

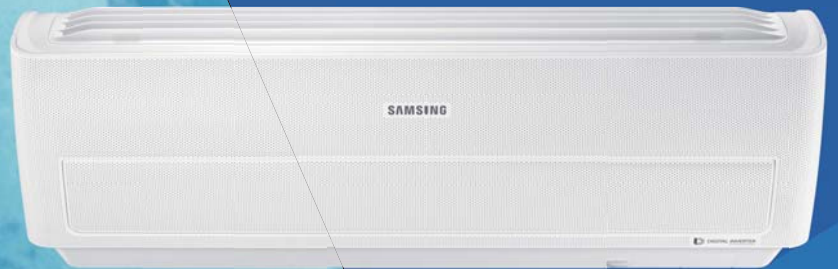
**SAMSUNG**

# RAC

# Technical

# Data Book

Wind Free RAC for North America  
(R410A, HP)



Model : AR\*\*SW\*\*WKNCV (Indoor Unit)  
AR\*\*SW\*\*WKKCV (Outdoor Unit)

# History

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Version	Modification	Date	Remark
Ver.1.0	Release Wind Free RAC TDB for North America	17. 03. 30	
Ver.2.0	Updated 2018 new line up	18. 09. 04	

# Nomenclature

## Model Name



### (1) Classification

<b>AR</b>	RAC
<b>AF</b>	FAC/PAC

### (2) Capacity

x1000 kBtu/h

### (3) Year

<b>K</b>	2016
<b>M</b>	2017
<b>N</b>	2018

### (4) Product Type

<b>R</b>	On/Off R410A CO
<b>Q</b>	On/Off R410R HP
<b>V</b>	INVERTER R410R CO
<b>Q</b>	INVERTER R410R HP

### (5) Rating Voltage

<b>W, F</b>	208~230V, 60Hz, 1Ø, No Virus Doctor
<b>S</b>	208~230V, 60Hz, 1Ø, Virus Doctor
<b>A</b>	115V, 60Hz, 1Ø, No Virus Doctor
<b>Z</b>	115V, 60Hz, 1Ø, Virus Doctor

### (6) Design Segment

<b>X</b>	Wind-Free
<b>D</b>	Pearl
<b>S</b>	Whisper
<b>P</b>	Quantum

### (7) Version

A-Z (1 digit)

\*P: Max Heat

### (8) Color

<b>WK</b>	DA White
<b>WQ</b>	DA White
<b>GM</b>	PM Gray

### (9) Mode

<b>N</b>	Indoor Unit
<b>X</b>	Outdoor Unit
<b>/</b>	Set

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# 1. Specification

Model Name		SET		AR09MSWXCWK/CV	AR12MSWXCWK/CV		
		Indoor Unit		AR09MSWXCWKNCV	AR12MSWXCWKNCV		
		Outdoor Unit		AR09MSWXCWKXCV	AR12MSWXCWKXCV		
System	Mode			-	HEAT PUMP	HEAT PUMP	
	Capacity	Cooling (Min / Std / Max)		kW	0.65/2.64/3.40	0.65/3.52/3.99	
				Btu/h	2,200/9,000/11,000	2,200/12,000/13,600	
				US RT	0.18/0.75/0.92	0.18/1.00/1.13	
		Heating (Min / Std / Max)		kW	0.88/3.22/3.99	0.88/3.99/4.84	
				Btu/h	3,000/11,000/13,600	3,000/13,600/16,500	
				US RT	0.25/0.92/1.13	0.25/1.13/1.38	
	Power	Power Input (Nominal)	Cooling (Min / Std / Max)		kW	0.17/0.64/0.85	0.17/1.05/1.2
			Heating (Min / Std / Max)			0.16/0.86/1.02	0.16/1.1/1.3
		Current Input (Nominal)	Cooling (Min / Std / Max)		A	1.2/3.1/4.0	1.2/4.9/5.3
			Heating (Min / Std / Max)			1.1/4.1/4.8	1.1/5.1/5.8
		MCA			A	11.1	11.1
	MOP			A	15.0	15.0	
	Energy Efficiency	EER (Nominal Cooling)		-	4.12	3.35	
		EER (Nominal Cooling, US)		(Btu/h)/W	14.05	11.45	
		COP (Nominal Heating)		W/W	3.75	3.62	
		Energy Grade		SEER	21.0	19.5	
				HSPF	10.0	9.5	
	Piping Connections	Liquid Pipe		Φ, mm	6.35	6.35	
				Φ, inch	1/4"	1/4"	
		Gas Pipe		Φ, mm	9.52	9.52	
				Φ, inch	3/8"	3/8"	
		Installation Limitation	Max. Length (Outdoor to indoor)		m	15	15
					ft	49.2	49.2
			Max. Height (Between ID/OD)		m	8	8
	ft	26.2			26.2		
	Field Wiring	Power Source Wire		mm <sup>2</sup>	1.5	1.5	
		Transmission Cable		mm <sup>2</sup>	1	1	
	Refrigerant	Type		-	R410A	R410A	
		Control Method		-	-	-	
Factory Charging		kg	1.10	1.10			
			lbs	2.43	2.43		
Indoor Unit	Power Supply		Φ, #, V, Hz	1,208-230,60	1,208-230,60		
	Fan	Type		-	Cross Flow Fan	Cross Flow Fan	
		Motor	Output	W	27	27	
		Number of Unit		EA	1	1	
		Air Flow Rate	Turbo / High / Mid / Low	CFM	325/290/254/212	350/314/268/226	
		External Static Pressure	Min / Std / Max	Pa	-	-	
				In Wg	-	-	
	Drain	Drain Pipe		Φ,mm	ID18 HOSE	ID18 HOSE	
	Sound	Sound Pressure Level	High / Low	dB(A)	38/22	39/22	
		Sound Power Level	Cooling	dB(A)	-	-	
	External Dimension	Net Weight		kg	10.1	10.1	
				lbs	22.26	22.26	
		Shipping Weight		kg	11.7	11.7	
				lbs	25.79	25.79	
		Net Dimensions (WxHxD)		mm	828 x 267 x 265	828 x 267 x 265	
inch				32.60 x 10.51 x 10.43	32.60 x 10.51 x 10.43		
Shipping Dimensions (WxHxD)		mm	886 x 317 x 335	886 x 317 x 335			
		inch	34.88 x 12.48 x 13.19	34.88 x 12.48 x 13.19			

# 1. Specification

Model Name		SET		AR09MSWXCWK/CV	AR12MSWXCWK/CV		
		Indoor Unit		AR09MSWXCWKNCV	AR12MSWXCWKNCV		
		Outdoor Unit		AR09MSWXCWKXCV	AR12MSWXCWKXCV		
Outdoor Unit	Power Supply			Φ, #, V, Hz	1,208-230,60	1,208-230,60	
	Compressor	Type		-	BLDC Rotary	BLDC Rotary	
		Model		-	UG9AJ5090FERSI	UG9AJ5090FERSI	
		Output		kW	2.70	2.70	
		Oil	Type	-	POE	POE	
	Fan	Air Flow Rate		Cooling	CFM	1400	1400
		Sound Pressure Level		Cooling	dB(A)	45	47
	Sound	Sound Power Level		Cooling	dB(A)	-	-
	External Dimension	Net Weight		kg	33.0	33.0	
				lbs	72.75	72.75	
		Shipping Weight		kg	35.5	35.5	
				lbs	78.26	78.26	
		Net Dimensions (WxHxD)		mm	790 x 548 x 285	790 x 548 x 285	
				inch	31.10 x 21.57 x 11.22	31.10 x 21.57 x 11.22	
	Shipping Dimensions (WxHxD)		mm	926 x 640 x 384	926 x 640 x 384		
			inch	36.46 x 25.20 x 15.12	36.46 x 25.20 x 15.12		
Operating Temp. Range	Cooling		°C	-15~46	-15~46		
			°F	5~115	5~115		
	Heating		°C	-25~24	-25~24		
			°F	-13~75	-13~75		

## NOTE

- Nominal Cooling : Indoor temperature 26.7°C DB/19.4°C WB(80°F DB/67°F WB), Outdoor temperature 35°C DB/23.9°C WB(90°F DB/75°F WB), Refrigerant pipe length 7.5m(24.6ft), Level difference 0m(0ft).
- Nominal Heating : Indoor temperature 21.1°C DB/15.6°C WB(70°F DB/60°F WB), Outdoor temperature 8.3°C DB/6.1°C WB(47°F DB/43°F WB), Refrigerant pipe length 7.5m(24.6ft), Level difference 0m(0ft).
- Sound level was acquired in an anechoic room. Thus actual noise level may be different depending on the installation conditions.
- Specifications may be subject to change without prior notice.

# 1. Specification

Model Name		Set		AR18NSWXCWK/CV	AR24NSWXCWK/CV	
		Indoor Unit	Outdoor Unit	AR18NSWXCWKNCV	AR24NSWXCWKNCV	
				AR18NSWXCWKXCV	AR24NSWXCWKXCV	
System	Performance	Capacity (Min/Std/Max)	Cooling	kW	2.2 / 5.28 / 7.0	2.58 / 6.15 / 9.29
				Btu/h	7,500 / 18,000 / 23,884	8,800 / 21,000 / 31,700
				US RT	0.62 / 1.5 / 1.99	0.73 / 1.75 / 2.64
			Heating	kW	2.05 / 6.04 / 8.79	2.2 / 8.06 / 12.02
				Btu/h	7,000 / 20,600 / 30,000	7,500 / 27,500 / 41,000
				US RT	0.58 / 1.72 / 2.5	0.62 / 2.29 / 3.42
	Power	Power Input (Min/Std/Max)	Cooling	kW	0.47 / 1.39 / 2.55	0.52 / 1.68 / 3.1
				Heating	kW	0.38 / 1.63 / 3.9
		Current Input (Min/Std/Max)	Cooling	A	2.4 / 6.2 / 11.2	2.7 / 7.6 / 13.7
				Heating	A	2.3 / 7.3 / 17.1
		Current	MCA	A	19	20
			MOP	A	30	30
	Efficiency	EER	Cooling	-	13	12.5
				Cooling (US)	(Btu/h)/W	13
		COP	Heating	W/W	3.71	3.36
				-	20	20
		HSPF	-	10	10	
	Piping Connections	Liquid Pipe		Ø, mm	6.35	6.35
				Ø, inch	1/4"	1/4"
		Gas Pipe		Ø, mm	12.7	15.88
				Ø, inch	1/2"	5/8"
		Installation Limitation	Max. Length (Outdoor to indoor)	m	30	30
				ft	98	98
Max. Height (Between ID/OD)	m	20	20			
	ft	66	66			
Wiring connections	Power Source Wire		mm <sup>2</sup>	2.5	2.5	
	Communication	Min.	mm <sup>2</sup>	0.75	0.75	
		Remark	-	F1, F2	F1, F2	
Refrigerant	Type		-	R410A	R410A	
	Factory Charging		kg	1.8	2.5	
			lbs	3.97	5.51	
Indoor Unit	Power Supply		Ø, #, V, Hz	1, 2, 208-230, 60	1, 2, 208-230, 60	
	Fan	Type		-	Cross Flow	Cross Flow
		Quantity		EA	1	1
		Air Flow Rate	H/M/L	m <sup>3</sup> /min	15.6 / 14 / 12.4 / 10.3	18.7 / 16.6 / 14 / 11.4
	ft <sup>3</sup> /min			550.91 / 494.41 / 437.9 / 363.74	660.38 / 586.22 / 494.41 / 402.59	
	l/s			260 / 233.3 / 206.7 / 171.7	311.7 / 276.7 / 233.3 / 190	
	Fan Motor	Type		-	BLDC	BLDC
		Output		W x n	27 x 1	27 x 1
	Drain	Drain Pipe		Ø, mm	ID18 HOSE	ID18 HOSE
	Sound	Sound Pressure Level		High / Low	42/25	47/28
		Net Weight		kg (lbs)	14.4 (31.75)	14.4 (31.75)
	External Dimension	Shipping Weight		kg (lbs)	16.6 (36.6)	16.6 (36.6)
		Net Dimensions (WxHxD)	mm		1,065 × 301 × 294	1,065 × 301 × 294
			inch		41.93 × 11.85 × 11.57	41.93 × 11.85 × 11.57
		Shipping Dimensions (WxHxD)	mm		1,123 × 354 × 384	1,123 × 354 × 384
			inch		44.21 × 13.94 × 15.12	44.21 × 13.94 × 15.12
	Casing	Material		-	ABS	ABS

# 1. Specification

Model Name		Set		AR18NSWXCWK/CV	AR24NSWXCWK/CV	
		Indoor Unit		AR18NSWXCWKNCV	AR24NSWXCWKNCV	
		Outdoor Unit		AR18NSWXCWKXCV	AR24NSWXCWKXCV	
Outdoor Unit	Power Supply		Ø, #, V, Hz	1, 2, 208-230, 60	1, 2, 208-230, 60	
	Compressor	Model Name		-	UG8TH8265FEW	UG8TH8265FJW
		Type		-	BLDC ROTARY	BLDC ROTARY
		Output		kW	7.29	7.29
		Oil	Type	-	POE	POE
			Initial charge	cc (fl oz)	700	700
	Fan	Type		-	Propeller	Propeller
		Discharge direction		-	Side	Side
		Quantity		EA	1	1
		Air Flow Rate		m <sup>3</sup> /min	57	80
				ft <sup>3</sup> /min	2012.94	2825.17
			l/s	950	1333.333333	
	Fan Motor	Type		-	BLDC	BLDC
		Output		W x n	125 x 1	125 x 1
	Sound	Sound Pressure Level	Cooling	dB(A)	51	56
		Net Weight		kg (lbs)	56.2 (123.9)	67 (147.71)
	External Dimension	Shipping Weight		kg (lbs)	59.4 (130.95)	71.6 (157.85)
		Net Dimensions (W×H×D)		mm	880 × 793 × 310	940 × 998 × 330
				inch	34.65 × 31.22 × 12.20	37.01 × 39.29 × 12.99
		Shipping Dimensions (W×H×D)		mm	1,023 × 881 × 413	995 × 1,096 × 426
inch				40.28 × 34.69 × 16.26	39.17 × 43.15 × 16.77	
Casing	Material	Body	-	GI	GI	
Operating Temp. Range	Cooling		°F(°C)	-0.4 ~ 115 (-18 ~ 46)	-0.4 ~ 115 (-18 ~ 46)	
	Heating		°F(°C)	5 ~ 75 (-15 ~ 24)	5 ~ 75 (-15 ~ 24)	

## NOTE

- Specification may be subject to change without prior notice.DB/23.9°C WB(90°F DB/75°F WB), Refrigerant pipe length 7.5m(24.6ft), Level difference 0m(0ft).
- 1) 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
    - Equivalent refrigerant piping length 5m(16.4ft), Level differences : 0m(0ft))
  - 2) Select wire size based on the value of MCA
    - Sound pressure level is a relative value, depending on the distance and acoustic environment.
    - dBA = A-weighted sound pressure level
    - Reference acoustic pressure 0 dB = 20uPa
  - 3) These products contain R410A which is fluorinated greenhouse gas.



# 2. Capacity Table

(1) AR09MSWXCWK/CV

Cooling

TC (Total Capacity), SHC (Sensible Heat Capacity), PI (Power Input)

Outdoor Temperature (°F, DB)	Indoor Temperature (°F, DB / WB)																				
	68 / 57			72 / 61			77 / 64			80 / 67			82 / 70			86 / 72			90 / 75		
	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
	MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW
14	9.42	5.27	0.44	8.12	5.85	0.44	9.42	6.78	0.45	9.42	7.53	0.45	10.71	7.71	0.45	12.01	8.17	0.45	12.01	9.13	0.45
32	9.59	5.37	0.44	8.29	5.97	0.44	9.59	6.90	0.45	9.59	7.67	0.45	10.88	7.84	0.45	12.18	8.28	0.45	12.18	9.26	0.45
50	9.72	5.45	0.44	8.43	6.07	0.44	9.72	7.00	0.45	9.72	7.78	0.45	11.02	7.93	0.45	12.32	8.38	0.45	12.32	9.36	0.45
68	9.89	5.54	0.44	8.60	6.19	0.44	9.89	7.12	0.44	9.89	7.92	0.44	11.19	8.06	0.45	12.49	8.49	0.45	12.49	9.49	0.46
77	9.59	5.37	0.49	8.29	5.97	0.49	9.59	6.90	0.50	9.59	7.67	0.50	10.88	7.84	0.51	12.18	8.28	0.51	12.18	9.26	0.52
90	9.18	5.14	0.58	7.88	5.67	0.58	9.18	6.61	0.59	9.18	7.34	0.59	10.47	7.54	0.60	11.77	8.00	0.60	11.77	8.95	0.61
95	9.00	5.04	0.63	7.70	5.55	0.63	9.00	6.48	0.64	9.00	7.20	0.64	10.30	7.41	0.64	11.59	7.88	0.65	11.59	8.81	0.65
104	8.70	4.87	0.81	7.40	5.33	0.82	8.70	6.26	0.83	8.70	6.96	0.84	10.00	7.20	0.85	11.29	7.68	0.86	11.29	8.58	0.87
110	8.53	4.78	0.92	7.23	5.21	0.93	8.53	6.14	0.95	8.53	6.82	0.96	9.83	7.08	0.97	11.12	7.56	0.99	11.12	8.45	1.00
115	8.36	4.68	1.04	7.06	5.09	1.05	8.36	6.02	1.07	8.36	6.69	1.08	9.66	6.95	1.09	10.95	7.45	1.11	10.95	8.32	1.13

Heating

TC (Total Capacity), PI (Power Input):

Outdoor Temperature (°F, DB)	Indoor Temperature (°F, DB)											
	61		64		68		70		72		75	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
	MBH	kW	MBH	kW	MBH	kW	MBH	kW	MBH	kW	MBH	kW
5	8.70	1.15	8.53	1.18	8.36	1.20	8.36	1.21	8.36	1.21	8.36	1.22
14	10.34	1.12	10.14	1.14	9.94	1.16	9.94	1.17	9.94	1.18	9.94	1.19
23	11.99	1.08	11.76	1.11	11.53	1.13	11.53	1.14	11.53	1.14	11.53	1.15
32	13.64	1.05	13.37	1.07	13.11	1.09	13.11	1.10	13.11	1.11	13.11	1.12
36	14.30	1.04	14.02	1.06	13.74	1.08	13.74	1.09	13.74	1.09	13.74	1.10
41	11.25	0.83	11.03	0.84	10.81	0.86	10.70	0.87	10.60	0.87	10.38	0.88
47	11.56	0.83	11.33	0.84	11.11	0.86	11.00	0.86	11.00	0.87	10.89	0.88
50	12.02	0.82	11.79	0.84	11.56	0.86	11.44	0.86	11.44	0.87	11.33	0.88
59	12.80	0.82	12.55	0.84	12.30	0.86	12.18	0.86	12.18	0.86	12.06	0.87
68	13.58	0.82	13.31	0.84	13.05	0.85	12.92	0.86	12.92	0.86	12.79	0.87
75	14.20	0.82	13.92	0.83	13.65	0.85	13.51	0.85	13.51	0.86	13.38	0.87

 **NOTE**

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

# 2. Capacity Table

## (2) AR12MSWXCWK/CV

Cooling

TC (Total Capacity), SHC (Sensible Heat Capacity), PI (Power Input)

Outdoor Temperature (°F, DB)	Indoor Temperature (°F, DB / WB)																				
	68 / 57			72 / 61			77 / 64			80 / 67			82 / 70			86 / 72			90 / 75		
	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
	MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW
14	12.45	6.23	0.69	11.16	7.36	0.69	12.45	8.22	0.70	12.45	9.22	0.70	13.75	9.08	0.70	15.05	9.33	0.70	15.05	10.53	0.71
32	12.73	6.36	0.70	11.43	7.54	0.70	12.73	8.40	0.71	12.73	9.42	0.71	14.02	9.26	0.71	15.32	9.50	0.71	15.32	10.72	0.72
50	13.03	6.52	0.70	11.74	7.75	0.70	13.03	8.60	0.71	13.03	9.65	0.72	14.33	9.46	0.71	15.63	9.69	0.71	15.63	10.94	0.72
68	13.31	6.65	0.72	12.01	7.93	0.72	13.31	8.78	0.73	13.31	9.85	0.73	14.60	9.64	0.74	15.90	9.86	0.74	15.90	11.13	0.75
77	12.86	6.43	0.81	11.57	7.63	0.82	12.86	8.49	0.83	12.86	9.52	0.83	14.16	9.35	0.84	15.46	9.58	0.85	15.46	10.82	0.85
90	12.25	6.12	0.96	10.95	7.23	0.97	12.25	8.08	0.98	12.25	9.06	0.98	13.55	8.94	0.99	14.84	9.20	1.00	14.84	10.39	1.01
95	12.00	6.00	1.03	10.70	7.06	1.03	12.00	7.92	1.04	12.00	8.88	1.05	13.30	8.78	1.06	14.59	9.05	1.06	14.59	10.22	1.07
104	11.12	5.56	1.08	9.83	6.49	1.09	11.12	7.34	1.10	11.12	8.23	1.11	12.42	8.20	1.12	13.72	8.50	1.13	13.72	9.60	1.14
110	10.58	5.29	1.11	9.28	6.13	1.13	10.58	6.98	1.15	10.58	7.83	1.16	11.87	7.84	1.18	13.17	8.17	1.19	13.17	9.22	1.21
115	10.07	5.03	1.15	8.77	5.79	1.16	10.07	6.64	1.18	10.07	7.45	1.20	11.36	7.50	1.21	12.66	7.85	1.23	12.66	8.86	1.26

Heating

TC (Total Capacity), PI (Power Input):

Outdoor Temperature (°F, DB)	Indoor Temperature (°F, DB)											
	61		64		68		70		72		75	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
	MBH	kW	MBH	kW	MBH	kW	MBH	kW	MBH	kW	MBH	kW
5	9.76	1.30	9.57	1.32	9.38	1.35	9.38	1.36	9.38	1.36	9.38	1.38
14	11.92	1.32	11.68	1.34	11.45	1.37	11.45	1.38	11.45	1.39	11.45	1.40
23	14.07	1.34	13.79	1.37	13.52	1.39	13.52	1.40	13.52	1.41	13.52	1.42
32	16.22	1.36	15.91	1.39	15.59	1.42	15.59	1.42	15.59	1.43	15.59	1.44
36	17.09	1.37	16.75	1.40	16.42	1.43	16.42	1.43	16.42	1.44	16.42	1.45
41	13.88	1.05	13.61	1.07	13.34	1.09	13.21	1.09	13.08	1.10	12.82	1.11
47	14.29	1.06	14.01	1.08	13.74	1.10	13.60	1.11	13.60	1.11	13.46	1.12
50	14.90	1.07	14.61	1.09	14.32	1.12	14.18	1.12	14.18	1.13	14.04	1.14
59	15.92	1.10	15.61	1.12	15.30	1.15	15.15	1.15	15.15	1.16	15.00	1.17
68	16.94	1.13	16.60	1.15	16.28	1.18	16.12	1.18	16.12	1.19	15.95	1.20
75	17.75	1.15	17.40	1.18	17.06	1.20	16.89	1.21	16.89	1.21	16.72	1.22

 **NOTE**

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

# 2. Capacity Table

(3) AR18NSWXCWK/CV

Cooling

TC (Total Capacity), SHC (Sensible Heat Capacity), PI (Power Input)

Outdoor Temperature (°F, DB)	Indoor Temperature (°F, DB / WB)																				
	68 / 57			72 / 61			77 / 64			80 / 67			82 / 70			86 / 72			90 / 75		
	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
	MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW
-0.4	15.59	12.47	0.85	16.29	12.87	0.88	17.80	13.52	0.91	19.04	14.66	0.98	19.30	14.29	0.95	20.31	14.73	0.96	21.32	14.92	0.96
14	16.24	12.99	0.94	17.33	13.69	0.98	18.93	14.43	1.02	20.05	15.44	1.08	20.54	15.17	1.05	21.61	15.66	1.07	22.65	15.86	1.07
32	17.25	13.80	1.04	18.36	14.51	1.08	20.06	15.27	1.12	21.12	16.26	1.19	21.76	16.03	1.16	22.89	16.53	1.19	24.06	16.75	1.19
50	18.27	14.62	1.14	19.39	15.33	1.18	21.18	16.11	1.23	22.19	17.09	1.30	22.97	16.88	1.27	24.17	17.40	1.29	25.47	17.65	1.30
68	19.29	15.43	1.24	20.42	16.14	1.29	22.30	16.94	1.33	23.26	17.91	1.40	24.19	17.74	1.38	25.45	18.27	1.41	26.88	18.55	1.42
77	17.80	14.49	1.27	18.86	15.17	1.30	20.64	15.85	1.34	21.51	16.86	1.40	22.42	16.52	1.38	23.60	16.97	1.41	24.97	17.09	1.42
90	16.32	13.55	1.29	17.30	14.20	1.32	18.97	14.75	1.35	19.75	15.81	1.39	20.64	15.30	1.39	21.75	15.67	1.41	23.06	15.63	1.42
95	14.83	12.61	1.32	15.73	13.23	1.34	17.30	13.66	1.37	18.00	14.76	1.39	18.86	14.08	1.39	19.91	14.36	1.41	21.15	14.17	1.43
104	15.49	13.46	1.95	16.44	14.15	1.98	18.12	14.50	2.02	18.84	15.81	2.05	19.80	14.86	2.07	20.92	15.10	2.09	22.27	14.71	2.12
110	15.89	13.98	2.33	16.87	14.70	2.36	18.62	15.01	2.42	19.35	16.44	2.45	20.37	15.33	2.47	21.53	15.54	2.50	22.95	15.03	2.54
115	16.28	14.49	2.70	17.30	15.24	2.75	19.11	15.52	2.81	19.85	17.07	2.85	20.93	15.79	2.87	22.14	15.98	2.92	23.63	15.36	2.96

Heating

TC (Total Capacity), PI (Power Input):

Outdoor Temperature (°F, DB)	Indoor Temperature (°F, DB)											
	61		64		68		70		72		75	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
	MBH	kW	MBH	kW	MBH	kW	MBH	kW	MBH	kW	MBH	kW
5	22.20	3.07	21.77	3.01	21.34	2.95	21.13	2.92	21.07	2.91	20.96	2.90
14	25.15	3.39	24.65	3.32	24.17	3.25	23.93	3.22	23.86	3.21	23.74	3.20
23	28.09	3.70	27.54	3.63	27.00	3.56	26.73	3.52	26.65	3.51	26.52	3.49
32	29.15	3.37	28.58	3.31	28.02	3.24	27.74	3.21	27.66	3.20	27.52	3.18
36	29.74	3.27	29.15	3.21	28.58	3.15	28.30	3.12	28.21	3.11	28.07	3.09
41	30.33	3.18	29.74	3.12	29.15	3.05	28.86	3.02	28.78	3.02	28.63	3.00
47	30.94	3.24	30.33	3.18	29.74	3.12	20.60	1.63	29.35	3.08	29.21	3.06
50	31.54	3.00	30.92	2.94	30.32	2.88	30.02	2.85	29.93	2.84	29.78	2.83
59	32.17	2.91	31.54	2.85	30.92	2.80	30.62	2.77	30.53	2.76	30.37	2.75
68	32.82	2.83	32.17	2.77	31.54	2.72	31.23	2.69	31.14	2.68	30.98	2.67
75	33.29	2.74	32.63	2.69	31.99	2.64	31.68	2.61	31.58	2.60	31.42	2.59

**NOTE**

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

## 2. Capacity Table

### (4) AR24NSWXCWK/CV

Cooling

TC (Total Capacity), SHC (Sensible Heat Capacity), PI (Power Input)

Outdoor Temperature (°F, DB)	Indoor Temperature (°F, DB / WB)																				
	68 / 57			72 / 61			77 / 64			80 / 67			82 / 70			86 / 72			90 / 75		
	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
	MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW
-0.4	23.96	19.17	0.93	25.03	19.77	0.97	27.35	20.79	1.00	29.27	22.54	1.07	29.67	21.96	1.04	31.22	22.63	1.05	32.76	22.93	1.05
14	24.95	19.96	1.03	26.63	21.05	1.07	29.10	22.18	1.11	30.81	23.72	1.18	31.56	23.32	1.15	33.21	24.07	1.17	34.81	24.37	1.17
32	24.40	19.52	1.14	25.97	20.53	1.18	28.38	21.61	1.23	29.91	23.03	1.30	30.78	22.69	1.27	32.39	23.41	1.30	34.03	23.72	1.30
50	23.85	19.08	1.24	25.32	20.02	1.29	27.66	21.04	1.34	29.00	22.33	1.42	30.00	22.06	1.38	31.56	22.74	1.41	33.26	23.06	1.42
68	23.30	18.64	1.35	24.67	19.50	1.40	26.94	20.47	1.46	28.10	21.64	1.53	29.22	21.43	1.51	30.74	22.07	1.54	32.48	22.41	1.55
77	21.30	17.33	1.44	22.56	18.15	1.48	24.69	18.96	1.52	25.73	20.16	1.58	26.82	19.76	1.57	28.24	20.30	1.60	29.87	20.45	1.61
90	19.30	16.02	1.52	20.46	16.79	1.55	22.44	17.44	1.59	23.37	18.69	1.63	24.41	18.10	1.63	25.73	18.53	1.65	27.27	18.49	1.67
95	17.31	14.71	1.60	18.36	15.44	1.63	20.18	15.93	1.66	21.00	17.22	1.68	22.01	16.43	1.69	23.22	16.76	1.71	24.67	16.53	1.73
104	17.43	15.14	2.13	18.50	15.90	2.16	20.39	16.31	2.21	21.20	17.77	2.24	22.28	16.71	2.25	23.53	16.98	2.28	25.05	16.55	2.31
110	17.50	15.39	2.44	18.59	16.18	2.48	20.51	16.53	2.53	21.32	18.10	2.57	22.44	16.88	2.59	23.72	17.12	2.63	25.28	16.57	2.67
115	17.58	15.65	2.76	18.68	16.46	2.80	20.64	16.76	2.86	21.44	18.44	2.90	22.60	17.05	2.93	23.91	17.25	2.97	25.51	16.58	3.02

Heating

TC (Total Capacity), PI (Power Input):

Outdoor Temperature (°F, DB)	Indoor Temperature (°F, DB)											
	61		64		68		70		72		75	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
	MBH	kW	MBH	kW	MBH	kW	MBH	kW	MBH	kW	MBH	kW
5	28.56	4.17	28.00	4.09	27.45	4.01	27.18	3.97	27.10	3.96	26.96	3.94
14	29.78	4.06	29.20	3.98	28.62	3.90	28.34	3.87	28.26	3.85	28.11	3.84
23	31.00	3.95	30.39	3.88	29.80	3.80	29.50	3.76	29.41	3.75	29.27	3.73
32	31.62	4.03	31.00	3.95	30.39	3.88	30.09	3.84	30.00	3.83	29.85	3.81
36	32.25	4.22	31.62	4.14	31.00	4.06	30.69	4.02	30.60	4.01	30.45	3.99
41	32.90	4.10	32.25	4.02	31.62	3.94	31.31	3.90	31.21	3.89	31.06	3.87
47	33.56	4.18	32.90	4.10	32.25	4.02	27.50	2.40	31.84	3.97	31.68	3.95
50	34.21	3.87	33.54	3.79	32.89	3.72	32.56	3.68	32.46	3.67	32.30	3.65
59	34.90	3.76	34.21	3.68	33.54	3.61	33.21	3.57	33.11	3.56	32.95	3.55
68	35.60	3.65	34.90	3.57	34.21	3.50	33.88	3.47	33.77	3.46	33.60	3.44
75	43.17	3.54	42.32	3.47	41.49	3.40	41.08	3.37	40.96	3.36	40.76	3.34

### NOTE

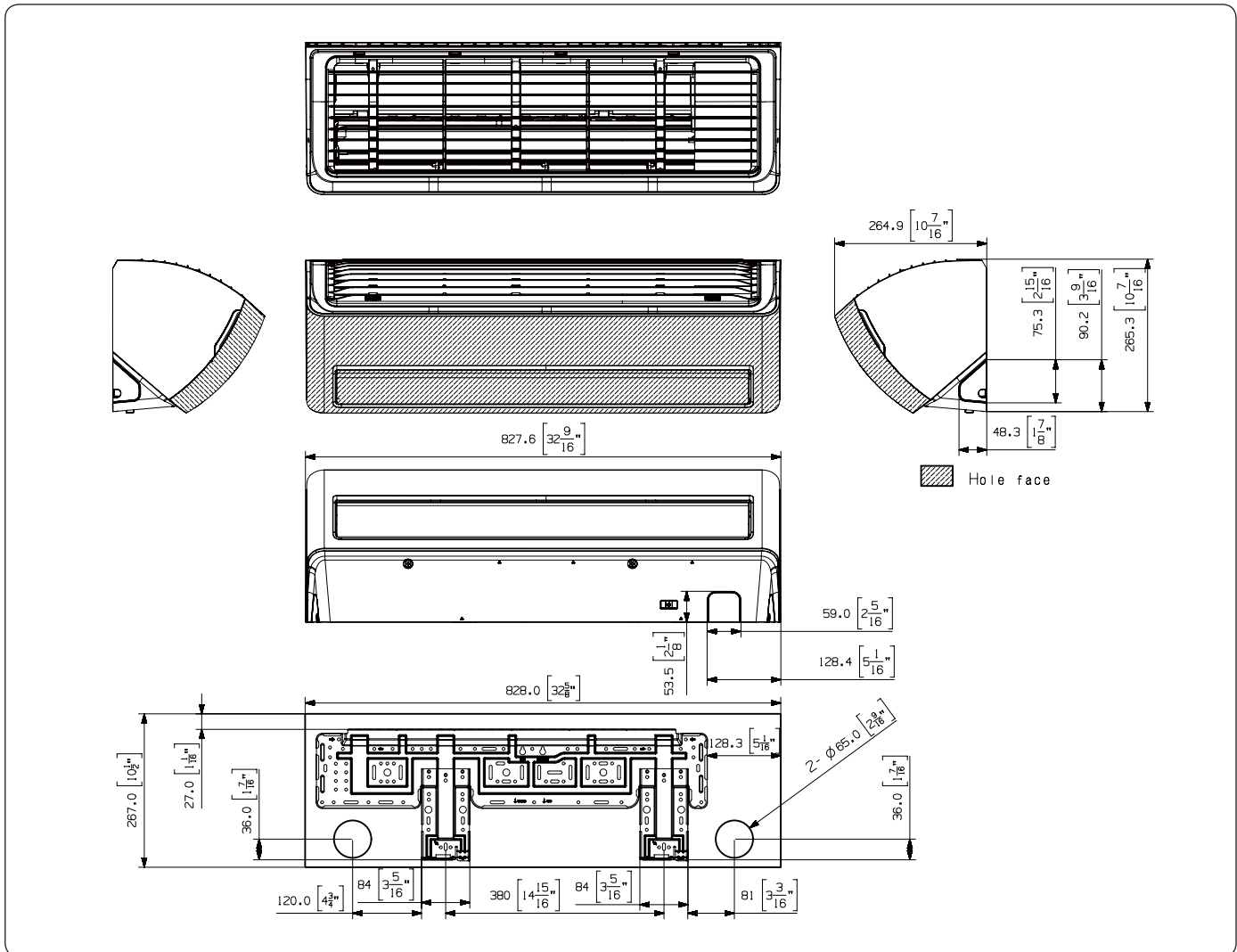
- The performance table shows the average value of each conditions.

# 3. Dimensional Drawing

## Indoor unit

AR09/12MSWXCWKNCV

Unit: mm [inch]



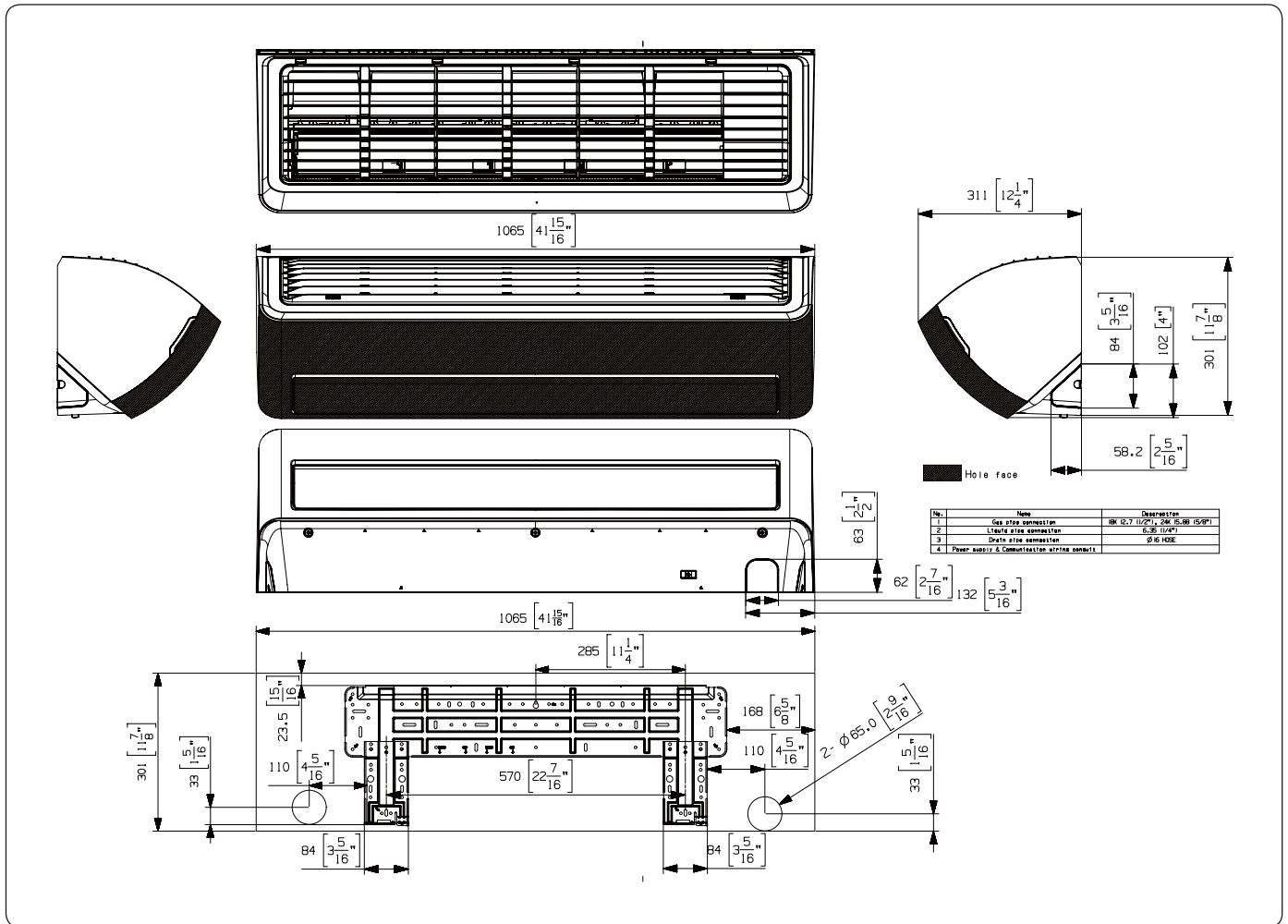
No.	Name	Description
1	Gas pipe connection	9.52 (3/8")
2	Liquid pipe connection	6.35 (1/4")
3	Drain pipe connection	ID 18 HOSE
4	Power supply & Communication wiring conduit	-

# 3. Dimensional Drawing

## Indoor unit

AR18/24NSWXCWKNCV

Unit: mm [inch]



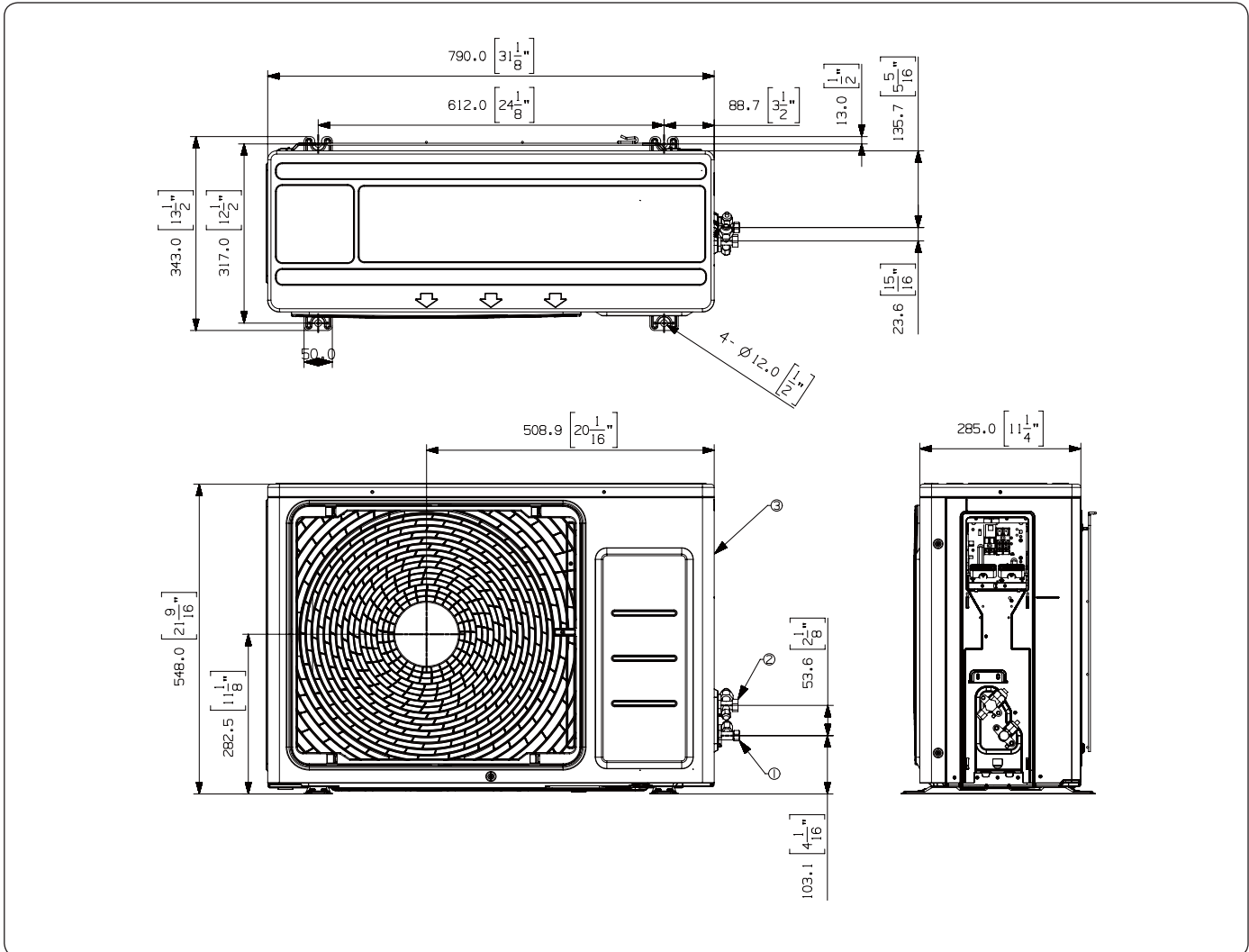
No.	Name	Description
1	Gas pipe connection	18K12.7(1/2"), 24K15.88(5/8")
2	Liquid pipe connection	6.35 (1/4")
3	Drain pipe connection	ID18 HOSE
4	Power supply & Communication wiring conduit	-

# 3. Dimensional Drawing

## Outdoor unit

AR09/12MSWXCWKXCV

Unit: mm [inch]



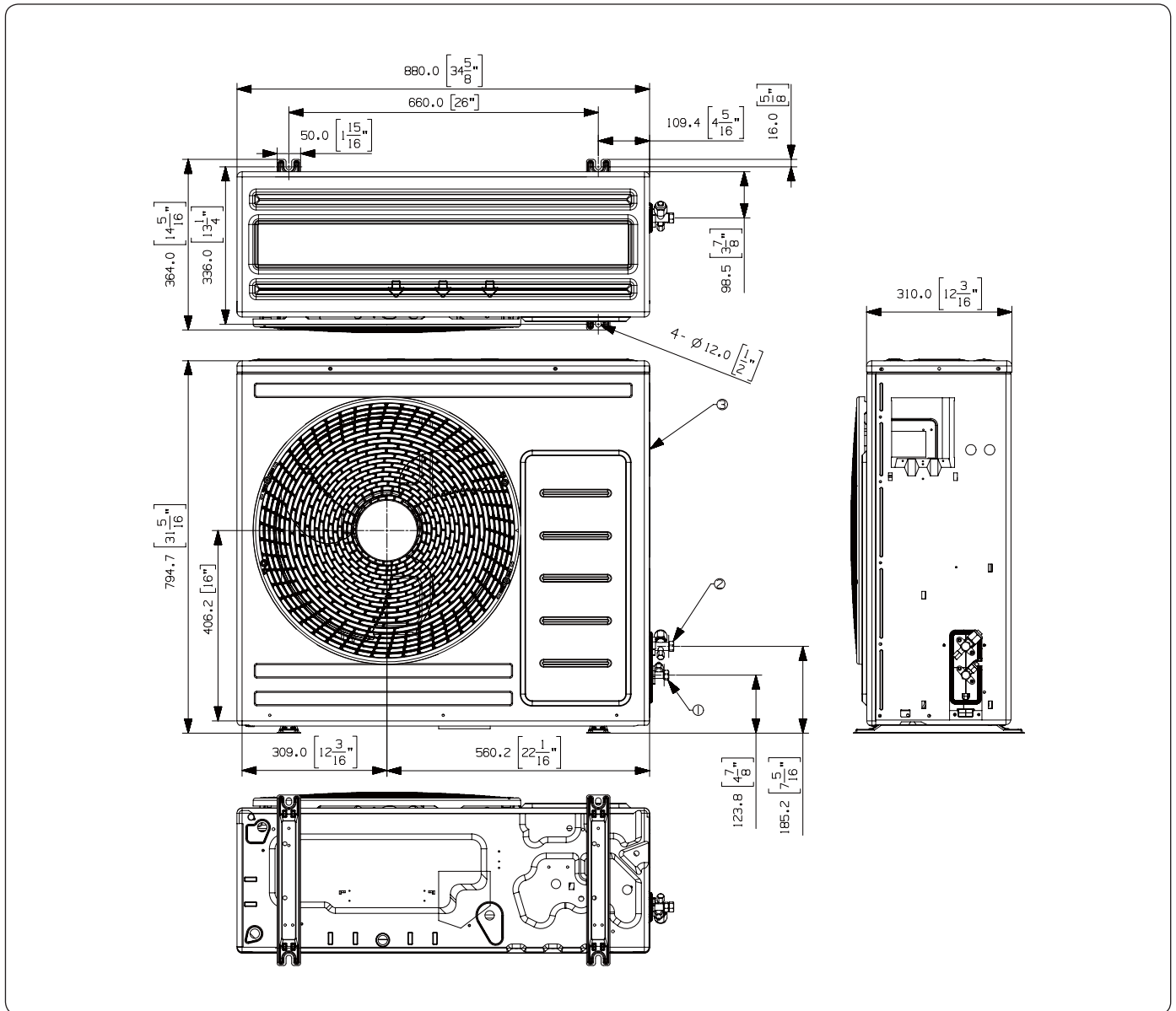
No.	Name	Description
1	Liquid pipe connection	6.35 (1/4")
2	Gas pipe connection	9.52 (3/8")
3	Power supply & Communication wiring conduit	-

# 3. Dimensional Drawing

## Outdoor unit

AR18NSWXCWKXC

Unit: mm [inch]



No.	Name	Description
1	Liquid pipe connection	6.35 (1/4")
2	Gas pipe connection	12.7 (1/2")
3	Power supply & Communication wiring conduit	-

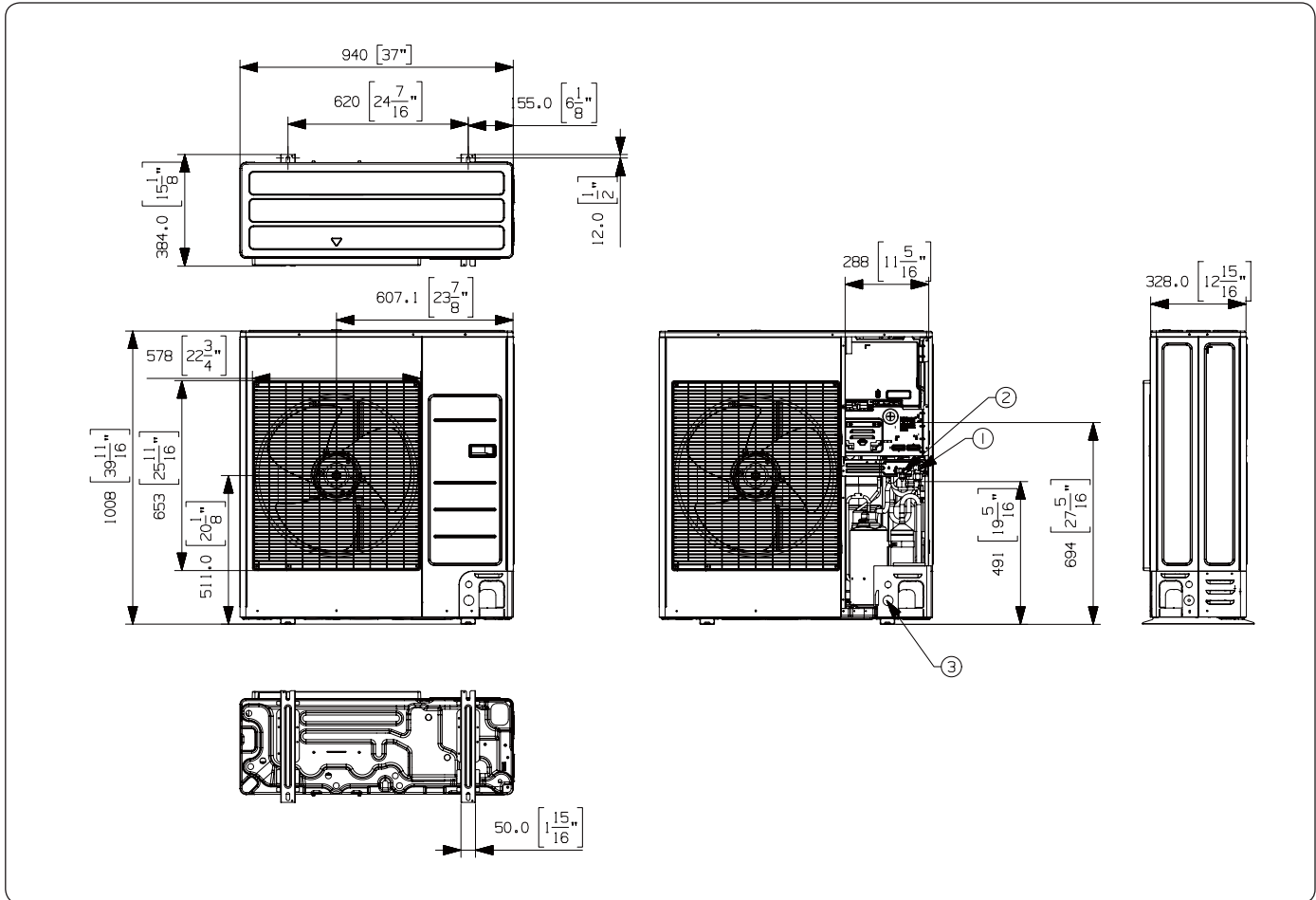


# 3. Dimensional Drawing

## Outdoor unit

AR24NSWXCWKXCV

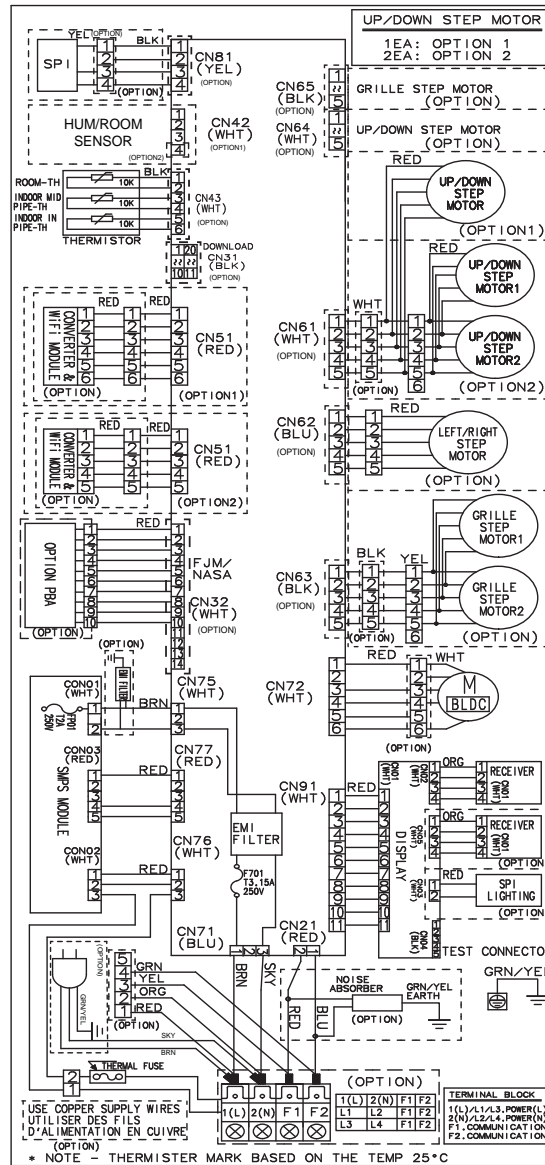
Unit: mm [inch]



No.	Name	Description
1	Liquid pipe connection	6.35 (1/4")
2	Gas pipe connection	15.88 (5/8")
3	Power supply & Communication wiring conduit	-

# 4. Electrical Wiring Diagram

## Indoor unit



SPI	LOAD(SPI)	DISPLAY	Printed circuit board(DISPLAY BOARD)	UP/DOWN STEP MOTOR	Motor(STEP MOTOR)
ROOM TH	Thermistor(Room Temp_10Kohm)	BLDC	Motor(BLDC FAN MOTOR)	THERMAL FUSE	Terminal Block Thermal Fuse
INDOOR MID PIPE-TH	Thermistor(EVA MID Temp_10Kohm)	GRILLE STEP MOTOR	Motor(STEP MOTOR)	WIFI MODULE	LOAD(WIFI MODULE)
INDOOR IN PIPE-TH	Thermistor(EVA IN Temp_10Kohm)	LEFT/RIGHT STEP MOTOR	Motor(STEP MOTOR)	SMPS MODULE	Printed circuit board(Power Supply)
RECEIVER	Printed circuit board(RECEIVER BOARD)	HUM/ROOM SENSOR	SENSOR(HUMIDITY/ROOM)		

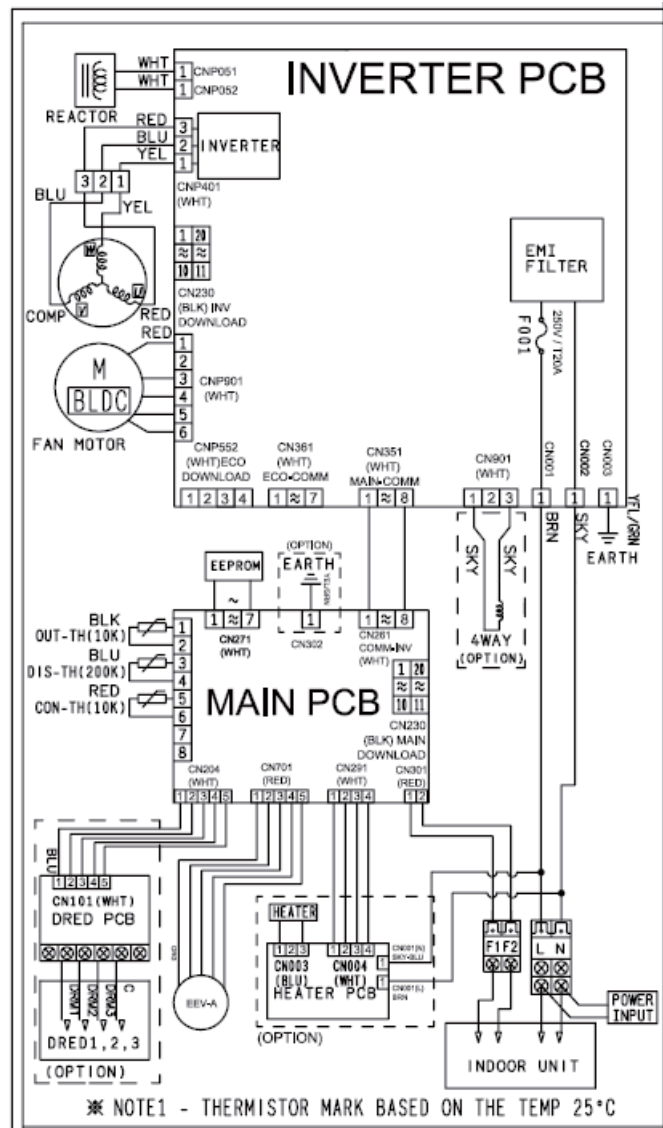
### NOTE

- This wiring diagram applies only to the indoor unit.
- Colors BLK : black, BRN : brown, SKY-BLU : sky-blue, GRN/YEL : green/yellow, RED : red, YEL : yellow, ORG : orange, BLU : blue, WHT:white
- For connection wiring indoor-outdoor transmission 3(C), refer to the installation manual
- : Protective earth(screw)

# 4. Electrical Wiring Diagram

## Outdoor unit

AR09/12MSWXCWKXC



INVERTER PCB	Printed circuit board(INVERTER PCB)	EEV-A	Electronic expansion valve A	OUT-TH	Thermistor(AmbientTemp_10Kohm) Motor(STEPMOTOR)
MAIN PCB	Printed circuit board(MAIN PCB)	COMP	Motor(COMPRESSOR)	DIS-TH	Thermistor(Discharge Temp_200Kohm)
DRED	Printed circuit board(DRED PCB)	4-WAY	4WAY VALVE	COND-TH	Thermistor(Cond Out Temp_10Kohm)
HEATER	Printed circuit board(HEATER PCB)	FAN MOTOR	Motor(BLDC FAN Motor)		
EEPROM	Printed circuit board(EEPROM PCB)	CAPZERO PBA	Printed circuit board(CAP ZERO PCB)		

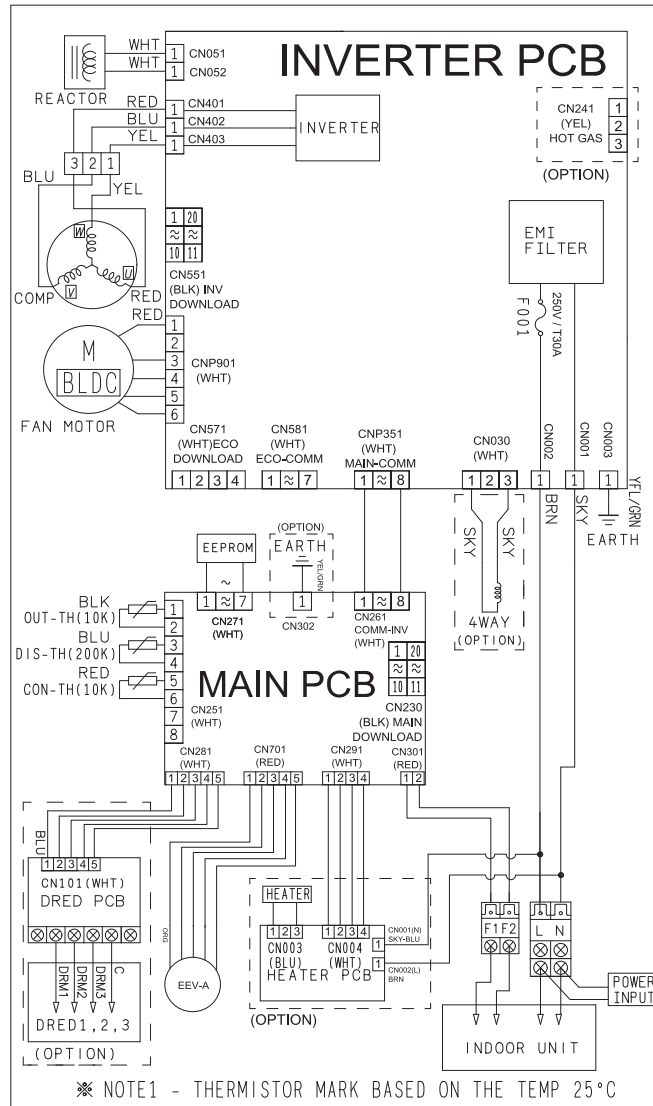
### NOTE

- This wiring diagram applies only to the indoor unit.
- Colors BLK : black, BRN : brown, SKY-BLU : sky-blue, GRN/YEL : green/yellow, RED : red, YEL : yellow, ORG : orange, BLU : blue, WHT:white
- For connection wiring indoor-outdoor transmission 3(C), refer to the installation manual
- ⊕ : Protective earth(screw)

# 4. Electrical Wiring Diagram

## Outdoor unit

AR18/24NSWXCWKXCV



INVERTER PCB	Printed circuit board(INVERTER PCB)	EEV-A	Electronic expansion valve A	OUT-TH	Thermistor(AmbientTemp._10Kohm) Motor(STEPMOTOR)
MAIN PCB	Printed circuit board(MAIN PCB)	COMP	Motor(COMPRESSOR)	DIS-TH	Thermistor(Discharge Temp._200Kohm)
DRED	Printed circuit board(DRED PCB)	4-WAY	4WAY VALVE	COND-TH	Thermistor(Cond Out Temp._10Kohm)
HEATER	Printed circuit board(HEATER PCB)	FAN MOTOR	Motor(BLDC FAN Motor)		
EEPROM	Printed circuit board(EEPROM PCB)	CAPZERO PBA	Printed circuit board(CAP ZERO PCB)		

### NOTE

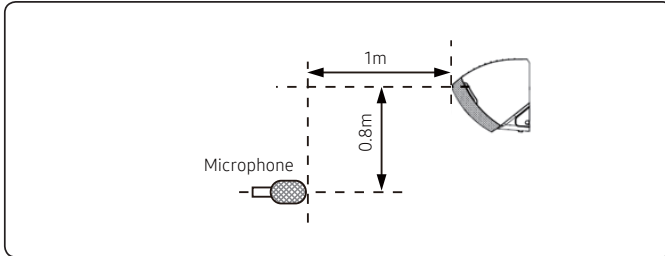
- This wiring diagram applies only to the indoor unit.
- Colors BLK : black, BRN : brown, SKY-BLU : sky-blue, GRN/YEL : green/yellow, RED : red, YEL : yellow, ORG : orange, BLU : blue, WHT:white
- For connection wiring indoor-outdoor transmission 3(C), refer to the installation manual
- : Protective earth(screw)

# 5. Sound Data

## Indoor unit

### Sound Pressure level

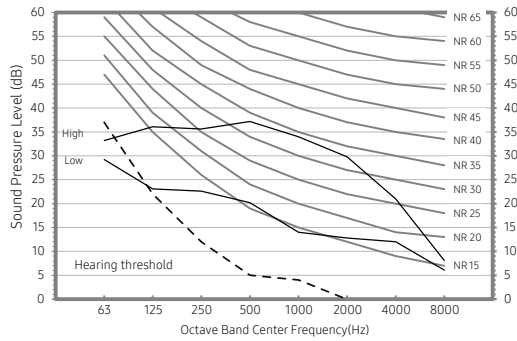
Unit: dB(A)



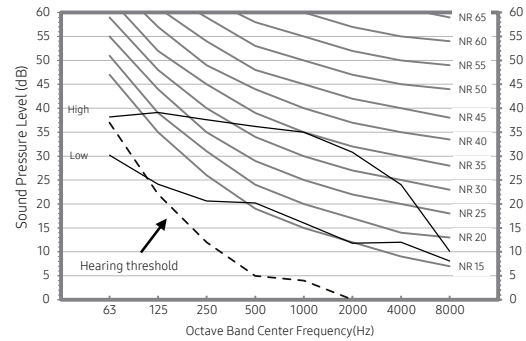
Model	High	Low
AR09MSWXCWKNCV	38	22
AR12MSWXCWKNCV	39	22
AR18NSWXCWKNCV	42	25
AR24NSWXCWKNCV	47	28

- NC Curve

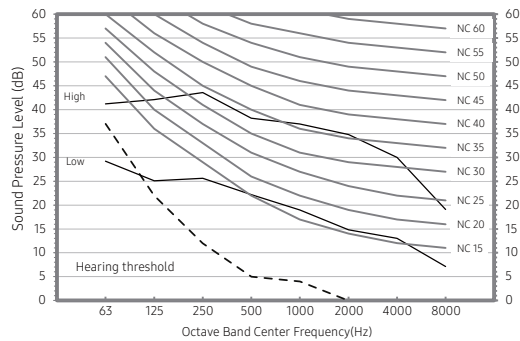
1) AR09MSWXCWKNCV



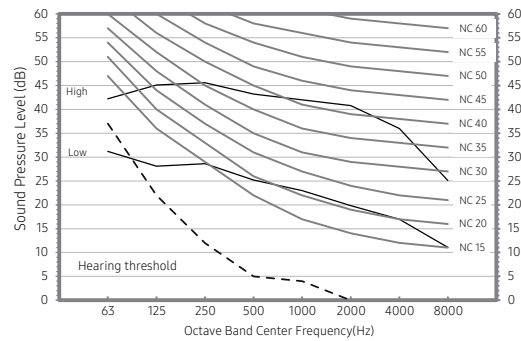
2) AR12MSWXCWKNCV



3) AR18NSWXCWKNCV



4) AR24NSWXCWKNCV



### NOTE

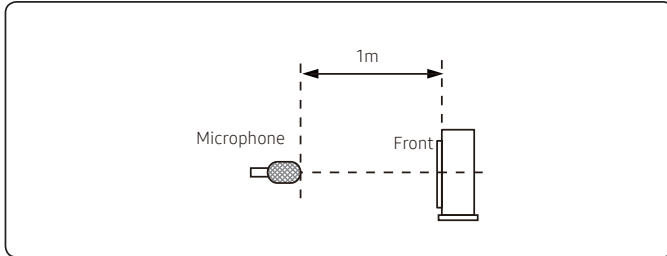
- Specifications may be subject to change without prior notice.
- Sound pressure Level
  - Sound pressure level is obtained in an anechoic room.
  - Sound pressure level is a relative value, depending on the distance and acoustic environment.
  - Sound pressure level may differ depending on operation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

# 5. Sound Data

## Outdoor unit

### Sound pressure level

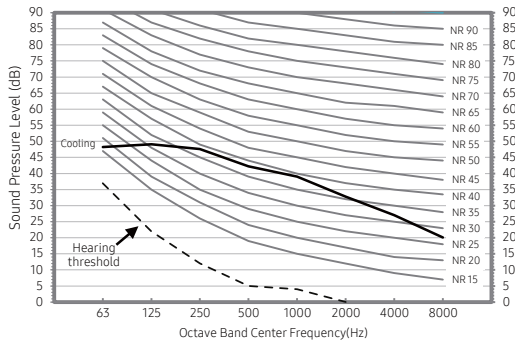
Unit: dB(A)



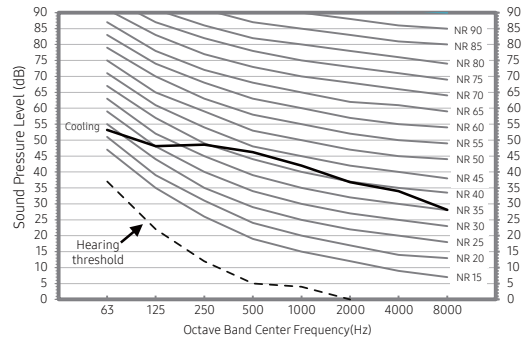
Model	Cooling
AR09MSWXCWKXCV	45
AR12MSWXCWKXCV	47
AR18NSWXCWKXCV	51
AR24NSWXCWKXCV	56

- NC Curve

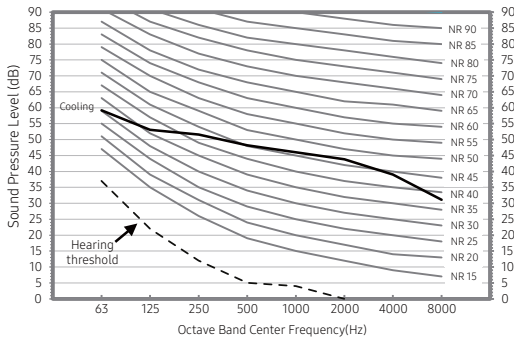
1) AR09MSWXCWKXCV



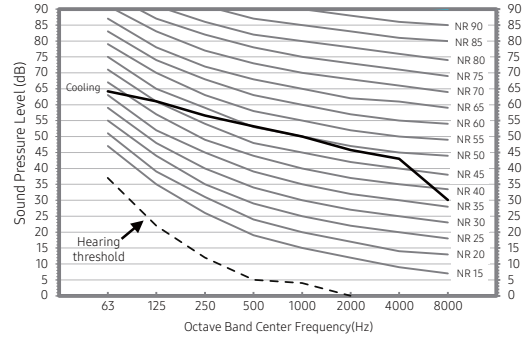
2) AR12MSWXCWKXCV



3) AR18NSWXCWKXCV



4) AR24NSWXCWKXCV



**NOTE**

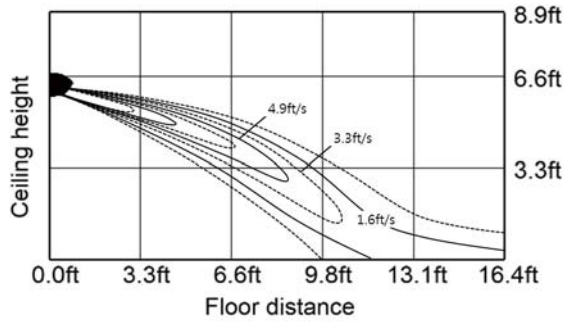
- Specifications may be subject to change without prior notice.
- Sound pressure Level
  - Sound pressure level is obtained in an anechoic room.
  - Sound pressure level is a relative value, depending on the distance and acoustic environment.
  - Sound pressure level may differ depending on operation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

# 6. Temperature and air flow distribution

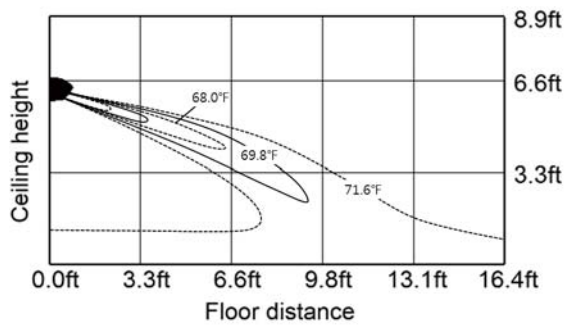
AR09MSWXCWKNCV

1) Cooling air velocity distribution

Cooling Discharge angle : 16°

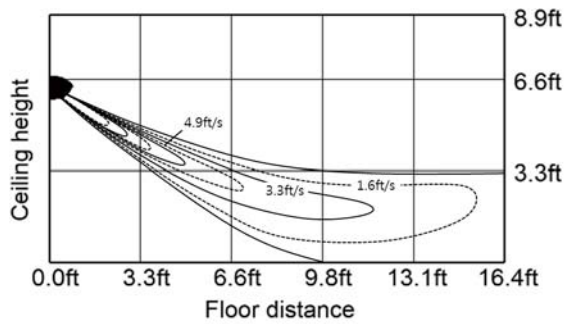


2) Cooling Temperature distribution

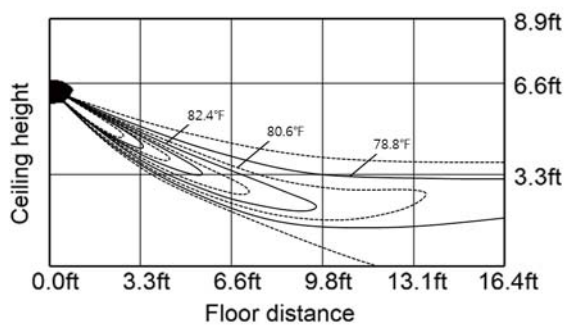


3) Heating air velocity distribution

Heating Discharge angle : 46°



4) Heating Temperature distribution

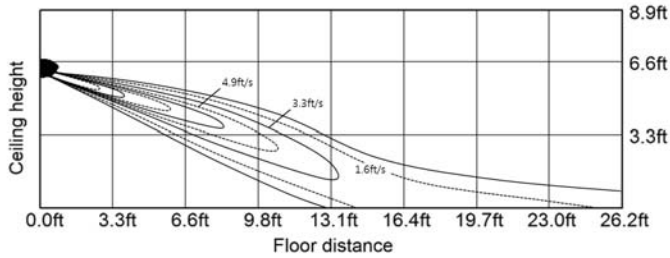


# 6. Temperature and air flow distribution

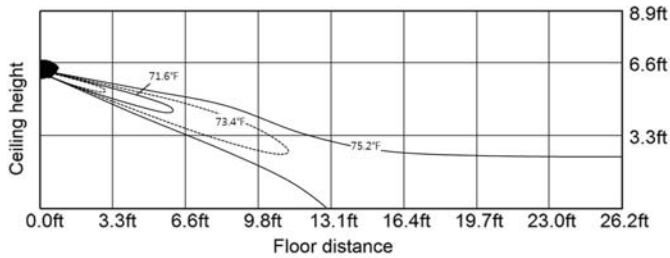
AR12MSWXCWKNCV

1) Cooling air velocity distribution

Cooling Discharge angle : 16°

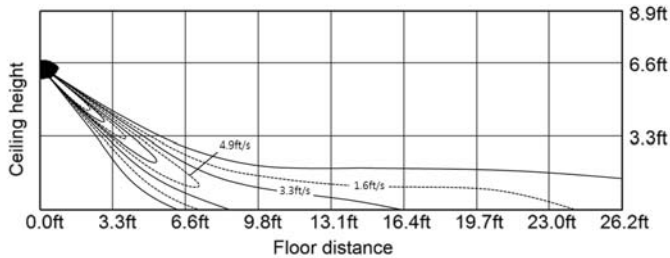


2) Cooling Temperature distribution

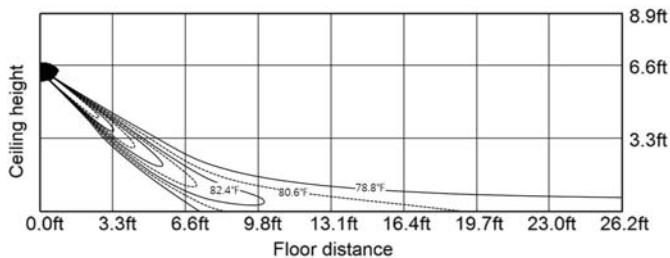


3) Heating air velocity distribution

Heating Discharge angle : 46°



4) Heating Temperature distribution



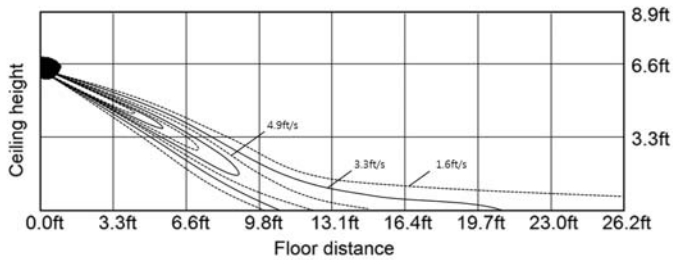


# 6. Temperature and air flow distribution

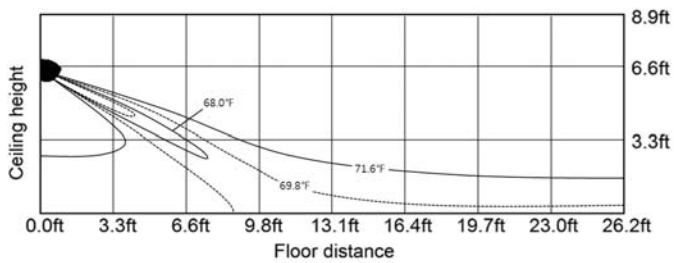
AR18NSWXCWKNCV

1) Cooling air velocity distribution

Cooling Discharge angle : 28°

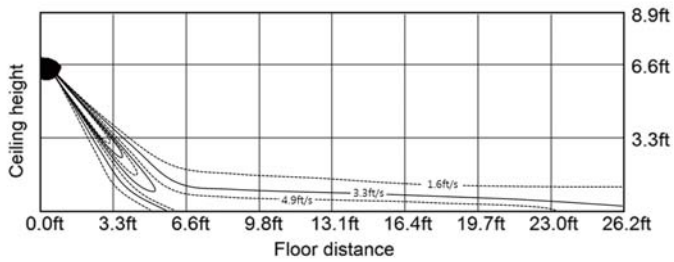


2) Cooling Temperature distribution

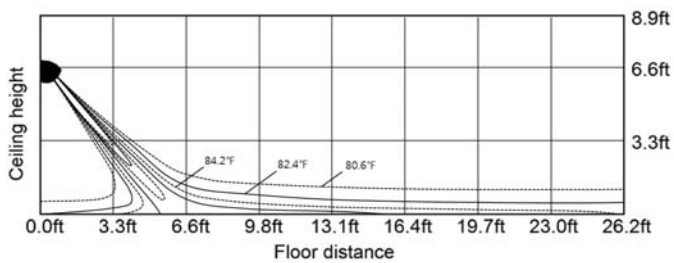


3) Heating air velocity distribution

Heating Discharge angle : 58°



4) Heating Temperature distribution

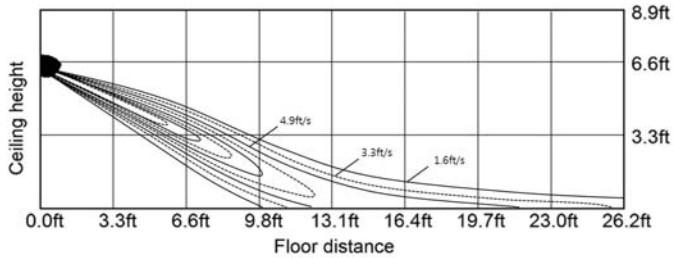


# 6. Temperature and air flow distribution

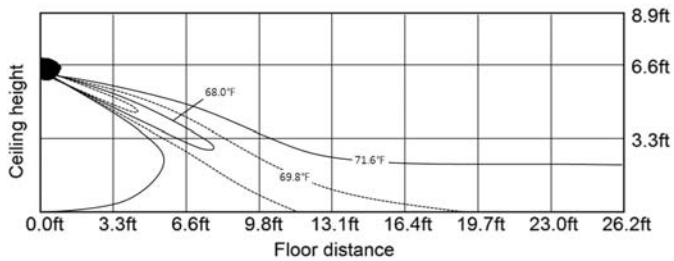
AR24NSWXCWKNCV

1) Cooling air velocity distribution

Cooling Discharge angle : 28°

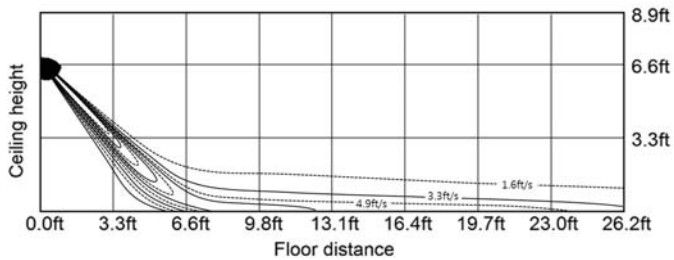


2) Cooling Temperature distribution

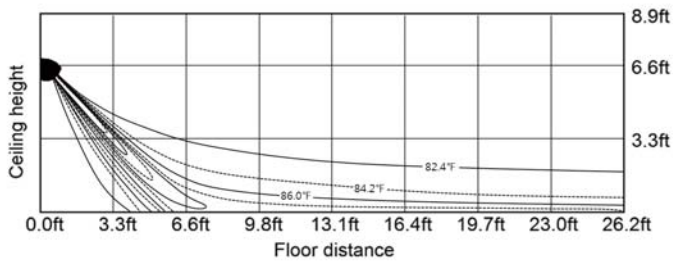


3) Heating air velocity distribution

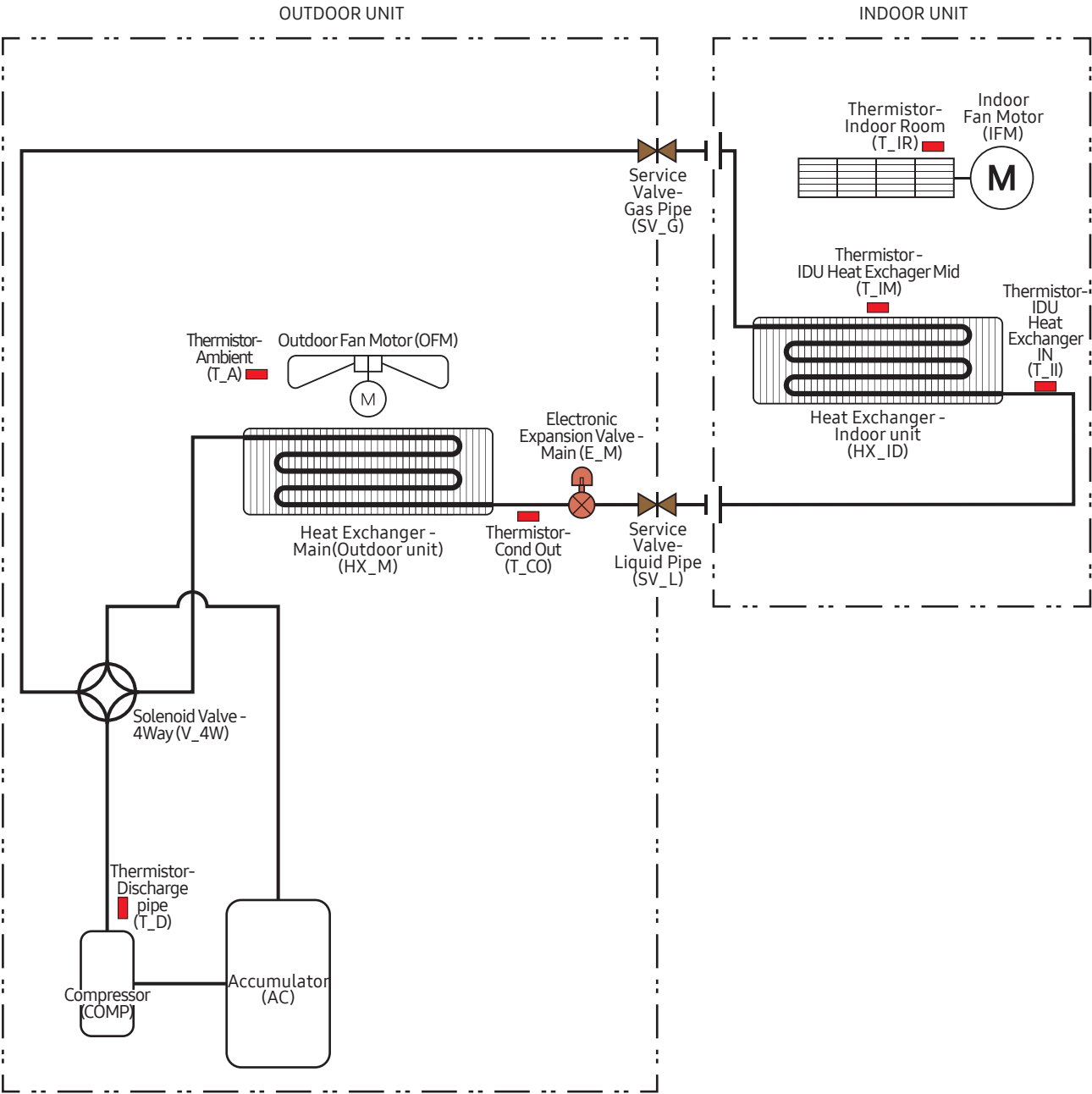
Heating Discharge angle : 58°



4) Heating Temperature distribution



# 7. Piping Diagram



## 8. Operation Range

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### AR09/12MSWXCWK/CV

Mode	Outdoor Unit	Indoor Unit	Indoor Unit
	Temperature(DB)	Temperature(DB)	Humidity(RH)
COOL	14 ~ 115°F	61~90°F	80% or less
HEAT	5 ~ 75°F	61~86°F	-
DRY	14 ~ 115°F	61~90°F	80% or less

### AR18/24NSWXCWK/CV

Mode	Outdoor Unit	Indoor Unit	Indoor Unit
	Temperature(DB)	Temperature(DB)	Humidity(RH)
COOL	-0.4 ~ 115°F	61~90°F	80% or less
HEAT	5 ~ 75°F	61~86°F	-
DRY	-0.4 ~ 115°F	61~90°F	80% or less

#### NOTE

- The assumed installation conditions are follows
  - The pipe length (including elbow) is 24.6 ft.
  - The level difference is 0 ft.

# 9. Capacity Correction

AR18NSWXCWKNCV + AR18NSWXCWKXCV, AR24NSWXCWKNCV + AR24NSWXCWKXCV

## Cooling



		Pipe Length (ft)						
		16.4	32.8	41.0	49.2	65.6	82	98.4
Level Difference (ft)	49.2	-	-	-	0.92	0.9	0.88	0.86
	32.8	-	0.95	0.94	0.93	0.91	0.89	0.87
	22.97	-	0.96	0.95	0.94	0.92	0.9	0.88
	16.4	0.99	0.97	0.96	0.95	0.93	0.91	0.89
	0	1	0.98	0.97	0.96	0.94	0.92	0.90
	-16.4	0.99	0.97	0.96	0.95	0.93	0.91	0.89
	-22.97	-	0.96	0.95	0.94	0.92	0.9	0.88
	-32.8	-	0.95	0.94	0.93	0.91	0.89	0.87
	-49.2	-	-	-	0.92	0.9	0.88	0.86

## Heating



		Pipe Length (ft)						
		16.4	32.8	41.0	49.2	65.6	82	98.4
Level Difference (ft)	49.2	-	-	-	0.92	0.9	0.88	0.86
	32.8	-	0.95	0.94	0.93	0.91	0.89	0.87
	22.97	-	0.96	0.95	0.94	0.92	0.9	0.88
	16.4	0.99	0.97	0.96	0.95	0.93	0.91	0.89
	0	1	0.98	0.97	0.96	0.94	0.92	0.90
	-16.4	0.99	0.97	0.96	0.95	0.93	0.91	0.89
	-22.97	-	0.96	0.95	0.94	0.92	0.9	0.88
	-32.8	-	0.95	0.94	0.93	0.91	0.89	0.87
	-49.2	-	-	-	0.92	0.9	0.88	0.86

2018. 09  
Ver. 2.0

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