cause mal-function.
2. Table 1 is based at 230V. According to the fluctuation of voltage, air flow rate varies.

11. Ceiling concealed duct - High static pressure

Table 2

ABNW70GB9A0[UB70 N94], ABNW85GB9A0 [UB85 N94]

(Unit : CMM)

Model	Mode		Set value	Standard	CMM	Lower Limit of External Static Pressure [mmAq(Pa)]	Upper Limit of External Static Pressure [mmAq(Pa)]
				E.S.P. [mmAq(Pa)]			
ABNW70GB9A0 [UB70 N94]	High (factory set)	Hi	91	13(127)	70	6(59)	25(245)
		Mid	86		65		
		Low	82		60		
ABNW85GB9A0 [UB85 N94]	High (factory set)	Hi	95	13(127)	80	6(59)	25(245)
		Mid	89		72		
		Low	84		64		

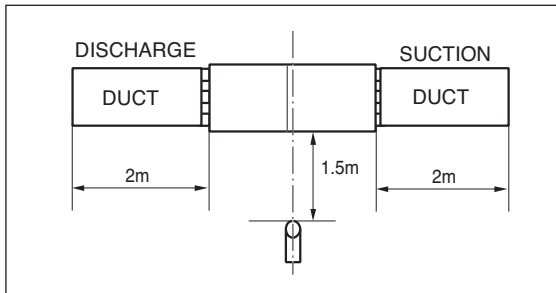
Note : The above table shows the correlation between the air rates and E.S.P.

11. Ceiling concealed duct - High static pressure

11.7 Sound levels

11.7.1 Sound pressure level

Overall



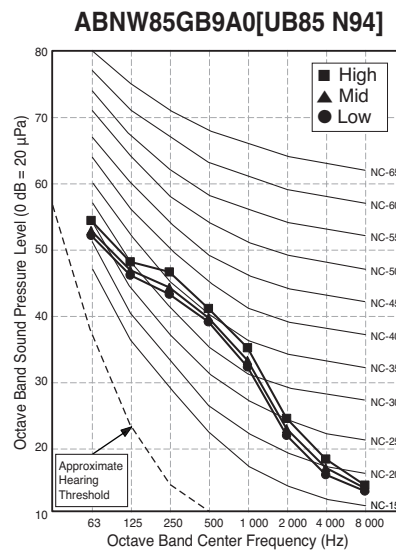
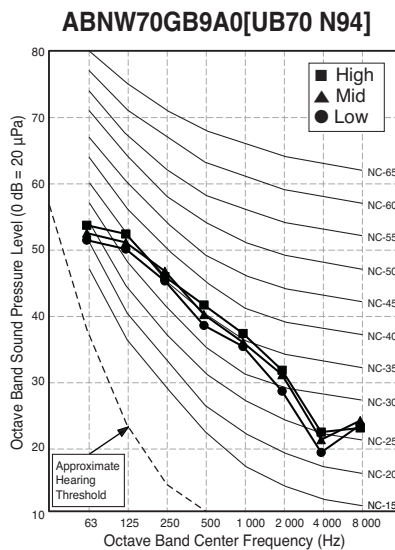
Notes:

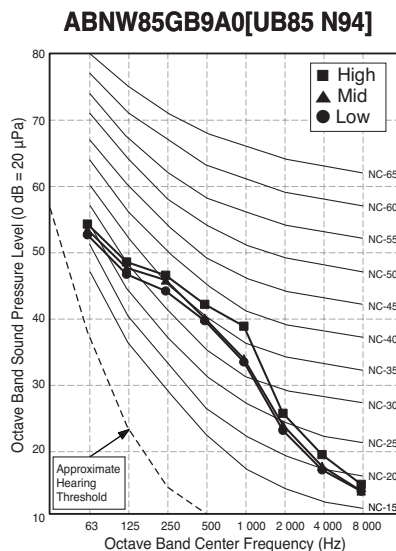
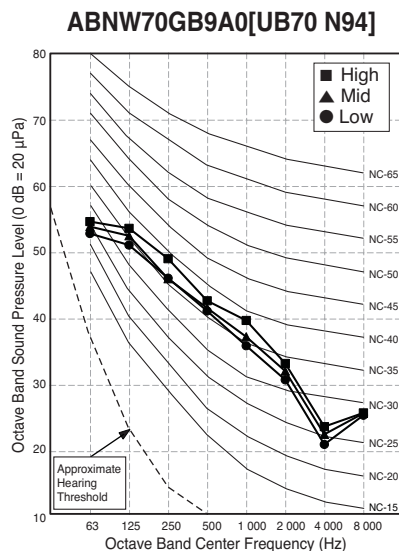
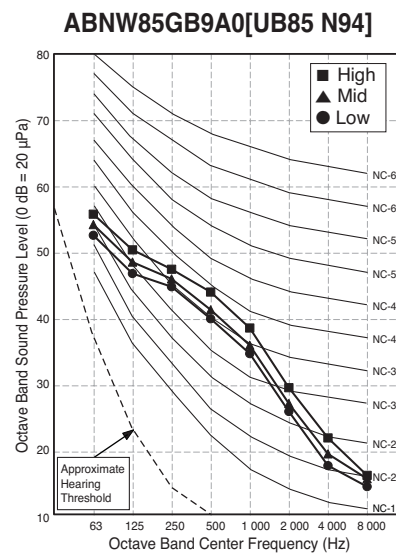
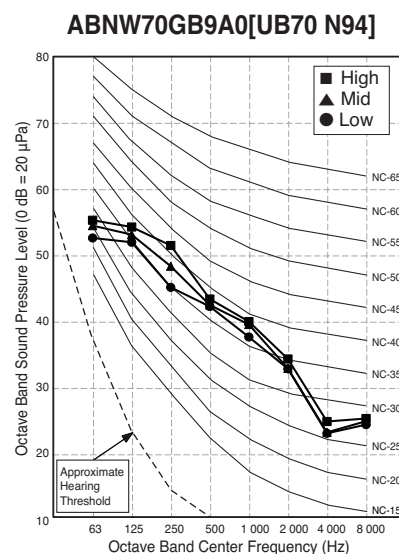
1. Sound measured at 1.5m away from the center of the unit.
2. Operating condition
 - Power source : 220-240V 50Hz / 220V 60Hz
 - Cooling : Indoor temperature (27°C DB, 19°C WB), Outdoor temperature (35°C DB, 24°C WB)
 - Heating : Indoor temperature (20°C DB, 15°C WB), Outdoor temperature (7°C DB, 6°C WB)
3. Reference acoustic intensity 0dB = 10E-6μW/m²
4. Sound level will vary depending on a range of factors such as the construction (acoustic absorption coefficient) of particular room in which the equipment is installed.

Model	Sound Pressure Levels (dB(A),H-M-L)					
	External Static Pressure [mmAq(Pa)]					
	6(59)	8(78)	10(98)	13(127)	15(147)	18(176)
ABNW70GB9A0[UB70 N94]	43-41-40	44-42-41	45-43-42	47-45-44	48-46-45	49-48-47
ABNW85GB9A0[UB85 N94]	43-41-40	44-42-41	44-42-41	47-45-44	48-46-45	49-48-47

* indicates values at 'Standard Mode'.

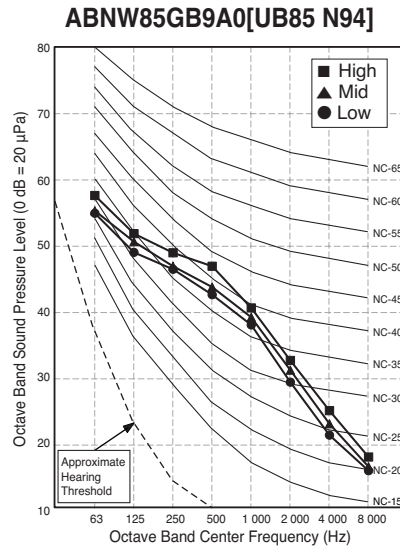
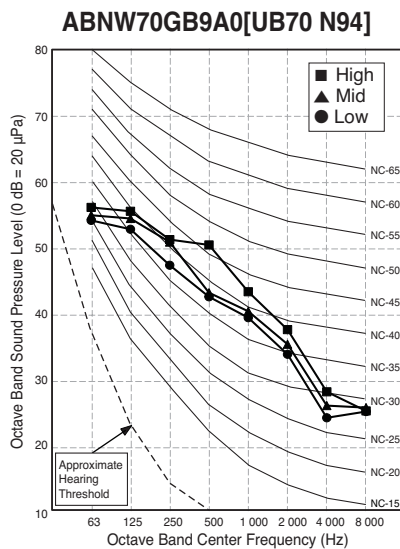
External Static Pressure 6(59) [mmAq(Pa)]



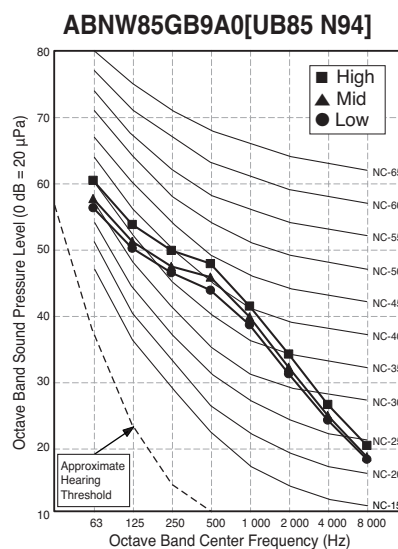
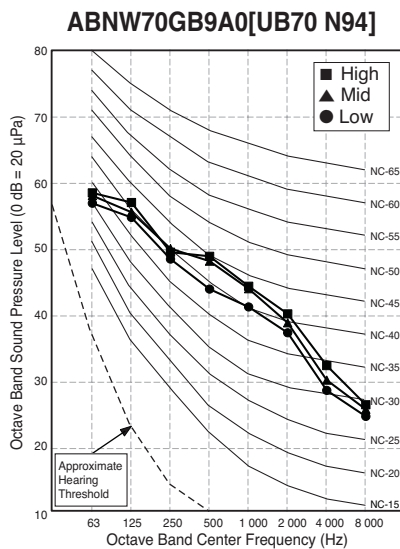
MULTI/SINGLE CAC Indoor unit**11. Ceiling concealed duct - High static pressure****External Static Pressure 8(78) [mmAq(Pa)]****External Static Pressure 10(98) [mmAq(Pa)]**

11. Ceiling concealed duct - High static pressure

External Static Pressure 13(127) [mmAq(Pa)]

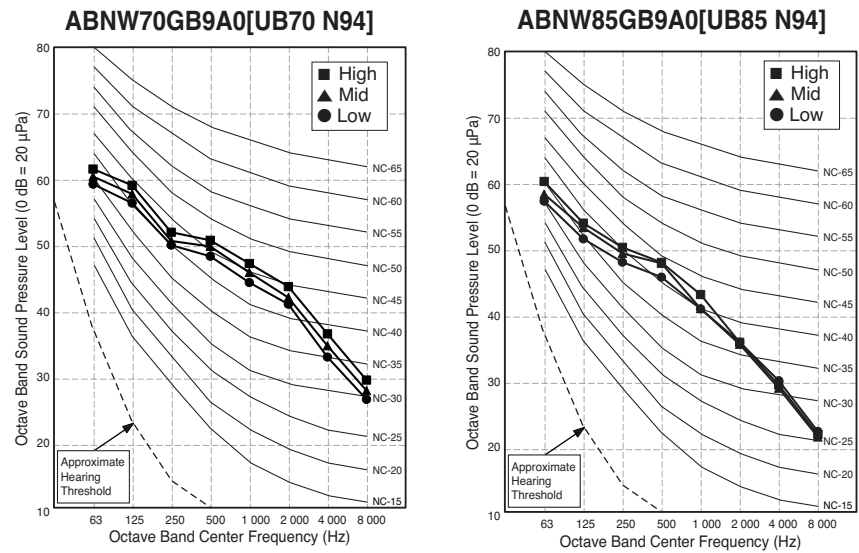


External Static Pressure 15(147) [mmAq(Pa)]



11. Ceiling concealed duct - High static pressure

External Static Pressure 18(176) [mmAq(Pa)]



11. Ceiling concealed duct - High static pressure

11.7.2 Sound power level

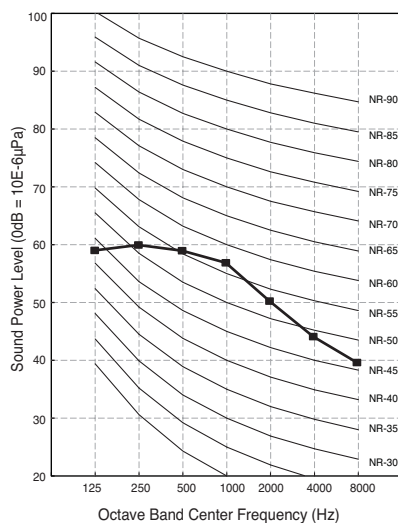
Notes:

- Operating condition
 - Power source : 220-240V 50Hz / 220V 60Hz
 - Cooling : Indoor temperature (27°C DB, 19°C WB), Outdoor temperature (35°C DB, 24°C WB)
 - Heating : Indoor temperature (20°C DB, 15°C WB), Outdoor temperature (7°C DB, 6°C WB)
 - External static pressure is according to "Standard mode" value. Refer the specifications.
- Reference acoustic intensity 0dB = 10E-6μW/m²
- Sound level will vary depending on a range of factors such as the construction (acoustic absorption coefficient) of particular room in which the equipment is installed.

Model	ABNW85GB9A0[UB85 N94]		
	External Static Pressure [mmAq(Pa)]		
	6(59)	10(98)	13(127)
ABNW70GB9A0[UB70 N94]	61-60-59	64-62-61	65-64-63
ABNW85GB9A0[UB85 N94]	61-60-59	64-62-61	65-64-63

External Static Pressure 6(59) [mmAq(Pa)]

ABNW70GB9A0 [UB70 N94],
ABNW85GB9A0 [UB85 N94]

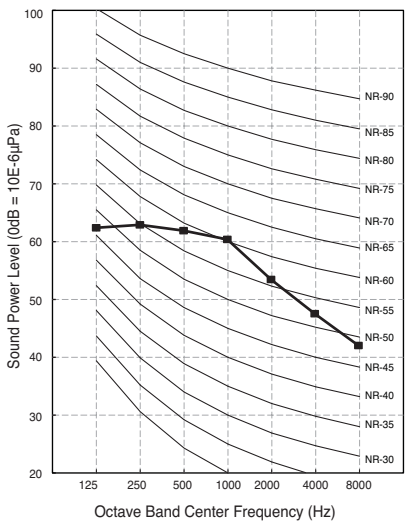


MULTI/SINGLE CAC Indoor unit

11. Ceiling concealed duct - High static pressure

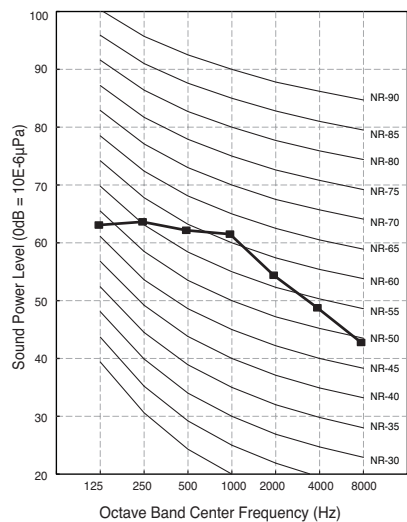
External Static Pressure 10(98) [mmAq(Pa)]

ABNW70GB9A0 [UB70 N94],
ABNW85GB9A0 [UB85 N94]



External Static Pressure 13(127) [mmAq(Pa)]

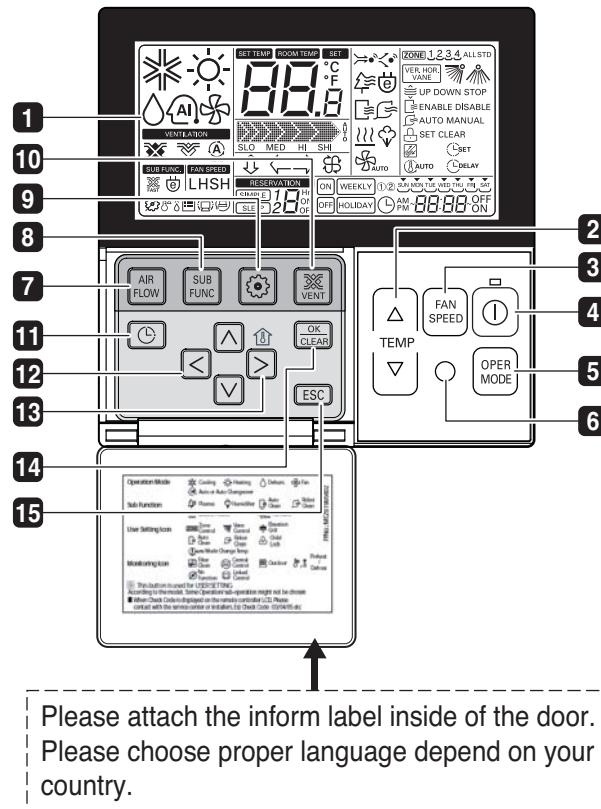
ABNW70GB9A0 [UB70 N94],
ABNW85GB9A0 [UB85 N94]



11. Ceiling concealed duct - High static pressure

11.8 Controller

Wired remote controller



- | | |
|---|--|
| 1 OPERATION INDICATION SCREEN | 9 FUNCTION SETTING Button |
| 2 SET TEMPERATURE Button | 10 VENTILATION Button |
| 3 FAN SPEED Button | 11 RESERVATION |
| 4 ON/OFF Button | 12 UP,DOWN,LEFT,RIGHT Button
• To check the indoor temperature, press button. |
| 5 OPERATION MODE SELECTION Button | 13 ROOM TEMPERATURE Button |
| 6 WIRELESS REMOTE CONTROLLER RECEIVER
• Some products don't receive the wireless signals. | 14 SETTING/CANCEL Button |
| 7 AIR FLOW Button | 15 EXIT Button |
| 8 SUBFUNCTION Button | |

* Some functions may not be operated and displayed depending on the product type.

Note :

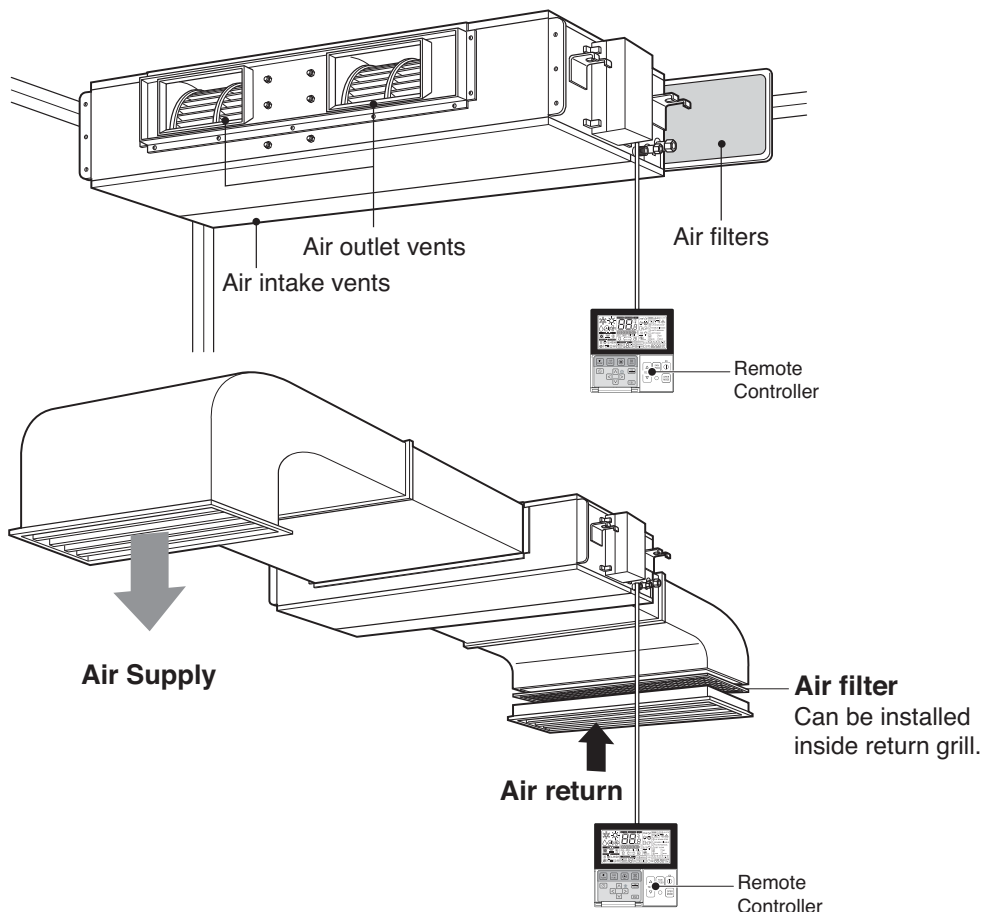
- * Display temperature can be different from actual room temperature if the remote controller is installed at the place where sun-rays are falling directly or the place nearby heat source.
- * The actual product can be different from above contents depending upon model type.
- * When using simultaneous operation system, whenever press remote controller button, system will approximately operate after 1~2 minutes.

MULTI/SINGLE CAC Indoor unit

11. Ceiling concealed duct - High static pressure

11.9 Installation


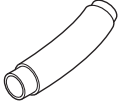
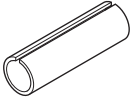
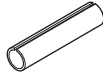
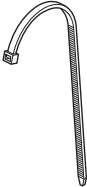

- Please read the instruction sheets completely before installing the product.
- When the power cord is damaged, replacement work shall be performed by authorized personnel only.
- Installation work must be performed in accordance with the national wiring standards by authorized personnel only.



11.9.1 Accessories

Check whether the following accessories are included with your unit.

1) Standard accessories

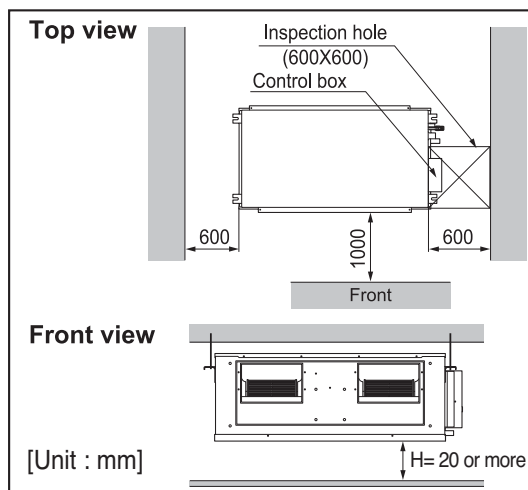
Name	Clamp metal	Drain hose	Insulation for fitting	Clamp	Screws for duct flanges	(Other)
Quantity	1 EA	1 EA	1 set	6 EA	1 set	
Shape			 for gas pipe  for liquid pipe			• Owner's manual • Installation manual • Washers(8 pcs.)

11. Ceiling concealed duct - High static pressure

11.9.2 Selection of the best location

Install the air conditioner in the location that satisfies the following conditions.

- The place shall easily bear a load of the indoor unit.
- The place should have enough area for inspection as shown in figure.
- The place where the unit shall be leveled.
- The place shall allow easy water drainage. (Suitable dimension "H" is necessary to get a slope to drain as figure.)
- The place shall easily connect with the outdoor unit.
- The place where the unit is not affected by an electrical noise.
- The place where air circulation in the room will be good.
- There should not be any heat source or steam near the unit.

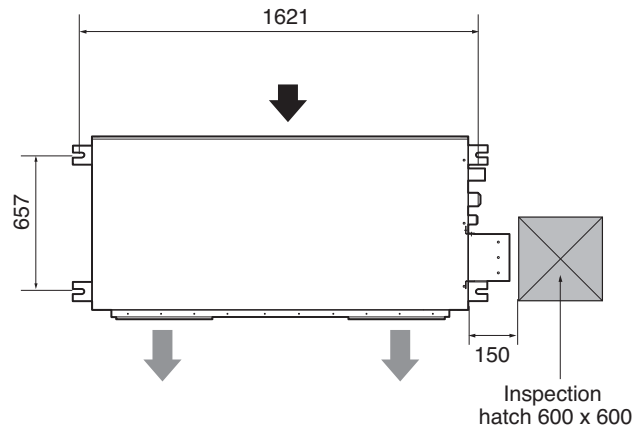


NOTE

If the service panel is at the top of the unit, then provide sufficient service clearance as per convenience.

2) Relative positions of indoor unit, suspension bolt and inspection hatch size

[B9 Chassis]



11.9.3 Ceiling dimension, also hanging bolt location and service space

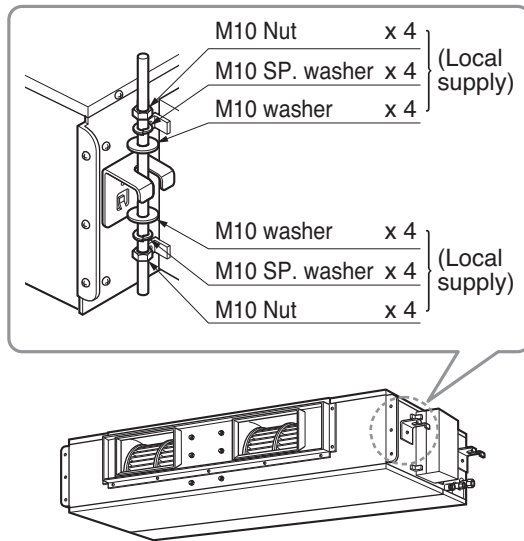
1) Select an installation site where the following conditions are fulfilled and also that meets with your customer's approval.

- If supporting structural members are not strong enough to take the units weight, the unit could fall out of place and cause serious injury.
- Where sufficient clearance of maintenance and service can be ensured.
- Where optimum air distribution can be ensured.
- Where nothing blocks the air passage.
- Where condensate can be properly drained.
- Where piping between indoor and outdoor units is possible within the allowable limit (Refer to the installation manual of the outdoor unit.)
- Keep the indoor and outdoor units, power cable and transmission wiring, at least 1 m from TVs and radios, to prevent distorted pictures and static. (Depending on the type and source of the electrical waves, static may be heard even when more than 1 m away.)

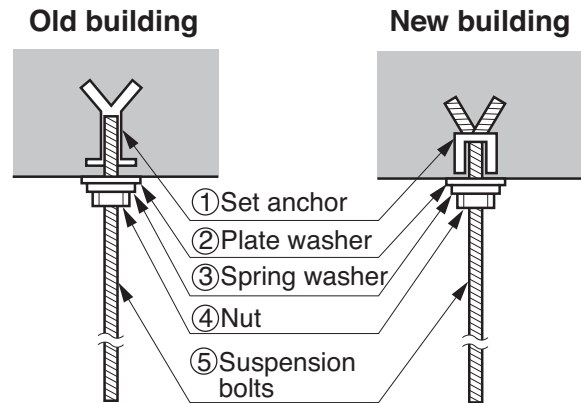
11. Ceiling concealed duct - High static pressure

11.9.4 Position of suspension bolt

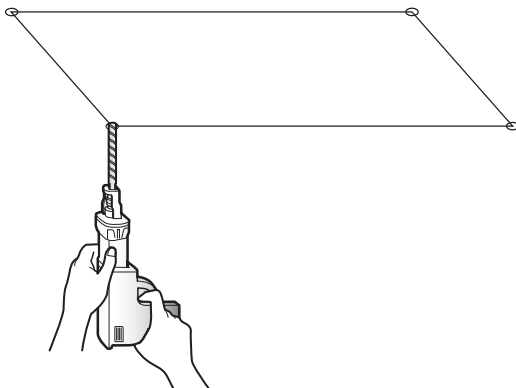
- ① Install the unit leaning to a drainage hole side as given in the figure above for easy water drainage.
- ② A place where the unit will be leveled and that can support the weight of the unit.
- ③ A place where the unit can withstand its vibration.
- ④ A place where service can be easily performed.



- ⑦ Insert the set anchor and washer on the suspension bolts for locking the suspension bolts on the ceiling.
- ⑧ Mount the suspension bolts to the set anchor firmly.
- ⑨ Secure the installation plates on the suspension bolts (adjust level roughly) using nuts, washers and spring washers.



- ⑤ Select and mark the position for fixing bolts.
- ⑥ Drill the hole for set anchor on the face of ceiling.



CAUTION

- Tighten the nut and bolt to prevent unit from falling.

11. Ceiling concealed duct - High static pressure

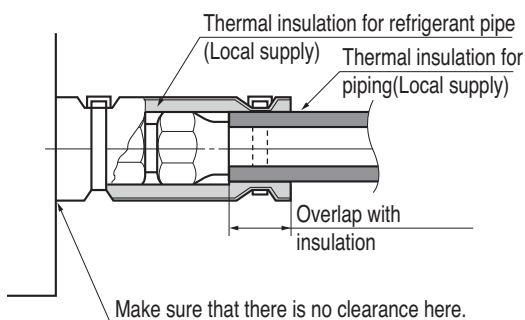
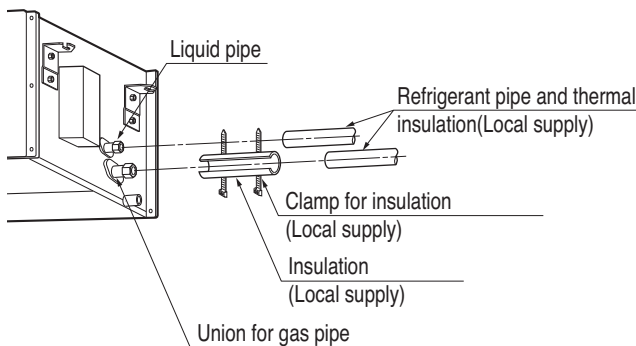
11.9.5 Connection pipes to the indoor unit

1) Refrigerant piping work

please refer "REFRIGERANT PIPING WORK".

2) Piping insulation

- ① Perform heat insulation work completely on both gas and the liquid pipe. Because improper insulation will result due condensate formation over pipe.
- ② Use the heat insulation material for the refrigerant piping which has an excellent heat resistance (over 120°C).
- ③ Precautions in high humidity circumstance.
- ④ Refer to the insulation works.



CAUTION

- Make sure to insulate any field piping all the way to the piping connection inside the unit. Any exposed piping may cause condensation or burns if touched.

3) Indoor unit drain piping

- ① During drain piping connection, be careful not to exert extra force on the drain port on the indoor unit.
- ② The outside diameter of the drain connection on the indoor unit is 32mm.

Piping material: Polyvinyl chloride pipe inner diameter Ø 25mm and pipe fitting

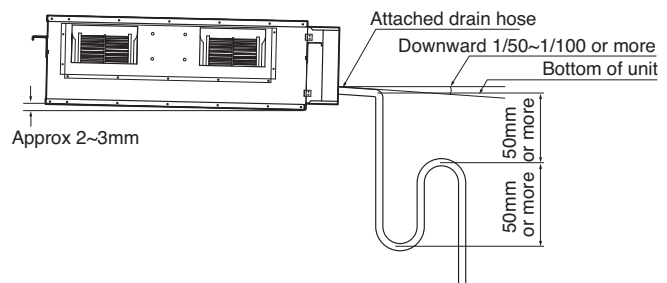
CAUTION

1. Decline Installation of indoor unit is very important for the drain of the duct type air conditioner.
2. Minimum thickness of the insulation for the connecting pipe should be 5mm.

4) Caution for gradient of unit and drain piping

- Without drain pump

- ① Always lay the drain with downward inclination (1/50 to 1/100). Prevent any upward flow or reverse flow in any part.
- ② 10mm or thicker formed thermal insulation shall always be provided for the drain pipe.



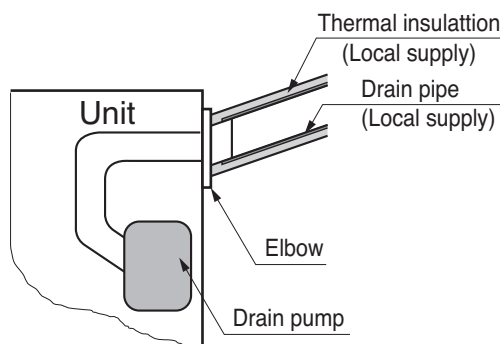
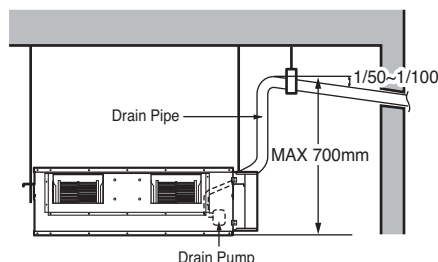
※ U-trap is not required for low static model in which the external static pressure is below 50 pa(5mm Aq)

MULTI/SINGLE CAC Indoor unit

11. Ceiling concealed duct - High static pressure

- With drain pump

- ① Possible drain head is upto 700mm.
- ② Keep the drain pipe downward stope upto 1/50~1/100. Prevent any upward flow or reverse flow in any part.
- ③ 10mm or thicker insulation should be provided for the drain pipe.



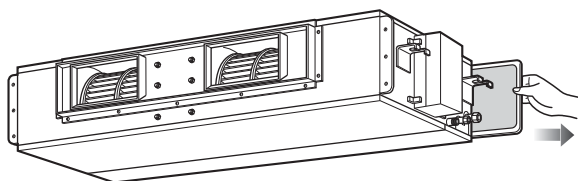
11.9.6 Electric wiring work

1) General instructions

- ① All field supplied parts and materials, electric works must conform to local codes. Use copper wire only.
- ② Follow the "WIRING DIAGRAM" attached to the unit body to wire the outdoor unit, indoor units and the remote controller.
- ③ All wiring must be performed by an authorized electrician.
- ④ This system consists of multiple indoor units. Mark each indoor unit as unit A, unit B..., and be sure the terminal board wiring to the outdoor unit and indoor unit are properly matched. If wiring and piping between the outdoor unit and an indoor unit are mismatched, the system may cause a malfunction.
- ⑤ A circuit breaker capable of shutting down the power supply to the entire system must be installed.

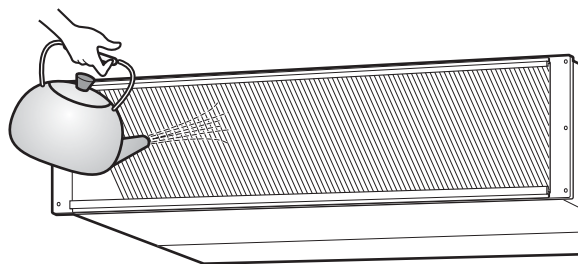
5) Checking the drain

- ① Remove the air filter.



- ② Check the drain.

- Pour enough water on the drain pan.
- Ensure that water flows through the drain pipe from indoor unit without any leakage.

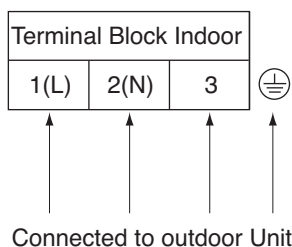


11. Ceiling concealed duct - High static pressure

2) Wiring connection

Connect the wires to the terminals on the control board individually according to the outdoor unit connection.

- ① Ensure that the color of the wires of outdoor unit and the terminal No. are the same as those of indoor unit respectively.



- ② If the supply cord is damaged, it must be replaced by a special cord or assembly available from the manufacturer of its service agent.

WARNING

- Make sure that the screws of the terminal are fixed tightly.

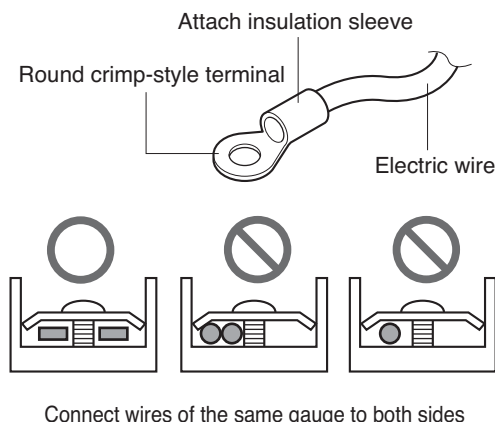
CAUTION

- Make sure to attach the sealing material or (field supplied) to hole of wiring to prevent the infiltration of foreign particle from outside. Otherwise a short-circuit may occur inside the electric parts box
- When clamping the wires, be sure no pressure is applied to the wire connections by using the included clamping material to make appropriate clamps. Also, when wiring, make sure the cover on the electric parts box fits snugly by arranging the wires neatly and attaching the electric parts box cover firmly. When attaching the electric parts box cover, make sure no wires get caught in the edges. Pass wiring through the holes to prevent damage to them.
- Make sure the remote controller wiring, the wiring between the units, and other electrical wiring do not pass through the same locations outside of the unit, separating them properly, otherwise electrical noise (external static) could cause product malfunction.

NOTE

1. Use round crimp-style terminals for connecting wires to the power supply terminal block. If unavailable, observe the following points when wiring.

- ① Do not connect wires of different gauge to the same power supply terminal.
- ② Use the specified electric wire. Connect the wire securely to the terminal. Lock the wire down without applying excessive force to the terminal.



Connect wires of the same gauge to both sides

2. Tightening torque for the terminal screws.

- ① Use the correct screwdriver for tightening the terminal screws. If the blade of screwdriver is too small, the head of the screw might be damaged, and the screw will not be properly tightened.
- ② If the terminal screws are tightened too hard, screws might be damaged.
3. Do not connect wires of different gauge to the same grounding terminal. Loose connection may deteriorate protection.
4. Outside of the unit, keep proper separation between transmission and power supply wiring. The equipment may malfunction if subjected to electrical (external) noise.
5. Never connect power supply wiring to the terminal block for remote controller wiring. A mistake of the sort could damage the entire system.
6. Use only specified wire and tightly connect wires to terminals. Be careful wires do not place external stress on terminals. Keep wiring in neat order and so as not to obstruct other equipment such as popping open the electric parts box cover. Make sure the cover closes tight. Incomplete connections could result in overheating, and in worse case, electric shock or fire.

MULTI/SINGLE CAC

Indoor unit

Ceiling cassette 4-way (2)

- 1. List of functions**
- 2. Specifications**
- 3. Dimensions**
- 4. Piping diagrams**
- 5. Wiring Diagrams**
- 6. Air flow and temperature distributions (reference data)**
- 7. Sound levels**
- 8. Controller**
- 9. Installation**

1. List of functions

Category	Functions	ATNW18GQLA0 [CT18 NQ4]	ATNW24GPLA0 [CT24 NP4] ATNW30GPLA0 [UT30 NP4]
Air flow	Air supply outlet	4	4
	Airflow direction control (left & right)	X	X
	Airflow direction control (up & down)	Auto	Auto
	Auto swing (left & right)	X	X
	Auto swing (up & down)	O	O
	Airflow steps (fan/cool/heat)	4 / 5 / 4	4 / 5 / 4
	Chaos wind(auto wind)	X	X
	Jet cool/heat	O / X	O / X
Air purifying	Swirl wind	O	O
	Triple filter (Deodorizing)	X	X
	Plasma air purifier	PTPKQ0	PTPKM0
	Allergy Safe filter	X	X
Installation	Long-life prefilter (washable / anti-fungus)	O	O
	Drain pump	O	O
	E.S.P. control*	X	X
	Electric heater	X	X
	High ceiling operation*	O	O
Reliability	Auto Elevation Grille*	X	PTEGM0
	Hot start	O	O
	Self diagnosis	O	O
Convenience	Auto changeover	O	O
	Auto cleaning	X	X
	Auto operation(artificial intelligence)	X	X
	Auto Restart	O	O
	Child lock*	O	O
	Forced operation	O	O
	Group control*	O	O
	Sleep mode	O	O
	Timer(on/off)	O	O
	Timer(weekly)*	O	O
Individual control	Two thermistor control*	O	O
	Wired remote controller	PQRCVSL0 / PQRCVSL0QW** / PREMTB001 / PREMTB01	PQRCVSL0 / PQRCVSL0QW** / PREMTB001 / PREMTB01
	Premium Wired remote controller	PREMTA000 / PREMTA000A / PREMTA000B	PREMTA000 / PREMTA000A / PREMTA000B
	Simple wired remote controller	PQRCVCL0Q / PQRCVCL0QW	PQRCVCL0Q / PQRCVCL0QW
	Simple Wired remote controller(for hotel use)	PQRCHCA0Q / PQRCHCA0QW	PQRCHCA0Q / PQRCHCA0QW
Network Solution	Wireless remote controller	PQWRHQ0FDB	PQWRHQ0FDB
	General central controller (Non LGAP)	X	X
	Network Solution(LGAP)	O	O
	Simple Dry contact (outside AC 220V power source)	PQDSA / PDRYCB000	PQDSA / PDRYCB000
	2 Points Dry Contact (For setback)	PDRYCB400	PDRYCB400
	Dry contact for Thermostat	PDRYCB300	PDRYCB300
Special function kit	PI 485(for Indoor Unit)	X	X
	Zone controller	X	X
	CTI(Communication transfer interface)	X	X
	Electronic thermostat	X	X
	Telecom shelter controller	PQCSA001T0	PQCSA001T0
	Independent Power Module	X	X
Others	CO ₂ Sensor	X	X
	Remote temperature sensor	PQRSTA0	PQRSTA0
	Group control wire	PZCWRCG3	PZCWRCG3

Note

- * : These functions need to connect the wired remote controller.
- ** : It is included by default when the product is manufactured.
- For synchro operation, some functions and accessories are not available. Check the outdoor unit's PDB.

O : Applied

X : Not applied

Accessory model name : Installed at field, ordered and purchased separately by the corresponding model name, supplied with separate package

2. Specifications

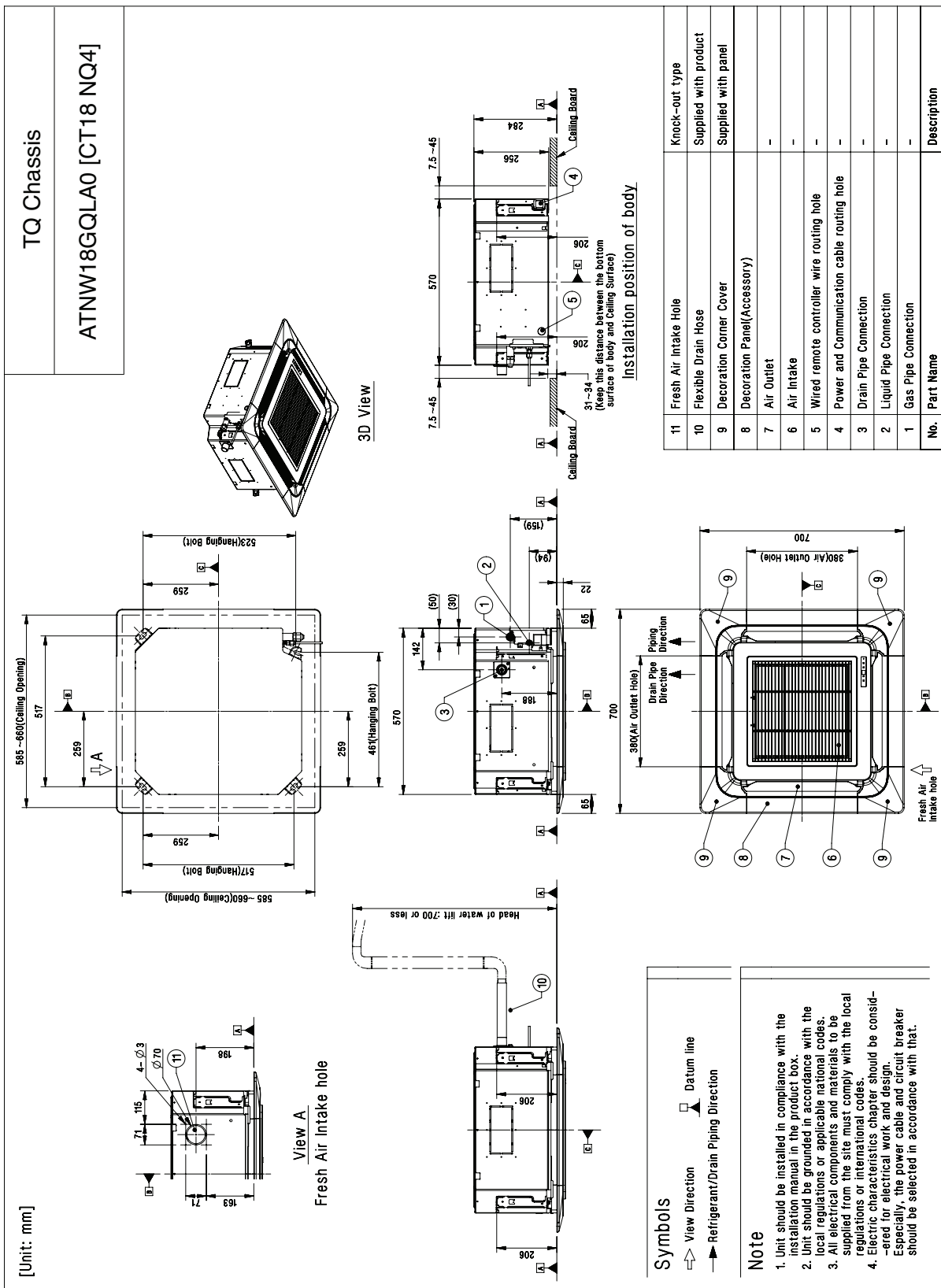
Model Name				ATNW18GQLA0 [CT18 NQ4]	ATNW24GPLA0 [CT24 NP4]	ATNW30GPLA0 [UT30 NP4]
Power Supply			V, Ø, Hz	220-240, 1, 50	220-240, 1, 50	220-240, 1, 50
				220, 1, 60	220, 1, 60	220, 1, 60
Power Input	Min / Nom / Max		W	10 / 30 / 40	20 / 50 / 60	30 / 70 / 80
Running Current			A	0.4	0.6	0.6
Casing Color			-	-	-	-
Dimensions	Body	W x H x D	mm	570 × 256 × 570	840 × 204 × 840	840 × 204 × 840
		W x H x D	inch	22-7/16 x 10-3/32 x 22-7/16	33-1/16 x 8-1/32 x 33-1/16	33-1/16 x 8-1/32 x 33-1/16
Net Weight	Body		kg (lbs)	15.3(33.7)	20.5 (45.2)	20.5 (45.2)
Heat Exchanger	(Row x Column x Fins per inch) x No.		-	(2 x 10 x 18) x 1	(2 x 8 x 19) x 1	(2 x 8 x 19) x 1
	Face Area		m² (ft²)	0.28 (3.00)	0.35 (3.77)	0.35 (3.77)
Fan	Type		-	Turbo Fan	Turbo Fan	Turbo Fan
	Air Flow Rate	H / M / L	m³/min	13.0 / 12.0 / 11.0	17.0 / 15.0 / 13.0	19.0 / 17.0 / 15.0
		H / M / L	ft³/min	459 / 424 / 353	600 / 530 / 459	671 / 600 / 530
Fan Motor	Type		-	BLDC	BLDC	BLDC
	Output		W x No.	43 x 1	60 x 1	60 x 1
Sound Pressure Level		H / M / L	dB(A)	41 / 39 / 36	38 / 36 / 34	40 / 37 / 35
Sound Power Level		Max.	dB(A)	57	57	58
Piping Connections	Liquid		mm(inch)	Ø 6.35 (1/4)	Ø 9.52 (3/8)	Ø 9.52 (3/8)
	Gas		mm(inch)	Ø 12.7 (1/2)	Ø 15.88 (5/8)	Ø 15.88 (5/8)
	Drain (O.D. / I.D.)		mm	Ø 32.0 / 25.0	Ø 32.0 / 25.0	Ø 32.0 / 25.0
Safety Devices			-	Fuse		
			-	Thermal Protector for Fan Motor		
Power and Communication Cable (included Earth)			No. x mm² (AWG)	4C x 0.75 (18)	4C x 0.75 (18)	4C x 0.75 (18)
Decoration Panel	Model Name		-	PT-UQC	PT-UMC(1)	PT-UMC(1)
	Casing Color		-	Morning Fog	Morning Fog	Morning Fog
	Dimensions	W x H x D	mm	700 × 22 × 700	950 × 25 × 950	950 × 25 × 950
		W x H x D	inch	27-9/16 x 7/8 x 27-9/16	37-13/32 x 31/32 x 37-13/32	37-13/32 x 31/32 x 37-13/32
	Net weight		kg (lbs)	3.0 (6.6)	5.0 (11.0)	5.0 (11.0)

Notes :

1. Wiring cable size must comply with the applicable local and national code.
2. Due to our policy of innovation some specifications may be changed without notification.
3. Sound Level Values are measured at Anechoic chamber.
Therefore, these values can be increased owing to ambient conditions during operation.

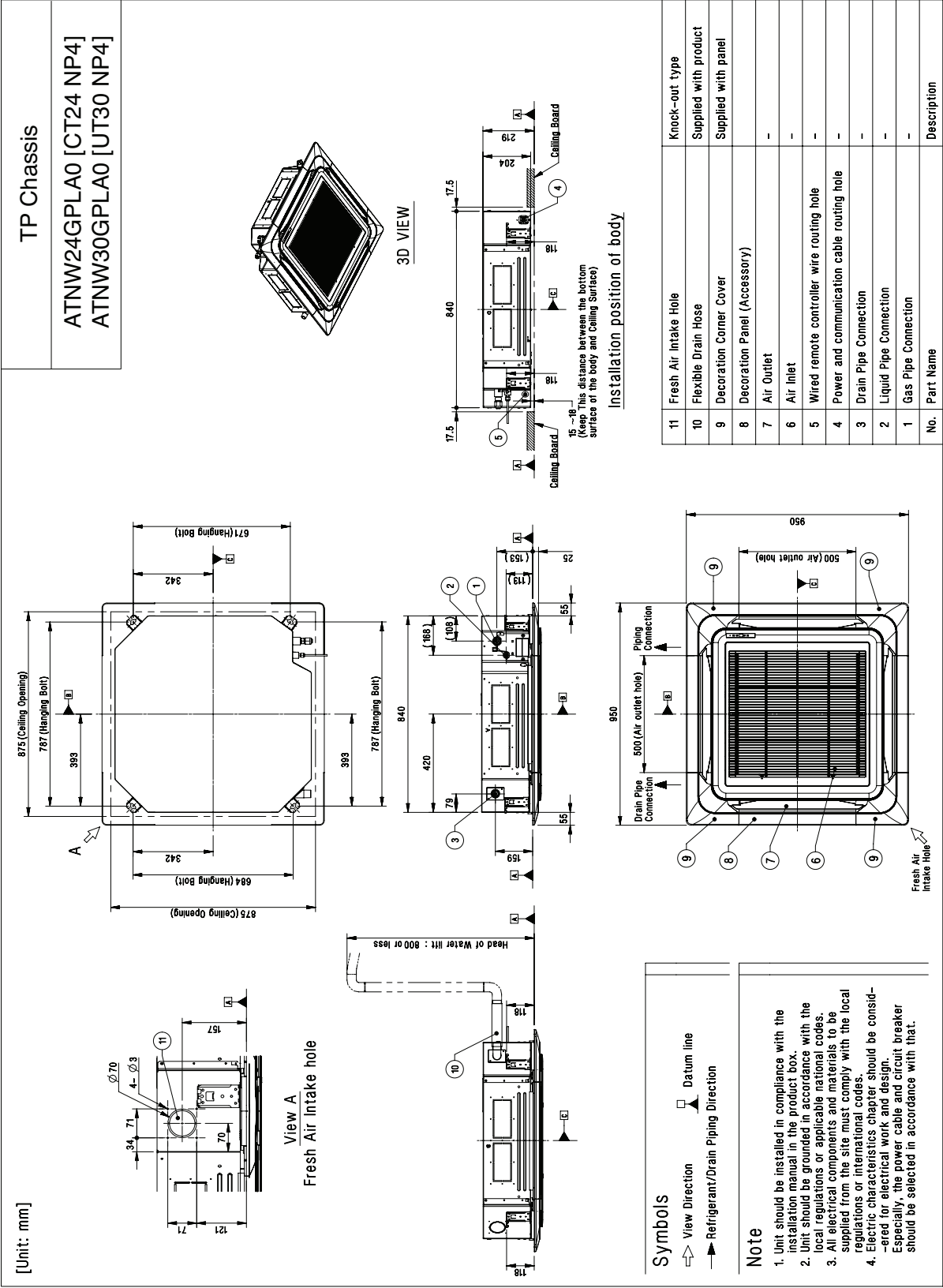
MULTI/SINGLE CAC Indoor unit

3. Dimensions

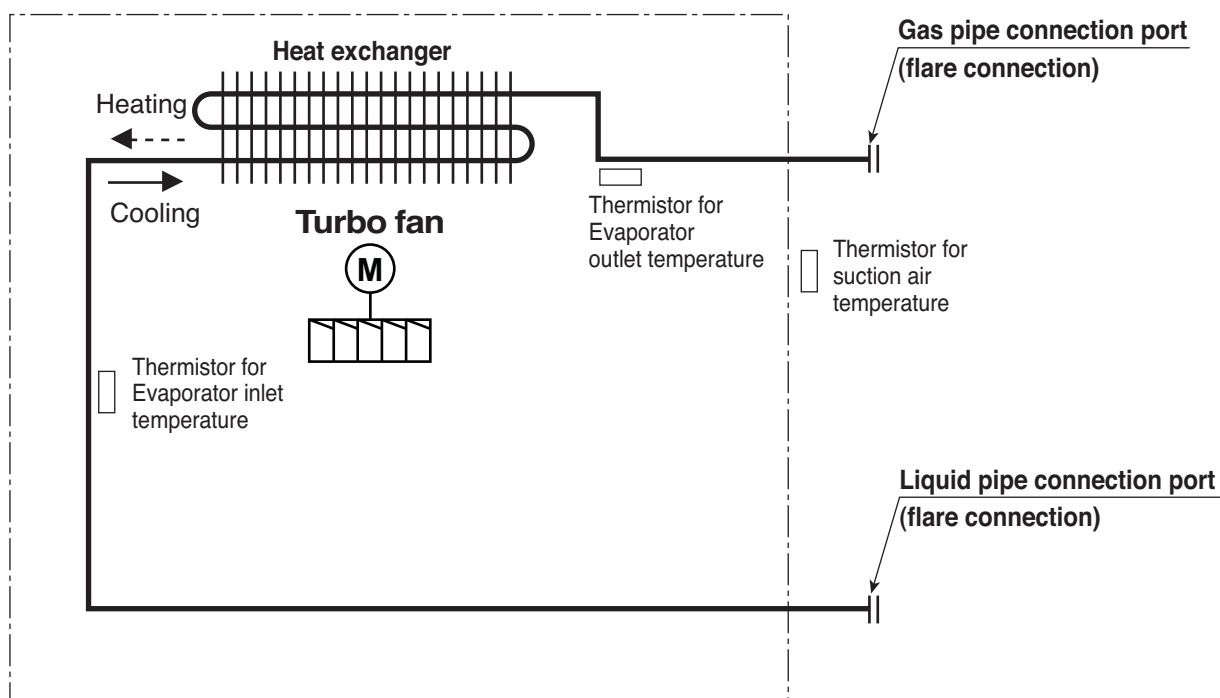


MULTI/SINGLE CAC Indoor unit

3. Dimensions



4. Piping diagrams



Description	PCB Connector
Thermistor for suction air temperature	CN-ROOM
Thermistor for evaporator inlet temperature	CN-PIPE / IN
Thermistor for evaporator outlet temperature	CN-PIPE / OUT

■ Refrigerant pipe connection port diameters

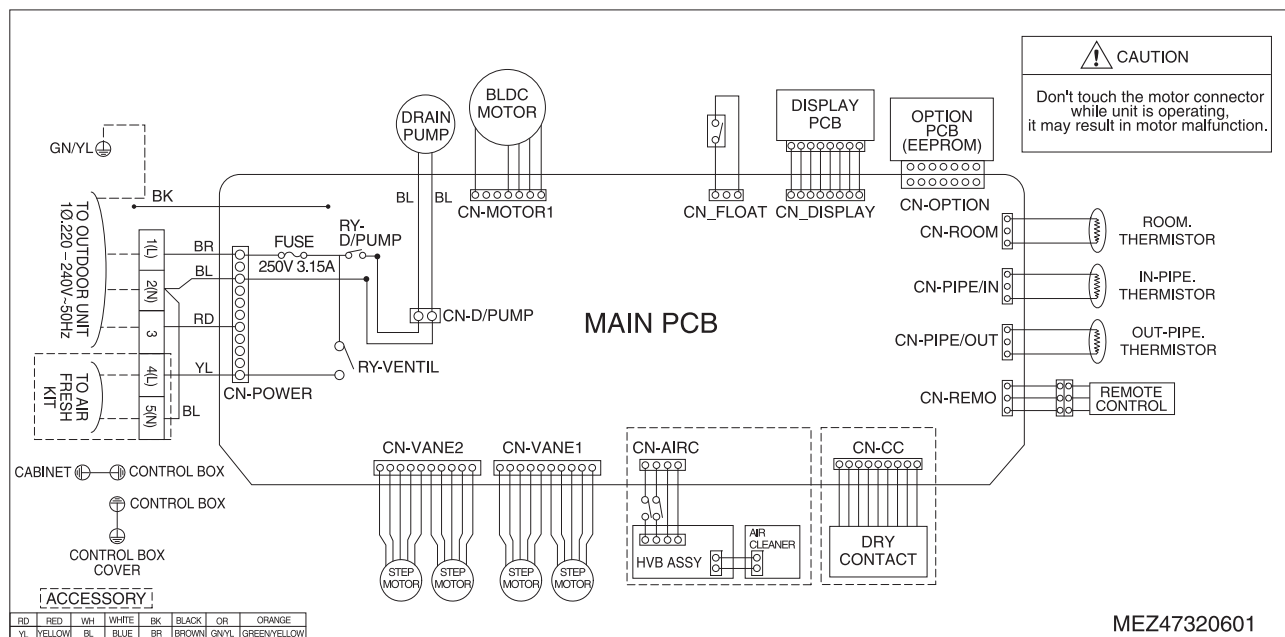
[Unit : mm]

Model	Gas	Liquid
ATNW18GQLA0 [CT18 NQ4]	Ø12.7	Ø6.35
ATNW24GPLA0 [CT24 NP4]	Ø15.88	Ø9.52
ATNW30GPLA0 [UT30 NP4]	Ø15.88	Ø9.52

MULTI/SINGLE CAC Indoor unit

5. Wiring diagrams

Models: ATNW18GQLA0 [CT18 NQ4] / ATNW24GPLA0 [CT24 NP4] / ATNW30GPLA0 [UT30 NP4]

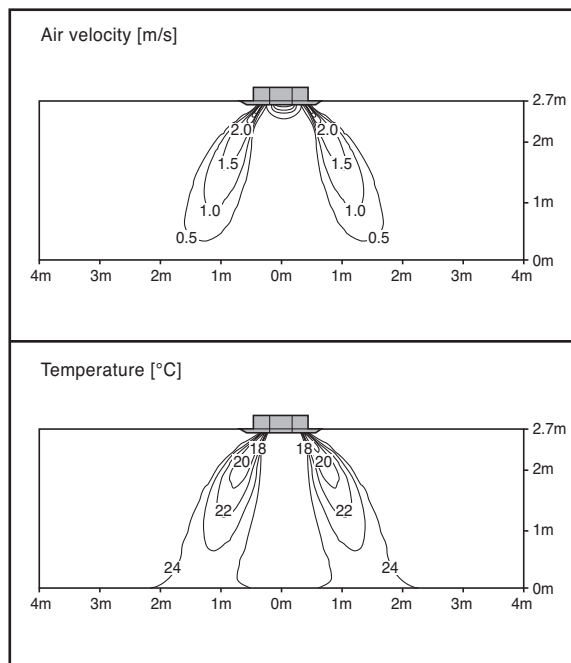


6. Air flow and temperature distributions (reference data)

Model : ATNW18GQLA0 [CT18 NQ4]

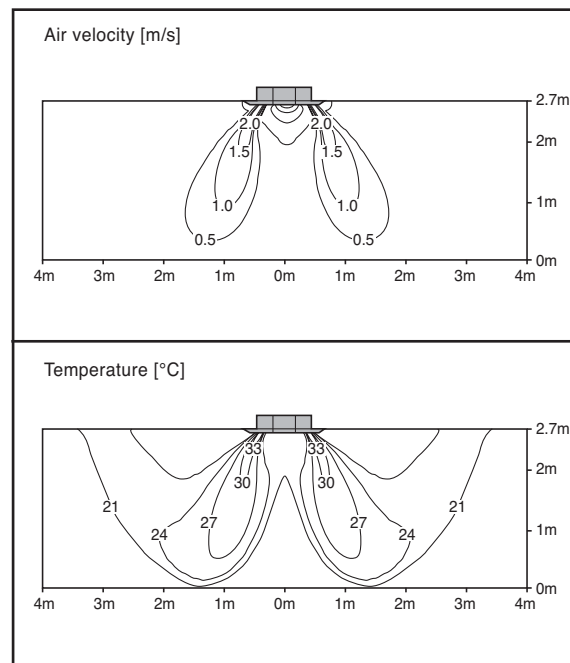
Cooling

Discharge angle: 40°



Heating

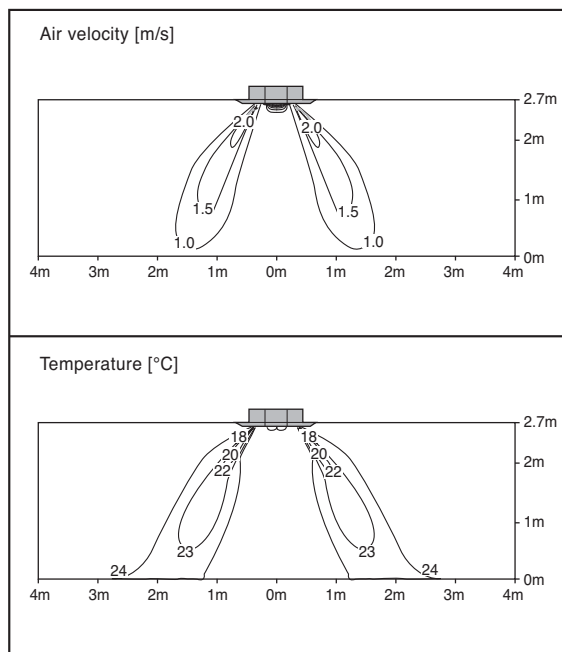
Discharge angle: 50°



Model : ATNW24GPLA0 [CT24 NP4]

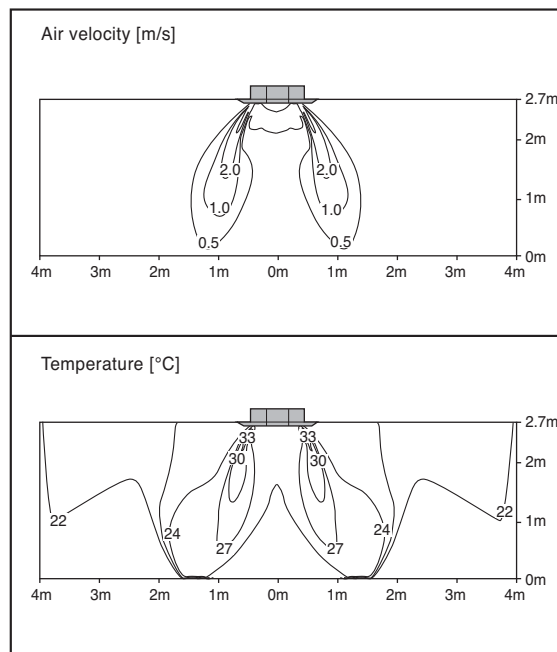
Cooling

Discharge angle: 40°



Heating

Discharge angle: 50°

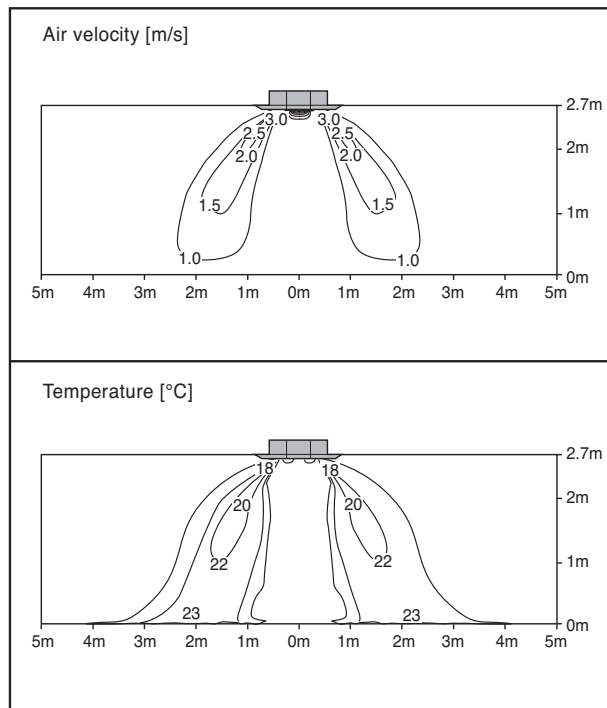


6. Air flow and temperature distributions (reference data)

Model : ATNW30GPLA0 [UT30 NP4]

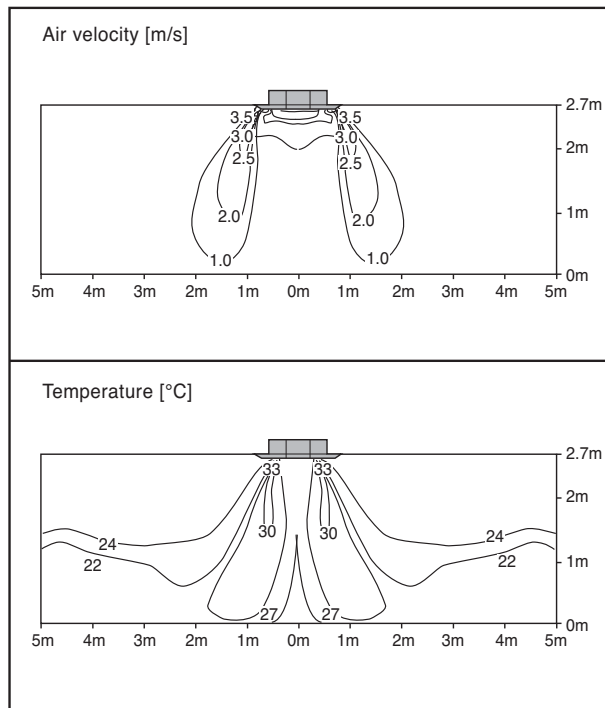
Cooling

Discharge angle: 40°



Heating

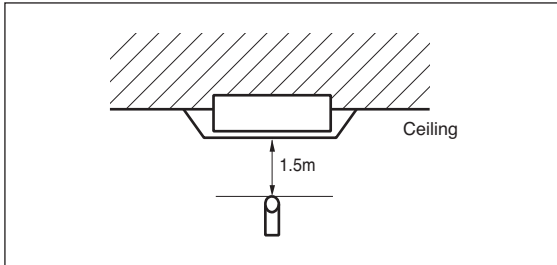
Discharge angle: 50°



7. Sound levels

7.1 Sound pressure level

Overall

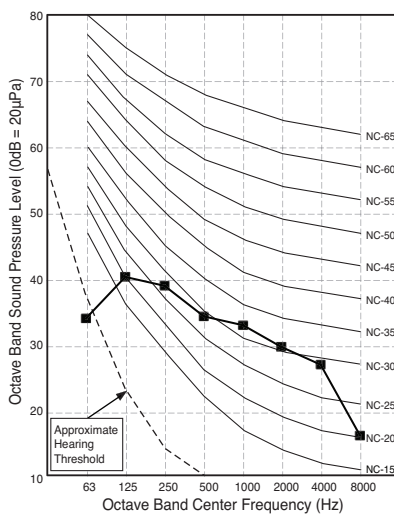


Notes:

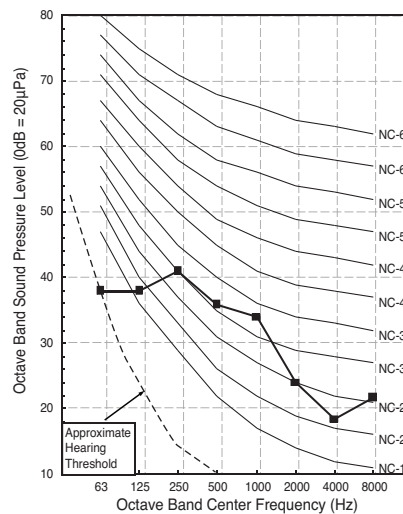
- Sound measured at 1.5m away from the center of the unit.
- Data is valid at free field condition.
- Data is valid at nominal operation condition.
- Reference acoustic pressure $0\text{dB}=20\mu\text{Pa}$.
- Sound level will vary depending on a range of factors such as the construction (acoustic absorption coefficient) of particular room in which the equipment is installed.
- The operating conditions are assumed to be standard.

Model	50Hz, 220-240V		
	Sound pressure Levels [dB(A)]		
	H	M	L
ATNW18GQLA0 [CT18 NQ4]	41	39	36
ATNW24GPLA0 [CT24 NP4]	38	36	34
ATNW30GPLA0 [UT30 NP4]	40	37	35

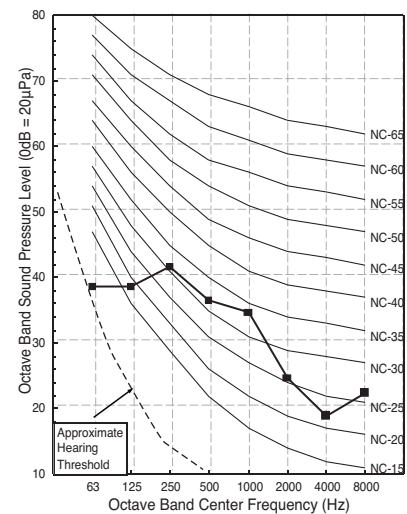
ATNW18GQLA0 [CT18 NQ4]



ATNW24GPLA0 [CT24 NP4]



ATNW30GPLA0 [UT30 NP4]



7. Sound levels

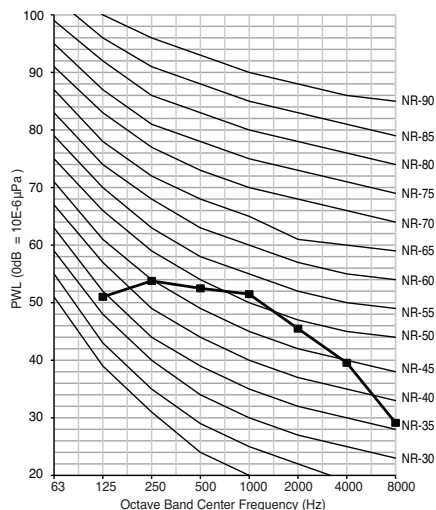
7.2 Sound power level

Notes:

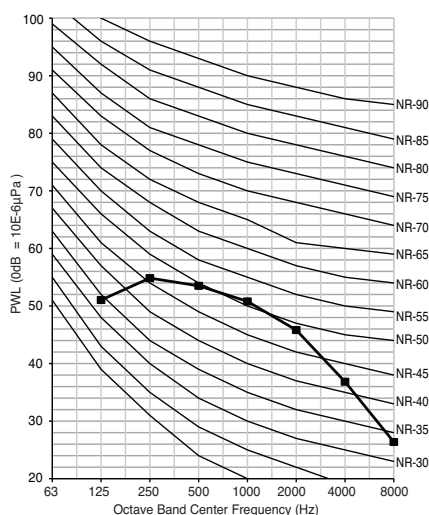
1. Reference acoustic intensity $0\text{dB} = 10\text{E-}6\mu\text{W/m}^2$
2. Sound level will vary depending on a range of factors such as the construction (acoustic absorption coefficient) of particular room in which the equipment is installed.

Model	Sound power level [dB(A)]
	H
ATNH18GQLE2 [CT18 NQ2]	57
ATNH24GPLE2 [CT24 NP2]	57
ATNH30GPLE2 [UT30 NP2]	58

**ATNW18GQLA0 [CT18 NQ4]
ATNW24GPLA0 [CT24 NP4]**

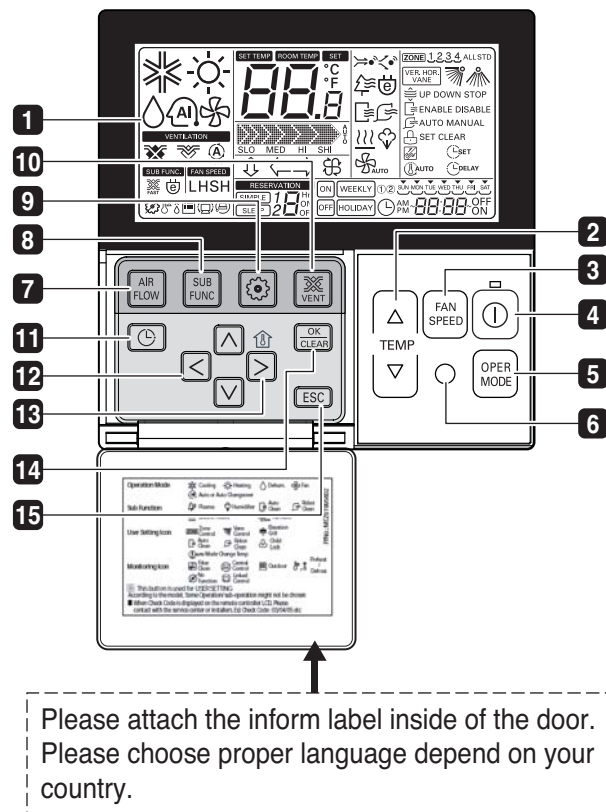


ATNW30GPLA0 [UT30 NP4]



8. Controller

Wired remote controller



- | | |
|---|--|
| 1 OPERATION INDICATION SCREEN | 9 FUNCTION SETTING Button |
| 2 SET TEMPERATURE Button | 10 VENTILATION Button |
| 3 FAN SPEED Button | 11 RESERVATION |
| 4 ON/OFF Button | 12 UP,DOWN,LEFT,RIGHT Button
• To check the indoor temperature, press button. |
| 5 OPERATION MODE SELECTION Button | 13 ROOM TEMPERATURE Button |
| 6 WIRELESS REMOTE CONTROLLER RECEIVER
• Some products don't receive the wireless signals. | 14 SETTING/CANCEL Button |
| 7 AIR FLOW Button | 15 EXIT Button |
| 8 SUBFUNCTION Button | |

※ Some functions may not be operated and displayed depending on the product type.

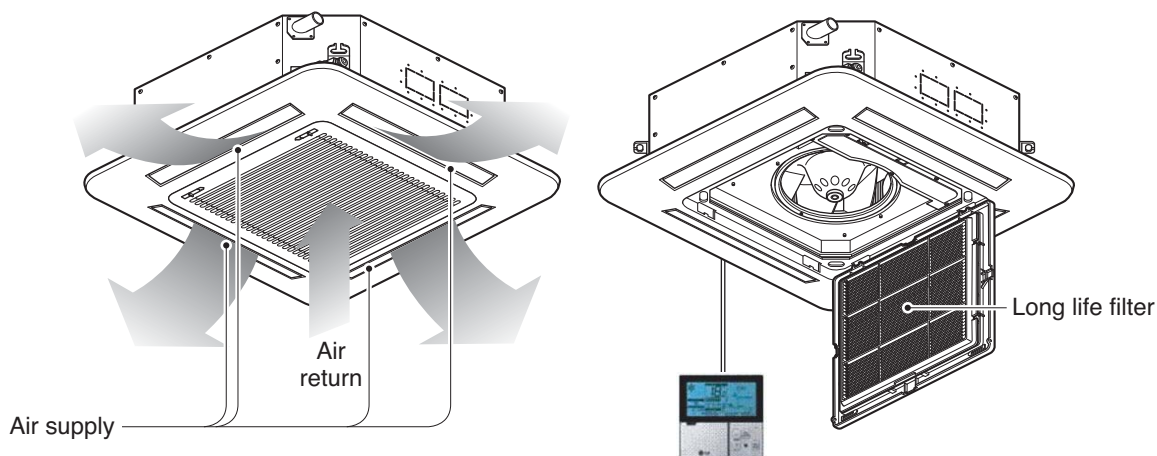
Note :

- ※ Display temperature can be different from actual room temperature if the remote controller is installed at the place where sun-rays are falling directly or the place nearby heat source.
- ※ The actual product can be different from above contents depending upon model type.
- ※ When using simultaneous operation system, whenever press remote controller button, system will approximately operate after 1~2 minutes.

MULTI/SINGLE CAC Indoor unit

9. Installation

- Please read the instruction sheets completely before installing the product.
- When the power cord is damaged, replacement work shall be performed by authorized personnel only.
- Installation work must be performed in accordance with the national wiring standards by authorized personnel only.



9.1 Accessories

Check whether the following accessories are included with your unit.

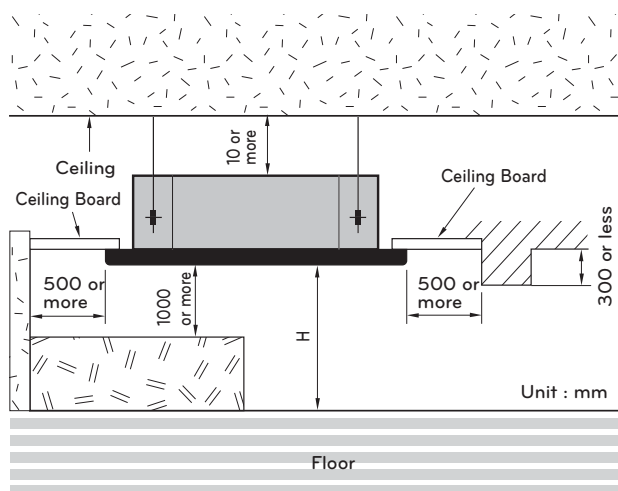
1) Standard accessories

Name	Drain hose	Clamp metal	Washer for hanging bracket	Clamp	Insulation for fitting	(Other)
Quantity	1 EA	1 EA	8 EA	8 EA	1 SET	
Diagram						<ul style="list-style-type: none">• Paper pattern for installation• Owner's manual• Installation manual

9. Installation

9.2 Selection of the best location

- There should not be any heat source or steam near the unit.
- There should not be any obstacles to the air circulation.
- There should be provision of easy condensate drain.
- Taking into accounting the noise prevention criteria, spot the installation location.
- Do not install the unit near the door way.
- Keep proper distances, of the unit, from ceiling, fence, floor, walls and other obstacles as shown in figure.
- The indoor unit must have the maintenance space.



NOTE

Above figure means minimum value. Please keep these value at least.

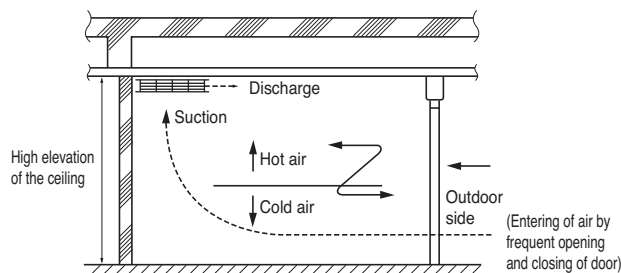
- below 30kBtu/h (TR/Q/P Chassis) model H
= At least 1800(70-7/8) , 3600(141-23/32) or less
- over 30kBtu/h (TN/M Chassis) model H
= At least 1800(70-7/8) , 4200(165-11/32) or less

9.3 Precautions regarding cassette indoor unit installation

1) Main points about the indoor installation

- In case of high height ceiling

In general commercial places and offices though the height of the ceiling is 2.7 m, the ceiling height can be 3 m. In such cases because of the temperature difference with the floor the heating effect can fall down.

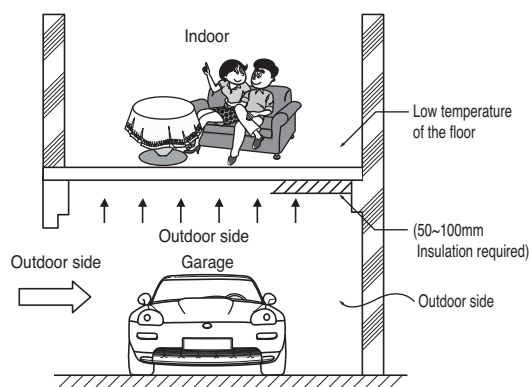


- Countermeasure method

- ① Air conditioner must be able to operate in high ceiling conditioner.
- ② Plan to install the circulator.
- ③ The air discharge port is made to give more airflow to the down wood directions.
- ④ The gate or exit of the building is protected by dual door system.

2) In case the floor or surfaces of the place to be air conditioned is in direct contact with the outdoor air

- The floor of the heating room indirect contact with the storeroom, garage or the outside air receives the cold air at the floor and the floor temperature decrease will feel cold at the feet.



In such places where the feet comes in direct contact with floors will give a cold feeling to th floor.

MULTI/SINGLE CAC Indoor unit

9. Installation

- Countermeasure:

- Use the carpet on the floor (compared to the tiles the carpet over it will have a 3 degree rise in temperature)
- Insulating the floor.
- Floor heating

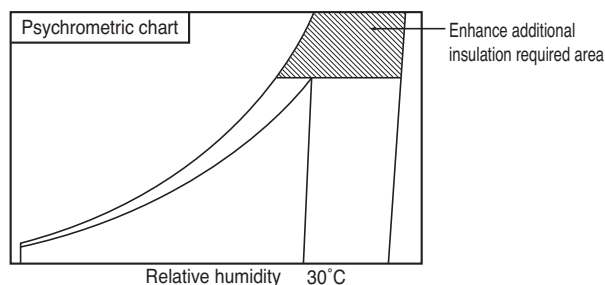
⚠ CAUTION

• Case of cold air intake:

The duct surface will have the dew drops so a insulation on the duct is a must.(Insulation material: a glass wool of thickness 25 mm will be appropriate.)

3) In case of high temperature or high humidity between the false ceiling and ceiling slab(near by the sea, river, lake, spa)

- In case of temperature of 30 degree and humidity above 80%, the units body as well as the piping insulation should be strengthened.
Refer to the picture given below.

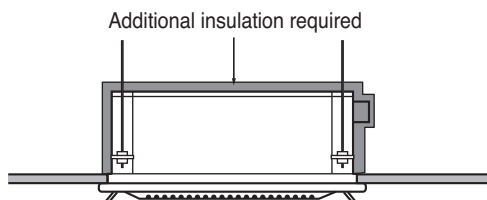


- Places having the temperature and humidity of the surrounding water sources(sea, river etc.)

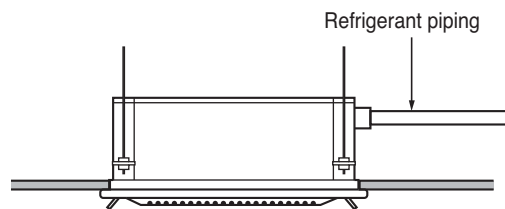
In case the steam is generated between the false ceiling and the ceiling slab

Due to some nearby by steam source.

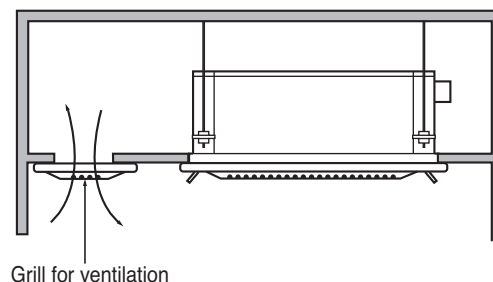
- Indoor unit: Insulate the unit body with some insulation like glass wool at least 10 mm in thickness.



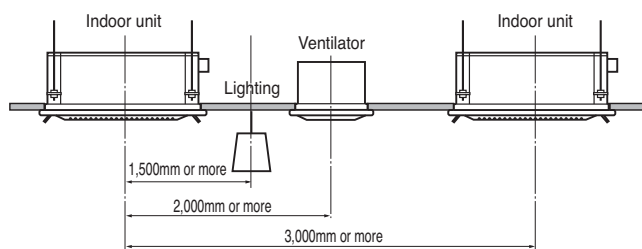
- Refrigerant piping: Increase the piping insulation thickness with thickness above 20 mm.



- Others: Inside the ceiling near the air tight seal places (To escape of the humidity inside false ceiling)



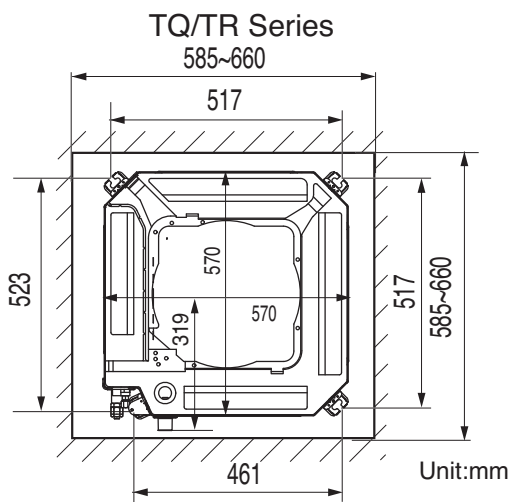
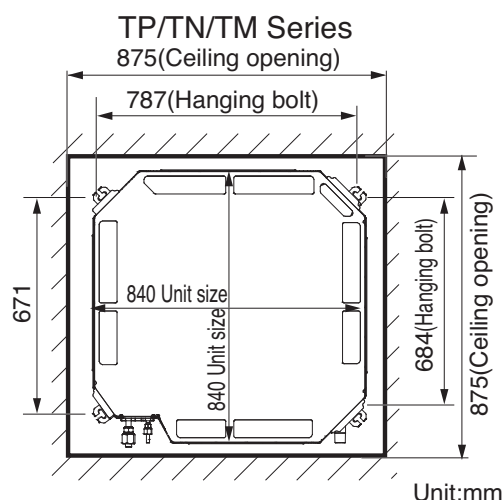
4) In case of multiple indoor cassette units (recommended)



9. Installation

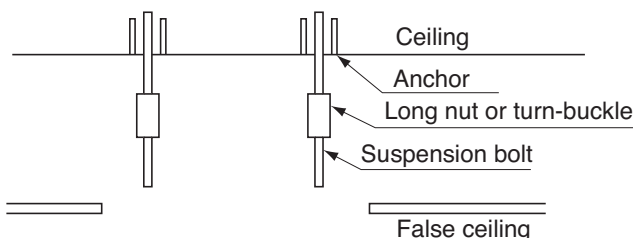
9.4 Ceiling opening dimensions and hanging bolt location

- ① The dimensions of the paper pattern for installation are the same as those of the ceiling opening dimensions.
- ② Select and mark the position for fixing bolts and piping hole.
- ③ Decide the position for fixing bolts slightly tilted to the drain direction after considering the direction of drain hose.
- ④ Drill the hole for anchor bolt on the wall.



1) Install the suspension bolts.

(Use either a W3/8" or M10 size bolt) Use a hole-in anchor for existing ceilings, and a sunken insert, sunken anchor or other field supplied parts for new ceilings to reinforce the ceiling to bear the weight of the unit. Adjust clearance from the ceiling before proceeding further.



NOTE

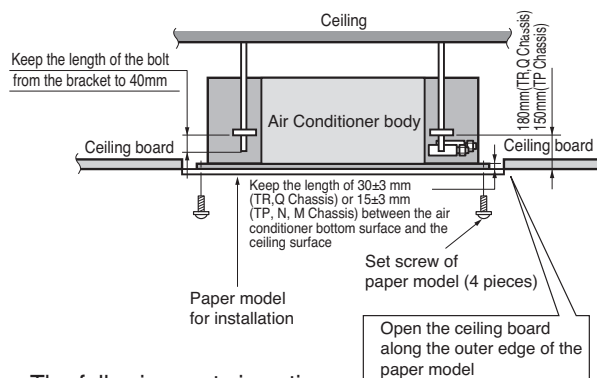
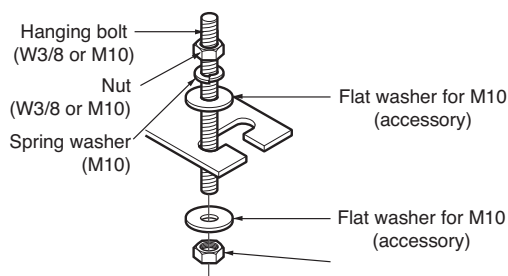
All the above parts are field supplied.

9.5 Indoor unit installation

- Installation of the accessories (except for the decoration panel) before installing the indoor unit is easier.

1) Install the indoor unit.

- Attach the hanger bracket to the suspension bolt. Be sure to fix it securely by using a nut and washer from the upper and lower sides of the hanger bracket.



- The following parts is option.
- Hanging Bolt - W 3/8 or M10
- Nut - W 3/8 or M10
- Spring Washer - M10
- Plate Washer - M10

Drill the piping hole on the wall slightly tilted to the outdoor side using a Ø 70 hole-core drill.

MULTI/SINGLE CAC Indoor unit

9. Installation

2) For new ceilings

- ① **Refer to the paper pattern for ceiling opening dimension.**
 - The center of the ceiling opening is indicated on the paper pattern for installation.
 - The center of the unit is indicated on the label attached to the unit and on the paper pattern for installation.
- First remove paper packaging material from the 4 corners of the paper pattern for installation, fix the paper pattern to the unit with screws.
- Ceiling height is shown on the side of the paper pattern for installation. Adjust the height of the unit according to this indication.

<Ceiling work>

- ② **Adjust the unit to the right position for installation.**
- ③ **Assure that the unit is horizontal.**
 - The indoor unit is equipped with a built-in drain pump and float switch. At each of the unit's 3 corners, verify that it is levelled by using a water-level or a water-filled vinyl tube. (Otherwise it will result in the malfunctioning of unit and cause water to drip.)
- ④ **Remove the washer fixing plate used for preventing the washer from falling and tighten the upper nut.**

5) Remove the paper pattern for installation

2) For existing ceilings

- ① **Adjust the height and position of the unit.**
- ② **Perform steps 3 and 4 in "5.1 For new ceilings".**

9.6 Connecting pipes to the indoor unit

1) Refrigerant piping work

please refer "REFRIGERANT PIPING WORK".

2) Piping insulation

- ① Perform heat insulation work completely on both gas and the liquid pipe. Because improper insulation will result in condensate formation over pipe.
- ② Use the heat insulation material for refrigerant piping which has an excellent heat resistance (over 120°C).
- ③ Precautions in high humidity circumstance:
- ④ Refer to insulation work

⚠ CAUTION

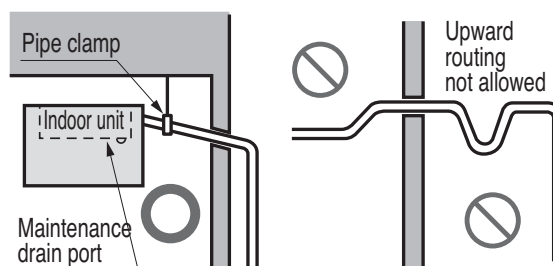
- Make sure to insulate any field piping all the way to the piping connection inside the unit. Any exposed piping may cause condensation or burns if touched.

3) Indoor unit drain piping

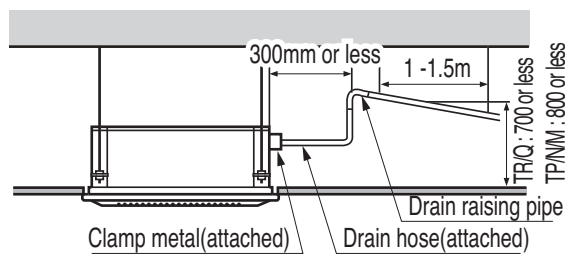
- Drain piping must have downward slope (1/50 to 1/100): be sure not to provide up-and-down slope to prevent reverse flow.
- During drain piping connection, be careful not to exert extra force on the drain port of the indoor unit.
- The outside diameter of the drain connection on the indoor unit is 32mm.

Piping material: Polyvinyl chloride pipe VP-25 and pipe fittings

- Be sure to execute heat insulation on the drain piping.
- Install the drain raising pipes at a right angle to the indoor unit and no more than 300mm from the unit.



9. Installation



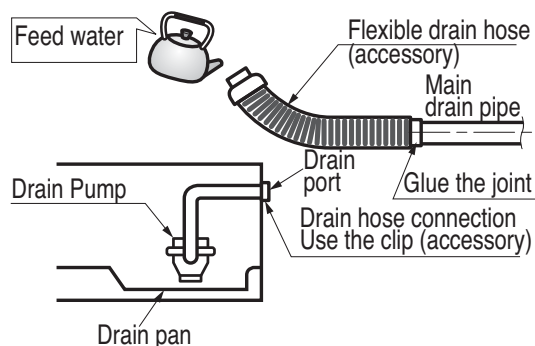
Heat insulation material: Polyethylene foam with thickness more than 8 mm.

4) Drain test

The air conditioner uses a drain pump to drain water.

Use the following procedure to test the drain pump operation:

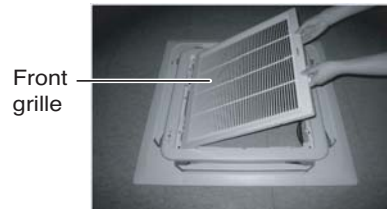
- Connect the main drain pipe to the exterior and leave it provisionally until the test comes to an end.
- Feed water to the flexible drain hose and check the piping for leakage.
- Be sure to check the drain pump for normal operating and noise when electrical wiring is complete.
- When the test is complete, connect the flexible drain hose to the drain port on the indoor unit.



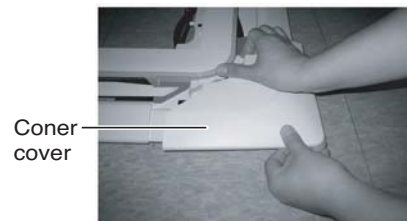
9.7 Installation of decoration panel

The decorative panel has its installation direction. Before installing the decorative panel, always remove the paper template.

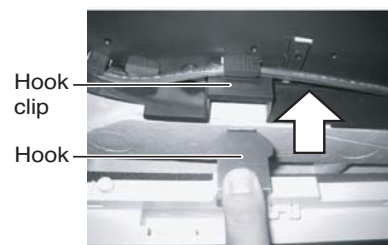
1. Remove the packing and take out air inlet grille from front panel.



2. Remove the Corner covers of the panel.



3. Fit the panel on the unit by inserting hooks as shown in picture.



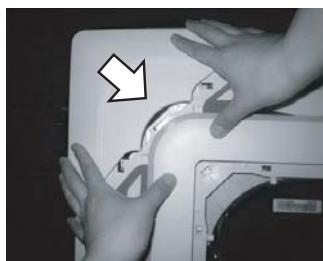
4. Insert two screws on diagonal corners of panel. Do not tighten the bolts completely. (The fixing screws are included in the indoor unit box.)
Check the alignment of panel with the ceiling. Height can be adjusted using hanging bolts as shown in picture. Insert the other two screws and tighten all screws completely.

MULTI/SINGLE CAC Indoor unit

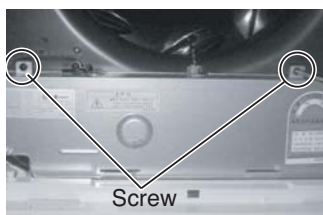
9. Installation



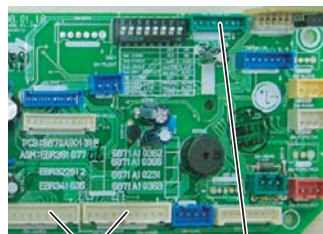
5. Fit the corner covers.



6. Open two screws of control panel cover.



7. Connect one display connector and two vane control connectors of front panel to indoor unit PCB.
The position marking on PCB is as:
Display connector : CN-DISPLAY
Vane control connector: CN-VANE 1,2

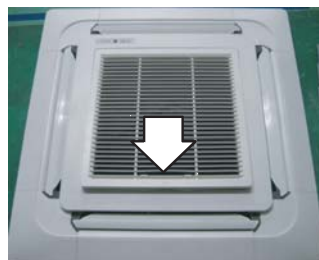


CN-VANE 1,2 CN-DISPLAY

8. Close the cover for control box.



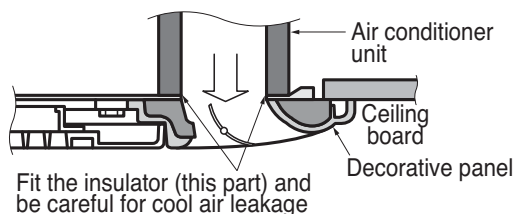
9. Install the air inlet grille and Filter on the panel.



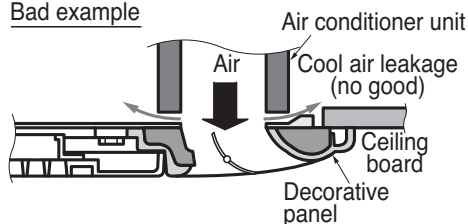
CAUTION

- Install certainly the decorative panel.
Cool air leakage causes sweating. ⇨ Water drops fall.

Good example



Bad example



9. Installation

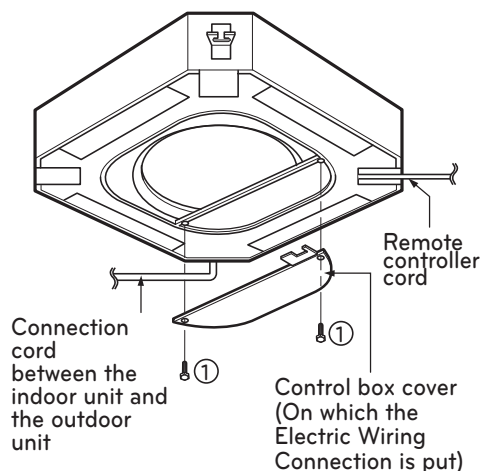
9.8 Electric wiring work

1) General instructions

- ① All field supplied parts and materials, electric works must conform to local codes.
Use copper wire only.
- ② Follow the "WIRING DIAGRAM" attached to the unit body to wire the outdoor unit, indoor units and the remote controller.
- ③ All wiring must be performed by an authorized electrician.
- ④ This system consists of multiple indoor units. Mark each indoor unit as unit A, unit B..., and make sure the terminal board wiring to the outdoor unit and indoor units are properly matched. If wiring and piping between the outdoor unit and an indoor units are mismatched, the system may malfunction.
- ⑤ A circuit breaker capable of shutting down the power supply to the entire system must be installed.

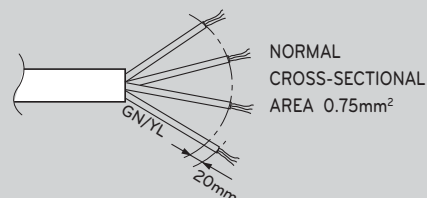
2) Wiring Connection

- ① Open the control box cover and connect the Remote controller cord and Indoor power wires.
- ② Remove the control box cover for electrical connection between the indoor and outdoor unit.
(Remove screws ①)
- ③ Use the cord clumper to fix the cord.



CAUTION

- The connecting cable connected to the indoor and outdoor unit should be complied with the following specifications (This equipment shall be provided with a cord set complying with the national regulation).



If the supply cord is damaged, it must be replaced by a special cord or assembly available from the manufacturer of its service agent.

CAUTION

- The Power cord connected to the unit should be selected according to the following specifications.

3) Precautions when laying power wiring

- ① Use round pressure terminals for connections to the power terminal block.



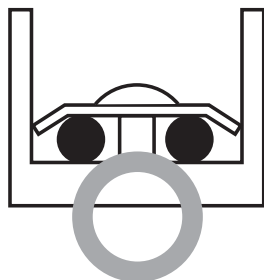
- ② When none are available, follow the instructions below.

- Do not connect wiring of different thicknesses to the power terminal block. (Slack in the power wiring may cause abnormal heat.)
- When connecting wiring which is the same thickness, do as shown in the figure below.

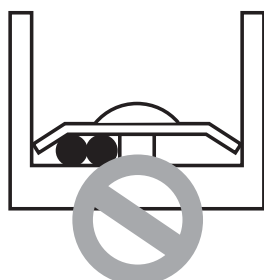
9. Installation

- For wiring, use the designated power wire and connect firmly, then secure to prevent outside pressure being exerted on the terminal block.
- Use an appropriate screwdriver for tightening the terminal screws. A screwdriver with a small head will strip the head and make proper tightening impossible.
- Over-tightening the terminal screws may break them.

Connect same thickness wiring to both sides.



It is forbidden to connect two to one side.



It is forbidden to connect wiring of different thicknesses.





P/No.: MFL67502501



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