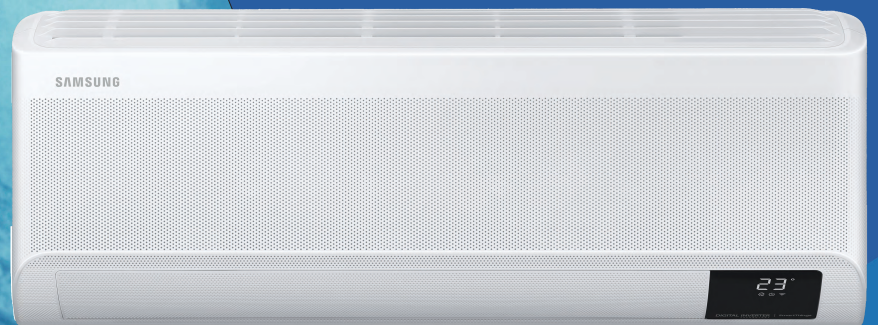


**SAMSUNG**

# RAC

# Technical Data Book

RAC for Europe  
(INV, R32, 50Hz, HP)



Model : AR\*\*CX\*AAWKNEU (Indoor Unit)  
AR\*\*\*X\*AAWKXEU (Outdoor Unit)

# History

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Version	Modification	Date	Remark
Ver.1.0	Released AR9500T RAC TDB for Europe	23.03.28	

# Nomenclature

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## Model Name

<b>AR</b>	<b>09</b>	<b>C</b>	<b>X</b>	<b>C</b>	<b>A</b>	<b>A</b>	<b>WK</b>	<b>N</b>	<b>EU</b>
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Buyer

### (1) Classification

<b>AR</b>	RAC
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### (6) Design Segment

<b>A</b>	Wind-Free GEO
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### (2) Capacity

x1000 Btu/h
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### (7) Version

A-Z (1 digit)
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### (3) Year

<b>T</b>	2020
<b>C</b>	2023

### (8) Color

<b>WK</b>	DA White
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### (4) Product Type

<b>X</b>	INVERTER HP R32
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### (9) Set





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

### (5) Characteristics

<b>C</b>	Motion Detect Sensor +Wi-Fi + Tri-care Filter
<b>K</b>	PM1.0 Filter + PM1.0 Sensor+Wi-Fi

# Line-up

## Indoor Unit

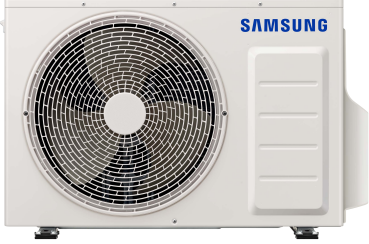
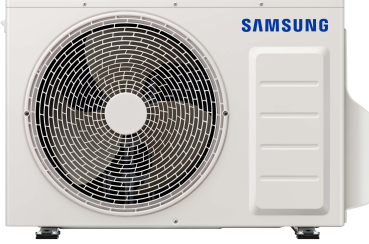
Model Type	Design	Image	
AR9500	Wind-Free GEO		
AR9500	Wind-Free GEO PM 1.0		

Model Type	Design	Capacity (kW)	
		2.5	3.5
AR9500	Wind-Free GEO	●	●



# Line-up

## Outdoor Unit

Model Type	Design	Capacity (kW)	
		2.5	3.5
AR9500	Wind-Free GEO		

# Contents

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# 1. Specification

## AR9500

	Indoor Unit		AR09CXCAAWKNEU	AR12CXCAAWKNEU	
	Outdoor Unit		AR09TXCAAWKXEU	AR12TXCAAWKXEU	
System	Model Name				
	Mode		-	HEAT PUMP	
	Performance	Capacity (Min/Std/Max)	Cooling	kW	0.9 / 2.5 / 3.6
				Btu/h	3,071 / 8,530 / 12,284
			Heating	kW	0.8 / 3.2 / 7.1
				Btu/h	2,730 / 10,919 / 24,226
	Power	Power Input (Min/Std/Max)	Cooling	kW	0.18 / 0.54 / 0.93
			Heating	kW	0.15 / 0.675 / 2.16
		Current Input (Min/Std/Max)	Cooling	A	1.2 / 2.9 / 4.5
			Heating	A	1.0 / 3.4 / 9.5
	Efficiency	EER	Cooling	-	4.63
		COP	Heating	-	4.74
		SEER (Cooling Energy Grade)		-	8.80 (A+++)
		SCOP (Heating Energy Grade)		-	5.10 (A+++)
		Pdesignh		kW	2.3
	Piping Connections	Liquid Pipe		Type	Flare connection
				Φ, mm (inch)	6.35 (1/4)
		Gas Pipe		Type	Flare connection
				Φ, mm (inch)	9.52 (3/8)
		Heat Insulation		-	Both liquid and gas pipes
		Installation Limitation	Max. Length (Outdoor to indoor)		m
	Max. Height (Between ID/OD)		m	8	
	Wiring connections	Power Source Wire		mm <sup>2</sup>	2.5
		Communication	Min.	mm <sup>2</sup>	0.75
			Remark	-	F1, F2
	Refrigerant	Type		-	R32
		Factory Charging		kg	0.965
				tCO <sub>2</sub> e	0.65
Indoor Unit	Power Supply		Ø, #, V, Hz	1,2,220-240,50	
	Heat Exchanger	Type		-	F&T
		Material	Fin	-	Al
			Tube	-	Cu
		Fin Treatment		-	Green Hydrophile
	Fan	Type		-	Cross Flow
		Quantity		EA	1
		Air Flow Rate	Cooling (T/H/M/L)	m <sup>3</sup> /min	11.1 / 10.1 / 8.6 / 7.1
				l/s	185 / 168 / 143 / 118
			Heating (T/H/M/L)	m <sup>3</sup> /min	13.1 / 12.1 / 10.6 / 9.1
	l/s			218 / 202 / 177 / 152	
	Fan Motor	Type		-	BLDC
		Output		W x n	27 x 1
	Drain	Drain Pipe		Φ, mm	16.3, 550
	Sound	Sound Pressure Level	H / Silent	dB(A)	38 / 16
			Sound Power Level	dB(A)	56
	External Dimension	Net Weight		kg	10.5
		Shipping Weight		kg	12.5
		Net Dimensions (WxHxD)		mm	889 x 299 x 215
		Shipping Dimensions (WxHxD)		mm	950 x 290 x 375
Casing	Material		-	HIPS	
Control System	Infrared remote control		-	Included	
	Wired remote control		-	MWR-WE13N MWR-WG00JN MWR-WG00KN MWR-SH11N	

# 1. Specification

## AR9500

Indoor Unit	Model Name		Indoor Unit	AR09CXCAAWKNEU	AR12CXCAAWKNEU			
			Outdoor Unit	AR09TXCAAWKXEU	AR12TXCAAWKXEU			
	Drain Pump		Drain Pump	-	-			
			Max. lifting Height / Displacement	mm / Liter/h	-			
	Additional Accessories		Drain Pump	External Model	-			
				Internal Model	-			
			Max. lifting Height / Displacement	mm / Liter/h	-			
			Easy Filter Plus	-	Removable / Washable			
			Tri-Care Filter	-	○			
		Motion Detect Sensor	-	○				
		Wi-Fi	-	○				
Outdoor Unit	Power Supply			Ø, #, V, Hz	1, 2, 220-240, 50	1, 2, 220-240, 50		
	Heat Exchanger		Type	-	F&T	F&T		
			Material		Fin	-	Al	Al
					Tube	-	Cu	Cu
			Fin Treatment	-	Anti-Corrosion	Anti-Corrosion		
	Compressor		Model Name			KTN130D42UFR	KTN130D42UFR	
			Type		-	BLDC ROTARY	BLDC ROTARY	
			Output		kW	4.09	4.09	
			Oil	Type	-	POE	POE	
	Initial charge	cc		350	350			
	Fan		Type		-	Propeller	Propeller	
			Discharge direction		-	Front	Front	
			Quantity		EA	1	1	
			Air Flow Rate		m <sup>3</sup> /min	45	45	
	l/s	750			750			
	Fan Motor		Type		-	BLDC	BLDC	
			Output		W x n	40 x 1	40 x 1	
	Sound		Sound Pressure Level	Cooling	dB(A)	45	46	
				Heating	dB(A)	59	62	
	External Dimension		Net Weight		kg	32.5	32.5	
			Shipping Weight		kg	34.8	34.8	
Net Dimensions (WxHxD)			mm	790 x 548 x 285	790 x 548 x 285			
Shipping Dimensions (WxHxD)			mm	913 x 622 x 371	913 x 622 x 371			
Casing		Material	Body	-	EGI Steel Plate / PP	EGI Steel Plate / PP		
		Operating Temp. Range		°C	-10 ~ 46	-10 ~ 46		
		Heating		°C	-15 ~ 24	-15 ~ 24		

### NOTE

- Specifications may be subject to change without prior notice.
- Nominal cooling capacities are based on;  
Indoor temperature: 27°C DB, 19°C WB  
Outdoor temperature: 35°C DB, 24°C WB, Equivalent refrigerant piping: 5m, Level differences: 0 m
  - Nominal heating capacities are based on;  
Indoor temperature: 20°C DB, 15°C WB  
Outdoor temperature: 7°C DB, 6°C WB, Equivalent refrigerant piping: 5m, Level differences: 0 m
  - Sound pressure was acquired in an anechoic room. Thus actual noise level may be different depending on the installation conditions.
  - These products contain R32 which is fluorinated greenhouse gas.

# 1. Specification

## AR9500

	Model Name		Indoor Unit	AR09CXKAAWKNEU	AR12CXKAAWKNEU		
			Outdoor Unit	AR09AXKAAWKXEU	AR12AXKAAWKXEU		
System	Mode			-	HEAT PUMP	HEAT PUMP	
	Performance	Capacity (Min/Std/Max)	Cooling	kW	0.9 / 2.5 / 3.4	0.9 / 3.5 / 4.4	
				Btu/h	3,071 / 8,530 / 11,601	3,071 / 11,942 / 15,013	
			Heating	kW	0.7 / 3.2 / 6.5	0.8 / 4.0 / 6.8	
				Btu/h	2,388 / 10,919 / 22,179	2,388 / 13,649 / 23,203	
	Power	Power Input (Min/Std/Max)	Cooling	kW	0.18 / 0.56 / 0.93	0.18 / 0.92 / 1.45	
			Heating	kW	0.15 / 0.81 / 2.16	0.15 / 1.09 / 2.28	
		Current Input (Min/Std/Max)	Cooling	A	1.2 / 2.9 / 4.5	1.2 / 4.4 / 6.4	
			Heating	A	1.0 / 3.9 / 9.5	1.0 / 5.1 / 10.0	
	Efficiency	EER	Cooling	-	4.46	3.8	
		COP	Heating	-	3.95	3.71	
		SEER (Cooling Energy Grade)		-	7.90 (A++)	7.20 (A++)	
		SCOP (Heating Energy Grade)		-	5.20 (A+++)	5.20 (A+++)	
	Piping Connections	Liquid Pipe		Type	Flare connection	Flare connection	
				Φ, mm (inch)	6.35 (1/4)	6.35 (1/4)	
		Gas Pipe		Type	Flare connection	Flare connection	
				Φ, mm (inch)	9.52 (3/8)	9.52 (3/8)	
		Heat Insulation		-	Both liquid and gas pipes	Both liquid and gas pipes	
		Installation Limitation	Max. Length (Outdoor to indoor)	m	15	15	
	Max. Height (Between ID/OD)			m	8	8	
		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		-	R32	R32	
		Factory Charging		kg	0.965	0.965	
				tCO <sub>2</sub> e	0.65	0.65	
	Indoor Unit	Power Supply			Ø, #, V, Hz	1,2,220-240,50	1,2,220-240,50
		Heat Exchanger	Type		-	F&T	F&T
Material			Fin	-	Al	Al	
			Tube	-	Cu	Cu	
Fin Treatment			-	Green Hydrophile	Green Hydrophile		
Fan		Type		-	Cross Flow	Cross Flow	
		Quantity		EA	1	1	
		Air Flow Rate	Cooling (T/H/M/L)	m <sup>3</sup> /min	10.3 / 9.5 / 8.5 / 7.0	10.8 / 10.0 / 8.5 / 7.0	
				l/s	172 / 159 / 142 / 117	180 / 167 / 142 / 117	
			Heating (T/H/M/L)	m <sup>3</sup> /min	11.1 / 10.2 / 9.1 / 8.0	11.1 / 10.2 / 9.1 / 8.0	
l/s				185 / 170 / 152 / 134	185 / 170 / 152 / 134		
Fan Motor		Type		-	BLDC	BLDC	
		Output		W x n	27 x 1	27 x 1	
Drain		Drain Pipe		Φ, mm	16.3, 550	16.3, 550	
Sound		Sound Pressure Level	H / Silent	dB(A)	38 / 19	40 / 19	
			Sound Power Level		dB(A)	56	58
External Dimension		Net Weight		kg	10.3	10.3	
		Shipping Weight		kg	12.4	12.4	
		Net Dimensions (WxHxD)		mm	820 x 345 x 215	820 x 345 x 215	
		Shipping Dimensions (WxHxD)		mm	880 x 290 x 410	880 x 290 x 410	
Casing	Material		-	HIPS	HIPS		
Control System	Infrared remote control		-	Included	Included		
	Wired remote control		-	MWR-WE13N MWR-WG00JN MWR-WG00KN MWR-SH11N	MWR-WE13N MWR-WG00JN MWR-WG00KN MWR-SH11N		



# 1. Specification

## AR9500

Indoor Unit	Model Name		Indoor Unit	AR09CXKAAWKNEU	AR12CXKAAWKNEU			
			Outdoor Unit	AR09AXKAAWKXEU	AR12AXKAAWKXEU			
	Drain Pump		Drain Pump	-	-			
			Max. lifting Height / Displacement	mm / Liter/h	-			
	Additional Accessories		Drain Pump	External Model	-			
				Internal Model	-			
			Max. lifting Height / Displacement	mm / Liter/h	-			
			Easy Filter Plus	-	Removable / Washable			
			PM1.0 Filter + PM1.0 Sensor	-	○			
		Motion Detect Sensor	-	-				
		Wi-Fi	-	○				
Outdoor Unit	Power Supply			Ø, #, V, Hz	1, 2, 220-240, 50	1, 2, 220-240, 50		
	Heat Exchanger		Type	-	F&T	F&T		
			Material		Fin	-	Al	Al
					Tube	-	Cu	Cu
			Fin Treatment	-	Anti-Corrosion	Anti-Corrosion		
	Compressor		Model Name		KTN130D42UFR	KTN130D42UFR		
			Type		-	BLDC ROTARY	BLDC ROTARY	
			Output		kW	4.09	4.09	
			Oil	Type	-	POE	POE	
	Initial charge	cc		350	350			
	Fan		Type		-	Propeller	Propeller	
			Discharge direction		-	Front	Front	
			Quantity		EA	1	1	
			Air Flow Rate		m <sup>3</sup> /min	45	45	
	l/s	750			750			
	Fan Motor		Type		-	BLDC	BLDC	
			Output		W x n	40 x 1	40 x 1	
	Sound		Sound Pressure Level	Cooling	dB(A)	45	46	
				Heating	dB(A)	59	62	
	External Dimension		Net Weight		kg	32.7	32.7	
			Shipping Weight		kg	35.0	35.0	
Net Dimensions (WxHxD)			mm	790 x 548 x 285	790 x 548 x 285			
Shipping Dimensions (WxHxD)			mm	913 x 622 x 371	913 x 622 x 371			
Casing		Material	Body	-	EGI Steel Plate / PP	EGI Steel Plate / PP		
		Operating Temp. Range		°C	-10 ~ 46	-10 ~ 46		
		Heating		°C	-15 ~ 24	-15 ~ 24		

### NOTE

- Specifications may be subject to change without prior notice.
- Nominal cooling capacities are based on;  
Indoor temperature: 27°C DB, 19°C WB  
Outdoor temperature: 35°C DB, 24°C WB, Equivalent refrigerant piping: 5m, Level differences: 0 m
  - Nominal heating capacities are based on;  
Indoor temperature: 20°C DB, 15°C WB  
Outdoor temperature: 7°C DB, 6°C WB, Equivalent refrigerant piping: 5m, Level differences: 0 m
  - Sound pressure was acquired in an anechoic room. Thus actual noise level may be different depending on the installation conditions.
  - These products contain R32 which is fluorinated greenhouse gas.

# 2. Capacity Table

## AR9500

### AR09CXCAAWKNEU+AR09TXCAAWKXEU

#### Cooling

TC : Total Capacity, SHC : Sensible Heat Capacity, PI : Power Input

Outdoor Temperature (°C, DB)	Indoor Temperature (°C, DB / WB)																				
	20 / 14			22 / 16			25 / 18			27 / 19			28 / 20			30 / 22			32 / 24		
	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
-10	2.31	1.92	0.49	2.40	2.06	0.56	2.59	2.24	0.63	2.76	2.35	0.66	2.85	2.41	0.66	3.05	2.50	0.65	3.28	2.59	0.63
0	2.50	2.08	0.36	2.60	2.22	0.44	2.80	2.41	0.52	2.97	2.53	0.55	3.06	2.58	0.56	3.27	2.68	0.55	3.51	2.77	0.53
10	2.64	2.20	0.32	2.75	2.34	0.41	2.95	2.54	0.49	3.13	2.66	0.53	3.22	2.71	0.54	3.44	2.82	0.54	3.68	2.92	0.52
20	2.73	2.28	0.37	2.84	2.42	0.46	3.06	2.63	0.55	3.24	2.75	0.59	3.34	2.81	0.60	3.56	2.92	0.61	3.81	3.02	0.60
25	2.76	2.30	0.42	2.88	2.45	0.51	3.10	2.66	0.61	3.28	2.78	0.65	3.38	2.84	0.67	3.60	2.95	0.68	3.85	3.05	0.67
32	2.78	2.32	0.53	2.90	2.47	0.63	3.12	2.68	0.73	3.31	2.81	0.78	3.41	2.87	0.79	3.64	2.98	0.81	3.89	3.09	0.80
35	2.78	2.32	0.59	2.90	2.47	0.69	3.13	2.68	0.80	2.50	2.13	0.54	3.42	2.87	0.86	3.65	2.99	0.87	3.90	3.10	0.87
40	2.78	2.32	0.71	2.90	2.47	0.81	3.13	2.68	0.92	3.32	2.81	0.97	3.42	2.88	0.98	3.65	2.99	1.00	3.91	3.10	1.00
43	2.76	2.31	0.79	2.89	2.46	0.89	3.12	2.68	1.00	3.31	2.81	1.05	3.42	2.87	1.07	3.65	2.99	1.09	3.91	3.10	1.09
46	2.75	2.30	0.88	2.87	2.45	0.98	3.11	2.67	1.10	3.30	2.80	1.15	3.41	2.87	1.17	3.64	2.99	1.19	3.91	3.10	1.19

#### Heating

TC : Total Capacity, PI : Power Input

Outdoor Temperature (°C, DB)	Indoor Temperature (°C, DB)											
	16		18		20		21		22		24	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
-15	4.75	1.58	4.18	1.54	3.92	1.59	3.91	1.65	3.97	1.73	4.29	2.00
-10	4.64	1.66	4.20	1.62	3.98	1.66	3.96	1.71	3.99	1.79	4.19	2.03
-5	4.64	1.61	4.32	1.57	4.15	1.61	4.12	1.66	4.12	1.73	4.20	1.94
0	4.70	1.47	4.51	1.45	4.39	1.48	4.35	1.53	4.32	1.59	4.28	1.78
2	4.74	1.40	4.60	1.38	4.50	1.42	4.46	1.46	4.42	1.52	4.33	1.70
5	4.80	1.29	4.75	1.28	4.67	1.32	4.63	1.36	4.57	1.42	4.42	1.58
7	4.85	1.21	4.84	1.21	3.20	0.68	4.74	1.29	4.67	1.35	4.48	1.51
10	4.91	1.11	4.99	1.11	4.96	1.16	4.91	1.20	4.83	1.25	4.56	1.40
15	4.98	0.97	5.20	1.00	5.23	1.05	5.18	1.09	5.07	1.14	4.69	1.28
20	5.00	0.93	5.35	0.97	5.44	1.04	5.38	1.08	5.25	1.13	4.77	1.26
24	4.94	0.98	5.41	1.05	5.55	1.12	5.49	1.16	5.34	1.21	4.77	1.34

#### NOTE

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

## 2. Capacity Table

AR9500

AR12CXCAAWKNEU+AR12TXCAAWKXEU

### Cooling

TC : Total Capacity, SHC : Sensible Heat Capacity, PI : Power Input

Outdoor Temperature (°C, DB)	Indoor Temperature (°C, DB / WB)																				
	20 / 14			22 / 16			25 / 18			27 / 19			28 / 20			30 / 22			32 / 24		
	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
-10	3.32	2.76	0.72	3.40	2.93	0.82	3.66	3.17	0.94	3.90	3.32	0.99	4.03	3.39	1.01	4.30	3.52	1.03	4.58	3.63	1.02
0	3.15	2.63	0.54	3.26	2.81	0.64	3.55	3.08	0.75	3.82	3.25	0.80	3.96	3.33	0.82	4.26	3.48	0.82	4.56	3.60	0.80
10	3.41	2.85	0.53	3.53	3.04	0.64	3.85	3.33	0.76	4.13	3.51	0.80	4.28	3.59	0.82	4.59	3.75	0.82	4.91	3.89	0.79
20	3.79	3.16	0.64	3.91	3.36	0.76	4.24	3.65	0.89	4.52	3.83	0.94	4.68	3.92	0.96	5.00	4.08	0.96	5.32	4.22	0.93
25	3.93	3.28	0.73	4.05	3.47	0.85	4.38	3.77	0.99	4.66	3.95	1.05	4.82	4.03	1.06	5.14	4.20	1.07	5.46	4.34	1.03
32	3.98	3.31	0.86	4.10	3.51	0.99	4.41	3.80	1.15	4.69	3.97	1.21	4.84	4.06	1.23	5.16	4.22	1.24	5.48	4.35	1.21
35	3.92	3.27	0.91	4.04	3.46	1.06	4.35	3.74	1.22	4.50	3.92	1.22	4.77	4.00	1.31	5.09	4.16	1.32	5.40	4.29	1.29
40	3.70	3.08	1.00	3.81	3.27	1.16	4.11	3.55	1.33	4.38	3.72	1.41	4.52	3.80	1.43	4.83	3.94	1.45	5.14	4.07	1.43
43	3.48	2.90	1.05	3.58	3.08	1.21	3.87	3.35	1.40	4.13	3.51	1.48	4.27	3.59	1.51	4.57	3.74	1.53	4.88	3.86	1.51
46	3.18	2.64	1.09	3.27	2.82	1.26	3.55	3.08	1.46	3.80	3.25	1.55	3.94	3.32	1.57	4.24	3.46	1.60	4.53	3.58	1.58

### Heating

TC : Total Capacity, PI : Power Input

Outdoor Temperature (°C, DB)	Indoor Temperature (°C, DB)											
	16		18		20		21		22		24	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
-15	5.17	1.95	4.71	1.90	4.52	1.96	4.54	2.04	4.63	2.15	5.05	2.48
-10	5.41	2.17	4.94	2.11	4.68	2.17	4.63	2.24	4.63	2.34	4.82	2.63
-5	5.58	2.09	5.14	2.05	4.83	2.10	4.73	2.16	4.67	2.25	4.67	2.51
0	5.68	1.84	5.31	1.81	4.99	1.85	4.86	1.91	4.74	1.98	4.58	2.21
2	5.70	1.70	5.36	1.68	5.05	1.72	4.91	1.78	4.78	1.85	4.56	2.07
5	5.71	1.49	5.43	1.47	5.14	1.52	4.99	1.57	4.84	1.64	4.55	1.84
7	5.70	1.34	5.47	1.33	4.00	0.94	5.05	1.43	4.89	1.50	4.56	1.69
10	5.66	1.14	5.52	1.14	5.29	1.20	5.14	1.24	4.97	1.31	4.59	1.48
15	5.54	0.90	5.57	0.92	5.42	0.98	5.29	1.03	5.13	1.08	4.68	1.24
20	5.34	0.86	5.57	0.91	5.55	0.97	5.46	1.02	5.30	1.07	4.84	1.21
24	5.12	1.03	5.54	1.10	5.65	1.18	5.59	1.22	5.46	1.27	5.00	1.40

### NOTE

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

## 2. Capacity Table

AR9500

AR09CXKAAWKNEU+AR09AXKAAWKXEU

### Cooling

TC : Total Capacity, SHC : Sensible Heat Capacity, PI : Power Input

Outdoor Temperature (°C, DB)	Indoor Temperature (°C, DB / WB)																				
	20 / 14			22 / 16			25 / 18			27 / 19			28 / 20			30 / 22			32 / 24		
	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
-10	2.80	2.33	0.76	2.91	2.41	0.79	3.13	2.55	0.83	3.31	2.65	0.84	3.42	2.71	0.84	3.65	2.81	0.85	3.91	2.92	0.85
0	2.88	2.41	0.66	3.01	2.50	0.69	3.26	2.65	0.72	3.46	2.77	0.73	3.57	2.82	0.73	3.82	2.94	0.74	4.10	3.05	0.74
10	3.06	2.55	0.61	3.19	2.65	0.64	3.45	2.81	0.67	3.66	2.93	0.68	3.78	2.99	0.68	4.04	3.11	0.68	4.33	3.23	0.68
20	3.20	2.67	0.63	3.34	2.77	0.66	3.61	2.93	0.70	3.82	3.05	0.71	3.94	3.11	0.71	4.20	3.24	0.71	4.49	3.35	0.71
25	3.23	2.69	0.67	3.37	2.79	0.70	3.63	2.95	0.74	3.84	3.07	0.75	3.96	3.13	0.75	4.22	3.25	0.75	4.51	3.37	0.75
32	3.19	2.65	0.76	3.32	2.75	0.80	3.57	2.91	0.83	3.78	3.02	0.85	3.90	3.08	0.85	4.15	3.20	0.85	4.44	3.31	0.85
35	3.13	2.61	0.81	3.26	2.70	0.85	3.51	2.85	0.89	2.50	2.00	0.56	3.82	3.02	0.91	4.07	3.14	0.91	4.36	3.25	0.91
40	2.97	2.47	0.92	3.09	2.56	0.96	3.33	2.71	1.00	3.52	2.82	1.02	3.63	2.88	1.02	3.88	2.99	1.03	4.15	3.10	1.03
43	2.84	2.36	0.99	2.95	2.44	1.04	3.18	2.59	1.08	3.37	2.70	1.10	3.47	2.75	1.11	3.71	2.86	1.11	3.98	2.97	1.11
46	2.66	2.22	1.08	2.77	2.30	1.13	2.99	2.44	1.17	3.17	2.54	1.19	3.27	2.59	1.20	3.50	2.70	1.21	3.77	2.80	1.21

### Heating

TC : Total Capacity, PI : Power Input

Outdoor Temperature (°C, DB)	Indoor Temperature (°C, DB)											
	16		18		20		21		22		24	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
-15	3.65	1.88	3.64	1.90	3.63	1.92	3.62	1.93	3.60	1.94	3.53	1.97
-10	4.06	1.93	4.11	1.96	4.11	2.00	4.10	2.02	4.06	2.04	3.92	2.07
-5	4.20	1.77	4.30	1.82	4.33	1.88	4.30	1.90	4.25	1.92	4.05	1.96
0	4.17	1.49	4.33	1.56	4.37	1.63	4.34	1.65	4.27	1.68	4.01	1.71
2	4.13	1.37	4.31	1.44	4.36	1.51	4.32	1.54	4.25	1.56	3.97	1.60
5	4.06	1.18	4.28	1.26	4.34	1.34	4.30	1.36	4.22	1.39	3.90	1.42
7	4.02	1.06	4.26	1.15	3.20	0.81	4.29	1.25	4.20	1.28	3.86	1.31
10	3.98	0.91	4.25	1.01	4.33	1.08	4.29	1.11	4.20	1.13	3.82	1.16
15	4.01	0.77	4.35	0.88	4.45	0.95	4.41	0.98	4.30	1.00	3.87	1.02
20	4.27	0.85	4.67	0.95	4.80	1.03	4.76	1.05	4.63	1.07	4.15	1.07
24	4.70	1.11	5.15	1.22	5.30	1.29	5.26	1.31	5.13	1.32	4.61	1.31

### NOTE

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

## 2. Capacity Table

AR9500

AR12CXKAAWKNEU+AR12AXKAAWKXEU

### Cooling

TC : Total Capacity, SHC : Sensible Heat Capacity, PI : Power Input

Outdoor Temperature (°C, DB)	Indoor Temperature (°C, DB / WB)																				
	20 / 14			22 / 16			25 / 18			27 / 19			28 / 20			30 / 22			32 / 24		
	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
-10	3.09	2.57	0.87	3.22	2.62	0.91	3.45	2.78	0.94	3.64	2.91	0.96	3.74	2.98	0.96	3.98	3.10	0.97	4.27	3.19	0.97
0	2.98	2.49	0.71	3.13	2.56	0.75	3.39	2.73	0.79	3.59	2.88	0.80	3.71	2.95	0.80	3.97	3.08	0.81	4.28	3.18	0.81
10	3.21	2.69	0.73	3.37	2.76	0.77	3.65	2.94	0.81	3.87	3.09	0.82	3.99	3.17	0.82	4.27	3.31	0.83	4.59	3.42	0.82
20	3.54	2.95	0.87	3.70	3.02	0.91	3.99	3.21	0.95	4.21	3.37	0.97	4.34	3.44	0.97	4.62	3.58	0.98	4.95	3.70	0.97
25	3.66	3.04	0.97	3.82	3.12	1.01	4.11	3.31	1.06	4.33	3.46	1.08	4.46	3.54	1.08	4.74	3.68	1.08	5.07	3.79	1.08
32	3.70	3.08	1.12	3.87	3.15	1.17	4.15	3.34	1.22	4.37	3.49	1.24	4.49	3.56	1.25	4.77	3.71	1.26	5.10	3.82	1.25
35	3.66	3.04	1.19	3.82	3.11	1.24	4.10	3.30	1.30	3.50	2.80	0.92	4.44	3.52	1.33	4.72	3.66	1.33	5.04	3.77	1.33
40	3.48	2.89	1.30	3.63	2.96	1.36	3.90	3.14	1.42	4.11	3.29	1.44	4.23	3.36	1.45	4.51	3.50	1.46	4.83	3.61	1.46
43	3.30	2.74	1.37	3.44	2.81	1.43	3.70	2.99	1.49	3.91	3.13	1.51	4.03	3.21	1.52	4.30	3.34	1.53	4.62	3.44	1.53
46	3.05	2.54	1.42	3.19	2.61	1.49	3.44	2.78	1.55	3.64	2.92	1.58	3.76	2.99	1.59	4.03	3.13	1.60	4.34	3.23	1.60

### Heating

TC : Total Capacity, PI : Power Input

Outdoor Temperature (°C, DB)	Indoor Temperature (°C, DB)											
	16		18		20		21		22		24	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
-15	4.15	2.20	4.15	2.21	4.14	2.24	4.12	2.25	4.10	2.27	4.01	2.30
-10	4.64	2.32	4.70	2.36	4.70	2.41	4.68	2.44	4.63	2.46	4.48	2.50
-5	4.84	2.21	4.95	2.28	4.97	2.35	4.94	2.38	4.88	2.41	4.66	2.46
0	4.83	1.96	5.00	2.05	5.04	2.13	5.00	2.17	4.93	2.20	4.65	2.25
2	4.79	1.84	4.99	1.93	5.03	2.02	4.99	2.06	4.91	2.09	4.61	2.14
5	4.71	1.64	4.95	1.75	5.00	1.84	4.96	1.87	4.87	1.91	4.53	1.95
7	4.65	1.51	4.91	1.62	4.00	1.08	4.93	1.75	4.84	1.78	4.48	1.82
10	4.57	1.33	4.87	1.44	4.95	1.53	4.90	1.57	4.80	1.60	4.40	1.63
15	4.50	1.10	4.86	1.21	4.96	1.30	4.92	1.34	4.80	1.36	4.35	1.38
20	4.58	1.03	5.01	1.14	5.14	1.23	5.09	1.25	4.96	1.27	4.46	1.27
24	4.83	1.14	5.31	1.25	5.47	1.32	5.42	1.35	5.28	1.36	4.73	1.34

### NOTE

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

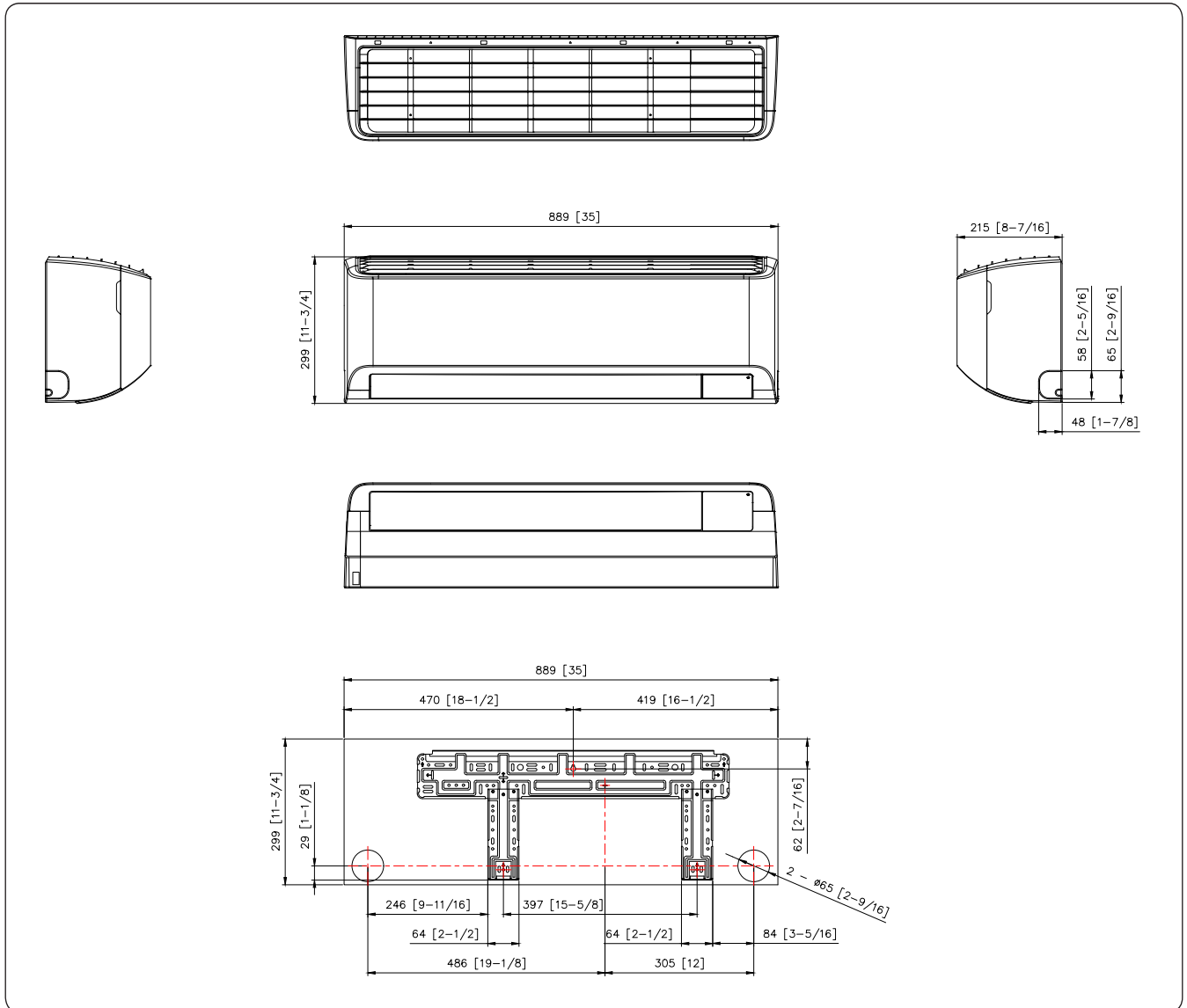


# 3. Dimensional Drawing

## Indoor units

AR09CXCAAWKNEU, AR12CXCAAWKNEU

Unit: mm (inches)

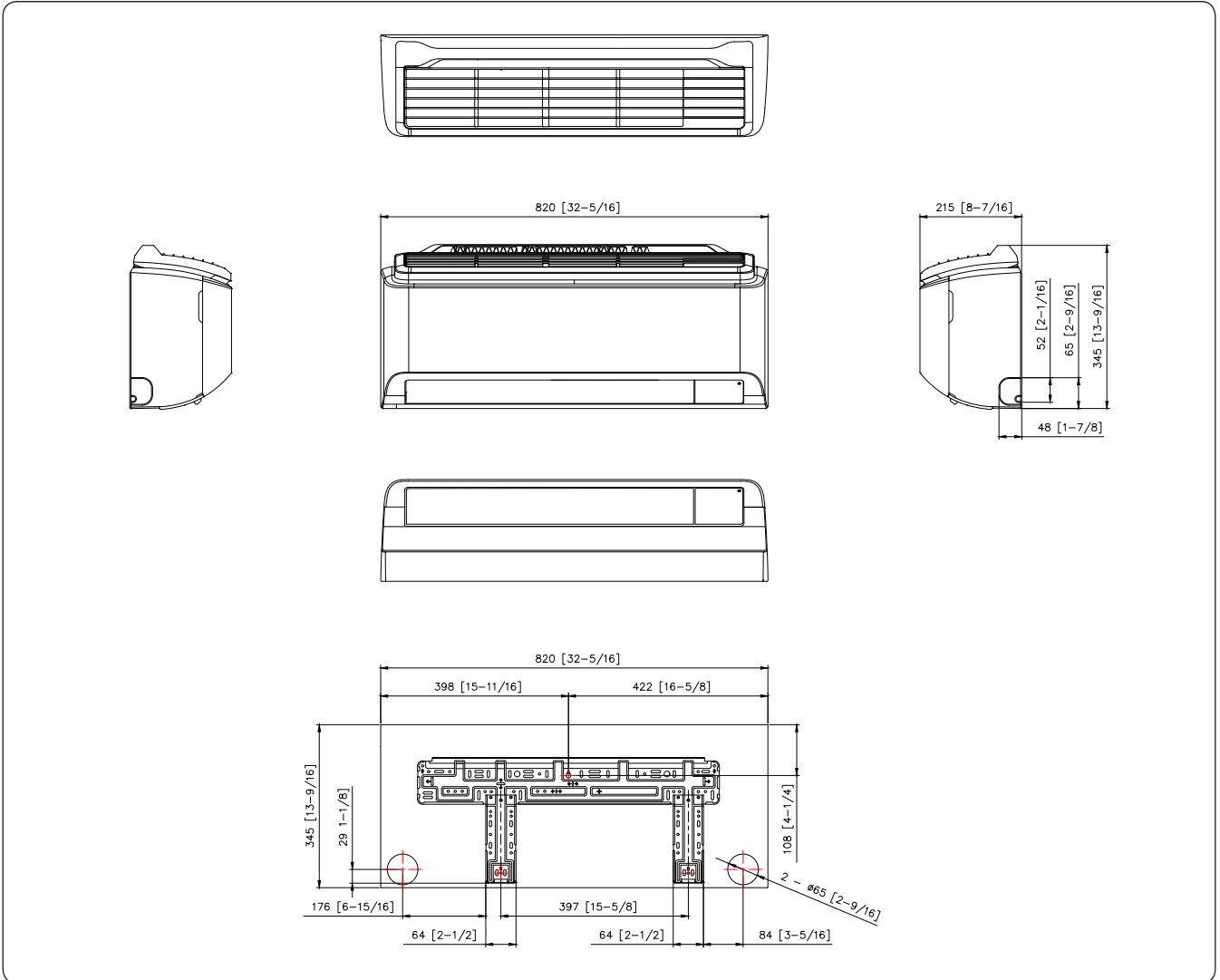


# 3. Dimensional Drawing

## Indoor units

AR09CXKAAWKNEU, AR12CXKAAWKNEU

Unit: mm (inches)

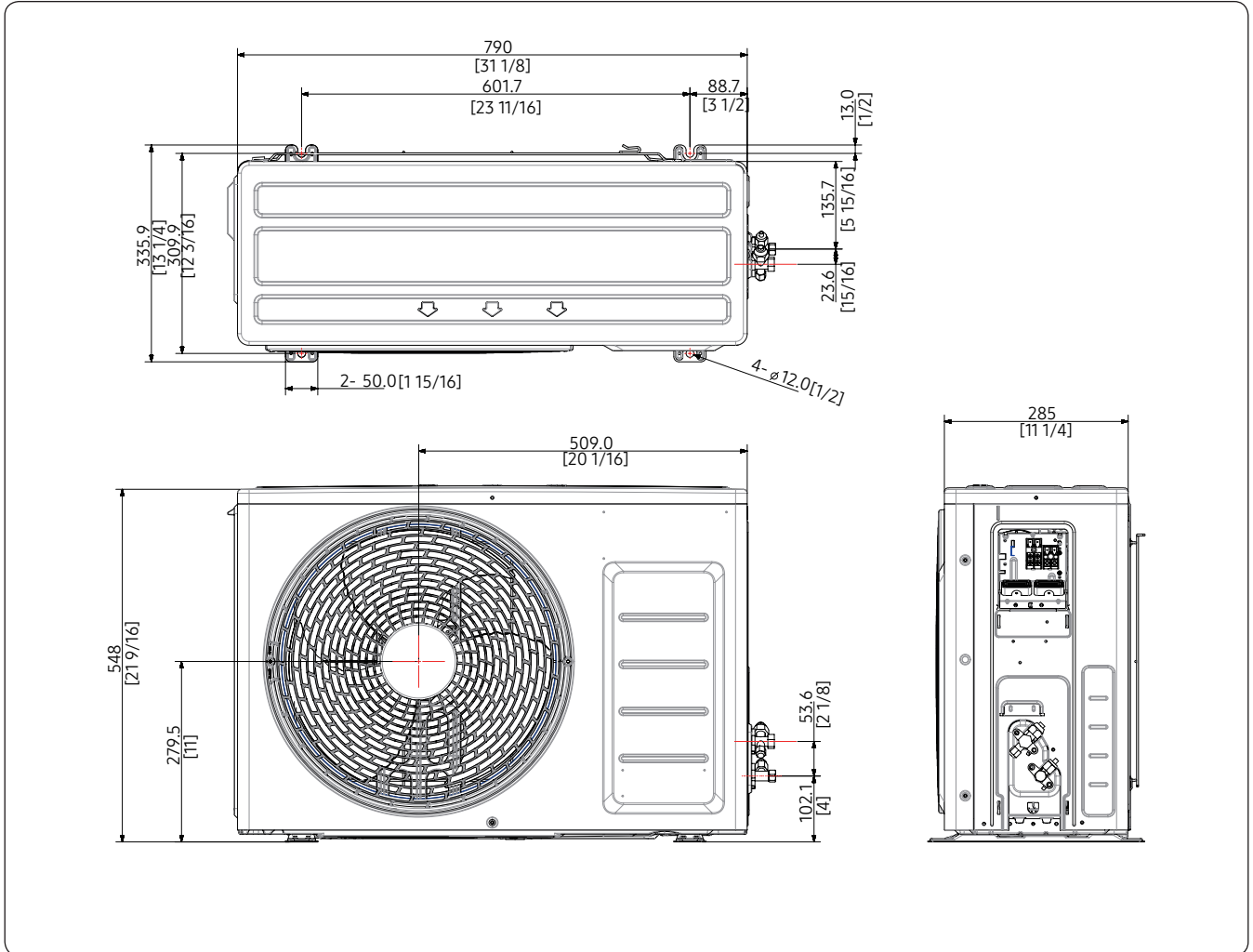


# 3. Dimensional Drawing

## Outdoor units

AR09TXCAAWKXEU, AR12TXCAAWKXEU, AR09AXKAAWKXEU, AR12AXKAAWKXEU

Unit: mm (inches)

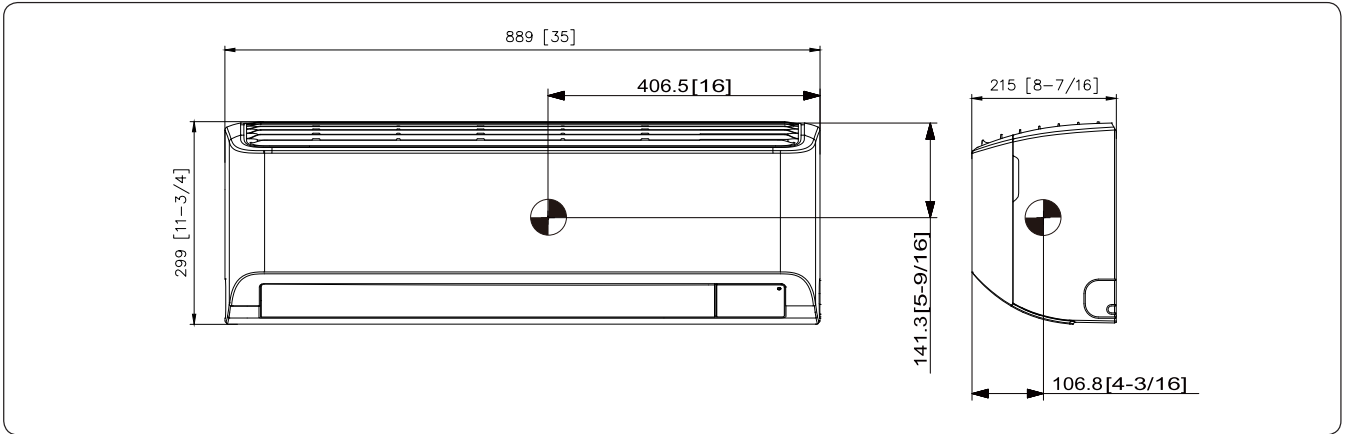


# 4. Center of Gravity

## Indoor units

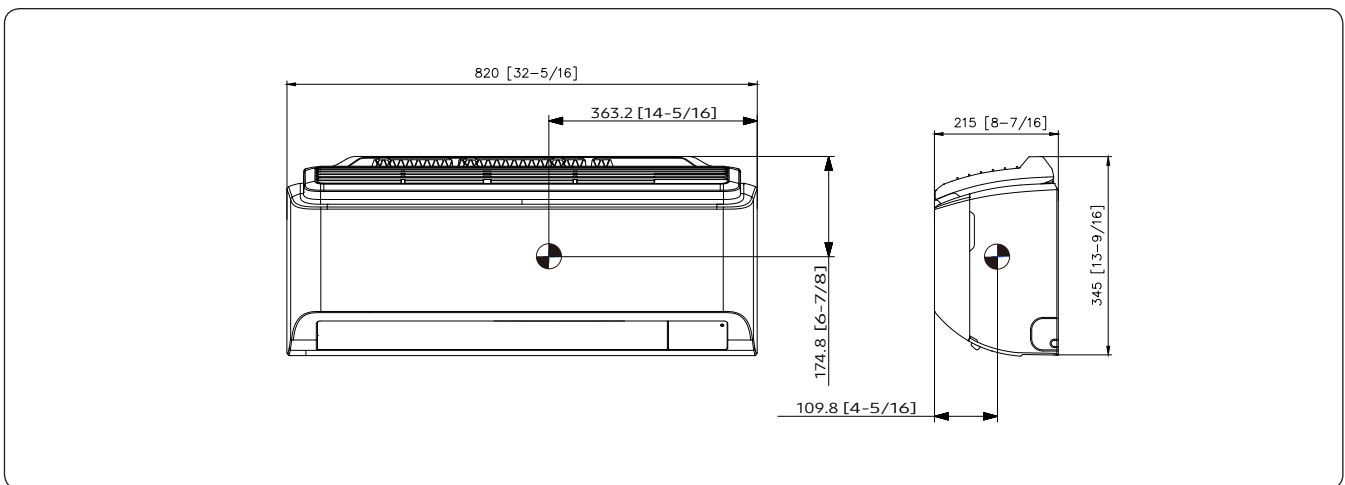
AR09CXCAAWKNEU, AR12CXCAAWKNEU

Unit: mm (inches)



AR09CXKAAWKNEU, AR12CXKAAWKNEU

Unit: mm (inches)

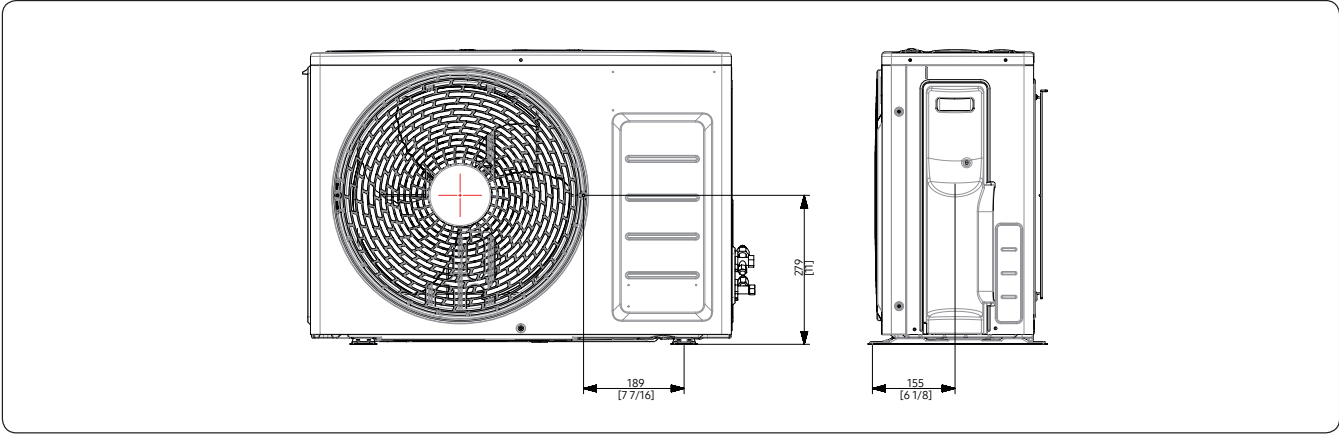


# 4. Center of Gravity

## Outdoor units

AR09TXCAAWKXEU, AR12TXCAAWKXEU, AR09AXKAAWKXEU, AR12AXKAAWKXEU

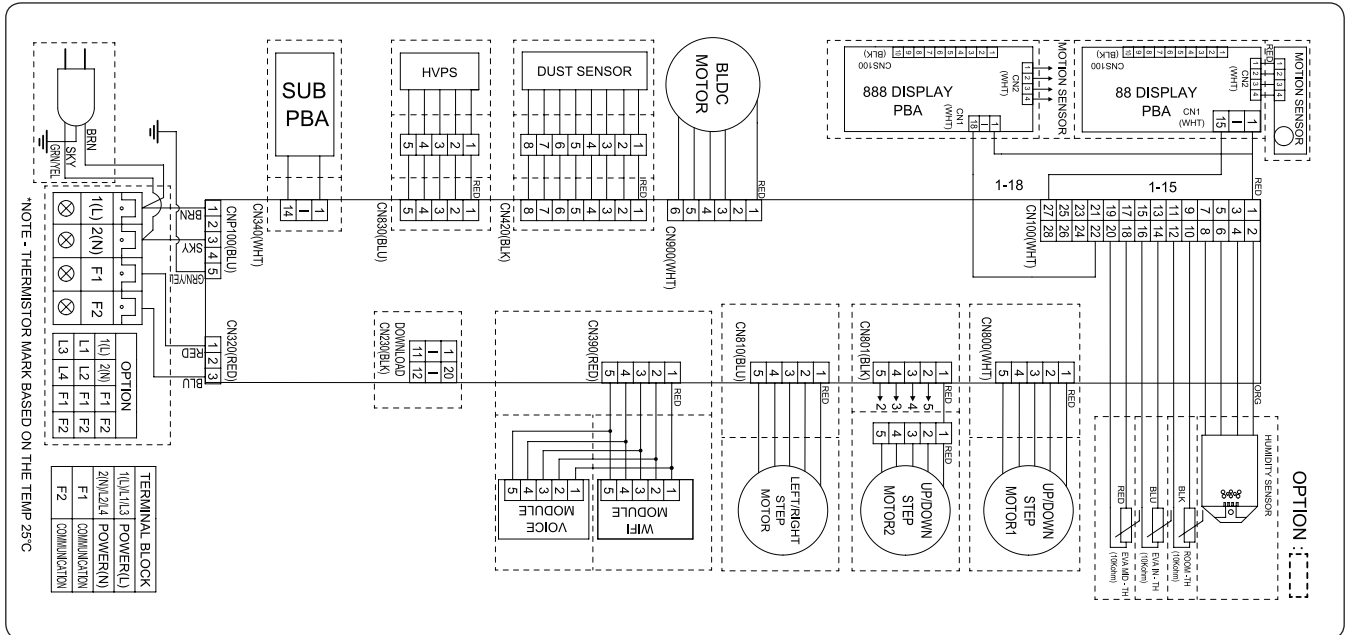
Unit: mm (inches)





# 5. Electrical Wiring Diagram

## Indoor units



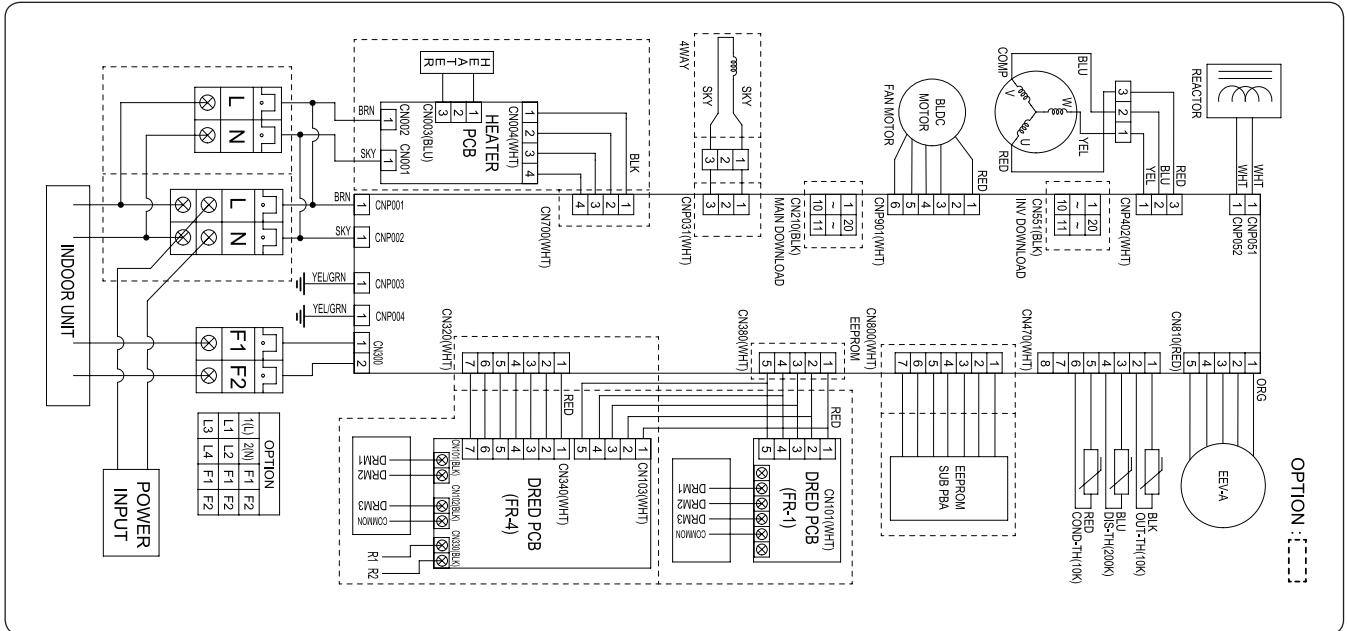
MOTION SENSOR	SENSOR(MOTION)	DISPLAY	Printed circuit board(DISPLAY BOARD)	DUST SNESOR	SENSOR(DUST)
ROOM TH	Thermistor(Room Temp, 10Kohm)	BLDC	Motor(BLDC FAN MOTOR)	HVPS	LOAD(HVPS MODULE)
EVA MID - TH	Thermistor(EVA MID Temp, 10Kohm)	UP/DOWN STEP MOTOR1	Motor(STEP MOTOR)	WIFI MODULE	LOAD(WIFI MODULE)
EVA IN -TH	Thermistor(EVA IN Temp, 10Kohm)	UP/DOWN STEP MOTOR2	Motor(STEP MOTOR)	SUB PBA	Printed circuit board(SUB BOARD)
HUMIDITY SENSOR	SENSOR(HUMIDITY)	LEFT/RIGHT STEP MOTOR	SENSOR(HUMIDITY)		

### 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
- : Protective earth(screw)

# 5. Electrical Wiring Diagram

## Outdoor units



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

### NOTE

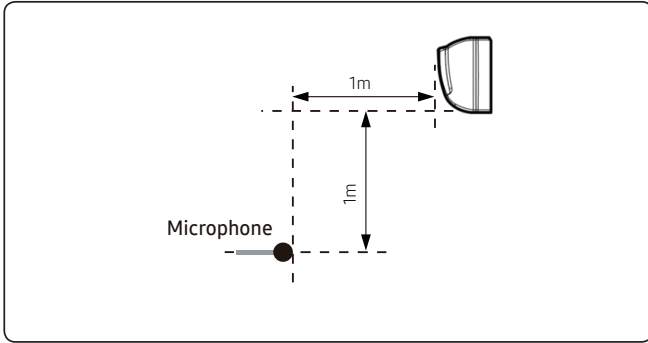
- This wiring diagram applies only to the outdoor unit.
- Colors BLK : black, BRN : brown, SKY-BLU : sky-blue, GRN/YEL : green/yellow, RED : red, YEL : yellow, ORG : orange, BLU : blue, WHT:white
- Protective earth(screw)

# 6. Sound Data

## Indoor units

### Sound Pressure level

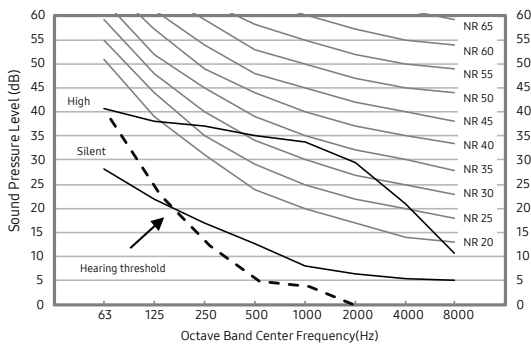
Unit: dB(A)



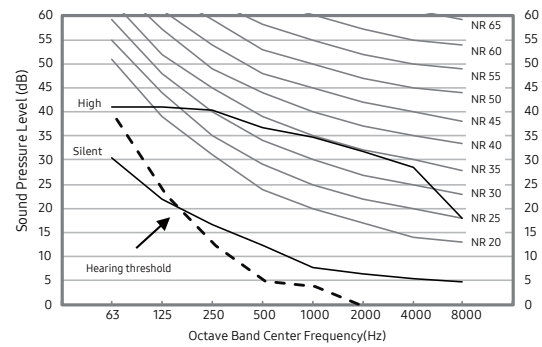
Model	Cooling	
	High	Silent
AR09CXCAAWKNEU	38	16
AR12CXCAAWKNEU	40	16
AR09CXKAAWKNEU	38	19
AR12CXKAAWKNEU	40	19

- NR Curve

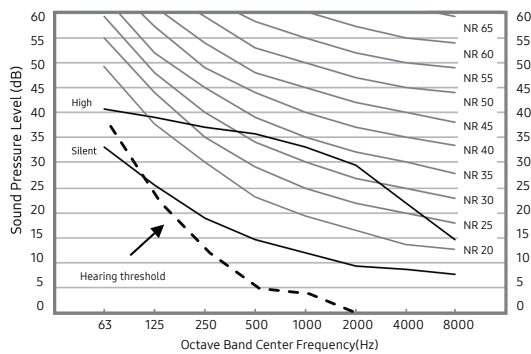
1) AR09CXCAAWKNEU



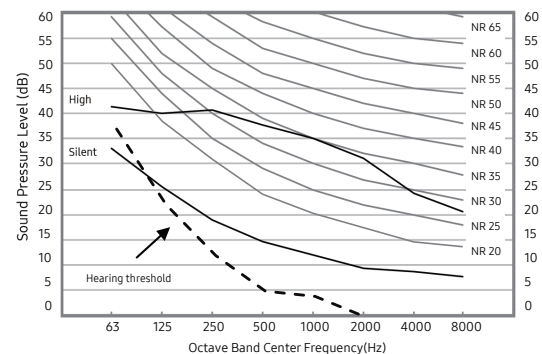
2) AR12CXCAAWKNEU



3) AR09CXKAAWKNEU



4) AR12CXKAAWKNEU



### NOTE

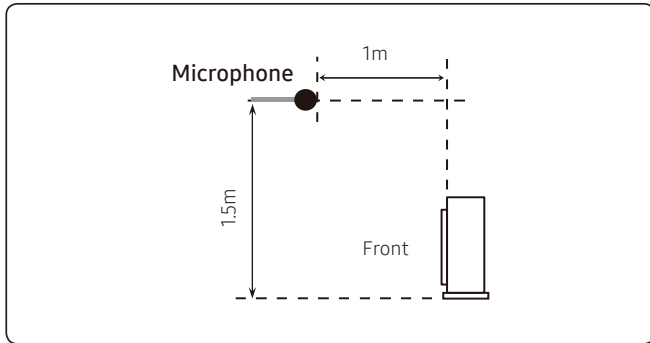
- Specifications may be subject to change without prior notice.
- Sound pressure Level
  - Sound pressure level is obtained in an anechoic room.
  - Sound pressure level is a relative value, depending on the distance and acoustic environment.
  - Sound pressure level may differ depending on operation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

# 6. Sound Data

## Outdoor units

### Sound Pressure level

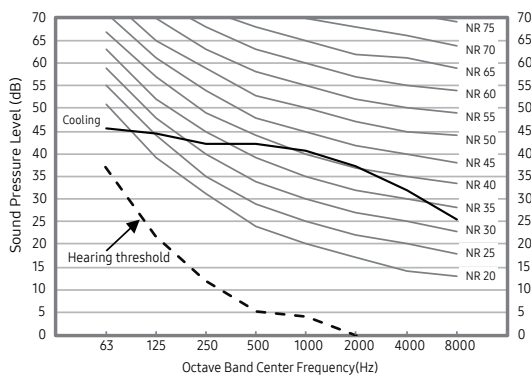
Unit: dB(A)



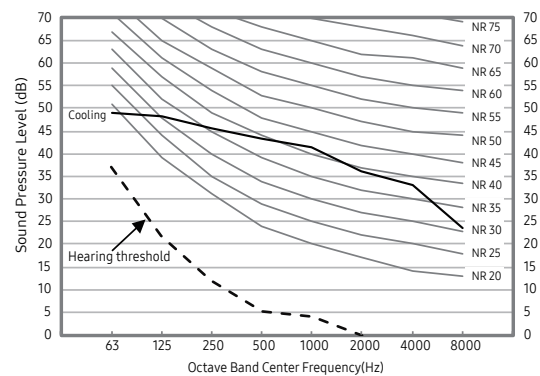
Model	Cooling
AR09TXCAAWKXEU	45
AR12TXCAAWKXEU	46
AR09AXKAAWKXEU	45
AR12AXKAAWKXEU	46

- NR Curve

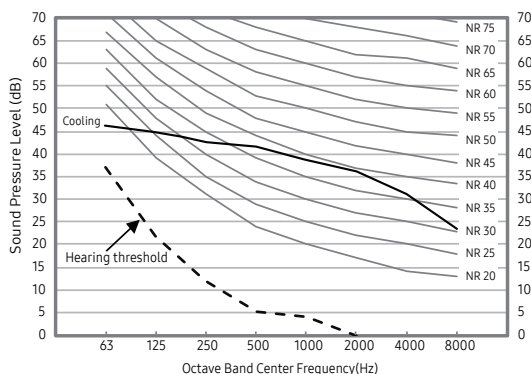
1) AR09TXCAAWKXEU



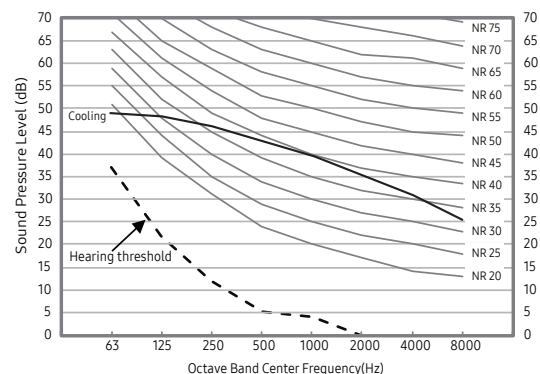
2) AR12TXCAAWKXEU



3) AR09AXKAAWKXEU



4) AR12AXKAAWKXEU



**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. Sound Data

## Indoor units

### Sound Power level

Unit: dB(A)

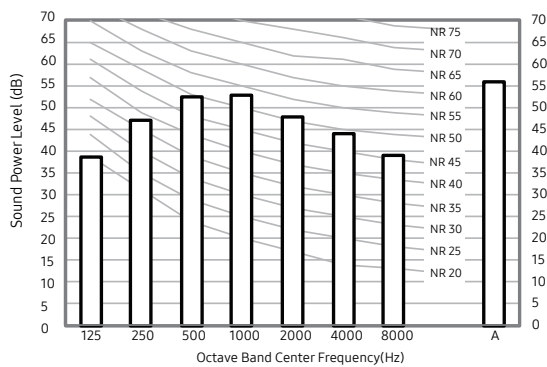
#### NOTE

- 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.

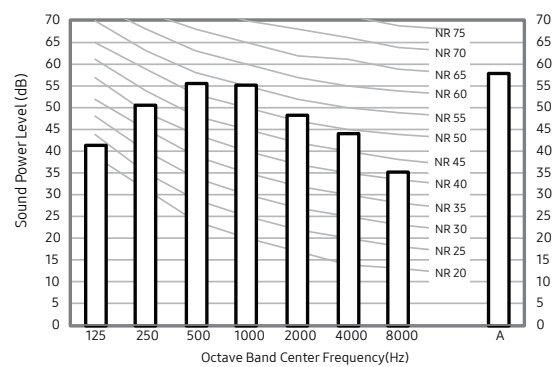
Model	Cooling
AR09CXCAAWKNEU	56
AR12CXCAAWKNEU	58
AR09CXKAAWKNEU	56
AR12CXKAAWKNEU	58

#### NR Curve

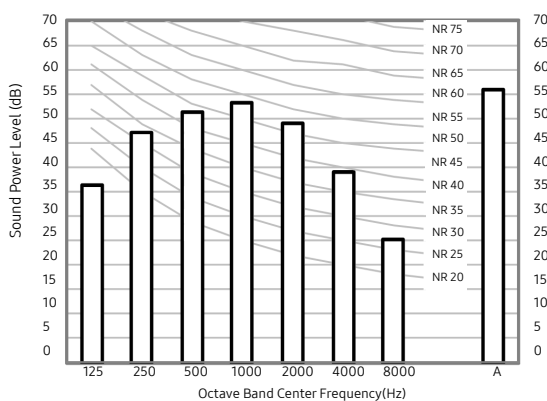
1) AR09CXCAAWKNEU



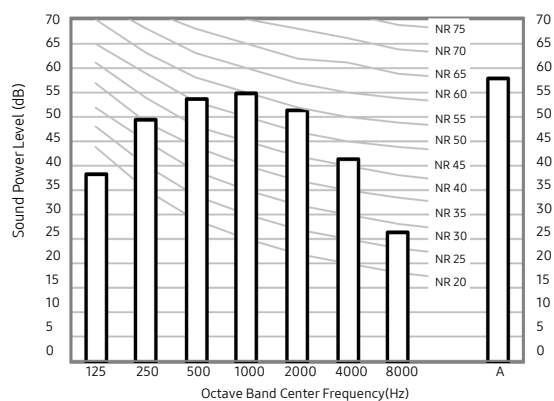
2) AR12CXCAAWKNEU



3) AR09CXKAAWKNEU



4) AR12CXKAAWKNEU





# 6. Sound Data

## Outdoor units

### Sound Power level

Unit: dB(A)

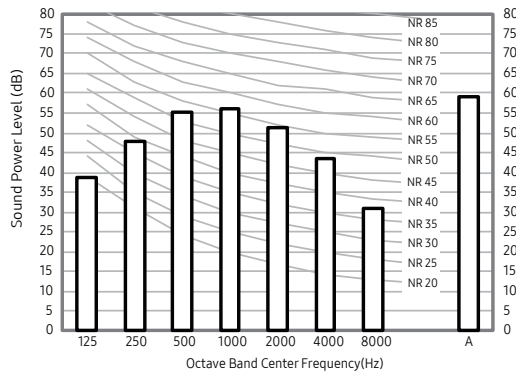
#### NOTE

- 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.

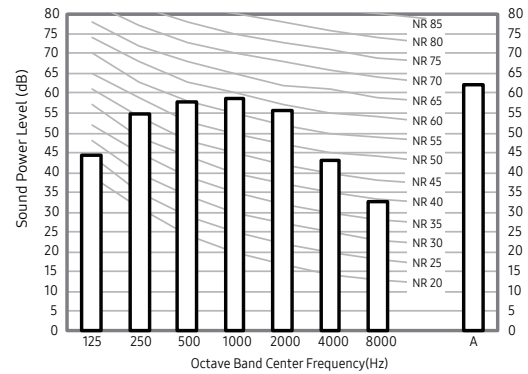
Model	Cooling
AR09TXCAAWKXEU	59
AR12TXCAAWKXEU	62
AR09AXKAAWKXEU	59
AR12AXKAAWKXEU	62

#### NR Curve

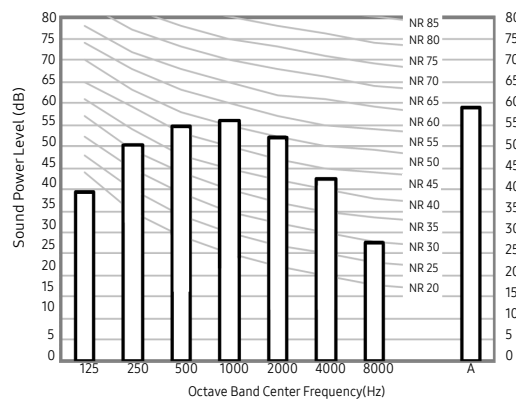
1) AR09TXCAAWKXEU



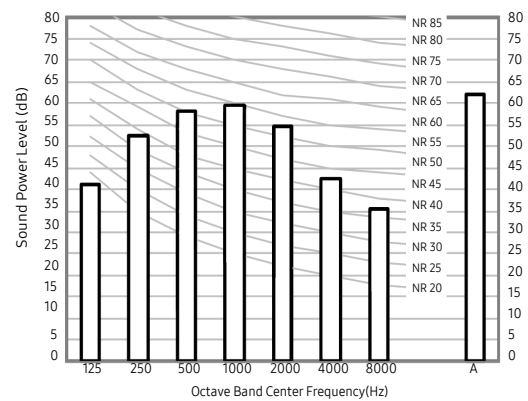
2) AR12TXCAAWKXEU



3) AR09AXKAAWKXEU



4) AR12AXKAAWKXEU

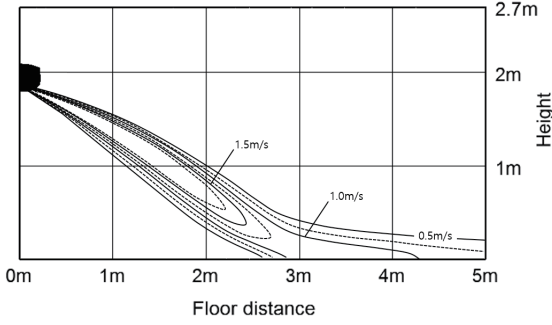


# 7. Temperature and air flow distribution

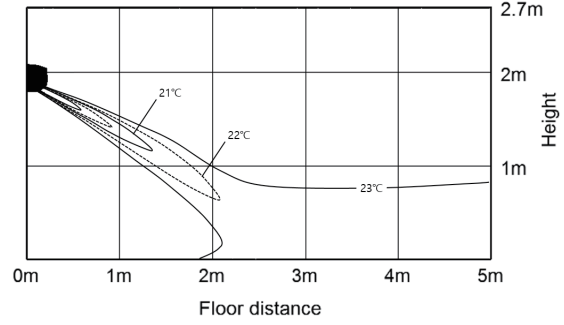
AR9500

## AR09CXCAAWKNEU

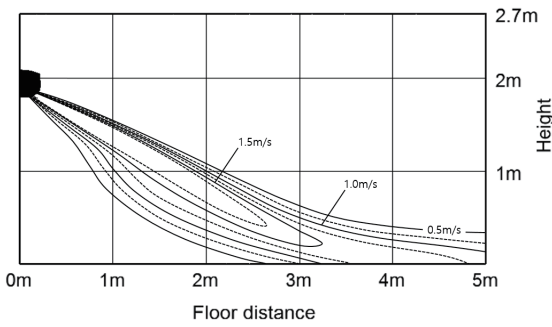
- Cooling air velocity distribution  
(Discharge angle : 20 degree)



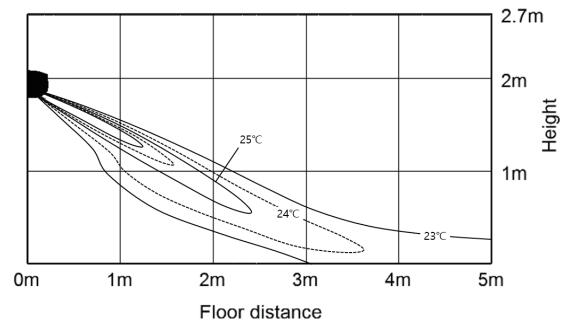
- Cooling Temperature distribution  
(Discharge angle : 20 degree)



- Heating air velocity distribution  
(Discharge angle : 30 degree)

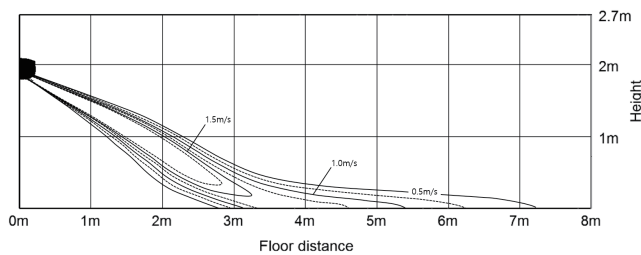


- Heating Temperature distribution  
(Discharge angle : 30 degree)

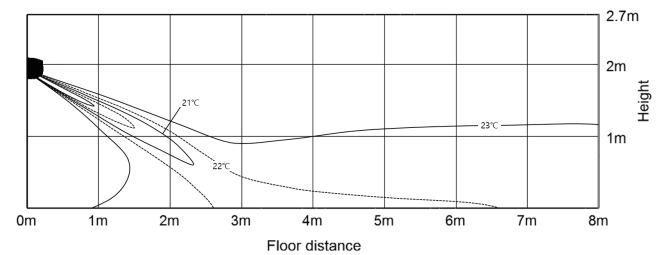


## AR12CXCAAWKNEU

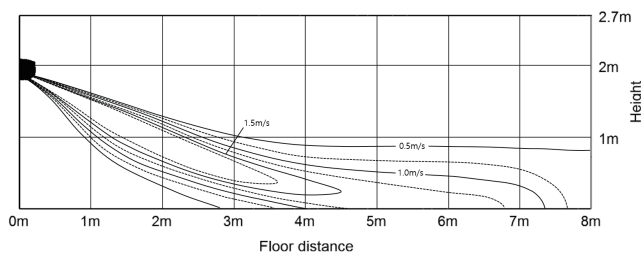
- Cooling air velocity distribution  
(Discharge angle : 20 degree)



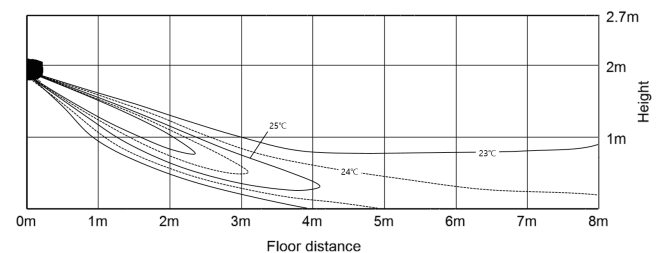
- Cooling Temperature distribution  
(Discharge angle : 20 degree)



- Heating air velocity distribution  
(Discharge angle : 30 degree)



- Heating Temperature distribution  
(Discharge angle : 30 degree)



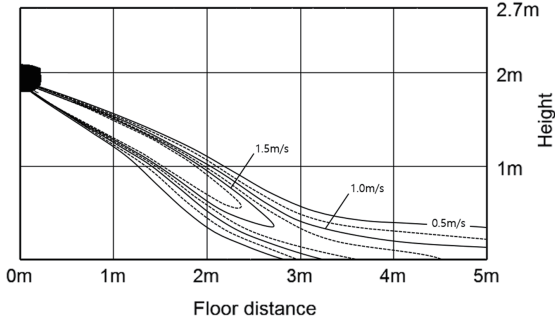
# 7. Temperature and air flow distribution

## AR9500

### AR09CXKAAWKNEU

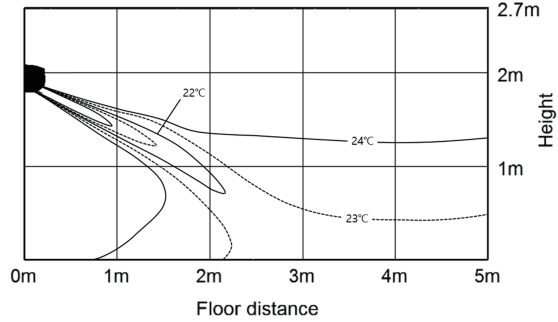
- Cooling air velocity distribution

(Discharge angle : 20 degree)



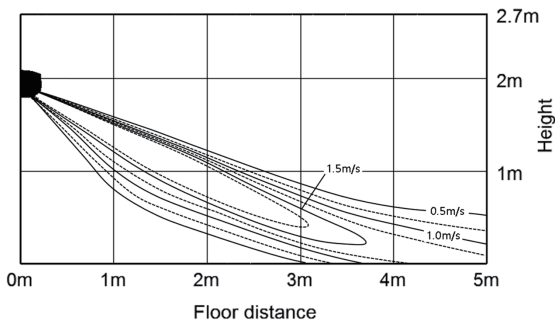
- Cooling Temperature distribution

(Discharge angle : 20 degree)



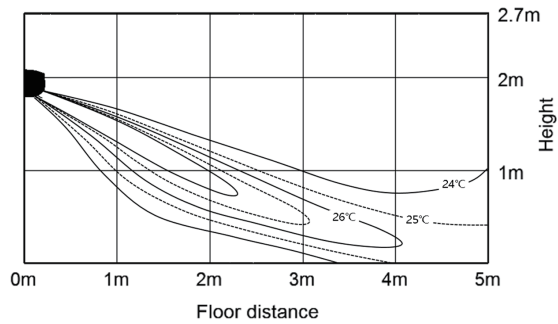
- Heating air velocity distribution

(Discharge angle : 30 degree)



- Heating Temperature distribution

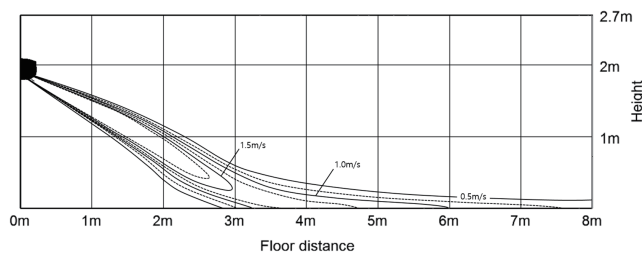
(Discharge angle : 30 degree)



### AR12CXKAAWKNEU

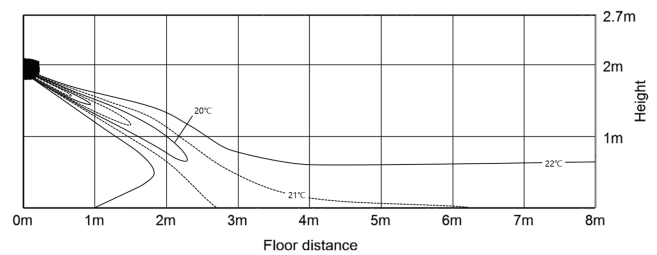
- Cooling air velocity distribution

(Discharge angle : 20 degree)



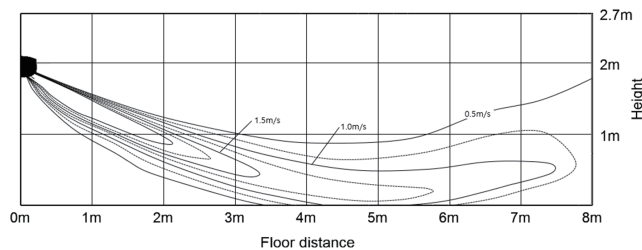
- Cooling Temperature distribution

(Discharge angle : 20 degree)



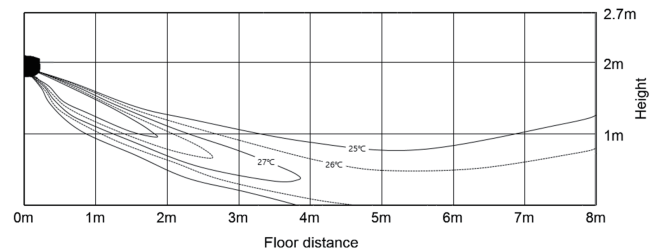
- Heating air velocity distribution

(Discharge angle : 30 degree)



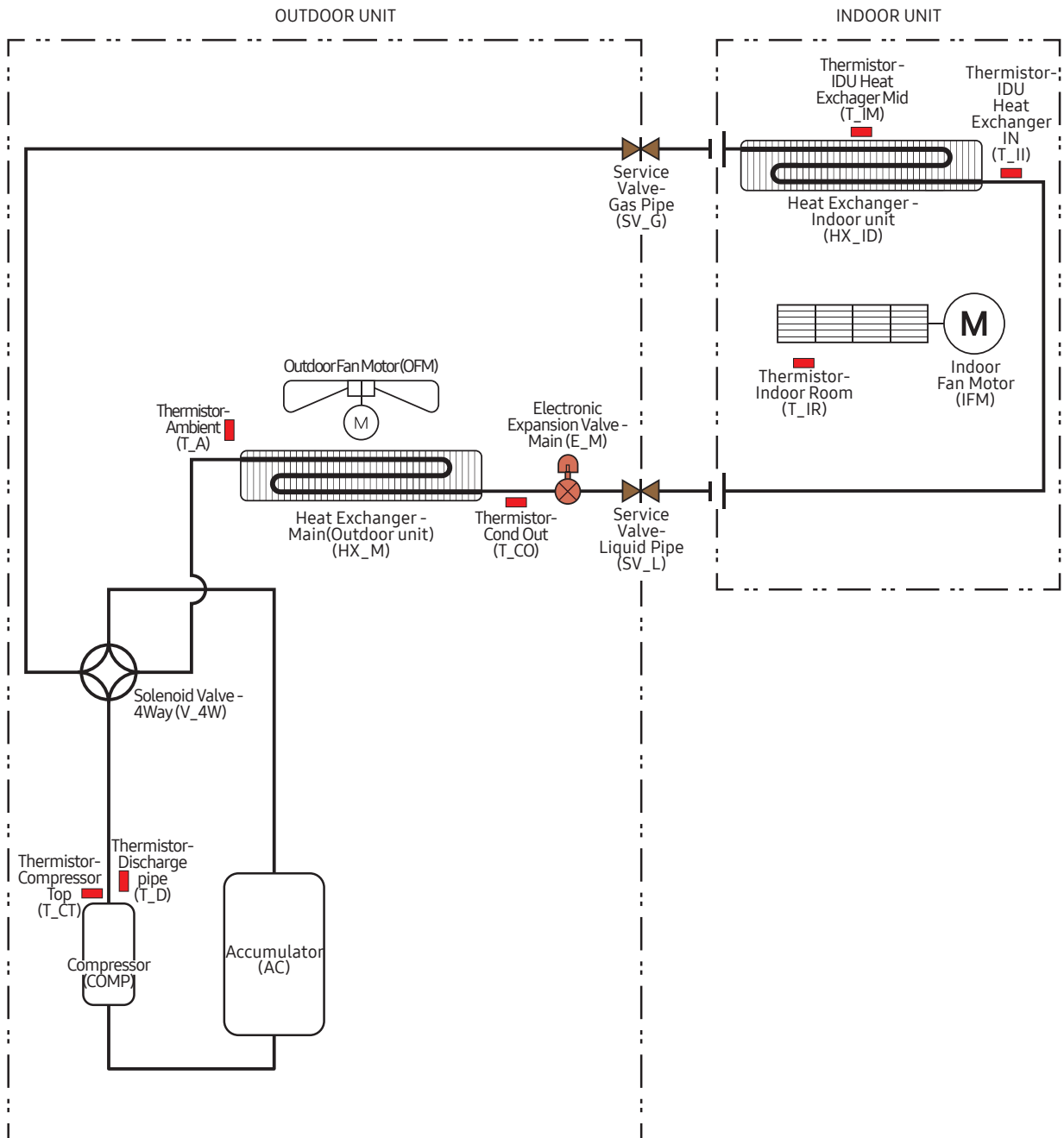
- Heating Temperature distribution

(Discharge angle : 30 degree)



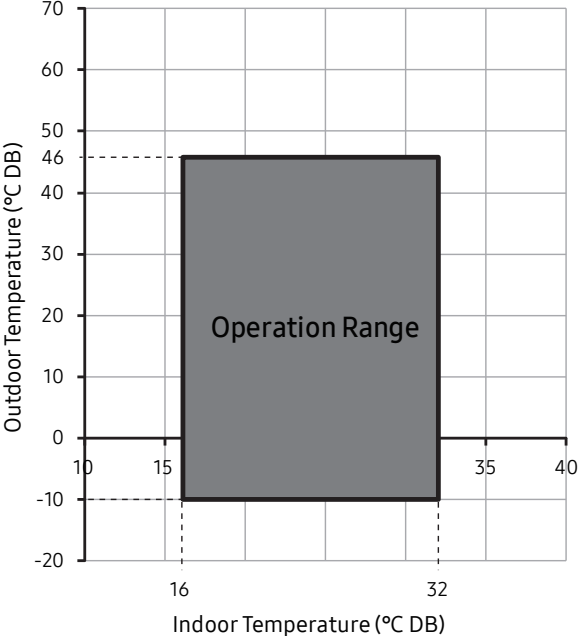
# 8. Piping Diagram

AR09CXCAAWKNEU, AR12CXCAAWKNEU, AR09CXKAAWKNEU, AR12CXKAAWKNEU

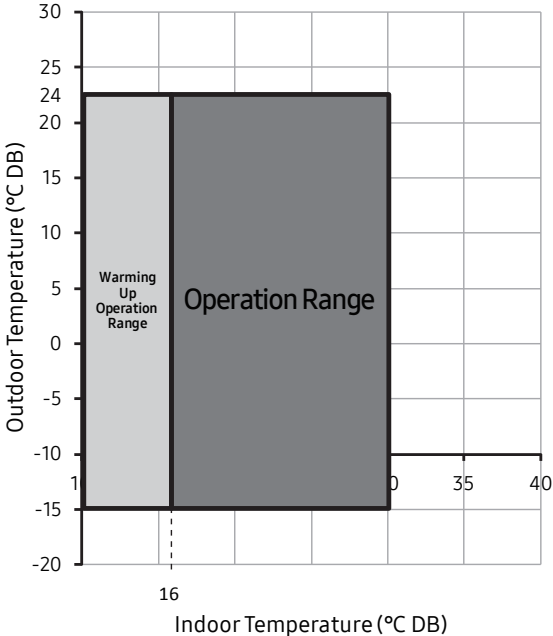


# 9. Operation Limit

Cooling



Heating




# 10. Capacity Correction

## Outdoor units


AR9500 : AR09CXCAAWKNEU+AR09TXCAAWKXEU, AR12CXCAAWKNEU+AR12TXCAAWKXEU  
 AR09CXKAAWKNEU+AR09AXKAAWKXEU, AR12CXKAAWKNEU+AR12AXKAAWKXEU

### Cooling



		Pipe Length (m)			
		5	10	12.5	15
Level Difference (m)	8	-	0.96	0.94	0.91
	5	0.99	0.97	0.95	0.92
	0	1	0.98	0.96	0.93
	-5	0.99	0.97	0.95	0.92
	-8	-	0.96	0.94	0.91

### Heating



		Pipe Length (m)			
		5	10	12.5	15
Level Difference (m)	8	-	0.96	0.94	0.91
	5	0.99	0.97	0.95	0.92
	0	1	0.98	0.96	0.93
	-5	0.99	0.97	0.95	0.92
	-8	-	0.96	0.94	0.91

# 11. Installation

## Installation of the product

- Our units must be installed in compliance with the spaces indicated in the installation manual to ensure either accessibility from both sides or ability to perform routine maintenance and repairs. The units' components must be accessible and that can be disassembled in conditions of complete safety either for people or things. For this reason, where it is not observed as indicated into the Installation Manual, the cost necessary to reach and repair the unit (in safety, as required by current regulations in force) with slings, trucks, scaffolding or any other means of elevation won't be considered in-warranty and will be charged to end user.
- The outdoor unit shall be installed in an open space that is always ventilated.
- The local gas regulations shall be observed.
- To handle, purge, and dispose the refrigerant, or break into the refrigerant circuit, the worker should have a certificate from an industry-accredited authority.
- The installation of pipings shall be kept to a minimum.
- Do not install the indoor unit in the following areas:
  - Area filled with minerals, splashed oil, or steam. It will deteriorate plastic parts, causing failure or leakage.
  - Area that is close to heat sources.
  - Area that produces substances such as sulfuric gas, chlorine gas, acid, and alkali. It may cause corrosion of the pipings and brazed joints.
  - Area that can cause leakage of combustible gas and suspension of carbon fibers, flammable dust, or volatile flammables.
  - Area where refrigerant leaks and settles.
  - Area where animals may urinate on the product. Ammonia may be generated.
- Do not use the indoor unit for preservation of food items, plants, equipment, and art works. This may cause deterioration of their quality.
- Do not install the indoor unit if it has any drainage problem.
- For the multi system, this indoor unit can be connected to an R-32 or R-410A outdoor unit. Check the type of refrigerant in the outdoor unit.
- Because your air conditioner contains R-32 refrigerant, make sure that it is installed, operated, and stored it in a room whose floor area is larger than the minimum required floor area specified in the following table:

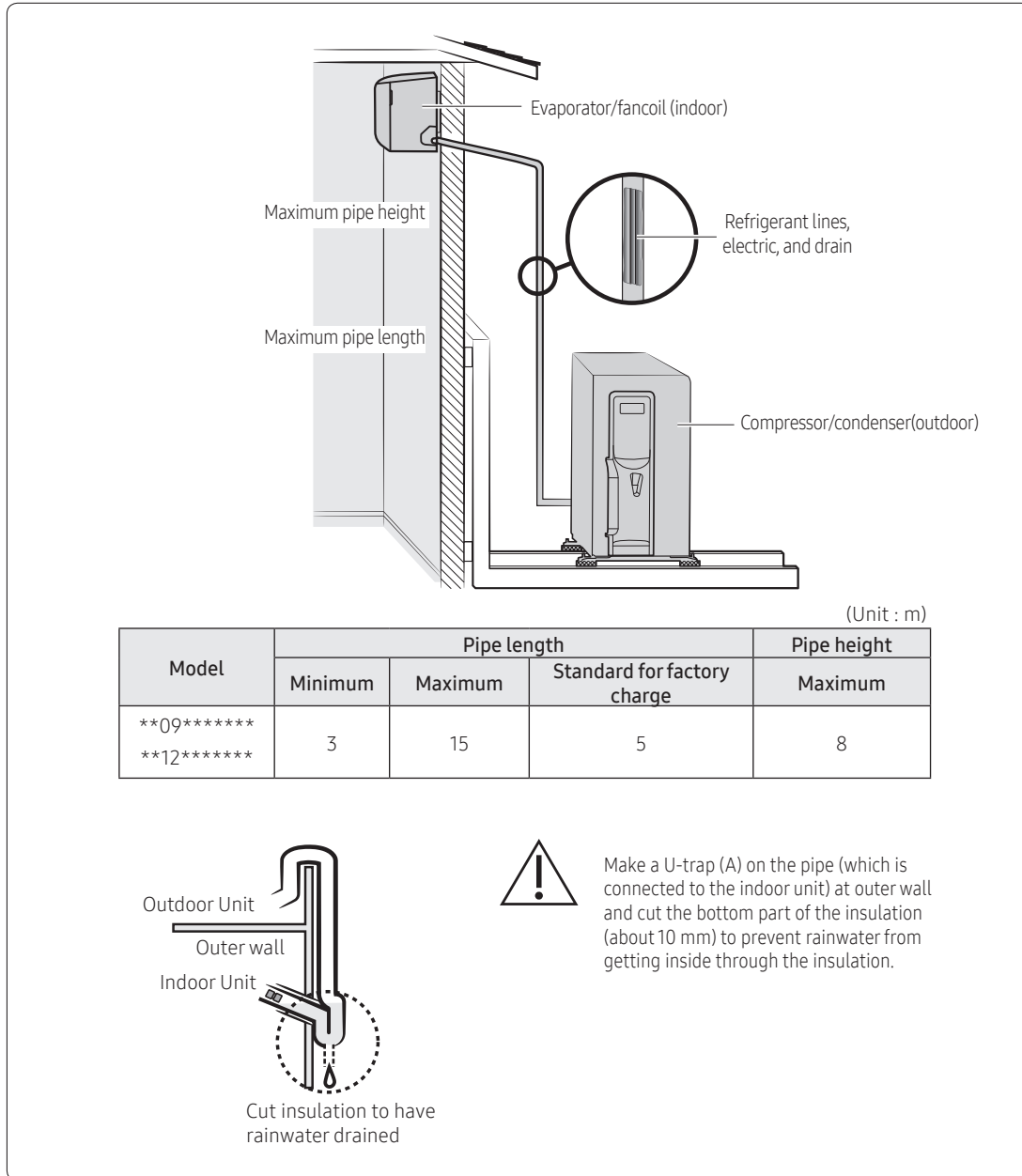
Wall-mounted type	
m (kg)	A (m <sup>2</sup> )
≤ 1.842	No requirement
1.843	4.45
1.9	4.58
2.0	4.83
2.2	5.31
2.4	5.79
2.6	6.39
2.8	7.41
3.0	8.51

- m : Total refrigerant charge in the system
- A : Minimum required floor area
- IMPORTANT: it's mandatory to consider either the table above or taking into consideration the local law regarding the minimum living space of the premises.
- Minimum installation height of indoor unit is 0.6 m for floor mounted, 1.8 m for wall, 2.2 m for ceiling.
- The actual refrigerant charge shall be in accordance with the room size within which the refrigerant containing parts are installed.
- The ventilation machinery and outlets shall be operating adequately and not obstructed.
- If an indirect refrigerating circuit is being used, the secondary circuit shall be checked for the presence of refrigerant.
- Marking to the equipment shall continue to be visible and legible. Markings and signs that are illegible shall be corrected.
- Refrigerating pipe or components shall be installed in a position where they are unlikely to be exposed to any substance which may corrode refrigerant containing components, unless the components are constructed of materials which are inherently resistant to being corroded or are suitably protected against being so corroded.

# 11. Installation

## Viewing the typical installation

A typical installation will be similar to the one shown below.



### ⚠ CAUTION

- For the product that uses the R-32 refrigerant, Install the indoor unit on the wall 1.8 m or higher from the floor.



# 11. Installation

---

## Choosing the installation location

---

### **WARNING**

- Verify that a dedicated circuit breaker and a disconnect switch of the appropriate sizes for the air conditioner are preinstalled and available for use.
- Verify that the voltage and frequency of the power supply comply with the rated voltage as defined on the unit name plate.
- Verify that a suitable grounding connection is available.
- Do not install this appliance in an environment containing hazardous substances or close to equipment that releases open flames.
- Do not install this appliance near a heater or flammable material.

### **CAUTION**

- The manufacturer shall not be responsible for damage occurring as a result of the wrong voltage being applied to this air conditioner.
- The indoor and outdoor units must be installed in compliance with minimum clearances to ensure that both units are accessible from both sides and can be maintained or repaired. Insufficient clearance may reduce product performance, generate excessive noise, and reduce the life of some unit components.

### **IMPORTANT**

- Any changes or modifications to the installation described in this manual that are not expressly approved by the manufacturer could void the manufacturer's warranty.

To determine where to locate the indoor and outdoor units, you must survey the entire site and consider many variables. The goal is to select locations that comply with all safety precautions while also minimizing the total effort involved.

---

# 11. Installation

## Indoor unit location requirements

### WARNING

- Do not install the unit in a humid, oily, or dusty location or in a location exposed to direct sunlight, water, or rain.
- Make sure that the wall can support the unit weight.

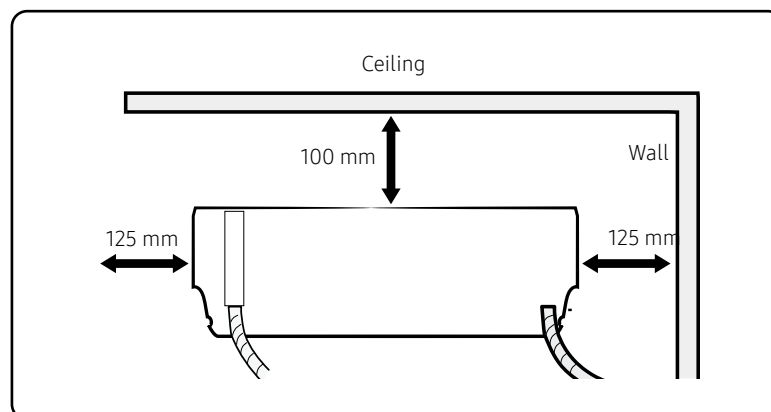
Examine the area that the customer wants to be air conditioned. Consider the following:

- What wall location will meet minimum clearances and provide optimal product performance?
- Will the wall provide adequate support for the unit weight (wall with stud construction or concrete)?
- If applicable, where are the studs?
- Where will you place the wall penetration for routing the piping bundle (consisting of power and communication cables, refrigerant pipes, and the drain hose) through the wall to the outdoor unit? Will the hole intersect any plumbing or wires in the wall?
- Is the location as close as possible to where the outdoor unit will be installed, to minimize the length of piping and cables?
- Will the condensate drain inside the room, through the wall penetration to the outdoor unit, or be connected to a condensate pump?

### NOTE

- This manual covers a typical gravity-drain installation where the drain hose is routed to the outdoor unit through a hole in the wall.

#### Minimum clearances for the indoor unit



# 11. Installation

---

## Outdoor unit location requirements

---

Examine the area where the outdoor unit could be located. Consider the following:

- What location will meet minimum clearances and provide optimal product performance?
- Is there an existing level and hard foundation, such as a concrete pad, that will support the unit weight and produce minimal vibration? Installation on uneven ground may result in abnormal vibrations, noise, or problems with the unit.
- Does the unit need to be mounted on the wall?
- Where are the dedicated circuit breaker and disconnect switch located? How will you connect them to the unit?
- How will you route the piping bundle from the indoor unit? Is the location as close as possible to where the indoor unit will be installed, to minimize the length of piping and cables?
- Will the unit be sheltered from the wind? In a high-wind area, you may need to build a protective fence around the unit.
- Where will the condensate drain?

### **WARNING**

- The drain location must allow condensate to drain properly and prevent ice from forming on the unit in winter. If a block of ice falls from the unit, it may result in death, serious injury, or property damage. Improper or inadequate draining may result in water overflowing and property damage.

### **CAUTION**

- Do not connect the drain hose to existing waste pipes as odors may arise.

### **Installation on an exterior wall**

If the outdoor unit must be installed on an exterior wall, you will need an L-bracket to support the unit. This bracket is not included with the unit.

### **WARNING**

- The wall must be capable of supporting the weight of both the L-bracket and the outdoor unit. If the unit falls, it may result in crushing, electric shock, fire, or explosion that could cause death, severe personal injury, or property damage.
-

# 11. Installation

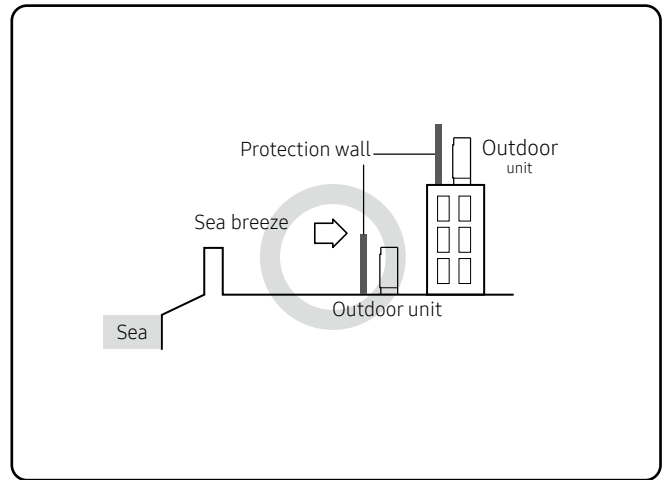
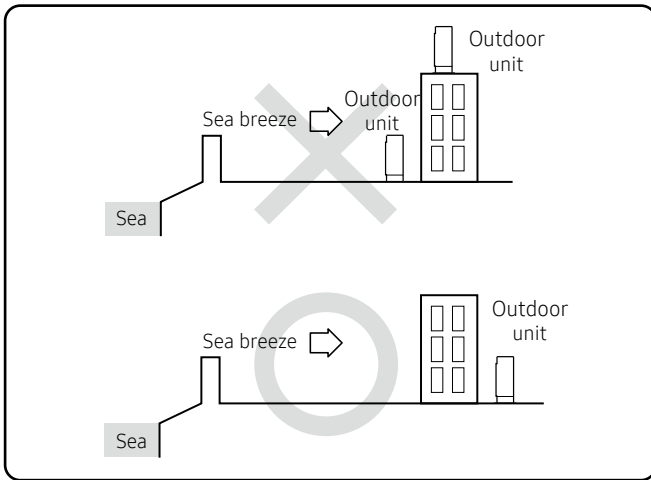
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## Installation Guide at the seashore

Make sure to follow below guides when installing at the seashore.

- 1** Do not install the product in a place where it is directly exposed to sea water and sea breeze.
  - Make sure to install the product behind a structure (such as building) that can block sea breeze.
  - Even when it is inevitable to install the product in seashore, make sure that product is not directly exposed to sea breeze by installing a protection wall.
- 2** Consider that the salinity particles clinging to the external panels should be sufficiently washed out.
- 3** Because the residual water at the bottom of the outdoor unit significantly promotes corrosion, make sure that the slope does not disturb drainage.
  - Keep the floor level so that rain does not accumulate.
  - Be careful not to block the drain hole due to foreign substance.
- 4** When product is installed in seashore, periodically clean it with water to remove attached salinity.
- 5** Make sure to install the product in a place that provides smooth water drainage. Especially, ensure that the base part has good drainage.
- 6** If the product is damaged during the installation or maintenance, make sure to repair it.
- 7** Check the condition of the product periodically.
  - Check the installation site every 3 months and perform anti-corrosion treatment such as R-Pro supplied by SAMSUNG (Code : MOK-220SA) or commercial water repellent grease and wax, etc., based on the product condition.
  - When the product is to be shut down for a long period of time, such as off-peak hours, take appropriate measures like covering the product.
- 8** If the product installed within 500m of seashore, special anti-corrosion treatment is required.
  - ※ Please contact your local SAMSUNG representative for further details.

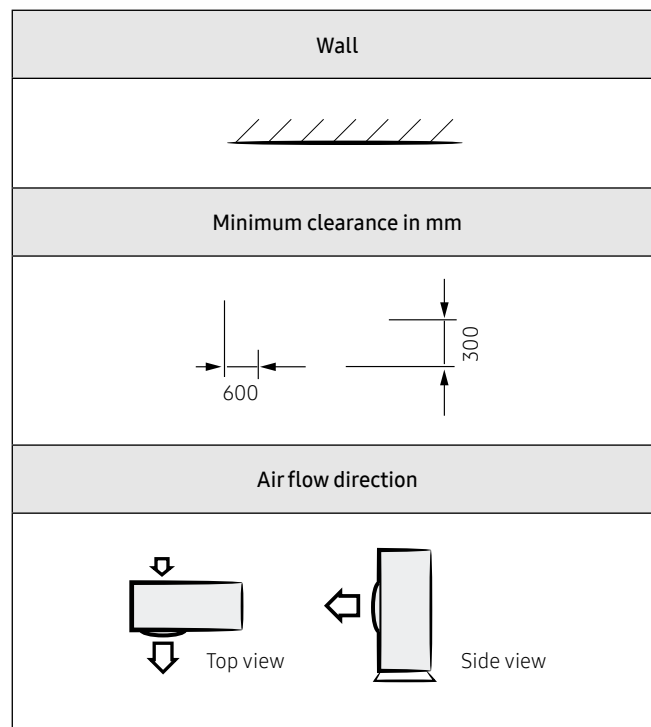
# 11. Installation



- Protection wall should be constructed with a solid material that can block the sea breeze and the height and width of the wall should be 1.5 times larger than the size of the outdoor unit. (You must secure more than 700mm of space between the protection wall and the outdoor unit for air circulation.)

## Minimum clearances for the outdoor unit

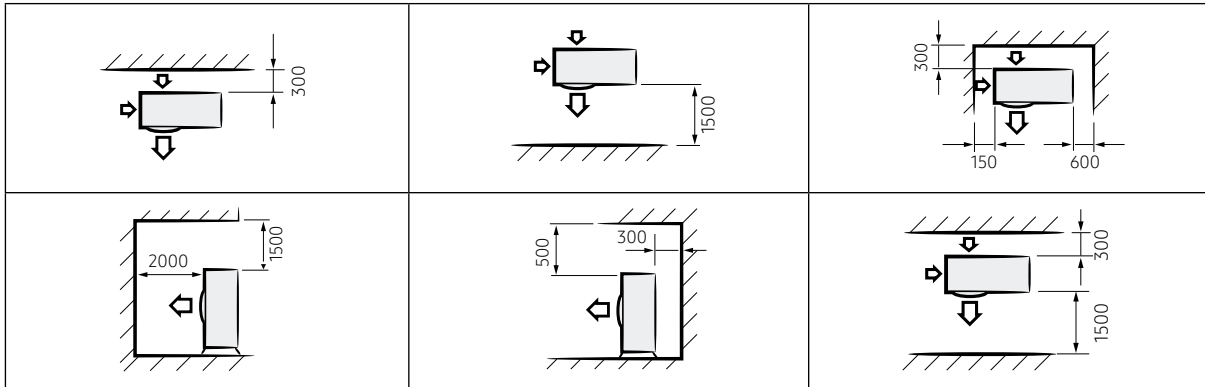
Legends:



# 11. Installation

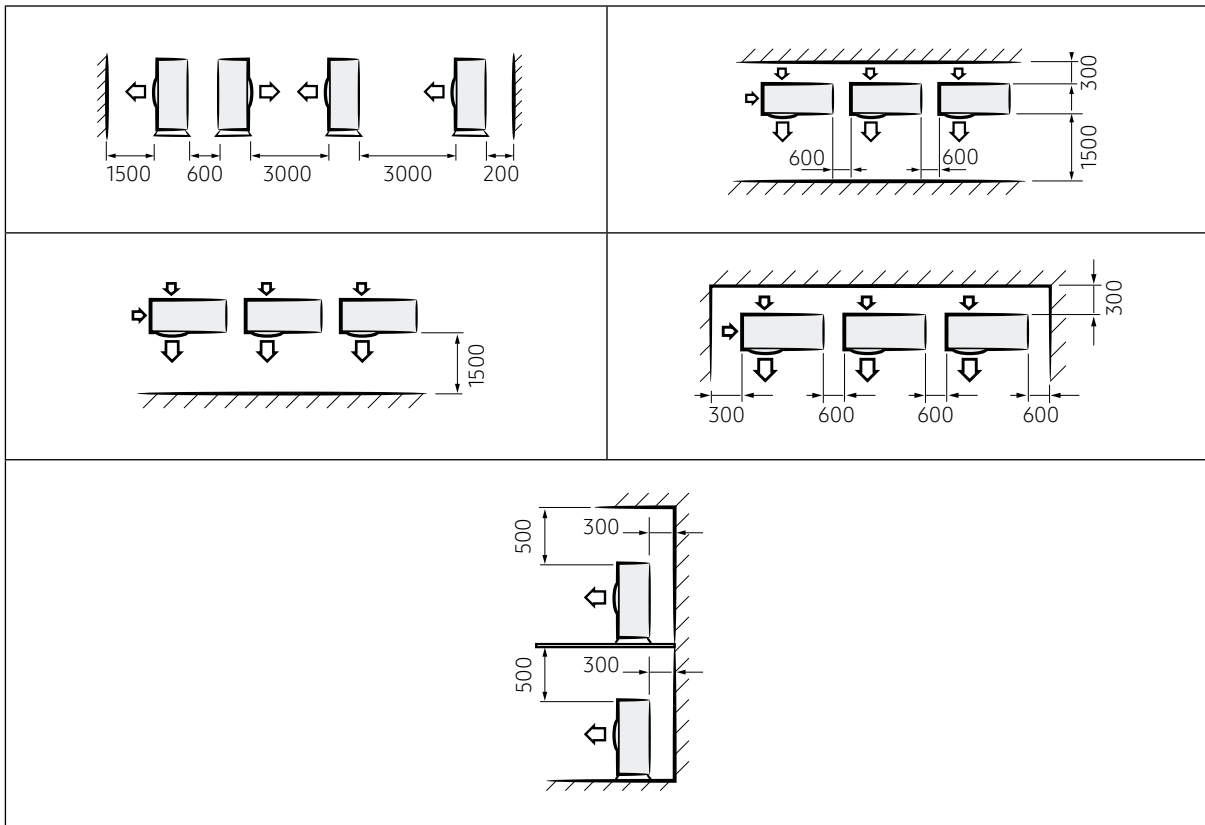
Examples for installing one outdoor unit:

Unit: mm



Examples for installing multiple outdoor units:

Unit: mm



# 11. Installation

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## Indoor unit Installation

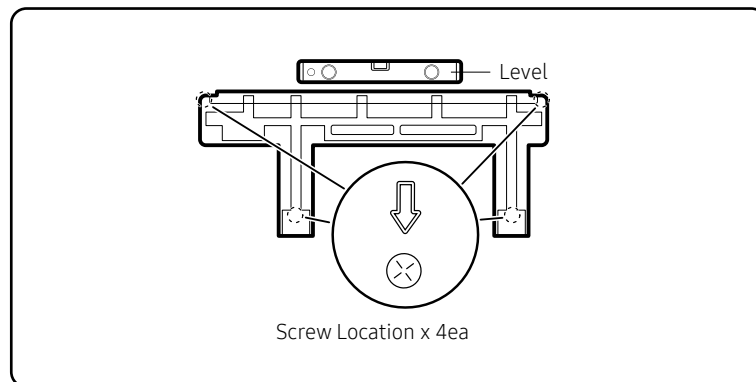
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### Attaching the mounting bracket to the wall

- 1 Hold the mounting bracket against the wall at the selected installation position making sure that the screw holes align with the center of the studs in the wall. If the screw locations do not align with the studs, use wall anchors.

#### CAUTION

- The recommended best practice is to attach the mounting bracket directly to the studs in the wall. If you did not find a suitable location with studs (in Step 1.2 on page 90), or if the wall is concrete, you must use wall anchors of a suitable type and weight capacity, and install them according to the manufacturer's instructions. Failure to do so may cause the material surrounding the joints to crumble over time and the screws to be loosened and stripped. This may result in the unit falling from the wall, which could cause physical injury or equipment damage.
- 2 Using a level, make sure that the mounting bracket is level, then mark the location of the screw holes on the wall.
  - 3 If using wall anchors, install them at the screw hole positions, following the manufacturer's instructions.
  - 4 Using six field-supplied mounting screws and anchors (if applicable), attach the bracket to the wall.

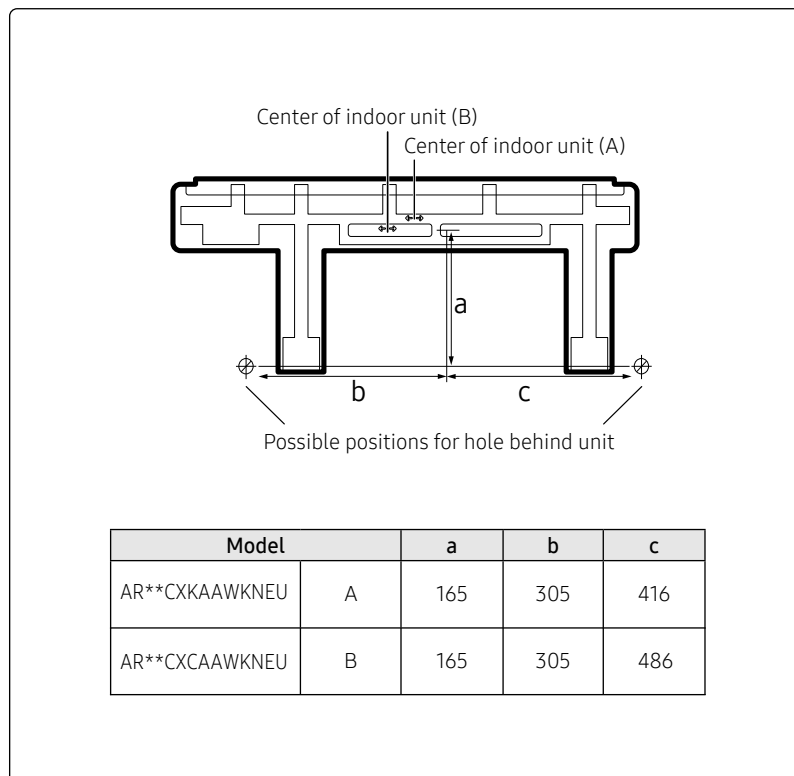


# 11. Installation

## Indoor unit Installation

### Drilling the wall penetration

- 1 Determine the position of the hole through which the piping bundle (consisting of power and communication cables, refrigerant pipes, and the drain hose) will pass. Consider the following:
  - The hole inner diameter must be 65 mm.
  - The recommended hole location is behind the unit so that the hole and the piping bundle will not be visible in the room. The minimum distances between the hole and the mounting bracket are:



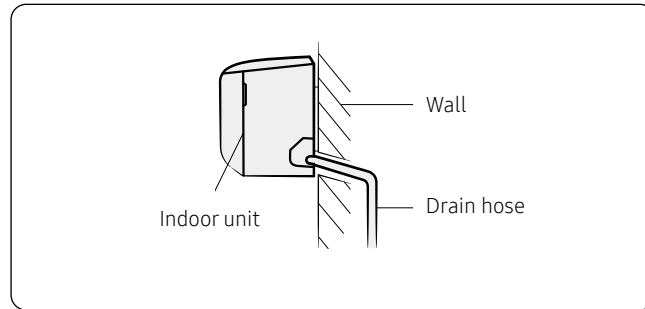
- If the hole cannot be positioned behind the unit, find a position as close to the unit as possible. The piping bundle that exits the unit and extends to the hole will need to be attached to the wall and will be visible inside the room.
- In relation to the bracket shown above, the unit is shipped with the drain hose connection on the right, the drain hose exits the unit on the left, and the refrigerant pipes are bent to exit on the left. Thus, positioning the hole to the left requires the least effort. If you position the hole to the right or below the unit, you will need to move the drain hose connection to the left and bend the pipes so that the hose and pipes exit to the right or bottom.



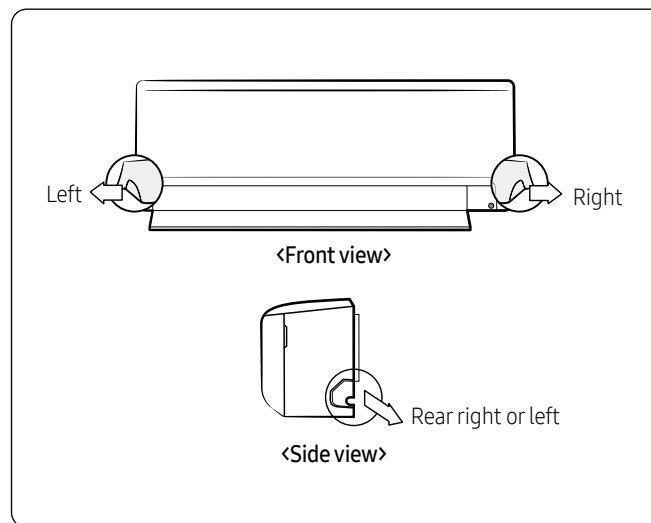
# 11. Installation

## Indoor unit Installation

- 2 Use a standard 65 mm hole saw to drill one hole at the selected location, at a 15° downward angle so that the drain hose will drain properly.



- 3 Based on the hole location, determine where the piping bundle (drain hose, refrigerant pipes, and cables) will exit the unit.



### NOTE

- The left, right, or bottom exit will only be used if the hole is not positioned behind the unit.


# 11. Installation

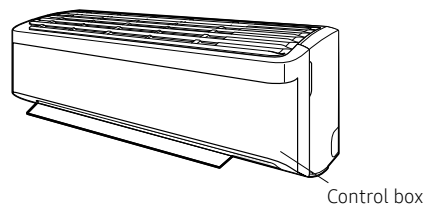
## Connecting the power and communication cables









### WARNING

- Do not modify the power cable in any way. Doing so may cause electric shock or fire due to poor connection, poor insulation, or current limit override. Make sure to comply with the technical standards of electrical installations and the wiring regulations in the local area.
- This appliance must be properly grounded. Do not ground the appliance to a gas pipe, plastic water pipe, or telephone line. Failure to comply may result in electric shock, fire, and explosion.

1 Connect each wire to its corresponding terminal number.

Model	AR09***AAWKXEU AR12***AAWKXEU
Power cable (Outdoor unit)	3G X 2.5 mm <sup>2</sup> , H07RN-F
Outdoor to indoor power cable	3G X 1.0 mm <sup>2</sup> , H07RN-F
Communication cable	2 X 0.75 mm <sup>2</sup> , H05RN-F
Type GL 	16A



Before connecting				
	Correct	Upside down	Damaged	Non- circular
After connecting				
	Correct (Front view)	Correct (Side view)	Upside down	Non-fitted

<Circular terminal>

# 11. Installation

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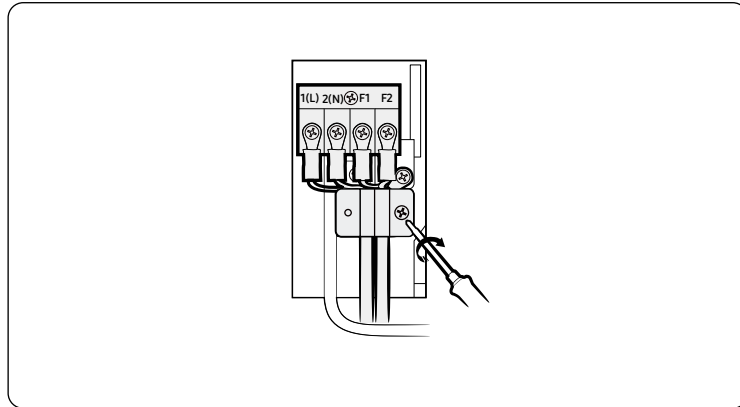
## CAUTION

- Connect the wires firmly so that wires cannot be pulled out. Loose wires can cause the connection to overheat. Each circular terminal must match the size of its corresponding screw in the terminal block.

## CAUTION

- For the terminal block wiring, use a wire with a ring terminal socket only. Regular wires without a ring terminal socket may become a hazard as the connections may loosen during operation.

- 2 Tighten the terminal block screw.



- 3 You determined the exit position for the piping bundle. If using the left, right, or bottom exits, pass the cables through the selected knockout.

## NOTE

- Power supply cords of parts of appliances for outdoor use shall not be lighter than polychloroprene sheathed flexible cord. (Code designation IEC: 60245 IEC66/CENELEC: H07RN-F, IEC: 60245 IEC57 CENELEC: H05RN-F, IEC: 60227 IEC53: H05VV-F)
- Power & Communication cable shall not exceed 30 m.

# 11. Installation

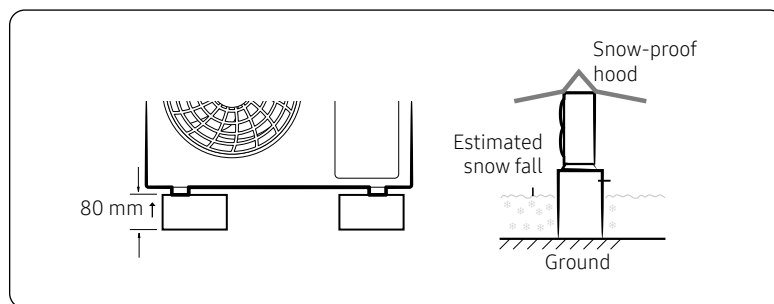
## Outdoor unit Installation

### Mounting the outdoor unit

To promote proper condensate draining, the recommended installation of the outdoor unit is elevated above the ground on a mounting bracket attached to a concrete pad.

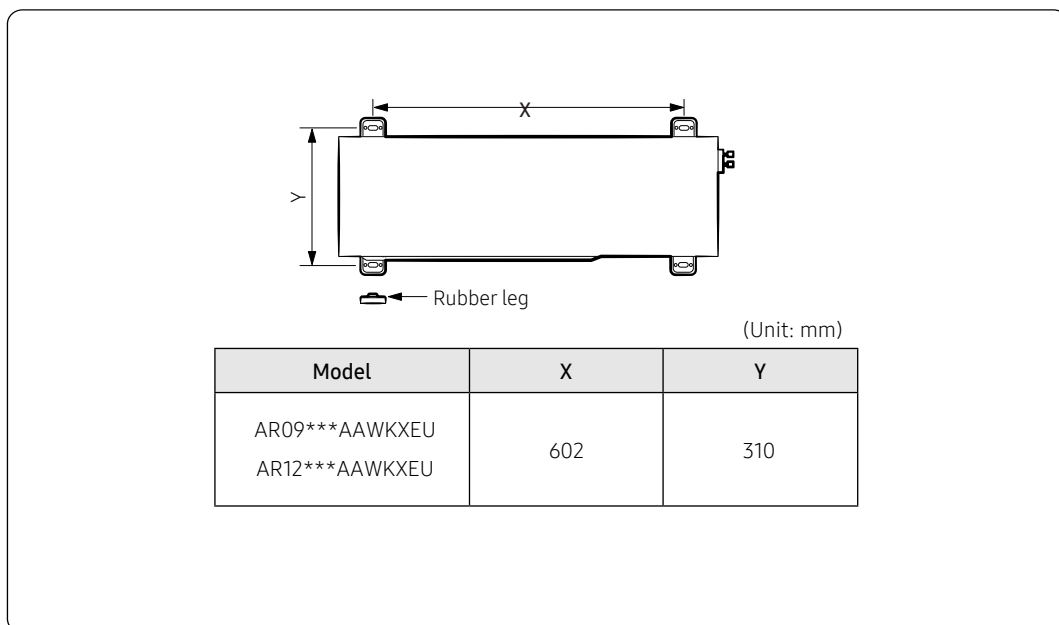
In areas where snowfall occurs, the unit must be mounted above the snow line to allow for proper heating. Snow cannot be allowed to collect on top of the unit. For promoting natural drainage in a heavy snow fall area:

- Make space more 80 mm between the bottom of the outdoor unit and the ground for installation. (Ensure that the drained water runs off correctly and safely.)
- Allow enough separation distance between the product and the ground.



### On the ground

- 1 Place the outdoor unit in the selected installation location (Step 1.1 on page 93), ensuring proper clearances and with the arrow on top of the unit pointing away from the wall.
- 2 Clip the rubber feet to the tabs to minimize sound and vibration to the structure.



- 3 Level the unit, then use anchor bolts to secure it at the four mounting points.
- 4 For installations in locations that require seismic or hurricane tie downs, comply with local codes.
- 5 If the selected location is exposed to strong winds, install a protective fence around the unit so that the fan can operate correctly.

# 11. Installation

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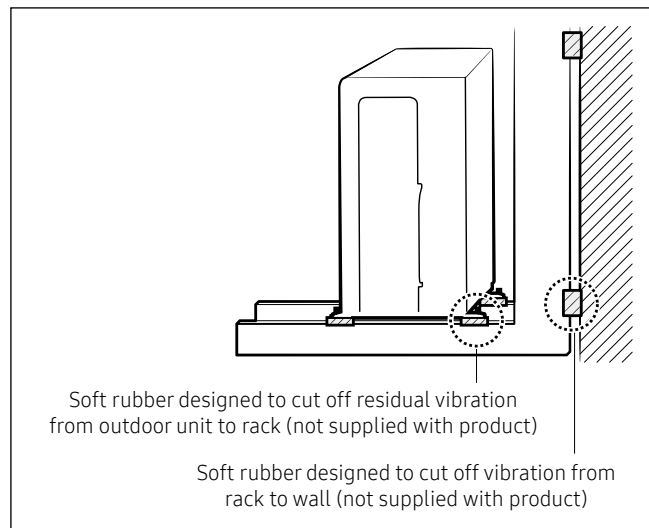
## Outdoor unit Installation

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### On a wall

#### CAUTION

- The unit must be properly secured to the wall. If the unit falls, it may result in crushing, electric shock, fire, or explosion that could cause death, severe personal injury, or property damage.
- 1 At the selected installation location attach the L- bracket to the wall as follows:
    - Install the bracket as close to the wall as possible.
    - Insert rubber isolators between the bracket and the wall to minimize sound and vibration to the structure. Do not fully compress the isolators.



- Make sure that the bracket is level.
  - Use suitable bolts/washers and lock washers.
- 2 Place the outdoor unit on the bracket, ensuring proper clearances and with the arrow on top of the unit pointing away from the wall.
  - 3 Clip the rubber feet to the tabs to minimize sound and vibration to the structure.
  - 4 Level the unit, then use anchor bolts to secure it at the four mounting points.
  - 5 For installations in locations that require seismic or hurricane tie downs, comply with local codes.

# 11. Installation

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## Outdoor unit Installation

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### Adding refrigerant (if needed)

The outdoor unit is charged with sufficient R-32 refrigerant to support up to a 5 m line set. For lengths greater than 5 m, you must add 15 g of refrigerant per meter of additional length, after the lines are evacuated.

- 1 Calculate the additional refrigerant required: Additional grams of R-32 = (Total line set meter – 5) × 15
- 2 Connect the common hose of the manifold gauge set to the inverted R-32 refrigerant cylinder.
- 3 Place the refrigerant cylinder on a scale set to measure grams.
- 4 Open the valve on the tank.
- 5 At the manifold connection, bleed the refrigerant to remove any air that may be present in the common hose.
- 6 Open the gauge manifold and charge the system with the amount of refrigerant calculated in step 1.
- 7 Close the gauge manifold valve, close the valve on the refrigerant tank, and remove the common hose.

### Precautions on adding the R-32 refrigerant

In addition to the conventional charging procedure, the following requirements shall be kept.

- Make sure that contamination by other refrigerants does not occur for charging.
  - To minimize the amount of refrigerant, keep the hoses and lines as short as possible.
  - The cylinders shall be kept upright.
  - Make sure that the refrigeration system is earthed before charging.
  - Label the system after charging, if necessary.
  - Extreme care is required not to overcharge the system.
  - Before recharging, the pressure shall be checked with nitrogen blowing.
  - After charging, check for leakage before commissioning.
  - Be sure to check for leakage before leaving the work area.
-

# 11. Installation

## Important information: regulation regarding the refrigerant used

This product contains fluorinated greenhouse gases. Do not vent gases into the atmosphere.

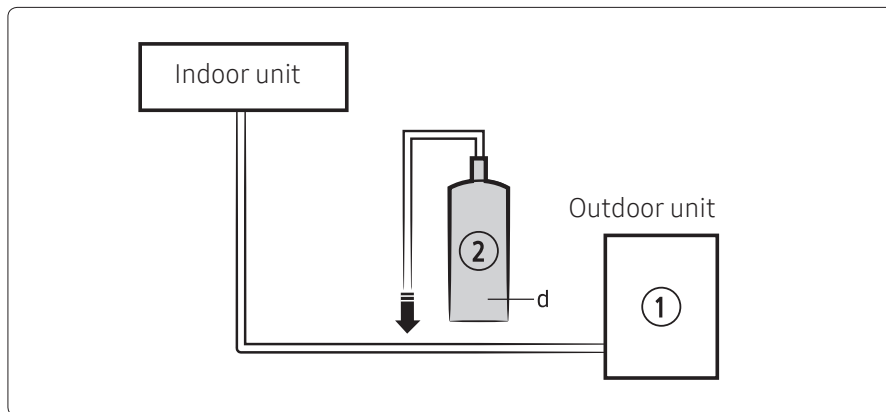
### CAUTION

- Inform user if the system contains 5 tCO<sub>2</sub>e or more of fluorinated greenhouse gases. In this case, it must be checked for leakage at least once every 12 months, according to regulation No. 517/2014. This activity must be covered by qualified personnel only. In the case of the situation above, the installer (or authorized person with responsibility for final check) must provide a maintenance book, with all the information recorded, according to REGULATION (EU) No. 517/2014 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 April 2014 on fluorinated greenhouse gases.

- Please fill in the following with indelible ink on the refrigerant charge label supplied with this product and on this manual.
  - ① the factory refrigerant charge of the product,
  - ② the additional refrigerant amount charged in the field and
  - ①+② the total refrigerant charge. on the refrigerant charge label supplied with the product.

Refrigerant type	GWP value
R-32	675

- GWP: Global Warming Potential
- Calculating tCO<sub>2</sub>e: kg x GWP/1000



Unit	Kg	tCO <sub>2</sub> e
①, a		
②, b		
①+②, c		

# 11. Installation

## Outdoor unit Installation

### NOTE

- Factory refrigerant charge of the product: see unit name plate
- Additional refrigerant amount charged in the field (Refer to the above information for the quantity of refrigerant replenishment.)
- Total refrigerant charge
- Refrigerant cylinder and manifold for charging th refrigerant charge limits for each products.


### CAUTION

- The filled-out label must be adhered in the proximity of the product charging port (e.g. onto the inside of the stop valve cover).
- Make sure that the total refrigerant charge does not exceed (A), the maximum refrigerant charge, which is calculated in the following formula: Maximum refrigerant charge (A)= factory refrigerant charge (B) + maximum additional refrigerant charge due to piping extension (C)
- Here below, the summary table with refrigerant charge limits for each products.

(Unit:g)

Model	A	B	C
AR09***AAWKXEU AR12***AAWKXEU	1,115	965	150





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