SAMSUNG

VRF Technical Data Book

Wind-Free 1Way Cassette for North America (R410A, 60Hz)

Model : AM✳✳✳NN1✳EH/✳✳

History

Version	Modification	Date	Remark
Ver. 1.0	Release VRF Wind-Free 1Way Cassette for North America TDB (60Hz)	17. 12. 28	
Ver. 1.1	Revised some errors of panel Weight/Shipping Dimensions.	18. 04. 25	
Ver. 1.2	Updated the panel name	19. 01. 16	
Ver. 1.3	Updated the installation page	19. 05. 23	
Ver. 1.4	Updated the Wind-Free 1Way CST Dimensional Drawing page	19. 10. 10	

Nomenclature

Indoor Units

Model Names

AM	009	N	N	1	D	C	H	/	**
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)		Buyer

(1) Classification

AM	DVM

(2) Capacity

kBtu (3 digits)

(3) Version

K	2016
M	2017
N	2018

(4) Product Type

N	Indoor Unit
X	Outdoor Unit

(5) Product Notation

1	1Way Cassette

(6) Feature

D	Deluxe

(7) Rating Voltage

C	1Ø, 208~230V, 60Hz

(8) Mode

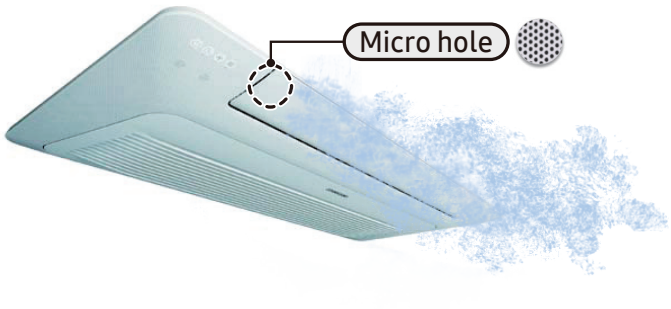
H	Heat Pump (R410A)

Features & Benefits

Wind-Free 1 Way Cassette

1. Wind-Free cooling

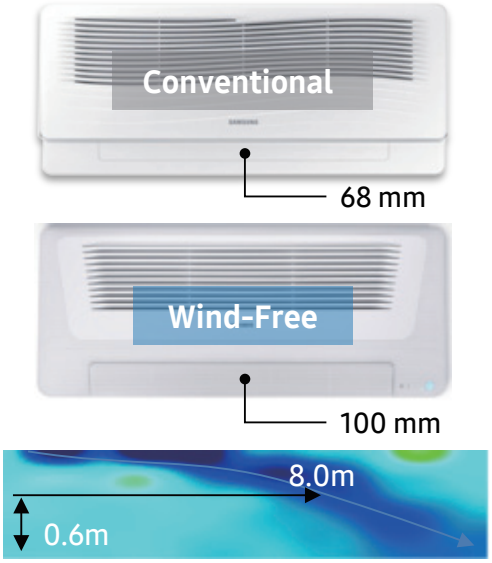
Comfort wind implementation by Wind-Free cooling



※ Wind-Free implementation : Still air by the velocity of flow below 0.15m/s.

2. Big blade

Max. 8m Horizontal reach



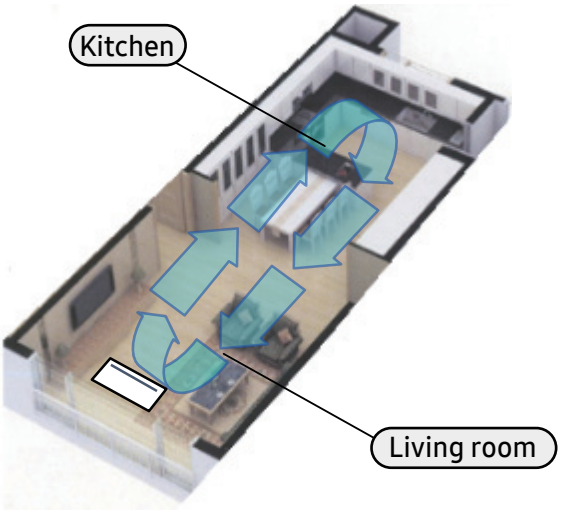
※ Blade enlargement about 47% compare to conventional product

※ Reach : 8m (Height 0.6m, Wind speed 0.3m/s)
Conventional product (Samsung) : 5m

※ Based on Wind-Free 1Way 7.1kW

3. Even cooling

Even cooling For spacious space



※ Expand the blade angle from 30˚ to 80˚
Conventional product (Samsung) : 40~80 ˚

Contents

1. Line up

Wind-Free 1 Way Cassette

Capacity (kBtu)	7.5	9.5	12
Wind free 1 Way Cassette			
Type	Middle		
Model Name	AM007NN1DCH/AA	AM009NN1DCH/AA	AM012NN1DCH/AA

2. Specification

Wind-Free 1 Way Cassette

Type				1Way CASSETTE	1Way CASSETTE	1Way CASSETTE
Model Name				AM007NN1DCH/AA	AM009NN1DCH/AA	AM012NN1DCH/AA
Power Supply			Φ, #, V, Hz	1,208-230,60	1,208-230,60	1,208-230,60
Mode			-	HP/HR	HP/HR	HP/HR
Performance	Capacity	Cooling	Btu/h	7,500	9,500	12,000
			US RT	0.63	0.79	1
		Heating	Btu/h	8,500	10,500	13,500
			US RT	0.71	0.88	1.12
Power	Power Input	Cooling	W	40	45	50
		Heating		40	45	50
	Current Input	Cooling	A	0.23	0.25	0.28
		Heating		0.23	0.25	0.28
	Current	MCA	A	0.29	0.31	0.35
		MFA		15	15	15
Heat exchanger	Type		-	Fin & Tube	Fin & Tube	Fin & Tube
	Material	Fin	-	Al	Al	Al
		Tube	-	Cu	Cu	Cu
	Fin Treatment		-	Green Hydrophile	Green Hydrophile	Green Hydrophile
Fan	Type		-	Crossflow Fan	Crossflow Fan	Crossflow Fan
	Quantity		ea	1	1	1
	Air Flow Rate	H/M/L	CFM	211.90/176.58/141.26	247.21/211.90/176.58	282.53/247.21/211.90
Fan Motor	Model		-	AC Motor	AC Motor	AC Motor
	Output x n		W	17 x 1	17 x 1	17 x 1
Piping Connections	Liquid Pipe		Type	Flare Connection	Flare Connection	Flare Connection
			Φ, mm	6.35	6.35	6.35
			Φ, inch	1/4"	1/4"	1/4"
	Gas Pipe		Type	Flare Connection	Flare Connection	Flare Connection
			Φ, mm	12.7	12.7	12.7
			Φ, inch	1/2"	1/2"	1/2"
	Drain Pipe		Φ, mm	VP20 (OD 25,ID 20)	VP20 (OD 25,ID 20)	VP20 (OD 25,ID 20)
Wiring connections	Communication	Minimum	mm^2	0.75	0.75	0.75
		Remark	-	F1, F2	F1, F2	F1, F2
Refrigerant	Type		-	R410A	R410A	R410A
	Electronic Expansion Valve		-	EEV INCLUDED	EEV INCLUDED	EEV INCLUDED
Sound	Sound Pressure	High / Mid / Low	dB(A)	29 / 26 / 24	32 / 28 / 24	37 / 33 / 30
	Sound Power	Cooling		47	50	55
Dimension	Net Weight		kg	10	10	10
			lbs	22.05	22.05	22.05
	Shipping Weight		kg	12.8	12.8	12.8
			lbs	28.22	28.22	28.22
	Net Dimensions (WxHxD)		mm	970 x 135 x 410	970 x 135 x 410	970 x 135 x 410
			inch	38.19 x 5.31 x 16.14	38.19 x 5.31 x 16.14	38.19 x 5.31 x 16.14
	Shipping Dimensions (WxHxD)		mm	1,173 x 231 x 478	1,173 x 231 x 478	1,173 x 231 x 478
			inch	46.18 x 9.09 x 18.82	46.18 x 9.09 x 18.82	46.18 x 9.09 x 18.82

2. Specification

Wind-Free 1 Way Cassette

Type			1Way CASSETTE	1Way CASSETTE	1Way CASSETTE
Model Name			AM007NN1DCH/AA	AM009NN1DCH/AA	AM012NN1DCH/AA
Casing	Material	-	ABS	ABS	ABS
Panel	Model Name	-	PC1NWFMAN PC1NWFMUN	PC1NWFMAN PC1NWFMUN	PC1NWFMAN PC1NWFMUN
	Type	-	Wind Free	Wind Free	Wind Free
	Material	-	HIPS	HIPS	HIPS
	Color	-	White	White	White
	Net Weight	kg	4.3	4.3	4.3
		lbs	9.48	9.48	9.48
	Shipping Weight	kg	6.3	6.3	6.3
		lbs	13.89	13.89	13.89
	Net Dimensions (W×H×D)	mm	1198 x 35 x 500	1198 x 35 x 500	1198 x 35 x 500
		inch	47.17 x 1.38 x 19.69	47.17 x 1.38 x 19.69	47.17 x 1.38 x 19.69
	Shipping Dimensions (W×H×D)	mm	1262 x 122 x 566	1262 x 122 x 566	1262 x 122 x 566
		inch	49.69 x 4.80 x 22.28	49.69 x 4.80 x 22.28	49.69 x 4.80 x 22.28
Drain pump		-	INCLUDED	INCLUDED	INCLUDED
	Max. lifting Height / Displacement	mm / Liter/h	750 / 24	750 / 24	750 / 24

NOTE

- Specification may be subject to change without prior notice.

1) Mode : HP(Heat Pump), HR(Heat Recovery)

2) Performances are based on the following test conditions.
   - Cooling : Indoor temperature : 80°F(26.7°C) DB, 67°F(19.4°C) WB,
     Outdoor temperature : 95°F(35°C) DB, 75°F(23.9°C) WB
   - Heating : Indoor temperature : 70°F(21.1°C) DB, 60°F(15.6°C) WB,
     Outdoor temperature : 47°F(8.3°C) DB, 43°F(6.1°C) WB
   - Equivalent refrigerant pipe length 25ft(7.5m), Level differences 0ft(0m)

3) Sound pressure level is obtained in an anechoic room.
   - Sound pressure level is a relative value, depending on the distance and acoustic environment.
   - Sound pressure level may differ depending on operation condition.
   - dBA = A-weighted sound pressure level
   - Reference acoustic pressure 0 dB = 20uPa

4) Sound power level is an absolute value that a sound source generates.
   - dBA = A-weighted sound power level
   - Reference power : 1pW
   - Measured according to ISO 3741

5) These products contain R410A which is fluorinated greenhouse gas.

6) Select wire size based on the value of MCA

3. Summary Table

Wind-Free 1 Way Cassette

Performance Characteristics

Model Code	Net Weight (lbs)	Fan Speed	Nominal Capacity(kBtu)			Airflow (CFM)	Sound Pressure (dBA)	Sound Power (dBA)
			Cooling	Sensible	Heating			
AM007NN1DCH/AA	22.05	High	7.50	5.10	8.50	211.90	29	47
		Mid	6.85	4.66	7.76	176.58	26	-
		Low	6.12	4.16	6.94	141.26	24	-
AM009NN1DCH/AA	22.05	High	9.50	6.40	10.50	247.21	32	50
		Mid	8.80	5.93	9.72	211.90	28	-
		Low	8.03	5.41	8.87	176.58	24	-
AM012NN1DCH/AA	22.05	High	12.00	8.70	13.50	282.53	37	55
		Mid	11.20	8.14	12.60	247.21	33	-
		Low	10.40	7.53	11.70	211.90	30	-

NOTE

- Sound data is based on cooling operation.

Electrical Characteristics

Model Code	Power Supply (Φ, #, V, Hz)	Power Input (W)	Current Input (A)	MCA (A)	MFA (A)	FLA (A)
AM007NN1DCH/AA	1,2,208-230,60	40.00	0.23	0.29	15	0.23
AM009NN1DCH/AA	1,2,208-230,60	45.00	0.25	0.31	15	0.25
AM012NN1DCH/AA	1,2,208-230,60	50.00	0.28	0.35	15	0.28

NOTE

- MCA: Minimum circuit amperes
- MFA: Maximum fuse amperes
- FLA: Full load amperes
- Select wire size based on the value of MCA

4. Capacity Table

Wind-Free 1 Way Cassette

Cooling

TC : Total Capacity(Btu/h), SHC : Sensible Heat Capacity(Btu/h)

Model	Outdoor Temperature (°F, DB)	Indoor temperature (°F, WB)													
		57		61		64		67		70		72		75	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
		Btu/h	Btu/h	Btu/h	Btu/h	Btu/h	Btu/h	Btu/h	Btu/h	Btu/h	Btu/h	Btu/h	Btu/h	Btu/h	Btu/h
007	50	5,100	4,400	6,100	4,800	7,200	5,100	7,500	5,100	7,800	5,100	8,500	5,500	8,900	4,800
	54	5,100	4,400	6,100	4,800	7,200	5,100	7,500	5,100	7,800	5,100	8,500	5,500	8,900	4,800
	58	5,100	4,400	6,100	4,800	7,200	5,100	7,500	5,100	7,800	5,100	8,500	5,500	8,900	4,800
	60	5,100	4,400	6,100	4,800	7,200	5,100	7,500	5,100	7,800	5,100	8,200	5,100	8,900	4,800
	64	5,100	4,400	6,100	4,800	7,200	5,100	7,500	5,100	7,800	5,100	8,200	5,100	8,900	4,800
	67	5,100	4,400	6,100	4,800	7,200	5,100	7,500	5,100	7,800	5,100	8,200	5,100	8,900	4,800
	70	5,100	4,400	6,100	4,800	7,200	5,100	7,500	5,100	7,800	5,100	8,200	5,100	8,900	4,800
	73	5,100	4,400	6,100	4,800	7,200	5,100	7,500	5,100	7,800	5,100	8,200	5,100	8,900	4,800
	77	5,100	4,400	6,100	4,800	7,200	5,100	7,500	5,100	7,800	5,100	8,200	5,100	8,900	4,800
	80	5,100	4,400	6,100	4,800	7,200	5,100	7,500	5,100	7,800	5,100	8,200	5,100	8,900	4,800
	84	5,100	4,400	6,100	4,800	7,200	5,100	7,500	5,100	7,800	5,100	8,200	5,100	8,900	4,800
	88	5,100	4,400	6,100	4,800	7,200	5,100	7,500	5,100	7,800	5,100	8,200	5,100	8,900	4,800
	92	5,100	4,400	6,100	4,800	7,200	5,100	7,500	5,100	7,800	5,100	8,200	5,100	8,900	4,800
	95	5,100	4,400	6,100	4,800	7,200	5,100	7,500	5,100	7,800	5,100	8,200	5,100	8,900	4,800
	99	5,100	4,400	6,100	4,800	7,200	5,100	7,500	5,100	7,800	5,100	8,200	5,100	8,900	4,800
	103	5,100	4,400	6,100	4,800	7,200	5,100	7,500	5,100	7,800	5,100	8,200	5,100	8,500	4,400
	107	5,100	4,400	6,100	4,800	7,200	5,100	7,200	4,800	7,500	4,800	7,800	4,800	8,200	4,100
	111	5,100	4,400	6,100	4,800	6,800	4,800	7,200	4,800	7,200	4,400	7,500	4,800	7,500	3,800
	115	5,100	4,400	6,100	4,800	6,800	4,800	7,200	4,800	7,200	4,400	7,500	4,800	7,500	3,800
	118	5,100	4,400	6,100	4,800	6,800	4,800	7,200	4,800	7,200	4,400	7,500	4,800	7,500	3,800
009	50	6,400	5,400	7,800	6,100	8,800	6,400	9,500	6,400	9,800	6,400	10,500	6,400	11,500	6,400
	54	6,400	5,400	7,800	6,100	8,800	6,400	9,500	6,400	9,800	6,400	10,500	6,400	11,200	6,100
	58	6,400	5,400	7,800	6,100	8,800	6,400	9,500	6,400	9,800	6,400	10,500	6,400	11,200	6,100
	60	6,400	5,400	7,800	6,100	8,800	6,400	9,500	6,400	9,800	6,400	10,500	6,400	11,200	6,100
	64	6,400	5,400	7,800	6,100	8,800	6,400	9,500	6,400	9,800	6,400	10,500	6,400	11,200	6,100
	67	6,400	5,400	7,800	6,100	8,800	6,400	9,500	6,400	9,800	6,400	10,500	6,400	11,200	6,100
	70	6,400	5,400	7,800	6,100	8,800	6,400	9,500	6,400	9,800	6,400	10,500	6,400	11,200	6,100
	73	6,400	5,400	7,800	6,100	8,800	6,400	9,500	6,400	9,800	6,400	10,500	6,400	11,200	6,100
	77	6,400	5,400	7,800	6,100	8,800	6,400	9,500	6,400	9,800	6,400	10,500	6,400	11,200	6,100
	80	6,400	5,400	7,800	6,100	8,800	6,400	9,500	6,400	9,800	6,400	10,500	6,400	11,200	6,100
	84	6,400	5,400	7,800	6,100	8,800	6,400	9,500	6,400	9,800	6,400	10,500	6,400	11,200	6,100
	88	6,400	5,400	7,800	6,100	8,800	6,400	9,500	6,400	9,800	6,400	10,500	6,400	11,200	6,100
	92	6,400	5,400	7,800	6,100	8,800	6,400	9,500	6,400	9,800	6,400	10,500	6,400	11,200	6,100
	95	6,400	5,400	7,800	6,100	8,800	6,400	9,500	6,400	9,800	6,400	10,500	6,400	11,200	6,100
	99	6,400	5,400	7,800	6,100	8,800	6,400	9,500	6,400	9,800	6,400	10,500	6,400	11,200	6,100
	103	6,400	5,400	7,800	6,100	8,800	6,400	9,500	6,400	9,800	6,400	10,200	6,100	10,900	5,800
	107	6,400	5,400	7,800	6,100	8,800	6,400	9,200	6,100	9,500	6,100	9,800	5,800	10,200	5,400
	111	6,400	5,400	7,800	6,100	8,500	6,100	9,200	6,100	9,200	5,800	9,200	5,400	9,500	5,100
	115	6,400	5,400	7,800	6,100	8,500	6,100	9,200	6,100	9,200	5,800	9,200	5,400	9,500	5,100
	118	6,400	5,400	7,800	6,100	8,500	6,100	9,200	6,100	9,200	5,800	9,200	5,400	9,500	5,100

4. Capacity Table

Wind-Free 1 Way Cassette

Model	Outdoor Temperature (°F, DB)	Indoor temperature (°F, WB)													
		57		61		64		67		70		72		75	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
		Btu/h	Btu/h	Btu/h	Btu/h	Btu/h	Btu/h	Btu/h	Btu/h	Btu/h	Btu/h	Btu/h	Btu/h	Btu/h	Btu/h
012	50	8,300	7,300	9,700	8,000	11,300	8,000	12,000	8,700	12,300	8,700	13,300	8,700	14,300	8,300
	54	8,300	7,300	9,700	8,000	11,300	8,000	12,000	8,700	12,300	8,700	13,300	8,700	14,300	8,300
	58	8,300	7,300	9,700	8,000	11,300	8,000	12,000	8,700	12,300	8,700	13,300	8,700	14,300	8,300
	60	8,300	7,300	9,700	8,000	11,300	8,000	12,000	8,700	12,300	8,700	13,300	8,700	14,300	8,300
	64	8,300	7,300	9,700	8,000	11,300	8,000	12,000	8,700	12,300	8,700	13,300	8,700	14,300	8,300
	67	8,300	7,300	9,700	8,000	11,300	8,000	12,000	8,700	12,300	8,700	13,300	8,700	14,000	8,000
	70	8,300	7,300	9,700	8,000	11,300	8,000	12,000	8,700	12,300	8,700	13,300	8,700	14,000	8,000
	73	8,300	7,300	9,700	8,000	11,300	8,000	12,000	8,700	12,300	8,700	13,300	8,700	14,000	8,000
	77	8,300	7,300	9,700	8,000	11,300	8,000	12,000	8,700	12,300	8,700	13,300	8,700	14,000	8,000
	80	8,300	7,300	9,700	8,000	11,300	8,000	12,000	8,700	12,300	8,700	13,300	8,700	14,000	8,000
	84	8,300	7,300	9,700	8,000	11,300	8,000	12,000	8,700	12,300	8,700	13,300	8,700	14,000	8,000
	88	8,300	7,300	9,700	8,000	11,300	8,000	12,000	8,700	12,300	8,700	13,300	8,700	14,000	8,000
	92	8,300	7,300	9,700	8,000	11,300	8,000	12,000	8,700	12,300	8,700	13,300	8,700	14,000	8,000
	95	8,300	7,300	9,700	8,000	11,300	8,000	12,000	8,700	12,300	8,700	13,300	8,700	14,000	8,000
	99	8,300	7,300	9,700	8,000	11,300	8,000	12,000	8,700	12,300	8,700	13,000	8,300	14,000	8,000
	103	8,300	7,300	9,700	8,000	11,300	8,000	12,000	8,700	12,300	8,700	13,000	8,300	13,700	7,700
	107	8,300	7,300	9,700	8,000	11,300	8,000	11,700	8,300	12,000	8,300	12,300	8,000	13,000	7,000
	111	8,300	7,300	9,700	8,000	10,700	7,700	11,300	8,000	11,700	8,000	11,700	7,700	12,000	6,700
	115	8,300	7,300	9,700	8,000	10,700	7,700	11,300	8,000	11,700	8,000	11,700	7,700	12,000	6,700
	118	8,300	7,300	9,700	8,000	10,700	7,700	11,300	8,000	11,700	8,000	11,700	7,700	12,000	6,700

NOTE

- The performance table shows the average value of each conditions.

4. Capacity Table

Wind-Free 1 Way Cassette

Heating

TC : Total Capacity(Btu/h)

Model	Outdoor temperature (°F, DB)		Indoor temperature (°F, DB)				
			61	65	70	72	75
			TC	TC	TC	TC	TC
	DB	WB	Btu/h	Btu/h	Btu/h	Btu/h	Btu/h
007	-3.6	-4	5,300	5,300	5,300	5,300	5,300
	-1.8	-2	5,500	5,500	5,500	5,500	5,500
	2	1	5,700	5,700	5,700	5,700	5,700
	6	5	6,000	5,700	5,700	5,700	5,700
	10	9	6,400	6,400	6,400	6,400	6,000
	13	12	7,100	7,100	6,700	6,700	6,700
	17	15	7,600	7,400	7,100	6,900	6,900
	19	18	8,100	7,800	7,400	7,100	7,100
	23	21	8,500	8,100	8,000	7,800	7,800
	26	24	8,900	8,900	8,300	8,100	7,800
	30	28	9,000	8,900	8,400	8,100	7,800
	35	32	9,200	8,900	8,500	8,100	7,800
	39	36	9,600	9,200	8,500	8,100	7,800
	44	40	9,900	9,600	8,500	8,100	7,800
	47	43	9,900	9,600	8,500	8,100	7,800
	51	47	10,600	9,600	8,500	8,100	7,800
	54	50	10,600	9,600	8,500	8,100	7,800
	57	53	10,600	9,600	8,500	8,100	7,800
	60	56	10,600	9,600	8,500	8,100	7,800
009	-3.6	-4	6,400	6,400	6,400	6,400	6,400
	-1.8	-2	6,600	6,600	6,600	6,600	6,400
	2	1	6,800	6,800	6,800	6,800	6,400
	6	5	7,100	7,100	6,800	6,800	6,400
	10	9	7,500	7,500	7,300	7,100	7,100
	13	12	7,800	7,800	7,800	7,800	7,500
	17	15	8,100	8,000	8,000	8,000	7,600
	19	18	8,500	8,100	8,100	8,100	7,800
	23	21	8,800	8,800	8,500	8,500	8,100
	26	24	9,500	9,100	9,000	8,800	8,500
	30	28	9,700	9,300	9,100	9,000	8,600
	35	32	9,800	9,500	9,300	9,100	8,800
	39	36	10,200	10,200	9,700	9,500	9,100
	44	40	10,800	10,500	10,200	9,800	9,100
	47	43	11,200	10,800	10,500	10,200	9,100
	51	47	11,500	11,200	10,500	10,200	9,100
	54	50	11,900	11,200	10,500	10,200	9,100
	57	53	12,200	11,500	10,500	10,200	9,100
	60	56	12,500	11,500	10,500	10,200	9,100

4. Capacity Table

Wind-Free 1 Way Cassette

Model	Outdoor temperature (°F, DB)		Indoor temperature (°F, DB)				
			61	65	70	72	75
			TC	TC	TC	TC	TC
	DB	WB	Btu/h	Btu/h	Btu/h	Btu/h	Btu/h
012	-3.6	-4	8,400	8,400	8,100	8,100	8,100
	-1.8	-2	8,800	8,600	8,200	8,200	8,100
	2	1	9,100	8,800	8,400	8,400	8,100
	6	5	9,500	9,100	8,800	8,800	8,400
	10	9	9,800	9,500	9,300	9,100	9,100
	13	12	10,200	10,200	10,000	9,800	9,800
	17	15	10,500	10,500	10,300	10,200	10,000
	19	18	10,900	10,900	10,500	10,500	10,200
	23	21	11,600	11,200	11,000	10,900	10,500
	26	24	11,900	11,900	11,400	11,200	10,900
	30	28	12,300	12,300	11,700	11,600	11,000
	35	32	12,600	12,600	12,100	11,900	11,200
	39	36	13,300	13,000	12,600	12,300	11,900
	44	40	13,700	13,700	13,000	12,600	11,900
	47	43	14,400	14,400	13,500	13,000	11,900
	51	47	14,700	14,400	13,500	13,000	11,900
	54	50	15,400	14,700	13,500	13,000	11,900
	57	53	15,800	14,700	13,500	13,000	11,900
	60	56	16,100	15,100	13,500	13,000	11,900

NOTE

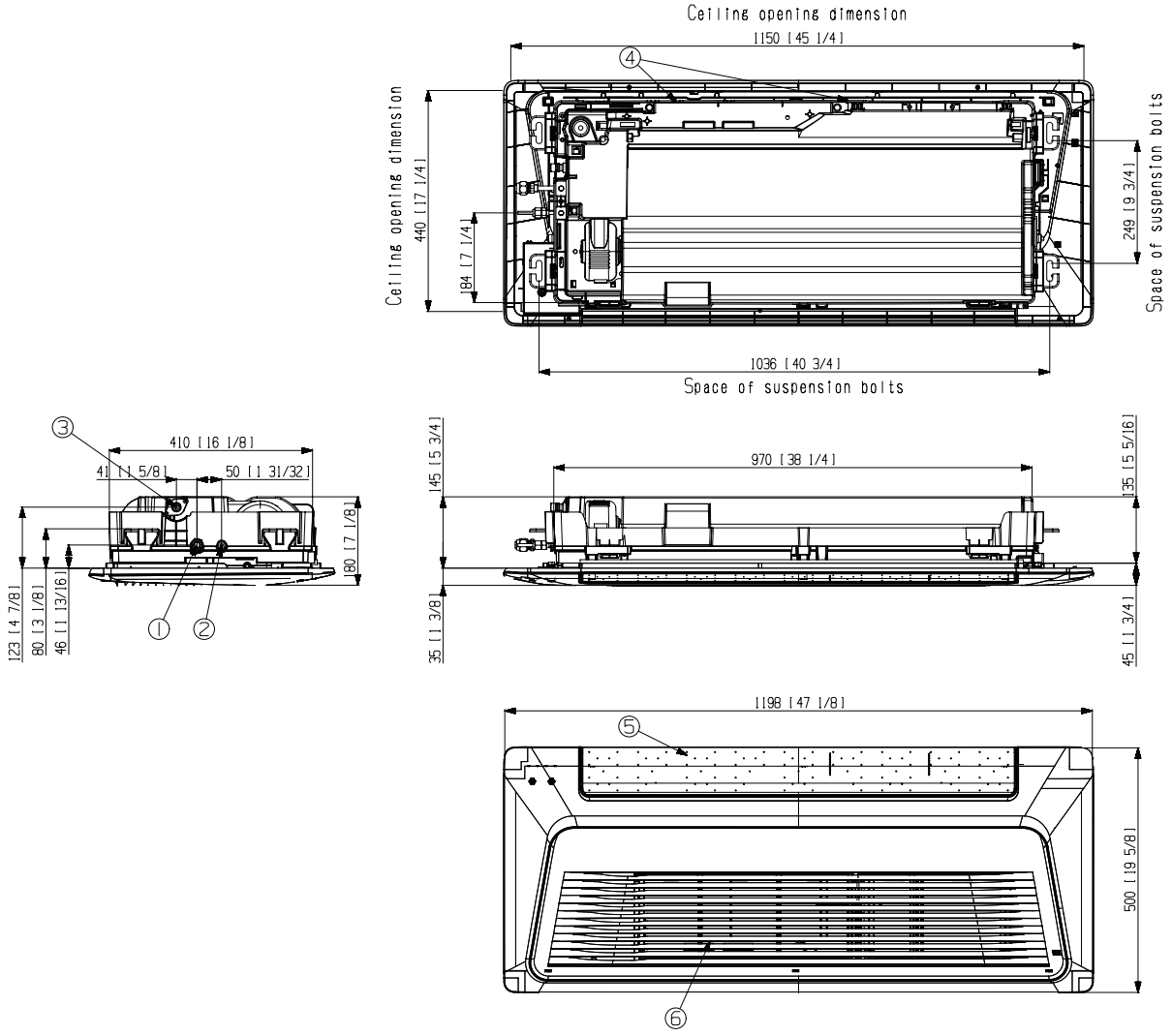
- The performance table shows the average value of each conditions.

5. Dimensional Drawing

Wind-Free 1 Way Cassette

- AM007/009/012NN1DCH/AA

[Unit : mm(inch)]

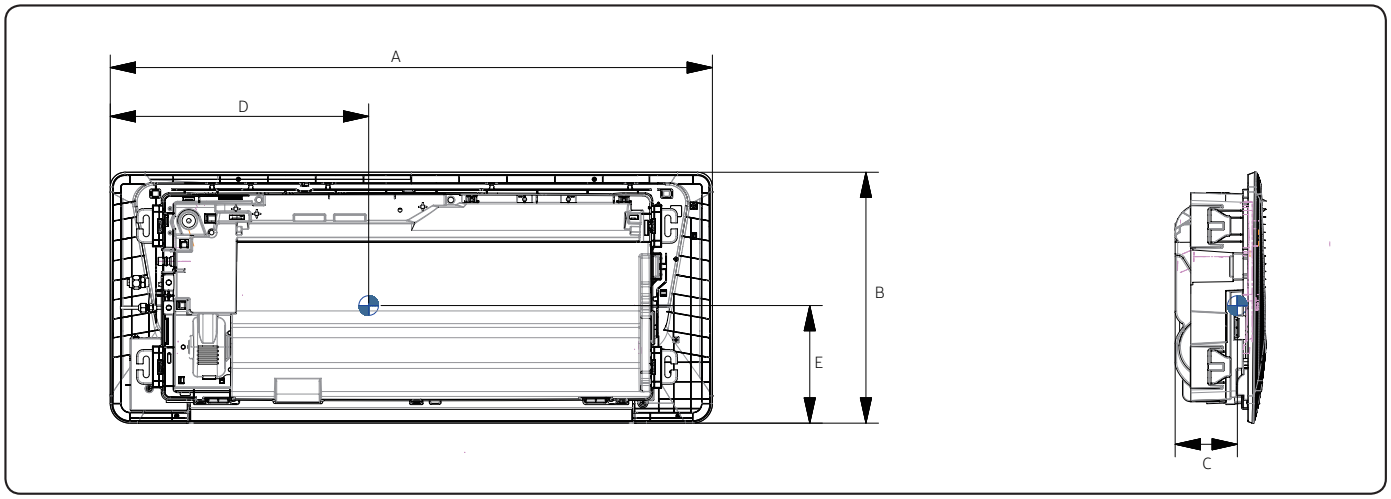


NO	Name	Description	NO	Name	Description
01	Gas pipe connection	Ø12.7 (1/2")	05	Air outlet louver	-
02	Liquid pipe connection	Ø6.35 (1/4")	06	Air inlet grille	-
03	Drain hose connection	VP20 (OD26, ID20)			
04	Power supply/Communication wiring conduit	-			

6. Center of Gravity

Wind-Free 1 Way Cassette

[Unit : mm(inch)]

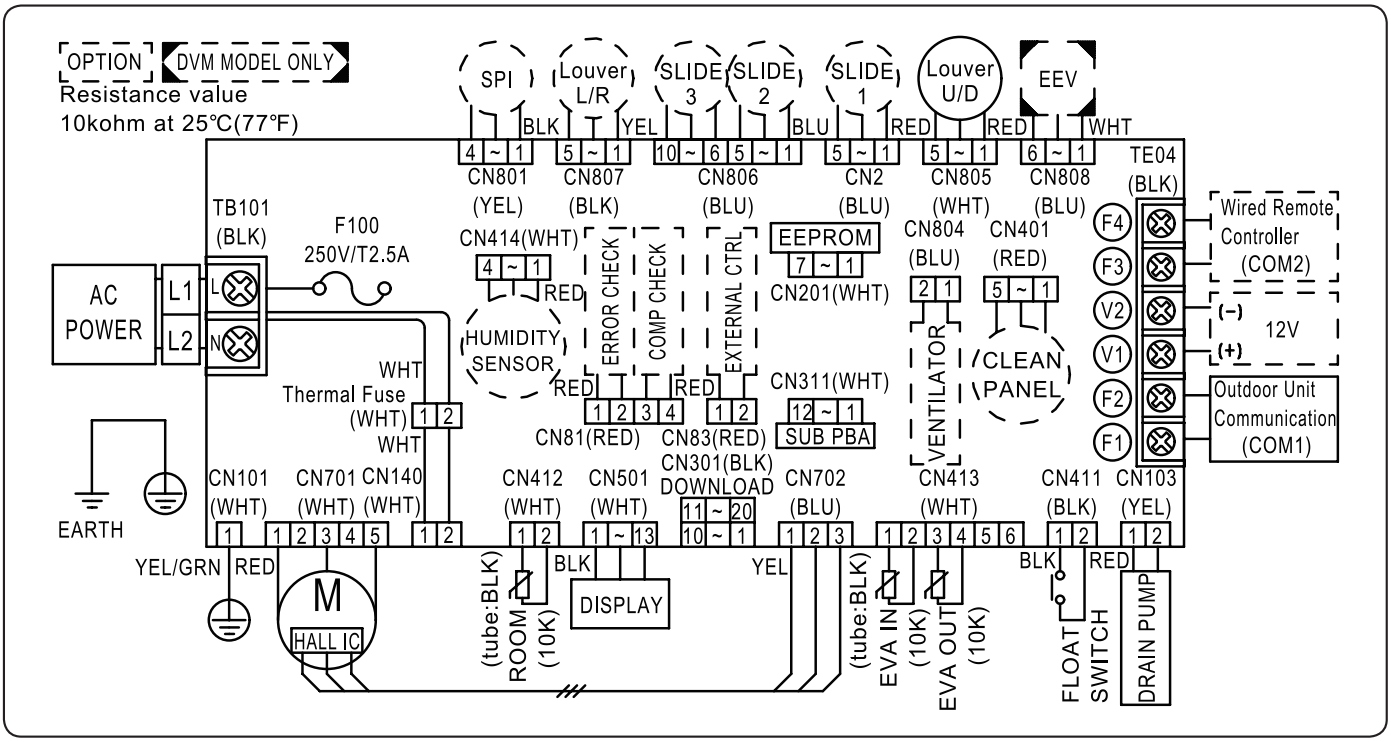


Model	A	B	C	D	E
AM007NN1DCH/AA AM009NN1DCH/AA AM012NN1DCH/AA	1,198 (47 3/16)	500 (19 11/16)	108 (4 1/4)	555 (21 7/8)	200 (7 7/8)

7. Electrical Wiring Diagram

Wind-Free 1 Way Cassette

- AM007/009/012NN1DCH/AA



F100	FUSE	EEV	Electronic expansion valve	EVA-IN(10K)	Thermistor EVA IN(10K)
M[HALL IC]	Motor (IDU fan)	SPI	S-Plasma ion	EVA-OUT(10K)	Thermistor EVA OUT(10K)
Thermal Fuse	Terminal Block thermal fuse	ROOM(10K)	Thermistor ROOM(10K)		

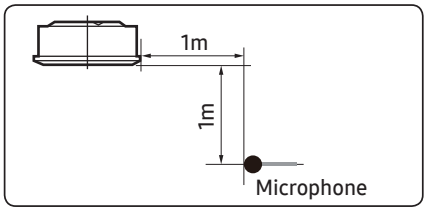
NOTE

- This wiring diagram applies only to the indoor unit.
- Symbols show as follow :
  BLK: black, RED: red, BLU: blue, WHT: white, YEL: yellow, BRN: brown, SKY: sky blue, GRN: green
- For connection wiring indoor-outdoor transmission F1-F2, indoor-wired remote controller transmission F3-F4.
- ⏚ Protective earth(SCREW)

8. Sound Data

Wind-Free 1 Way Cassette

Sound Pressure level

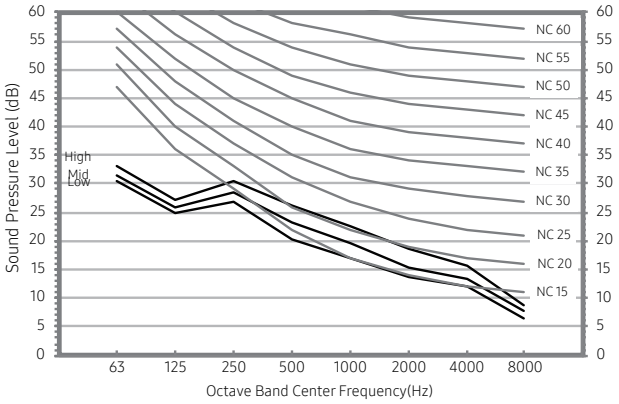


Unit: dB(A)

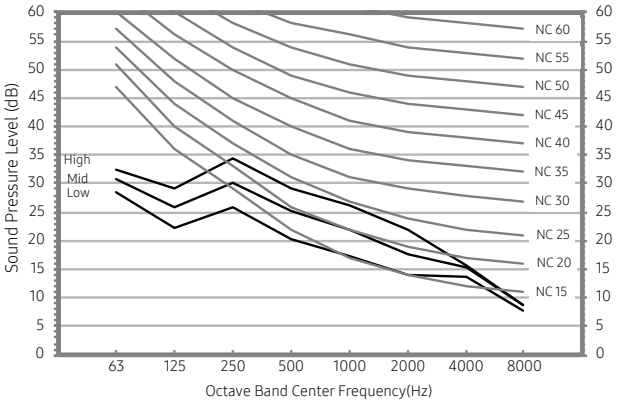
Model	High	Mid	Low
AM007NN1DCH/AA	29	26	24
AM009NN1DCH/AA	32	28	24
AM012NN1DCH/AA	37	33	30

- NC Curve

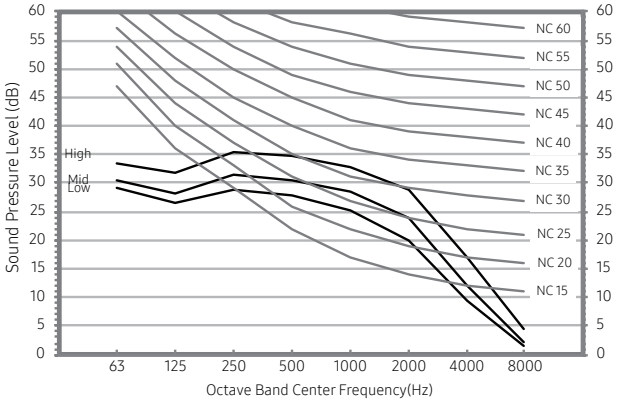
1) AM007NN1DCH/AA



2) AM009NN1DCH/AA



3) AM012NN1DCH/AA



NOTE

- Specifications may be subject to change without prior notice.
  - Sound pressure level is obtained in an anechoic room.
  - Sound pressure level is a relative value, depending on the distance and acoustic environment.
  - Sound pressure level may differ depending on operation condition.
  - dBA = A weighted sound pressure level
  - Reference acoustic pressure 0 dB = 20μPa

8. Sound Data

Wind-Free 1 Way Cassette

Sound Power level

Unit: dB(A)

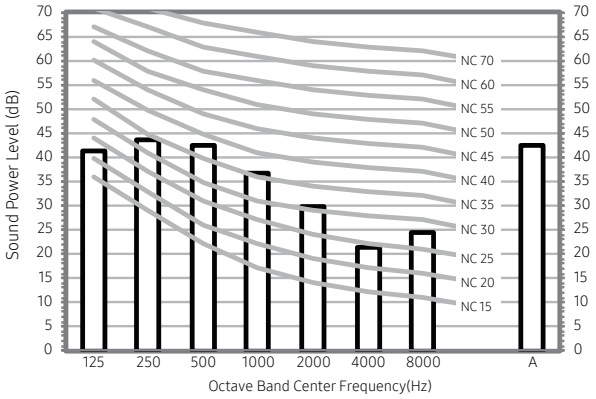
Model	Power
AM007NN1DCH/AA	47
AM009NN1DCH/AA	50
AM012NN1DCH/AA	55

NOTE

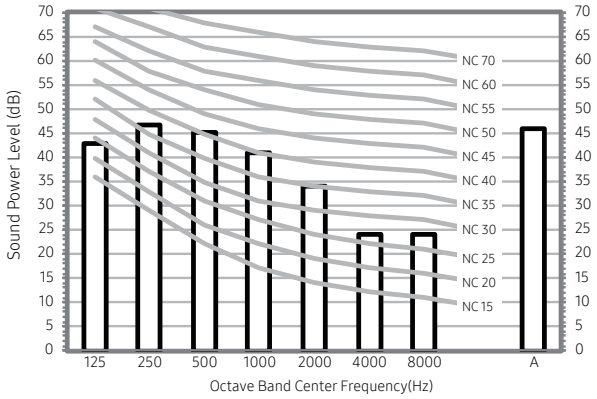
- Specifications may be subject to change without prior notice
  - Sound power level is an absolute value that a sound source generates.
  - dBA = A-weighted sound power level.
  - Reference power : 1pW.
  - Measured according to ISO 3741.

- NC Curve

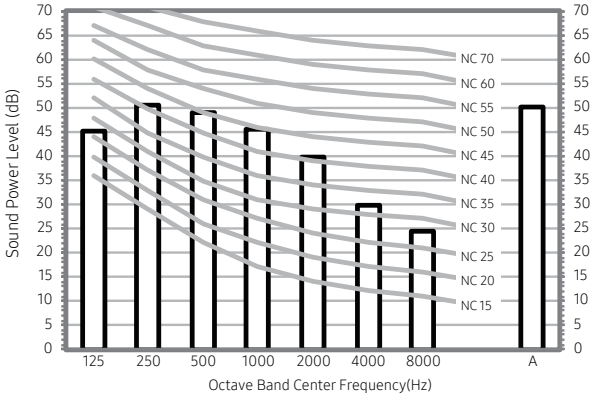
1) AM007NN1DCH/AA



2) AM009NN1DCH/AA



3) AM012NN1DCH/AA

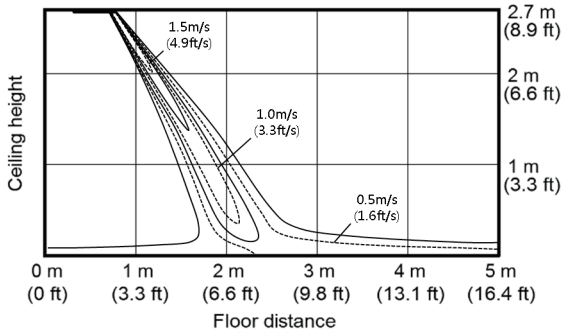


9. Temperature and Air Flow Distribution

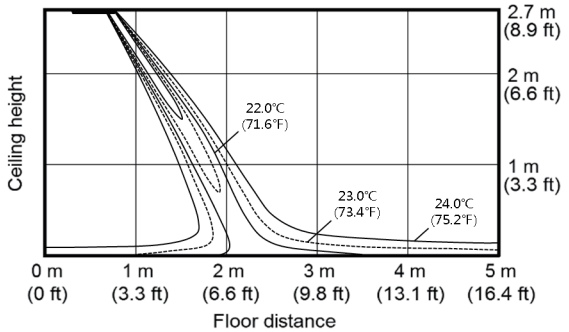
Wind-Free 1 Way Cassette

- AM007NN1DCH/AA

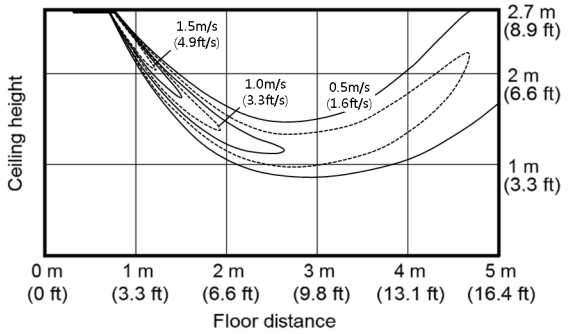
Cooling Air Velocity distribution Discharge angle : 60˚



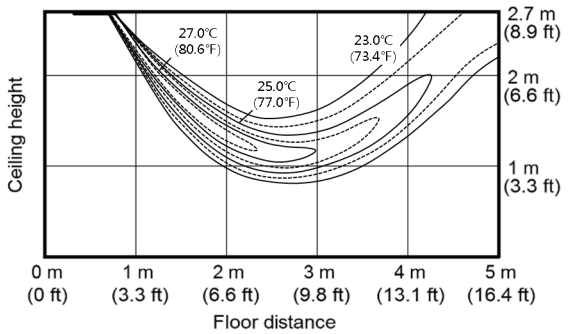
Cooling temperature distribution Discharge angle : 60˚



Heating Air Velocity distribution Discharge angle : 60˚



Heating temperature distribution Discharge angle : 60˚

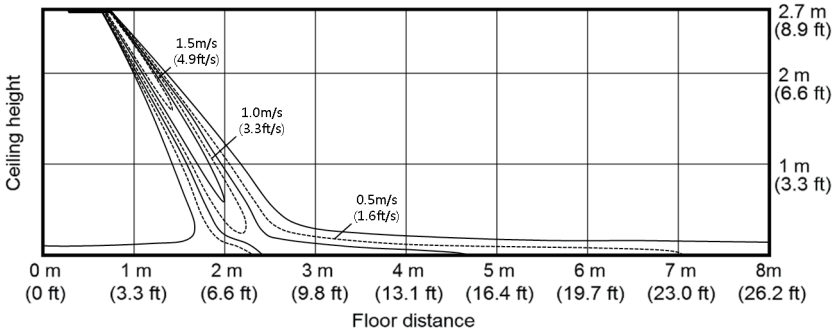


9. Temperature and Air Flow Distribution

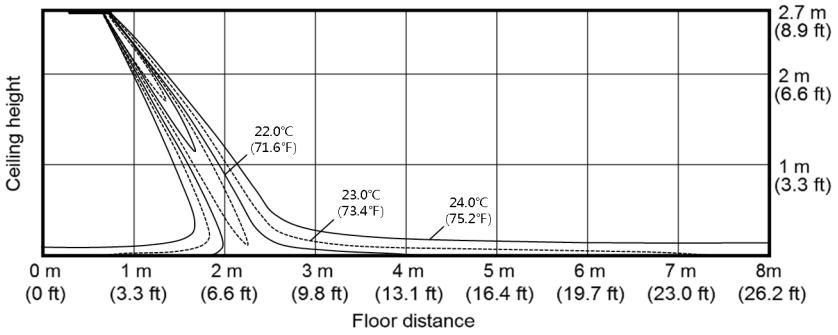
Wind-Free 1 Way Cassette

- AM009NN1DCH/AA

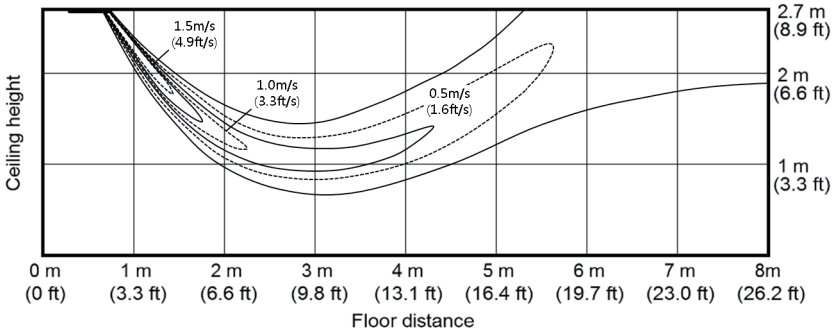
Cooling Air Velocity distribution Discharge angle : 16˚



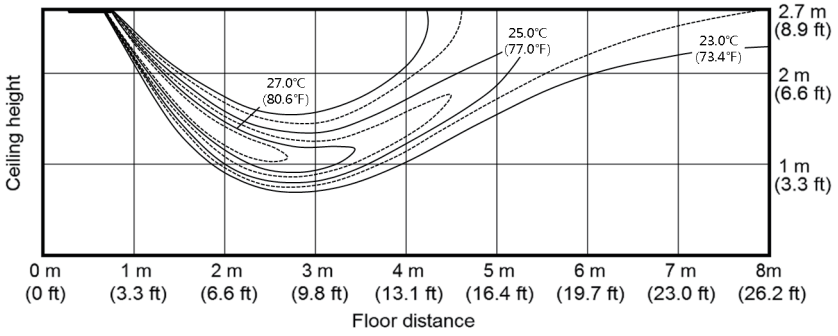
Cooling temperature distribution Discharge angle : 16˚



Heating Air Velocity distribution Discharge angle : 46˚



Heating temperature distribution Discharge angle : 46˚

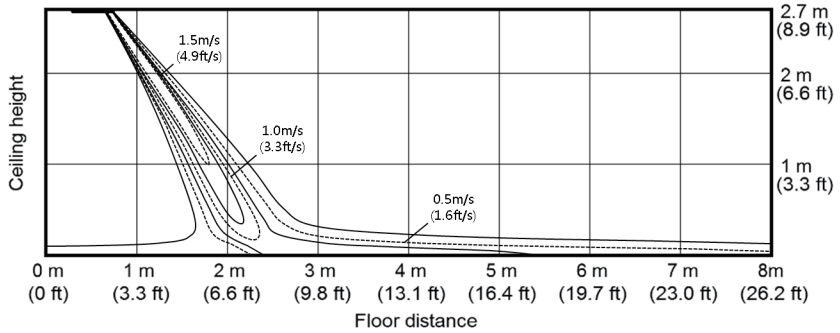


9. Temperature and Air Flow Distribution

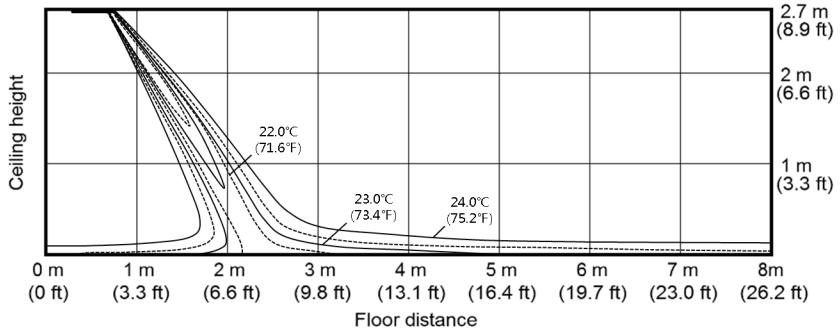
Wind-Free 1 Way Cassette

- AM012NN1DCH/AA

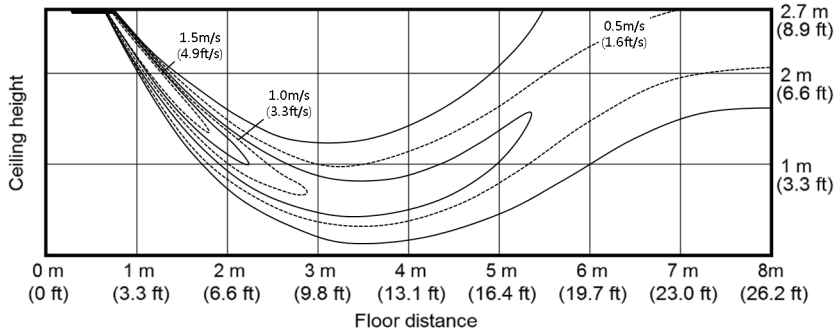
Cooling Air Velocity distribution Discharge angle : 16˚



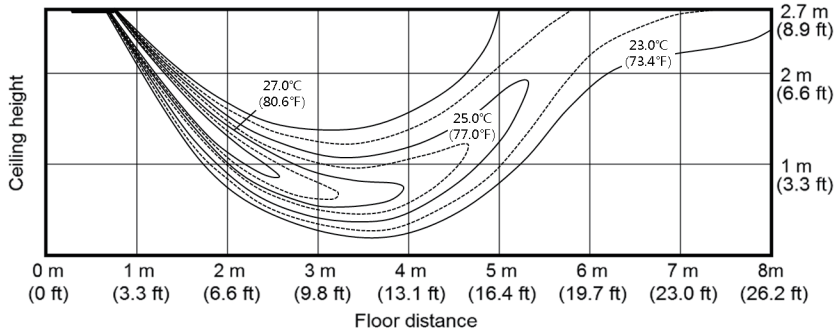
Cooling temperature distribution Discharge angle : 16˚



Heating Air Velocity distribution Discharge angle : 46˚

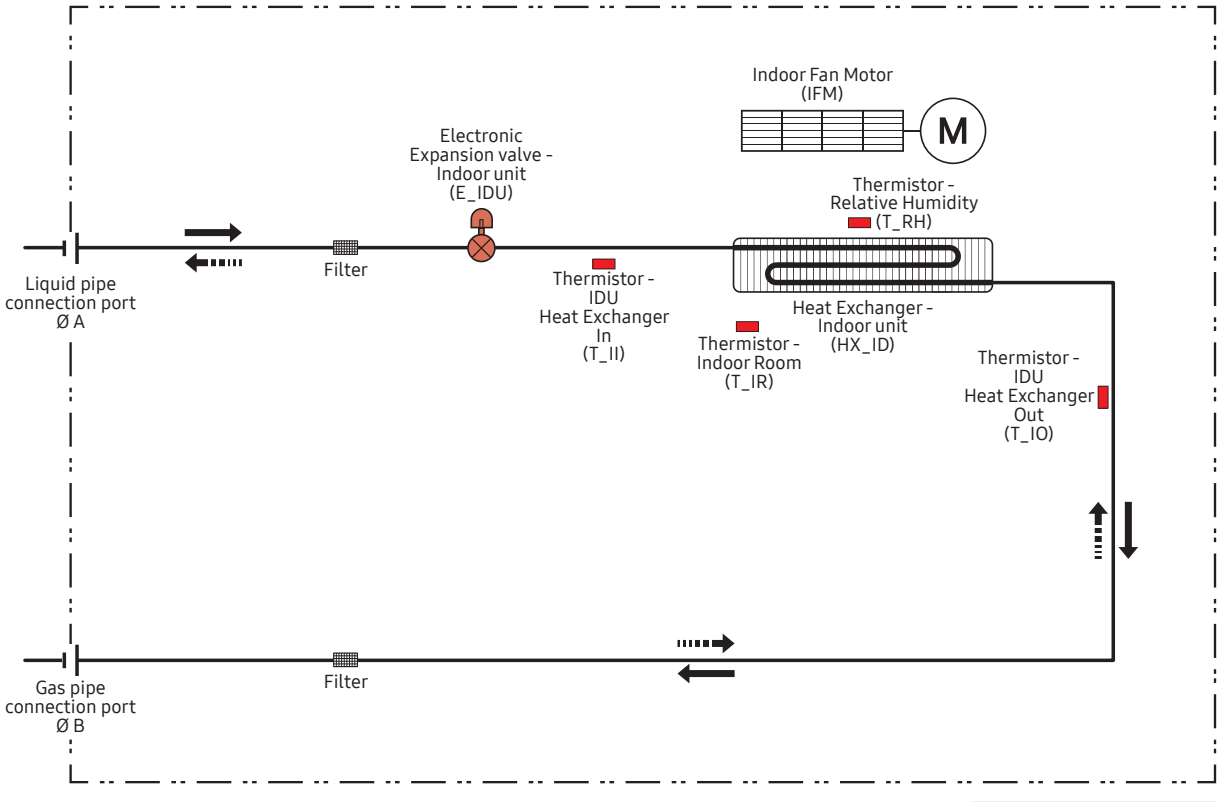


Heating temperature distribution Discharge angle : 46˚



10. Piping Diagram

Wind-Free 1 Way Cassette



Refrigerant flow	
Cooling	Heating
→	⇢

Unit : mm [Inches]

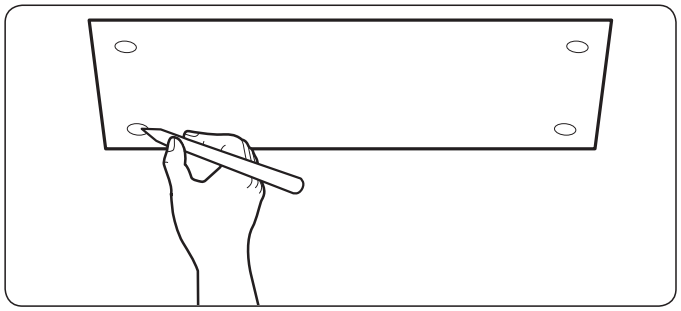
Model	A	B
AM007NN1DCH/AA	6.35(1/4)	12.70(1/2)
AM009NN1DCH/AA	6.35(1/4)	12.70(1/2)
AM012NN1DCH/AA	6.35(1/4)	12.70(1/2)

11. Installation

Installing the indoor unit

When deciding on the location of the air conditioner the following restrictions must be taken into account.

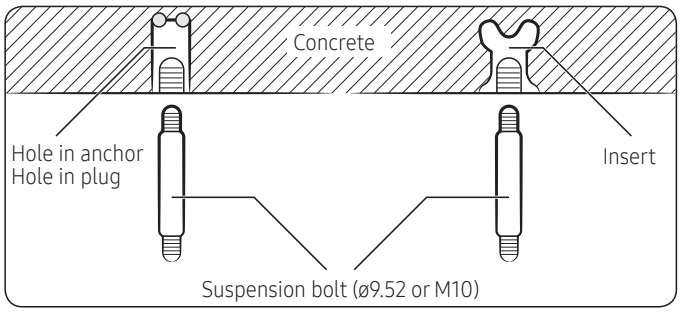
1 Place the pattern sheet on the ceiling at the spot where you want to install the indoor unit.



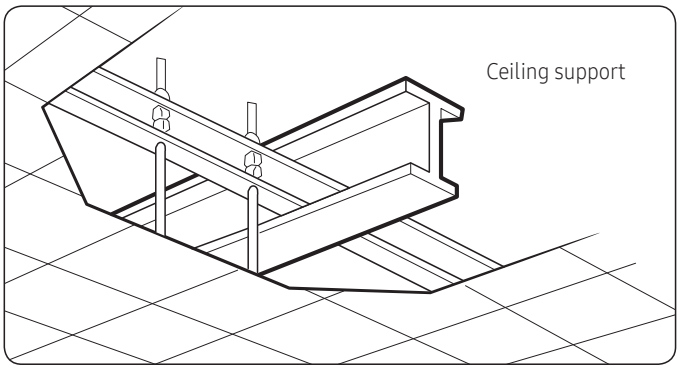
NOTE

- Since the diagram is made of paper, it may shrink or stretch slightly due to temperature or humidity. For this reason, before drilling the holes, be sure to maintain the correct dimensions between the markings.

2 Insert bolt anchors, use existing ceiling supports or construct a suitable support as shown in figure.



3 Install the suspension bolts, depending on the ceiling type.



⚠ CAUTION

- Make sure that the ceiling is strong enough to support the weight of the indoor unit. Before hanging the unit, test the strength of each attached suspension bolt.
- If the length of the suspension bolt is more than 1.5 m, you are required to prevent vibration.
- If this is not possible, create an opening on the false ceiling in order to be able to use it to perform the required operations on the indoor unit.

4 Screw eight nuts and washers to the suspension bolts, making space for hanging the indoor unit.

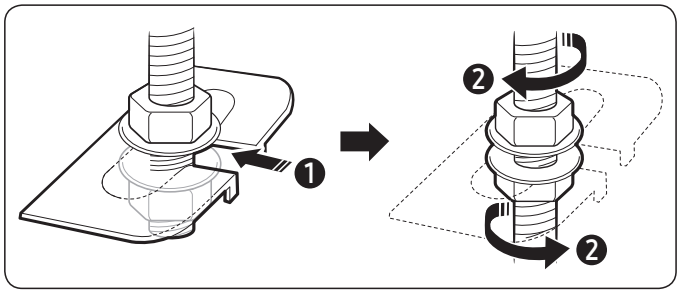
⚠ CAUTION

- You must install all of the suspension rods.
- It is important to leave sufficient space in the false ceiling to allow access for maintenance or repairs to the drainage pipe connection, the refrigerant pipe connection, or to remove the unit if necessary.

※ In case you want more information about the controllers and accessories, please refer to the Controller and Accessory TDB on pvi.Samsung.com site or Global Partner Portal site.

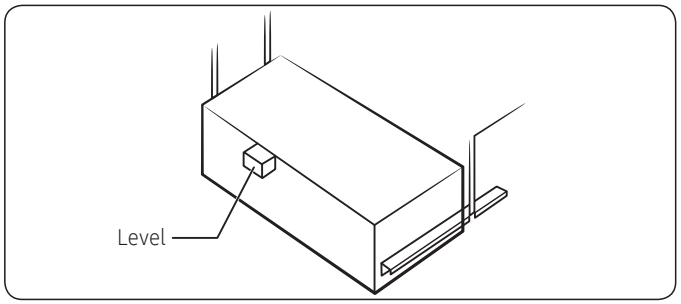
11. Installation

5 Hang the indoor unit to the suspension bolts between two nuts. Screw the nuts to suspend the unit.



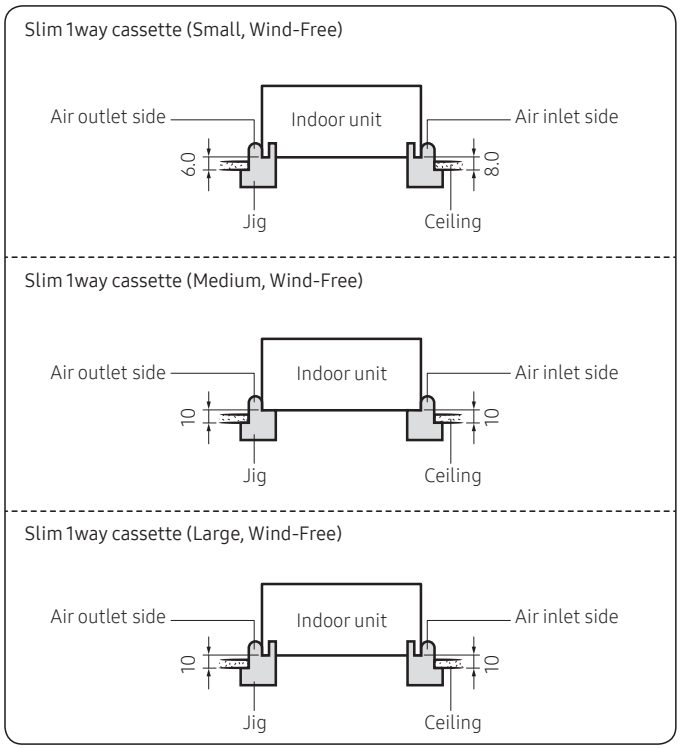
6 Check the level of the indoor unit by using a leveler.

- A tilt of the indoor unit may cause malfunction of a built-in float switch and water leaks.



7 Adjust the unit to the appropriate position, taking into account the installation area for the front panel.

- Place the pattern sheet on the indoor unit.
- Adjust the space between the ceiling and the indoor unit by using a dimension gauge.
- Fix the indoor unit securely after adjusting the level of the unit by using a leveller.
- Remove the pattern sheet and install the front panel.

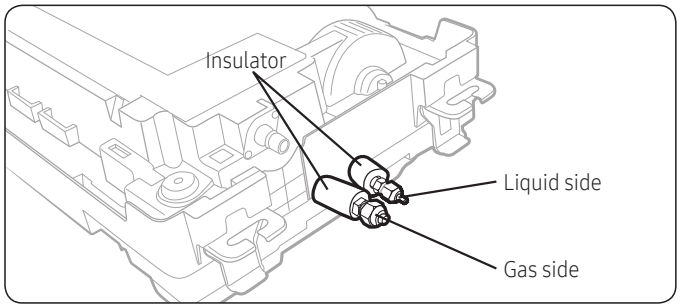


Performing the gas leak test

To identify potential gas leaks on the indoor unit, inspect the connection area of each refrigerant pipe using a leak detector for R-410A.

Before recreating the vacuum and recirculating the refrigerant gas, pressurize the whole system with nitrogen (using a cylinder with a pressure reducer) at a pressure above 4.1 MPa in order to immediately detect leaks on the refrigerant fittings.

Made vacuum for 15 minutes and pressurizing system with nitrogen.



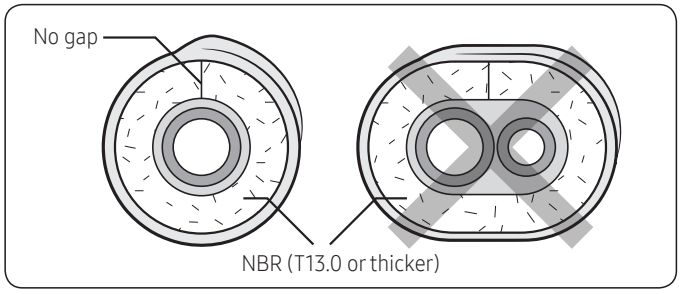
※ In case you want more information about the controllers and accessories, please refer to the Controller and Accessory TDB on pvi.Samsung.com site or Global Partner Portal site.

11. Installation

Insulating the refrigerant pipes

Once you have checked that there are no leaks in the system, you can insulate the piping and hose.

1 To avoid condensation problems, place Acrylonitrile Butadien Rubber separately around each refrigerant pipe.



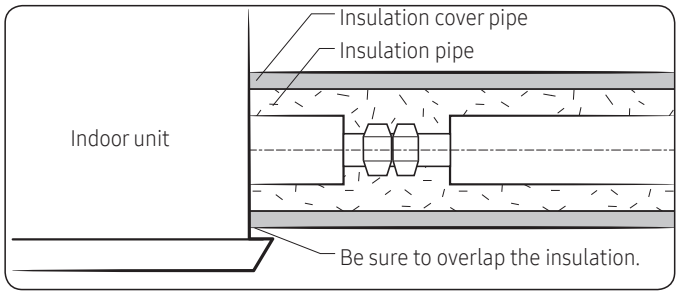
NOTE

- Always make the seam of pipes face upwards.

2 Wind insulating tape around the pipes and drain hose avoiding compressing the insulation too much.

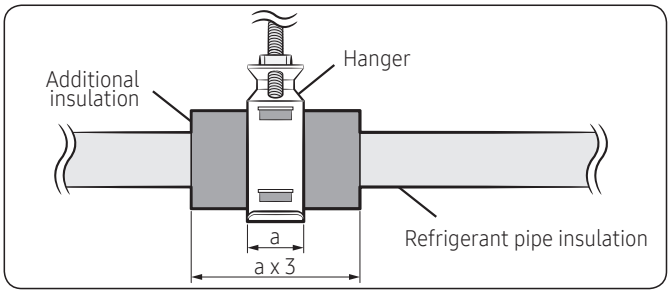
3 Finish wrapping insulating tape around the rest of the pipes leading to the outdoor unit.

4 The pipes and electrical cables connecting the indoor unit with the outdoor unit must be fixed to the wall with suitable ducts.



⚠ CAUTION

- Must fit tightly against body without any gap.
- Install the insulation not to get wider and use the adhesives on the connection part of it to prevent moisture from entering.
- Wind the refrigerant pipe with insulation tape if it is exposed to outside sunlight.
- Install the refrigerant pipe respecting that the insulation does not get thinner on the bent part or hanger of pipe.
- Add the additional insulation if the insulation plate gets thinner.



- Must fit tightly against body without any gap.
- All refrigerant connection must be accessible, in order to permit either unit maintenance or removal.

5 Select the insulation of the refrigerant pipe.

- Insulate the gas side and liquid side pipe, noting the insulation thickness that must differ according to the pipe size.
- Standard: Less than an indoor temperature of 30°C, with humidity at 85%. If installing in a high humidity environment, use one grade thicker insulator by referring to the table below. If installing in an unfavourable environment, use thicker one.
- The heat-resistance temperature of the insulator must be more than 120°C.

※ In case you want more information about the controllers and accessories, please refer to the Controller and Accessory TDB on pvi.Samsung.com site or Global Partner Portal site.

11. Installation

Pipe	Pipe size	Insulation Type (Heating/Cooling)		Remarks
		Standard [30°C, 85%]	High humidity [30°C, over 85%]	
		EPDM, NBR		
Liquid pipe	Ø6.35 to Ø9.52	9t	←	Internal temperature is higher than 120°C
	Ø12.7 to Ø50.80	13t	←	
Gas pipe	Ø6.35	13t	19t	
	Ø9.52 to Ø25.40	19t	25t	
	Ø28.58 to Ø44.45		32t	
	Ø50.80	25t	38t	

- When installing insulation in the places and conditions below, use the same insulation that is used for high humidity conditions.

‹Geological condition›
High humidity locations such as shorelines, hot springs, lake or riversides, and ridges (when part of the building is covered by earth and sand)
‹Operation purpose condition›
Restaurant ceiling, sauna, swimming pool etc.
‹Building construction condition›
Ceilings frequently exposed to moisture and cooling are not covered. For example, pipes installed at a corridor of a dormitory and studio or near an exit that opens and closes frequently. Places (where the pipes are installed) that are highly humid due to a lack of ventilation.

- Refrigerant pipe before EEV kit and MCU or without EEV kit and MCU
  - You can contact the gas side and liquid side pipes but the pipes should not be pressed.
  - When contacting the gas side and liquid side pipe, use 1 grade thicker insulator.
- Refrigerant pipe after EEV kit and MCU
  - Install the gas side and liquid side pipes, leave 10mm of space.
  - When contacting the gas side and liquid side pipe, use 1 grade thicker insulator.

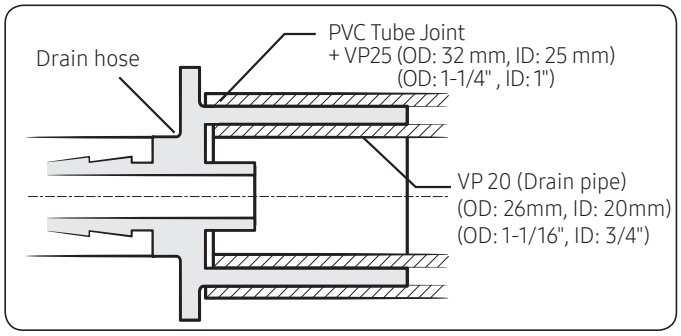
※ In case you want more information about the controllers and accessories, please refer to the Controller and Accessory TDB on pvi.Samsung.com site or Global Partner Portal site.

11. Installation

Installing the drain hose and drain pipe

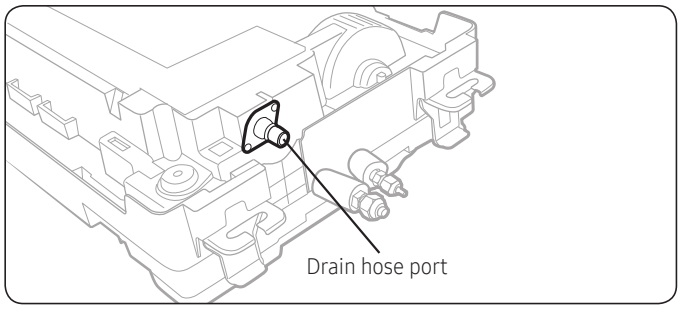
1 Fix the flexible hose to the drain pipe.

- The connection port of the flexible hose and PVC drain pipe must be fixed with PVC adhesives.
  Check out that the connected part doesn't leak.

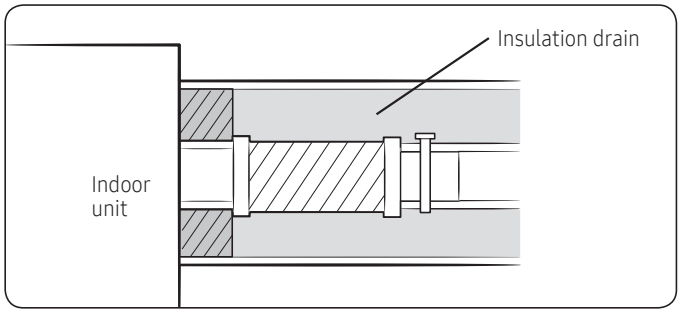


2 Connect the flexible hose to the drain hose port.

- Make sure that a rubber ring is installed on the drain hose port.
- The drain hose port location differs depending on the unit types.



3 Cover the flexible hose with the provided insulation drain.



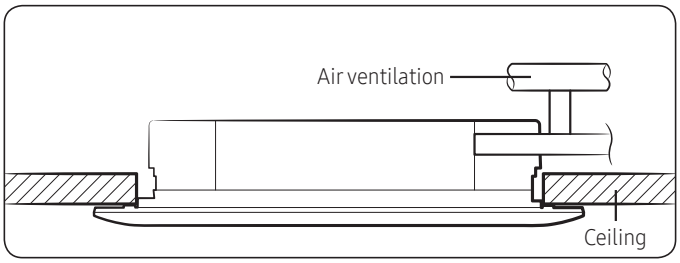
4 Install the drain pipe as shortly as possible (field supply).

5 Insulate the whole drain pipe inside the building (field supply).
The whole drain pipe must be insulated with 5t (or more) insulation to prevent condensation.

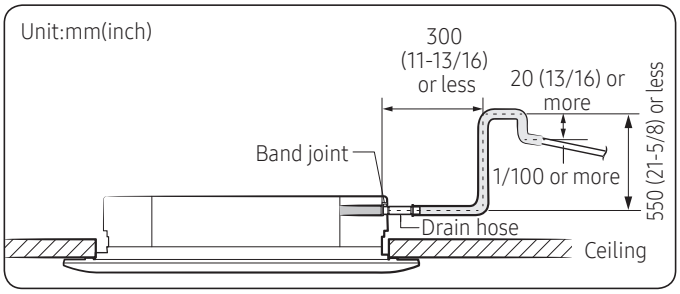
⚠ CAUTION

Check that the indoor unit is level with the ceiling by using the leveller.

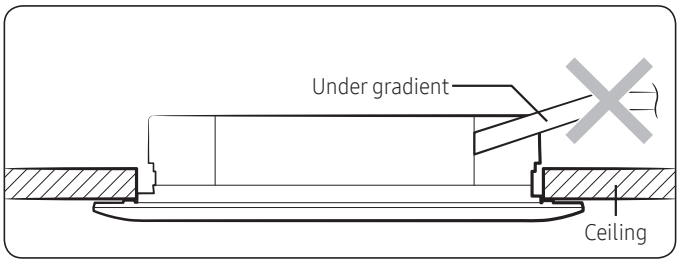
- Install air ventilation to drain condensation smoothly.



- If it is necessary to increase the height of the drain pipe, install the drain pipe straight within 300mm (11-13/16 inch) from the drain hose port. If it is raised higher than 500mm (21-5/8 inch), there may be water leaks.



- Do not give the hose an upward gradient beyond the connection port. This will cause water to flow backwards when the unit is stopped, resulting in water leaks.



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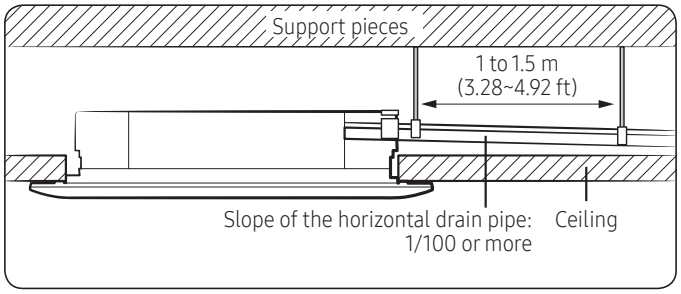
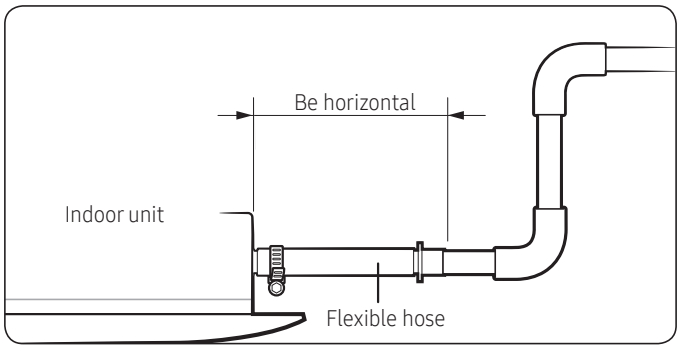
11. Installation

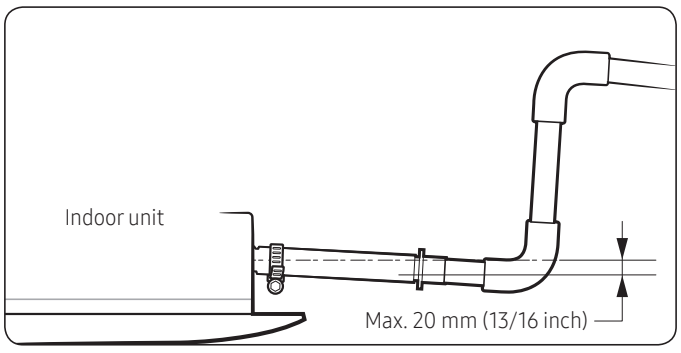
- Do not apply force to the piping on the unit side when connecting the drain hose. The hose should not be allowed to hang loose from its connection to the unit. Fasten the hose to a wall, frame or other support as close to the unit as possible.



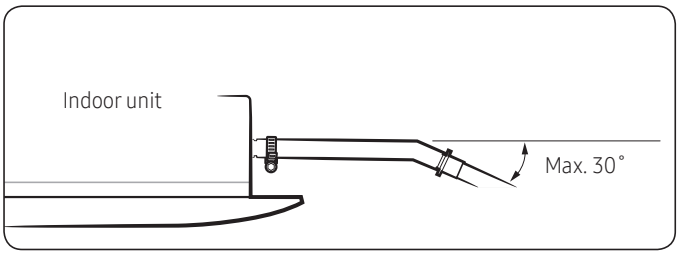
- Install horizontally.



- Max. allowable aixs gap

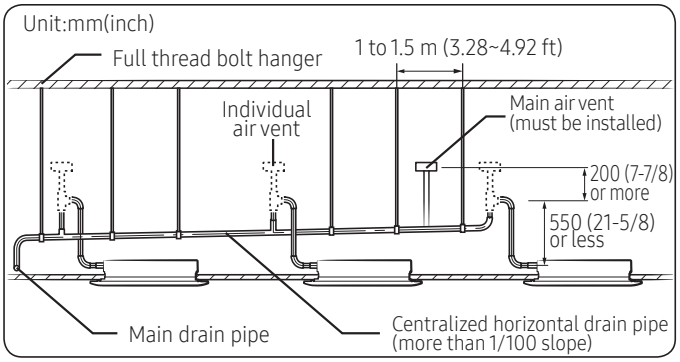


- Max. allowable bending angle



NOTE

- If a concentrated drain pipe is installed, refer to the figure below.



- If 3 or more units are installed, install the main air vent at the front of the farthest indoor unit from the main drain pipe.
- To prevent water from flowing back to indoor units, install an individual air vent at the top of each indoor unit.
  - The air vents should be T or 7 shaped to prevent dust or foreign substances from entering.
  - You may not need to install air vent if the horizontal drain pipe is in proper slope.

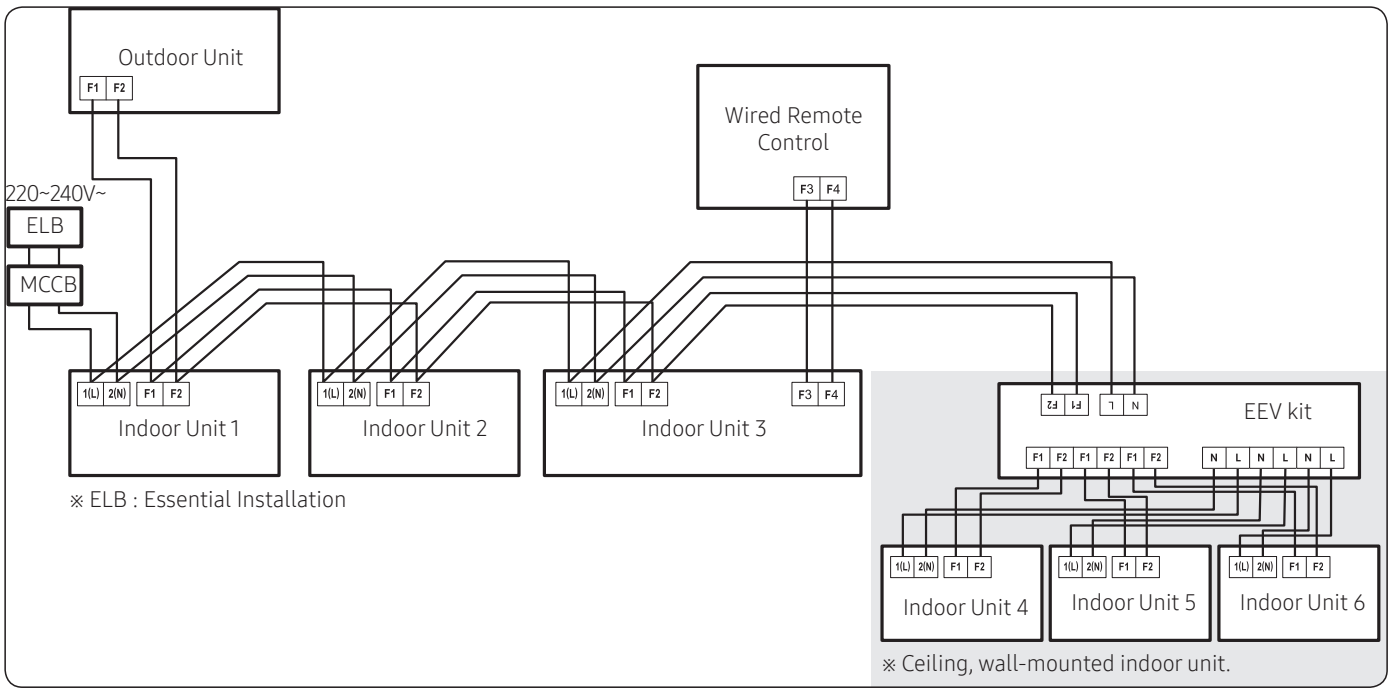
※ In case you want more information about the controllers and accessories, please refer to the Controller and Accessory TDB on pvi.Samsung.com site or Global Partner Portal site.

11. Installation

Connecting the power and communication cables

Power and communication cable connection

- Before wiring work, you must turn off all power source.
- Connect the power and communication cable among the units within maximum length to set the voltage drop under 10%.
- The auxiliary circuit breaker (ELCB, MCCB, ELB) should be considered more capacity if many indoor units are connected from one breaker.
- Connect F3, F4(for communication) to the communication cable of the wired remote control.
- Tighten the electric wires with a proper tool within the torque limit to connect and fix them firmly, and then organize the wires to prevent outside pressure being exerted on the covers and other parts. Failure to do so may result in overheating, electric shock, and fire.
- To protect the product from water and possible shock, you should keep the power and the communication cables of the indoor and outdoor units in the iron pipe.
- Connect the power cable to the auxiliary circuit breaker (ELCB, MCCB, ELB).
- Keep distances of 50mm or more between power cable and communication cables.
- Power supply cords of parts of appliances for outdoor use shall not be lighter than polychloroprene sheathed flexible cord. (Code designation IEC:60245 IEC 57 / CENELEC: H05RN-F or IEC:60245 IEC 66 / CENELEC: H07RN-F)
- Screws on terminal block must not be unscrewed with the torque less than 12 kgf•cm.
- When installing the indoor unit in a computer room, use the double shielded (tape aluminum / polyester braid + copper) cable of FROHH2R type.



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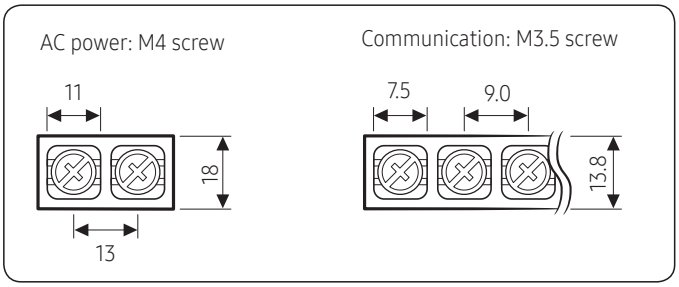
11. Installation

Specifications of the terminal blocks

(Unit: mm)



Power supply (single phase)	MCCB	ELB
Min : 198V Max : 242V	XA	XA, 30 mA 0.1 s
Power cable	**Earth cable**	**Communication cable**
2.5 mm or more	2.5 mm²	0.75 to 1.5 mm²

Decide the power cable specification and maximum length by formula **2**.

1 Decide the capacity of ELB and MCCB by below formula.

The capacity of ELB, MCCB X[A] = 1.25 X 1.1 X ΣAi

NOTE

- X : The capacity of ELB, MCCB
- ΣAi : Sum of rating currents of each indoor unit.

Rated currents

Model	Rating current(A)
AM007NN1DCH/AA	0.20
AM009NN1DCH/AA	0.23
AM012NN1DCH/AA	0.25

2 Decide the power cable specification and maximum length within 10% voltage drop among indoor units.

$$\sum_{k=1}^{n}\left(\frac{Coef\times 35.6\times Lk}{1000\times Ak}\times ik\right) < 10\%\ \text{of input voltage[V]}$$

NOTE

- Coef: 1.55
- Lk: Distance among each indoor unit[m],
  Ak: Power cable specification[mm²]
- ik: Running current of each unit[A]

※ In case you want more information about the controllers and accessories, please refer to the Controller and Accessory TDB on pvi.Samsung.com site or Global Partner Portal site.

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