

Digital Inverter Classic R32 (DIC) *Light Commercial System*

Indoor Units

4-way cassette

RAV-HM1101UTP-E / TR

RAV-HM1401UTP-E / TR

RAV-HM1601UTP-E / TR

Standard duct

RAV-HM1101BTP-E / TR

RAV-HM1401BTP-E / TR

RAV-HM1601BTP-E / TR

High wall

RAV-HM1101KRTP-E / TR

Outdoor Units (3 Phase)

RAV-GV1101AT8P-E / TR

RAV-GV1401AT8P-E / TR

RAV-GV1601AT8P-E1 / TR

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1. Line up

Outdoor unit

Model name	RAV-GV1101AT8P-E / TR	RAV-GV1401AT8P-E / TR	RAV-GV1601AT8P-E1 / TR
Appearance			

Indoor unit

Capacity Type		(kbtu/h) **	110	140	160
4-way Cassette		RAV-HM**1UTP-E / TR	110	140	160
Standard duct		RAV-HM**1BTP-E / TR	110	140	160
High wall		RAV-HM**1KRTP-E / TR	110	-	-

2. Indoor Units

2-1. 4-way Cassette Type

2-1-1. Specifications

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2-1-8. Accessories

2-1-1. Specifications

4-way Cassette Type

Model		Indoor unit		RAV-HM1101UTP-E/TR	RAV-HM1401UTP-E/TR	RAV-HM1601UTP-E/TR
		Outdoor unit		RAV-GV1101AT8P-E/TR	RAV-GV1401AT8P-E/TR	RAV-GV1601AT8P-E1 /TR
Cooling capacity				9.5	12.1	13.0
				3.0 - 11.2	3.0 - 14.0	3.0 - 15.0
Heating capacity				10.0	12.3	13.5
				3.0 -13.0	3.0 - 16.0	3.0 -18.0
Power supply				3 phase 380V-415V/50Hz, 380V/60Hz		
Electrical characteristics	Cooling	Power consumption (kW)		3.10	4.80	5.40
		EER		3.06	2.52	2.41
		PdesignC		9.5	12.1	13.0
		SEER	No.	6.20	5.10	5.90
			Grade (Lot10)	A++	-	-
	Heating	Power consumption (kW)		3.00	4.10	3.90
		COP		3.33	3.00	3.46
		PdesignH		7.6	7.8	8.0
		SCOP	No.	4.10	3.90	4.20
			Grade (Lot10)	A+	-	-
Indoor unit						
Outer dimension		Main unit	Height (mm)	319		
			Width (mm)	840		
			Depth (mm)	840		
		Ceiling panel (Sold separately)	Height (mm)	30		
			Width (mm)	950		
			Depth (mm)	950		
Total weight		Main unit (kg)		24.0		
		Ceiling panel (Sold separately) (kg)		4.2 (RBC-U32PGP-E), 4.0 (RBC-U33P-E)		
Fan unit		Fan		Turbo fan		
		Air flow	H/M/L (m3/h)	2010-1440-1170	2100-1440-1230	2130-1500-1260
Air filter				Standard filter (Long life filter)		
Sound pressure level			H/M/L (dB)	43/38/33	44/38/34	45/40/36
Sound power level			H/M/L (dB)	58/53/48	59/53/49	60/55/51

*1 : The cooling capacities and electrical characteristics are measured under the conditions specified by JIS B 8615 based on the reference piping.
The reference piping consists of 5 m of main piping and 2.5 m of branch piping connected with 0 meter height.

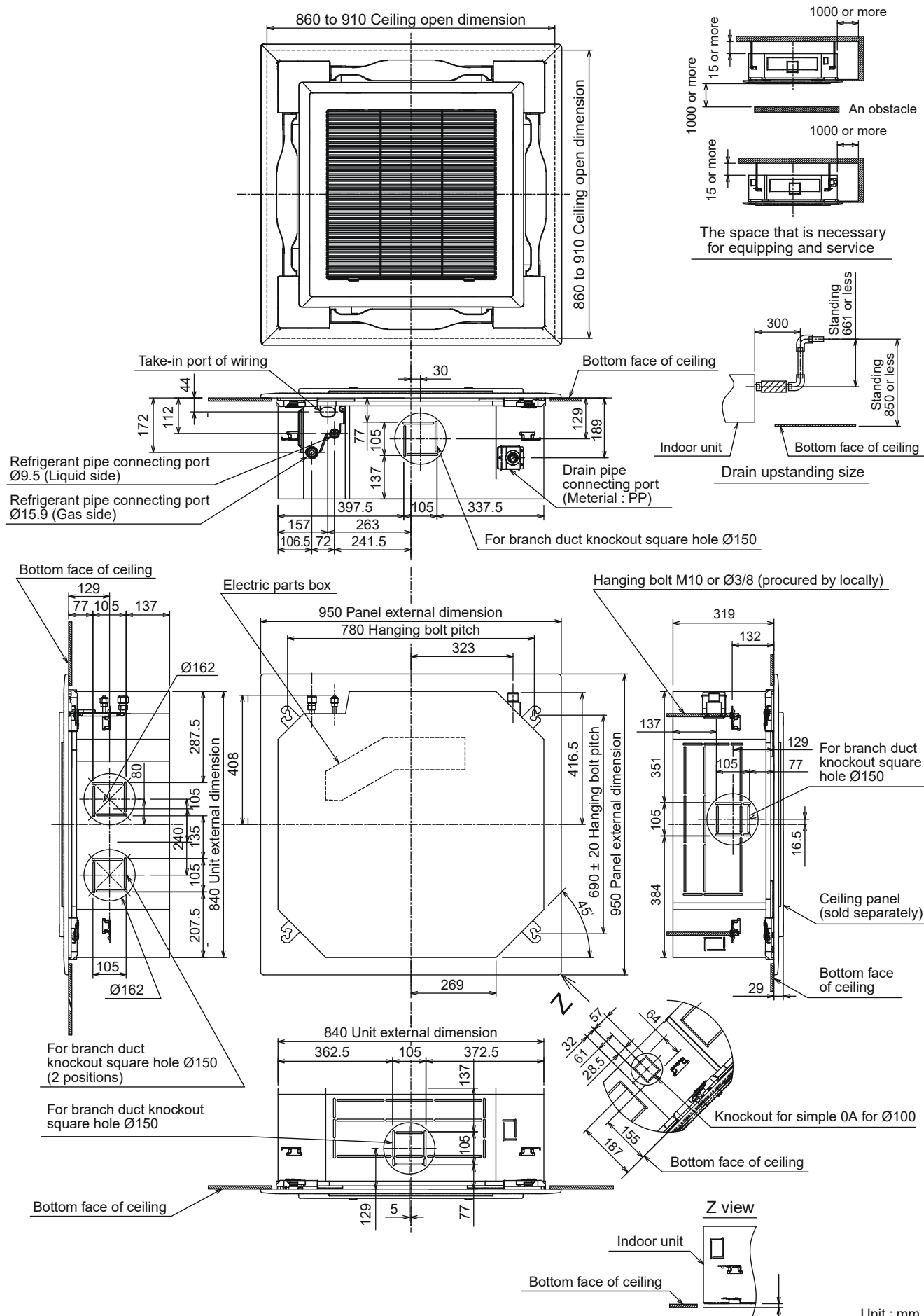
*2 : The sound level are measured in an anechoic chamber in accordance with JIS B 8616. Normally, the values measured in the actual operating environment become larger than the indicated values due to the effects of external sound.

Note :

Rated conditions Cooling : Indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB
Heating : Indoor air temperature 20°C DB, Outdoor air temperature 35°C DB

2-1-2. Dimension

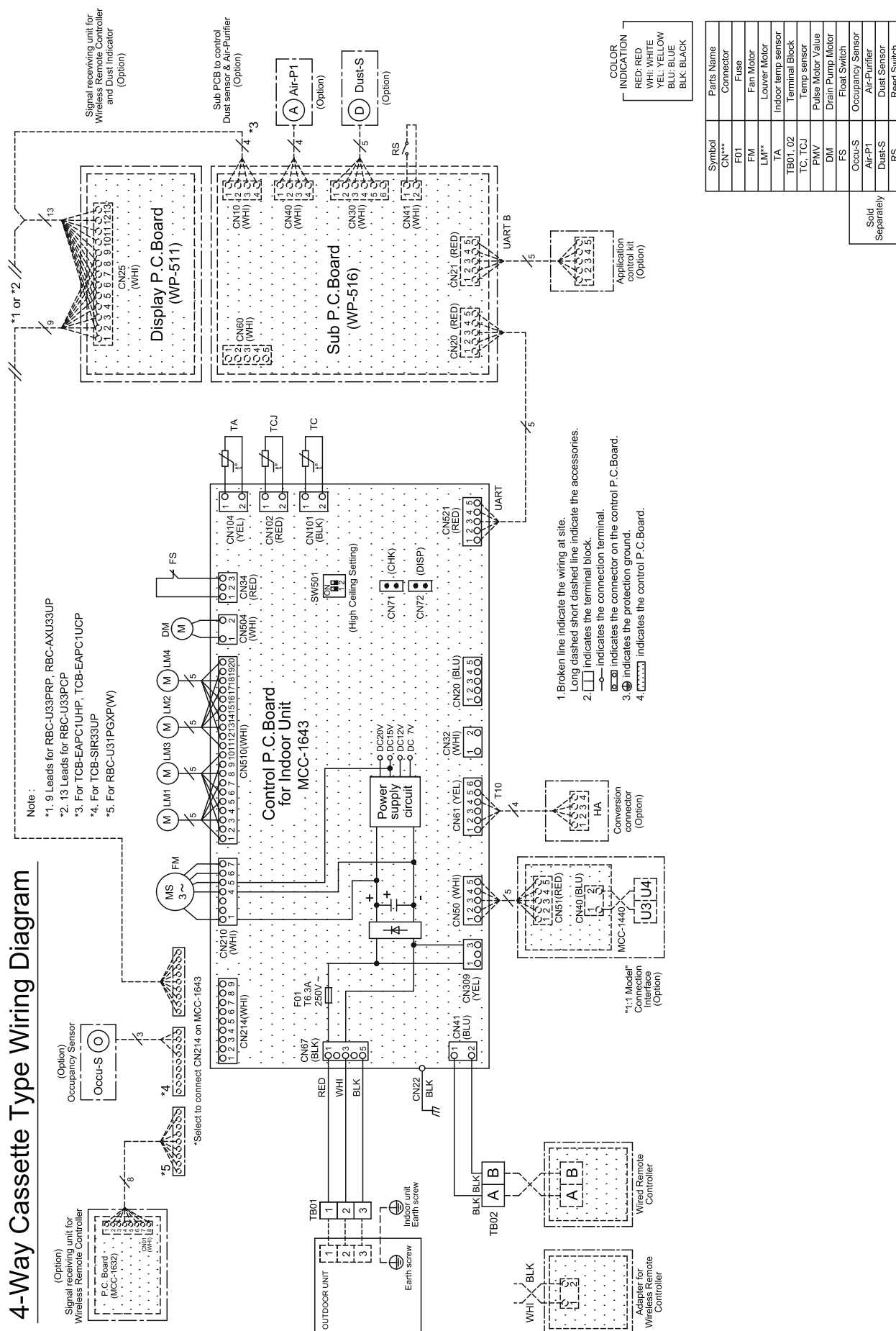
RAV-HM*_1UTP-E / TR (*110 / 140 / 160)



2-1-3. Wiring Diagrams

RAV-HM*__1UTP-E / TR (*110 / 140 / 160)

4-Way Cassette Type Wiring Diagram



2-1-4. Sensible Capacity Table

Product models : RAV-HM1101UTP-E / TR ; RAV-GV1101AT8P-E / TR

Specification of product at standard condition

Standard Condition	Indoor	27°C (DB) / 19°C (WB)	Total Cooling Capacity (TC)	9.50	kW
	Outdoor	35°C (DB) / 24°C (WB)	Sensible Heat Capacity (SHC)	7.89	kW

Outdoor air temperature DB (°C)	Indoor air temperature													
	20.0°C (DB) 14.0°C (WB)		23.0°C (DB) 16.0°C (WB)		26.0°C (DB) 18.0°C (WB)		27.0°C (DB) 19.0°C (WB)		28.0°C (DB) 20.0°C (WB)		30.0°C (DB) 22.0°C (WB)		32.0°C (DB) 24.0°C (WB)	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
10	10.3	9.2	11.4	9.8	12.2	10.4	12.6	10.4	12.9	10.4	13.7	10.4	14.3	10.2
11	10.2	9.1	11.3	9.7	12.1	10.3	12.4	10.3	12.8	10.3	13.5	10.3	14.2	10.1
12	10.1	9.0	11.2	9.6	11.9	10.2	12.3	10.2	12.7	10.2	13.4	10.1	14.0	10.0
13	10.0	8.9	11.0	9.5	11.8	10.1	12.2	10.1	12.5	10.1	13.3	10.0	13.9	9.9
14	9.9	8.8	10.9	9.4	11.7	10.0	12.1	10.0	12.4	10.0	13.1	9.9	13.7	9.8
15	9.8	8.7	10.8	9.3	11.6	9.9	11.9	9.9	12.3	9.9	13.0	9.8	13.6	9.7
16	9.7	8.6	10.7	9.2	11.5	9.8	11.8	9.8	12.2	9.8	12.9	9.7	13.5	9.6
17	9.6	8.6	10.6	9.1	11.4	9.7	11.7	9.7	12.0	9.7	12.7	9.6	13.3	9.5
18	9.5	8.5	10.5	9.0	11.2	9.6	11.6	9.6	11.9	9.6	12.6	9.5	13.2	9.4
19	9.4	8.4	10.4	8.9	11.1	9.5	11.5	9.5	11.8	9.5	12.5	9.4	13.0	9.3
20	9.3	8.3	10.3	8.8	11.0	9.4	11.3	9.4	11.7	9.4	12.3	9.3	12.9	9.2
21	9.2	8.2	10.2	8.8	10.9	9.3	11.2	9.3	11.5	9.3	12.2	9.2	12.8	9.1
22	9.1	8.1	10.1	8.7	10.8	9.2	11.1	9.2	11.4	9.2	12.1	9.1	12.6	9.0
23	9.0	8.0	9.9	8.6	10.6	9.1	11.0	9.1	11.3	9.1	11.9	9.0	12.5	8.9
24	8.9	7.9	9.8	8.5	10.5	9.0	10.8	9.0	11.2	9.0	11.8	8.9	12.4	8.8
25	8.8	7.8	9.7	8.4	10.4	8.9	10.7	8.9	11.0	8.9	11.7	8.8	12.2	8.7
26	8.7	7.8	9.6	8.3	10.3	8.8	10.6	8.8	10.9	8.8	11.5	8.7	12.1	8.6
27	8.6	7.7	9.5	8.2	10.2	8.7	10.5	8.7	10.8	8.7	11.4	8.6	11.9	8.5
28	8.5	7.6	9.4	8.1	10.1	8.6	10.4	8.6	10.6	8.6	11.3	8.5	11.8	8.4
29	8.4	7.5	9.3	8.0	9.9	8.5	10.2	8.5	10.5	8.5	11.1	8.4	11.7	8.3
30	8.3	7.4	9.2	7.9	9.8	8.4	10.1	8.4	10.4	8.4	11.0	8.3	11.5	8.2
31	8.2	7.3	9.1	7.8	9.7	8.3	10.0	8.3	10.3	8.3	10.9	8.2	11.4	8.1
32	8.1	7.2	9.0	7.7	9.6	8.2	9.9	8.2	10.2	8.2	10.8	8.1	11.2	8.0
33	8.0	7.1	8.8	7.6	9.5	8.1	9.7	8.1	10.0	8.1	10.6	8.0	11.1	7.9
34	7.9	7.0	8.7	7.5	9.3	8.0	9.6	8.0	9.9	8.0	10.5	7.9	11.0	7.8
35	7.8	7.0	8.6	7.4	9.2	7.9	9.5	7.9	9.8	7.9	10.3	7.8	10.8	7.7
36	7.7	6.9	8.5	7.3	9.1	7.8	9.4	7.8	9.6	7.8	10.2	7.7	10.7	7.6
37	7.6	6.8	8.4	7.2	9.0	7.7	9.3	7.7	9.5	7.7	10.1	7.6	10.5	7.5
38	7.5	6.7	8.3	7.1	8.9	7.6	9.1	7.6	9.4	7.6	9.9	7.5	10.4	7.4
39	7.4	6.6	8.2	7.0	8.8	7.5	9.0	7.5	9.3	7.5	9.8	7.4	10.3	7.3
40	7.3	6.5	8.1	6.9	8.6	7.4	8.9	7.4	9.1	7.4	9.7	7.3	10.1	7.2
41	7.2	6.4	8.0	6.8	8.5	7.3	8.8	7.3	9.0	7.3	9.6	7.2	10.0	7.1
42	7.1	6.3	7.8	6.8	8.4	7.2	8.7	7.2	8.9	7.2	9.4	7.1	9.9	7.0
43	7.0	6.2	7.7	6.7	8.3	7.1	8.5	7.1	8.8	7.1	9.3	7.0	9.7	6.9
44	6.9	6.1	7.6	6.6	8.2	7.0	8.4	7.0	8.6	7.0	9.2	6.9	9.6	6.8
45	6.8	6.1	7.5	6.5	8.0	6.9	8.3	6.9	8.5	6.9	9.0	6.8	9.4	6.7
46	6.7	6.0	7.4	6.4	7.9	6.8	8.2	6.8	8.4	6.8	8.9	6.7	9.3	6.6

Product models : RAV-HM1401UTP-E / TR ; RAV-GV1401AT8P-E / TR

Specification of product at standard condition

Standard Condition	Indoor	27°C (DB) / 19°C (WB)	Total Cooling Capacity (TC)	12.10	kW
	Outdoor	35°C (DB) / 24°C (WB)	Sensible Heat Capacity (SHC)	10.04	kW

Outdoor air temperature DB (°C)	Indoor air temperature													
	20.0°C (DB) 14.0°C (WB)		23.0°C (DB) 16.0°C (WB)		26.0°C (DB) 18.0°C (WB)		27.0°C (DB) 19.0°C (WB)		28.0°C (DB) 20.0°C (WB)		30.0°C (DB) 22.0°C (WB)		32.0°C (DB) 24.0°C (WB)	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
10	13.1	11.7	14.5	12.5	15.5	13.3	16.0	13.3	16.4	13.3	17.4	13.2	18.2	13.0
11	13.0	11.6	14.4	12.4	15.4	13.1	15.8	13.1	16.3	13.1	17.2	13.1	18.0	12.8
12	12.9	11.5	14.2	12.2	15.2	13.0	15.7	13.0	16.1	13.0	17.1	12.9	17.9	12.7
13	12.7	11.4	14.1	12.1	15.1	12.9	15.5	12.9	16.0	12.9	16.9	12.8	17.7	12.6
14	12.6	11.2	13.9	12.0	14.9	12.8	15.4	12.7	15.8	12.8	16.7	12.7	17.5	12.5
15	12.5	11.1	13.8	11.9	14.8	12.6	15.2	12.6	15.6	12.6	16.6	12.5	17.3	12.3
16	12.4	11.0	13.7	11.8	14.6	12.5	15.1	12.5	15.5	12.5	16.4	12.4	17.1	12.2
17	12.2	10.9	13.5	11.6	14.5	12.4	14.9	12.4	15.3	12.4	16.2	12.3	17.0	12.1
18	12.1	10.8	13.4	11.5	14.3	12.2	14.7	12.2	15.2	12.2	16.1	12.2	16.8	12.0
19	12.0	10.7	13.2	11.4	14.2	12.1	14.6	12.1	15.0	12.1	15.9	12.0	16.6	11.8
20	11.9	10.6	13.1	11.3	14.0	12.0	14.4	12.0	14.8	12.0	15.7	11.9	16.4	11.7
21	11.7	10.4	12.9	11.1	13.9	11.9	14.3	11.8	14.7	11.8	15.5	11.8	16.3	11.6
22	11.6	10.3	12.8	11.0	13.7	11.7	14.1	11.7	14.5	11.7	15.4	11.6	16.1	11.5
23	11.5	10.2	12.7	10.9	13.6	11.6	14.0	11.6	14.4	11.6	15.2	11.5	15.9	11.3
24	11.3	10.1	12.5	10.8	13.4	11.5	13.8	11.5	14.2	11.5	15.0	11.4	15.7	11.2
25	11.2	10.0	12.4	10.7	13.3	11.3	13.7	11.3	14.0	11.3	14.9	11.3	15.6	11.1
26	11.1	9.9	12.2	10.5	13.1	11.2	13.5	11.2	13.9	11.2	14.7	11.1	15.4	10.9
27	11.0	9.8	12.1	10.4	13.0	11.1	13.3	11.1	13.7	11.1	14.5	11.0	15.2	10.8
28	10.8	9.7	12.0	10.3	12.8	11.0	13.2	10.9	13.6	11.0	14.4	10.9	15.0	10.7
29	10.7	9.5	11.8	10.2	12.7	10.8	13.0	10.8	13.4	10.8	14.2	10.7	14.8	10.6
30	10.6	9.4	11.7	10.1	12.5	10.7	12.9	10.7	13.2	10.7	14.0	10.6	14.7	10.4
31	10.4	9.3	11.5	9.9	12.4	10.6	12.7	10.6	13.1	10.6	13.9	10.5	14.5	10.3
32	10.3	9.2	11.4	9.8	12.2	10.4	12.6	10.4	12.9	10.4	13.7	10.4	14.3	10.2
33	10.2	9.1	11.3	9.7	12.1	10.3	12.4	10.3	12.8	10.3	13.5	10.2	14.1	10.1
34	10.1	9.0	11.1	9.6	11.9	10.2	12.3	10.2	12.6	10.2	13.4	10.1	14.0	9.9
35	9.9	8.9	11.0	9.5	11.8	10.0	12.1	10.0	12.4	10.0	13.2	10.0	13.8	9.8
36	9.8	8.7	10.8	9.3	11.6	9.9	11.9	9.9	12.3	9.9	13.0	9.8	13.6	9.7
37	9.7	8.6	10.7	9.2	11.5	9.8	11.8	9.8	12.1	9.8	12.8	9.7	13.4	9.6
38	9.6	8.5	10.5	9.1	11.3	9.7	11.6	9.7	12.0	9.7	12.7	9.6	13.3	9.4
39	9.4	8.4	10.4	9.0	11.2	9.5	11.5	9.5	11.8	9.5	12.5	9.5	13.1	9.3
40	9.3	8.3	10.3	8.8	11.0	9.4	11.3	9.4	11.6	9.4	12.3	9.3	12.9	9.2
41	9.2	8.2	10.1	8.7	10.9	9.3	11.2	9.3	11.5	9.3	12.2	9.2	12.7	9.1
42	9.0	8.1	10.0	8.6	10.7	9.1	11.0	9.1	11.3	9.1	12.0	9.1	12.5	8.9
43	8.9	7.9	9.9	8.5	10.5	9.0	10.9	9.0	11.2	9.0	11.8	9.0	12.4	8.8
44	8.8	7.8	9.7	8.4	10.4	8.9	10.7	8.9	11.0	8.9	11.7	8.8	12.2	8.7
45	8.7	7.7	9.6	8.2	10.2	8.8	10.6	8.8	10.9	8.8	11.5	8.7	12.0	8.6
46	8.5	7.6	9.4	8.1	10.1	8.6	10.4	8.6	10.7	8.6	11.3	8.6	11.8	8.4

Product models : RAV-HM1601UTP-E / TR ; RAV-GV1601AT8P-E / TR

Specification of product at standard condition

Standard Condition	Indoor	27°C (DB) / 19°C (WB)	Total Cooling Capacity (TC)	13.00 kW
	Outdoor	35°C (DB) / 24°C (WB)	Sensible Heat Capacity (SHC)	10.79 kW

Outdoor air temperature DB (°C)	Indoor air temperature													
	20.0°C (DB) 14.0°C (WB)		23.0°C (DB) 16.0°C (WB)		26.0°C (DB) 18.0°C (WB)		27.0°C (DB) 19.0°C (WB)		28.0°C (DB) 20.0°C (WB)		30.0°C (DB) 22.0°C (WB)		32.0°C (DB) 24.0°C (WB)	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
10	14.1	12.6	15.6	13.4	16.7	14.3	17.2	14.3	17.7	14.3	18.7	14.2	19.6	13.9
11	14.0	12.4	15.4	13.3	16.5	14.1	17.0	14.1	17.5	14.1	18.5	14.0	19.4	13.8
12	13.8	12.3	15.3	13.2	16.4	14.0	16.8	14.0	17.3	14.0	18.3	13.9	19.2	13.7
13	13.7	12.2	15.1	13.0	16.2	13.8	16.7	13.8	17.1	13.8	18.2	13.7	19.0	13.5
14	13.6	12.1	15.0	12.9	16.0	13.7	16.5	13.7	17.0	13.7	18.0	13.6	18.8	13.4
15	13.4	12.0	14.8	12.8	15.9	13.6	16.3	13.6	16.8	13.6	17.8	13.5	18.6	13.3
16	13.3	11.8	14.7	12.6	15.7	13.4	16.2	13.4	16.6	13.4	17.6	13.3	18.4	13.1
17	13.1	11.7	14.5	12.5	15.5	13.3	16.0	13.3	16.5	13.3	17.4	13.2	18.2	13.0
18	13.0	11.6	14.4	12.4	15.4	13.2	15.8	13.1	16.3	13.2	17.3	13.1	18.0	12.8
19	12.9	11.5	14.2	12.2	15.2	13.0	15.7	13.0	16.1	13.0	17.1	12.9	17.9	12.7
20	12.7	11.3	14.1	12.1	15.1	12.9	15.5	12.9	15.9	12.9	16.9	12.8	17.7	12.6
21	12.6	11.2	13.9	12.0	14.9	12.7	15.3	12.7	15.8	12.7	16.7	12.7	17.5	12.4
22	12.5	11.1	13.8	11.8	14.7	12.6	15.2	12.6	15.6	12.6	16.5	12.5	17.3	12.3
23	12.3	11.0	13.6	11.7	14.6	12.5	15.0	12.5	15.4	12.5	16.3	12.4	17.1	12.2
24	12.2	10.9	13.5	11.6	14.4	12.3	14.8	12.3	15.3	12.3	16.2	12.2	16.9	12.0
25	12.0	10.7	13.3	11.5	14.3	12.2	14.7	12.2	15.1	12.2	16.0	12.1	16.7	11.9
26	11.9	10.6	13.2	11.3	14.1	12.0	14.5	12.0	14.9	12.0	15.8	12.0	16.5	11.8
27	11.8	10.5	13.0	11.2	13.9	11.9	14.3	11.9	14.7	11.9	15.6	11.8	16.3	11.6
28	11.6	10.4	12.9	11.1	13.8	11.8	14.2	11.8	14.6	11.8	15.4	11.7	16.1	11.5
29	11.5	10.2	12.7	10.9	13.6	11.6	14.0	11.6	14.4	11.6	15.3	11.5	16.0	11.4
30	11.4	10.1	12.5	10.8	13.4	11.5	13.8	11.5	14.2	11.5	15.1	11.4	15.8	11.2
31	11.2	10.0	12.4	10.7	13.3	11.4	13.7	11.3	14.1	11.4	14.9	11.3	15.6	11.1
32	11.1	9.9	12.2	10.5	13.1	11.2	13.5	11.2	13.9	11.2	14.7	11.1	15.4	10.9
33	10.9	9.8	12.1	10.4	12.9	11.1	13.3	11.1	13.7	11.1	14.5	11.0	15.2	10.8
34	10.8	9.6	11.9	10.3	12.8	10.9	13.2	10.9	13.5	10.9	14.3	10.9	15.0	10.7
35	10.7	9.5	11.8	10.2	12.6	10.8	13.0	10.8	13.4	10.8	14.2	10.7	14.8	10.5
36	10.5	9.4	11.6	10.0	12.5	10.7	12.8	10.6	13.2	10.7	14.0	10.6	14.6	10.4
37	10.4	9.3	11.5	9.9	12.3	10.5	12.7	10.5	13.0	10.5	13.8	10.5	14.4	10.3
38	10.3	9.1	11.3	9.8	12.1	10.4	12.5	10.4	12.9	10.4	13.6	10.3	14.2	10.1
39	10.1	9.0	11.2	9.6	12.0	10.2	12.3	10.2	12.7	10.2	13.4	10.2	14.0	10.0
40	10.0	8.9	11.0	9.5	11.8	10.1	12.2	10.1	12.5	10.1	13.3	10.0	13.9	9.9
41	9.9	8.8	10.9	9.4	11.7	10.0	12.0	10.0	12.3	10.0	13.1	9.9	13.7	9.7
42	9.7	8.7	10.7	9.2	11.5	9.8	11.8	9.8	12.2	9.8	12.9	9.8	13.5	9.6
43	9.6	8.5	10.6	9.1	11.3	9.7	11.7	9.7	12.0	9.7	12.7	9.6	13.3	9.5
44	9.4	8.4	10.4	9.0	11.2	9.6	11.5	9.5	11.8	9.5	12.5	9.5	13.1	9.3
45	9.3	8.3	10.3	8.8	11.0	9.4	11.3	9.4	11.7	9.4	12.3	9.3	12.9	9.2
46	9.2	8.2	10.1	8.7	10.8	9.3	11.2	9.3	11.5	9.3	12.2	9.2	12.7	9.1

2-1-5. Part Load Performance

Indoor units : RAV-HM1101UTP-E / TR

Outdoor unit : RAV-GV1101AT8P-E / TR

	Cooling		Heating	
	Capacity [Q (W)]	Power consumption [W (W)]	Capacity [Q (W)]	Power consumption [W (W)]
MINIMUM	3000	600	3000	600
RATING	9500	3100	10000	3005

Cooling

Outdoor temperature (°C)		Load(%)									
		100	90	80	70	60	50	40	30	20	10
46	Q	8160	6870	6110	5340	4580	3820	3060	2410	2410	2410
	W	3590	3390	2940	2480	2040	1570	1130	740	740	740
43	Q	8520	7670	6820	5970	5110	4260	3410	2690	2690	2690
	W	3460	3040	2640	2230	1830	1420	1010	670	670	670
40	Q	8890	8000	7110	6220	5330	4450	3560	2810	2810	2810
	W	3320	2930	2540	2140	1760	1360	980	640	640	640
35	Q	9500	8550	7600	6650	5700	4750	3800	3000	3000	3000
	W	3100	2730	2370	2000	1640	1270	910	600	600	600
30	Q	10110	9100	8090	7080	6070	5050	4040	3190	3190	3190
	W	2880	2530	2200	1860	1520	1180	840	560	560	560
25	Q	10720	9650	8580	7500	6430	5360	4290	3390	3390	3390
	W	2660	2340	2030	1710	1400	1090	780	510	510	510
20	Q	11330	10200	9060	7930	6800	5660	4530	3580	3580	3580
	W	2430	2140	1860	1570	1290	1000	710	470	470	470

Heating

Outdoor temperature (°C)		Load(%)									
		100	90	80	70	60	50	40	30	20	10
20	Q	12570	11310	10060	8800	7540	6280	5030	3770	3770	3770
	W	3310	2930	2560	2170	1800	1420	1040	660	660	660
15	Q	11580	10420	9270	8110	6950	5790	4630	3470	3470	3470
	W	3190	2830	2470	2090	1730	1370	1000	640	640	640
10	Q	10590	9530	8470	7420	6360	5300	4240	3180	3180	3180
	W	3080	2720	2370	2020	1670	1320	960	610	610	610
7	Q	10000	9000	8000	7000	6000	5000	4000	3000	3000	3000
	W	3005	2660	2320	1970	1630	1290	940	600	600	600
6	Q	8530	7680	6830	5970	5120	4270	3410	2560	2560	2560
	W	2800	2480	2160	1840	1520	1200	880	560	560	560
5	Q	8030	7230	6430	5620	4820	4020	3210	2410	2410	2410
	W	2780	2460	2150	1830	1510	1190	870	560	560	560
2	Q	7270	6550	5820	5090	4360	3640	2910	2180	2180	2180
	W	2670	2360	2060	1750	1450	1140	840	530	530	530
0	Q	6770	6090	5420	4730	4060	3390	2700	2030	2030	2030
	W	2590	2290	2000	1700	1410	1110	810	520	520	520
-5	Q	5500	4960	4410	3850	3300	2760	2200	1650	1650	1650
	W	2400	2120	1850	1580	1300	1030	750	480	480	480
-7	Q	5000	4500	4000	3500	3000	2500	2000	1500	1500	1500
	W	2320	2060	1790	1530	1260	1000	730	460	460	460

Indoor units : RAV-HM1401UTP-E / TR

Outdoor unit : RAV-GV1401AT8P-E / TR

	Cooling		Heating	
	Capacity [Q (W)]	Power consumption [W (W)]	Capacity [Q (W)]	Power consumption [W (W)]
MINIMUM	3000	600	3000	600
RATING	12100	4800	12300	4100

Cooling

Outdoor temperature (°C)		Load(%)									
		100	90	80	70	60	50	40	30	20	10
46	Q	10390	8750	7780	6810	5830	4860	3890	2920	2410	2410
	W	5560	5260	4560	3870	3180	2490	1790	1100	740	740
43	Q	10860	9770	8690	7600	6510	5430	4340	3260	2690	2690
	W	5350	4730	4100	3480	2860	2240	1620	990	670	670
40	Q	11320	10190	9060	7930	6790	5660	4530	3400	2810	2810
	W	5140	4540	3940	3340	2750	2150	1550	950	640	640
35	Q	12100	10890	9680	8470	7260	6050	4840	3630	3000	3000
	W	4800	4240	3680	3120	2570	2010	1450	890	600	600
30	Q	12880	11590	10300	9010	7730	6440	5150	3860	3190	3190
	W	4460	3940	3420	2900	2390	1870	1350	830	560	560
25	Q	13650	12290	10920	9560	8190	6830	5460	4100	3390	3390
	W	4110	3630	3150	2670	2200	1720	1240	760	510	510
20	Q	14430	12990	11540	10100	8660	7210	5770	4330	3580	3580
	W	3770	3330	2890	2450	2020	1580	1140	700	470	470

Heating

Outdoor temperature (°C)		Load(%)									
		100	90	80	70	60	50	40	30	20	10
20	Q	15460	13910	12370	10820	9280	7730	6180	4640	3770	3770
	W	4520	4010	3490	2990	2480	1970	1450	950	660	660
15	Q	14250	12820	11400	9970	8550	7120	5700	4270	3470	3470
	W	4360	3870	3370	2880	2390	1900	1400	910	640	640
10	Q	13030	11730	10420	9120	7820	6510	5210	3910	3180	3180
	W	4200	3730	3240	2770	2300	1830	1350	880	610	610
7	Q	12300	11070	9840	8610	7380	6150	4920	3690	3000	3000
	W	4100	3640	3170	2710	2250	1790	1320	860	600	600
6	Q	10500	9450	8400	7350	6300	5250	4200	3150	2560	2560
	W	3820	3390	2960	2530	2100	1670	1230	800	560	560
5	Q	9880	8890	7900	6920	5930	4940	3950	2960	2410	2410
	W	3790	3370	2940	2510	2090	1660	1220	790	560	560
2	Q	8950	8050	7160	6260	5370	4470	3580	2680	2180	2180
	W	3640	3230	2820	2410	2000	1590	1170	760	530	530
0	Q	8330	7490	6660	5830	5000	4160	3330	2500	2030	2030
	W	3530	3140	2740	2340	1940	1540	1140	740	520	520
-5	Q	6780	6100	5420	4740	4070	3390	2710	2030	1650	1650
	W	3270	2900	2540	2170	1800	1430	1050	690	480	480
-7	Q	6160	5540	4920	4310	3690	3080	2460	1850	1500	1500
	W	3170	2810	2450	2100	1740	1380	1020	660	460	460

Indoor units : RAV-HM1601UTP-E / TR

Outdoor unit : RAV-GV1601AT8P-E1 / TR

	Cooling		Heating	
	Capacity [Q (W)]	Power consumption [W (W)]	Capacity [Q (W)]	Power consumption [W (W)]
MINIMUM	3000	600	3000	600
RATING	13000	5400	13500	3900

Cooling

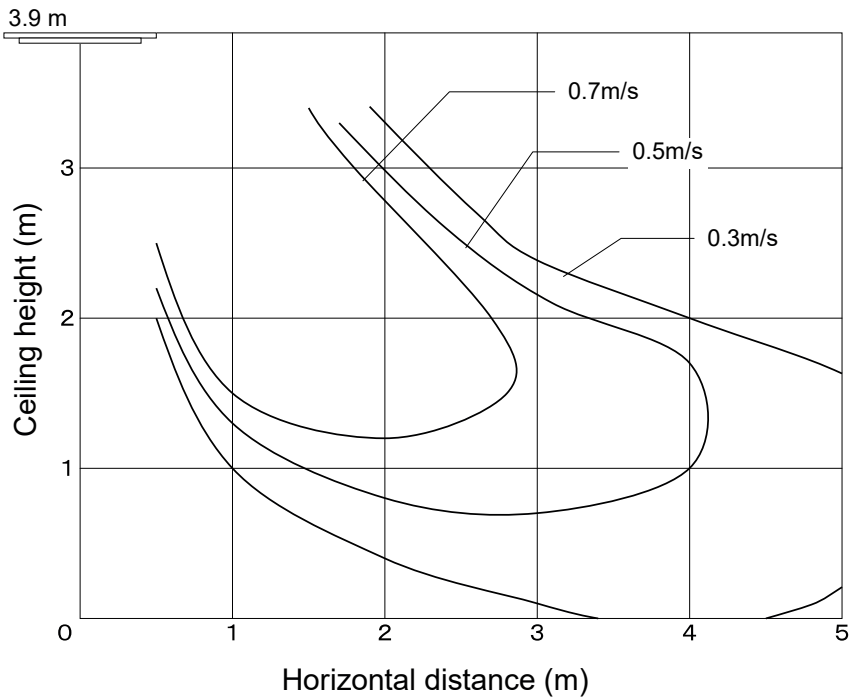
Outdoor temperature (°C)		Load(%)									
		100	90	80	70	60	50	40	30	20	10
46	Q	11160	9400	8360	7320	6270	5220	4180	3130	2410	2410
	W	6250	5930	5150	4380	3600	2820	2060	1270	740	740
43	Q	11670	10500	9330	8170	7000	5830	4670	3500	2690	2690
	W	6020	5330	4630	3930	3230	2540	1850	1150	670	670
40	Q	12170	10950	9730	8520	7300	6080	4870	3650	2810	2810
	W	5790	5120	4450	3780	3110	2440	1780	1100	640	640
35	Q	13000	11700	10400	9100	7800	6500	5200	3900	3000	3000
	W	5400	4780	4150	3530	2900	2280	1660	1030	600	600
30	Q	13830	12450	11070	9680	8300	6920	5530	4150	3190	3190
	W	5010	4440	3850	3280	2690	2120	1540	960	560	560
25	Q	14670	13200	11730	10270	8800	7330	5870	4400	3390	3390
	W	4630	4090	3560	3020	2480	1950	1420	880	510	510
20	Q	15500	13950	12400	10850	9300	7750	6200	4650	3580	3580
	W	4240	3750	3260	2770	2280	1790	1300	810	470	470

Heating

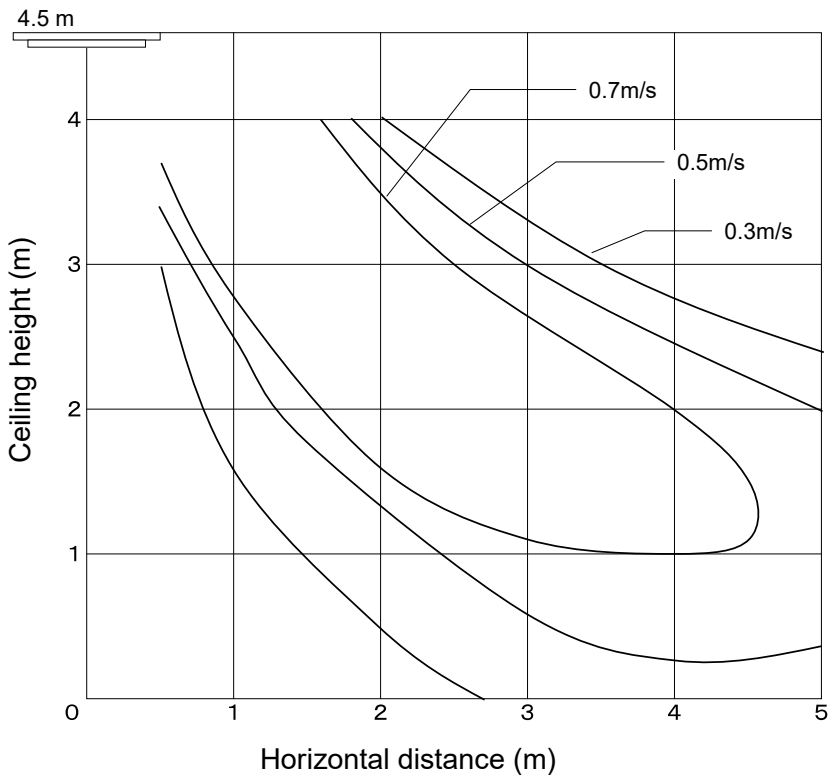
Outdoor temperature (°C)		Load(%)									
		100	90	80	70	60	50	40	30	20	10
20	Q	16970	15270	13580	11880	10180	8480	6790	5090	3770	3770
	W	4300	3830	3360	2900	2420	1960	1490	1020	660	660
15	Q	15640	14070	12510	10940	9380	7820	6250	4690	3470	3470
	W	4140	3700	3240	2790	2340	1890	1430	990	640	640
10	Q	14300	12870	11440	10010	8580	7150	5720	4290	3180	3180
	W	3990	3560	3120	2690	2250	1820	1380	950	610	610
7	Q	13500	12150	10800	9450	8100	6750	5400	4050	3000	3000
	W	3900	3480	3050	2630	2200	1780	1350	930	600	600
6	Q	11520	10370	9220	8060	6910	5760	4610	3460	2560	2560
	W	3640	3240	2840	2450	2050	1660	1260	870	560	560
5	Q	10840	9760	8670	7580	6500	5420	4340	3260	2410	2410
	W	3620	3220	2820	2430	2040	1650	1250	860	560	560
2	Q	9820	8840	7860	6870	5890	4910	3930	2950	2180	2180
	W	3470	3090	2700	2330	1950	1580	1200	830	530	530
0	Q	9140	8220	7310	6390	5480	4570	3660	2740	2030	2030
	W	3370	3000	2630	2270	1900	1540	1170	800	520	520
-5	Q	7430	6690	5950	5200	4460	3720	2970	2230	1650	1650
	W	3120	2780	2430	2100	1760	1420	1080	750	480	480
-7	Q	6750	6080	5400	4720	4050	3380	2700	2030	1500	1500
	W	3020	2690	2350	2030	1700	1380	1040	720	460	460

2-1-6. Air Throw Distance Chart

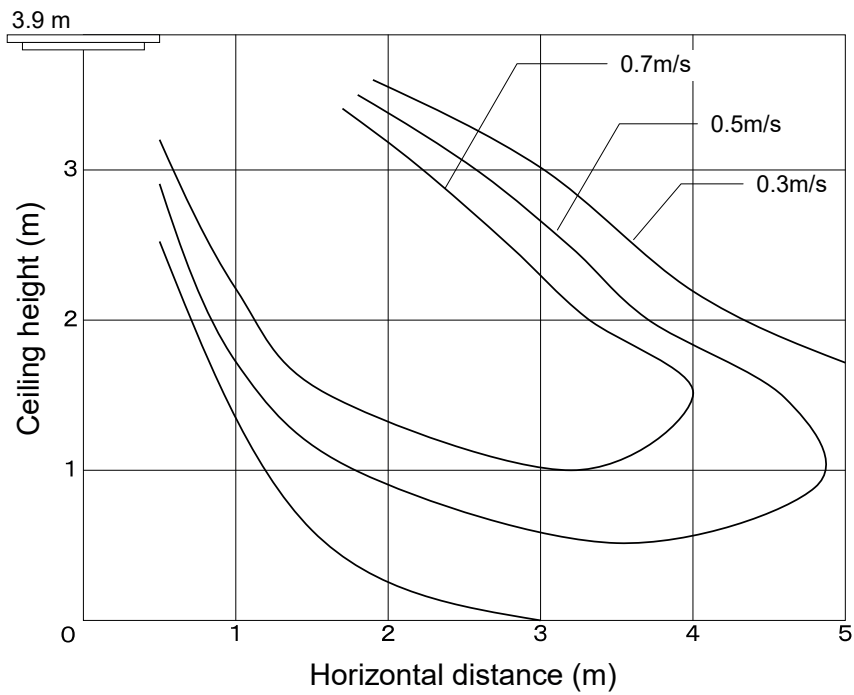
RAV-HM1101UTP-E / TR



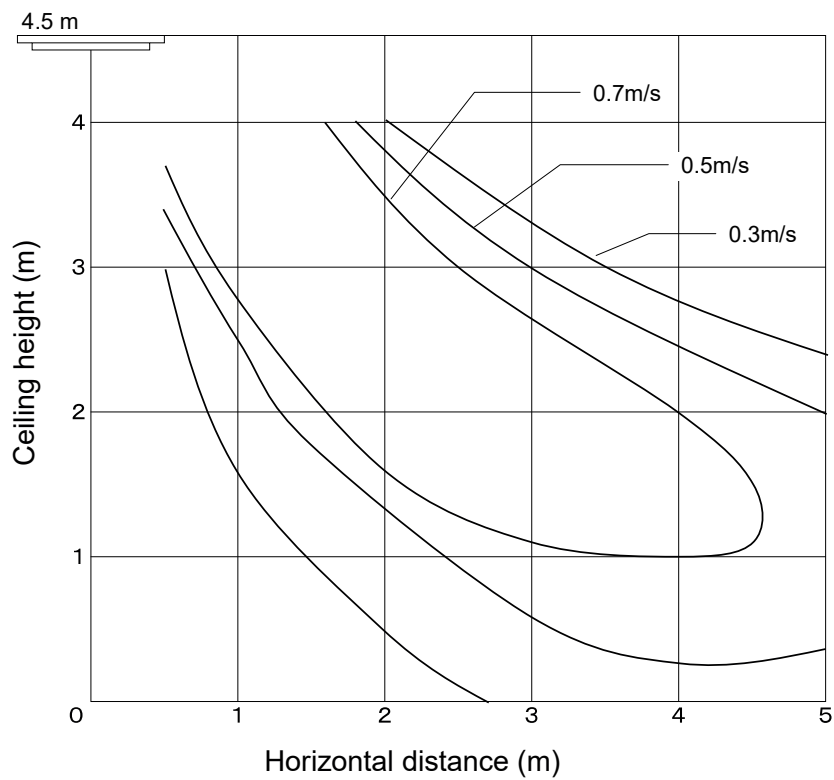
RAV-HM1101UTP-E / TR (High ceiling)



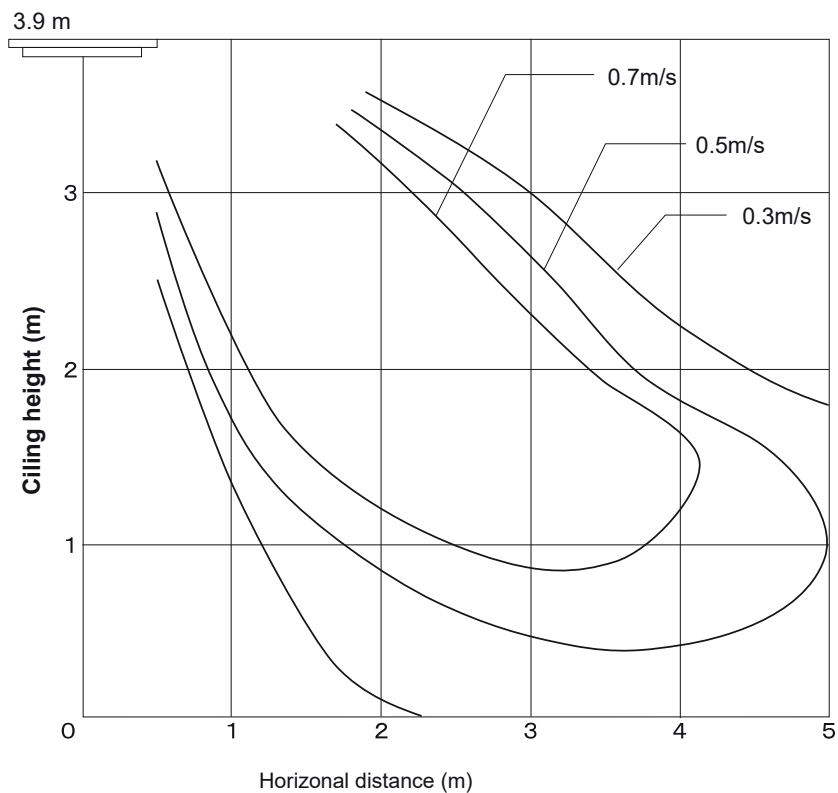
RAV-HM1401UTP-E / TR



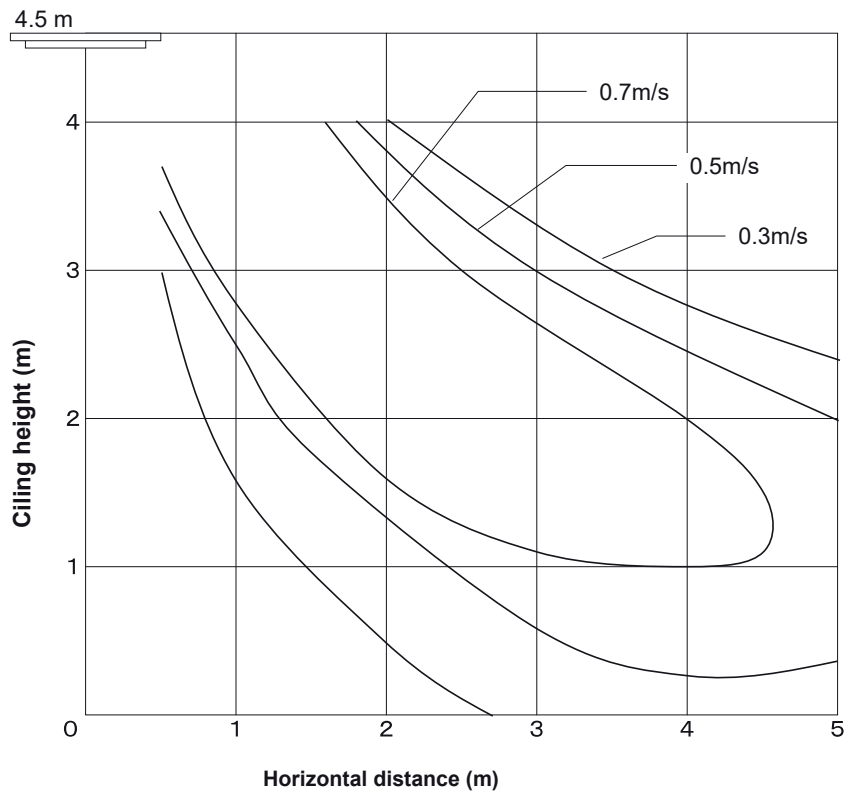
RAV-HM1401UTP-E / TR (High ceiling)



RAV-HM1601UTP-E / TR

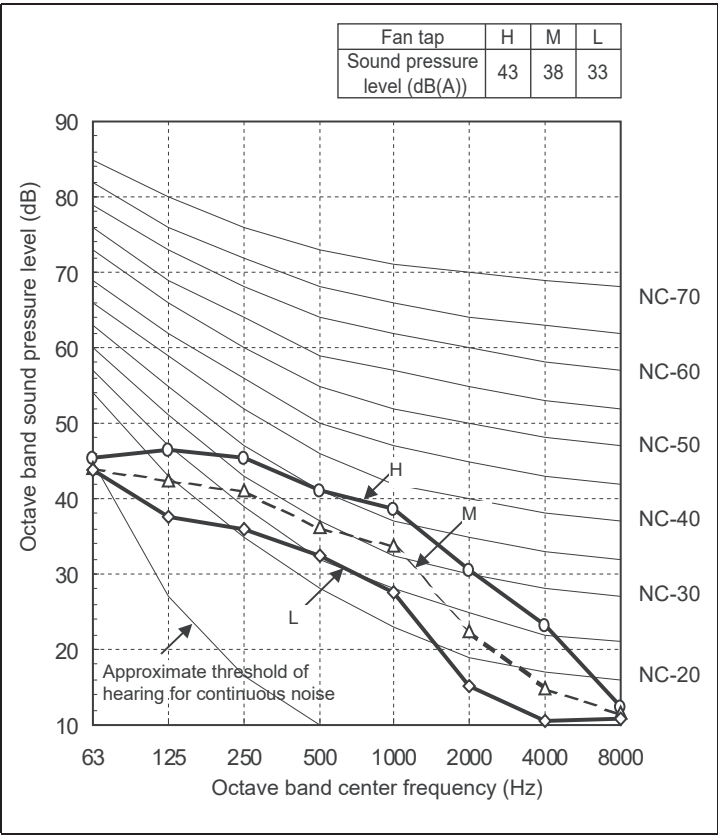


RAV-HM1601UTP-E / TR (High ceiling)

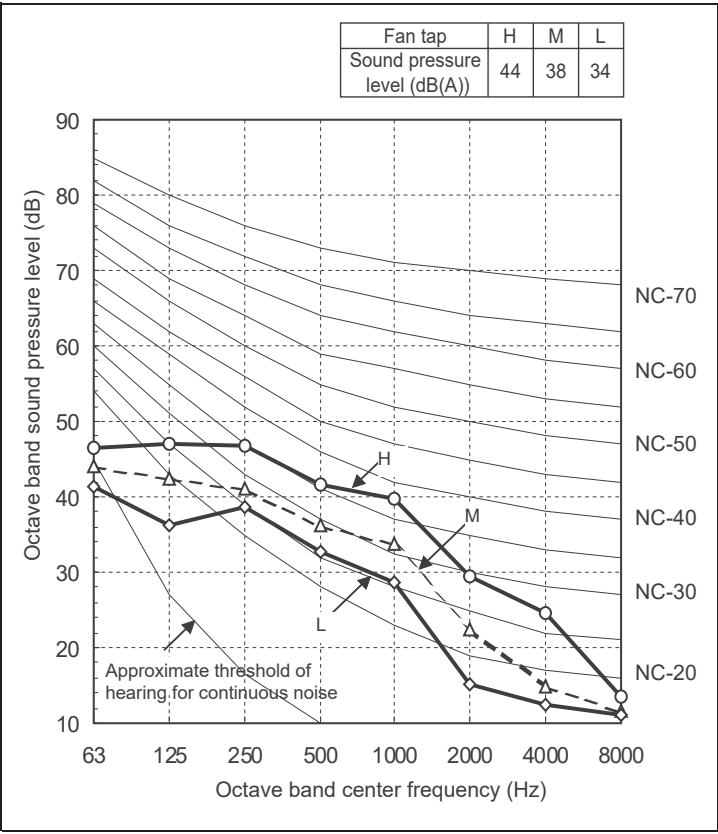


2-1-7. Sound characteristics (NC curve)

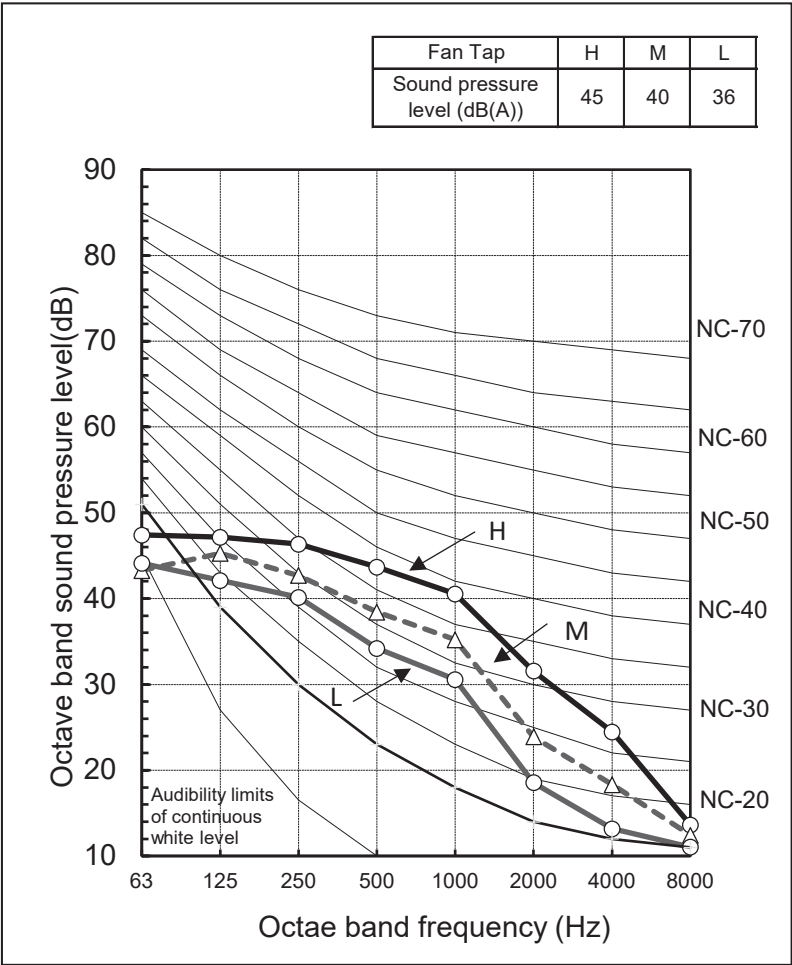
RAV-HM1101UTP-E / TR



RAV-HM1401UTP-E / TR

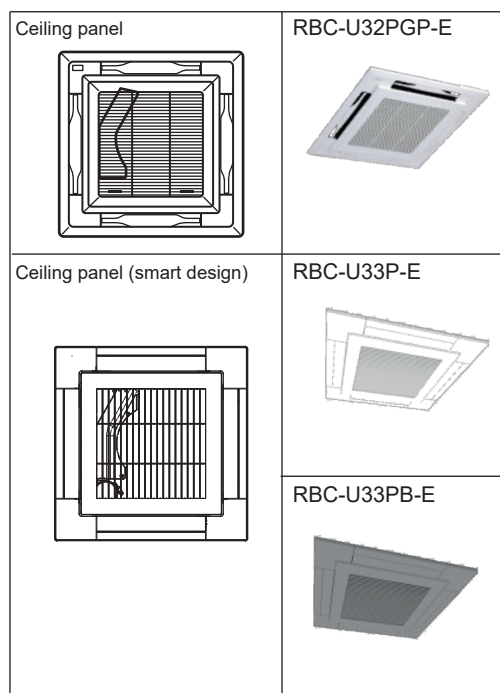
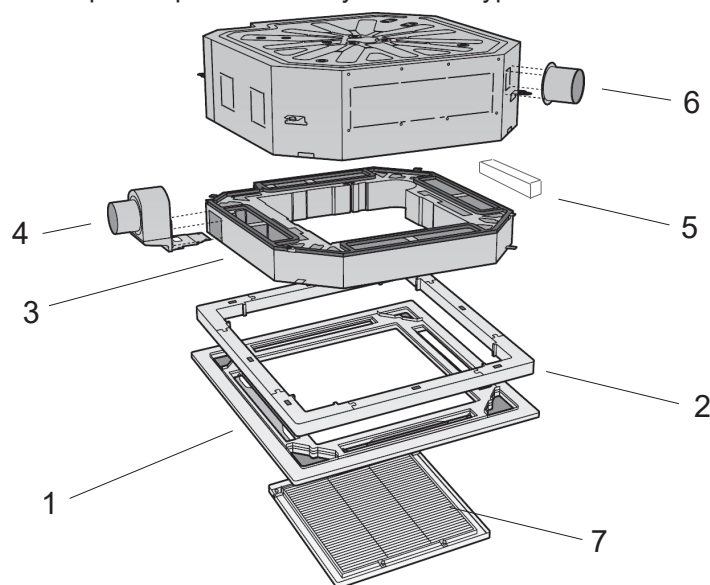


RAV-HM1601UTP-E / TR



2-1-8. Accessories

Optional parts for 4-Way Cassette type



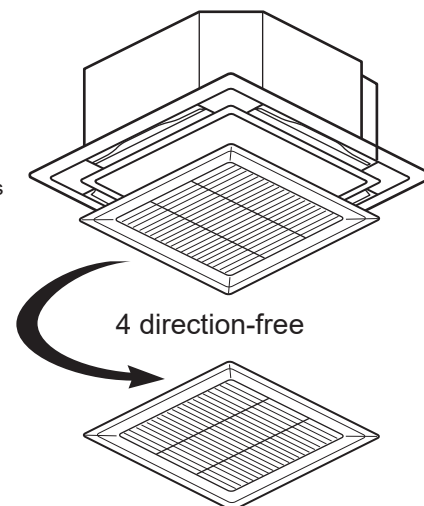
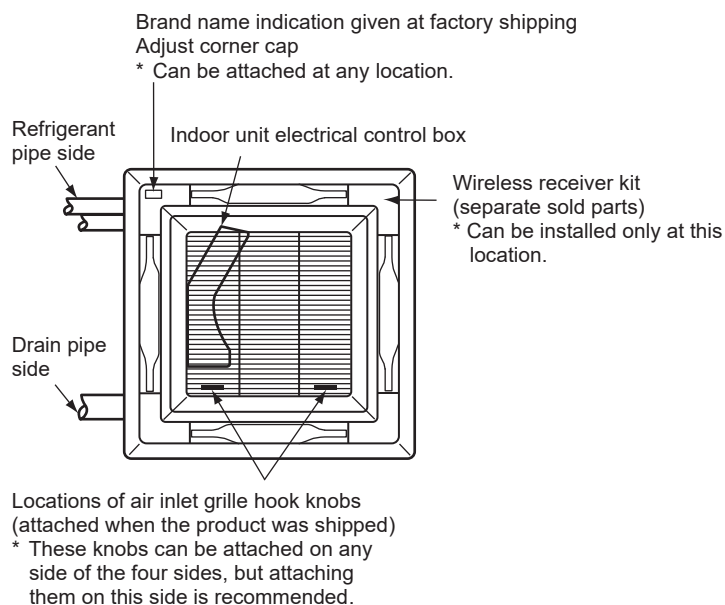
No	Type	Model name	Qty/unit	Note
1	1.1 Ceiling panel	RBC-U32PGP-E	1	White (2.5GY9.0/0.5)
	1.2 Ceiling panel (smart design)	RBC-U33P-E	1	White (5PB9/1)
	1.3 Ceiling panel (smart design)	RBC-U33PB-E	1	Black (RAL9005)
2	Spacer for height adjustment	TCB-SP1602UE	1	50 mm
3	Fresh-air chamber	TCB-GFC1602UE	1	Use with TCB-GB1602UUL
4	Fresh-air inlet box	TCB-GB1602UE	1	Connection = Dia. 100 mm.
5	Air-discharge direction kit	TCB-BC1602UE	1	6-direction patterns
6	Auxiliary fresh air flange	TCB-FF101URE2	1	Connection = Dia.100
7	PM2.5 filter	TCB-PLFC1UPE-120	1	Before pre-filter
		TCB-PLFC2UPE-80	1	After pre-filter

Applicable Compatibility Table		Ceiling panel RBC-U32PGP-E	Ceiling panel (smart design) RBC-U33P-E	Ceiling panel (smart design, black) RBC-U33PB-E	Wireless receiver kit RBC-AXU31UP-E	Wireless receiver kit RBC-AXU33UP-E	Occupancy sensor TCB-SIR33UP-E	Wireless remote controller kit (black) RBC-AXU33UPB-E	Air purifier kit (HTM) TCB-EAPC1UHP-E	Air purifier kit (MTM) TCB-EABC1UHP-E	Spacer for height adjustment TCB-SP1602UE	Fresh-air inlet box + Fresh-air chamber TCB-GB1602UE+TCB-GFC1602UE	Air-discharge direction kit TCB-BC1602UE	Auxiliary fresh air flange TCB-FF101URE2	PM2.5 filter TCB-PLFC1UPE-120	PM2.5 filter TCB-PLFC2UPE-80
Panel	Ceiling panel RBC-U32PGP-E				OK						OK	OK	OK	OK	OK	OK
	Ceiling panel (smart design) RBC-U33P-E					OK	OK		OK	OK				OK	OK	OK
	Ceiling panel (smart design, black) RBC-U33PB-E							OK						OK	OK	OK
Optional parts	Wireless receiver kit RBC-AXU31UP-E	OK									OK	OK	OK	OK	OK	OK
	Wireless receiver kit RBC-AXU33UP-E		OK											OK	OK	OK
	Occupancy sensor TCB-SIR33UP-E		OK											OK	OK	OK
	Wireless remote controller kit (black) RBC-AXU33UPB-E			OK										OK	OK	OK
	Air purifier kit (HTM) TCB-EAPC1UHP-E		OK											OK	OK	OK
	Air purifier kit (MTM) TCB-EABC1UHP-E		OK											OK	OK	OK
	Spacer for height adjustment TCB-SP1602UE	OK			OK							OK	OK	OK	OK	OK
	Fresh-air inlet box + Fresh-air chamber TCB-GB1602UE+TCB-GFC1602UE	OK			OK						OK		OK	OK	OK	OK
	Air-discharge direction kit TCB-BC1602UE	OK			OK						OK	OK		OK	OK	OK
	Auxiliary fresh air flange TCB-FF101URE2	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK		OK	OK	OK
	PM2.5 filter TCB-PLFC1UPE-120	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK			
	PM2.5 filter TCB-PLFC2UPE-80	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK			

Appendix

1. Ceiling Panel

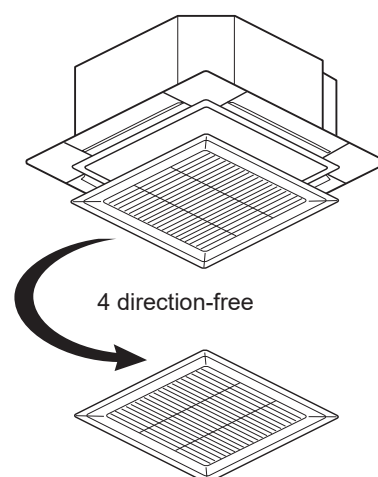
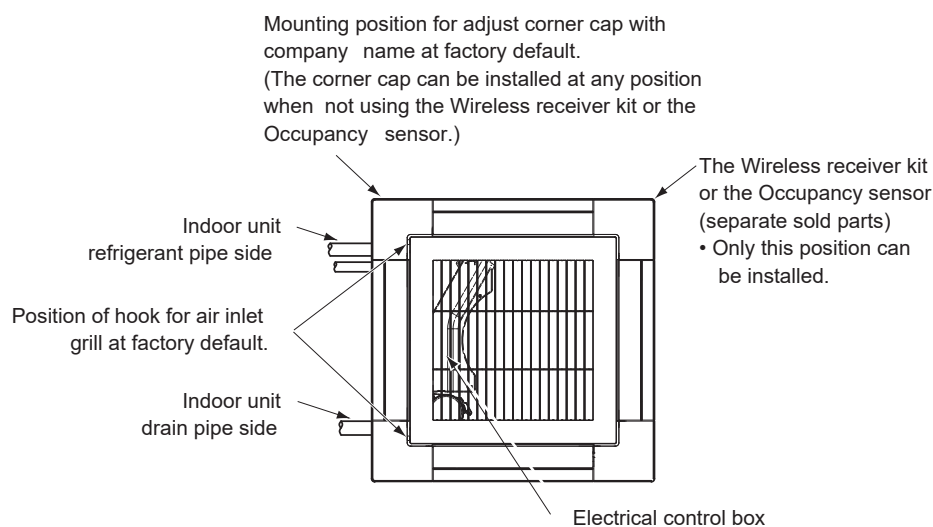
1.1 Ceiling Panel (Standard) : RBC-U32PGP-E



Wireless remote controller kit for standard panel : 40VCI4--7-TEE



1.2 Ceiling Panel (Smart design: White) : RBC-U33P-E



Wireless remote controller kit for Smart Design panel : 40VCI7--8-TEE



Occupancy sensor kit for Smart Design panel : 40VSUM--S8F-TEE

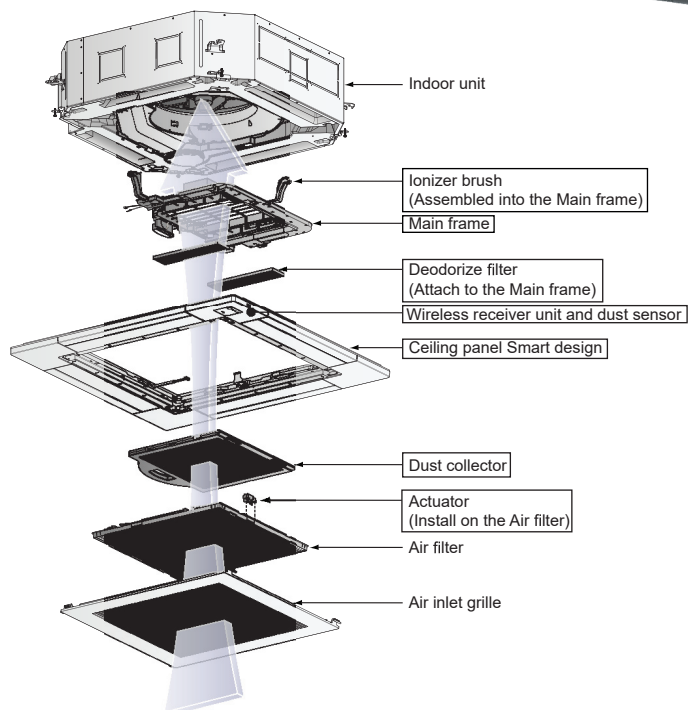


Air Purifier kit (HTM) for Design panel : TCB-EAPC1UHP-E

*together with wireless receiver and dust sensor



INSTALLATION DIAGRAM OF AIR PURIFIER KIT

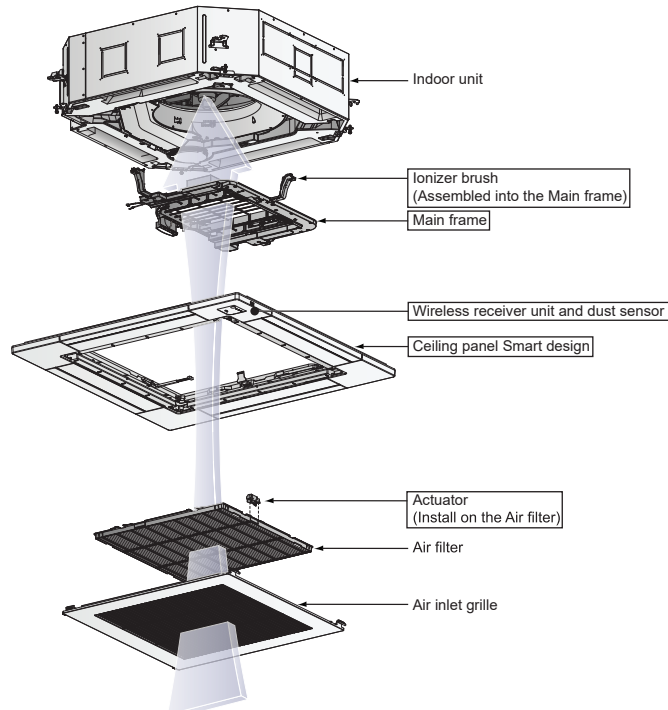


Air Purifier kit (MTM) for Design panel : TCB-EABC1UHP-E

*together with wireless receiver and dust sensor



INSTALLATION DIAGRAM OF AIR PURIFIER KIT



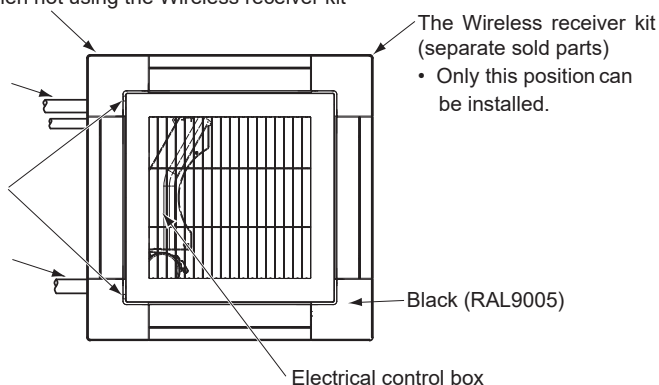
1.3 Ceiling Panel (Smart design: Black) : RBC-U33PB-E

Mounting position for adjust corner cap with company name at factory default.
(The corner cap can be installed at any position when not using the Wireless receiver kit)

Indoor unit
refrigerant pipe side

Position of hook for air inlet
grill at factory default.

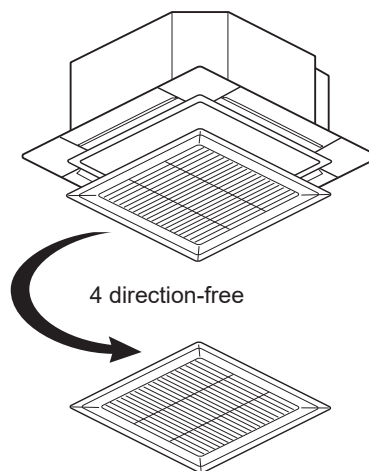
Indoor unit
drain pipe side



The Wireless receiver kit
(separate sold parts)
• Only this position can
be installed.

Black (RAL9005)

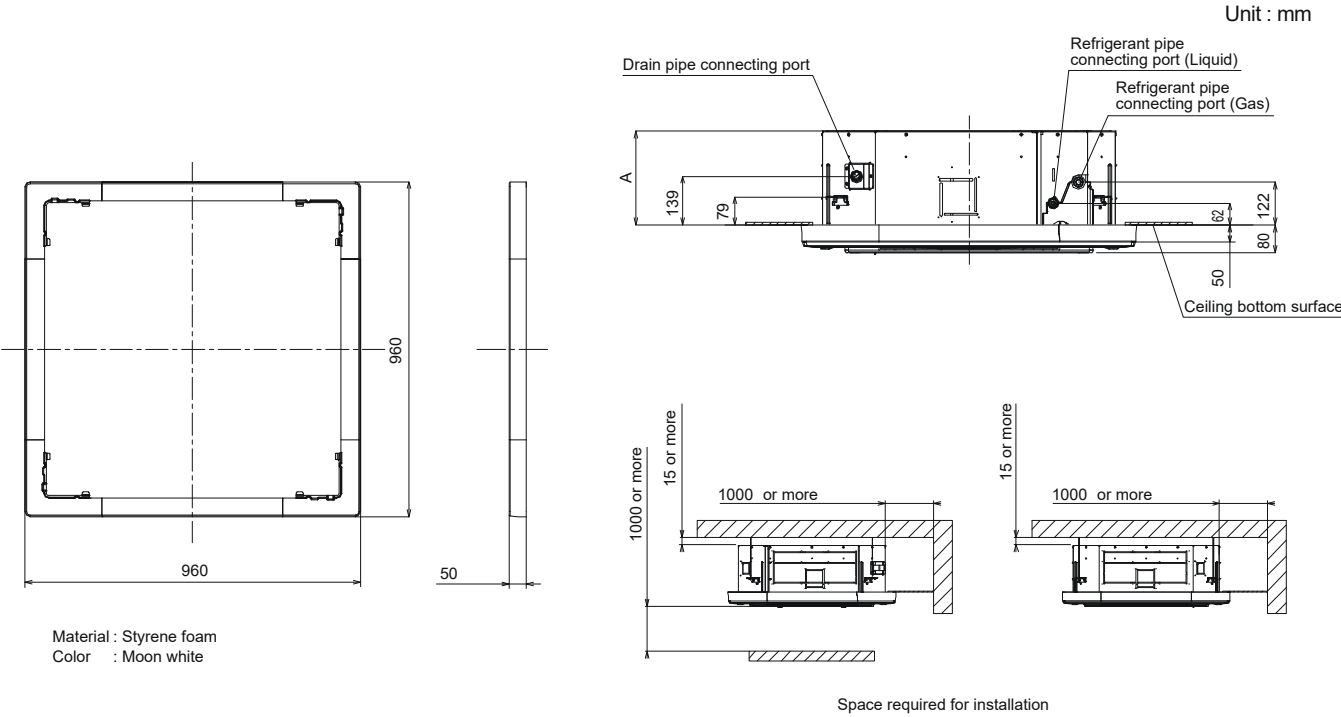
Electrical control box



Wireless remote controller kit for
Smart Design panel : RBC-AXU33UPB-E



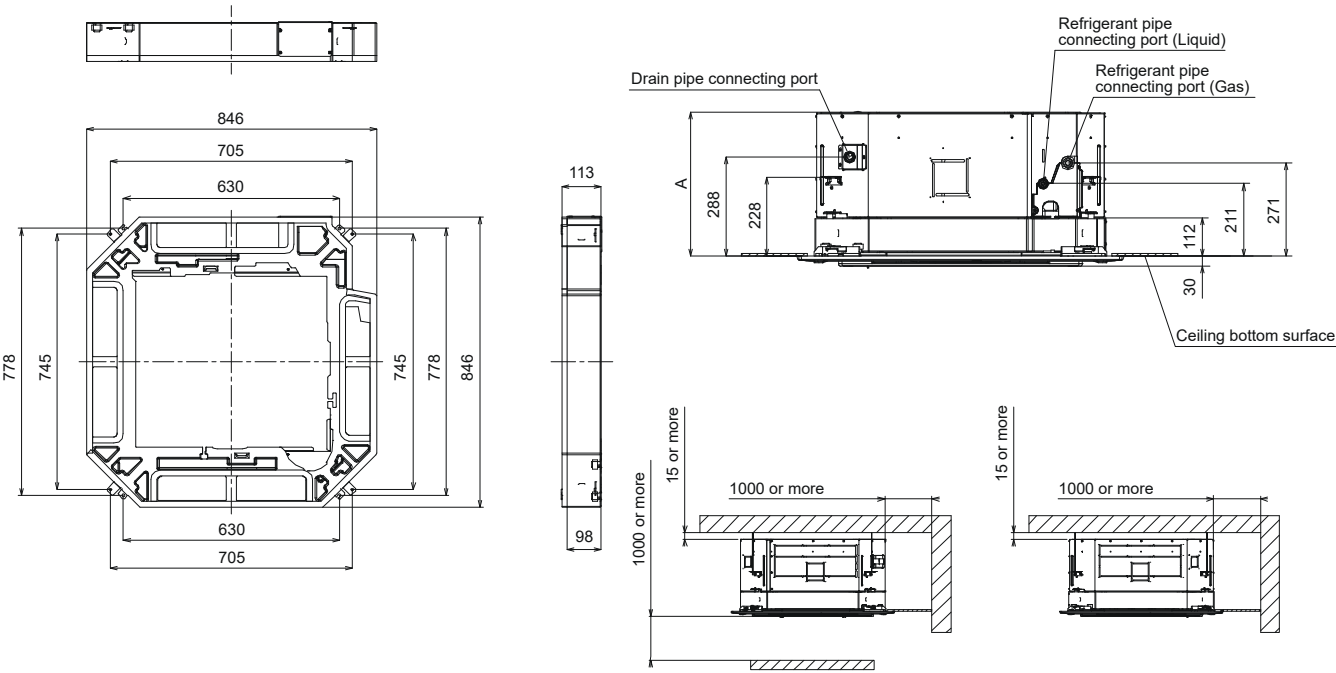
2. Spacer for height adjustment : TCB-SP1602UE



	A
009 to 030 type	206
036 to 056 type	269

3. Fresh-air chamber : TCB-GFC1602UE

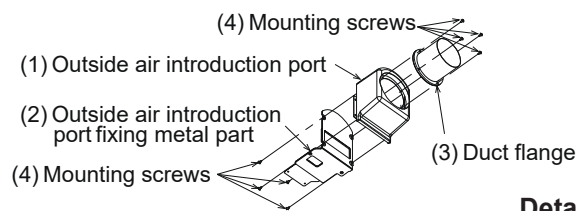
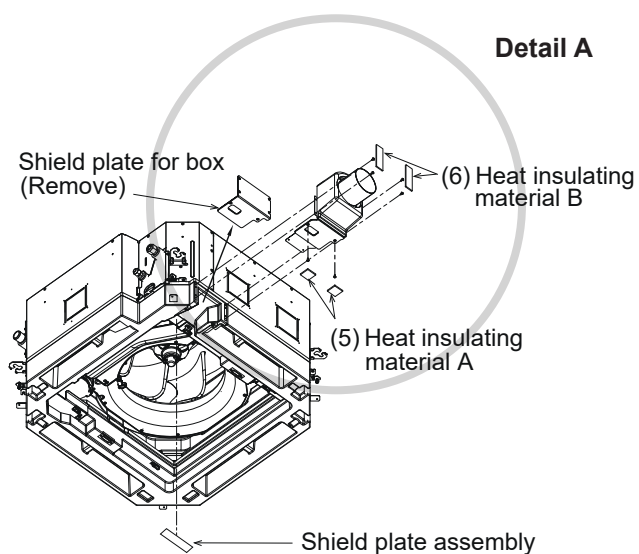
Unit : mm



Space required for installation

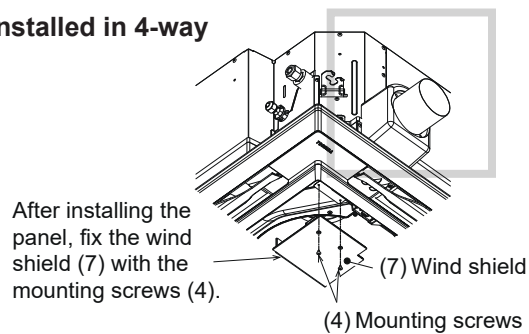
	A
009 to 030 type	356
036 to 056 type	419

4. Fresh-air inlet box : TCB-GB1602UE

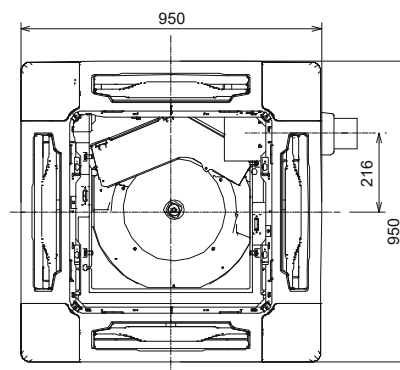
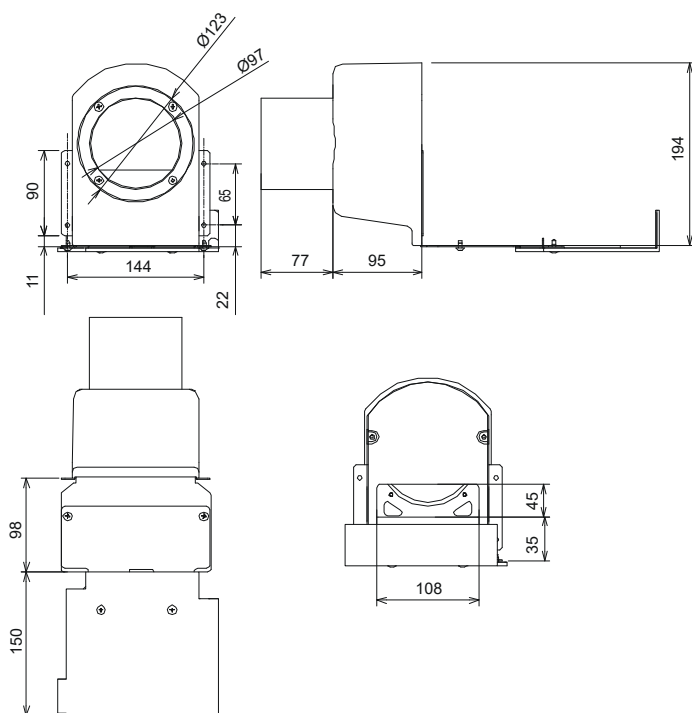


Detail A

Installed in 4-way



Dimension

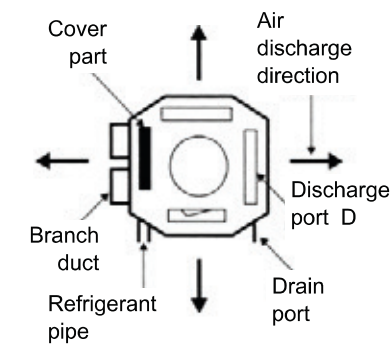


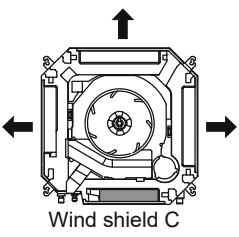
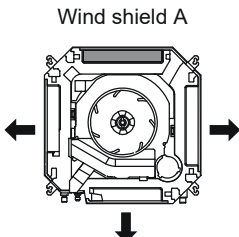
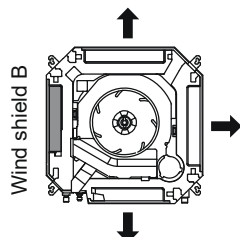
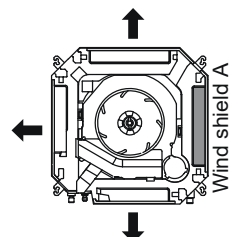
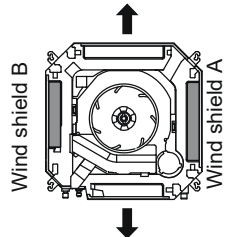
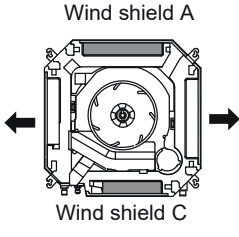
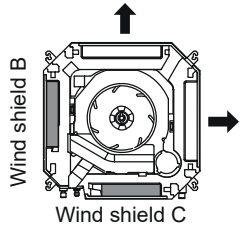
Unit: mm

NOTE

This inlet box shall be used with the fresh-air chamber.

5. Air discharge direction kit : TCB-BC1602UE

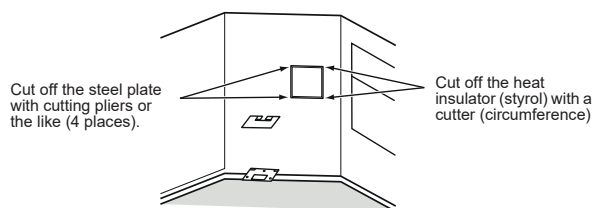


Limited models only				
3-way air flow				
	Available for all models	Available for all models	Available only for 009 to 030 type	Available only for 036 to 056 type
2-way air flow				
	Available for all models	Available for all models	Available for all models	

6. Auxiliary fresh air flange : TCB-FF101URE2

Installation

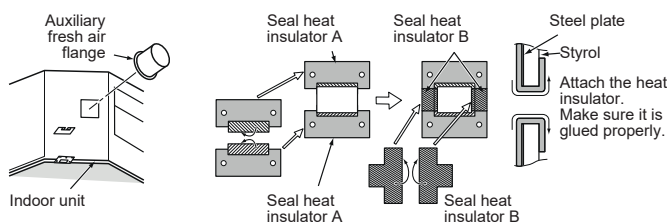
1. Using the knockout of the indoor unit main body, as a marker, cut off the flange with the heat insulator (styrol) with cutting pliers or cutter.



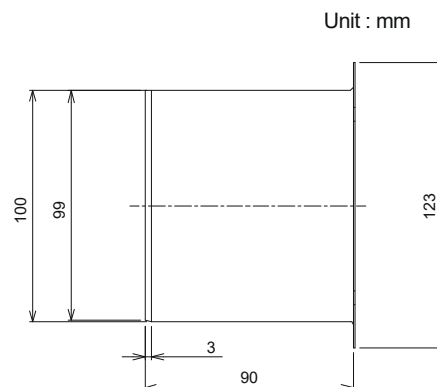
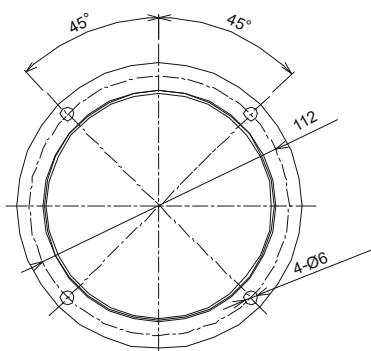
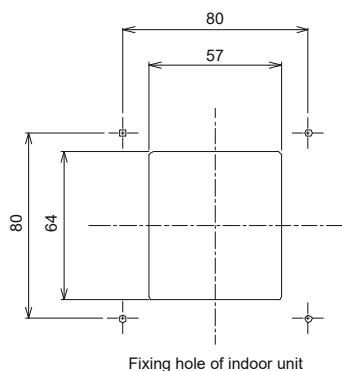
NOTE

When cutting off the styrol inside, be careful not to insert the cutter blade deeper than 30 mm. (Damage to the drain pan inside can cause water leakage.)
Wear safety globes to carry out these works. Do not attempt with bare hands.

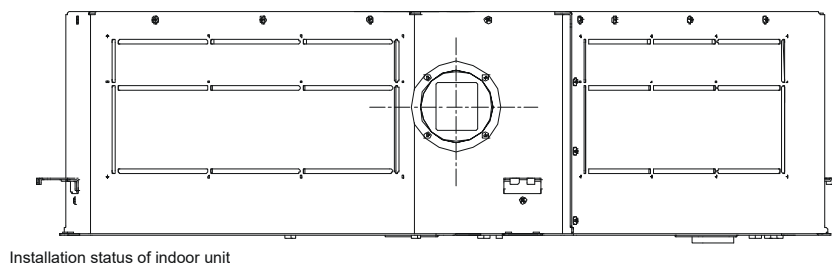
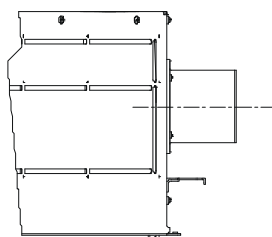
2. A gap between the styrol and steel plate may cause a trouble such as condensation. Be sure to attach the attached heat insulator A first with it aligned to the screw hole, and then attach B, according to the right figure.
3. Install the auxiliary fresh air flange to the indoor unit main body with attached 4 fixing screws.



Dimension



Unit : mm

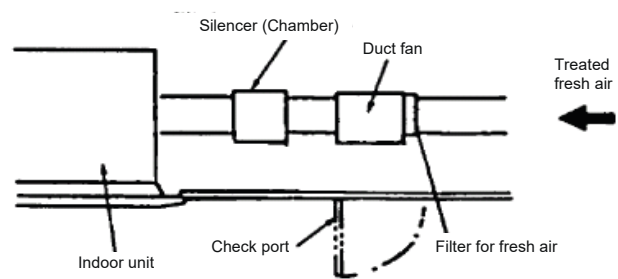


Installation status of indoor unit

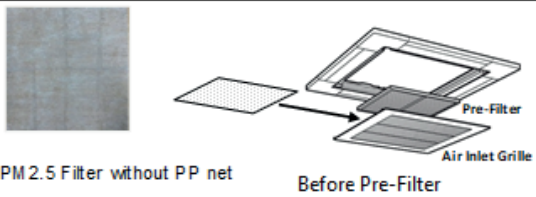
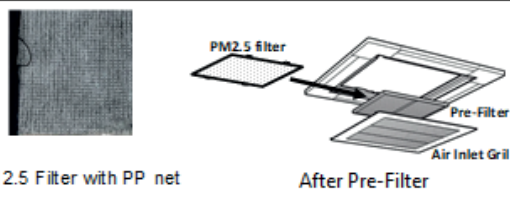
Duct fan

In order to take fresh air, provide the duct fan separately.

1. Install the filter for fresh air
2. Provide the check port beneath the duct fan for maintenance.
3. Provide the silencer to prevent the effect of noise.



7. PM2.5 filter

	TCB-PLFC1UPE -120	TCB-PLFC2UPE -80
Appearance and installation image	 PM2.5 Filter without PP net Before Pre-Filter	 PM2.5 Filter with PP net After Pre-Filter
Replacement	Change filter	Change filter and reuse strap
Lifetime*	2-3 months	3-4 months

* Lifetime is depend on Air Quality in each area. Recommended to change PM2.5 filter when air flow, cooling or heating Capacity is not enough or filter color reach replacement index color.

Particle reduction efficiency of filter

Reference filter specification from supplier based on JIS B9908 Standard (EFR15 is PM2.5 Filter material)

Item	Air speed	Air volume of 4-way cassette	Pressure drop	Particle reduction efficiency*		
				0.3 - 0.5 μm	0.5 - 1.0 μm	1.0 - 2.5 μm
EFR15	100 cm/sec	900 m ³ /h	14 Pa	19.5 %	41.9 %	49.8 %
	200 cm/sec	1800 m ³ /h	36 Pa	16.9 %	39.1 %	51.8 %

* PM2.5 is defined Particulate Matter with a particle size of 2.5 μm or less.

This efficiency represents ratio at which particle can be collected by 1 time filter passing.

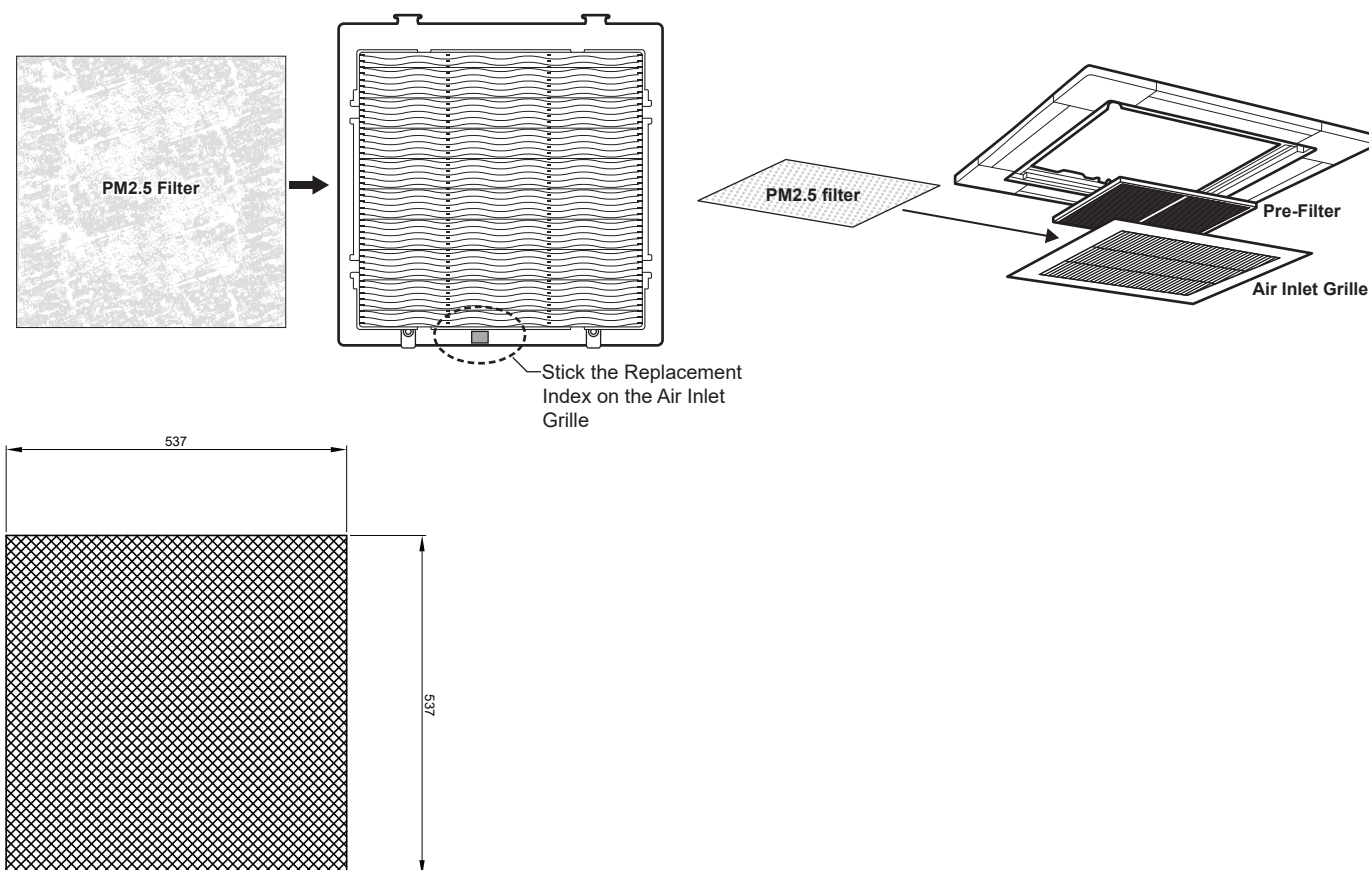
With continuous use, it is possible to realize higher particle collection ratio than mention ratio.

PM2.5 Filter : TCB-PLFC1UPE-120 (Before Pre-filter)

Fan Operation Mode	Factory default	High Ceiling Mode (Type3)
Air volume flow rate*	Drop 20%	Drop 10%
Cooling capacity	Drop 4%	Drop 3%
Heating capacity	Drop 2%	Drop 1%

*Air volume will vary depending on capacity of indoor unit, setting mode, operating temperature conditions.

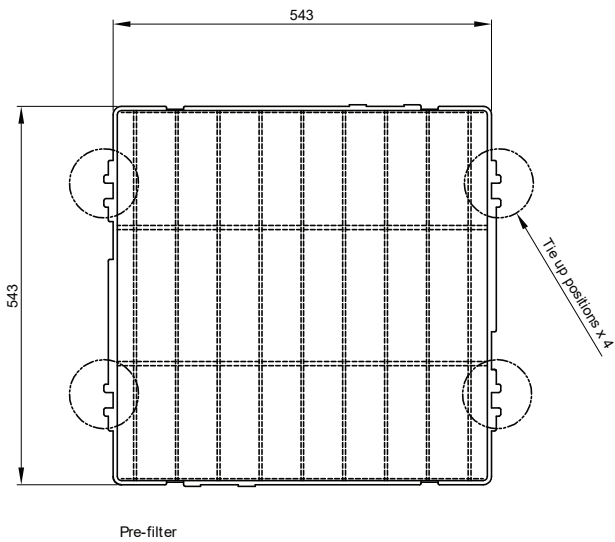
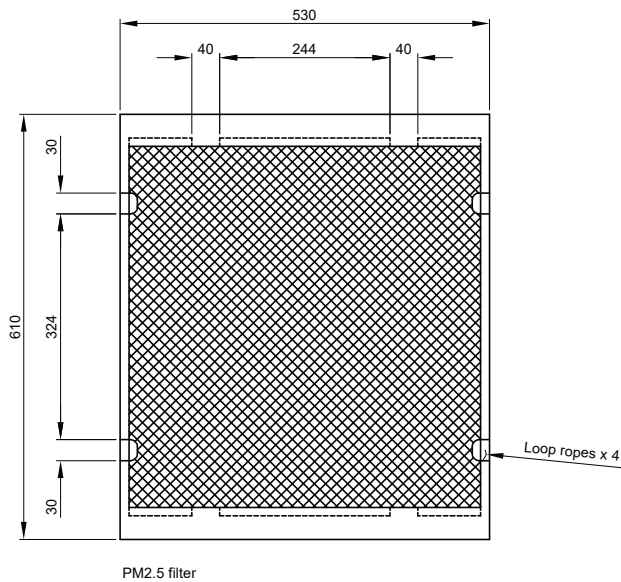
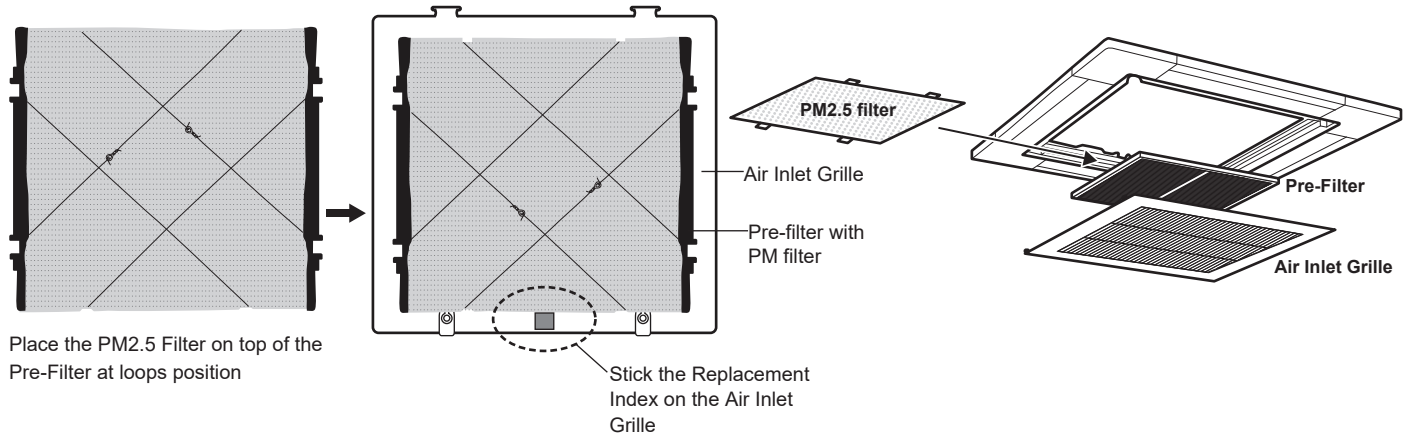
Place the PM2.5 Filter into the Air Inlet Grille.



PM2.5 Filter : TCB-PLFC2UPE-80 (After Pre-filter)

Fan Operation Mode	Factory default	High Ceiling Mode (Type3)
Air volume flow rate*	Drop 25%	Drop 15%
Cooling capacity	Drop 6%	Drop 5%
Heating capacity	Drop 4%	Drop 3%

*Air volume will vary depending on capacity of indoor unit, setting mode, operating temperature conditions.



2-2. Standard Duct Type

2-2-1. Specifications

2-2-2. Dimension

2-2-3. Wiring Diagrams

2-2-4. Sensible Capacity Table

2-2-5. Part Load Performance

2-2-6. Fan Static Characteristic

2-2-7. Sound Characteristics (NC Curve)

2-2-8. Accessories

2-2-1. Specifications

Standard Duct Type

Model		Indoor unit		RAV-HM1101BTP-E/TR	RAV-HM1401BTP-E/TR	RAV-HM1601BTP-E/TR	
		Outdoor unit		RAV-GV1101AT8P-E/TR	RAV-GV1401AT8P-E/TR	RAV-GV1601AT8P-E1/TR	
Cooling capacity				(kW)	9.5	12.1	13.0
				(kW)	3.0 - 11.2	3.0 - 14.0	3.0 - 15.0
Heating capacity				(kW)	10.0	12.3	13.5
				(kW)	3.0 -13.0	3.0 - 16.0	3.0 -18.0
Power supply				3 phase 380V-415V/50Hz, 380V/60Hz			
Electrical characteristics	Cooling	Power consumption		(kW)	3.07	4.90	5.40
		EER			3.10	2.47	2.41
		PdesignC			9.5	12.1	13.0
		SEER	No.	5.30	5.10	4.90	
			Grade (Lot10)	A	-	-	
	Heating	Power consumption		(kW)	2.94	4.10	4.00
		COP			3.40	3.00	3.38
		PdesignH			7.6	7.8	8.0
		SCOP	No.	3.80	3.80	4.15	
			Grade (Lot10)	A	-	-	
Indoor unit							
Appearance		Main unit		Zinc hot dipping hot steel			
Outer dimension		Main unit	Height	(mm)	275		
			Width	(mm)	1,400		
			Depth	(mm)	750		
Total weight		Main unit		(kg)	41		
Fan unit		Fan		Centrifugal fan			
		Air Flow	H/M/L	(m3/h)	2100-1650-1260	2100-1650-1260	2100-1650-1260
External static pressure		Standard (Upper - Lower)		(Pa)	40 (150 - 30)	50 (150 - 30)	
Air filter				Standard filter (Long life filter)			
Sound pressure level			H/M/L	(dB)	40/36/33	40/36/33	40/36/33
Sound power level			H/M/L	(dB)	55/51/48	55/51/48	55/51/48

*1 : The cooling capacities and electrical characteristics are measured under the conditions specified by JIS B 8615 based on the reference piping.
The reference piping consists of 5 m of main piping and 2.5 m of branch piping connected with 0 meter height.

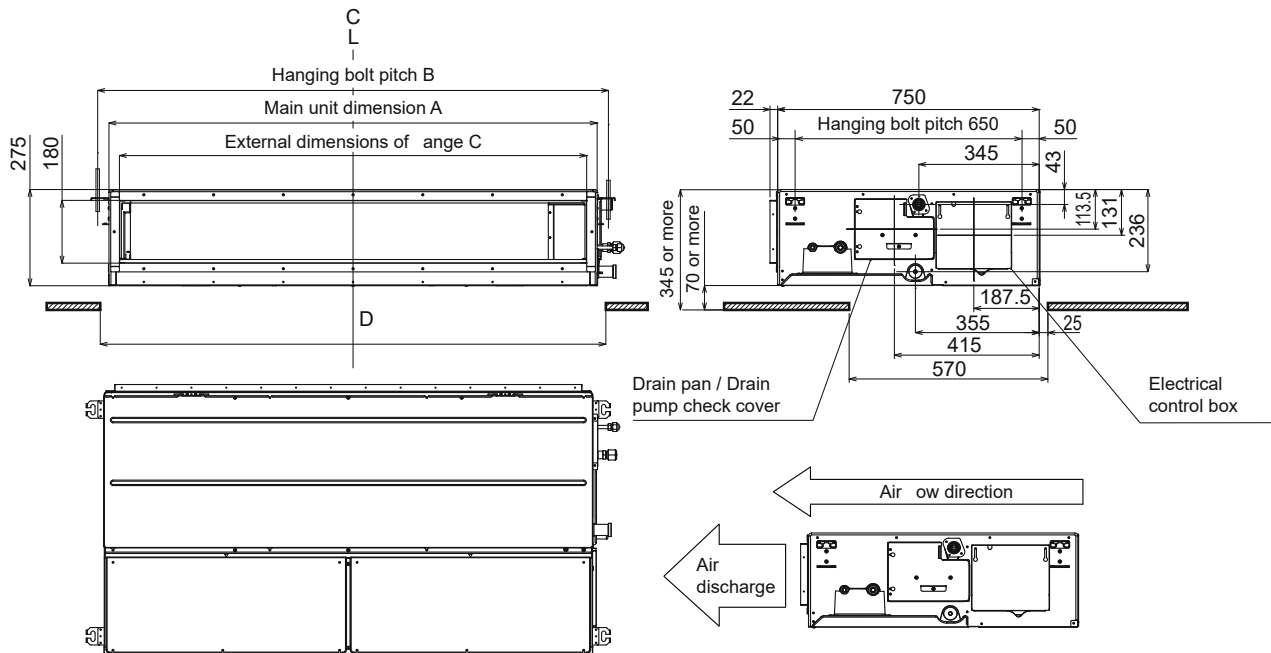
*2 : The sound level are measured in an anechoic chamber in accordance with JIS B 8616. Normally, the values measured in the actual operating environment become larger than the indicated values due to the effects of external sound.

Note :

Rated conditions Cooling : Indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB
Heating : Indoor air temperature 20°C DB, Outdoor air temperature 35°C DB

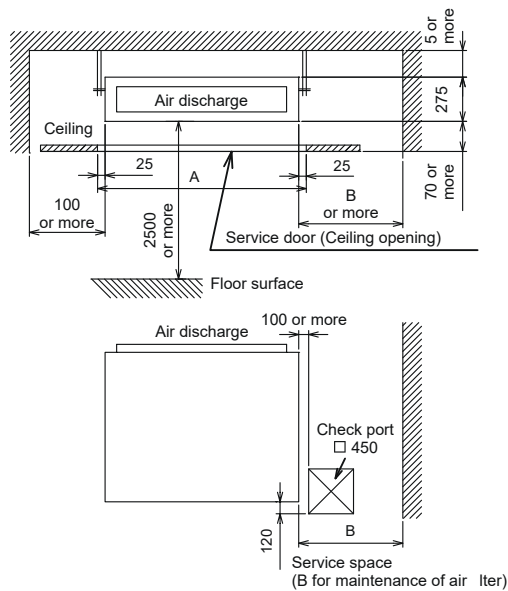
2-2-2. Dimension

RAV-HM*_1BTP-E / TR (*110 / 140 / 160)

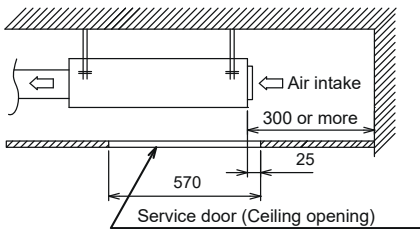
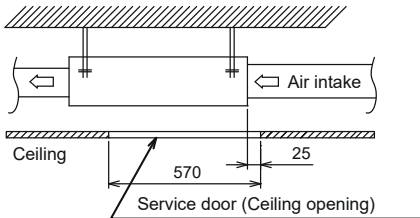
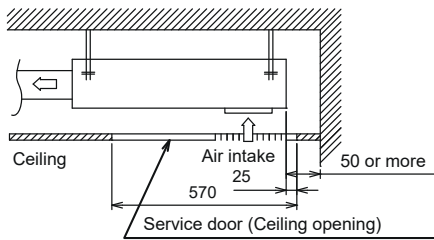


Dimension

Model	A	B	C	D
HM110, HM140, HM160 type	1400	1465	1340	1450

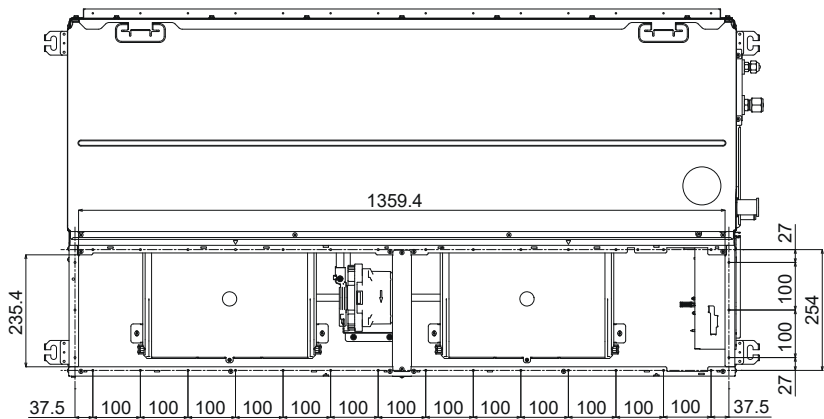


Model	A	B
HM110, HM140, HM160 type	1450	700

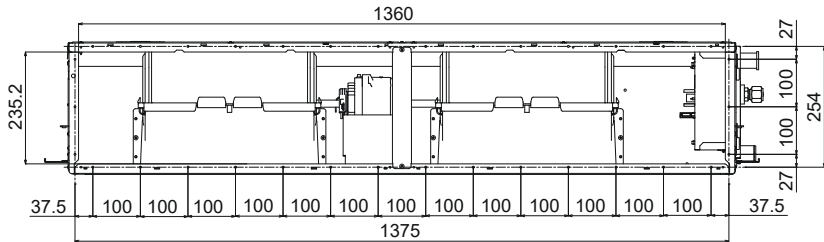


HM110, HM140, HM160 type

<Under air intake>

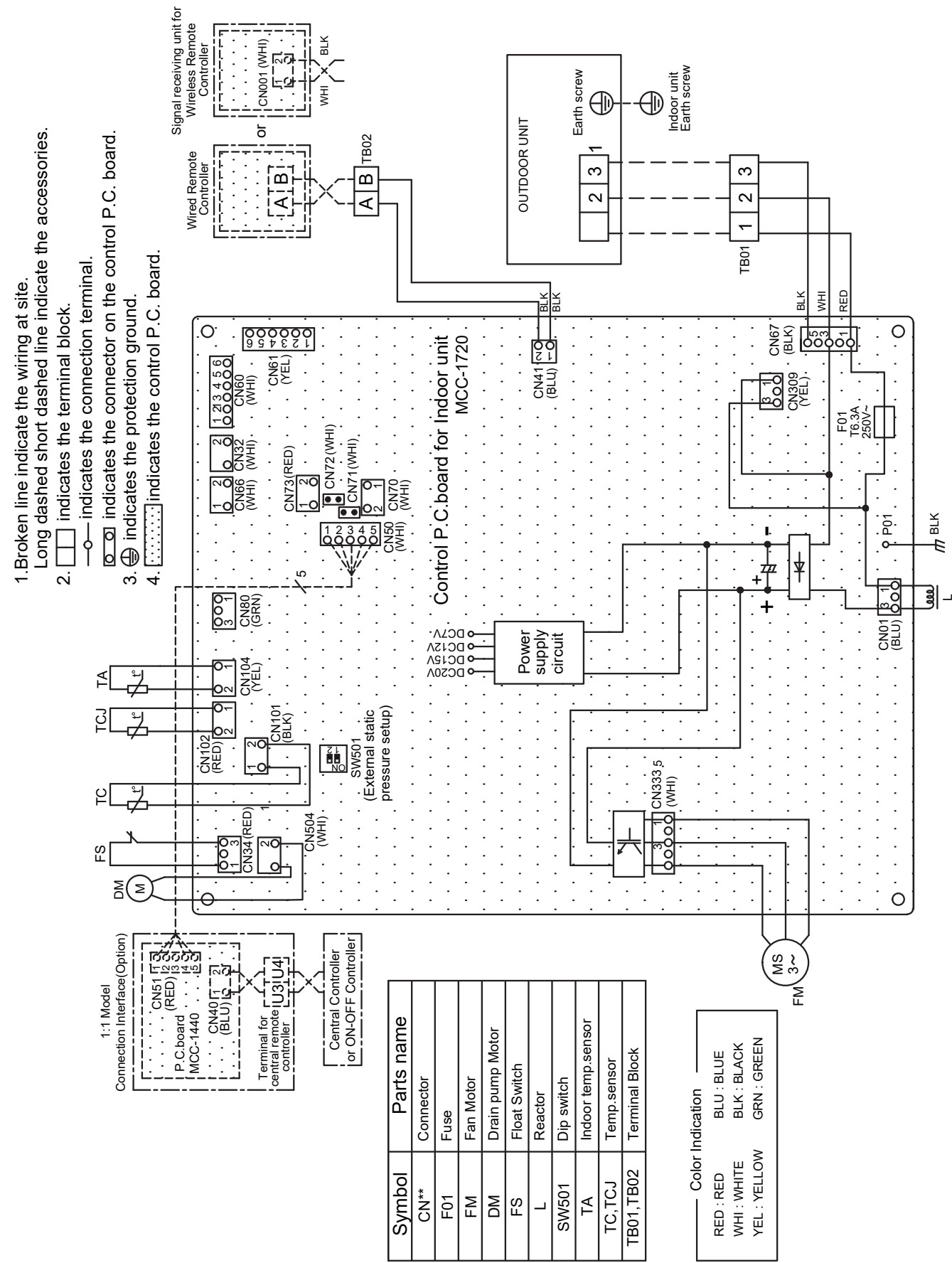


<Back air intake>



2-2-3. Wiring Diagrams

RAV-HM*_1BTP-E / TR (*110 / 140 / 160)



2-2-4. Sensible Capacity Table

Product models : RAV-HM1101BTP-E / TR ; RAV-GV1101AT8P-E / TR

Specification of product at standard condition

Standard Condition

Indoor	27°C (DB) / 19°C (WB)
Outdoor	35°C (DB) / 24°C (WB)

Total Cooling Capacity (TC)	9.50 kW
Sensible Heat Capacity (SHC)	7.89 kW

Outdoor air temperature DB (°C)	Indoor air temperature															
	20.0°C (DB) 14.0°C (WB)		23.0°C (DB) 16.0°C (WB)		26.0°C (DB) 18.0°C (WB)		27.0°C (DB) 19.0°C (WB)		28.0°C (DB) 20.0°C (WB)		30.0°C (DB) 22.0°C (WB)		32.0°C (DB) 24.0°C (WB)			
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
10	10.3	9.2	11.4	9.8	12.2	10.4	12.6	10.4	12.9	10.4	13.7	10.4	14.3	10.2		
11	10.2	9.1	11.3	9.7	12.1	10.3	12.4	10.3	12.8	10.3	13.5	10.3	14.2	10.1		
12	10.1	9.0	11.2	9.6	11.9	10.2	12.3	10.2	12.7	10.2	13.4	10.1	14.0	10.0		
13	10.0	8.9	11.0	9.5	11.8	10.1	12.2	10.1	12.5	10.1	13.3	10.0	13.9	9.9		
14	9.9	8.8	10.9	9.4	11.7	10.0	12.1	10.0	12.4	10.0	13.1	9.9	13.7	9.8		
15	9.8	8.7	10.8	9.3	11.6	9.9	11.9	9.9	12.3	9.9	13.0	9.8	13.6	9.7		
16	9.7	8.6	10.7	9.2	11.5	9.8	11.8	9.8	12.2	9.8	12.9	9.7	13.5	9.6		
17	9.6	8.6	10.6	9.1	11.4	9.7	11.7	9.7	12.0	9.7	12.7	9.6	13.3	9.5		
18	9.5	8.5	10.5	9.0	11.2	9.6	11.6	9.6	11.9	9.6	12.6	9.5	13.2	9.4		
19	9.4	8.4	10.4	8.9	11.1	9.5	11.5	9.5	11.8	9.5	12.5	9.4	13.0	9.3		
20	9.3	8.3	10.3	8.8	11.0	9.4	11.3	9.4	11.7	9.4	12.3	9.3	12.9	9.2		
21	9.2	8.2	10.2	8.8	10.9	9.3	11.2	9.3	11.5	9.3	12.2	9.2	12.8	9.1		
22	9.1	8.1	10.1	8.7	10.8	9.2	11.1	9.2	11.4	9.2	12.1	9.1	12.6	9.0		
23	9.0	8.0	9.9	8.6	10.6	9.1	11.0	9.1	11.3	9.1	11.9	9.0	12.5	8.9		
24	8.9	7.9	9.8	8.5	10.5	9.0	10.8	9.0	11.2	9.0	11.8	8.9	12.4	8.8		
25	8.8	7.8	9.7	8.4	10.4	8.9	10.7	8.9	11.0	8.9	11.7	8.8	12.2	8.7		
26	8.7	7.8	9.6	8.3	10.3	8.8	10.6	8.8	10.9	8.8	11.5	8.7	12.1	8.6		
27	8.6	7.7	9.5	8.2	10.2	8.7	10.5	8.7	10.8	8.7	11.4	8.6	11.9	8.5		
28	8.5	7.6	9.4	8.1	10.1	8.6	10.4	8.6	10.6	8.6	11.3	8.5	11.8	8.4		
29	8.4	7.5	9.3	8.0	9.9	8.5	10.2	8.5	10.5	8.5	11.1	8.4	11.7	8.3		
30	8.3	7.4	9.2	7.9	9.8	8.4	10.1	8.4	10.4	8.4	11.0	8.3	11.5	8.2		
31	8.2	7.3	9.1	7.8	9.7	8.3	10.0	8.3	10.3	8.3	10.9	8.2	11.4	8.1		
32	8.1	7.2	9.0	7.7	9.6	8.2	9.9	8.2	10.2	8.2	10.8	8.1	11.2	8.0		
33	8.0	7.1	8.8	7.6	9.5	8.1	9.7	8.1	10.0	8.1	10.6	8.0	11.1	7.9		
34	7.9	7.0	8.7	7.5	9.3	8.0	9.6	8.0	9.9	8.0	10.5	7.9	11.0	7.8		
35	7.8	7.0	8.6	7.4	9.2	7.9	9.5	7.9	9.8	7.9	10.3	7.8	10.8	7.7		
36	7.7	6.9	8.5	7.3	9.1	7.8	9.4	7.8	9.6	7.8	10.2	7.7	10.7	7.6		
37	7.6	6.8	8.4	7.2	9.0	7.7	9.3	7.7	9.5	7.7	10.1	7.6	10.5	7.5		
38	7.5	6.7	8.3	7.1	8.9	7.6	9.1	7.6	9.4	7.6	9.9	7.5	10.4	7.4		
39	7.4	6.6	8.2	7.0	8.8	7.5	9.0	7.5	9.3	7.5	9.8	7.4	10.3	7.3		
40	7.3	6.5	8.1	6.9	8.6	7.4	8.9	7.4	9.1	7.4	9.7	7.3	10.1	7.2		
41	7.2	6.4	8.0	6.8	8.5	7.3	8.8	7.3	9.0	7.3	9.6	7.2	10.0	7.1		
42	7.1	6.3	7.8	6.8	8.4	7.2	8.7	7.2	8.9	7.2	9.4	7.1	9.9	7.0		
43	7.0	6.2	7.7	6.7	8.3	7.1	8.5	7.1	8.8	7.1	9.3	7.0	9.7	6.9		
44	6.9	6.1	7.6	6.6	8.2	7.0	8.4	7.0	8.6	7.0	9.2	6.9	9.6	6.8		
45	6.8	6.1	7.5	6.5	8.0	6.9	8.3	6.9	8.5	6.9	9.0	6.8	9.4	6.7		
46	6.7	6.0	7.4	6.4	7.9	6.8	8.2	6.8	8.4	6.8	8.9	6.7	9.3	6.6		

Product models : RAV-HM1401BTP-E / TR ; RAV-GV1401AT8P-E / TR

Specification of product at standard condition

Standard Condition	Indoor	27°C (DB) / 19°C (WB)	Total Cooling Capacity (TC)	12.10 kW
	Outdoor	35°C (DB) / 24°C (WB)	Sensible Heat Capacity (SHC)	10.04 kW

Outdoor air temperature DB (°C)	Indoor air temperature													
	20.0°C (DB) 14.0°C (WB)		23.0°C (DB) 16.0°C (WB)		26.0°C (DB) 18.0°C (WB)		27.0°C (DB) 19.0°C (WB)		28.0°C (DB) 20.0°C (WB)		30.0°C (DB) 22.0°C (WB)		32.0°C (DB) 24.0°C (WB)	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
10	13.1	11.7	14.5	12.5	15.5	13.3	16.0	13.3	16.4	13.3	17.4	13.2	18.2	13.0
11	13.0	11.6	14.4	12.4	15.4	13.1	15.8	13.1	16.3	13.1	17.2	13.1	18.0	12.8
12	12.9	11.5	14.2	12.2	15.2	13.0	15.7	13.0	16.1	13.0	17.1	12.9	17.9	12.7
13	12.7	11.4	14.1	12.1	15.1	12.9	15.5	12.9	16.0	12.9	16.9	12.8	17.7	12.6
14	12.6	11.2	13.9	12.0	14.9	12.8	15.4	12.7	15.8	12.8	16.7	12.7	17.5	12.5
15	12.5	11.1	13.8	11.9	14.8	12.6	15.2	12.6	15.6	12.6	16.6	12.5	17.3	12.3
16	12.4	11.0	13.7	11.8	14.6	12.5	15.1	12.5	15.5	12.5	16.4	12.4	17.1	12.2
17	12.2	10.9	13.5	11.6	14.5	12.4	14.9	12.4	15.3	12.4	16.2	12.3	17.0	12.1
18	12.1	10.8	13.4	11.5	14.3	12.2	14.7	12.2	15.2	12.2	16.1	12.2	16.8	12.0
19	12.0	10.7	13.2	11.4	14.2	12.1	14.6	12.1	15.0	12.1	15.9	12.0	16.6	11.8
20	11.9	10.6	13.1	11.3	14.0	12.0	14.4	12.0	14.8	12.0	15.7	11.9	16.4	11.7
21	11.7	10.4	12.9	11.1	13.9	11.9	14.3	11.8	14.7	11.8	15.5	11.8	16.3	11.6
22	11.6	10.3	12.8	11.0	13.7	11.7	14.1	11.7	14.5	11.7	15.4	11.6	16.1	11.5
23	11.5	10.2	12.7	10.9	13.6	11.6	14.0	11.6	14.4	11.6	15.2	11.5	15.9	11.3
24	11.3	10.1	12.5	10.8	13.4	11.5	13.8	11.5	14.2	11.5	15.0	11.4	15.7	11.2
25	11.2	10.0	12.4	10.7	13.3	11.3	13.7	11.3	14.0	11.3	14.9	11.3	15.6	11.1
26	11.1	9.9	12.2	10.5	13.1	11.2	13.5	11.2	13.9	11.2	14.7	11.1	15.4	10.9
27	11.0	9.8	12.1	10.4	13.0	11.1	13.3	11.1	13.7	11.1	14.5	11.0	15.2	10.8
28	10.8	9.7	12.0	10.3	12.8	11.0	13.2	10.9	13.6	11.0	14.4	10.9	15.0	10.7
29	10.7	9.5	11.8	10.2	12.7	10.8	13.0	10.8	13.4	10.8	14.2	10.7	14.8	10.6
30	10.6	9.4	11.7	10.1	12.5	10.7	12.9	10.7	13.2	10.7	14.0	10.6	14.7	10.4
31	10.4	9.3	11.5	9.9	12.4	10.6	12.7	10.6	13.1	10.6	13.9	10.5	14.5	10.3
32	10.3	9.2	11.4	9.8	12.2	10.4	12.6	10.4	12.9	10.4	13.7	10.4	14.3	10.2
33	10.2	9.1	11.3	9.7	12.1	10.3	12.4	10.3	12.8	10.3	13.5	10.2	14.1	10.1
34	10.1	9.0	11.1	9.6	11.9	10.2	12.3	10.2	12.6	10.2	13.4	10.1	14.0	9.9
35	9.9	8.9	11.0	9.5	11.8	10.0	12.1	10.0	12.4	10.0	13.2	10.0	13.8	9.8
36	9.8	8.7	10.8	9.3	11.6	9.9	11.9	9.9	12.3	9.9	13.0	9.8	13.6	9.7
37	9.7	8.6	10.7	9.2	11.5	9.8	11.8	9.8	12.1	9.8	12.8	9.7	13.4	9.6
38	9.6	8.5	10.5	9.1	11.3	9.7	11.6	9.7	12.0	9.7	12.7	9.6	13.3	9.4
39	9.4	8.4	10.4	9.0	11.2	9.5	11.5	9.5	11.8	9.5	12.5	9.5	13.1	9.3
40	9.3	8.3	10.3	8.8	11.0	9.4	11.3	9.4	11.6	9.4	12.3	9.3	12.9	9.2
41	9.2	8.2	10.1	8.7	10.9	9.3	11.2	9.3	11.5	9.3	12.2	9.2	12.7	9.1
42	9.0	8.1	10.0	8.6	10.7	9.1	11.0	9.1	11.3	9.1	12.0	9.1	12.5	8.9
43	8.9	7.9	9.9	8.5	10.5	9.0	10.9	9.0	11.2	9.0	11.8	9.0	12.4	8.8
44	8.8	7.8	9.7	8.4	10.4	8.9	10.7	8.9	11.0	8.9	11.7	8.8	12.2	8.7
45	8.7	7.7	9.6	8.2	10.2	8.8	10.6	8.8	10.9	8.8	11.5	8.7	12.0	8.6
46	8.5	7.6	9.4	8.1	10.1	8.6	10.4	8.6	10.7	8.6	11.3	8.6	11.8	8.4

Product models : RAV-HM1601BTP-E / TR ; RAV-GV1601AT8P-E1 / TR

Specification of product at standard condition

Standard Condition	Indoor	27°C (DB) / 19°C (WB)	Total Cooling Capacity (TC)	13.00	kW
	Outdoor	35°C (DB) / 24°C (WB)	Sensible Heat Capacity (SHC)	10.79	kW

Outdoor air temperature DB (°C)	Indoor air temperature													
	20.0°C (DB) 14.0°C (WB)		23.0°C (DB) 16.0°C (WB)		26.0°C (DB) 18.0°C (WB)		27.0°C (DB) 19.0°C (WB)		28.0°C (DB) 20.0°C (WB)		30.0°C (DB) 22.0°C (WB)		32.0°C (DB) 24.0°C (WB)	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
10	14.1	12.6	15.6	13.4	16.7	14.3	17.2	14.3	17.7	14.3	18.7	14.2	19.6	13.9
11	14.0	12.4	15.4	13.3	16.5	14.1	17.0	14.1	17.5	14.1	18.5	14.0	19.4	13.8
12	13.8	12.3	15.3	13.2	16.4	14.0	16.8	14.0	17.3	14.0	18.3	13.9	19.2	13.7
13	13.7	12.2	15.1	13.0	16.2	13.8	16.7	13.8	17.1	13.8	18.2	13.7	19.0	13.5
14	13.6	12.1	15.0	12.9	16.0	13.7	16.5	13.7	17.0	13.7	18.0	13.6	18.8	13.4
15	13.4	12.0	14.8	12.8	15.9	13.6	16.3	13.6	16.8	13.6	17.8	13.5	18.6	13.3
16	13.3	11.8	14.7	12.6	15.7	13.4	16.2	13.4	16.6	13.4	17.6	13.3	18.4	13.1
17	13.1	11.7	14.5	12.5	15.5	13.3	16.0	13.3	16.5	13.3	17.4	13.2	18.2	13.0
18	13.0	11.6	14.4	12.4	15.4	13.2	15.8	13.1	16.3	13.2	17.3	13.1	18.0	12.8
19	12.9	11.5	14.2	12.2	15.2	13.0	15.7	13.0	16.1	13.0	17.1	12.9	17.9	12.7
20	12.7	11.3	14.1	12.1	15.1	12.9	15.5	12.9	15.9	12.9	16.9	12.8	17.7	12.6
21	12.6	11.2	13.9	12.0	14.9	12.7	15.3	12.7	15.8	12.7	16.7	12.7	17.5	12.4
22	12.5	11.1	13.8	11.8	14.7	12.6	15.2	12.6	15.6	12.6	16.5	12.5	17.3	12.3
23	12.3	11.0	13.6	11.7	14.6	12.5	15.0	12.5	15.4	12.5	16.3	12.4	17.1	12.2
24	12.2	10.9	13.5	11.6	14.4	12.3	14.8	12.3	15.3	12.3	16.2	12.2	16.9	12.0
25	12.0	10.7	13.3	11.5	14.3	12.2	14.7	12.2	15.1	12.2	16.0	12.1	16.7	11.9
26	11.9	10.6	13.2	11.3	14.1	12.0	14.5	12.0	14.9	12.0	15.8	12.0	16.5	11.8
27	11.8	10.5	13.0	11.2	13.9	11.9	14.3	11.9	14.7	11.9	15.6	11.8	16.3	11.6
28	11.6	10.4	12.9	11.1	13.8	11.8	14.2	11.8	14.6	11.8	15.4	11.7	16.1	11.5
29	11.5	10.2	12.7	10.9	13.6	11.6	14.0	11.6	14.4	11.6	15.3	11.5	16.0	11.4
30	11.4	10.1	12.5	10.8	13.4	11.5	13.8	11.5	14.2	11.5	15.1	11.4	15.8	11.2
31	11.2	10.0	12.4	10.7	13.3	11.4	13.7	11.3	14.1	11.4	14.9	11.3	15.6	11.1
32	11.1	9.9	12.2	10.5	13.1	11.2	13.5	11.2	13.9	11.2	14.7	11.1	15.4	10.9
33	10.9	9.8	12.1	10.4	12.9	11.1	13.3	11.1	13.7	11.1	14.5	11.0	15.2	10.8
34	10.8	9.6	11.9	10.3	12.8	10.9	13.2	10.9	13.5	10.9	14.3	10.9	15.0	10.7
35	10.7	9.5	11.8	10.2	12.6	10.8	13.0	10.8	13.4	10.8	14.2	10.7	14.8	10.5
36	10.5	9.4	11.6	10.0	12.5	10.7	12.8	10.6	13.2	10.7	14.0	10.6	14.6	10.4
37	10.4	9.3	11.5	9.9	12.3	10.5	12.7	10.5	13.0	10.5	13.8	10.5	14.4	10.3
38	10.3	9.1	11.3	9.8	12.1	10.4	12.5	10.4	12.9	10.4	13.6	10.3	14.2	10.1
39	10.1	9.0	11.2	9.6	12.0	10.2	12.3	10.2	12.7	10.2	13.4	10.2	14.0	10.0
40	10.0	8.9	11.0	9.5	11.8	10.1	12.2	10.1	12.5	10.1	13.3	10.0	13.9	9.9
41	9.9	8.8	10.9	9.4	11.7	10.0	12.0	10.0	12.3	10.0	13.1	9.9	13.7	9.7
42	9.7	8.7	10.7	9.2	11.5	9.8	11.8	9.8	12.2	9.8	12.9	9.8	13.5	9.6
43	9.6	8.5	10.6	9.1	11.3	9.7	11.7	9.7	12.0	9.7	12.7	9.6	13.3	9.5
44	9.4	8.4	10.4	9.0	11.2	9.6	11.5	9.5	11.8	9.5	12.5	9.5	13.1	9.3
45	9.3	8.3	10.3	8.8	11.0	9.4	11.3	9.4	11.7	9.4	12.3	9.3	12.9	9.2
46	9.2	8.2	10.1	8.7	10.8	9.3	11.2	9.3	11.5	9.3	12.2	9.2	12.7	9.1

2-2-5. Part load performance

Indoor units : RAV-HM1101BTP-E / TR

Outdoor unit : RAV-GV1101AT8P-E / TR

	Cooling		Heating	
	Capacity [Q (W)]	Power consumption [W (W)]	Capacity [Q (W)]	Power consumption [W (W)]
MINIMUM	3000	600	3000	600
RATING	9500	3065	10000	2940

Cooling

Outdoor temperature (°C)		Load(%)									
		100	90	80	70	60	50	40	30	20	10
46	Q	8160	6870	6110	5340	4580	3820	3060	2410	2410	2410
	W	3550	3350	2910	2450	2010	1560	1110	740	740	740
43	Q	8520	7670	6820	5970	5110	4260	3410	2690	2690	2690
	W	3420	3010	2610	2210	1810	1400	1000	670	670	670
40	Q	8890	8000	7110	6220	5330	4450	3560	2810	2810	2810
	W	3280	2890	2510	2120	1740	1350	960	640	640	640
35	Q	9500	8550	7600	6650	5700	4750	3800	3000	3000	3000
	W	3065	2700	2340	1980	1620	1260	900	600	600	600
30	Q	10110	9100	8090	7080	6070	5050	4040	3190	3190	3190
	W	2850	2510	2170	1840	1500	1170	840	560	560	560
25	Q	10720	9650	8580	7500	6430	5360	4290	3390	3390	3390
	W	2630	2310	2000	1700	1390	1080	770	510	510	510
20	Q	11330	10200	9060	7930	6800	5660	4530	3580	3580	3580
	W	2410	2120	1840	1550	1270	990	710	470	470	470

Heating

Outdoor temperature (°C)		Load(%)									
		100	90	80	70	60	50	40	30	20	10
20	Q	12570	11310	10060	8800	7540	6280	5030	3770	3770	3770
	W	3240	2880	2500	2140	1760	1400	1020	660	660	660
15	Q	11580	10420	9270	8110	6950	5790	4630	3470	3470	3470
	W	3120	2770	2410	2060	1700	1350	990	640	640	640
10	Q	10590	9530	8470	7420	6360	5300	4240	3180	3180	3180
	W	3010	2670	2320	1990	1640	1300	950	610	610	610
7	Q	10000	9000	8000	7000	6000	5000	4000	3000	3000	3000
	W	2940	2610	2270	1940	1600	1270	930	600	600	600
6	Q	8530	7680	6830	5970	5120	4270	3410	2560	2560	2560
	W	2740	2430	2120	1810	1490	1180	870	560	560	560
5	Q	8030	7230	6430	5620	4820	4020	3210	2410	2410	2410
	W	2720	2410	2110	1800	1480	1170	860	560	560	560
2	Q	7270	6550	5820	5090	4360	3640	2910	2180	2180	2180
	W	2610	2310	2020	1720	1420	1120	830	530	530	530
0	Q	6770	6090	5420	4730	4060	3390	2700	2030	2030	2030
	W	2530	2250	1960	1670	1380	1090	800	520	520	520
-5	Q	5500	4960	4410	3850	3300	2760	2200	1650	1650	1650
	W	2350	2080	1820	1550	1280	1010	750	480	480	480
-7	Q	5000	4500	4000	3500	3000	2500	2000	1500	1500	1500
	W	2270	2010	1760	1500	1240	980	720	460	460	460

Indoor units : RAV-HM1401BTP-E / TR

Outdoor unit : RAV-GV1401AT8P-E / TR

	Cooling		Heating	
	Capacity [Q (W)]	Power consumption [W (W)]	Capacity [Q (W)]	Power consumption [W (W)]
MINIMUM	3000	600	3000	600
RATING	12100	4900	12300	4100

Cooling

Outdoor temperature (°C)		Load(%)									
		100	90	80	70	60	50	40	30	20	10
46	Q	10390	8750	7780	6810	5830	4860	3890	2920	2410	2410
	W	5670	5370	4670	3950	3240	2540	1830	1110	740	740
43	Q	10860	9770	8690	7600	6510	5430	4340	3260	2690	2690
	W	5460	4830	4190	3540	2910	2270	1640	1000	670	670
40	Q	11320	10190	9060	7930	6790	5660	4530	3400	2810	2810
	W	5250	4640	4030	3410	2800	2190	1580	960	640	640
35	Q	12100	10890	9680	8470	7260	6050	4840	3630	3000	3000
	W	4900	4330	3760	3180	2610	2040	1470	900	600	600
30	Q	12880	11590	10300	9010	7730	6440	5150	3860	3190	3190
	W	4550	4020	3490	2950	2420	1890	1360	840	560	560
25	Q	13650	12290	10920	9560	8190	6830	5460	4100	3390	3390
	W	4200	3710	3220	2720	2240	1750	1260	770	510	510
20	Q	14430	12990	11540	10100	8660	7210	5770	4330	3580	3580
	W	3850	3400	2950	2500	2050	1600	1150	710	470	470

Heating

Outdoor temperature (°C)		Load(%)									
		100	90	80	70	60	50	40	30	20	10
20	Q	15460	13910	12370	10820	9280	7730	6180	4640	3770	3770
	W	4520	4010	3490	2990	2480	1970	1450	950	660	660
15	Q	14250	12820	11400	9970	8550	7120	5700	4270	3470	3470
	W	4360	3870	3370	2880	2390	1900	1400	910	640	640
10	Q	13030	11730	10420	9120	7820	6510	5210	3910	3180	3180
	W	4200	3730	3240	2770	2300	1830	1350	880	610	610
7	Q	12300	11070	9840	8610	7380	6150	4920	3690	3000	3000
	W	4100	3640	3170	2710	2250	1790	1320	860	600	600
6	Q	10500	9450	8400	7350	6300	5250	4200	3150	2560	2560
	W	3820	3390	2960	2530	2100	1670	1230	800	560	560
5	Q	9880	8890	7900	6920	5930	4940	3950	2960	2410	2410
	W	3790	3370	2940	2510	2090	1660	1220	790	560	560
2	Q	8950	8050	7160	6260	5370	4470	3580	2680	2180	2180
	W	3640	3230	2820	2410	2000	1590	1170	760	530	530
0	Q	8330	7490	6660	5830	5000	4160	3330	2500	2030	2030
	W	3530	3140	2740	2340	1940	1540	1140	740	520	520
-5	Q	6780	6100	5420	4740	4070	3390	2710	2030	1650	1650
	W	3270	2900	2540	2170	1800	1430	1050	690	480	480
-7	Q	6160	5540	4920	4310	3690	3080	2460	1850	1500	1500
	W	3170	2810	2450	2100	1740	1380	1020	660	460	460

Indoor units : RAV-HM1601BTP-E / TR

Outdoor unit : RAV-GV1601AT8P-E1 / TR

	Cooling		Heating	
	Capacity [Q (W)]	Power consumption [W (W)]	Capacity [Q (W)]	Power consumption [W (W)]
MINIMUM	3000	700	3000	700
RATING	13000	5400	13500	4000

Cooling

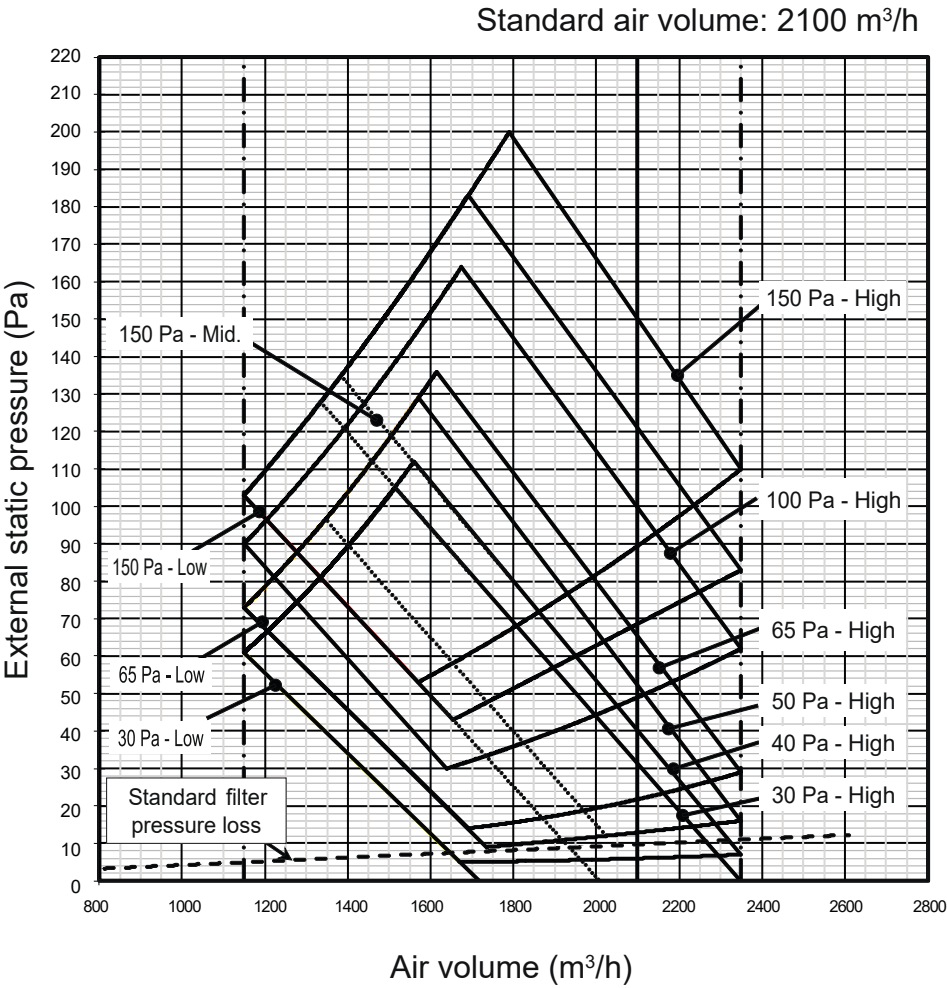
Outdoor temperature (°C)		Load(%)									
		100	90	80	70	60	50	40	30	20	10
46	Q	11160	9400	8360	7320	6270	5220	4180	3130	2410	2410
	W	6250	5940	5190	4430	3670	2920	2140	1390	870	870
43	Q	11670	10500	9330	8170	7000	5830	4670	3500	2690	2690
	W	6020	5340	4660	3980	3300	2620	1930	1250	780	780
40	Q	12170	10950	9730	8520	7300	6080	4870	3650	2810	2810
	W	5790	5130	4480	3830	3170	2520	1850	1200	750	750
35	Q	13000	11700	10400	9100	7800	6500	5200	3900	3000	3000
	W	5400	4790	4180	3570	2960	2350	1730	1120	700	700
30	Q	13830	12450	11070	9680	8300	6920	5530	4150	3190	3190
	W	5010	4450	3880	3310	2750	2180	1610	1040	650	650
25	Q	14670	13200	11730	10270	8800	7330	5870	4400	3390	3390
	W	4630	4100	3580	3060	2540	2010	1480	960	600	600
20	Q	15500	13950	12400	10850	9300	7750	6200	4650	3580	3580
	W	4240	3760	3280	2800	2320	1840	1360	880	550	550

Heating

Outdoor temperature (°C)		Load(%)									
		100	90	80	70	60	50	40	30	20	10
20	Q	16970	15270	13580	11880	10180	8480	6790	5090	3770	3770
	W	4410	3940	3470	3010	2530	2070	1600	1130	770	770
15	Q	15640	14070	12510	10940	9380	7820	6250	4690	3470	3470
	W	4250	3800	3350	2900	2440	2000	1540	1090	740	740
10	Q	14300	12870	11440	10010	8580	7150	5720	4290	3180	3180
	W	4090	3660	3220	2790	2350	1920	1480	1050	720	720
7	Q	13500	12150	10800	9450	8100	6750	5400	4050	3000	3000
	W	4000	3580	3150	2730	2300	1880	1450	1030	700	700
6	Q	11520	10370	9220	8060	6910	5760	4610	3460	2560	2560
	W	3730	3340	2940	2550	2140	1750	1350	960	650	650
5	Q	10840	9760	8670	7580	6500	5420	4340	3260	2410	2410
	W	3700	3320	2920	2530	2130	1740	1340	950	650	650
2	Q	9820	8840	7860	6870	5890	4910	3930	2950	2180	2180
	W	3550	3180	2800	2430	2040	1670	1290	910	620	620
0	Q	9140	8220	7310	6390	5480	4570	3660	2740	2030	2030
	W	3450	3090	2720	2360	1980	1620	1250	890	600	600
-5	Q	7430	6690	5950	5200	4460	3720	2970	2230	1650	1650
	W	3190	2860	2520	2180	1830	1500	1160	820	560	560
-7	Q	6750	6080	5400	4720	4050	3380	2700	2030	1500	1500
	W	3090	2770	2440	2110	1770	1450	1120	800	540	540

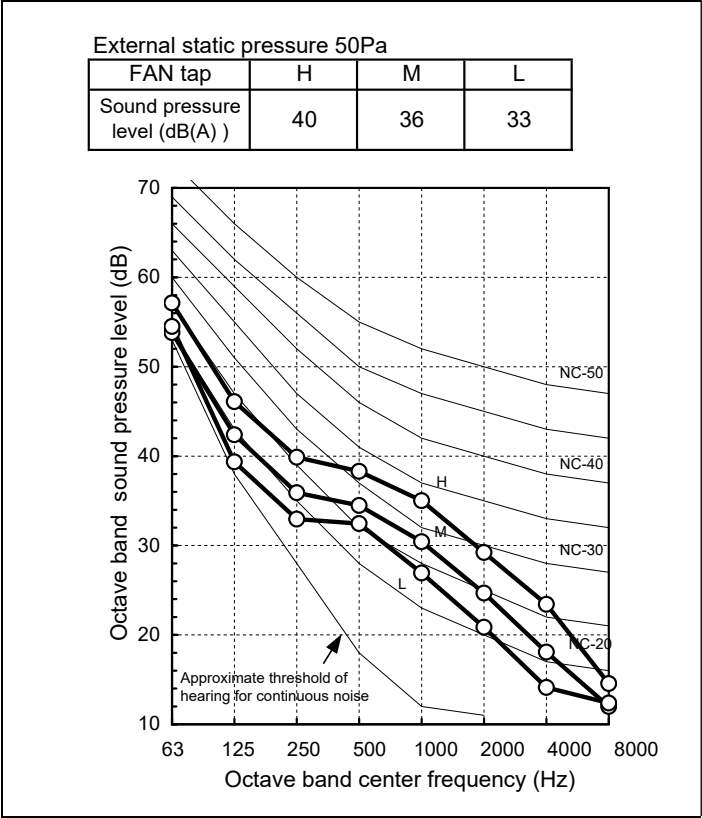
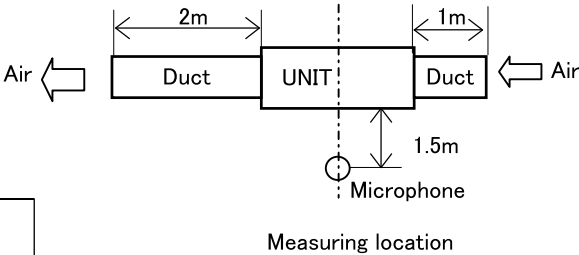
2-2-6. Fan static characteristic

RAV-HM*_1BTP-E / TR (*110/ 140 / 160)



2-2-7. Sound characteristics (NC curve)

RAV-HM*_1BTP-E / TR (*110 / 140 / 160)



2-2-8. Optional Accessories

No	Type	Model name	Applied model / Note
1	Drain pump kit (standard equipment)	-	Built in with unit
2	Long life filter	TCB-LK801D-E	RAV-HM561BTP-E
		TCB-LK1401D-E	RAV-HM801BTP-E
		TCB-LK2801DP-E	RAV-HM__1BTP-E (*110 / 140 / 160)
3	Filter chamber	TCB-FC0481DF-E	RAV-HM__1BTP-E (*110 / 140 / 160)
	High efficiency filter 65 %	TCB-UFM0481D-E	RAV-HM__1BTP-E (*110 / 140 / 160)
	High efficiency filter 90 %	TCB-UFH0481D-E	RAV-HM__1BTP-E (*110 / 140 / 160)
4	Auxiliary fresh air flange	TCB-FF151US-E	RAV-HM__1BTP-E (*56 / 80 / 110 / 140 / 160)
5	Spigot flange for Duct (Zoing duct flange)	TCB-SF56C6BPE	RAV-HM561BTP-E
6	Spigot flange for Duct (Zoing duct flange)	TCB-SF80C6BPE	RAV-HM801BTP-E
7	Spigot flange for Duct (Zoing duct flange)	TCB-SF160C6BPE	RAV-HM__1BTP-E (*110 / 140 / 160)
8	Wireless Remote Kit for Concealed Duct	RBC-ACXU31P-E	RAV-HM__1BTP-E (*56 / 80 / 110 / 140 / 160)

Table of applicable accessories		RAV-HM561BTP-E	RAV-HM801BTP-E	RAV-HM1101BTP-E	RAV-HM1401BTP-E	RAV-HM1601BTP-E
Drain pump kit	TCB-DP40DPE	P	P	P	P	P
Long life filter	TCB-LK801D-E	P				
	TCB-LK1401D-E		P			
	TCB-LK2801DP-E			P	P	P
Filter chamber	TCB-FC0481DF-E			OK	OK	OK
High efficiency filter 65 %	TCB-UFM0481D-E			OK	OK	OK
High efficiency filter 90 %	TCB-UFH0481D-E			OK	OK	OK
Auxiliary fresh air flange high duct	TCB-FF151US-E	OK	OK	OK	OK	OK
Spigot flange for Duct	TCB-SF56C6BPE	OK				
Spigot flange for Duct (Zoing duct flange)	TCB-SF80C6BPE		OK			
Spigot flange for Duct (Zoing duct flange)	TCB-SF160C6BPE			OK	OK	OK
Wireless Remote Kit for Concealed Duct	RBC-ACXU31P-E	OK	OK	OK	OK	OK

Note : "P" : Built in with unit

"OK" : Compatible

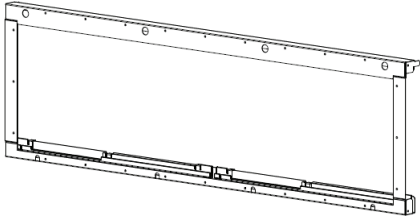
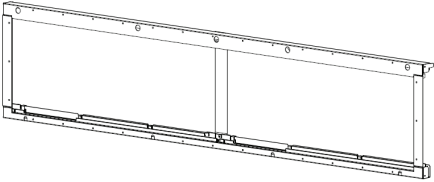
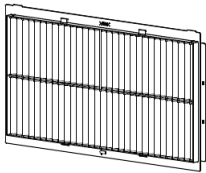
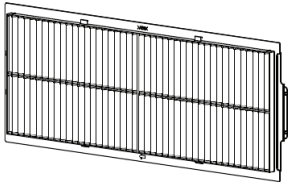
Long life filter kit : incase install with chamber remove frame before put it in

High efficiency filter 65 and 90% require filter chamber to install

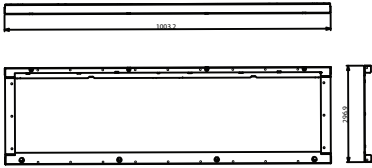
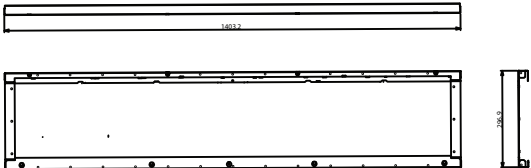
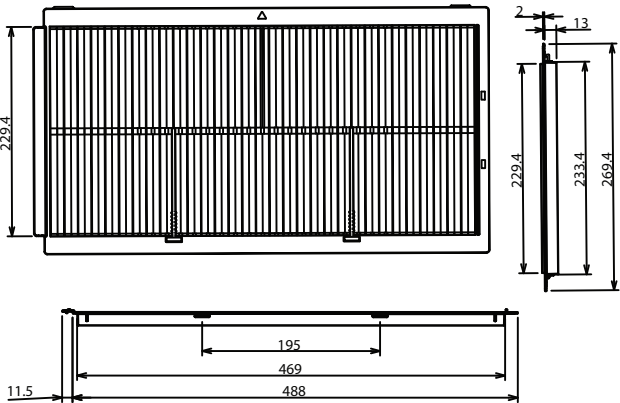
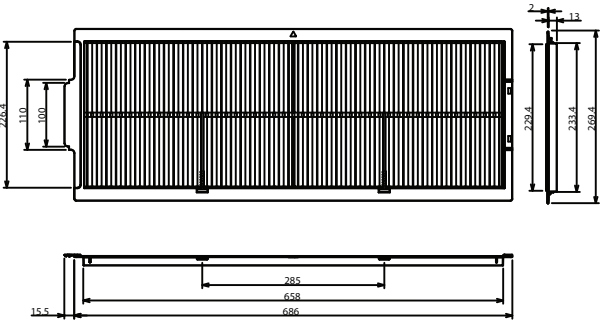
Appendix

2. Long life filter kit

TCB-LK801D-E , TCB-LK1401D-E

Parts name	Model: TCB-LK801D-E		Model: TCB-LK1401D-E	
	Form	Quantity	Form	Quantity
(1) Filter Frame		1		1
(2) Filter		2		2

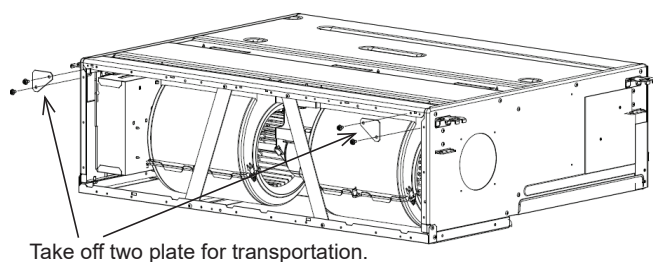
Dimension

Parts name	Model: TCB-LK801D-E	Model: TCB-LK1401D-E
(1) Filter Frame		
(2) Filter		

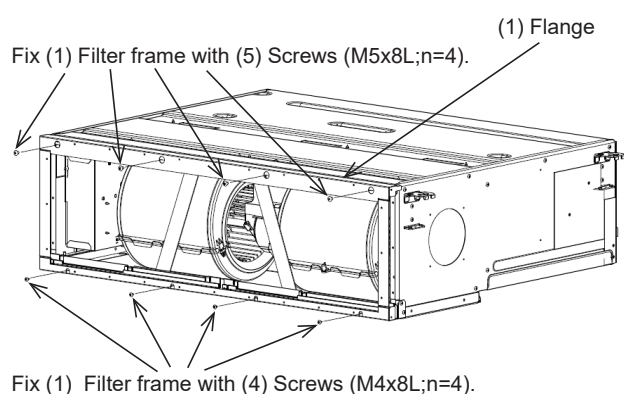
How to install

Install (1) Filter frame, (2) Filter, (3) Cover in indoor unit.

1. Before installation.

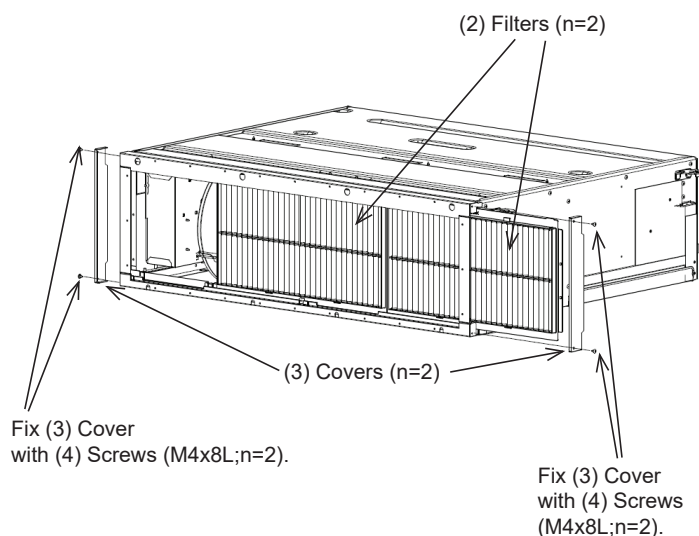


2. Install (1) Filter frame in indoor unit.



- The flange gets one having black mold parts (filter rail) in the lower direction at the time of the installation of indoor unit.

3. Install (2) Filter and (3) Cover in (1) Filter frame



- Please confirm that two pieces of filters are connected .
- Please attach the cover with both side.

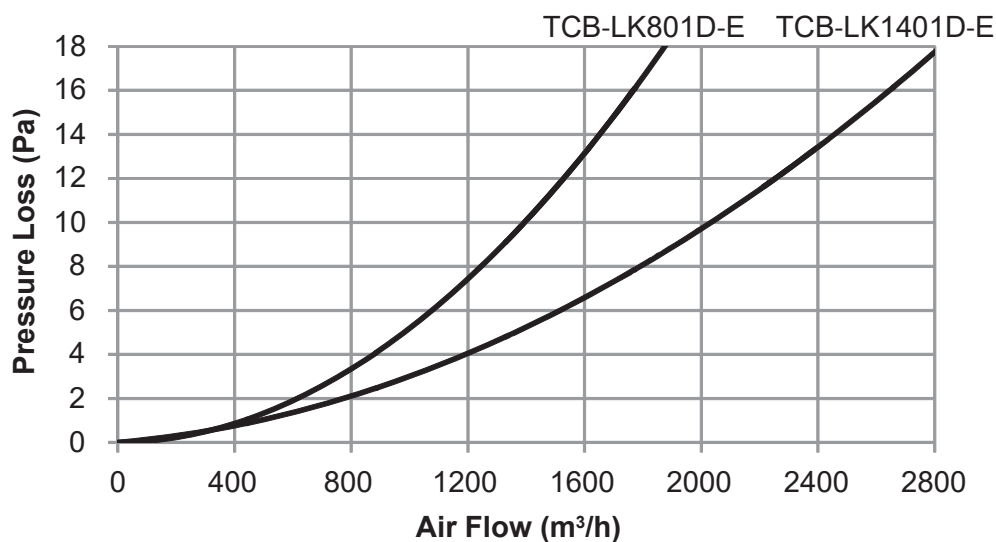
NOTE

- When you use too long screws at attach a suction duct (locally procured), you can not remove the filters by attack the screws.
- After installation completion, please confirm the putting on and taking off of the filter by all means.

External Pressure Loss Characteristic

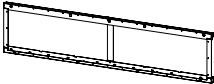
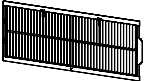
When you use these "Long life filter Kit", pressure-loss characteristics depends on Air Flow.

Long life filter Kit, Pressure Loss Characteristics



TCB-LK2801DP-E

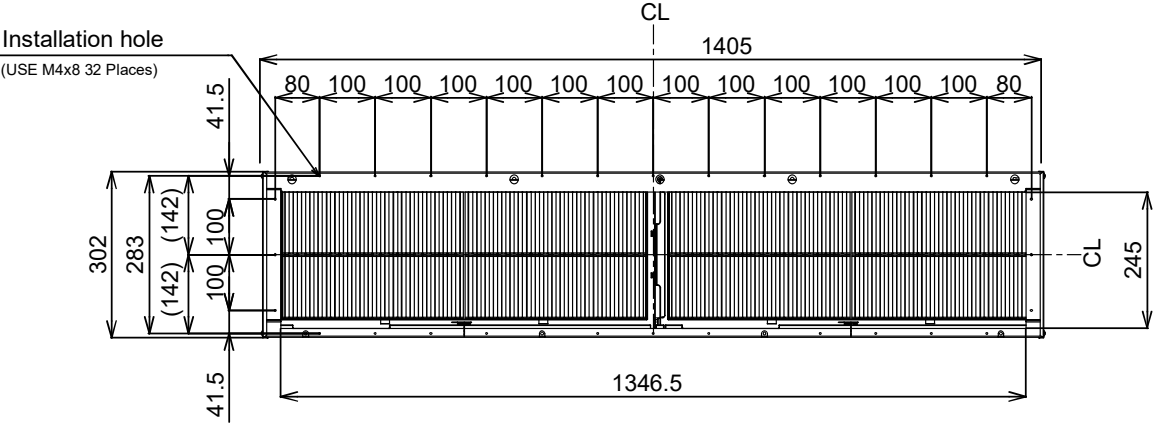
Below part are included.

Part name	Form	Quantity
(1) Frame fix plate		2
(2) Filter frame		1
(3) Filter		2

Duct design

Arrangement

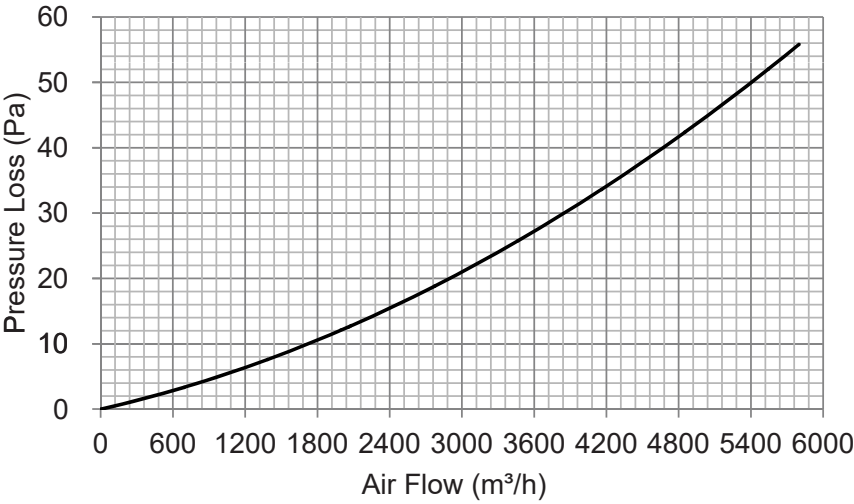
Referring to the following dimension, manufacture duct at the local site.



External Pressure Loss Characteristic

When you use these “Long life filter Kit”, pressure-loss characteristics depends on Air Flow.

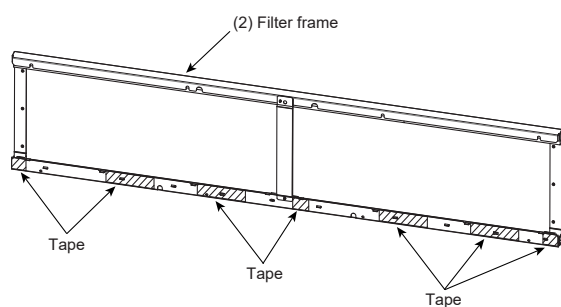
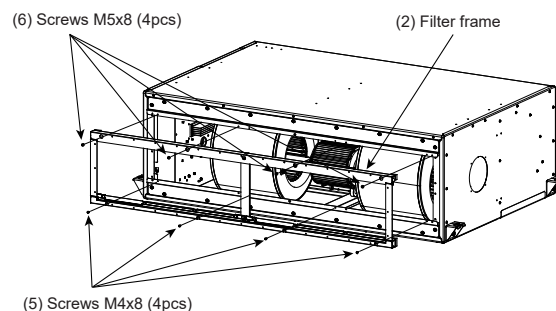
Long life Filter Kit, Pressure Loss Characteristics



How to install

1. Peel off the tape fixing the filter rail.

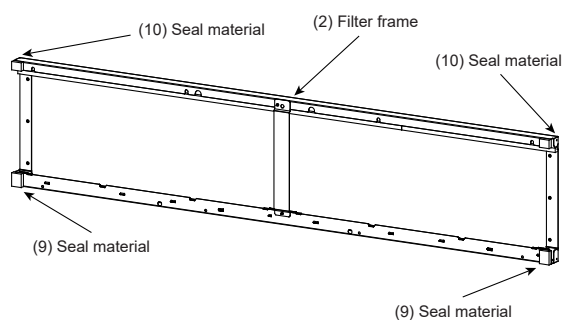
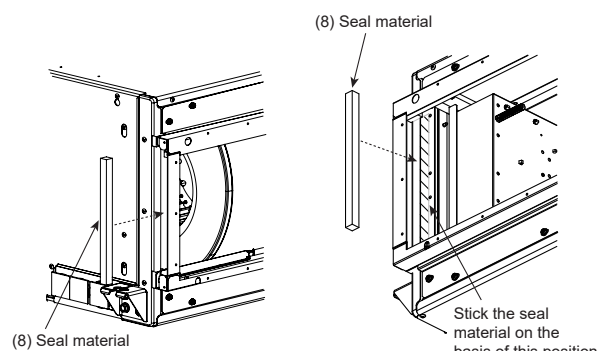
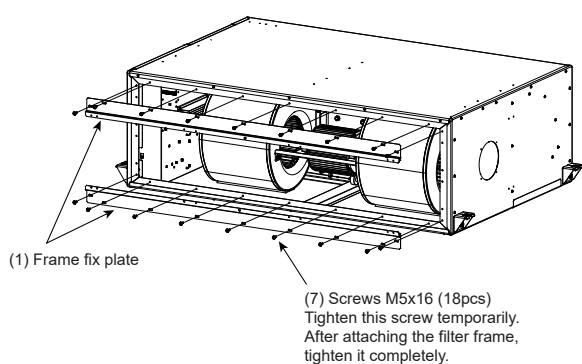
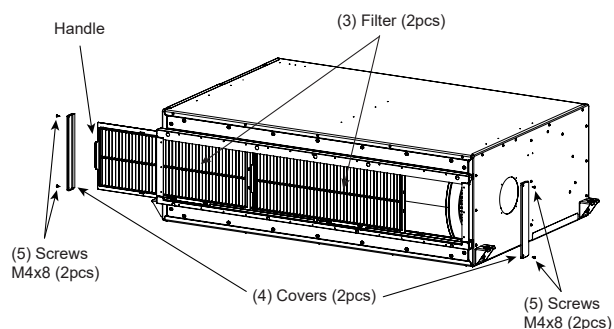
And check if the claw of the filter rail is not taken off.

**4. Install (2) Filter frame.**

· The filter frame gets one having black mold parts (filter rail) in the lower direction at the time of the installation of indoor unit.

2. Install (9) (10) Seal material.

Fit the seal material to the corner and paste it.

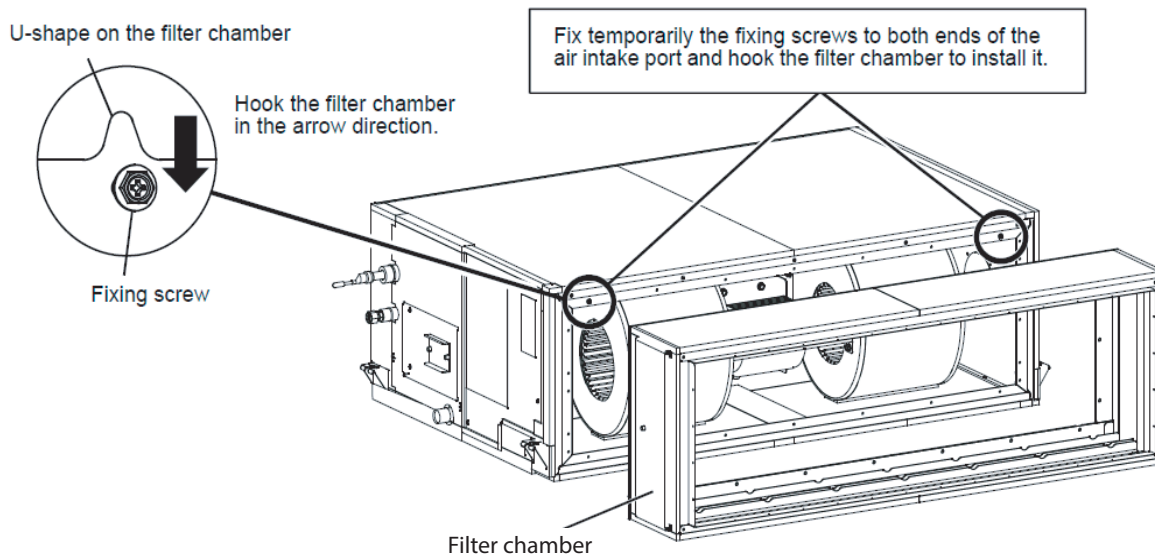
**5. Install (8) Seal material.****3. Install (1) Frame fix plate.****6. Install (3) Filter and (4) Cover.**

· For the filter direction, the insertion direction is the handle side as the above picture.
 · Please confirm that two pieces of filters are connected.
 · Please attach the cover with both side.

NOTE

When you use too long screws at attach a suction duct (local procured), you can not remove the filters by attach the screws. Be sure to check if the filter can be attached and removed after the attachment.

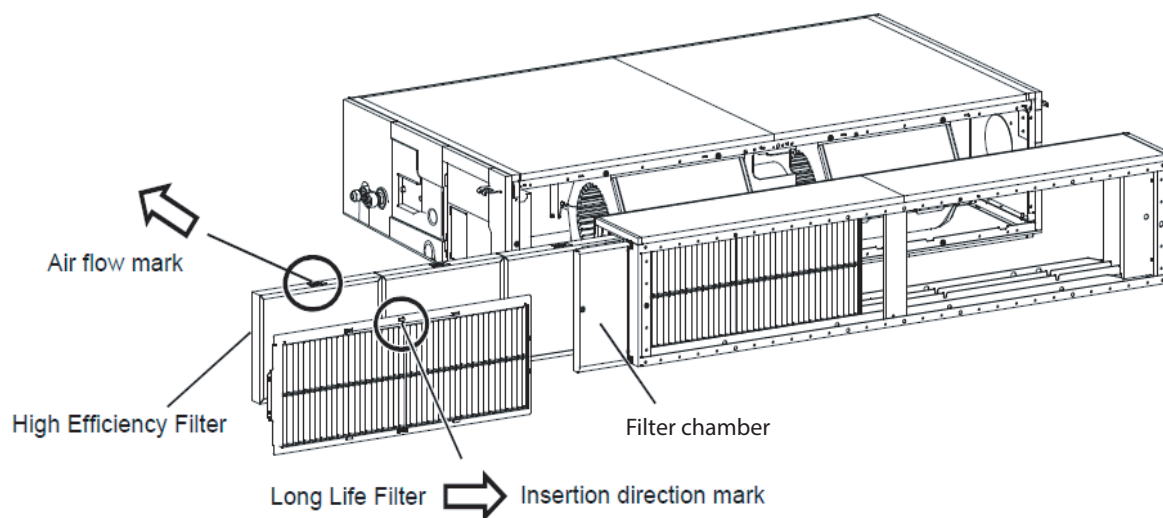
3. Filter Chamber : TCB-FC__1DF-E



Pressure loss in standard air volume (Pa)

Applicable model		RAV-HM__1BTP-E (56,80)	RAV-HM__1BTP-E (110,140,160)
Filter chamber	(Pa)	2	2
High efficiency filter 65 %	(Pa)	13	9
High efficiency filter 90 %	(Pa)	20	12
Long life filter	(Pa)	2	2

This estimate is based on the information provided and might subject to further change prior condition



Filter type	Cleanning as a gudie *1	Replacement as a guide *1
High efficiency filter 65 %	-	2500 hr (approx. 1 year) *2
High efficiency filter 90 %	-	1800 hr (approx. 8 months) *2
Long life filter	2500 hr (1 time/year)	-

*1 : Please note that the filter cleaning time and replacement time may differ depending on the environmental conditions.

*2 : The High efficiency filter needs replacene periodically.

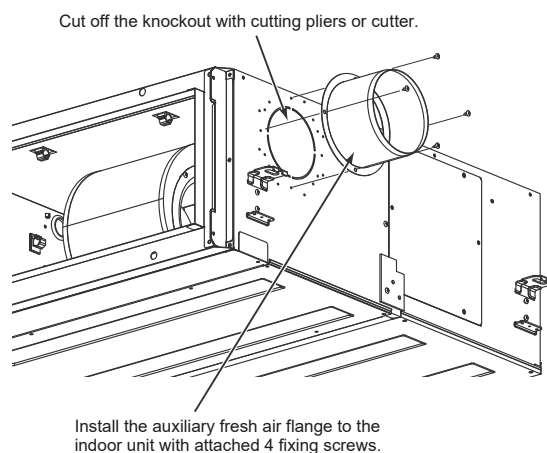
4. Auxiliary fresh air flange

Arrange a flexible duct (locally procured).

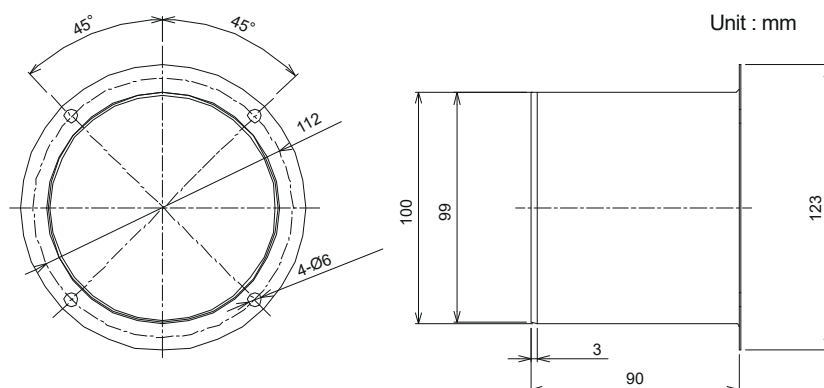
It is necessary to install auxiliary fresh air flange.

INSTALLATION PROCEDURE

- 1 Using the knockout of the indoor unit, as a marker, cut off the steel plate with cutting pliers or cutter.
- 2 Install the auxiliary fresh air flange to the indoor unit with attached 4 fixing screws.



DIMENSION



CAUTION

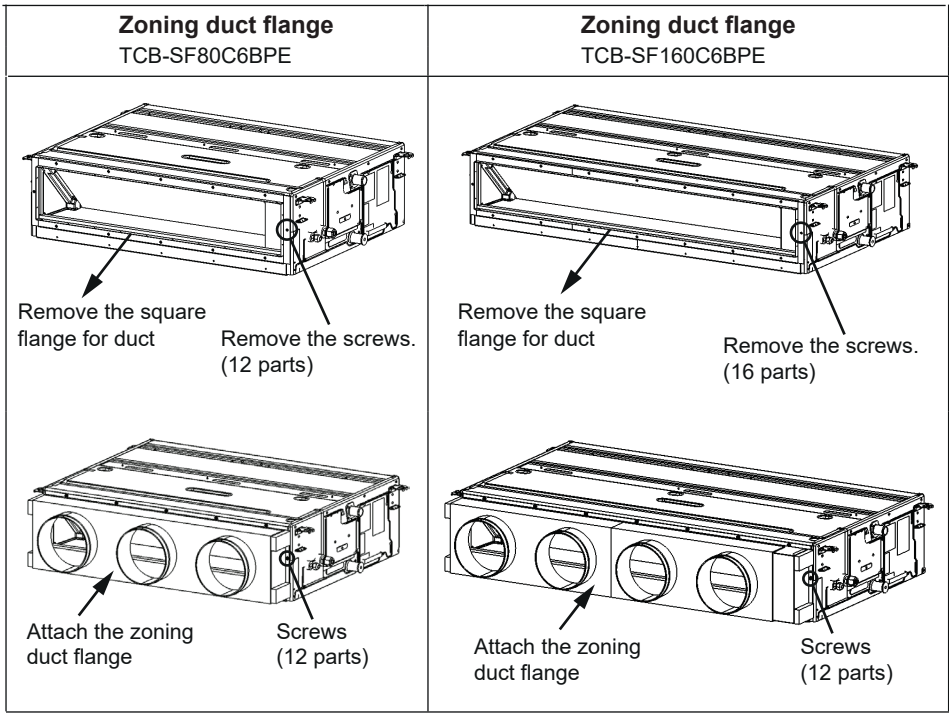
The fresh air shall be conditioned by heat reclaim ventilator or similar.

Emsure the fresh air volume is determined so that mixed suction air and fresh air maintain the operating temperature.

Recommended conditioned air temperature is 12°C to 30°C.

however, make a fresh air volume within 10% of standard.

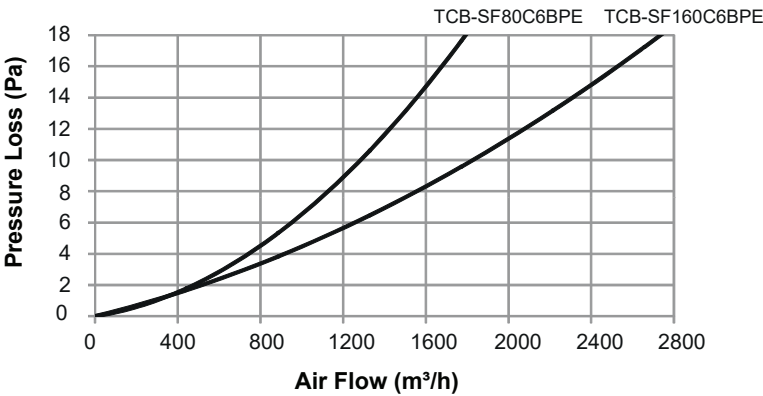
5 , 6 Spigot shaped flange



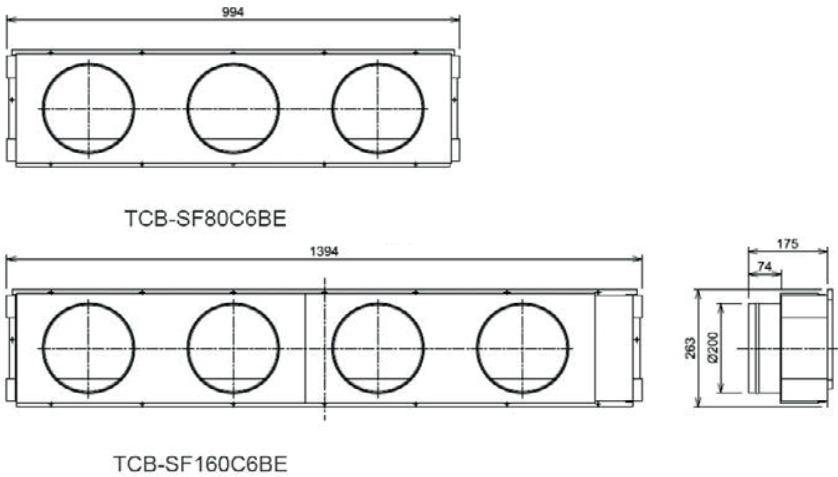
Remove screws on square flange for duct of indoor unit and attach the zoning duct flange with the screw.

External pressure loss characteristic

When you use these “Zoning duct flange” with Concealed Duct Type and High Static Pressure type, pressure-loss characteristics depends on Air Flow.

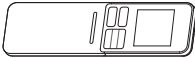
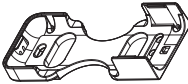


External dimension

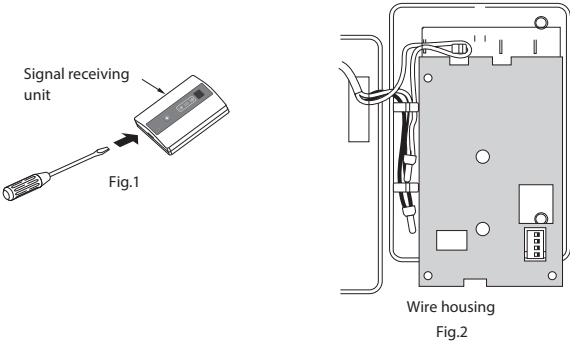


7. Wireless remote controller kit

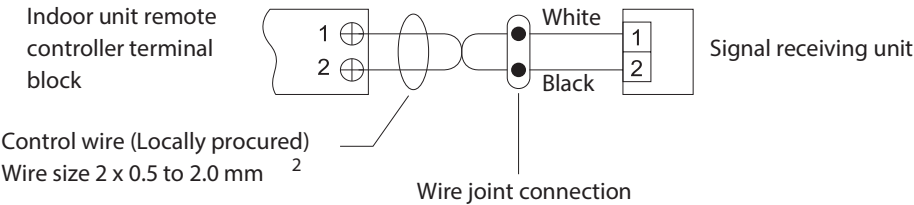
Below part are included.

Part name	Form	Quantity
(1) Signal receiving unit (provided 200 mm control wire)		1
(2) Mounting bracket		1
(3) Remote controller		1
(4) Remote controller holder		1

Connect the Signal receiving unit wiring (2-core control wire) with the wires extended from the indoor unit. Refer to the Wiring of the Signal Receiving Unit.)
Be sure to determine the correct terminal numbers on the indoor unit when wiring the Signal receiving unit. The Signal receiving unit will be damaged if high voltage (such as 220 - 240 V) is applied.



Wiring of the Signal Receiving Unit



Multiple Remote Controller Installation

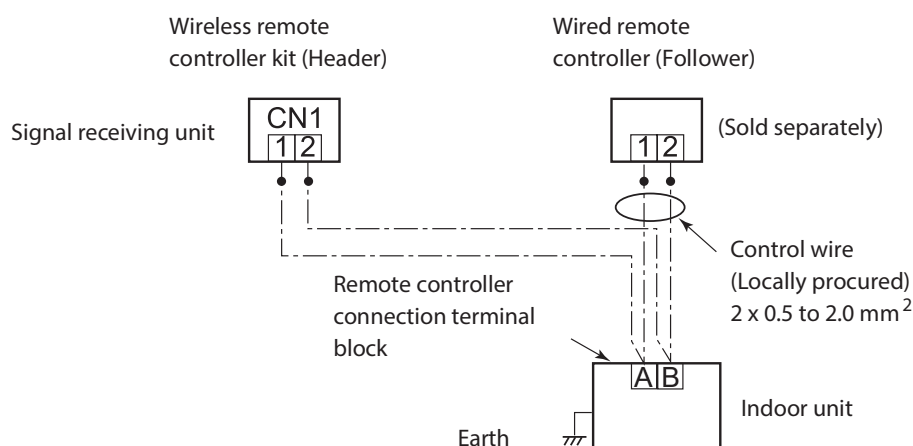
The control by two remote controllers is enabled by installing the wireless remote controller with the wired remote controller for an indoor unit. (Max. 2 remote controllers of wireless or wired are insatiable.)
 “2-remote controllers” means that one or multiple units are operated by the multiple remote controllers.

Note:

1. Upon confirmation of the terminal numbers of the indoor unit, connect the control wire without miswiring. (If applied 220 - 240 V, damage the unit.)
2. The multiple wireless remote controller kits cannot concurrently be used for an indoor unit.
3. When installing simultaneously the wireless remote controller with the wired remote controller, set one of them as the follower remote controller.
 - To use wired remote controller or Lite-vision plus remote controller as a follower, settings must be changed. For the details, refer to the installation manual of each controller.
 - To use the wireless remote controller as a follower, set bit 4 (Follower side) of DIP switch SW30 on the signal receiving unit P.C. board to ON.

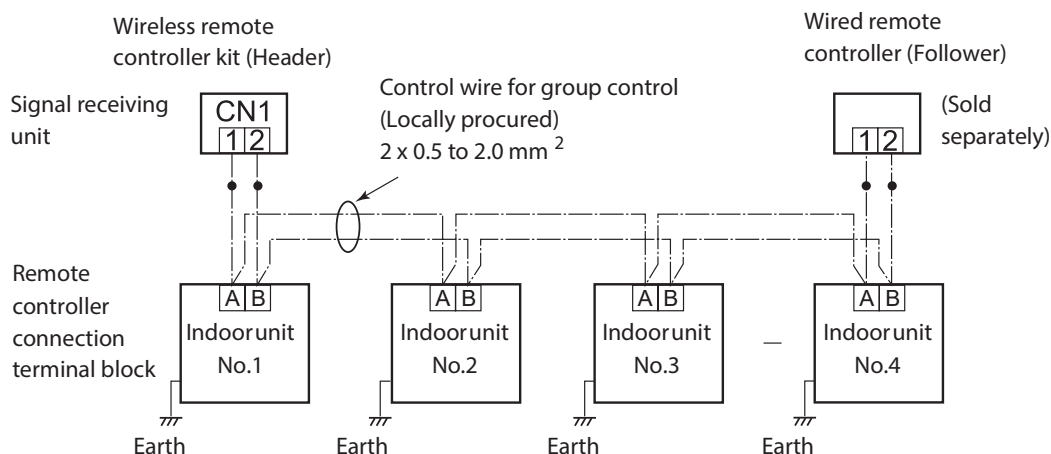
* 2-remote controllers

The indoor unit is operated if either wireless or wired remote controller is set as header or follower remote controller. (Total wire length: Within 400 m)



* Group control

Header and follower remote controllers are operable even if they are installed to any indoor unit. (Total wire length: Within 200 m)



Note : Maximum 8 or 16 units are connectable (depending on connction system TCC link / TU2C ink)

2-3. High Wall Type

2-3-1. Specifications

2-3-2. Dimension

2-3-3. Wiring Diagrams

2-3-4. Sensible Capacity Table

2-3-5. Part Load Performance

2-3-6. Air Speed Distribution

2-3-7. Sound Characteristics (NC Curve)

2-3-1. Specifications

High wall type

Model		Indoor unit		RAV-HM1101KRTP-E/TR		
		Outdoor unit		RAV-GV1101AT8P-E/TR		
Cooling capacity		(kW)		9.5		
		(kW)		3.0 - 11.2		
Heating capacity		(kW)		10.0		
		(kW)		3.0 -13.0		
Power supply				3 phase 380V-415V/50Hz, 380V/60Hz		
Electrical characteristics	Cooling	Power consumption (kW)		3.40		
		EER		2.79		
		PdesignC		9.5		
		SEER	No.		6.10	
			Grade (Lot10)		A++	
	Heating	Power consumption (kW)		3.20		
		COP		3.13		
		PdesignH		7.6		
		SCOP	No.		4.10	
			Grade (Lot10)		A+	
Indoor unit						
Appearance		Main unit		Pure white		
Outer dimension		Main unit	Height (mm)	348		
			Width (mm)	1,200		
			Depth (mm)	280		
Total weight		Main unit (kg)		19		
Fan unit		Fan		Cross flow fan		
		Air flow	H/M/L (m3/h)	1610/1350 /1180		
Air filter				Standard filter (Long life filter)		
Sound pressure level			H/M/L (dB)	49/45/41		
Sound power level			H/M/L (dB)	64/60/56		

1 : The cooling capacities and electrical characteristics are measured under the conditions specified by JIS B 8615 based on the reference piping. The reference piping consists of 5 m of main piping and 2.5 m of branch piping connected with 0 meter height.

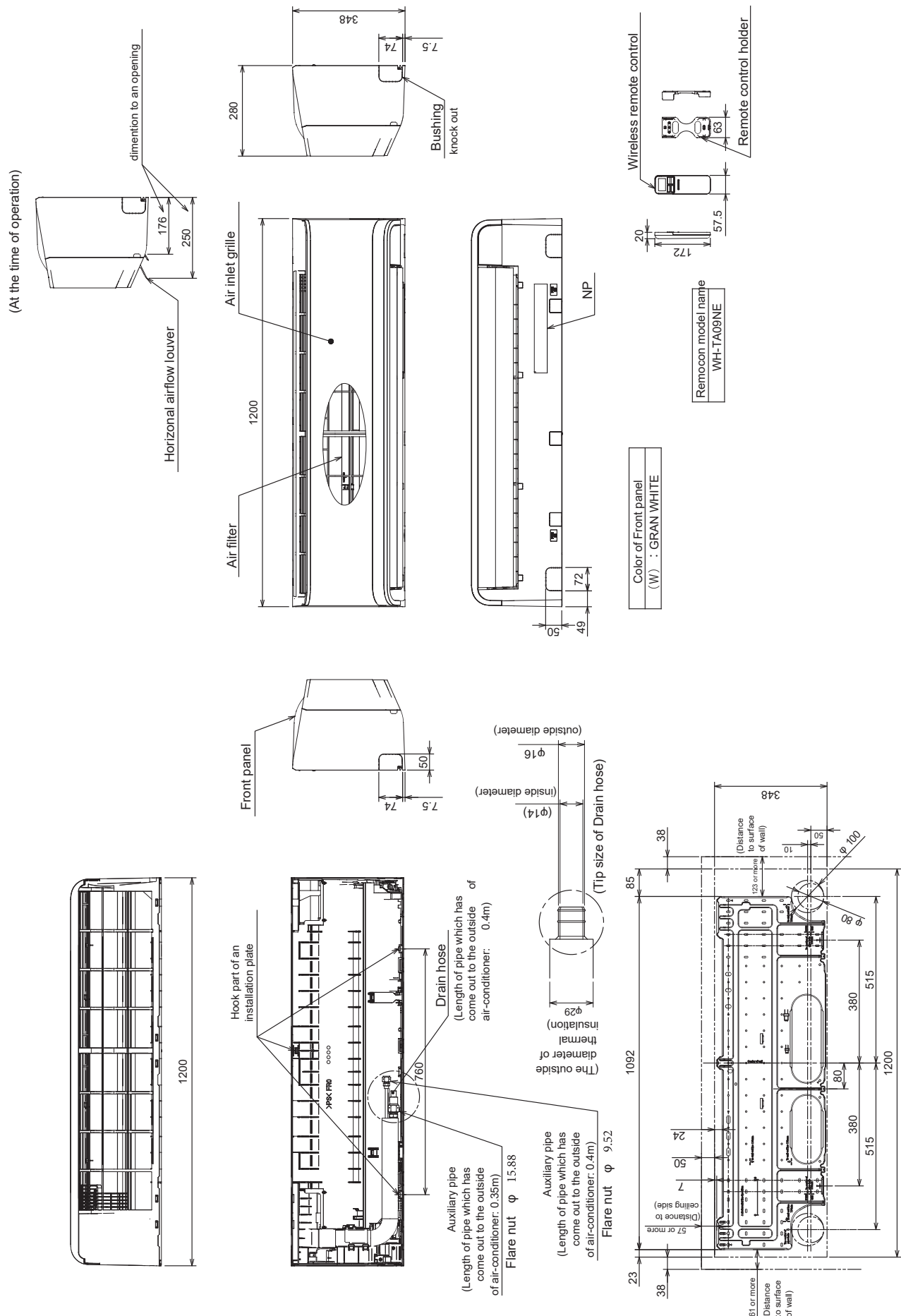
2 : The sound level are measured in an anechoic chamber in accordance with JIS B 8616. Normally, the values measured in the actual operating environment become larger than the indicated values due to the effects of external sound.

Note :

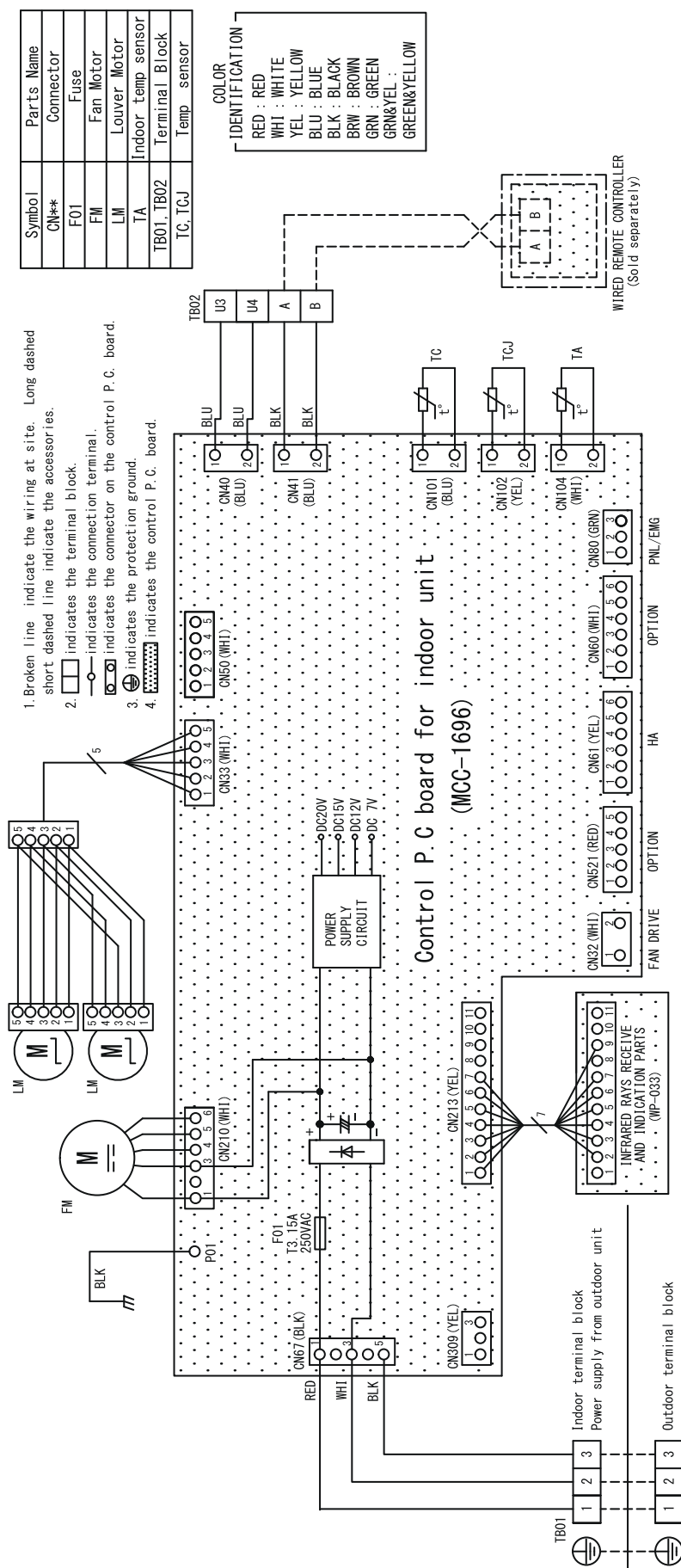
Rated conditions Cooling : Indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB

2-3-2. Dimension

RAV-HM1101KRTP-E / TR



2-3-3. Wiring diagrams

RAV-HM1101KRTP-E / TR

2-3-4. Sensible Capacity Table

Product models : RAV-HM1101KRTP-E / TR ; RAV-GV1101AT8P-E / TR

Specification of product at standard condition

Standard Condition	Indoor	27°C (DB) / 19°C (WB)	Total Cooling Capacity (TC)	9.50	kW
	Outdoor	35°C (DB) / 24°C (WB)	Sensible Heat Capacity (SHC)	7.89	kW

Outdoor air temperature DB (°C)	Indoor air temperature													
	20.0°C (DB) 14.0°C (WB)		23.0°C (DB) 16.0°C (WB)		26.0°C (DB) 18.0°C (WB)		27.0°C (DB) 19.0°C (WB)		28.0°C (DB) 20.0°C (WB)		30.0°C (DB) 22.0°C (WB)		32.0°C (DB) 24.0°C (WB)	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
10	10.3	9.2	11.4	9.8	12.2	10.4	12.6	10.4	12.9	10.4	13.7	10.4	14.3	10.2
11	10.2	9.1	11.3	9.7	12.1	10.3	12.4	10.3	12.8	10.3	13.5	10.3	14.2	10.1
12	10.1	9.0	11.2	9.6	11.9	10.2	12.3	10.2	12.7	10.2	13.4	10.1	14.0	10.0
13	10.0	8.9	11.0	9.5	11.8	10.1	12.2	10.1	12.5	10.1	13.3	10.0	13.9	9.9
14	9.9	8.8	10.9	9.4	11.7	10.0	12.1	10.0	12.4	10.0	13.1	9.9	13.7	9.8
15	9.8	8.7	10.8	9.3	11.6	9.9	11.9	9.9	12.3	9.9	13.0	9.8	13.6	9.7
16	9.7	8.6	10.7	9.2	11.5	9.8	11.8	9.8	12.2	9.8	12.9	9.7	13.5	9.6
17	9.6	8.6	10.6	9.1	11.4	9.7	11.7	9.7	12.0	9.7	12.7	9.6	13.3	9.5
18	9.5	8.5	10.5	9.0	11.2	9.6	11.6	9.6	11.9	9.6	12.6	9.5	13.2	9.4
19	9.4	8.4	10.4	8.9	11.1	9.5	11.5	9.5	11.8	9.5	12.5	9.4	13.0	9.3
20	9.3	8.3	10.3	8.8	11.0	9.4	11.3	9.4	11.7	9.4	12.3	9.3	12.9	9.2
21	9.2	8.2	10.2	8.8	10.9	9.3	11.2	9.3	11.5	9.3	12.2	9.2	12.8	9.1
22	9.1	8.1	10.1	8.7	10.8	9.2	11.1	9.2	11.4	9.2	12.1	9.1	12.6	9.0
23	9.0	8.0	9.9	8.6	10.6	9.1	11.0	9.1	11.3	9.1	11.9	9.0	12.5	8.9
24	8.9	7.9	9.8	8.5	10.5	9.0	10.8	9.0	11.2	9.0	11.8	8.9	12.4	8.8
25	8.8	7.8	9.7	8.4	10.4	8.9	10.7	8.9	11.0	8.9	11.7	8.8	12.2	8.7
26	8.7	7.8	9.6	8.3	10.3	8.8	10.6	8.8	10.9	8.8	11.5	8.7	12.1	8.6
27	8.6	7.7	9.5	8.2	10.2	8.7	10.5	8.7	10.8	8.7	11.4	8.6	11.9	8.5
28	8.5	7.6	9.4	8.1	10.1	8.6	10.4	8.6	10.6	8.6	11.3	8.5	11.8	8.4
29	8.4	7.5	9.3	8.0	9.9	8.5	10.2	8.5	10.5	8.5	11.1	8.4	11.7	8.3
30	8.3	7.4	9.2	7.9	9.8	8.4	10.1	8.4	10.4	8.4	11.0	8.3	11.5	8.2
31	8.2	7.3	9.1	7.8	9.7	8.3	10.0	8.3	10.3	8.3	10.9	8.2	11.4	8.1
32	8.1	7.2	9.0	7.7	9.6	8.2	9.9	8.2	10.2	8.2	10.8	8.1	11.2	8.0
33	8.0	7.1	8.8	7.6	9.5	8.1	9.7	8.1	10.0	8.1	10.6	8.0	11.1	7.9
34	7.9	7.0	8.7	7.5	9.3	8.0	9.6	8.0	9.9	8.0	10.5	7.9	11.0	7.8
35	7.8	7.0	8.6	7.4	9.2	7.9	9.5	7.9	9.8	7.9	10.3	7.8	10.8	7.7
36	7.7	6.9	8.5	7.3	9.1	7.8	9.4	7.8	9.6	7.8	10.2	7.7	10.7	7.6
37	7.6	6.8	8.4	7.2	9.0	7.7	9.3	7.7	9.5	7.7	10.1	7.6	10.5	7.5
38	7.5	6.7	8.3	7.1	8.9	7.6	9.1	7.6	9.4	7.6	9.9	7.5	10.4	7.4
39	7.4	6.6	8.2	7.0	8.8	7.5	9.0	7.5	9.3	7.5	9.8	7.4	10.3	7.3
40	7.3	6.5	8.1	6.9	8.6	7.4	8.9	7.4	9.1	7.4	9.7	7.3	10.1	7.2
41	7.2	6.4	8.0	6.8	8.5	7.3	8.8	7.3	9.0	7.3	9.6	7.2	10.0	7.1
42	7.1	6.3	7.8	6.8	8.4	7.2	8.7	7.2	8.9	7.2	9.4	7.1	9.9	7.0
43	7.0	6.2	7.7	6.7	8.3	7.1	8.5	7.1	8.8	7.1	9.3	7.0	9.7	6.9
44	6.9	6.1	7.6	6.6	8.2	7.0	8.4	7.0	8.6	7.0	9.2	6.9	9.6	6.8
45	6.8	6.1	7.5	6.5	8.0	6.9	8.3	6.9	8.5	6.9	9.0	6.8	9.4	6.7
46	6.7	6.0	7.4	6.4	7.9	6.8	8.2	6.8	8.4	6.8	8.9	6.7	9.3	6.6

2-3-5. Part load performance

Indoor units : RAV-HM1101KRTP-E / TR

Outdoor unit : RAV-GV1101AT8P-E / TR

	Cooling		Heating	
	Capacity [Q (W)]	Power consumption [W (W)]	Capacity [Q (W)]	Power consumption [W (W)]
MINIMUM	3000	600	3000	600
RATING	9500	3400	10000	3200

Cooling

Outdoor temperature (°C)		Load(%)									
		100	90	80	70	60	50	40	30	20	10
46	Q	8160	6870	6110	5340	4580	3820	3060	2410	2410	2410
	W	3940	3700	3200	2700	2190	1680	1170	740	740	740
43	Q	8520	7670	6820	5970	5110	4260	3410	2690	2690	2690
	W	3790	3330	2880	2420	1960	1500	1050	670	670	670
40	Q	8890	8000	7110	6220	5330	4450	3560	2810	2810	2810
	W	3640	3200	2760	2330	1890	1450	1010	640	640	640
35	Q	9500	8550	7600	6650	5700	4750	3800	3000	3000	3000
	W	3400	2990	2580	2170	1760	1350	940	600	600	600
30	Q	10110	9100	8090	7080	6070	5050	4040	3190	3190	3190
	W	3160	2780	2400	2010	1630	1250	870	560	560	560
25	Q	10720	9650	8580	7500	6430	5360	4290	3390	3390	3390
	W	2910	2560	2210	1860	1510	1160	810	510	510	510
20	Q	11330	10200	9060	7930	6800	5660	4530	3580	3580	3580
	W	2670	2350	2030	1700	1380	1060	740	470	470	470

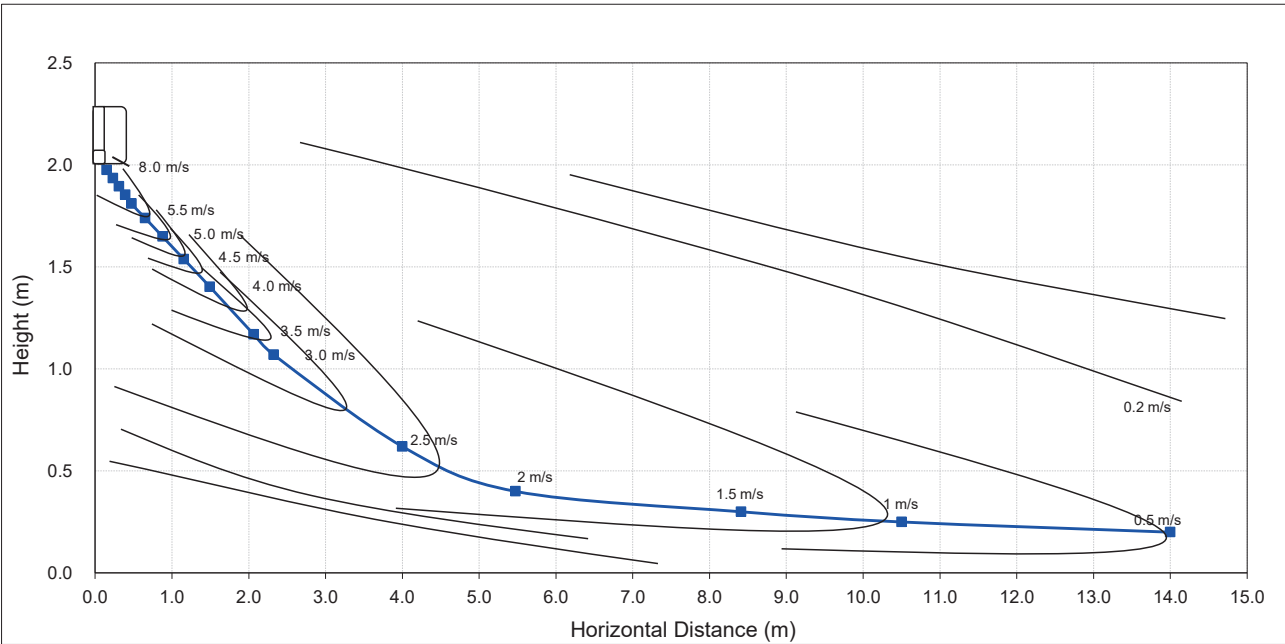
Heating

Outdoor temperature (°C)		Load(%)									
		100	90	80	70	60	50	40	30	20	10
20	Q	12570	11310	10060	8800	7540	6280	5030	3770	3770	3770
	W	3530	3120	2710	2300	1880	1480	1070	660	660	660
15	Q	11580	10420	9270	8110	6950	5790	4630	3470	3470	3470
	W	3400	3010	2610	2220	1820	1420	1030	640	640	640
10	Q	10590	9530	8470	7420	6360	5300	4240	3180	3180	3180
	W	3280	2900	2520	2140	1750	1370	990	610	610	610
7	Q	10000	9000	8000	7000	6000	5000	4000	3000	3000	3000
	W	3200	2830	2460	2090	1710	1340	970	600	600	600
6	Q	8530	7680	6830	5970	5120	4270	3410	2560	2560	2560
	W	2980	2640	2290	1950	1590	1250	900	560	560	560
5	Q	8030	7230	6430	5620	4820	4020	3210	2410	2410	2410
	W	2960	2620	2270	1940	1580	1240	890	560	560	560
2	Q	7270	6550	5820	5090	4360	3640	2910	2180	2180	2180
	W	2840	2510	2180	1860	1510	1190	860	530	530	530
0	Q	6770	6090	5420	4730	4060	3390	2700	2030	2030	2030
	W	2760	2440	2120	1800	1470	1160	830	520	520	520
-5	Q	5500	4960	4410	3850	3300	2760	2200	1650	1650	1650
	W	2550	2260	1960	1670	1360	1070	770	480	480	480
-7	Q	5000	4500	4000	3500	3000	2500	2000	1500	1500	1500
	W	2470	2190	1900	1620	1320	1040	750	460	460	460

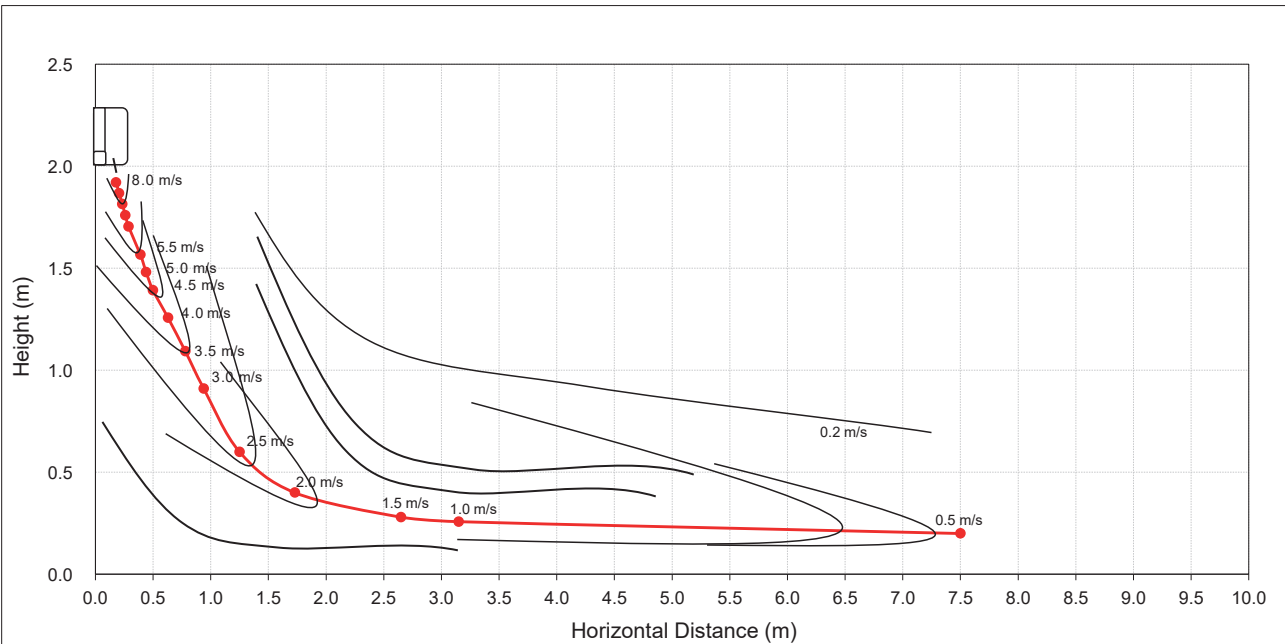
2-3-6. Air speed distribution

RAV-HM1101KRTP-E / TR

Cooling



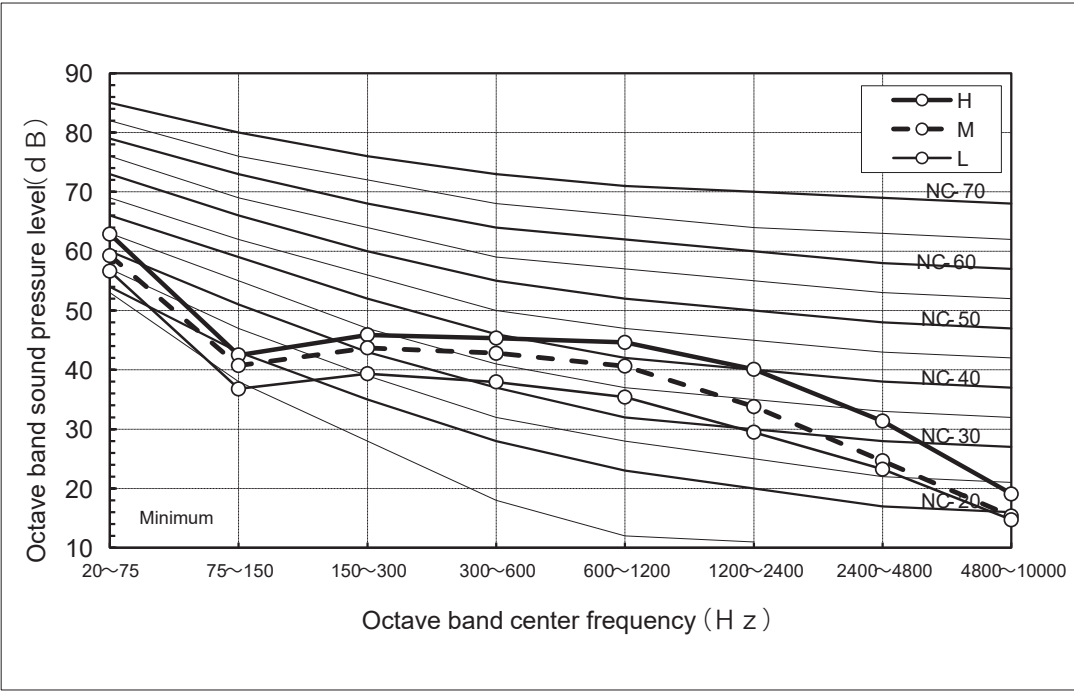
Heating



2-3-7. Sound Characteristics (NC curve)

RAV-HM1101KRTP-E / TR

Specification (d B)			
Fan tap	H	M	L
Sound pressure level (dB(A))	49	45	41



3. Outdoor Unit

3-1. Specifications

3-2. Dimension

3-3. Wiring Diagrams

3-4. Refrigerant Cycle Diagram

3-5. Sound Characteristic

3-6. Connecting Pipe Length and Lift Difference Between Indoor Units VS. Capacity Correction Value

3-1 Specification

Model name	Outdoor unit		RAV-GV	1101AT8P- E / TR	1401AT8P- E / TR
Power supply				3 phase 380-415V, 50Hz 3 phase 380V, 60Hz (Power exclusive to outdoor is require.)	
Compressor	Type		Hermetic compressor	Hermetic compressor	
	Motor (kW)		2.35	2.35	
	Pole		6	6	
Refrigerant charged			(kg)	1.9	1.9
Refrigerant control			Pulse motor valve	Pulse motor valve	
Inter connecting pipe	Standard length		(m)	7.5	7.5
	Min. length		(m)	5	5
	Max. total length		(m)	30	30
	Additional refrigerant charge under long piping connector		No addition charge	No addition charge	
	Height difference	Outdoor lower	(m)	30	30
		Outdoor higher	(m)	30	30
Outer dimension	Height		(mm)	710	710
	Width		(mm)	900	900
	Depth		(mm)	320	320
Appearance				Silky shade (Muncel 1Y8.5/0.5)	
Total weight			(kg)	60	60
Heat exchanger				Finned tube	Finned tube
Fan unit	Fan		Propeller fan	Propeller fan	
	Standard air flow high		(m3/min)	58 (cool) / 70 (heat)	70
	Motor		(W)	100	100
Connecting pipe	Gas side		(mm)	15.9	15.9
	Liquid side		(mm)	9.5	9.5
Sound pressure level			Cooling/Heating (dB·A)	52 / 58	56 / 60
Sound power level			Cooling/Heating (dB·A)	69 / 75	73 / 77
Outside air temperature, Cooling			°C (Dry bulb temp.)	46 to -15	46 to -15
Outside air temperature, Heating			°C (Wet bulb temp.)	15 to -15	15 to -15

※ Twins indoor unit connecting is not allowed for this models.

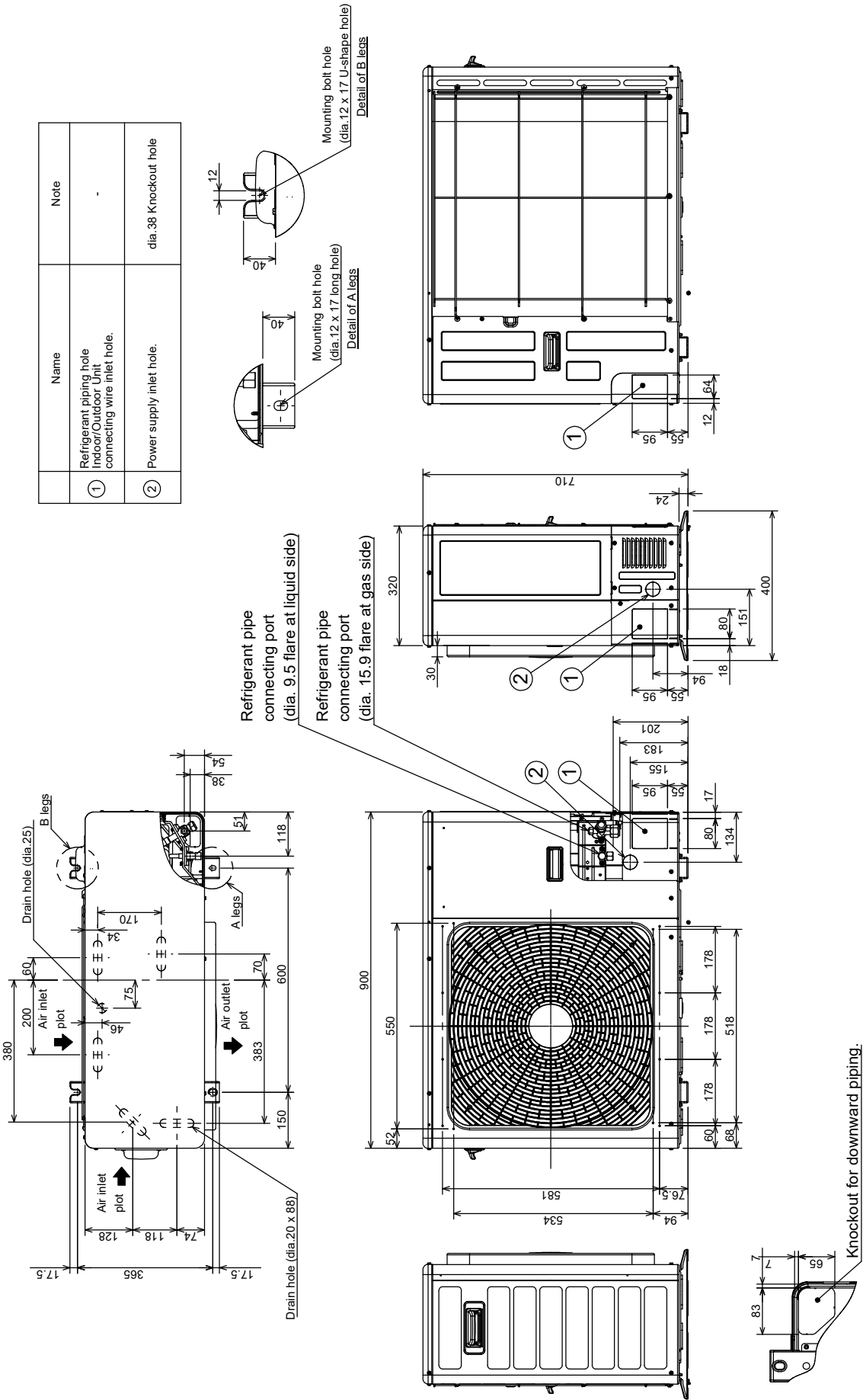
Model name	Outdoor unit		RAV-GV1601AT8P-E1 / TR	
Power supply			1 phase 220-240V, 50Hz 1 phase 220V, 60Hz (Power exclusive to outdoor is required)	
Compressor	Type		Harmonic Rotary compressor	
	Motor	(kW)	2.43	
	Pole		6	
Refrigerant charged		(kg)	2.2	
Refrigerant control			Pulse motor valve	
Inter connecting pipe	Standard length		(m)	7.5
	Min. length		(m)	5
	Max. total length		(m)	30
	Height difference	Outdoor lower	(m)	30
		Outdoor higher	(m)	30
Outer dimension	Height		(mm)	890
	Width		(mm)	900
	Depth		(mm)	320
Appearance			Silky shade (Muncel 1Y8.5/0.5)	
Total weight		(kg)	63	
Heat exchanger			Finned tube	
Fan unit	Fan		Propeller fan	
	Standard air flow high		(m³/h)	5000
	Motor		(W)	100
Connecting pipe	Gas side		(mm)	15.9
	Liquid side		(mm)	9.5
Sound pressure level		Cooling/Heating (dB·A)	57/59	
Sound power level		Cooling/Heating (dB·A)	74/76	
Outside air temperature, Cooling		°C (Dry bulb temp.)	46 to -15	
Outside air temperature, Heating		°C (Wet bulb temp.)	15 to -15	

※ Twins indoor unit connecting is not allowed for this models.

3-2. Dimension

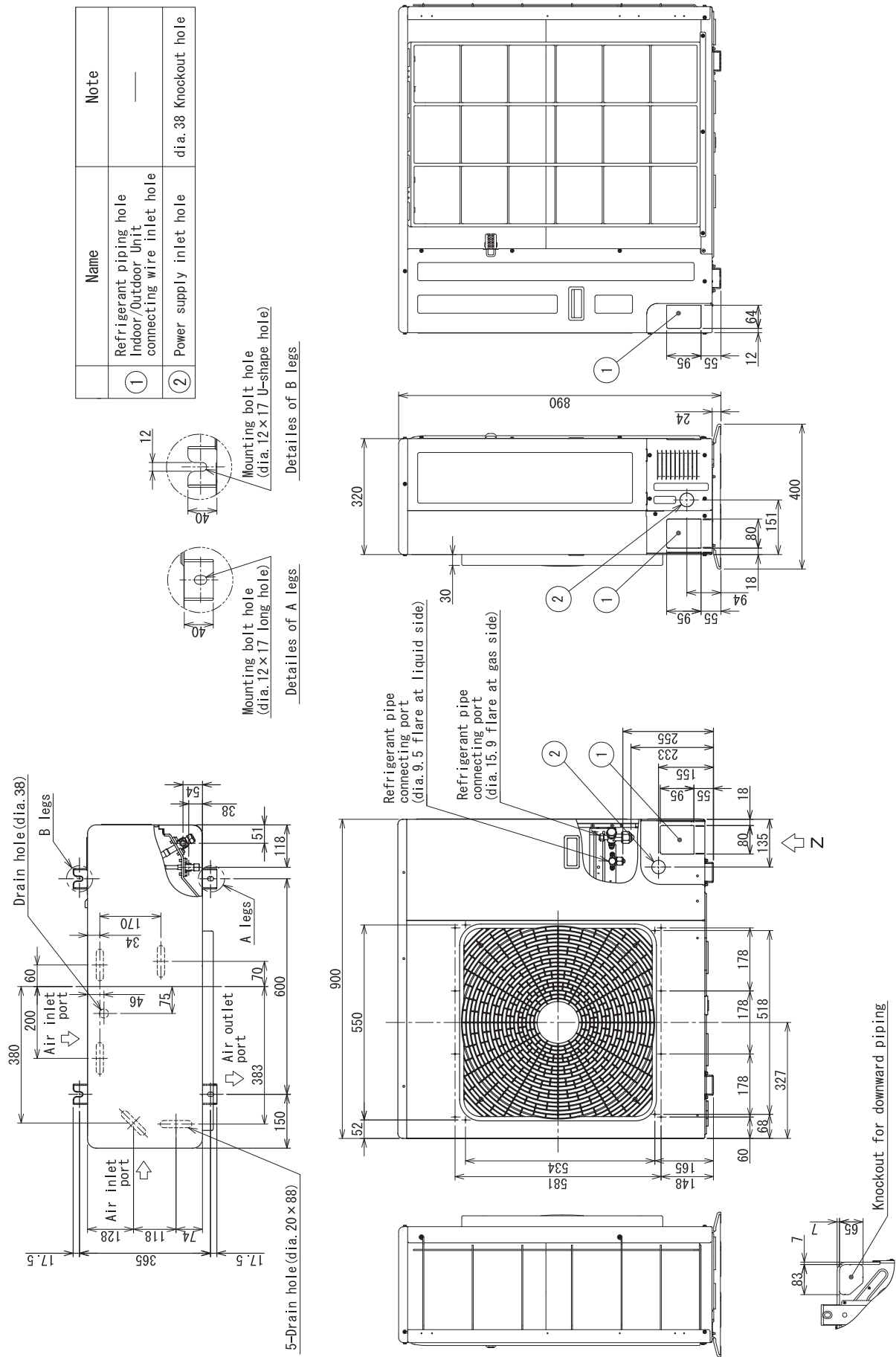
RAV-GV*__1AT8P-E / TR (*110 / 140)

	Name	Note
①	Refrigerant piping hole Indoor/Outdoor Unit connecting wire inlet hole.	-
②	Power supply inlet hole.	dia. 38 Knockout hole



(Unit:mm.)

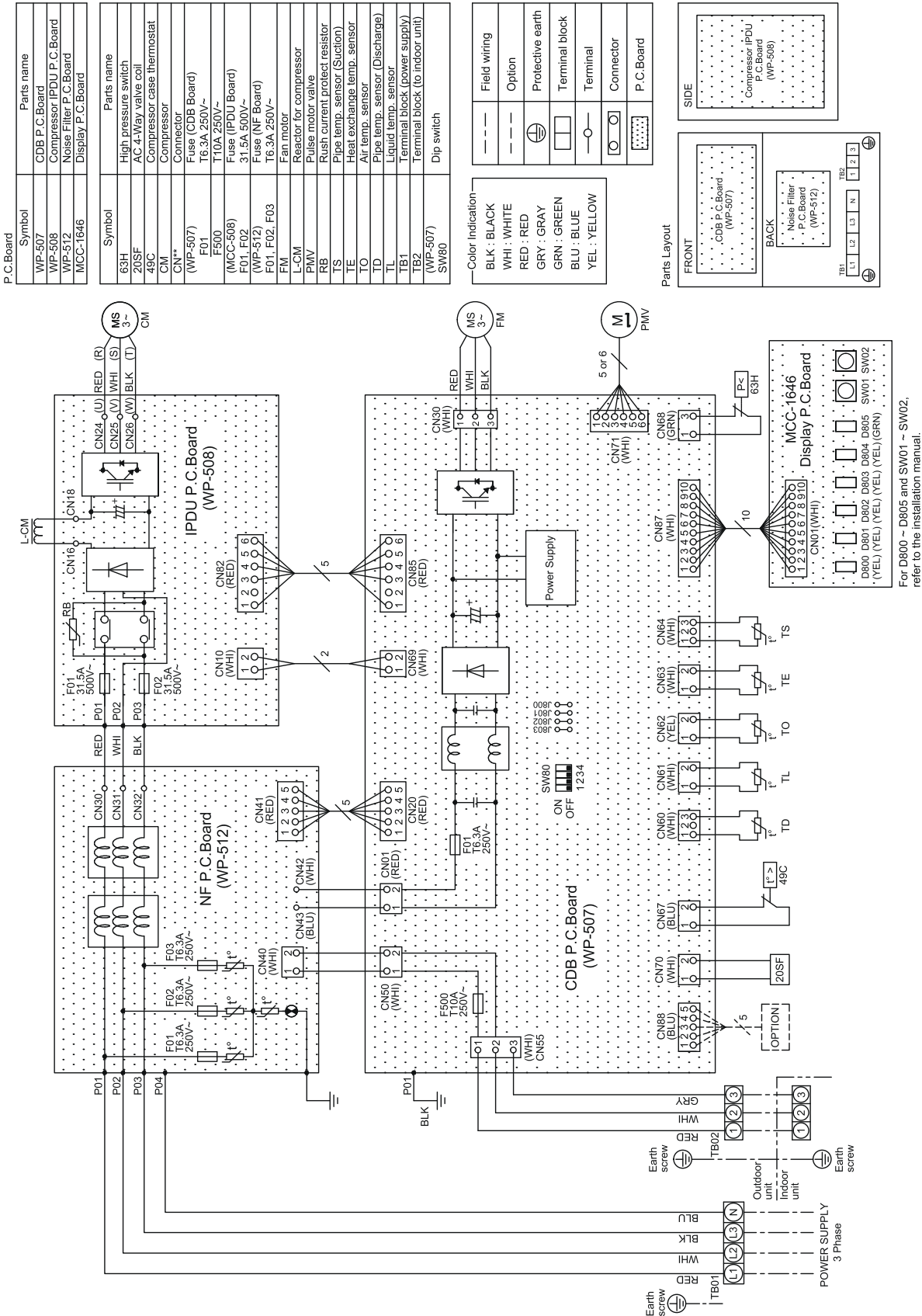
RAV-GV1601AT8P-E1 / TR



(Unit:mm)

3-3. Wiring Diagram

RAV-GV*_1AT8P-E / TR (*110 / 140)



RAV-GV1601AT8P-E1 / TR

Symbol	Parts name
WP-507	CDB P.C.Board
WP-508	Compressor IPDU P.C.Board
WP-512	Noise Filter P.C.Board
MCC-1646	Display P.C.Board

Symbol	Parts name
63H	High pressure switch
20SF	AC 4-Way valve coil
49C	Compressor case thermostat
CM	Compressor
CN**	Connector
(WP-507) F01	Fuse (CDB Board) T6.3A 250V~
F500	T10A 250V~
(MCC-508) F01, F02	Fuse (IPDU Board) 31.5A 500V~
(WP-512) F01, F02, F03	Fuse (NF Board) T6.3A 250V~
FM	Fan motor
L-CM	Reactor for compressor
PMV	Pulse motor valve
R8	Rush current protect resistor
TS	Pipe temp. sensor (Suction)
TE	Heat exchange temp. sensor
TO	Air temp. sensor
TD	Pipe temp. sensor (Discharge)
TL	Liquid temp. sensor
TB1	Terminal block (power supply)
TB2	Terminal block (to indoor unit)
(WP-507) SW80	Dip switch

---	Field wiring
---	Option
	Protective earth
	Terminal block
	Terminal
	Connector
	P.C.Board

Diagram illustrating the layout of the PDU (Power Distribution Unit) components, showing the Front, Back, and Side views.

FRONT

- COB P.C. Board (WP-507)
- Noise Filter P.C. Board (WP-512)

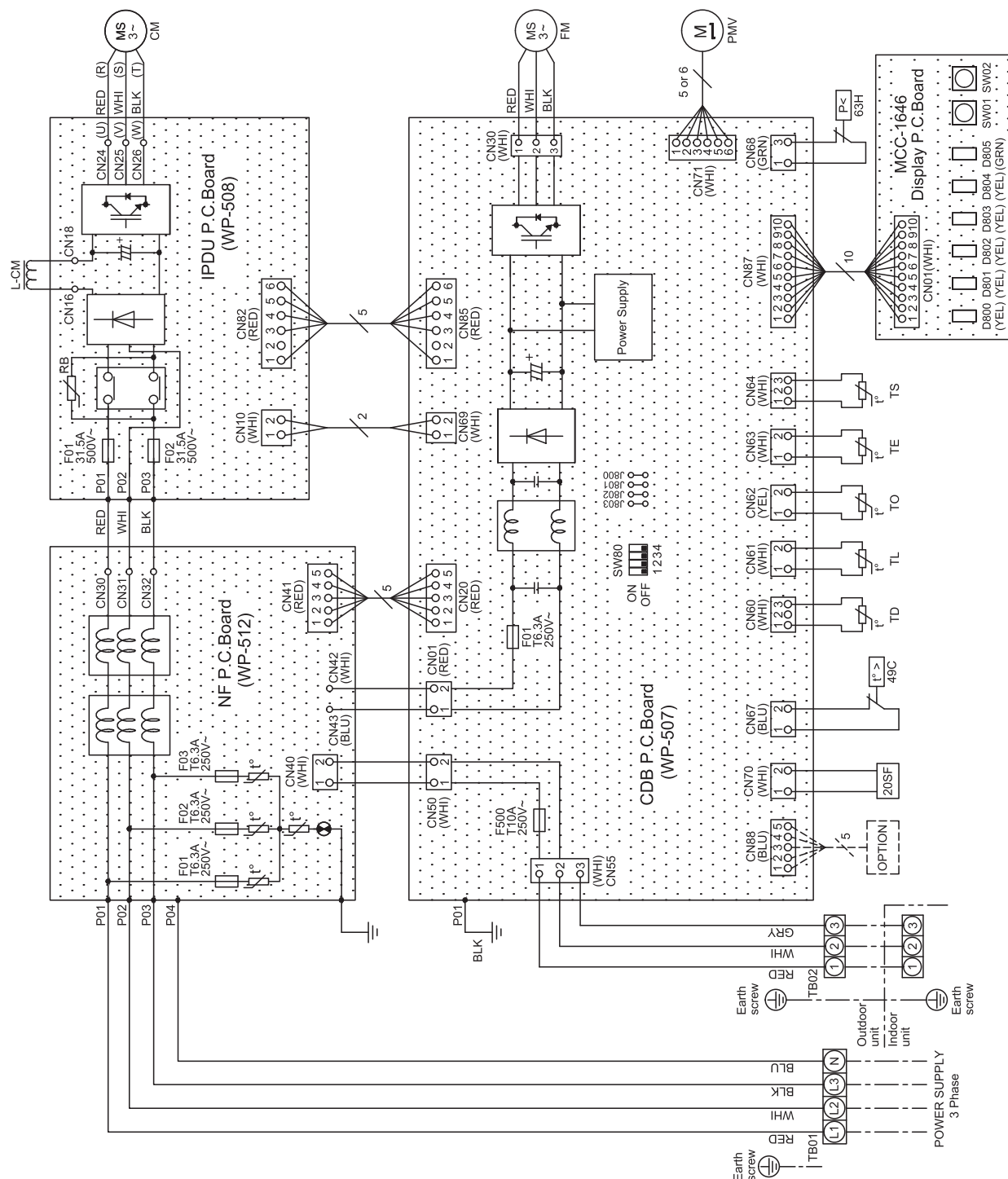
BACK

- Compressor PDU P.C. Board (WP-508)

SIDE

Labels on the right side of the diagram:

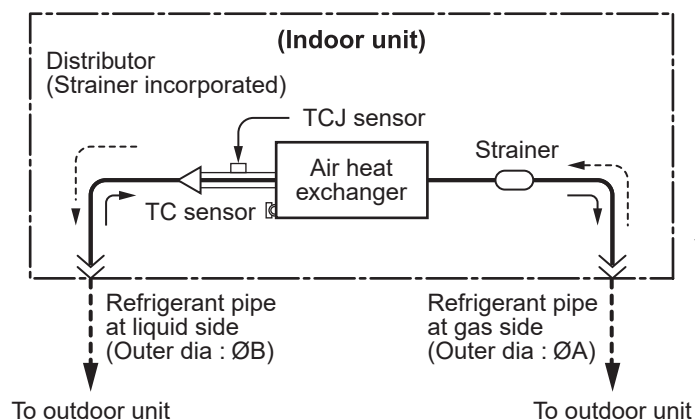
- TB1
- TB2
- L1
- L2
- L3
- N
- 1
- 2
- 3



For D800 ~ D805 and SW01 ~ SW02, refer to the installation manual.

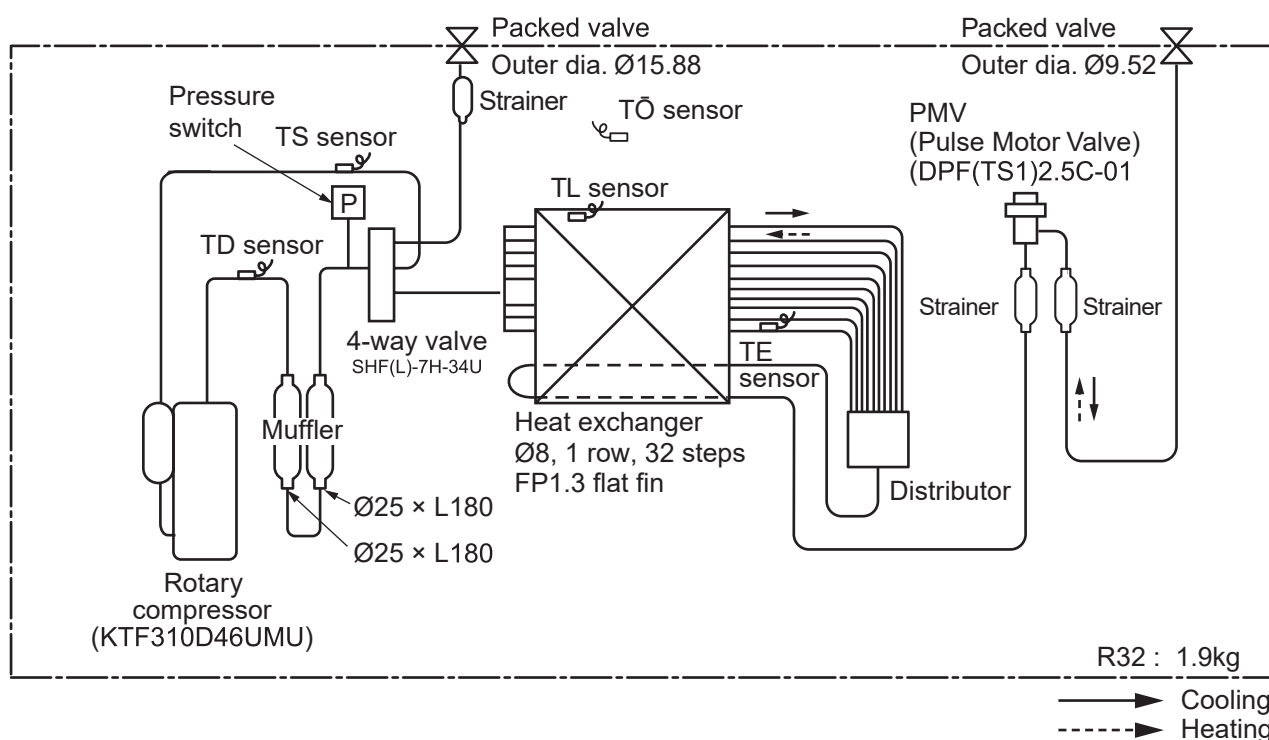
3-4. Refrigerant cycle diagram

RAV-GV*__1AT8P-E / TR (*110 / 140)



Dimension table

Indoor unit	Outer diameter of refrigerant pipe	
	Gas side ØA	Liquid side ØB
GV110 type	15.9	9.5
GV140 type		



RAV-GV1101AT8P-E / TR

		Pressure				Pipe surface temperature (°C)				* Comp. Hz	Fan	Temp	
		(MPa)		(kg/cm²G)								In	Out
		Pd	Ps	Pd	Ps	(TD)	(TS)	(TC)	(TE)				
Cooling	Standard	3.45	0.95	35.2	9.70	91	12	13	39	50	HIGH	27/19	35/-
	Overload	3.72	1.38	37.9	14.0	82	13	15	51	40	HIGH	32/24	46/-
	Low load	2.60	0.70	26.5	7.10	36	0.5	7	28	33	LOW	18/15.5	-15/-
Heating	Standard	2.45	0.60	25.0	6.10	65	-1.0	34	2.7	54	HIGH	20/-	7/6
	Overload	3.40	0.75	34.7	7.70	70	10	53	13	48	LOW	29/27	24/18
	Low load	1.42	0.20	14.4	2.03	76	-16	16	-17	65	HIGH	0/-	-15/-

* 6 poles are provided to this compressor.

The compressor frequency (Hz) measured with a clamp meter is 2 times of revolutions (rps) of the compressor.

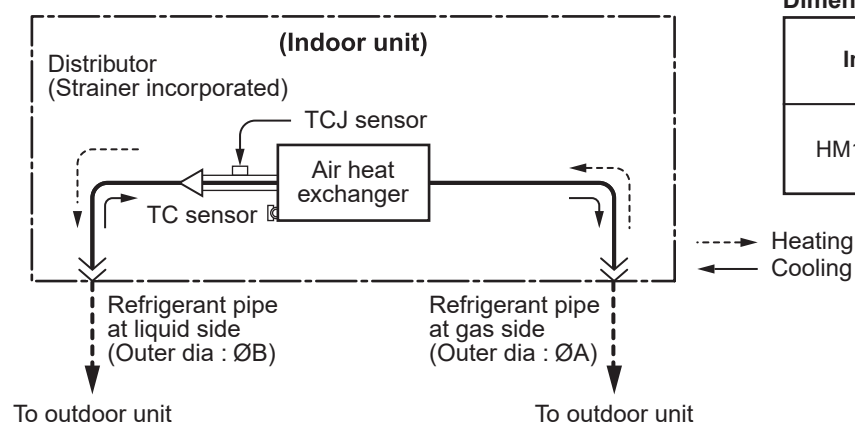
RAV-GV1401AT8P*

		Pressure				Pipe surface temperature (°C)				* Comp. Hz	Fan	Temp	
		(MPa)		(kg/cm²G)								In	Out
		Pd	Ps	Pd	Ps	(TD)	(TS)	(TC)	(TE)				
Cooling	Standard	3.52	0.89	35.8	9.10	98	8	10	40	75	HIGH	27/19	35/-
	Overload	3.78	1.40	38.5	14.3	81	17	21	55	54	HIGH	32/24	46/-
	Low load	2.60	0.70	26.5	7.10	36	0.5	7	28	33	LOW	18/15.5	-15/-
Heating	Standard	2.65	0.65	27.0	6.63	59	-0.8	42	1.2	79	HIGH	20/-	7/6
	Overload	3.40	0.75	34.7	7.70	70	10	53	13	48	LOW	29/27	24/18
	Low load	1.47	0.22	15.0	2.24	95	-26	19	-19	100.2	HIGH	0/-	-15/-

* 6 poles are provided to this compressor.

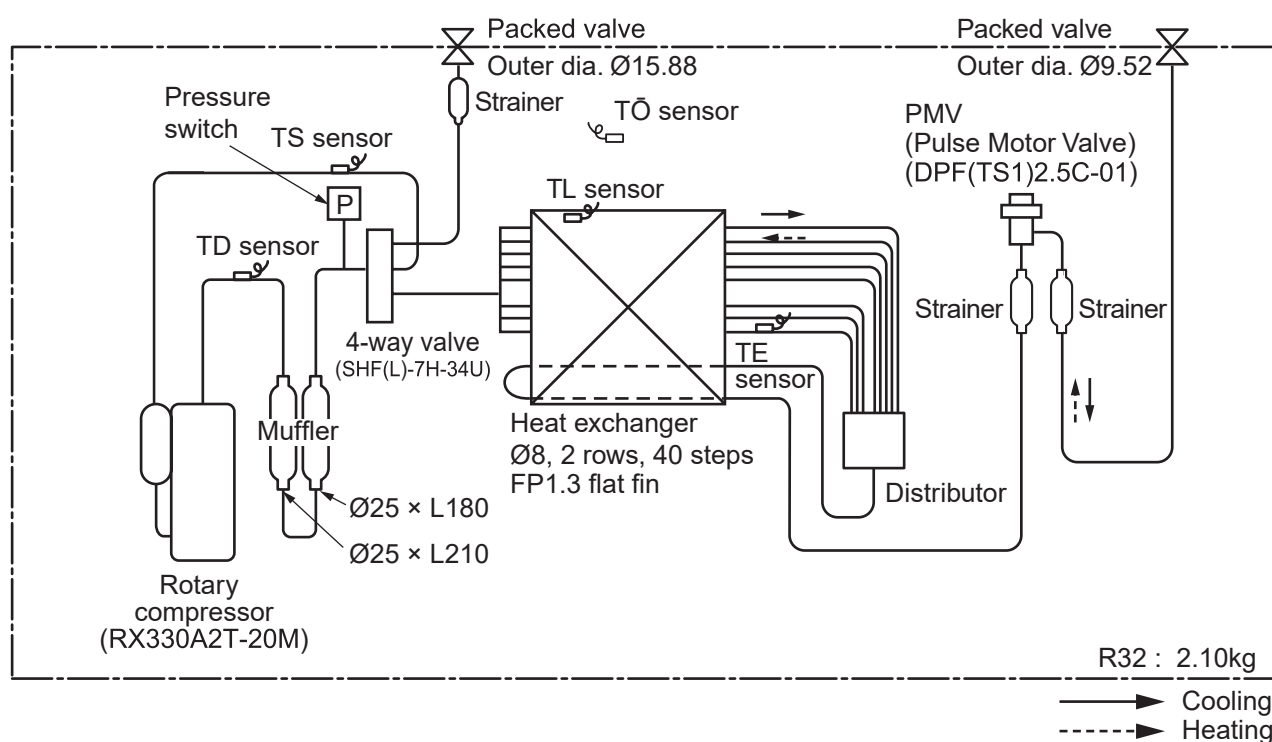
The compressor frequency (Hz) measured with a clamp meter is 2 times of revolutions (rps) of the compressor.

RAV-GV1601AT8P-E1 / TR



Dimension table

Indoor unit	outer diameter of refrigerant pipe	
	Gas side ØA	Liquid side ØB
HM1601 type	15.9	9.5



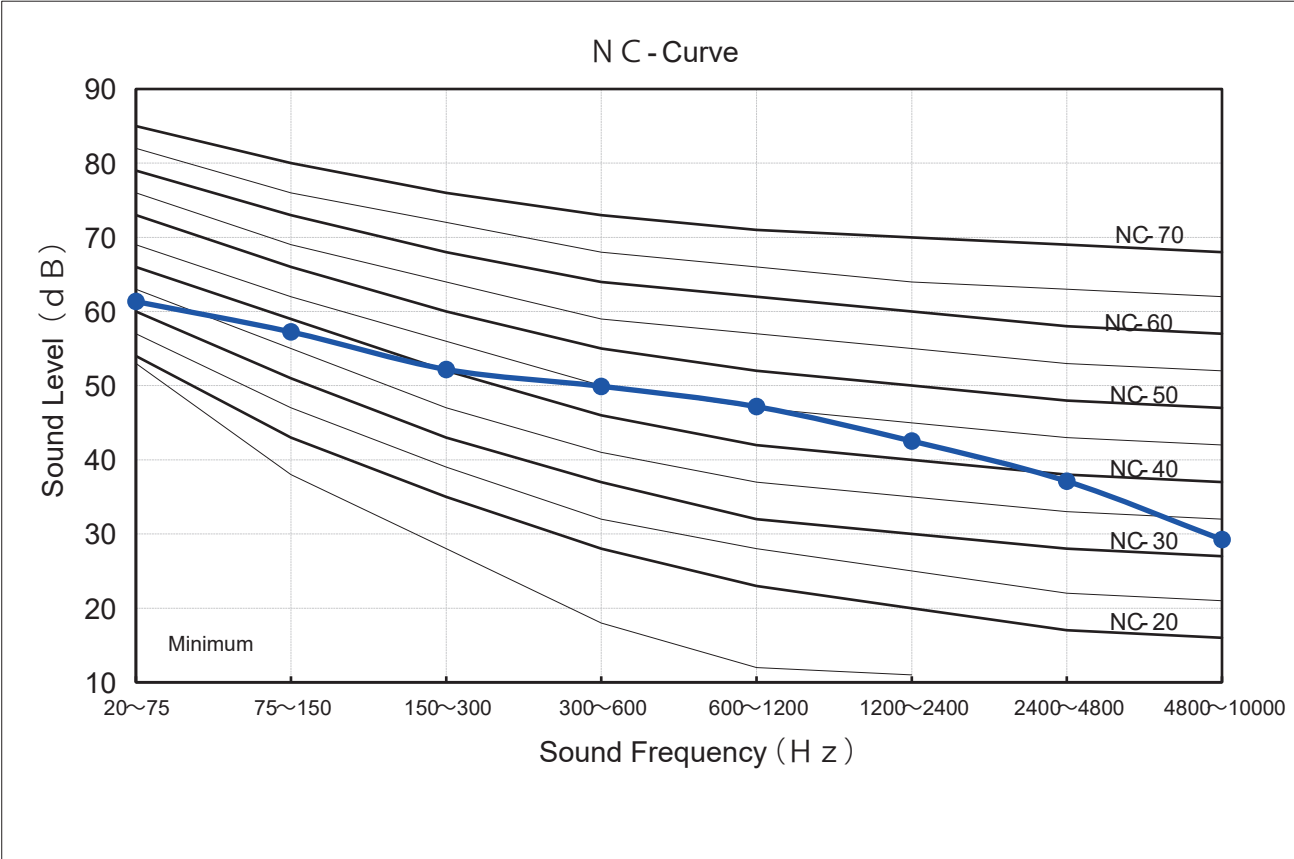
		Pressure				Pipe surface temperature (°C)				* Comp. Hz	Fan	Temp	
		(MPa)		(kg/cm²G)									
		Pd	Ps	Pd	Ps	(TD)	(TS)	(TC)	(TE)			In	Out
Cooling	Standard	3.12	0.89	31.8	9.08	86	8	11	45	85	HIGH	27/19	35/-
	Overload	3.57	1.27	36.4	12.9	79	17	21	55	46	HIGH	32/24	46/-
	Low load	2.56	0.78	26.1	7.95	64	6	7	25	35	LOW	18/15.5	-15/-
Heating	Standard	2.70	0.70	27.5	7.13	70	0.5	43	1.5	77	HIGH	20/-	7/6
	Overload	3.39	1.09	34.5	11.1	90	13	53	15	53	LOW	29/27	24/18
	Low load	1.50	0.23	15.3	2.35	89	-24	22	-19	96	HIGH	0/-	-15/-

The compressor frequency (Hz) measured with a clamp meter is 2 times of revolutions (rps) of the compressor.

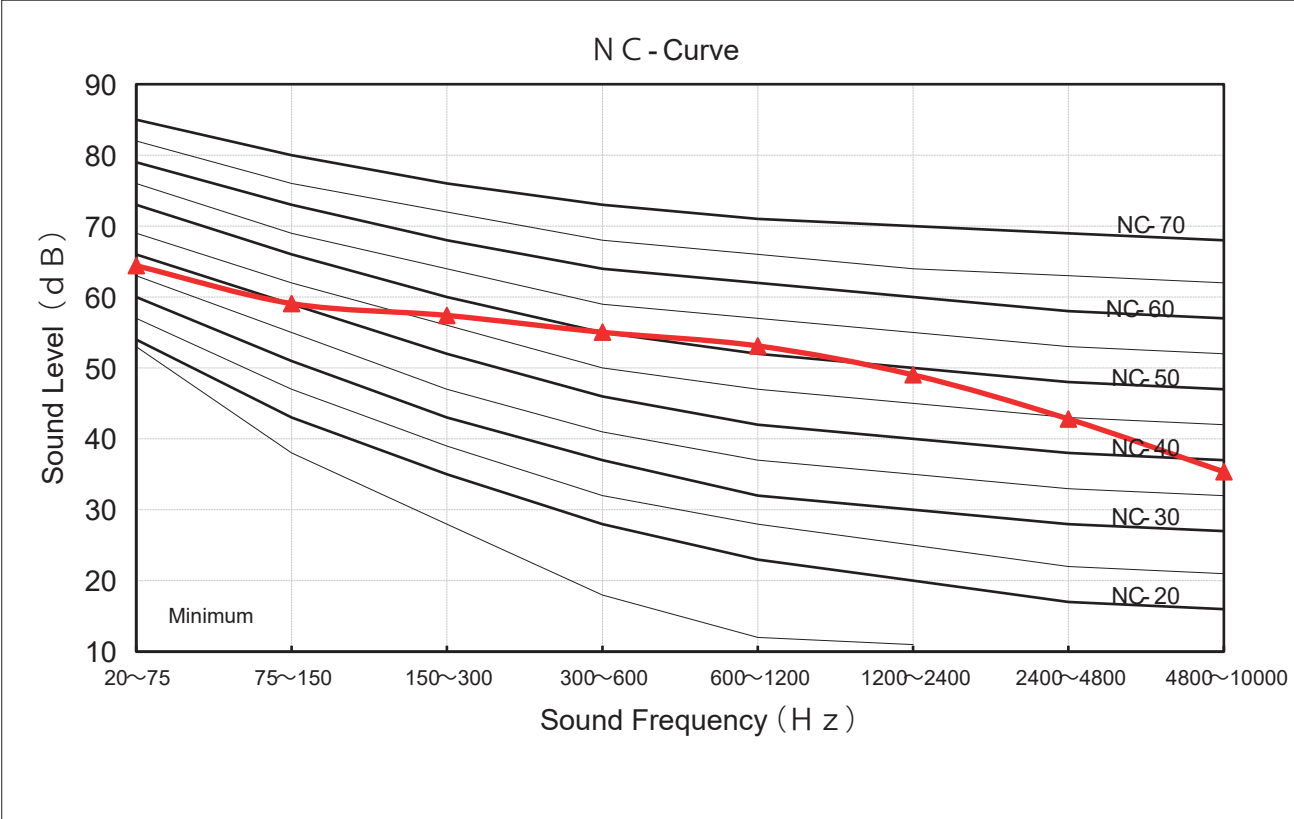
3-5. Sound Characteristic

RAV-GV1101AT8P-E / TR

Cooling

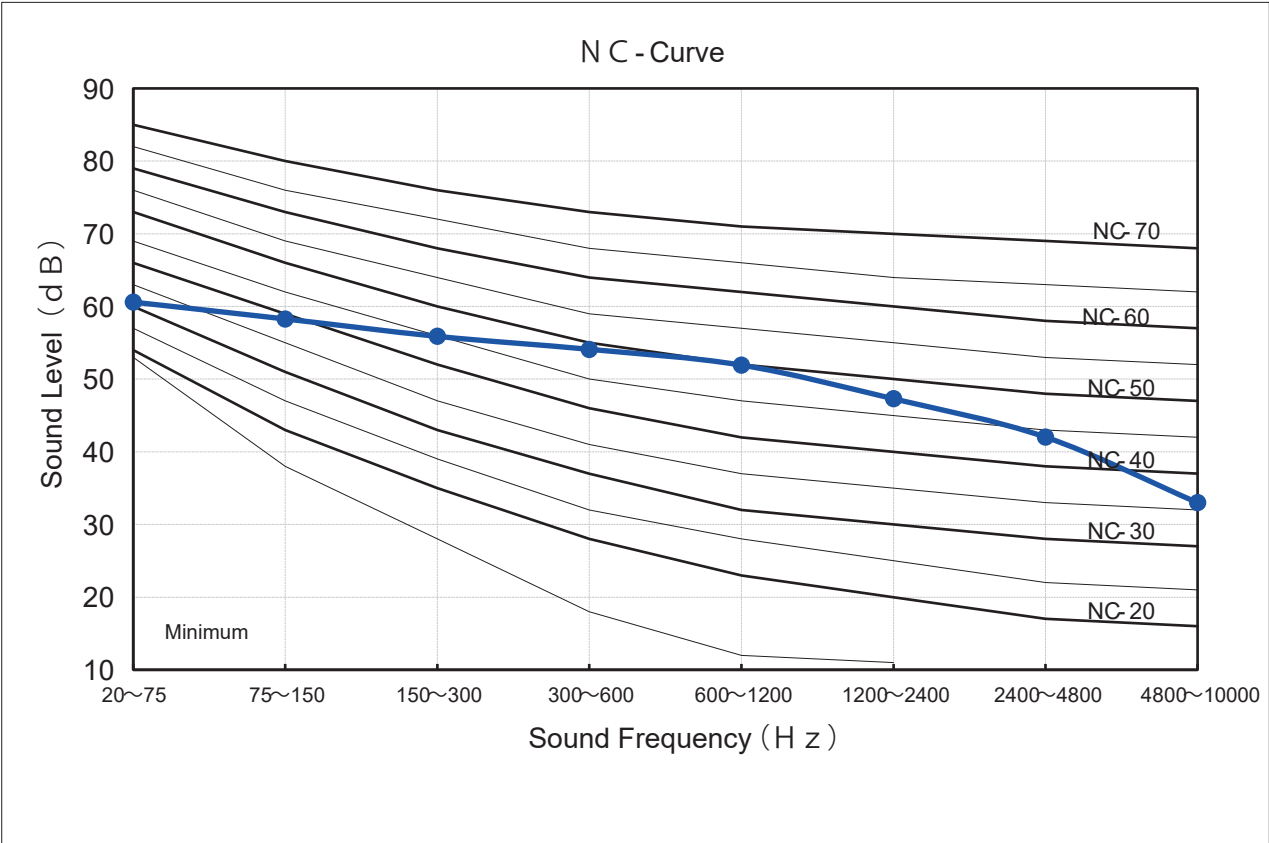


Heating

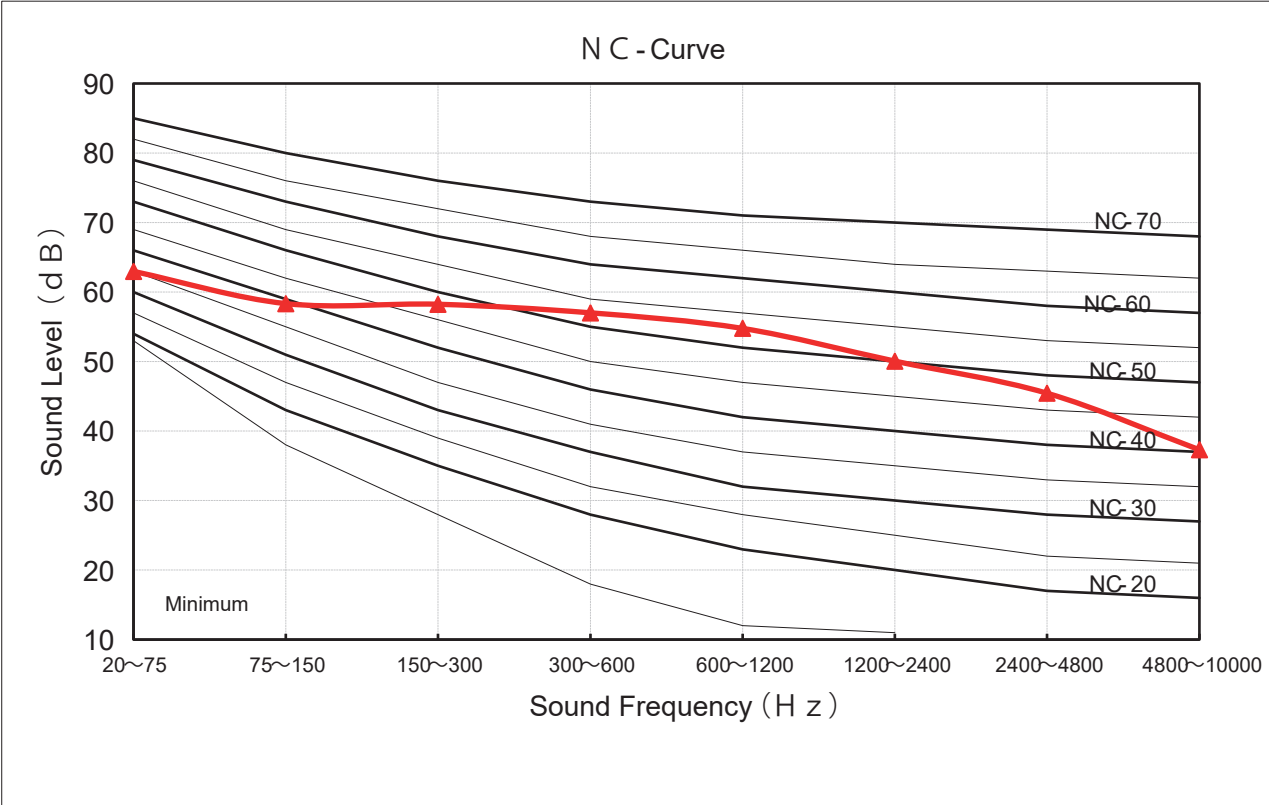


RAV-GV1401AT8P-E / TR

Cooling

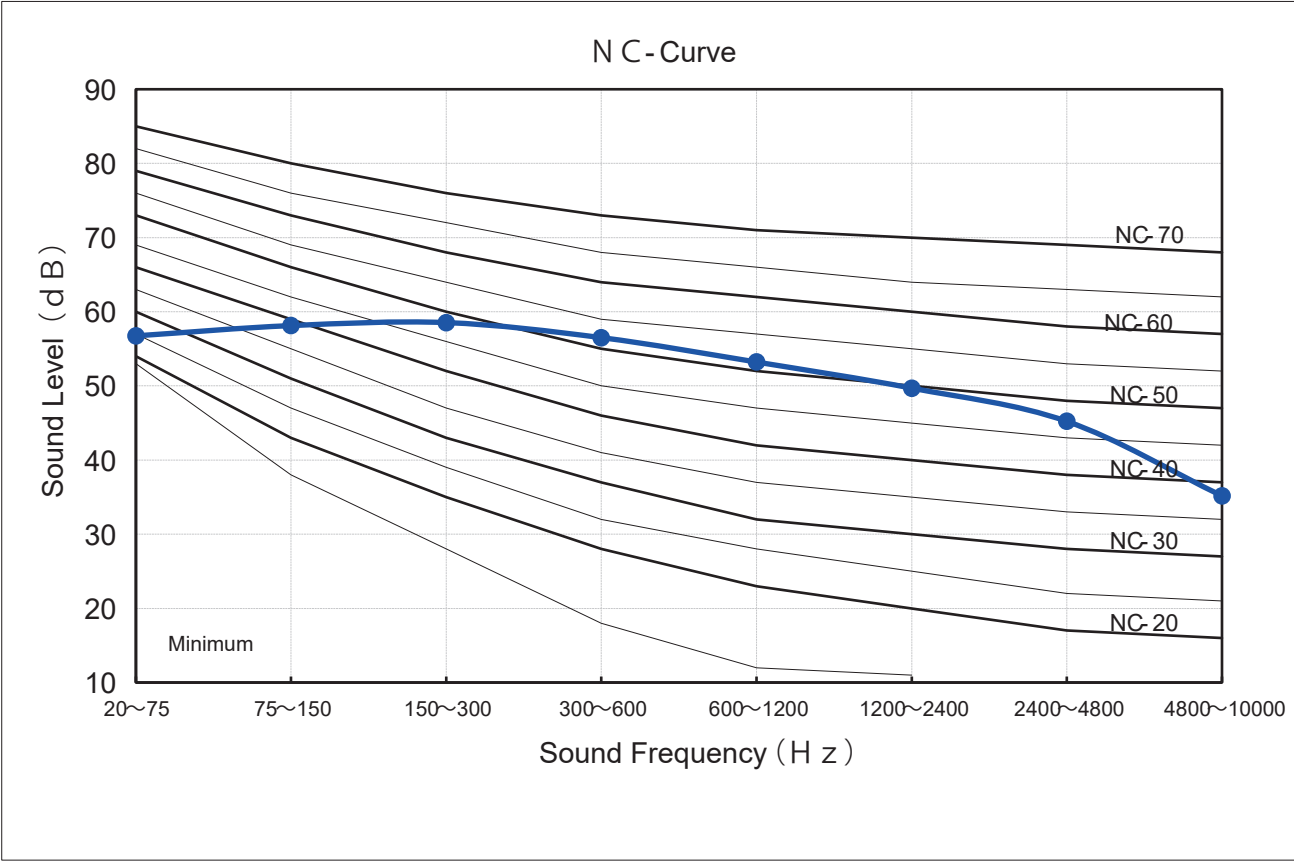


Heating

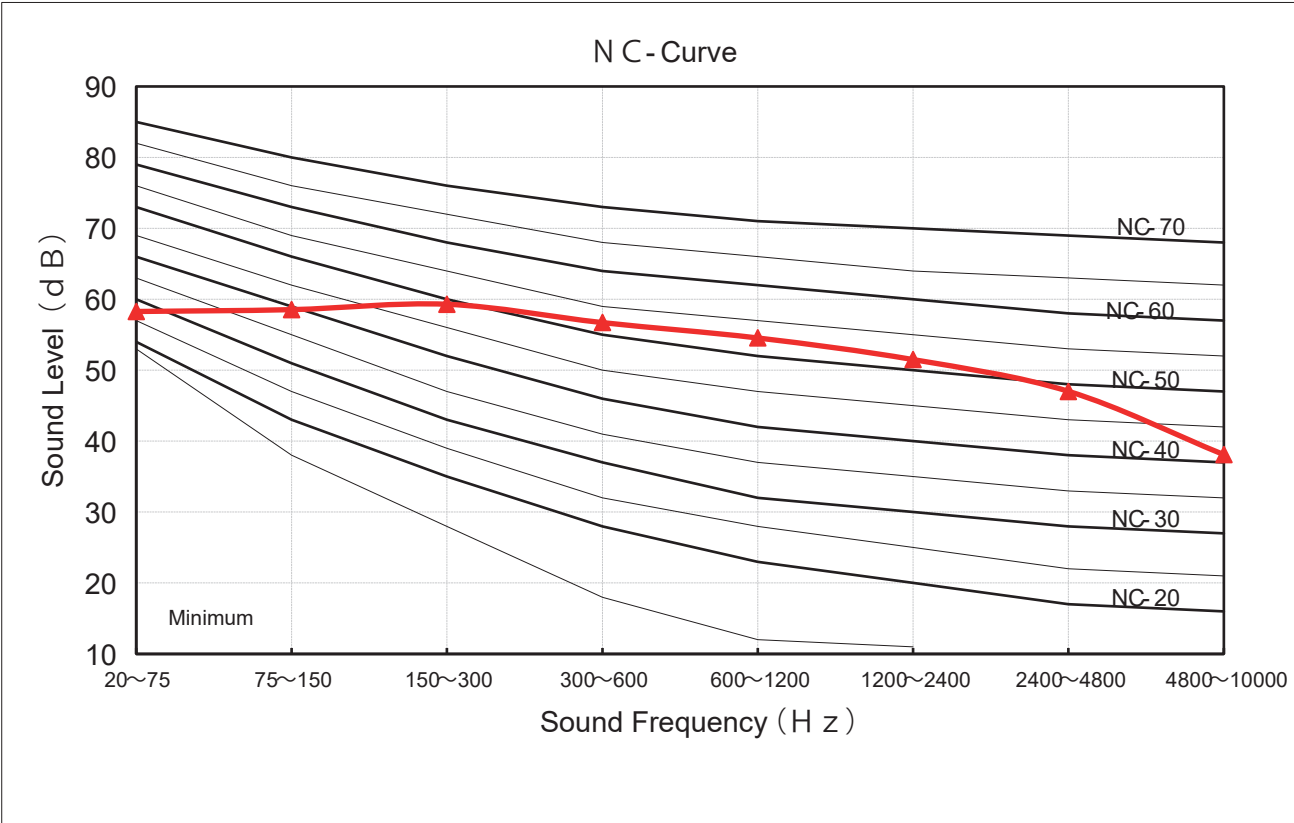


RAV-GV1601AT8P-E1 / TR

Cooling

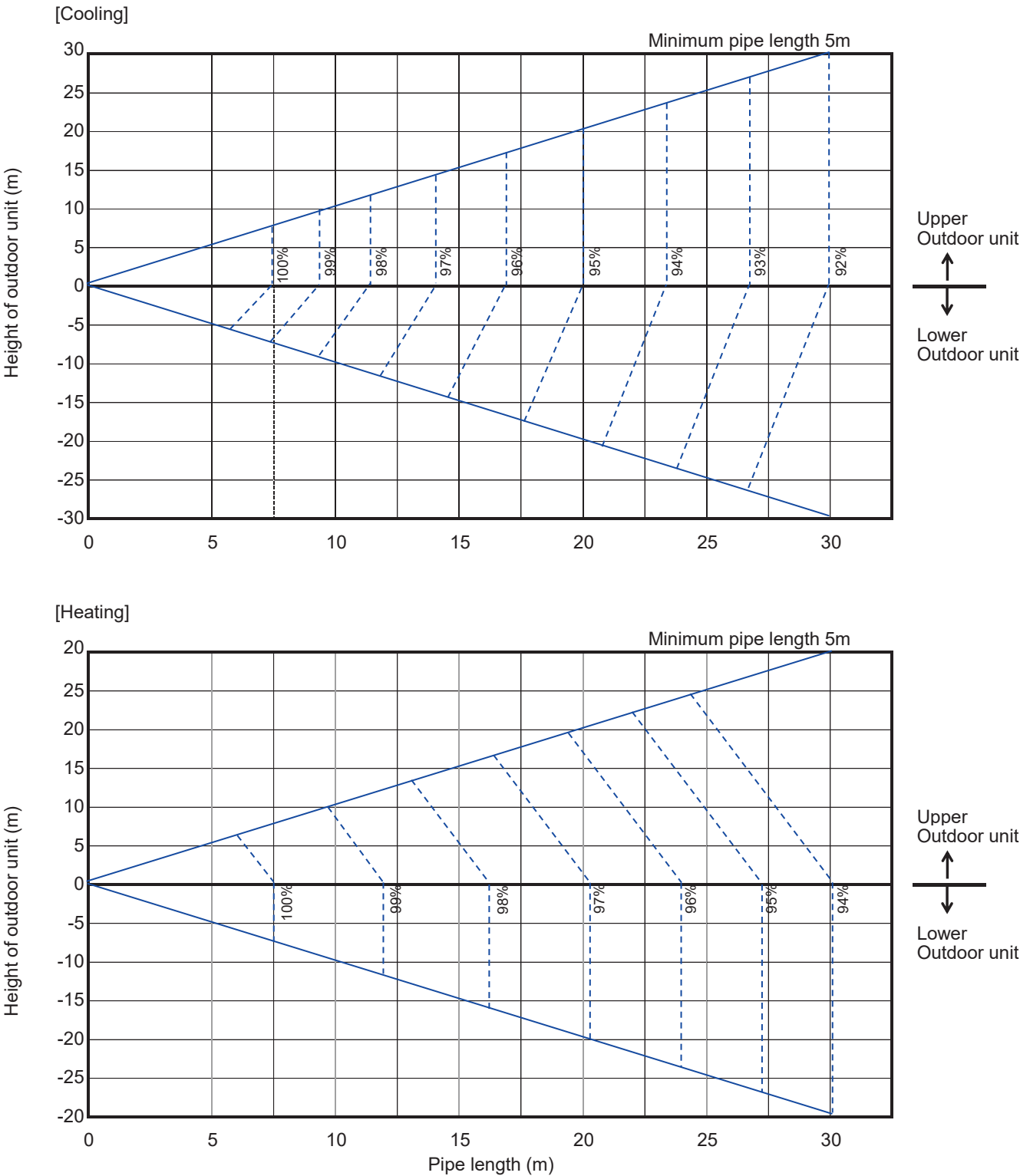


Heating

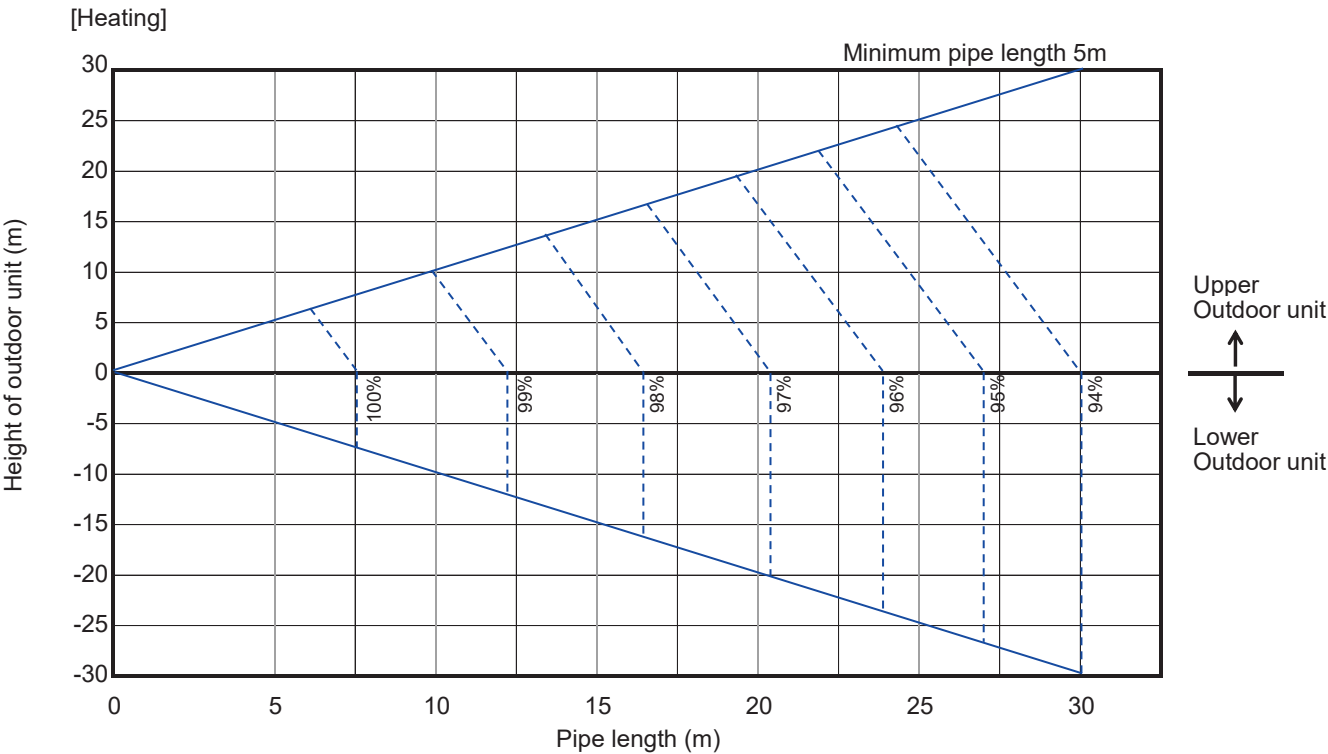
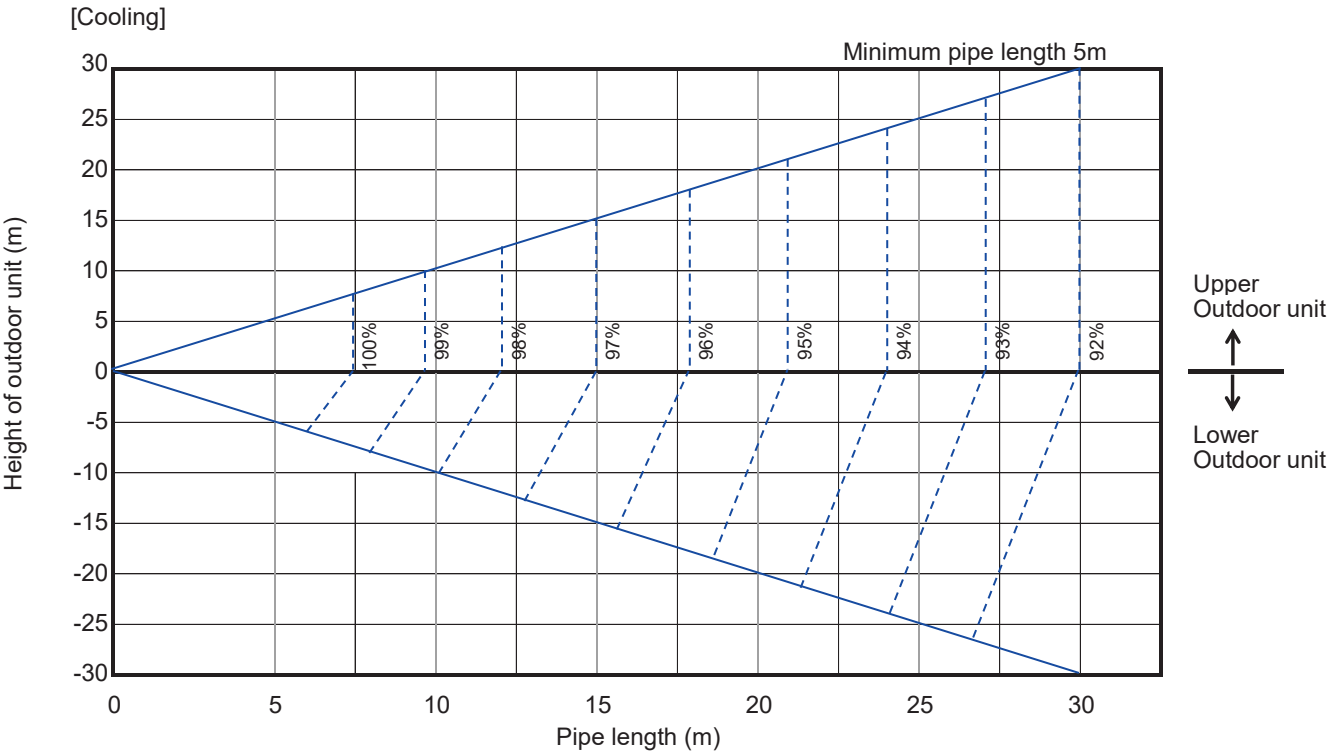


3-6. Connecting pipe length and lift difference between indoor units vs. capacity correction value

RAV-GV*__1AT8P-E / TR (*110 / 140)



RAV-GV1601AT8P-E1 / TR



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