

Super Digital Inverter R454B

Light Commercial System

Indoor Units

4-way Cassette Type

RAV-HB121UTP-UL
RAV-HB181UTP-UL
RAV-HB241UTP-UL
RAV-HB301UTP-UL
RAV-HB361UTP-UL
RAV-HB421UTP-UL
RAV-HB481UTP-UL

Under Ceiling Type

RAV-HB181CTP-UL
RAV-HB241CTP-UL
RAV-HB301CTP-UL
RAV-HB361CTP-UL
RAV-HB421CTP-UL
RAV-HB481CTP-UL

Standard Duct Type

RAV-HB121BTP-UL
RAV-HB181BTP-UL
RAV-HB241BTP-UL
RAV-HB301BTP-UL
RAV-HB361BTP-UL
RAV-HB421BTP-UL
RAV-HB481BTP-UL

High-wall Type

RAV-HB121KRTP-UL
RAV-HB181KRTP-UL
RAV-HB241KRTP-UL
RAV-HB301KRTP-UL
RAV-HB361KRTP-UL

Outdoor Units

RAV-BP121AT2P-UL
RAV-BP181AT2P-UL
RAV-BP241AT2P-UL
RAV-BP301AT2P-UL
RAV-BP361AT2P-UL
RAV-BP421AT2P-UL
RAV-BP481AT2P-UL

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1. Line up

Outdoor unit

Model name	RAV-BP121AT2P-UL	RAV-BP241AT2P-UL	RAV-BP301AT2P-UL
	RAV-BP181AT2P-UL		RAV-BP361AT2P-UL
			RAV-BP421AT2P-UL
			RAV-BP481AT2P-UL
Appearance			

Indoor unit

Capacity range		K Btu/h						
4-way Cassette	 RAV-HB__1UTP-UL	12	18	24	30	36	42	48
Under Ceiling	 RAV-HB__1CTP-UL	-	18	24	30	36	42	48
Standard Duct	 RAV-HB__1BTP-UL	12	18	24	30	36	42	48
High-wall	 RAV-HB__1KRTP-UL	12	18	24	30	36	-	-

2. Indoor Units

2-1. 4-way Cassette Type

2-1-1. Specifications

2-1-2. Dimension

2-1-3. Wiring Diagrams

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Appendix

2-1-1. Specifications

4-way Cassette Type

Model name	Indoor unit		RAV -		HB121UTP-UL		HB181UTP-UL		HB241UTP-UL		
	Outdoor unit		RAV -		BP121AT2P-UL		BP181AT2P-UL		BP241AT2P-UL		
Cooling	Capacity		Btu/h		12000		18000		24000		
	Power consumption		W		750		1324		1739		
	EER2				16.0		13.6		13.8		
	SEER2				26.0		25.5		24.2		
Heating	Capacity		Btu/h		14000		20000		27000		
	Power consumption		W		875		1475		2140		
	COP2				16.0		13.6		12.6		
	HSPF2				12.0		11.3		11.1		
Power supply			1 Phase 208V/230V 60 Hz								
Indoor unit											
Outer dimension	Main unit	Height	In	10.1							
		Width	In	33.1							
		Depth	In	33.1							
	Panel	Height	In	1.2							
		Width	In	37.4							
		Depth	In	37.4							
Total weight	Main unit		lbs.		46.3						
	Panel		lbs.		10.0						
Air flow volume	Indoor unit (H/M/L)		CFM		550 / 480 / 440		670 / 540 / 470		730 / 630 / 510		
Sound Pressure Level (H/M+/M/L+/L)			dB(A)		35 / 34 / 33 / 32 / 31		38 / 37 / 33 / 32 / 31		41 / 40 / 37 / 36 / 34		
Sound power level (High) Cooling / Heating			(dB)		50 / 50		53 / 53		56 / 56		
Fan motor output			W		60				130		
Drain tube size (outside diameter)			In		0.9" (VP16)		1.3" (VP25)				
Outdoor unit											
Air flow volume	Cooling / Heating		CFM		1590 / 1590		1590 / 1590		2300 / 2220		
Sound Pressure Level Cooling / Heating			dB(A)		48 / 52		48 / 52		52 / 54		
Sound power level (High) Cooling / Heating			(dB)		65 / 69		65 / 69		68 / 70		
Outer dimension	Height		In		21.7				35.0		
	Width		In		30.7				35.4		
	Depth		In		11.4				12.6		
Total weight	Main unit		lbs.		81.6				132		
Pipe	Min. legth		ft.		16'5"						
	Max. total length		ft.		164'1"				246'1"		
Refrigerant	Type		R454B								
	Amount (charged)		lbs.		3.31				4.63		
Flare Connections	Gas side		In		1 / 2"				5 / 8"		
	Liquid side		In		1 / 4"				3 / 8"		
Operating Range	Cooling		(°F)		5 to 115						
	Cooling with Wind buffels		(°F)		5 to 115				-13 to 115		
	Heating		(°F)		-13 to 59						

Rated conditions Cooling : Indoor air temperature 80°F (27°C) DB / 67 (19°C) WB, Outdoor air temperature 95°F (35°C) DB
 Heating : Indoor air temperature 70°F (21°C) DB, Outdoor air temperature 47°F (8°C) DB/43°F (6°C) WB

4-way Cassette Type

Model name	Indoor unit		RAV -	HB301UTP-UL	HB361UTP-UL	HB421UTP-UL
	Outdoor unit		RAV -	BP301AT2P-UL	BP361AT2P-UL	BP421AT2P-UL
Cooling	Capacity		Btu/h	30000	36000	42000
	Power consumption		w	2128	2687	3500
	EER2			14.1	13.4	12.0
	SEER2			24.5	24.8	22.6
Heating	Capacity		Btu/h	34000	40000	47000
	Power consumption		w	2400	3080	3930
	COP2			14.2	13.0	12.0
	HSPF2			11.8	11.3	11.2
Power supply			1 Phase 208V/230V 60 Hz			
Indoor unit						
Outer dimension	Main unit	Height	In	12.6		
		Width	In	33.1		
		Depth	In	33.1		
	Panel	Height	In	1.2		
		Width	In	37.4		
		Depth	In	37.4		
Total weight	Main unit		lbs.	55.1		
	Panel		lbs.	10.0		
Air flow volume	Indoor unit (H/M/L)		CFM	1150 / 840 / 630	1200 / 850 / 650	1250 / 870 / 650
Sound Pressure Level (H/M+/M/L+/L)			dB(A)	43 / 42 / 38 / 37 / 34	45 / 44 / 39 / 38 / 35	46 / 45 / 40 / 39 /36
Sound power level (High) Cooling / Heating			(dB)	58 / 58	60 / 60	61 / 61
Fan motor output			w	130		
Drain tube size (outside diameter)			In	1.3" (VP25)		
Outdoor unit						
Air flow volume	Cooling / Heating		CFM	3570 / 2870	3570 / 3100	3570 / 3290
Sound Pressure Level Cooling / Heating			dB(A)	54 / 54	54 / 54	54 / 54
Sound power level (High) Cooling / Heating			(dB)	71 / 68	71 / 71	71 / 71
Outer dimension	Height		In	52.8		
	Width		In	35.4		
	Depth		In	12.6		
Total weight	Main unit		lbs.	218		234
Pipe	Min. leghth		ft.	16'5"		
	Max. total length		ft.	246'1"		
Refrigerant	Type		R454B			
	Amount (charged)		lbs.	5.84		6.61
Flare Connections	Gas side		In	5 / 8"		
	Liquid side		In	3 / 8"		
Operating Range	Cooling		(°F)	5 to 115		
	Cooling with Wind buffels		(°F)	-13 to 115		
	Heating		(°F)	-13 to 59		

Rated conditions Cooling : Indoor air temperature 80°F (27°C) DB / 67 (19°C) WB, Outdoor air temperature 95°F (35°C) DB
 Heating : Indoor air temperature 70°F (21°C) DB, Outdoor air temperature 47°F (8°C) DB/43°F (6°C) WB

4-way Cassette Type

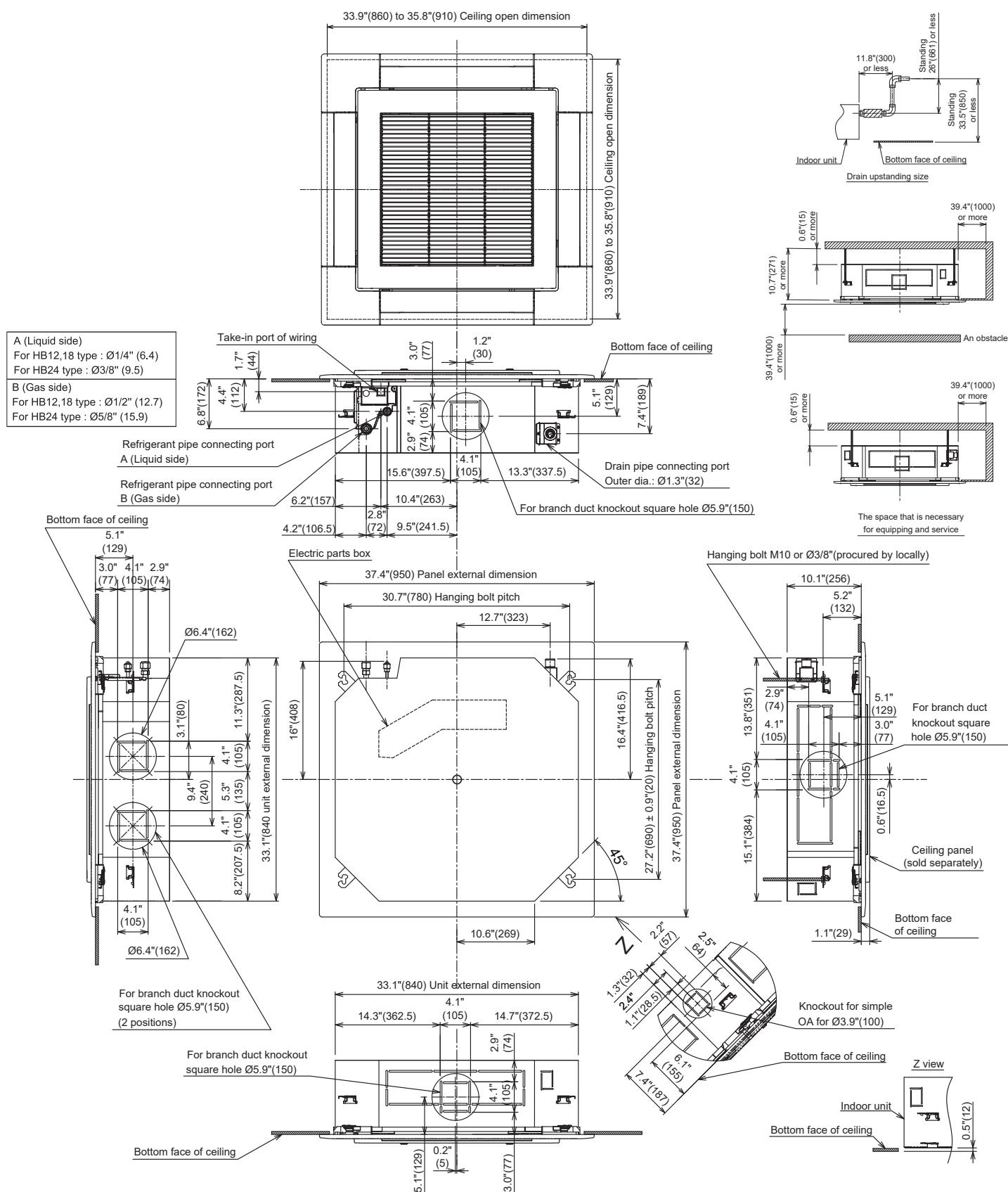
Model name	Indoor unit		RAV -	HB481UTP-UL	
	Outdoor unit		RAV -	BP481AT2P-UL	
Cooling	Capacity		Btu/h	48000	
	Power consumption		w	4530	
	EER2			10.6	
	SEER2			22.4	
Heating	Capacity		Btu/h	54000	
	Power consumption		w	4970	
	COP2			10.9	
	HSPF2			10.8	
Power supply			1 Phase 208V/230V 60 Hz		
Indoor unit					
Outer dimension	Main unit	Height	In	12.6	
		Width	In	33.1	
		Depth	In	33.1	
	Panel	Height	In	1.2	
		Width	In	37.4	
		Depth	In	37.4	
Total weight	Main unit		lbs.	55.1	
	Panel		lbs.	10.0	
Air flow volume	Indoor unit (H/M/L)		CFM	1300 / 1080 / 880	
Sound Pressure Level (H/M+/M/L+/L)			dB(A)	48 / 47 / 44 / 43 / 41	
Sound power level (High) Cooling / Heating			(dB)	64 / 63	
Fan motor output			w	130	
Drain tube size (outside diameter)			In	1.3" (VP25)	
Outdoor unit					
Air flow volume	Cooling / Heating		CFM	4540 / 4060	
Sound Pressure Level Cooling / Heating			dB(A)	60 / 60	
Sound power level (High) Cooling / Heating			(dB)	77 / 77	
Outer dimension	Height		In	52.8	
	Width		In	35.4	
	Depth		In	12.6	
Total weight	Main unit		lbs.	234	
Pipe	Min. leghth		ft.	16'5"	
	Max. total length		ft.	246'1"	
Refrigerant	Type			R454B	
	Amount (charged)		lbs.	6.61	
Flare Connections	Gas side		In	5 / 8"	
	Liquid side		In	3 / 8"	
Operating Range	Cooling		(°F)	5 to 115	
	Cooling with Wind buffels		(°F)	-13 to 115	
	Heating		(°F)	-13 to 59	

Rated conditions Cooling : Indoor air temperature 80°F (27°C) DB / 67 (19°C) WB, Outdoor air temperature 95°F (35°C) DB
 Heating : Indoor air temperature 70°F (21°C) DB, Outdoor air temperature 47°F (8°C) DB/43°F (6°C) WB

2-1-2. Dimension

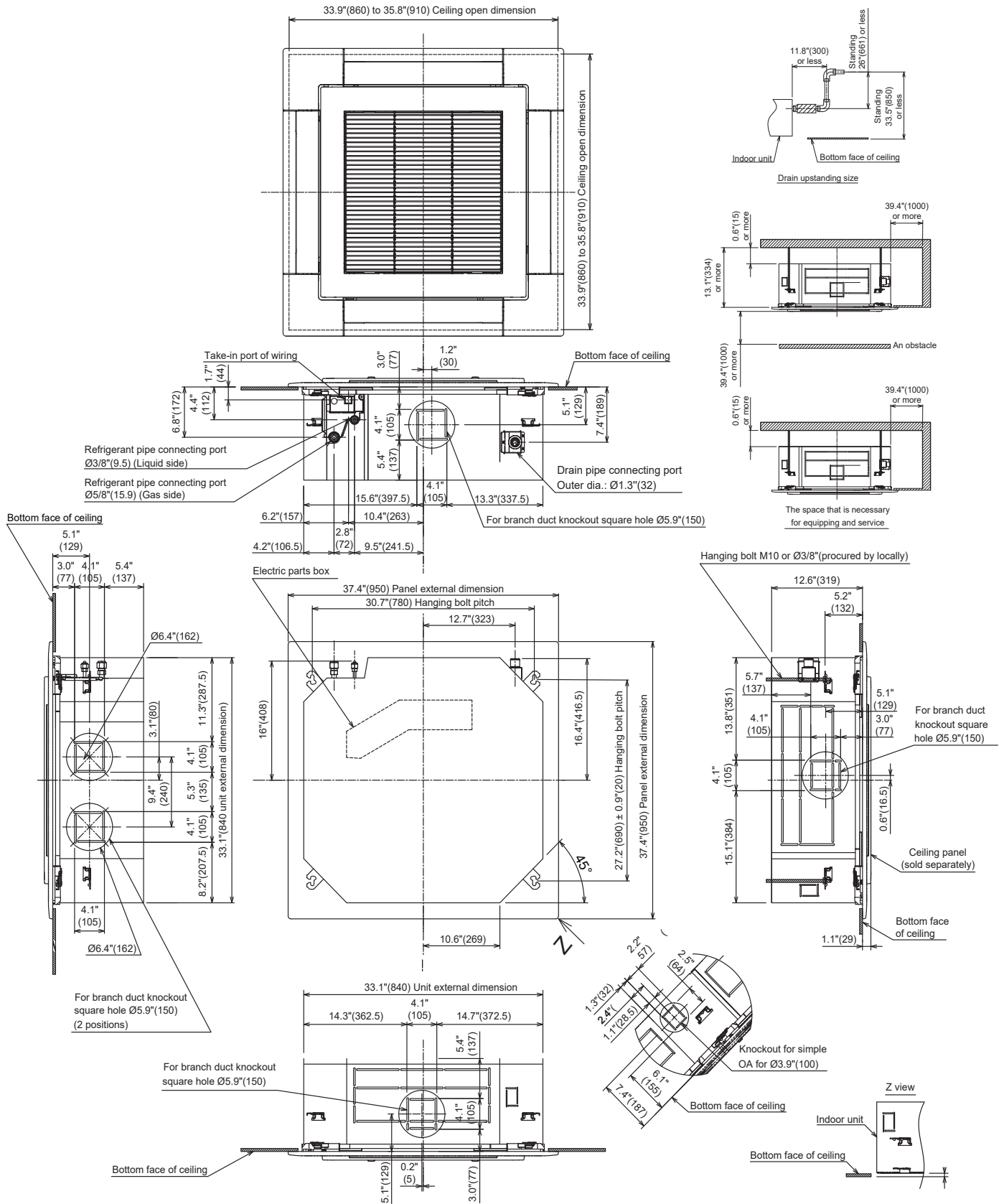
RAV-HB*_1UTP-UL (*12 / 18 / 24)

Unit : in (mm)



RAV-HB*__1UTP-UL (*30 / 36 / 42 / 48)

Unit : in (mm)

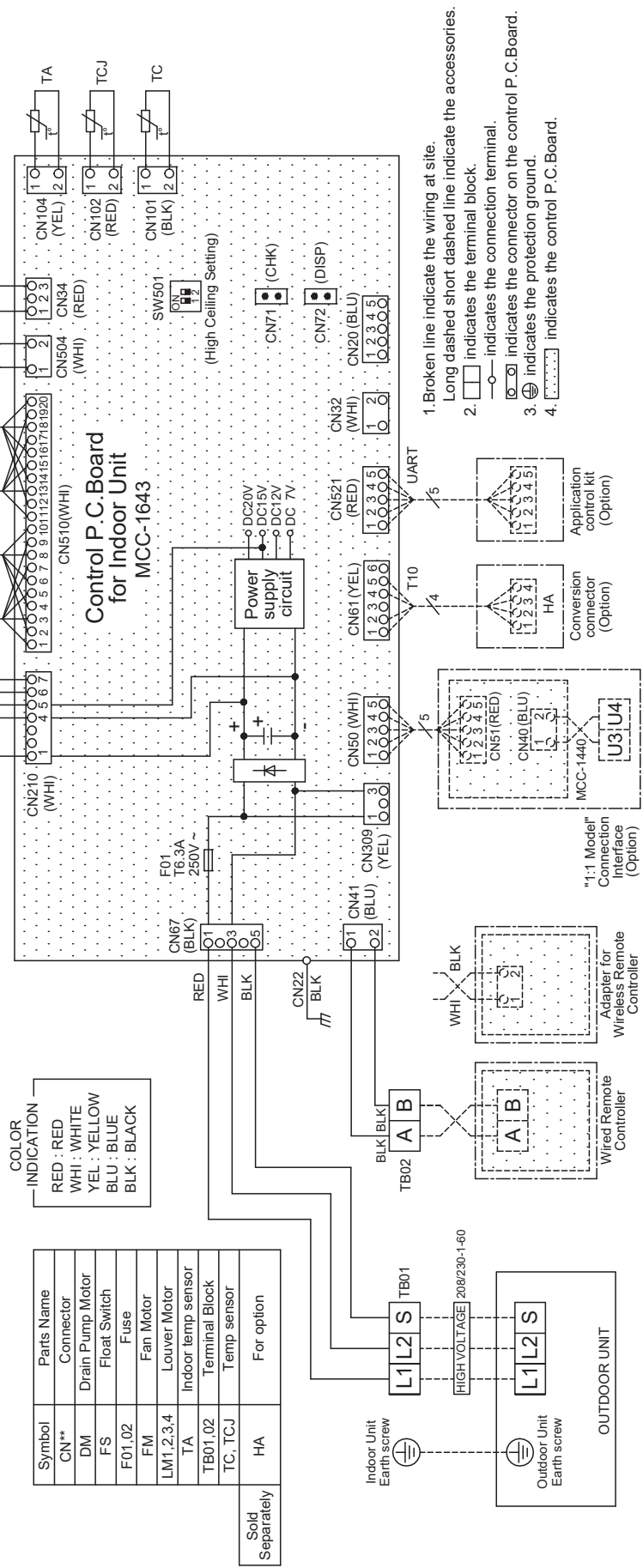


2-1-3. Wiring Diagrams

RAV-HB*_1UTP-UL (*12 / 18 / 24 / 30 / 36 / 42 / 48)

4-Way Cassette Type Wiring Diagram

208/230-1-60



2-1-4. Sensible Capacity Table

Product models : **RAV-HB121UTP-UL ; RAV-BP121AT2P-UL**

Specification of product at standard condition

Standard Condition	Indoor	80°F (DB) / 67°F (WB)	Total Cooling Capacity (TC)	12000 Btu/hr
	Outdoor	95°F (DB) / 75°F (WB)	Sensible Heat Capacity (SHC)	11000 Btu/hr

Outdoor air temperature DB (°F)	Indoor air temperature													
	71°F (DB) 59°F (WB)		73°F (DB) 61°F (WB)		77°F (DB) 64°F (WB)		80°F (DB) 67°F (WB)		82°F (DB) 68°F (WB)		86°F (DB) 72°F (WB)		90°F (DB) 75°F (WB)	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
5	11900	11600	13100	12400	14100	13200	14500	13300	14900	13300	15800	13300	16500	13200
10	11900	11600	13100	12400	14100	13200	14500	13300	14900	13300	15800	13300	16500	13200
15	11900	11600	13100	12400	14100	13200	14500	13300	14900	13300	15800	13300	16500	13200
20	11900	11600	13100	12400	14100	13200	14500	13300	14900	13300	15800	13300	16500	13200
25	11900	11600	13100	12400	14100	13200	14500	13300	14900	13300	15800	13300	16500	13200
30	11900	11600	13100	12400	14100	13200	14500	13300	14900	13300	15800	13300	16500	13200
35	11900	11600	13100	12400	14100	13200	14500	13300	14900	13300	15800	13300	16500	13200
40	11900	11600	13100	12400	14100	13200	14500	13300	14900	13300	15800	13300	16500	13200
45	11900	11600	13100	12400	14100	13200	14500	13300	14900	13300	15800	13300	16500	13200
50	11900	11600	13100	12400	14100	13200	14500	13300	14900	13300	15800	13300	16500	13200
55	11900	11600	13100	12400	14100	13200	14500	13300	14900	13300	15800	13300	16500	13200
60	11900	11600	13100	12400	14100	13200	14500	13300	14900	13300	15800	13300	16500	13200
66	11900	11600	13100	12400	14100	13200	14500	13300	14900	13300	15800	13300	16500	13200
68	11800	11500	13000	12300	13900	13100	14300	13100	14700	13200	15600	13200	16300	13000
70	11600	11400	12800	12200	13800	12900	14200	13000	14600	13000	15400	13000	16100	12900
73	11400	11100	12600	11900	13500	12700	13800	12700	14200	12700	15100	12700	15800	12600
77	11100	10900	12300	11600	13200	12400	13500	12400	13900	12500	14700	12400	15400	12300
81	10900	10600	12000	11400	12900	12100	13200	12100	13600	12200	14400	12200	15100	12000
84	10600	10400	11700	11100	12600	11800	12900	11800	13300	11900	14100	11900	14700	11800
88	10400	10100	11400	10800	12300	11500	12600	11600	13000	11600	13700	11600	14400	11500
91	10100	9900	11200	10600	12000	11300	12300	11300	12700	11300	13400	11300	14000	11200
95	9900	9600	10900	10300	11700	11000	12000	11000	12300	11000	13100	11000	13700	10900
99	9600	9400	10600	10100	11400	10700	11700	10700	12000	10800	12700	10700	13300	10600
102	9400	9100	10300	9800	11100	10400	11400	10400	11700	10500	12400	10500	13000	10400
106	9100	8900	10000	9500	10800	10100	11100	10200	11400	10200	12100	10200	12600	10100
109	8800	8600	9800	9300	10500	9800	10800	9900	11100	9900	11700	9900	12300	9800
113	8600	8400	9500	9000	10200	9600	10500	9600	10800	9600	11400	9600	11900	9500
115	8500	8300	9300	8900	10000	9400	10300	9400	10600	9500	11200	9500	11700	9400

Product models : RAV-HB181UTP-UL ; RAV-BP181AT2P-UL

Specification of product at standard condition

Standard Condition	Indoor	80°F (DB) / 67°F (WB)	Total Cooling Capacity (TC)	18000 Btu/hr
	Outdoor	95°F (DB) / 75°F (WB)	Sensible Heat Capacity (SHC)	14600 Btu/hr

Outdoor air temperature DB (°F)	Indoor air temperature													
	71°F (DB) 59°F (WB)		73°F (DB) 61°F (WB)		77°F (DB) 64°F (WB)		80°F (DB) 67°F (WB)		82°F (DB) 68°F (WB)		86°F (DB) 72°F (WB)		90°F (DB) 75°F (WB)	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
5	17800	15500	19700	16600	21100	17600	21700	17600	22300	17600	23600	17400	24700	17100
10	17800	15500	19700	16600	21100	17600	21700	17600	22300	17600	23600	17400	24700	17100
15	17800	15500	19700	16600	21100	17600	21700	17600	22300	17600	23600	17400	24700	17100
20	17800	15500	19700	16600	21100	17600	21700	17600	22300	17600	23600	17400	24700	17100
25	17800	15500	19700	16600	21100	17600	21700	17600	22300	17600	23600	17400	24700	17100
30	17800	15500	19700	16600	21100	17600	21700	17600	22300	17600	23600	17400	24700	17100
35	17800	15500	19700	16600	21100	17600	21700	17600	22300	17600	23600	17400	24700	17100
40	17800	15500	19700	16600	21100	17600	21700	17600	22300	17600	23600	17400	24700	17100
45	17800	15500	19700	16600	21100	17600	21700	17600	22300	17600	23600	17400	24700	17100
50	17800	15500	19700	16600	21100	17600	21700	17600	22300	17600	23600	17400	24700	17100
55	17800	15500	19700	16600	21100	17600	21700	17600	22300	17600	23600	17400	24700	17100
60	17800	15500	19700	16600	21100	17600	21700	17600	22300	17600	23600	17400	24700	17100
66	17800	15500	19700	16600	21100	17600	21700	17600	22300	17600	23600	17400	24700	17100
68	17600	15400	19500	16400	20900	17400	21500	17400	22100	17400	23400	17300	24500	16900
70	17400	15200	19300	16200	20600	17200	21200	17200	21800	17200	23100	17100	24200	16800
73	17100	14900	18800	15900	20200	16900	20800	16800	21400	16800	22600	16700	23700	16400
77	16700	14500	18400	15500	19700	16500	20300	16500	20900	16500	22100	16300	23100	16000
81	16300	14200	18000	15200	19300	16100	19800	16100	20400	16100	21600	16000	22600	15700
84	15900	13900	17600	14800	18800	15700	19400	15700	19900	15700	21100	15600	22100	15300
88	15500	13600	17200	14500	18400	15400	18900	15300	19500	15300	20600	15200	21600	14900
91	15200	13200	16700	14100	17900	15000	18500	15000	19000	15000	20100	14800	21000	14600
95	14800	12900	16300	13700	17500	14600	18000	14600	18500	14600	19600	14500	20500	14200
99	14400	12600	15900	13400	17000	14200	17500	14200	18000	14200	19100	14100	20000	13800
102	14000	12200	15500	13000	16600	13900	17100	13900	17600	13800	18600	13700	19500	13500
106	13600	11900	15100	12700	16100	13500	16600	13500	17100	13500	18100	13400	18900	13100
109	13300	11600	14700	12300	15700	13100	16200	13100	16600	13100	17600	13000	18400	12800
113	12400	10800	13700	11500	14700	12300	15100	12200	15500	12200	16400	12100	17200	11900
115	12200	10600	13400	11300	14400	12000	14800	12000	15200	12000	16100	11900	16900	11700

Product models : RAV-HB241UTP-UL ; RAV-BP241AT2P-UL

Specification of product at standard condition

Standard Condition	Indoor	80°F (DB) / 67°F (WB)	Total Cooling Capacity (TC)	24000 Btu/hr
	Outdoor	95°F (DB) / 75°F (WB)	Sensible Heat Capacity (SHC)	18000 Btu/hr

Outdoor air temperature DB (°F)	Indoor air temperature													
	71°F (DB) 59°F (WB)		73°F (DB) 61°F (WB)		77°F (DB) 64°F (WB)		80°F (DB) 67°F (WB)		82°F (DB) 68°F (WB)		86°F (DB) 72°F (WB)		90°F (DB) 75°F (WB)	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
5	23800	19300	26200	20500	28100	21800	28900	21700	29800	21600	31500	21300	33000	20800
10	23800	19300	26200	20500	28100	21800	28900	21700	29800	21600	31500	21300	33000	20800
15	23800	19300	26200	20500	28100	21800	28900	21700	29800	21600	31500	21300	33000	20800
20	23800	19300	26200	20500	28100	21800	28900	21700	29800	21600	31500	21300	33000	20800
25	23800	19300	26200	20500	28100	21800	28900	21700	29800	21600	31500	21300	33000	20800
30	23800	19300	26200	20500	28100	21800	28900	21700	29800	21600	31500	21300	33000	20800
35	23800	19300	26200	20500	28100	21800	28900	21700	29800	21600	31500	21300	33000	20800
40	23800	19300	26200	20500	28100	21800	28900	21700	29800	21600	31500	21300	33000	20800
45	23800	19300	26200	20500	28100	21800	28900	21700	29800	21600	31500	21300	33000	20800
50	23800	19300	26200	20500	28100	21800	28900	21700	29800	21600	31500	21300	33000	20800
55	23800	19300	26200	20500	28100	21800	28900	21700	29800	21600	31500	21300	33000	20800
60	23800	19300	26200	20500	28100	21800	28900	21700	29800	21600	31500	21300	33000	20800
66	23800	19300	26200	20500	28100	21800	28900	21700	29800	21600	31500	21300	33000	20800
68	23500	19100	26000	20300	27800	21500	28600	21500	29400	21400	31200	21100	32600	20600
70	23300	18900	25700	20100	27500	21300	28300	21200	29100	21200	30800	20900	32300	20400
73	22700	18400	25100	19600	26900	20900	27700	20800	28500	20700	30200	20400	31600	19900
77	22200	18000	24600	19200	26300	20400	27100	20300	27900	20300	29500	20000	30900	19500
81	21700	17600	24000	18700	25700	19900	26500	19800	27200	19800	28800	19500	30200	19100
84	21200	17200	23400	18300	25100	19500	25800	19400	26600	19300	28200	19100	29400	18600
88	20700	16800	22900	17900	24500	19000	25200	18900	26000	18900	27500	18600	28700	18200
91	20200	16400	22300	17400	23900	18500	24600	18500	25300	18400	26800	18200	28000	17700
95	19700	16000	21800	17000	23300	18100	24000	18000	24700	18000	26100	17700	27300	17300
99	19200	15600	21200	16600	22700	17600	23400	17500	24100	17500	25500	17200	26600	16800
102	18700	15200	20700	16100	22100	17100	22800	17100	23400	17000	24800	16800	25900	16400
106	18200	14800	20100	15700	21500	16700	22200	16600	22800	16600	24100	16300	25200	15900
109	17700	14300	19500	15300	20900	16200	21500	16200	22200	16100	23500	15900	24500	15500
113	17200	13900	19000	14800	20300	15700	20900	15700	21500	15700	22800	15400	23800	15100
115	16900	13700	18700	14600	20000	15500	20600	15500	21200	15400	22500	15200	23500	14800

Product models : RAV-HB301UTP-UL ; RAV-BP301AT2P-UL

Specification of product at standard condition

Standard Condition	Indoor	80°F (DB) / 67°F (WB)	Total Cooling Capacity (TC)	30000 Btu/hr
	Outdoor	95°F (DB) / 75°F (WB)	Sensible Heat Capacity (SHC)	24800 Btu/hr

Outdoor air temperature DB (°F)	Indoor air temperature													
	71°F (DB) 59°F (WB)		73°F (DB) 61°F (WB)		77°F (DB) 64°F (WB)		80°F (DB) 67°F (WB)		82°F (DB) 68°F (WB)		86°F (DB) 72°F (WB)		90°F (DB) 75°F (WB)	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-13	32500	28900	35900	30800	38500	32800	39600	32800	40800	32800	43200	32500	45100	32000
-10	32500	28900	35900	30800	38500	32800	39600	32800	40800	32800	43200	32500	45100	32000
-5	32500	28900	35900	30800	38500	32800	39600	32800	40800	32800	43200	32500	45100	32000
0	32500	28900	35900	30800	38500	32800	39600	32800	40800	32800	43200	32500	45100	32000
5	32500	28900	35900	30800	38500	32800	39600	32800	40800	32800	43200	32500	45100	32000
10	32500	28900	35900	30800	38500	32800	39600	32800	40800	32800	43200	32500	45100	32000
15	32500	28900	35900	30800	38500	32800	39600	32800	40800	32800	43200	32500	45100	32000
20	32500	28900	35900	30800	38500	32800	39600	32800	40800	32800	43200	32500	45100	32000
25	32500	28900	35900	30800	38500	32800	39600	32800	40800	32800	43200	32500	45100	32000
30	32500	28900	35900	30800	38500	32800	39600	32800	40800	32800	43200	32500	45100	32000
35	32500	28900	35900	30800	38500	32800	39600	32800	40800	32800	43200	32500	45100	32000
40	32500	28900	35900	30800	38500	32800	39600	32800	40800	32800	43200	32500	45100	32000
45	32500	28900	35900	30800	38500	32800	39600	32800	40800	32800	43200	32500	45100	32000
50	32500	28900	35900	30800	38500	32800	39600	32800	40800	32800	43200	32500	45100	32000
55	31600	28000	34900	29900	37400	31800	38500	31800	39600	31800	41900	31600	43800	31100
60	31000	27500	34200	29300	36600	31200	37700	31200	38800	31200	41100	31000	43000	30400
66	29700	26400	32800	28100	35100	29900	36200	29900	37200	29900	39400	29700	41200	29200
68	29400	26100	32500	27800	34800	29600	35800	29600	36800	29600	39000	29400	40800	28900
70	29100	25800	32100	27500	34400	29300	35400	29300	36400	29300	38600	29100	40300	28600
73	28400	25200	31400	26900	33600	28600	34600	28600	35600	28600	37700	28400	39400	27900
77	27800	24700	30700	26300	32900	28000	33900	28000	34800	28000	36900	27800	38600	27300
81	27200	24100	30000	25700	32100	27400	33100	27300	34000	27400	36000	27200	37700	26700
84	26500	23600	29300	25100	31400	26700	32300	26700	33200	26700	35200	26500	36800	26100
88	25900	23000	28600	24500	30600	26100	31500	26100	32400	26100	34400	25900	35900	25500
91	25300	22400	27900	23900	29900	25500	30800	25400	31700	25400	33500	25300	35100	24800
95	24600	21900	27200	23300	29100	24800	30000	24800	30900	24800	32700	24600	34200	24200
99	24000	21300	26500	22700	28400	24200	29200	24200	30100	24200	31800	24000	33300	23600
102	23400	20700	25800	22100	27600	23500	28500	23500	29300	23500	31000	23400	32400	23000
106	22700	20200	25100	21500	26900	22900	27700	22900	28500	22900	30200	22700	31500	22400
109	22100	19600	24400	20900	26200	22300	26900	22300	27700	22300	29300	22100	30700	21700
113	21500	19100	23700	20300	25400	21600	26200	21600	26900	21600	28500	21500	29800	21100
115	21200	18800	23400	20000	25000	21300	25800	21300	26500	21300	28100	21200	29400	20800

Product models : RAV-HB361UTP-UL ; RAV-BP361AT2P-UL

Specification of product at standard condition

Standard Condition	Indoor	80°F (DB) / 67°F (WB)	Total Cooling Capacity (TC)	36000 Btu/hr
	Outdoor	95°F (DB) / 75°F (WB)	Sensible Heat Capacity (SHC)	27800 Btu/hr

Outdoor air temperature DB (°F)	Indoor air temperature													
	71°F (DB) 59°F (WB)		73°F (DB) 61°F (WB)		77°F (DB) 64°F (WB)		80°F (DB) 67°F (WB)		82°F (DB) 68°F (WB)		86°F (DB) 72°F (WB)		90°F (DB) 75°F (WB)	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-13	39100	32500	43100	34600	46200	36800	47600	36700	48900	36700	51800	36200	54200	35400
-10	39100	32500	43100	34600	46200	36800	47600	36700	48900	36700	51800	36200	54200	35400
-5	39100	32500	43100	34600	46200	36800	47600	36700	48900	36700	51800	36200	54200	35400
0	39100	32500	43100	34600	46200	36800	47600	36700	48900	36700	51800	36200	54200	35400
5	39100	32500	43100	34600	46200	36800	47600	36700	48900	36700	51800	36200	54200	35400
10	39100	32500	43100	34600	46200	36800	47600	36700	48900	36700	51800	36200	54200	35400
15	39100	32500	43100	34600	46200	36800	47600	36700	48900	36700	51800	36200	54200	35400
20	39100	32500	43100	34600	46200	36800	47600	36700	48900	36700	51800	36200	54200	35400
25	39100	32500	43100	34600	46200	36800	47600	36700	48900	36700	51800	36200	54200	35400
30	39100	32500	43100	34600	46200	36800	47600	36700	48900	36700	51800	36200	54200	35400
35	39100	32500	43100	34600	46200	36800	47600	36700	48900	36700	51800	36200	54200	35400
40	39100	32500	43100	34600	46200	36800	47600	36700	48900	36700	51800	36200	54200	35400
45	39100	32500	43100	34600	46200	36800	47600	36700	48900	36700	51800	36200	54200	35400
50	39100	32500	43100	34600	46200	36800	47600	36700	48900	36700	51800	36200	54200	35400
55	37900	31600	41900	33600	44800	35800	46200	35600	47500	35600	50300	35200	52600	34400
60	37200	31000	41000	33000	43900	35000	45200	34900	46500	34900	49300	34500	51500	33700
66	35600	29700	39400	31600	42200	33600	43400	33500	44600	33500	47300	33100	49400	32300
68	35300	29400	38900	31300	41700	33200	42900	33200	44200	33100	46800	32700	48900	32000
70	34900	29100	38500	30900	41300	32900	42500	32800	43700	32700	46300	32400	48400	31600
73	34100	28400	37700	30300	40400	32200	41500	32100	42700	32000	45300	31700	47300	31000
77	33400	27800	36800	29600	39500	31500	40600	31400	41800	31300	44200	30900	46300	30300
81	32600	27200	36000	28900	38600	30700	39700	30700	40800	30600	43200	30200	45200	29600
84	31800	26500	35200	28200	37700	30000	38800	29900	39900	29900	42200	29500	44200	28900
88	31100	25900	34300	27600	36800	29300	37800	29200	38900	29200	41200	28800	43100	28200
91	30300	25300	33500	26900	35900	28600	36900	28500	38000	28500	40200	28100	42100	27500
95	29600	24600	32700	26200	35000	27900	36000	27800	37000	27800	39200	27400	41000	26800
99	28800	24000	31800	25600	34100	27200	35100	27100	36100	27000	38200	26700	40000	26100
102	28100	23400	31000	24900	33200	26400	34200	26400	35100	26300	37200	26000	38900	25500
106	27300	22700	30100	24200	32300	25700	33200	25700	34200	25600	36200	25300	37900	24800
109	26500	22100	29300	23500	31400	25000	32300	24900	33200	24900	35200	24600	36800	24100
113	25800	21500	28500	22900	30500	24300	31400	24200	32300	24200	34200	23900	35800	23400
115	25400	21200	28000	22500	30000	23900	30900	23900	31800	23800	33700	23600	35200	23000

Product models : **RAV-HB421UTP-UL ; RAV-BP421AT2P-UL**

Specification of product at standard condition

Standard Condition	Indoor	80°F (DB) / 67°F (WB)	Total Cooling Capacity (TC)	42000 Btu/hr
	Outdoor	95°F (DB) / 75°F (WB)	Sensible Heat Capacity (SHC)	30600 Btu/hr

Outdoor air temperature DB (°F)	Indoor air temperature													
	71°F (DB) 59°F (WB)		73°F (DB) 61°F (WB)		77°F (DB) 64°F (WB)		80°F (DB) 67°F (WB)		82°F (DB) 68°F (WB)		86°F (DB) 72°F (WB)		90°F (DB) 75°F (WB)	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-13	45600	36000	50300	38200	53900	40600	55500	40400	57100	40300	60400	39600	63200	38600
-10	45600	36000	50300	38200	53900	40600	55500	40400	57100	40300	60400	39600	63200	38600
-5	45600	36000	50300	38200	53900	40600	55500	40400	57100	40300	60400	39600	63200	38600
0	45600	36000	50300	38200	53900	40600	55500	40400	57100	40300	60400	39600	63200	38600
5	45600	36000	50300	38200	53900	40600	55500	40400	57100	40300	60400	39600	63200	38600
10	45600	36000	50300	38200	53900	40600	55500	40400	57100	40300	60400	39600	63200	38600
15	45600	36000	50300	38200	53900	40600	55500	40400	57100	40300	60400	39600	63200	38600
20	45600	36000	50300	38200	53900	40600	55500	40400	57100	40300	60400	39600	63200	38600
25	45600	36000	50300	38200	53900	40600	55500	40400	57100	40300	60400	39600	63200	38600
30	45600	36000	50300	38200	53900	40600	55500	40400	57100	40300	60400	39600	63200	38600
35	45600	36000	50300	38200	53900	40600	55500	40400	57100	40300	60400	39600	63200	38600
40	45600	36000	50300	38200	53900	40600	55500	40400	57100	40300	60400	39600	63200	38600
45	45600	36000	50300	38200	53900	40600	55500	40400	57100	40300	60400	39600	63200	38600
50	45600	36000	50300	38200	53900	40600	55500	40400	57100	40300	60400	39600	63200	38600
55	44200	34900	48900	37100	52300	39400	53900	39200	55400	39100	58700	38500	61400	37500
60	43400	34200	47900	36400	51300	38600	52800	38500	54300	38300	57500	37700	60100	36700
66	41600	32800	45900	34900	49200	37100	50600	36900	52100	36800	55100	36200	57700	35200
68	41100	32500	45400	34500	48700	36700	50100	36500	51500	36400	54600	35800	57100	34800
70	40700	32100	44900	34100	48100	36300	49500	36100	51000	36000	54000	35400	56400	34500
73	39800	31400	44000	33400	47100	35500	48500	35300	49900	35200	52800	34600	55200	33700
77	38900	30700	43000	32700	46000	34700	47400	34500	48700	34400	51600	33900	54000	33000
81	38000	30000	42000	31900	45000	33900	46300	33700	47600	33600	50400	33100	52800	32200
84	37200	29300	41000	31200	43900	33100	45200	33000	46500	32800	49300	32300	51500	31500
88	36300	28600	40100	30400	42900	32300	44200	32200	45400	32100	48100	31500	50300	30700
91	35400	27900	39100	29700	41800	31500	43100	31400	44300	31300	46900	30800	49100	30000
95	34500	27200	38100	28900	40800	30700	42000	30600	43200	30500	45800	30000	47900	29200
99	33600	26500	37100	28200	39800	30000	40900	29800	42100	29700	44600	29200	46600	28500
102	32700	25800	36100	27500	38700	29200	39800	29000	41000	28900	43400	28500	45400	27700
106	31800	25100	35200	26700	37700	28400	38800	28200	39900	28100	42200	27700	44200	27000
109	31000	24400	34200	26000	36600	27600	37700	27500	38800	27400	41100	26900	42900	26200
113	30100	23700	33200	25200	35600	26800	36600	26700	37700	26600	39900	26200	41700	25500
115	29600	23400	32700	24900	35000	26400	36100	26300	37100	26200	39300	25800	41100	25100

Product models : RAV-HB481UTP-UL ; RAV-BP481AT2P-UL

Specification of product at standard condition

Standard Condition	Indoor	80°F (DB) / 67°F (WB)	Total Cooling Capacity (TC)	48000 Btu/hr
	Outdoor	95°F (DB) / 75°F (WB)	Sensible Heat Capacity (SHC)	33700 Btu/hr

Outdoor air temperature DB (°F)	Indoor air temperature													
	71°F (DB) 59°F (WB)		73°F (DB) 61°F (WB)		77°F (DB) 64°F (WB)		80°F (DB) 67°F (WB)		82°F (DB) 68°F (WB)		86°F (DB) 72°F (WB)		90°F (DB) 75°F (WB)	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-13	52100	39700	57500	42200	61600	44800	63400	44500	65200	44300	69100	43500	72200	42200
-10	52100	39700	57500	42200	61600	44800	63400	44500	65200	44300	69100	43500	72200	42200
-5	52100	39700	57500	42200	61600	44800	63400	44500	65200	44300	69100	43500	72200	42200
0	52100	39700	57500	42200	61600	44800	63400	44500	65200	44300	69100	43500	72200	42200
5	52100	39700	57500	42200	61600	44800	63400	44500	65200	44300	69100	43500	72200	42200
10	52100	39700	57500	42200	61600	44800	63400	44500	65200	44300	69100	43500	72200	42200
15	52100	39700	57500	42200	61600	44800	63400	44500	65200	44300	69100	43500	72200	42200
20	52100	39700	57500	42200	61600	44800	63400	44500	65200	44300	69100	43500	72200	42200
25	52100	39700	57500	42200	61600	44800	63400	44500	65200	44300	69100	43500	72200	42200
30	52100	39700	57500	42200	61600	44800	63400	44500	65200	44300	69100	43500	72200	42200
35	52100	39700	57500	42200	61600	44800	63400	44500	65200	44300	69100	43500	72200	42200
40	52100	39700	57500	42200	61600	44800	63400	44500	65200	44300	69100	43500	72200	42200
45	52100	39700	57500	42200	61600	44800	63400	44500	65200	44300	69100	43500	72200	42200
50	52100	39700	57500	42200	61600	44800	63400	44500	65200	44300	69100	43500	72200	42200
55	50600	38600	55800	40900	59800	43500	61600	43200	63300	43000	67000	42200	70100	41000
60	49500	37800	54700	40100	58600	42600	60300	42300	62000	42200	65700	41300	68700	40100
66	47500	36300	52500	38500	56200	40900	57900	40600	59500	40400	63000	39700	65900	38500
68	47000	35900	51900	38100	55600	40400	57200	40200	58900	40000	62400	39200	65200	38100
70	46500	35500	51400	37700	55000	40000	56600	39800	58200	39600	61700	38800	64500	37700
73	45500	34700	50200	36800	53800	39100	55400	38900	57000	38700	60300	38000	63100	36900
77	44500	33900	49100	36000	52600	38300	54200	38000	55700	37800	59000	37100	61700	36000
81	43500	33200	48000	35200	51400	37400	52900	37200	54400	37000	57700	36300	60300	35200
84	42500	32400	46900	34400	50200	36500	51700	36300	53200	36100	56300	35400	58900	34400
88	41500	31600	45800	33600	49000	35600	50500	35400	51900	35300	55000	34600	57500	33600
91	40400	30900	44700	32700	47800	34800	49200	34600	50600	34400	53600	33700	56100	32800
95	39400	30100	43500	31900	46600	33900	48000	33700	49400	33500	52300	32900	54700	31900
99	38400	29300	42400	31100	45400	33000	46800	32800	48100	32700	50900	32100	53300	31100
102	37400	28500	41300	30300	44200	32200	45500	32000	46800	31800	49600	31200	51900	30300
106	36400	27800	40200	29500	43000	31300	44300	31100	45600	31000	48300	30400	50500	29500
109	35400	27000	39100	28600	41800	30400	43100	30200	44300	30100	46900	29500	49100	28700
113	34400	26200	38000	27800	40600	29600	41800	29400	43000	29200	45600	28700	47700	27800
115	33900	25800	37400	27400	40000	29100	41200	28900	42400	28800	44900	28300	47000	27400

Heating capacity table

Product model : RAV-HB_1UTP-UL ; RAV-BP_1AT2P-UL

(TC : Btu/h, PI : W)

unit size	outdoor air temp.		indoor air temp.									
	FDB	FWB	61 (FDB)		64 (FDB)		70 (FDB)		72 (FDB)		75 (FDB)	
			TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
12	59	57	17200	910	17000	930	16900	970	16800	1010	16700	1060
	50	48	15600	860	15400	890	15300	920	15200	960	15100	1000
	47	43	14200	820	14100	850	14000	880	13900	910	13800	960
	41	39	13300	800	13100	820	13100	850	13000	890	12900	930
	36	34	11900	760	11800	780	11700	810	11600	840	11600	880
	32	31	11100	740	11000	770	10800	790	10800	810	10900	850
	23	22	9300	670	9200	690	9100	710	9100	750	9000	780
	19	18	8700	650	8600	670	8600	700	8500	730	8500	760
	14	13	8000	620	7900	640	7900	660	7800	690	7800	730
	5	4	6700	590	6700	610	6600	630	6600	660	6600	690
	1	0	5100	540	5000	560	5000	580	5000	600	4900	630
	-3	-4	4000	510	3900	520	3900	540	3900	570	3900	590
	-13	-13	2100	450	2100	470	2100	480	2100	500	2100	530
unit size	outdoor air temp.		indoor air temp.									
	FDB	FWB	61 (FDB)		64 (FDB)		70 (FDB)		72 (FDB)		75 (FDB)	
			TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
18	59	57	24500	1530	24300	1580	24100	1630	24000	1700	23800	1790
	50	48	22300	1450	22000	1490	21900	1540	21800	1610	21600	1690
	47	43	20300	1390	20100	1430	20000	1480	19900	1540	19800	1620
	41	39	19000	1340	18800	1380	18700	1430	18500	1490	18400	1570
	36	34	17000	1280	16800	1310	16700	1360	16600	1420	16500	1490
	32	31	15800	1250	15700	1300	15500	1340	15400	1370	15600	1430
	23	22	13300	1130	13100	1160	13100	1200	13000	1260	12900	1320
	19	18	12500	1100	12400	1130	12300	1170	12200	1230	12100	1290
	14	13	11400	1050	11300	1080	11300	1120	11200	1170	11100	1230
	5	4	9600	990	9500	1020	9500	1060	9400	1110	9400	1160
	1	0	7300	910	7200	940	7100	970	7100	1020	7100	1070
	-3	-4	5700	860	5600	880	5600	910	5600	950	5500	1000
	-13	-13	3000	760	3000	790	3000	810	3000	850	2900	890
unit size	outdoor air temp.		indoor air temp.									
	FDB	FWB	61 (FDB)		64 (FDB)		70 (FDB)		72 (FDB)		75 (FDB)	
			TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
24	59	57	33100	2220	32800	2290	32600	2360	32400	2470	32200	2590
	50	48	30100	2110	29700	2170	29600	2240	29400	2340	29200	2460
	47	43	27500	2010	27200	2070	27000	2140	26800	2240	26700	2350
	41	39	25600	1950	25300	2000	25200	2070	25000	2170	24900	2270
	36	34	23000	1850	22700	1910	22600	1970	22400	2060	22300	2160
	32	31	21300	1810	21200	1880	20900	1940	20800	1990	21100	2080
	23	22	17900	1640	17700	1690	17600	1750	17500	1830	17400	1920
	19	18	16800	1600	16700	1650	16600	1700	16500	1780	16400	1870
	14	13	15400	1530	15300	1570	15200	1620	15100	1700	15000	1780
	5	4	13000	1440	12900	1480	12800	1530	12700	1600	12600	1680
	1	0	9800	1320	9700	1370	9600	1410	9600	1480	9500	1550
	-3	-4	7700	1240	7600	1280	7500	1320	7500	1380	7400	1450
	-13	-13	4100	1100	4100	1140	4000	1180	4000	1230	4000	1290
unit size	outdoor air temp.		indoor air temp.									
	FDB	FWB	61 (FDB)		64 (FDB)		70 (FDB)		72 (FDB)		75 (FDB)	
			TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
30	59	57	41700	2490	41300	2560	41000	2650	40800	2770	40500	2910
	50	48	37900	2360	37500	2430	37200	2510	37000	2630	36800	2760
	47	43	34600	2250	34200	2320	34000	2400	33800	2510	33600	2630
	41	39	32200	2180	31900	2250	31700	2320	31500	2430	31300	2550
	36	34	28900	2080	28600	2140	28400	2210	28300	2310	28100	2430
	32	31	26900	2030	26700	2110	26300	2170	26200	2230	26500	2330
	23	22	22600	1840	22300	1900	22200	1960	22100	2050	21900	2150
	19	18	21200	1790	21000	1850	20900	1910	20700	2000	20600	2090
	14	13	19400	1710	19200	1760	19100	1820	19000	1900	18900	2000
	5	4	16400	1620	16200	1660	16100	1720	16000	1800	15900	1890
	1	0	12400	1490	12200	1530	12100	1580	12100	1650	12000	1740
	-3	-4	9700	1390	9600	1440	9500	1480	9500	1550	9400	1630
	-13	-13	5200	1240	5100	1280	5100	1320	5100	1380	5000	1450

TC: Total Heating Capacity [Btu/h]

PI: Power Input [W]

Product model : RAV-HB__1UTP-UL ; RAV-BP__1AT2P-UL

(TC : Btu/h, PI : W)

unit size	outdoor air temp.		indoor air temp.									
	FDB	FWB	61 (FDB)		64 (FDB)		70 (FDB)		72 (FDB)		75 (FDB)	
			TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
36	59	57	49100	3200	48500	3290	48300	3400	48000	3560	47700	3730
	50	48	44500	3030	44100	3120	43800	3230	43500	3370	43300	3540
	47	43	40700	2890	40200	2980	40000	3080	39800	3220	39500	3380
	41	39	37900	2800	37500	2880	37300	2980	37100	3120	36900	3270
	36	34	34000	2670	33700	2740	33500	2840	33200	2970	33100	3110
	32	31	31600	2600	31500	2710	30900	2790	30800	2860	31200	2990
	23	22	26500	2360	26300	2430	26100	2520	25900	2630	25800	2760
	19	18	25000	2300	24700	2370	24600	2450	24400	2560	24300	2690
	14	13	22900	2200	22600	2260	22500	2340	22400	2440	22200	2560
	5	4	19300	2080	19100	2140	19000	2210	18800	2310	18700	2420
	1	0	14500	1910	14400	1970	14300	2030	14200	2120	14100	2230
	-3	-4	11400	1790	11300	1840	11200	1900	11100	1990	11000	2090
	-13	-13	6100	1590	6100	1640	6000	1690	6000	1770	5900	1860
42	59	57	57600	4080	57000	4200	56700	4340	56400	4540	56000	4760
	50	48	52300	3870	51800	3980	51500	4120	51200	4300	50900	4510
	47	43	47800	3690	47300	3800	47000	3930	46700	4110	46400	4310
	41	39	44600	3580	44100	3680	43800	3810	43600	3980	43300	4170
	36	34	40000	3400	39500	3500	39300	3620	39100	3790	38800	3970
	32	31	37100	3320	37000	3460	36300	3560	36200	3650	36700	3810
	23	22	31200	3020	30900	3100	30700	3210	30500	3360	30300	3520
	19	18	29300	2940	29000	3020	28800	3130	28700	3270	28500	3430
	14	13	26900	2800	26600	2880	26400	2980	26300	3120	26100	3270
	5	4	22600	2650	22400	2730	22300	2820	22100	2950	22000	3090
	1	0	17100	2430	16900	2510	16800	2590	16700	2710	16600	2840
	-3	-4	13400	2280	13200	2350	13100	2430	13100	2540	12900	2670
	-13	-13	7200	2030	7100	2090	7000	2160	7000	2260	6900	2370
48	59	57	66200	5160	65500	5310	65100	5490	64700	5740	64400	6020
	50	48	60100	4890	59500	5030	59100	5200	58800	5440	58400	5710
	47	43	54900	4670	54300	4800	54000	4970	53700	5200	53400	5450
	41	39	51200	4520	50700	4650	50400	4810	50100	5030	49800	5280
	36	34	45900	4300	45400	4430	45200	4580	44900	4790	44600	5020
	32	31	42700	4200	42500	4370	41700	4500	41600	4620	42100	4820
	23	22	35800	3810	35500	3920	35200	4060	35000	4240	34800	4450
	19	18	33700	3720	33300	3820	33100	3960	32900	4130	32700	4340
	14	13	30900	3550	30600	3650	30400	3770	30200	3940	30000	4140
	5	4	26000	3350	25700	3450	25600	3560	25400	3730	25300	3910
	1	0	19600	3080	19500	3170	19300	3280	19200	3430	19000	3600
	-3	-4	15400	2880	15200	2970	15100	3070	15000	3210	14900	3370
	-13	-13	8200	2560	8200	2650	8000	2730	8100	2860	7900	3000

TC:Total Heating Capacity [Btu/h]

PI:Power Input [W]

2-1-5. Part Load Performance

Indoor: RAV-HB121UTP-UL
Outdoor: RAV-BP121AT2P-UL

Operation range	Cooling		Heating	
	Q	P	Q	P
MINIMUM	Btu/h 4000	270	3000	210
RATING	Btu/h 12000	750	14000	875
MAXIMUM	Btu/h 13600	970	17000	1450

Q : Capacity (Btu/h)
P : Power consumption (W)

Cooling		Parts Load (%)																			
		100		90		80		70		60		50		40		30		20		10	
		Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P
Outdoor Temperature DB °F(°C)																					
68(20)	14310	590	12880	530	11450	480	10020	420	8590	360	7160	310	5720	250	4770	210	4770	210	4770	210	
70(21)	14160	600	12740	540	11320	480	9910	430	8490	370	7080	310	5660	250	4720	220	4720	220	4720	220	
72(22)	14000	610	12600	550	11200	490	9800	430	8400	380	7000	320	5600	260	4670	220	4670	220	4670	220	
73(23)	13850	620	12460	560	11080	500	9690	440	8310	380	6920	320	5540	260	4620	220	4620	220	4620	220	
75(24)	13690	630	12320	570	10960	510	9590	450	8220	390	6850	330	5480	270	4560	230	4560	230	4560	230	
77(25)	13540	640	12190	580	10830	520	9480	460	8120	400	6770	330	5420	270	4510	230	4510	230	4510	230	
79(26)	13390	650	12050	590	10710	530	9370	470	8030	400	6690	340	5350	280	4460	240	4460	240	4460	240	
81(27)	13230	660	11910	600	10590	540	9260	470	7940	410	6620	350	5290	280	4410	240	4410	240	4410	240	
82(28)	13080	670	11770	610	10460	550	9150	480	7850	420	6540	350	5230	290	4360	240	4360	240	4360	240	
84(29)	12920	690	11630	620	10340	550	9050	490	7750	420	6460	360	5170	290	4310	250	4310	250	4310	250	
86(30)	12770	700	11490	630	10220	560	8940	500	7660	430	6390	360	5110	300	4260	250	4260	250	4260	250	
88(31)	12620	710	11350	640	10090	570	8830	500	7570	440	6310	370	5050	300	4210	250	4210	250	4210	250	
90(32)	12460	720	11220	650	9970	580	8720	510	7480	440	6230	370	4980	300	4150	260	4150	260	4150	260	
91(33)	12310	730	11080	660	9850	590	8620	520	7380	450	6150	380	4920	310	4100	260	4100	260	4100	260	
93(34)	12150	740	10940	670	9720	600	8510	530	7290	460	6080	380	4860	310	4050	270	4050	270	4050	270	
95(35)	12000	750	10800	680	9600	610	8400	530	7200	460	6000	390	4800	320	4000	270	4000	270	4000	270	
97(36)	11850	760	10660	690	9480	610	8290	540	7110	470	5920	400	4740	320	3950	270	3950	270	3950	270	
99(37)	11690	770	10520	700	9350	620	8180	550	7020	480	5850	400	4680	330	3900	280	3900	280	3900	280	
100(38)	11540	780	10380	710	9230	630	8080	560	6920	480	5770	410	4620	330	3850	280	3850	280	3850	280	
102(39)	11380	790	10250	720	9110	640	7970	560	6830	490	5690	410	4550	340	3790	290	3790	290	3790	290	
104(40)	11230	800	10110	730	8980	650	7860	570	6740	500	5620	420	4490	340	3740	290	3740	290	3740	290	
106(41)	11080	810	9970	740	8860	660	7750	580	6650	500	5540	420	4430	350	3690	290	3690	290	3690	290	
108(42)	10920	830	9830	750	8740	670	7650	590	6550	510	5460	430	4370	350	3640	300	3640	300	3640	300	
109(43)	10770	840	9690	760	8610	680	7540	600	6460	510	5380	430	4310	350	3590	300	3590	300	3590	300	
111(44)	10610	850	9550	770	8490	680	7430	600	6370	520	5310	440	4250	360	3540	300	3540	300	3540	300	
113(45)	10460	860	9410	780	8370	690	7320	610	6280	530	5230	450	4180	360	3490	310	3490	310	3490	310	
115(46)	10310	870	9280	780	8240	700	7210	620	6180	530	5150	450	4120	370	3440	310	3440	310	3440	310	

Heating		Parts Load (%)																			
Outdoor Temperature		100		90		80		70		60		50		40		30		20		10	
DB °F(°C)		Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P
-13(-25)		5710	600	5140	540	4570	490	3990	430	3420	370	2850	310	2280	250	1710	190	1220	140	1220	140
-11(-24)		5830	610	5250	550	4670	490	4080	430	3500	370	2920	320	2330	260	1750	200	1250	150	1250	150
-9(-23)		5960	620	5360	560	4770	500	4170	440	3580	380	2980	320	2380	260	1790	200	1280	150	1280	150
-8(-22)		6090	630	5480	570	4870	510	4260	450	3650	390	3040	320	2430	260	1830	200	1300	150	1300	150
-6(-21)		6210	640	5590	580	4970	510	4350	450	3730	390	3110	330	2490	270	1860	210	1330	150	1330	150
-4(-20)		6340	650	5710	580	5070	520	4440	460	3800	400	3170	330	2540	270	1900	210	1360	150	1360	150
-2(-19)		6590	650	5930	590	5280	530	4620	460	3960	400	3300	340	2640	270	1980	210	1410	160	1410	160
0(-18)		6850	660	6160	600	5480	530	4790	470	4110	410	3420	340	2740	280	2050	210	1470	160	1470	160
1(-17)		7100	670	6390	610	5680	540	4970	480	4260	410	3550	350	2840	280	2130	220	1520	160	1520	160
3(-16)		7360	680	6620	610	5880	550	5150	480	4410	420	3680	350	2940	290	2210	220	1580	160	1580	160
5(-15)		7610	690	6850	620	6090	560	5330	490	4570	420	3800	360	3040	290	2280	220	1630	170	1630	170
7(-14)		7850	690	7060	630	6280	560	5490	490	4710	430	3920	360	3140	290	2350	220	1680	170	1680	170
9(-13)		8080	700	7280	630	6470	560	5660	500	4850	430	4040	360	3230	290	2430	230	1730	170	1730	170
10(-12)		8320	700	7490	640	6660	570	5830	500	4990	430	4160	360	3330	300	2500	230	1780	170	1780	170
12(-11)		8560	710	7700	640	6850	570	5990	500	5140	440	4280	370	3420	300	2570	230	1830	170	1830	170
14(-10)		8800	720	7920	650	7040	580	6160	510	5280	440	4400	370	3520	300	2640	230	1890	170	1890	170
16(-9)		9040	720	8130	650	7230	580	6320	510	5420	440	4520	370	3610	300	2710	230	1940	170	1940	170
18(-8)		9270	730	8350	660	7420	590	6490	520	5560	450	4640	370	3710	300	2780	230	1990	170	1990	170
19(-7)		9510	730	8560	660	7610	590	6660	520	5710	450	4760	380	3800	310	2850	240	2040	180	2040	180
21(-6)		9580	740	8620	660	7670	590	6710	520	5750	450	4790	380	3830	310	2870	240	2050	180	2050	180
23(-5)		9650	740	8690	670	7720	600	6760	530	5790	450	4830	380	3860	310	2900	240	2070	180	2070	180
25(-4)		9720	750	8750	670	7780	600	6810	530	5830	460	4860	390	3890	310	2920	240	2080	180	2080	180
27(-3)		9790	750	8810	680	7830	610	6850	530	5880	460	4900	390	3920	310	2940	240	2100	180	2100	180
28(-2)		9860	760	8880	680	7890	610	6900	540	5920	460	4930	390	3950	320	2960	240	2110	180	2110	180
30(-1)		9930	760	8940	690	7950	610	6950	540	5960	470	4970	390	3970	320	2980	250	2130	180	2130	180
32(0)		10000	760	9000	690	8000	620	7000	540	6000	470	5000	390	4000	320	3000	250	2140	180	2140	180
34(1)		10070	770	9070	700	8060	620	7050	550	6040	470	5040	400	4030	320	3020	250	2160	180	2160	180
36(2)		10140	770	9130	700	8120	620	7100	550	6090	470	5070	400	4060	320	3040	250	2170	190	2170	190
37(3)		10310	780	9280	710	8250	630	7220	560	6190	480	5160	410	4120	330	3090	250	2210	190	2210	190
39(4)		10480	800	9430	720	8380	640	7330	560	6290	490	5240	410	4190	330	3140	260	2250	190	2250	190
41(5)		10640	810	9580	730	8510	650	7450	570	6390	490	5320	420	4260	340	3190	260	2280	190	2280	190
43(6)		13640	860	12270	780	10910	690	9550	610	8180	530	6820	440	5460	360	4090	280	2920	210	2920	210
45(7)		14000	880	12600	790	11200	710	9800	620	8400	540	7000	450	5600	370	4200	280	3000	210	3000	210
46(8)		14360	890	12930	800	11490	720	10050	630	8620	540	7180	460	5740	370	4310	290	3080	210	3080	210
48(9)		14720	900	13250	810	11780	730	10310	640	8830	550	7360	470	5890	380	4420	290	3150	220	3150	220
50(10)		15080	920	13580	830	12070	740	10560	650	9050	560	7540	470	6030	380	4530	300	3230	220	3230	220
52(11)		15450	930	13900	840	12360	750	10810	660	9270	570	7720	480	6180	390	4630	300	3310	220	3310	220
54(12)		15810	940	14230	850	12650	760	11060	670	9480	580	7900	490	6320	400	4740	300	3390	230	3390	230
55(13)		16170	960	14550	860	12930	770	11320	680	9700	590	8080	490	6470	400	4850	310	3460	230	3460	230
57(14)		16530	970	14880	880	13220	780	11570	690	9920	590	8260	500	6610	410	4960	310	3540	230	3540	230
59(15)		16890	980	15200	890	13510	790	11820	700	10130	600	8450	510	6760	410	5070	320	3620	240	3620	240

Indoor: RAV-HB181UTP-UL
Outdoor: RAV-BP181AT2P-UL

Operation range	Cooling		Heating	
	Q	P	Q	P
MINIMUM	Btu/h	4000	270	3000
RATING	Btu/h	18000	1324	20000
MAXIMUM	Btu/h	19100	1900	21400

Q : Capacity (Btu/h)
P : Power consumption (W)

Cooling

Outdoor Temperature DB °F(°C)	Parts Load (%)															
	100		90		80		70		60		50		40		30	
	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P
68(20)	21470	1040	19320	930	17170	830	15030	720	12880	610	10730	510	8590	400	6440	290
70(21)	21230	1060	19110	950	16990	840	14860	730	12740	630	10620	520	8490	410	6370	300
72(22)	21000	1080	18900	970	16800	860	14700	750	12600	640	10500	530	8400	420	6300	310
73(23)	20770	1100	18690	980	16620	870	14540	760	12460	650	10390	540	8310	420	6230	310
75(24)	20540	1120	18490	1000	16430	890	14380	770	12320	660	10270	540	8220	430	6160	320
77(25)	20310	1130	18280	1020	16250	900	14220	790	12190	670	10160	550	8120	440	6090	320
79(26)	20080	1150	18070	1040	16060	920	14060	800	12050	680	10040	560	8030	450	6020	330
81(27)	19850	1170	17860	1050	15880	930	13890	810	11910	690	9920	570	7940	450	5950	330
82(28)	19620	1190	17660	1070	15690	950	13730	830	11770	700	9810	580	7850	460	5890	340
84(29)	19390	1210	17450	1090	15510	960	13570	840	11630	710	9690	590	7750	470	5820	340
86(30)	19160	1230	17240	1100	15320	980	13410	850	11490	730	9580	600	7660	470	5750	350
88(31)	18920	1250	17030	1120	15140	990	13250	860	11350	740	9460	610	7570	480	5680	350
90(32)	18690	1270	16820	1140	14950	1010	13090	880	11220	750	9350	620	7480	490	5610	360
91(33)	18460	1290	16620	1150	14770	1020	12920	890	11080	760	9230	630	7380	500	5540	360
93(34)	18230	1310	16410	1170	14580	1040	12760	900	10940	770	9120	640	7290	500	5470	370
95(35)	18000	1320	16200	1190	14400	1050	12600	920	10800	780	9000	650	7200	510	5400	380
97(36)	17770	1340	15990	1210	14220	1070	12440	930	10660	790	8880	660	7110	520	5330	380
99(37)	17540	1360	15780	1220	14030	1080	12280	940	10520	800	8770	660	7020	530	5260	390
100(38)	17310	1380	15580	1240	13850	1100	12110	960	10380	820	8650	670	6920	530	5190	390
102(39)	17080	1400	15370	1260	13660	1110	11950	970	10250	830	8540	680	6830	540	5120	400
104(40)	16850	1420	15160	1270	13480	1130	11790	980	10110	840	8420	690	6740	550	5050	400
106(41)	16610	1440	14950	1290	13290	1140	11630	1000	9970	850	8310	700	6650	550	4980	410
108(42)	16380	1460	14740	1310	13110	1160	11470	1010	9830	860	8190	710	6550	560	4910	410
109(43)	16150	1480	14540	1320	12920	1170	11310	1020	9690	870	8080	720	6460	570	4850	420
111(44)	15920	1490	14330	1340	12740	1190	11140	1040	9550	880	7960	730	6370	580	4780	420
113(45)	15090	1170	13580	1050	12070	930	10560	810	9050	690	7540	570	6030	450	4530	330
115(46)	14820	1170	13340	1050	11860	930	10370	810	8890	690	7410	570	5930	450	4450	330

Heating

Outdoor Temperature DB °F(°C)	Parts Load (%)															
	100		90		80		70		60		50		40		30	
	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P
-13(-25)	8150	1020	7340	910	6520	810	5710	710	4890	610	4080	510	3260	410	2450	300
-11(-24)	8330	1030	7500	930	6670	820	5830	720	5000	620	4170	510	3330	410	2500	310
-9(-23)	8510	1040	7660	940	6810	840	5960	730	5110	630	4260	520	3410	420	2550	310
-8(-22)	8700	1060	7830	950	6960	850	6090	740	5220	630	4350	530	3480	420	2610	320
-6(-21)	8880	1070	7990	970	7100	860	6210	750	5330	640	4440	540	3550	430	2660	320
-4(-20)	9060	1090	8150	980	7250	870	6340	760	5430	650	4530	540	3620	430	2720	330
-2(-19)	9420	1100	8480	990	7540	880	6590	770	5650	660	4710	550	3770	440	2830	330
0(-18)	9780	1120	8800	1000	7830	890	6850	780	5870	670	4890	560	3910	450	2930	330
1(-17)	10140	1130	9130	1020	8120	900	7100	790	6090	680	5070	570	4060	450	3040	340
3(-16)	10510	1150	9460	1030	8410	920	7360	800	6300	690	5250	570	4200	460	3150	340
5(-15)	10870	1160	9780	1040	8700	930	7610	810	6520	700	5430	580	4350	460	3260	350
7(-14)	11210	1170	10090	1050	8970	940	7850	820	6730	700	5600	580	4480	470	3360	350
9(-13)	11550	1180	10390	1060	9240	940	8080	820	6930	710	5770	590	4620	470	3460	350
10(-12)	11890	1190	10700	1070	9510	950	8320	830	7130	710	5940	590	4760	470	3570	360
12(-11)	12230	1200	11010	1080	9780	960	8560	840	7340	720	6110	600	4890	480	3670	360
14(-10)	12570	1210	11310	1080	10050	960	8800	840	7540	720	6280	600	5030	480	3770	360
16(-9)	12910	1210	11620	1090	10330	970	9040	850	7740	730	6450	610	5160	490	3870	360
18(-8)	13250	1220	11920	1100	10600	980	9270	860	7950	730	6620	610	5300	490	3970	370
19(-7)	13590	1230	12230	1110	10870	990	9510	860	8150	740	6790	620	5430	490	4080	370
21(-6)	13690	1240	12320	1120	10950	990	9580	870	8210	740	6840	620	5480	500	4110	370
23(-5)	13790	1250	12410	1120	11030	1000	9650	870	8270	750	6890	620	5520	500	4140	370
25(-4)	13890	1260	12500	1130	11110	1010	9720	880	8330	750	6940	630	5560	500	4170	380
27(-3)	13990	1270	12590	1140	11190	1010	9790	890	8390	760	6990	630	5600	510	4200	380
28(-2)	14090	1270	12680	1150	11270	1020	9860	890	8450	760	7050	640	5640	510	4230	380
30(-1)	14190	1280	12770	1150	11350	1020	9930	900	8510	770	7100	640	5680	510	4260	380
32(0)	14290	1290	12860	1160	11430	1030	10000	900	8570	770	7150	640	5720	510	4290	390
34(1)	14390	1300	12950	1170	11510	1040	10070	910	8640	780	7200	650	5760	520	4320	390
36(2)	14490	1310	13040	1170	11590	1040	10140	910	8700	780	7250	650	5800	520	4350	390
37(3)	14730	1320	13260	1190	11780	1060	10310	930	8840	790	7370	660	5890	530	4420	400
39(4)	14970	1340	13470	1210	11970	1070	10480	940	8980	800	7480	670	5990	540	4490	400
41(5)	15200	1360	13680	1220	12160	1090	10640	950	9120	810	7600	680	6080	540	4560	410
43(6)	19480	1450	17540	1310	15590	1160	13640	1020	11690	870	9740	730	7790	580	5850	430
45(7)	20000	1480	18000	1330	16000	1180	14000	1030	12000	880	10000	740	8000	590	6000	440
46(8)	20520	1500	18460	1350	16410	1200	14360	1050	12310	900	10260	750	8210	600	6150	450
48(9)	21030	1520	18930	1370	16830	1220	14720	1060	12620	910	10520	760	8410	610	6310	460
50(10)	21550	1540	19390	1390	17240	1230	15080	1080	12930	930	10770	770	8620	620	6460	460
52(11)	22060	1570	19860	1410	17650	1250	15450	1100	13240	940	11030	780	8830	630	6620	470
54(12)	22580	1590	20320	1430	18060	1270	15810	1110	13550	950	11290	790	9030	630	6770	480
55(13)	23100	1610	20790	1450	18480	1290	16170	1130	13860	970	11550	810	9240	640	6930	480
57(14)	23610	1630	21250	1470	18890	1310	16530	1140	14170	980	11810	820	9450	650	7080	490
59(15)	24130	1660	21720	1490	19300	1330	16890	1160	14480	990	12060	830	9650	660	7240	500

Indoor: RAV-HB241UTP-UL
Outdoor: RAV-BP241AT2P-UL

Operation range	Cooling		Heating	
	Q	P	Q	P
MINIMUM	Btu/h 6500	300	5100	300
RATING	Btu/h 24000	1778	27000	2077
MAXIMUM	Btu/h 27300	2390	38500	3530

Q : Capacity (Btu/h)
P : Power consumption (W)

Cooling

Outdoor Temperature DB °F(°C)	Parts Load (%)															
	100		90		80		70		60		50		40		30	
	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P
68(20)	28620	1400	25760	1240	22900	1080	20030	920	17170	760	14310	600	11450	440	8590	280
70(21)	28310	1420	25480	1260	22650	1100	19820	940	16990	770	14160	610	11320	450	8490	290
72(22)	28000	1450	25200	1280	22400	1120	19600	950	16800	790	14000	620	11200	460	8400	290
73(23)	27700	1470	24930	1300	22160	1140	19390	970	16620	800	13850	630	11080	470	8310	300
75(24)	27390	1500	24650	1330	21910	1160	19170	990	16430	810	13690	640	10960	470	8220	300
77(25)	27080	1520	24370	1350	21660	1180	18960	1000	16250	830	13540	650	10830	480	8120	310
79(26)	26770	1550	24090	1370	21420	1200	18740	1020	16060	840	13390	670	10710	490	8030	310
81(27)	26460	1570	23820	1390	21170	1220	18520	1040	15880	860	13230	680	10590	500	7940	320
82(28)	26160	1600	23540	1420	20920	1230	18310	1050	15690	870	13080	690	10460	510	7850	320
84(29)	25850	1630	23260	1440	20680	1250	18090	1070	15510	880	12920	700	10340	510	7750	330
86(30)	25540	1650	22990	1460	20430	1270	17880	1090	15320	900	12770	710	10220	520	7660	330
88(31)	25230	1680	22710	1480	20190	1290	17660	1100	15140	910	12620	720	10090	530	7570	340
90(32)	24920	1700	22430	1510	19940	1310	17450	1120	14950	930	12460	730	9970	540	7480	340
91(33)	24620	1730	22150	1530	19690	1330	17230	1140	14770	940	12310	740	9850	550	7380	350
93(34)	24310	1750	21880	1550	19450	1350	17020	1150	14580	950	12150	750	9720	550	7290	350
95(35)	24000	1780	21600	1580	19200	1370	16800	1170	14400	970	12000	760	9600	560	7200	360
97(36)	23690	1800	21320	1600	18950	1390	16580	1190	14220	980	11850	780	9480	570	7110	360
99(37)	23380	1830	21050	1620	18710	1410	16370	1200	14030	990	11690	790	9350	580	7020	370
100(38)	23080	1850	20770	1640	18460	1430	16150	1220	13850	1010	11540	800	9230	590	6920	370
102(39)	22770	1880	20490	1670	18210	1450	15940	1240	13660	1020	11380	810	9110	590	6830	380
104(40)	22460	1910	20210	1690	17970	1470	15720	1250	13480	1040	11230	820	8980	600	6740	380
106(41)	22150	1930	19940	1710	17720	1490	15510	1270	13290	1050	11080	830	8860	610	6650	390
108(42)	21840	1960	19660	1730	17480	1510	15290	1290	13110	1060	10920	840	8740	620	6550	400
109(43)	21540	1980	19380	1760	17230	1530	15080	1300	12920	1080	10770	850	8610	630	6460	400
111(44)	21230	2010	19110	1780	16980	1550	14860	1320	12740	1090	10610	860	8490	630	6370	410
113(45)	20920	2030	18830	1800	16740	1570	14640	1340	12550	1110	10460	870	8370	640	6280	410
115(46)	20610	2060	18550	1820	16490	1590	14430	1350	12370	1120	10310	890	8240	650	6180	420

Heating

Outdoor Temperature DB °F(°C)	Parts Load (%)																			
	100		90		80		70		60		50		40		30		20		10	
	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P
-13(-25)	11010	1430	9900	1280	8800	1130	7700	980	6600	830	5500	680	4400	520	3300	370	2200	220	2080	210
-11(-24)	11250	1450	10130	1300	9000	1140	7880	990	6750	840	5630	690	4500	530	3380	380	2250	230	2130	210
-9(-23)	11490	1470	10350	1320	9200	1160	8050	1010	6900	850	5750	690	4600	540	3450	380	2300	230	2170	210
-8(-22)	11740	1490	10570	1330	9390	1180	8220	1020	7040	860	5870	700	4700	550	3520	390	2350	230	2220	220
-6(-21)	11980	1510	10790	1350	9590	1190	8390	1030	7190	870	5990	710	4790	550	3600	400	2400	240	2260	220
-4(-20)	12230	1530	11010	1370	9780	1210	8560	1050	7340	890	6110	720	4890	560	3670	400	2450	240	2310	220
-2(-19)	12720	1550	11450	1390	10170	1220	8900	1060	7630	900	6360	730	5090	570	3820	410	2540	240	2400	220
0(-18)	13210	1570	11890	1410	10570	1240	9240	1070	7920	910	6600	740	5280	580	3960	410	2640	250	2490	230
1(-17)	13700	1590	12330	1420	10960	1260	9590	1090	8220	920	6850	750	5480	580	4110	420	2740	250	2590	230
3(-16)	14180	1610	12770	1440	11350	1270	9930	1100	8510	930	7090	760	5670	590	4260	420	2840	250	2680	230
5(-15)	14670	1630	13210	1460	11740	1290	10270	1120	8800	940	7340	770	5870	600	4400	430	2930	260	2770	240
7(-14)	15130	1650	13620	1470	12110	1300	10590	1130	9080	950	7570	780	6050	600	4540	430	3030	260	2860	240
9(-13)	15590	1660	14030	1480	12470	1310	10910	1130	9350	960	7800	780	6240	610	4680	430	3120	260	2940	240
10(-12)	16050	1670	14440	1500	12840	1320	11230	1140	9630	970	8020	790	6420	610	4810	440	3210	260	3030	240
12(-11)	16510	1680	14860	1510	13210	1330	11560	1150	9900	970	8250	800	6600	620	4950	440	3300	260	3120	240
14(-10)	16970	1700	15270	1520	13570	1340	11880	1160	10180	980	8480	800	6790	620	5090	440	3390	270	3200	250
16(-9)	17430	1710	15680	1530	13940	1350	12200	1170	10460	990	8710	810	6970	630	5230	450	3490	270	3290	250
18(-8)	17880	1720	16100	1540	14310	1360	12520	1180	10730	1000	8940	810	7150	630	5370	450	3580	270	3380	250
19(-7)	18340	1740	16510	1550	14670	1370	12840	1190	11010	1000	9170	820	7340	640	5500	450	3670	270	3460	250
21(-6)	18480	1750	16630	1560	14780	1380	12930	1190	11090	1010	9240	830	7390	640	5540	460	3700	270	3490	250
23(-5)	18610	1760	16750	1570	14890	1390	13030	1200	11170	1020	9310	830	7450	650	5580	460	3720	270	3520	250
25(-4)	18750	1770	16880	1580	15000	1400	13130	1210	11250	1020	9380	840	7500	650	5630	460	3750	280	3540	260
27(-3)	18890	1780	17000	1590	15110	1410	13220	1220	11330	1030	9440	840	7550	650	5670	470	3780	280	3570	260
28(-2)	19020	1790	17120	1600	15220	1410	13320	1230	11410	1040	9510	850	7610	660	5710	470	3800	280	3590	260
30(-1)	19160	1800	17240	1610	15330	1420	13410	1230	11490	1040	9580	850	7660	660	5750	470	3830	280	3620	260
32(0)	19290	1820	17360	1620	15430	1430	13510	1240	11580	1050	9650	860	7720	670	5790	470	3860	280	3640	260
34(1)	19430	1830	17490	1630	15540	1440	13600	1250	11660	1060	9710	860	7770	670	5830	480	3890	290	3670	260
36(2)	19570	1840	17610	1640	15650	1450	13700	1260	11740	1060	9780	870	7830	670	5870	480	3910	290	3700	270
37(3)	19890	1860	17900	1670	15910	1470	13920	1270	11930	1080	9940	880	7950	680	5970	490	3980	290	3760	270
39(4)	20210	1890	18190	1690	16160	1490	14140	1290	12120	1090	10100	890	8080	690	6060	490	4040	290	3820	270
41(5)	20530	1910	18470	1710	16420	1510	14370	1310	12320	1110	10260	900	8210	700	6160	500	4110	300	3880	280
43(6)	26300	2040	23670	1830	21040	1610	18410	1400	15780	1180	13150	970	10520	750	7890	540	5260	320	4970	300
45(7)	27000	2080	24300	1860	21600	1640	18900	1420	16200	1200	13500	980	10800	760	8100	540	5400	320	5100	300
46(8)	27700	2110	24930	1890	22160	1660	19390	1440	16620	1220	13850	1000	11080	770	8310	550	5540	330	5230	300
48(9)	28390	2140	25550	1920	22710	1690	19880	1460	17040	1240	14200	1010	11360	790	8520	560	5680	330	5360	310
50(10)	29090	2170	26180	1940	23270	1710	20360	1490	17450	1260	14550	1030	11640	800	8730	570	5820	340	5490	310
52(11)	29790	2210	26810	1970	23830	1740	20850	1510	17870	1280	14890	1040	11910	810	8940	580	5960	340	5630	320
54(12)	30480	2240	27440	2000	24390	1770	21340	1530	18290	1290	15240	1060	12190	820	9150	590	6100	350	5760	320
55(13)	31180	2270	28060	2030	24940	1790	21830	1550	18710	1310	15590	1070	12470	830	9350	590	6240	350	5890	330
57(14)	31880	2300	28690	2060	25500	1820	22310	1570	19130	1330	15940	1090	12750	850	9560	600	6380	360	6020	330
59(15)	32570	2330	29320	2090	26060	1840	22800	1600	19540	1350	16290	1100	13030	860	9770	610	6510	360	6150	340

Indoor: RAV-HB301UTP-UL
Outdoor: RAV-BP301AT2P-UL

Operation range		Cooling		Heating	
		Q	P	Q	P
MINIMUM	Btu/h	8900	640	8100	520
RATING	Btu/h	30000	2128	34000	2400
MAXIMUM	Btu/h	38500	3230	40900	3830

Q : Capacity (Btu/h)
P : Power consumption (W)

Cooling

Outdoor Temperature DB °F(°C)	Parts Load (%)																			
	100		90		80		70		60		50		40		30		20		10	
	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P
68(20)	35780	1670	32200	1500	28620	1340	25040	1170	21470	1010	17890	840	14310	670	10730	510	10610	500	10610	500
70(21)	35390	1700	31850	1530	28310	1360	24770	1190	21230	1020	17700	860	14160	690	10620	520	10500	510	10500	510
72(22)	35010	1730	31500	1560	28000	1390	24500	1220	21000	1040	17500	870	14000	700	10500	530	10380	520	10380	520
73(23)	34620	1760	31160	1590	27700	1410	24230	1240	20770	1060	17310	890	13850	710	10390	540	10270	530	10270	530
75(24)	34240	1790	30810	1610	27390	1440	23960	1260	20540	1080	17120	900	13690	720	10270	550	10160	540	10160	540
77(25)	33850	1820	30470	1640	27080	1460	23700	1280	20310	1100	16930	920	13540	740	10160	550	10040	550	10040	550
79(26)	33470	1850	30120	1670	26770	1480	23430	1300	20080	1120	16730	930	13390	750	10040	560	9930	560	9930	560
81(27)	33080	1880	29770	1700	26460	1510	23160	1320	19850	1130	16540	950	13230	760	9920	570	9810	570	9810	570
82(28)	32700	1910	29430	1720	26160	1530	22890	1340	19620	1150	16350	960	13080	770	9810	580	9700	580	9700	580
84(29)	32310	1940	29080	1750	25850	1560	22620	1360	19390	1170	16160	980	12920	780	9690	590	9590	580	9590	580
86(30)	31930	1980	28730	1780	25540	1580	22350	1390	19160	1190	15960	990	12770	800	9580	600	9470	590	9470	590
88(31)	31540	2010	28390	1810	25230	1610	22080	1410	18920	1210	15770	1010	12620	810	9460	610	9360	600	9360	600
90(32)	31160	2040	28040	1830	24920	1630	21810	1430	18690	1230	15580	1020	12460	820	9350	620	9240	610	9240	610
91(33)	30770	2070	27690	1860	24620	1660	21540	1450	18460	1250	15390	1040	12310	830	9230	630	9130	620	9130	620
93(34)	30390	2100	27350	1890	24310	1680	21270	1470	18230	1260	15190	1050	12150	850	9120	640	9010	630	9010	630
95(35)	30000	2130	27000	1920	24000	1700	21000	1490	18000	1280	15000	1070	12000	860	9000	650	8900	640	8900	640
97(36)	29620	2160	26650	1940	23690	1730	20730	1510	17770	1300	14810	1090	11850	870	8880	660	8790	650	8790	650
99(37)	29230	2190	26310	1970	23380	1750	20460	1540	17540	1320	14620	1100	11690	880	8770	670	8670	660	8670	660
100(38)	28850	2220	25960	2000	23080	1780	20190	1560	17310	1340	14420	1120	11540	900	8650	670	8560	670	8560	670
102(39)	28460	2250	25610	2030	22770	1800	19920	1580	17080	1360	14230	1130	11380	910	8540	680	8440	680	8440	680
104(40)	28080	2280	25270	2050	22460	1830	19650	1600	16850	1370	14040	1150	11230	920	8420	690	8330	690	8330	690
106(41)	27690	2310	24920	2080	22150	1850	19380	1620	16610	1390	13850	1160	11080	930	8310	700	8210	700	8210	700
108(42)	27310	2340	24570	2110	21840	1880	19110	1640	16380	1410	13650	1180	10920	940	8190	710	8100	700	8100	700
109(43)	26920	2370	24230	2140	21540	1900	18840	1660	16150	1430	13460	1190	10770	960	8080	720	7990	710	7990	710
111(44)	26540	2400	23880	2160	21230	1920	18570	1690	15920	1450	13270	1210	10610	970	7960	730	7870	720	7870	720
113(45)	26150	2430	23540	2190	20920	1950	18310	1710	15690	1470	13080	1220	10460	980	7850	740	7760	730	7760	730
115(46)	25770	2460	23190	2220	20610	1970	18040	1730	15460	1480	12880	1240	10310	990	7730	750	7640	740	7640	740

Heating

Outdoor Temperature DB °F(°C)	Parts Load (%)																			
	100		90		80		70		60		50		40		30		20		10	
	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P
-13(-25)	13860	1650	12470	1480	11090	1310	9700	1140	8320	970	6930	800	5540	630	4160	460	3300	360	3300	360
-11(-24)	14170	1680	12750	1500	11330	1330	9920	1160	8500	990	7080	810	5670	640	4250	470	3380	360	3380	360
-9(-23)	14470	1700	13030	1520	11580	1350	10130	1170	8680	1000	7240	830	5790	650	4340	480	3450	370	3450	370
-8(-22)	14780	1720	13300	1550	11830	1370	10350	1190	8870	1010	7390	840	5910	660	4430	480	3520	370	3520	370
-6(-21)	15090	1750	13580	1570	12070	1390	10560	1210	9050	1030	7550	850	6040	670	4530	490	3600	380	3600	380
-4(-20)	15400	1770	13860	1590	12320	1410	10780	1220	9240	1040	7700	860	6160	680	4620	500	3670	380	3670	380
-2(-19)	16010	1790	14410	1610	12810	1420	11210	1240	9610	1060	8010	870	6410	690	4800	500	3820	390	3820	390
0(-18)	16630	1820	14970	1630	13300	1440	11640	1260	9980	1070	8320	880	6650	700	4990	510	3960	390	3960	390
1(-17)	17250	1840	15520	1650	13800	1460	12070	1270	10350	1080	8620	890	6900	710	5170	520	4110	400	4110	400
3(-16)	17860	1860	16080	1670	14290	1480	12500	1290	10720	1100	8930	910	7140	710	5360	520	4260	400	4260	400
5(-15)	18480	1890	16630	1690	14780	1500	12930	1310	11090	1110	9240	920	7390	720	5540	530	4400	410	4400	410
7(-14)	19060	1900	17150	1710	15240	1510	13340	1320	11430	1120	9530	920	7620	730	5720	530	4540	410	4540	410
9(-13)	19630	1920	17670	1720	15710	1520	13740	1330	11780	1130	9820	930	7850	730	5890	540	4680	420	4680	420
10(-12)	20210	1930	18190	1730	16170	1530	14150	1340	12130	1140	10110	940	8080	740	6060	540	4810	420	4810	420
12(-11)	20790	1950	18710	1750	16630	1550	14550	1350	12470	1150	10390	950	8320	750	6240	550	4950	420	4950	420
14(-10)	21370	1960	19230	1760	17090	1560	14960	1360	12820	1150	10680	950	8550	750	6410	550	5090	430	5090	430
16(-9)	21940	1980	19750	1770	17550	1570	15360	1370	13170	1160	10970	960	8780	760	6580	550	5230	430	5230	430
18(-8)	22520	1990	20270	1790	18020	1580	15760	1380	13510	1170	11260	970	9010	760	6760	560	5370	430	5370	430
19(-7)	23100	2010	20790	1800	18480	1590	16170	1390	13860	1180	11550	970	9240	770	6930	560	5500	430	5500	430
21(-6)	23270	2020	20940	1810	18620	1600	16290	1400	13960	1190	11630	980	9310	770	6980	570	5540	440	5540	440
23(-5)	23440	2030	21100	1820	18750	1610	16410	1410	14060	1200	11720	990	9380	780	7030	570	5580	440	5580	440
25(-4)	23610	2050	21250	1830	18890	1620	16530	1410	14170	1200	11810	990	9440	780	7080	570	5630	440	5630	440
27(-3)	23780	2060	21400	1850	19030	1640	16650	1420	14270	1210	11890	1000	9510	790	7130	580	5670	450	5670	450
28(-2)	23950	2070	21560	1860	19160	1650	16770	1430	14370	1220	11980	1010	9580	790	7190	580	5710	450	5710	450
30(-1)	24120	2080	21710	1870	19300	1660	16890	1440	14470	1230	12060	1010	9650	800	7240	580	5750	450	5750	450
32(0)	24300	2100	21870	1880	19440	1670	17010	1450	14580	1230	12150	1020	9720	800	7290	590	5790	450	5790	450
34(1)	24470	2110	22020	1890	19570	1680	17130	1460	14680	1240	12230	1030	9790	810	7340	590	5830	460	5830	460
36(2)	24640	2120	22170	1910	19710	1690	17250	1470	14780	1250	12320	1030	9860	810	7390	600	5870	460	5870	460
37(3)	25040	2150	22540	1930	20030	1710	17530	1490	15020	1270	12520	1050	10020	820	7510	600	5970	470	5970	470
39(4)	25440	2180	22900	1960	20360	1730	17810	1510	15270	1280	12720	1060	10180	840	7630	610	6060	470	6060	470
41(5)	25850	2210	23260	1980	20680	1760	18090	1530	15510	1300	12920	1070	10340	850	7750	620	6160	480	6160	480
43(6)	33120	2360	29810	2120	26500	1880	23190	1630	19870	1390	16560	1150	13250	900	9940	660	7890	510	7890	510
45(7)	34000	2400	30600	2150	27200	1910	23800	1660	20400	1410	17000	1170	13600	920	10200	670	8100	520	8100	520
46(8)	34880	2440	31390	2190	27900	1940	24410	1690	20930	1430	17440	1180	13950	930	10460	680	8310	530	8310	530
48(9)	35750	2470	32180	2220	28600	1970	25030	1710	21450	1460	17880	1200	14300	950	10730	690	8520	540	8520	540
50(10)	36630	2510	32970	2250	29310	1990	25640	1740	21980	1480	18320	1220	14650	960	10990	700	8730	540	8730	540
52(11)	37510	2550	33760	2290	30010	2020	26260	1760	22510	1500	18750	1240	15000	980	11250	710	8940	550	8940	550
54(12)	38390	2590	34550	2320	30710	2050	26870	1790	23030	1520	19190	1260	15350	990	11520	720	9150	560	9150	560
55(13)	39260	2620	35340	2350	31410	2080	27490	1810	23560	1540	19630	1270	15710	1000	11780	730	9350	570	9350	570
57(14)	40140	2660	36130	2390	32110	2110	28100	1840	24090	1570	20070	1290	16060	1020	12040	750	9560	580	9560	580
59(15)	41020	2700	36920	2420	32820	2140	28710	1870	24610	1590	20510	1310	16410	1030	12310	760	9770	580	9770	580

Indoor: RAV-HB361UTP-UL
Outdoor: RAV-BP361AT2P-UL

Operation range	Cooling		Heating	
	Q	P	Q	P
MINIMUM	Btu/h 8900	640	8100	520
RATING	Btu/h 36000	2687	40000	3080
MAXIMUM	Btu/h 41000	4100	44300	4490

Q : Capacity (Btu/h)
P : Power consumption (W)

Cooling

Outdoor Temperature DB °F(°C)	Parts Load (%)																			
	100		90		80		70		60		50		40		30		20		10	
	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P
68(20)	42930	2110	38640	1900	34340	1680	30050	1470	25760	1260	21470	1040	17170	830	12880	620	10610	500	10610	500
70(21)	42470	2150	38220	1930	33970	1710	29730	1500	25480	1280	21230	1060	16990	840	12740	630	10500	510	10500	510
72(22)	42010	2190	37810	1970	33600	1740	29400	1520	25200	1300	21000	1080	16800	860	12600	640	10380	520	10380	520
73(23)	41540	2220	37390	2000	33240	1770	29080	1550	24930	1320	20770	1100	16620	870	12460	650	10270	530	10270	530
75(24)	41080	2260	36970	2030	32870	1810	28760	1580	24650	1350	20540	1120	16430	890	12320	660	10160	540	10160	540
77(25)	40620	2300	36560	2070	32500	1840	28430	1600	24370	1370	20310	1140	16250	900	12190	670	10040	550	10040	550
79(26)	40160	2340	36140	2100	32130	1870	28110	1630	24090	1390	20080	1160	16060	920	12050	680	9930	560	9930	560
81(27)	39700	2380	35730	2140	31760	1900	27790	1660	23820	1420	19850	1180	15880	930	11910	690	9810	570	9810	570
82(28)	39230	2420	35310	2170	31390	1930	27460	1680	23540	1440	19620	1190	15690	950	11770	700	9700	580	9700	580
84(29)	38770	2460	34890	2210	31020	1960	27140	1710	23260	1460	19390	1210	15510	960	11630	720	9590	580	9590	580
86(30)	38310	2490	34480	2240	30650	1990	26820	1740	22990	1480	19160	1230	15320	980	11490	730	9470	590	9470	590
88(31)	37850	2530	34060	2280	30280	2020	26490	1760	22710	1510	18920	1250	15140	990	11350	740	9360	600	9360	600
90(32)	37390	2570	33650	2310	29910	2050	26170	1790	22430	1530	18690	1270	14950	1010	11220	750	9240	610	9240	610
91(33)	36920	2610	33230	2350	29540	2080	25850	1820	22150	1550	18460	1290	14770	1030	11080	760	9130	620	9130	620
93(34)	36460	2650	32820	2380	29170	2110	25520	1840	21880	1580	18230	1310	14580	1040	10940	770	9010	630	9010	630
95(35)	36000	2690	32400	2420	28800	2140	25200	1870	21600	1600	18000	1330	14400	1060	10800	780	8900	640	8900	640
97(36)	35540	2730	31980	2450	28430	2170	24880	1900	21320	1620	17770	1350	14220	1070	10660	790	8790	650	8790	650
99(37)	35080	2760	31570	2480	28060	2200	24550	1920	21050	1650	17540	1370	14030	1090	10520	810	8670	660	8670	660
100(38)	34610	2800	31150	2520	27690	2240	24230	1950	20770	1670	17310	1380	13850	1100	10380	820	8560	670	8560	670
102(39)	34150	2840	30740	2550	27320	2270	23910	1980	20490	1690	17080	1400	13660	1120	10250	830	8440	680	8440	680
104(40)	33690	2880	30320	2590	26950	2300	23580	2010	20210	1710	16850	1420	13480	1130	10110	840	8330	690	8330	690
106(41)	33230	2920	29910	2620	26580	2330	23260	2030	19940	1740	16610	1440	13290	1150	9970	850	8210	700	8210	700
108(42)	32770	2960	29490	2660	26210	2360	22940	2060	19660	1760	16380	1460	13110	1160	9830	860	8100	700	8100	700
109(43)	32300	3000	29070	2690	25840	2390	22610	2090	19380	1780	16150	1480	12920	1180	9690	870	7990	710	7990	710
111(44)	31840	3030	28660	2730	25470	2420	22290	2110	19110	1810	15920	1500	12740	1190	9550	880	7870	720	7870	720
113(45)	31380	3070	28240	2760	25100	2450	21970	2140	18830	1830	15690	1520	12550	1210	9410	900	7760	730	7760	730
115(46)	30920	3110	27830	2800	24730	2480	21640	2170	18550	1850	15460	1540	12370	1220	9280	910	7640	740	7640	740

Heating

Outdoor Temperature DB °F(°C)	Parts Load (%)																			
	100		90		80		70		60		50		40		30		20		10	
	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P
-13(-25)	16300	2120	14670	1900	13040	1680	11410	1460	9780	1240	8150	1020	6520	790	4890	570	3300	360	3300	360
-11(-24)	16670	2150	15000	1930	13330	1700	11670	1480	10000	1250	8330	1030	6670	810	5000	580	3380	360	3380	360
-9(-23)	17030	2180	15330	1950	13620	1730	11920	1500	10220	1270	8510	1040	6810	820	5110	590	3450	370	3450	370
-8(-22)	17390	2210	15650	1980	13910	1750	12170	1520	10430	1290	8700	1060	6960	830	5220	600	3520	370	3520	370
-6(-21)	17750	2240	15980	2010	14200	1770	12430	1540	10650	1310	8880	1070	7100	840	5330	610	3600	380	3600	380
-4(-20)	18120	2270	16300	2030	14490	1800	12680	1560	10870	1320	9060	1090	7250	850	5430	610	3670	380	3670	380
-2(-19)	18840	2300	16960	2060	15070	1820	13190	1580	11300	1340	9420	1100	7540	860	5650	620	3820	390	3820	390
0(-18)	19570	2330	17610	2090	15650	1850	13700	1600	11740	1360	9780	1120	7830	870	5870	630	3960	390	3960	390
1(-17)	20290	2360	18260	2120	16230	1870	14200	1620	12170	1380	10140	1130	8120	890	6090	640	4110	400	4110	400
3(-16)	21010	2390	18910	2140	16810	1890	14710	1640	12610	1400	10510	1150	8410	900	6300	650	4260	400	4260	400
5(-15)	21740	2420	19570	2170	17390	1920	15220	1670	13040	1410	10870	1160	8700	910	6520	660	4400	410	4400	410
7(-14)	22420	2440	20180	2190	17930	1930	15690	1680	13450	1420	11210	1170	8970	910	6730	660	4540	410	4540	410
9(-13)	23100	2460	20790	2200	18480	1950	16170	1690	13860	1430	11550	1180	9240	920	6930	670	4680	420	4680	420
10(-12)	23780	2480	21400	2220	19020	1960	16640	1700	14270	1450	11890	1190	9510	930	7130	670	4810	420	4810	420
12(-11)	24460	2500	22010	2240	19570	1980	17120	1720	14670	1460	12230	1200	9780	940	7340	680	4950	420	4950	420
14(-10)	25140	2520	22620	2260	20110	1990	17600	1730	15080	1470	12570	1210	10050	940	7540	680	5090	430	5090	430
16(-9)	25820	2540	23230	2270	20650	2010	18070	1740	15490	1480	12910	1210	10330	950	7740	690	5230	430	5230	430
18(-8)	26490	2560	23850	2290	21200	2020	18550	1760	15900	1490	13250	1220	10600	960	7950	690	5370	430	5370	430
19(-7)	27170	2570	24460	2310	21740	2040	19020	1770	16300	1500	13590	1230	10870	960	8150	700	5500	430	5500	430
21(-6)	27380	2590	24640	2320	21900	2050	19160	1780	16430	1510	13690	1240	10950	970	8210	700	5540	440	5540	440
23(-5)	27580	2610	24820	2340	22060	2060	19300	1790	16550	1520	13790	1250	11030	980	8270	710	5580	440	5580	440
25(-4)	27780	2620	25000	2350	22220	2080	19440	1800	16670	1530	13890	1260	11110	980	8330	710	5630	440	5630	440
27(-3)	27980	2640	25180	2370	22380	2090	19590	1820	16790	1540	13990	1270	11190	990	8390	710	5670	450	5670	450
28(-2)	28180	2660	25360	2380	22540	2100	19730	1830	16910	1550	14090	1270	11270	1000	8450	720	5710	450	5710	450
30(-1)	28380	2680	25540	2400	22710	2120	19870	1840	17030	1560	14190	1280	11350	1000	8510	720	5750	450	5750	450
32(0)	28580	2690	25720	2410	22870	2130	20010	1850	17150	1570	14290	1290	11430	1010	8570	730	5790	450	5790	450
34(1)	28780	2710	25910	2430	23030	2140	20150	1860	17270	1580	14390	1300	11510	1010	8640	730	5830	460	5830	460
36(2)	28990	2730	26090	2440	23190	2160	20290	1870	17390	1590	14490	1310	11590	1020	8700	740	5870	460	5870	460
37(3)	29460	2760	26510	2470	23570	2190	20620	1900	17680	1610	14730	1320	11780	1030	8840	750	5970	470	5970	470
39(4)	29940	2800	26940	2510	23950	2220	20950	1920	17960	1630	14970	1340	11970	1050	8980	760	6060	470	6060	470
41(5)	30410	2840	27370	2540	24330	2240	21290	1950	18250	1650	15200	1360	12160	1060	9120	770	6160	480	6160	480
43(6)	38970	3030	35070	2720	31170	2400	27280	2080	23380	1770	19480	1450	15590	1140	11690	820	7890	510	7890	510
45(7)	40000	3080	36000	2760	32000	2440	28000	2120	24000	1800	20000	1470	16000	1150	12000	830	8100	520	8100	520
46(8)	41030	3130	36930	2800	32830	2480	28720	2150	24620	1820	20520	1500	16410	1170	12310	850	8310	530	8310	530
48(9)	42060	3180	37860	2840	33650	2510	29450	2180	25240	1850	21030	1520	16830	1190	12620	860	8520	540	8520	540
50(10)	43100	3220	38790	2890	34480	2550	30170	2220	25860	1880	21550	1540	17240	1210	12930	870	8730	540	8730	540
52(11)	44130	3270	39720	2930	35300	2590	30890	2250	26480	1910	22060	1570	17650	1230	13240	880	8940	550	8940	550
54(12)	45160	3320	40650	2970	36130	2630	31610	2280	27100	1940	22580	1590	18060	1240	13550	900	9150	560	9150	560
55(13)	46190	3370	41570	3020	36950	2660	32340	2310	27720	1960	23100	1610	18480	1260	13860	910	9350	570	9350	570
57(14)	47230	3410	42500	3060	37780	2700	33060	2350	28340	1990	23610	1630	18890	1280	14170	920	9560	580	9560	580
59(15)	48260	3460	43430	3100	38610	2740	33780	2380	28950	2020	24130	1660	19300	1300	14480	940	9770	580	9770	580

Indoor: RAV-HB421UTP-UL
Outdoor: RAV-BP421AT2P-UL

Operation range	Cooling		Heating	
	Q	P	Q	P
MINIMUM	Btu/h 8900	660	8100	540
RATING	Btu/h 42000	3500	47000	3930
MAXIMUM	Btu/h 47800	5070	61400	4720

Cooling

Outdoor Temperature DB °F(°C)	Parts Load (%)																			
	100		90		80		70		60		50		40		30		20		10	
	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P
68(20)	50090	2750	45080	2460	40070	2180	35060	1900	30050	1620	25040	1330	20030	1050	15030	770	10610	520	10610	520
70(21)	49550	2800	44590	2510	39640	2220	34680	1930	29730	1650	24770	1360	19820	1070	14860	780	10500	530	10500	530
72(22)	49010	2850	44110	2550	39210	2260	34300	1970	29400	1670	24500	1380	19600	1090	14700	800	10380	540	10380	540
73(23)	48470	2900	43620	2600	38770	2300	33930	2000	29080	1700	24230	1410	19390	1110	14540	810	10270	550	10270	550
75(24)	47930	2950	43140	2640	38340	2340	33550	2040	28760	1730	23960	1430	19170	1130	14380	820	10160	560	10160	560
77(25)	47390	3000	42650	2690	37910	2380	33170	2070	28430	1760	23700	1450	18960	1150	14220	840	10040	570	10040	570
79(26)	46850	3050	42170	2730	37480	2420	32800	2110	28110	1790	23430	1480	18740	1170	14060	850	9930	570	9930	570
81(27)	46310	3100	41680	2780	37050	2460	32420	2140	27790	1820	23160	1500	18520	1180	13890	870	9810	580	9810	580
82(28)	45770	3150	41200	2820	36620	2500	32040	2180	27460	1850	22890	1530	18310	1200	13730	880	9700	590	9700	590
84(29)	45230	3200	40710	2870	36190	2540	31660	2210	27140	1880	22620	1550	18090	1220	13570	890	9590	600	9590	600
86(30)	44700	3250	40230	2910	35760	2580	31290	2250	26820	1910	22350	1580	17880	1240	13410	910	9470	610	9470	610
88(31)	44160	3300	39740	2960	35320	2620	30910	2280	26490	1940	22080	1600	17660	1260	13250	920	9360	620	9360	620
90(32)	43620	3350	39260	3000	34890	2660	30530	2310	26170	1970	21810	1630	17450	1280	13090	940	9240	630	9240	630
91(33)	43080	3400	38770	3050	34460	2700	30150	2350	25850	2000	21540	1650	17230	1300	12920	950	9130	640	9130	640
93(34)	42540	3450	38290	3090	34030	2740	29780	2380	25520	2030	21270	1670	17020	1320	12760	960	9010	650	9010	650
95(35)	42000	3500	37800	3140	33600	2780	29400	2420	25200	2060	21000	1700	16800	1340	12600	980	8900	660	8900	660
97(36)	41460	3550	37310	3180	33170	2820	29020	2450	24880	2090	20730	1720	16580	1360	12440	990	8790	670	8790	670
99(37)	40920	3600	36830	3230	32740	2860	28650	2490	24550	2120	20460	1750	16370	1380	12280	1010	8670	680	8670	680
100(38)	40380	3650	36340	3270	32310	2900	28270	2520	24230	2150	20190	1770	16150	1400	12110	1020	8560	690	8560	690
102(39)	39840	3700	35860	3320	31880	2940	27890	2560	23910	2180	19920	1800	15940	1410	11950	1030	8440	700	8440	700
104(40)	39310	3750	35370	3360	31440	2980	27510	2590	23580	2210	19650	1820	15720	1430	11790	1050	8330	710	8330	710
106(41)	38770	3800	34890	3410	31010	3020	27140	2630	23260	2240	19380	1840	15510	1450	11630	1060	8210	720	8210	720
108(42)	38230	3850	34400	3450	30580	3060	26760	2660	22940	2270	19110	1870	15290	1470	11470	1080	8100	730	8100	730
109(43)	37690	3900	33920	3500	30150	3100	26380	2700	22610	2290	18840	1890	15080	1490	11310	1090	7990	740	7990	740
111(44)	37150	3950	33430	3540	29720	3140	26000	2730	22290	2320	18570	1920	14860	1510	11140	1100	7870	750	7870	750
113(45)	36610	4000	32950	3590	29290	3180	25630	2770	21970	2350	18310	1940	14640	1530	10980	1120	7760	750	7760	750
115(46)	36070	4050	32460	3630	28860	3220	25250	2800	21640	2380	18040	1970	14430	1550	10820	1130	7640	760	7640	760

Heating

Outdoor Temperature DB °F(°C)	Parts Load (%)																			
	100		90		80		70		60		50		40		30		20		10	
	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P
-13(-25)	19160	2710	17240	2830	15330	2950	13410	3070	11490	3190	9580	3320	7660	3440	5750	3560	3830	3680	3300	3720
-11(-24)	19580	2740	17630	2870	15670	2990	13710	3120	11750	3240	9790	3360	7830	3490	5880	3610	3920	3740	3380	3770
-9(-23)	20010	2780	18010	2910	16010	3030	14010	3160	12010	3290	10000	3410	8000	3540	6000	3660	4000	3790	3450	3820
-8(-22)	20430	2820	18390	2950	16350	3080	14300	3200	12260	3330	10220	3460	8170	3590	6130	3710	4090	3840	3520	3880
-6(-21)	20860	2860	18770	2990	16690	3120	14600	3250	12520	3380	10430	3510	8340	3630	6260	3760	4170	3890	3600	3930
-4(-20)	21290	2900	19160	3030	17030	3160	14900	3290	12770	3420	10640	3550	8510	3680	6390	3820	4260	3950	3670	3980
-2(-19)	22140	2940	19920	3070	17710	3200	15500	3340	13280	3470	11070	3600	8860	3730	6640	3870	4430	4000	3820	4040
0(-18)	22990	2980	20690	3110	18390	3240	16090	3380	13790	3510	11490	3650	9200	3780	6900	3920	4600	4050	3960	4090
1(-17)	23840	3010	21460	3150	19070	3290	16690	3420	14300	3560	11920	3700	9540	3830	7150	3970	4770	4100	4110	4140
3(-16)	24690	3050	22220	3190	19750	3330	17280	3470	14820	3600	12350	3740	9880	3880	7410	4020	4940	4160	4260	4190
5(-15)	25540	3090	22990	3230	20430	3370	17880	3510	15330	3650	12770	3790	10220	3930	7660	4070	5110	4210	4400	4250
7(-14)	26340	3120	23710	3260	21070	3400	18440	3540	15810	3680	13170	3820	10540	3960	7900	4100	5270	4240	4540	4280
9(-13)	27140	3140	24430	3280	21710	3420	19000	3570	16280	3710	13570	3850	10860	3990	8140	4130	5430	4270	4680	4310
10(-12)	27940	3160	25140	3310	22350	3450	19560	3590	16760	3740	13970	3880	11180	4020	8380	4160	5590	4310	4810	4350
12(-11)	28740	3190	25860	3330	22990	3480	20120	3620	17240	3760	14370	3910	11490	4050	8620	4200	5750	4340	4950	4380
14(-10)	29530	3210	26580	3360	23630	3500	20670	3650	17720	3790	14770	3940	11810	4080	8860	4230	5910	4370	5090	4410
16(-9)	30330	3240	27300	3380	24270	3530	21230	3680	18200	3820	15170	3970	12130	4110	9100	4260	6070	4410	5230	4450
18(-8)	31130	3260	28020	3410	24900	3560	21790	3700	18680	3850	15570	4000	12450	4140	9340	4290	6230	4440	5370	4480
19(-7)	31930	3280	28740	3430	25540	3580	22350	3730	19160	3880	15960	4030	12770	4180	9580	4320	6390	4470	5500	4510
21(-6)	32170	3310	28950	3460	25730	3600	22520	3750	19300	3900	16080	4050	12870	4200	9650	4350	6430	4500	5540	4540
23(-5)	32400	3330	29160	3480	25920	3630	22680	3780	19440	3930	16200	4080	12960	4230	9720	4380	6480	4530	5580	4570
25(-4)	32640	3350	29380	3500	26110	3650	22850	3800	19580	3950	16320	4110	13060	4260	9790	4410	6530	4560	5630	4600
27(-3)	32880	3370	29590	3520	26300	3680	23010	3830	19730	3980	16440	4130	13150	4280	9860	4440	6580	4590	5670	4630
28(-2)	33110	3390	29800	3550	26490	3700	23180	3850	19870	4010	16560	4160	13240	4310	9930	4470	6620	4620	5710	4660
30(-1)	33350	3410	30010	3570	26680	3720	23340	3880	20010	4030	16670	4180	13340	4340	10000	4490	6670	4650	5750	4690
32(0)	33580	3430	30230	3590	26870	3750	23510	3900	20150	4060	16790	4210	13430	4370	10080	4520	6720	4680	5790	4720
34(1)	33820	3460	30440	3610	27060	3770	23680	3930	20290	4080	16910	4240	13530	4390	10150	4550	6760	4710	5830	4750
36(2)	34060	3480	30650	3640	27250	3790	23840	3950	20430	4110	17030	4260	13620	4420	10220	4580	6810	4740	5870	4780
37(3)	34620	3520	31150	3680	27690	3840	24230	4000	20770	4160	17310	4320	13850	4480	10380	4640	6920	4800	5970	4840
39(4)	35170	3570	31660	3730	28140	3890	24620	4060	21100	4220	17590	4380	14070	4540	10550	4700	7030	4860	6060	4910
41(5)	35730	3620	32160	3780	28590	3950	25010	4110	21440	4270	17870	4440	14290	4600	10720	4760	7150	4930	6160	4970
43(6)	45790	3870	41210	4040	36630	4220	32050	4390	27470	4570	22890	4740	18310	4920	13740	5090	9160	5270	7890	5320
45(7)	47000	3930	42300	4110	37600	4290	32900	4460	28200	4640	23500	4820	18800	5000	14100	5170	9400	5350	8100	5400
46(8)	48210	3990	43390	4170	38570	4350	33750	4530	28930	4710	24110	4890	19290	5070	14460	5250	9640	5430	8310	5480
48(9)	49430	4050	44480	4230	39540	4420	34600	4600	29660	4780	24710	4970	19770	5150	14830	5330	9890	5520	8520	5570
50(10)	50640	4110	45570	4300	40510	4480	35450	4670	30380	4860	25320	5040	20260	5230	15190	5410	10130	5600	8730	5650
52(11)	51850	4170	46670	4360	41480	4550	36300	4740	31110	4930	25930	5120	20740	5310	15560	5490	10370	5680	8940	5730
54(12)	53060	4230	47760	4430	42450	4620	37150	4810	31840	5000	26530	5190	21230	5380	15920	5570	10610	5770	9150	5820
55(13)	54280	4300	48850	4490	43420	4680	37990	4880	32570	5070	27140	5270	21710	5460	16280	5650	10860	5850	9350	5900
57(14)	55490	4360	49940	4550	44390	4750	38840	4950	33290	5140	27750	5340	22200	5540	16650	5730	11100	5930	9560	5990
59(15)	56700	4420	51030	4620	45360	4820	39690	5020	34020	5220	28350	5410	22680	5610	17010	5810	11340	6010	9770	6070

Indoor: RAV-HB481UTP-UL
Outdoor: RAV-BP481AT2P-UL

Operation range	Cooling			Heating		
	Q	P		Q	P	
MINIMUM	Btu/h	8900	660	8100	540	
RATING	Btu/h	48000	4530	54000	4970	
MAXIMUM	Btu/h	54600	5710	64800	5800	

Q : Capacity (Btu/h)
P : Power consumption (W)

Cooling

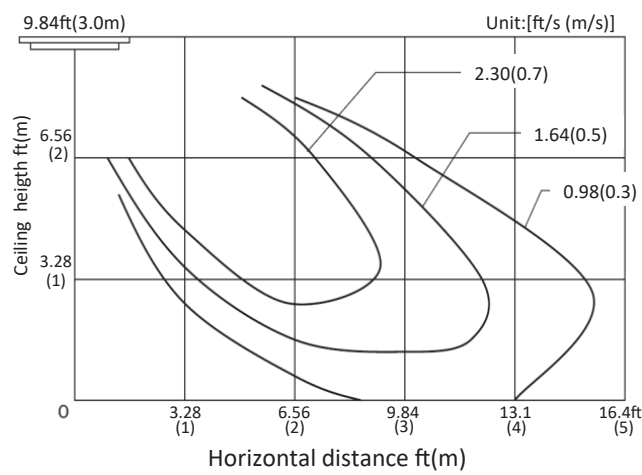
Outdoor Temperature DB °F(°C)	Parts Load (%)																			
	100		90		80		70		60		50		40		30		20		10	
	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P
68(20)	57240	3560	51520	3180	45790	2810	40070	2440	34340	2060	28620	1690	22900	1320	17170	950	11450	570	10610	520
70(21)	56620	3620	50960	3240	45300	2860	39640	2480	33970	2100	28310	1720	22650	1340	16990	960	11320	580	10500	530
72(22)	56010	3690	50410	3300	44810	2910	39210	2530	33600	2140	28000	1750	22400	1370	16800	980	11200	590	10380	540
73(23)	55390	3750	49850	3360	44310	2960	38770	2570	33240	2180	27700	1780	22160	1390	16620	1000	11080	600	10270	550
75(24)	54780	3820	49300	3420	43820	3020	38340	2620	32870	2220	27390	1810	21910	1410	16430	1010	10960	610	10160	560
77(25)	54160	3880	48740	3470	43330	3070	37910	2660	32500	2250	27080	1850	21660	1440	16250	1030	10830	620	10040	570
79(26)	53540	3950	48190	3530	42840	3120	37480	2700	32130	2290	26770	1880	21420	1460	16060	1050	10710	640	9930	570
81(27)	52930	4010	47640	3590	42340	3170	37050	2750	31760	2330	26460	1910	21170	1490	15880	1070	10590	650	9810	580
82(28)	52310	4080	47080	3650	41850	3220	36620	2790	31390	2370	26160	1940	20920	1510	15690	1080	10460	660	9700	590
84(29)	51700	4140	46530	3710	41360	3270	36190	2840	31020	2400	25850	1970	20680	1540	15510	1100	10340	670	9590	600
86(30)	51080	4210	45970	3760	40860	3320	35760	2880	30650	2440	25540	2000	20430	1560	15320	1120	10220	680	9470	610
88(31)	50460	4270	45420	3820	40370	3370	35320	2930	30280	2480	25230	2030	20190	1580	15140	1140	10090	690	9360	620
90(32)	49850	4340	44860	3880	39880	3430	34890	2970	29910	2520	24920	2060	19940	1610	14950	1150	9970	700	9240	630
91(33)	49230	4400	44310	3940	39390	3480	34460	3020	29540	2550	24620	2090	19690	1630	14770	1170	9850	710	9130	640
93(34)	48620	4470	43750	4000	38890	3530	34030	3060	29170	2590	24310	2120	19450	1660	14580	1190	9720	720	9010	650
95(35)	48000	4530	43200	4050	38400	3580	33600	3100	28800	2630	24000	2150	19200	1680	14400	1200	9600	730	8900	660
97(36)	47380	4590	42650	4110	37910	3630	33170	3150	28430	2670	23690	2190	18950	1700	14220	1220	9480	740	8790	670
99(37)	46770	4660	42090	4170	37410	3680	32740	3190	28060	2710	23380	2220	18710	1730	14030	1240	9350	750	8670	680
100(38)	46150	4720	41540	4230	36920	3730	32310	3240	27690	2740	23080	2250	18460	1750	13850	1260	9230	760	8560	690
102(39)	45540	4790	40980	4290	36430	3790	31880	3280	27320	2780	22770	2280	18210	1780	13660	1270	9110	770	8440	700
104(40)	44920	4850	40430	4350	35940	3840	31440	3330	26950	2820	22460	2310	17970	1800	13480	1290	8980	780	8330	710
106(41)	44300	4920	39870	4400	35440	3890	31010	3370	26580	2860	22150	2340	17720	1820	13290	1310	8860	790	8210	720
108(42)	43690	4980	39320	4460	34950	3940	30580	3420	26210	2890	21840	2370	17480	1850	13110	1330	8740	800	8100	730
109(43)	43070	5050	38760	4520	34460	3990	30150	3460	25840	2930	21540	2400	17230	1870	12920	1340	8610	810	7990	740
111(44)	42460	5110	38210	4580	33960	4040	29720	3510	25470	2970	21230	2430	16980	1900	12740	1360	8490	820	7870	750
113(45)	41840	5180	37660	4640	33470	4090	29290	3550	25100	3010	20920	2460	16740	1920	12550	1380	8370	830	7760	750
115(46)	41220	5240	37100	4690	32980	4140	28860	3590	24730	3040	20610	2490	16490	1940	12370	1390	8240	840	7640	760

Heating

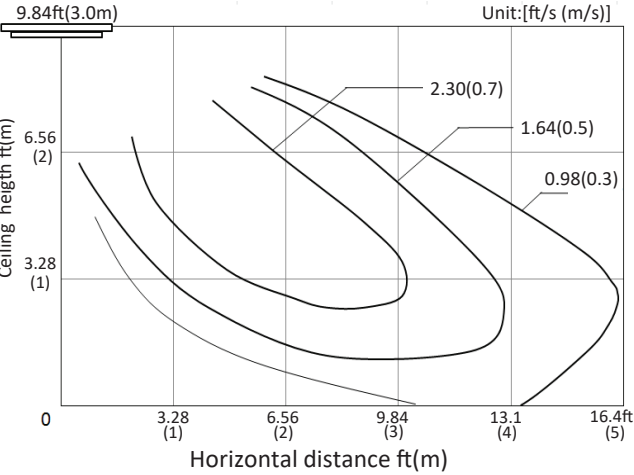
Outdoor Temperature DB °F(°C)	Parts Load (%)																			
	100		90		80		70		60		50		40		30		20		10	
	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P
-13(-25)	22010	3420	19810	3060	17610	2700	15410	2340	13210	1990	11010	1630	8800	1270	6600	910	4400	550	3300	370
-11(-24)	22500	3470	20250	3110	18000	2740	15750	2380	13500	2010	11250	1650	9000	1290	6750	920	4500	560	3380	380
-9(-23)	22990	3520	20690	3150	18390	2780	16090	2410	13790	2040	11490	1670	9200	1300	6900	940	4600	570	3450	380
-8(-22)	23480	3570	21130	3190	18780	2820	16430	2450	14090	2070	11740	1700	9390	1320	7040	950	4700	570	3520	390
-6(-21)	23970	3620	21570	3240	19170	2860	16780	2480	14380	2100	11980	1720	9590	1340	7190	960	4790	580	3600	390
-4(-20)	24460	3670	22010	3280	19570	2900	17120	2510	14670	2130	12230	1740	9780	1360	7340	970	4890	590	3670	400
-2(-19)	25430	3710	22890	3320	20350	2940	17800	2550	15260	2160	12720	1770	10170	1380	7630	990	5090	600	3820	400
0(-18)	26410	3760	23770	3370	21130	2970	18490	2580	15850	2180	13210	1790	10570	1400	7920	1000	5280	610	3960	410
1(-17)	27390	3810	24650	3410	21910	3010	19170	2610	16430	2210	13700	1810	10960	1410	8220	1010	5480	610	4110	410
3(-16)	28370	3860	25530	3460	22700	3050	19860	2650	17020	2240	14180	1840	11350	1430	8510	1030	5670	620	4260	420
5(-15)	29350	3910	26410	3500	23480	3090	20540	2680	17610	2270	14670	1860	11740	1450	8800	1040	5870	630	4400	420
7(-14)	30260	3940	27240	3530	24210	3110	21190	2700	18160	2290	15130	1870	12110	1460	9080	1050	6050	630	4540	430
9(-13)	31180	3970	28060	3550	24950	3140	21830	2720	18710	2310	15590	1890	12470	1470	9350	1060	6240	640	4680	430
10(-12)	32100	4000	28890	3580	25680	3160	22470	2740	19260	2320	16050	1900	12840	1480	9630	1060	6420	640	4810	430
12(-11)	33020	4030	29710	3610	26410	3190	23110	2760	19810	2340	16510	1920	13210	1500	9900	1070	6600	650	4950	440
14(-10)	33930	4060	30540	3640	27150	3210	23750	2780	20360	2360	16970	1930	13570	1510	10180	1080	6790	650	5090	440
16(-9)	34850	4090	31370	3660	27880	3230	24400	2810	20910	2380	17430	1950	13940	1520	10460	1090	6970	660	5230	440
18(-8)	35770	4120	32190	3690	28610	3260	25040	2830	21460	2390	17880	1960	14310	1530	10730	1100	7150	660	5370	450
19(-7)	36680	4150	33020	3720	29350	3280	25680	2850	22010	2410	18340	1980	14670	1540	11010	1100	7340	670	5500	450
21(-6)	36960	4180	33260	3740	29570	3300	25870	2870	22170	2430	18480	1990	14780	1550	11090	1110	7390	670	5540	450
23(-5)	37230	4210	33510	3770	29780	3330	26060	2880	22340	2440	18610	2000	14890	1560	11170	1120	7450	680	5580	460
25(-4)	37500	4240	33750	3790	30000	3350	26250	2900	22500	2460	18750	2010	15000	1570	11250	1130	7500	680	5630	460
27(-3)	37770	4260	33990	3820	30220	3370	26440	2920	22660	2470	18890	2030	15110	1580	11330	1130	7550	690	5670	460
28(-2)	38040	4290	34240	3840	30430	3390	26630	2940	22830	2490	19020	2040	15220	1590	11410	1140	7610	690	5710	470
30(-1)	38320	4320	34480	3860	30650	3410	26820	2960	22990	2510	19160	2050	15330	1600	11490	1150	7660	700	5750	470
32(0)	38590	4340	34730	3890	30870	3430	27010	2980	23150	2520	19290	2070	15430	1610	11580	1160	7720	700	5790	470
34(1)	38860	4370	34970	3910	31090	3450	27200	3000	23320	2540	19430	2080	15540	1620	11660	1160	7770	700	5830	470
36(2)	39130	4400	35220	3940	31300	3480	27390	3010	23480	2550	19570	2090	15650	1630	11740	1170	7830	710	5870	480
37(3)	39770	4460	35790	3990	31820	3520	27840	3060	23860	2590	19890	2120	15910	1650	11930	1190	7950	720	5970	480
39(4)	40410	4520	36370	4040	32330	3570	28290	3100	24250	2620	20210	2150	16160	1670	12120	1200	8080	730	6060	490
41(5)	41050	4580	36950	4100	32840	3620	28740	3140	24630	2660	20530	2180	16420	1700	12320	1220	8210	740	6160	500
43(6)	52610	4890	47350	4380	432090	3870	36820	3350	31560	2840	26300	2330	21040	1810	15780	1300	10520	790	7890	530
45(7)	54000	4970	48600	4450	439020	3930	37800	3410	32400	2890	27000	2360	21600	1840	16200	1320	10800	800	8100	540
46(8)	55390	5050	49850	4520	44310	3990	38780	3460	33240	2930	27700	2400	22160	1870	16620	1340	11080	810	8310	550
48(9)	56790	5120	51110	4590	45430	4050	39750	3510	34070	2970	28390	2440	22710	1900	17040	1360	11360	830	8520	560
50(10)	58180	5200	52360	4660	46540	4110	40730	3560	34910	3020	29090	2470	23270	1930	17450	1380	11640	840	8730	570
52(11)	59570	5280	53620	4720	47660	4170	41700	3620	35740	3060	29790	2510	23830	1960	17870	1400	11910	850	8940	570
54(12)	60970	5350	54870	4790	48770	4230	42680	3670	36580	3110	30480	2550	24390	1990	18290	1420	12190	860	9150	580
55(13)	62360	5430	56130	4860	49890	4290	43650	3720	37420	3150	31180	2580	24940	2010	18710	1440	12470	870	9350	590
57(14)	63750	5510	57380	4930	51000	4350	44630	3780	38250	3200	31880	2620	25500	2040	19130	1470	12750	890	9560	600
59(15)	65150	5590	58630	5000	52120	4410	45600	3830	39090	3240	32570	2660	26060	2070	19540	1490	13030	900	9770	610

2-1-6. Air Throw Distance Chart

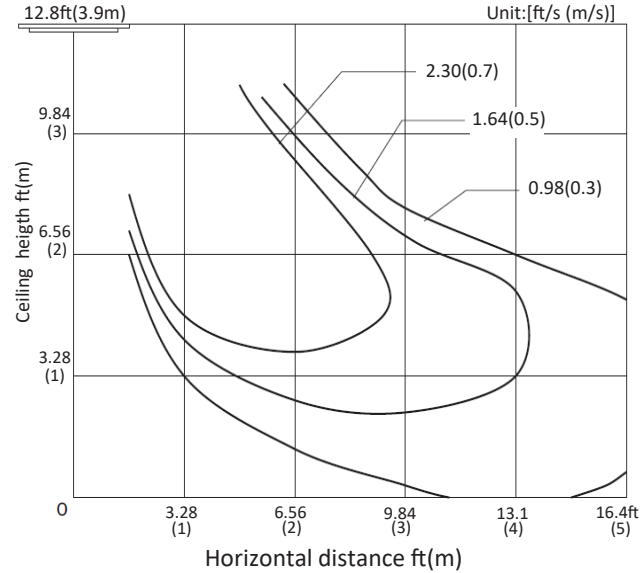
RAV-HB121, 181UTP series



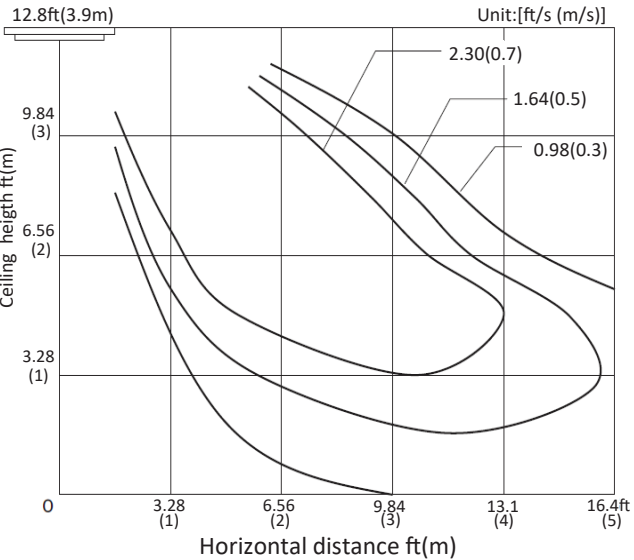
RAV-HB241UTP series



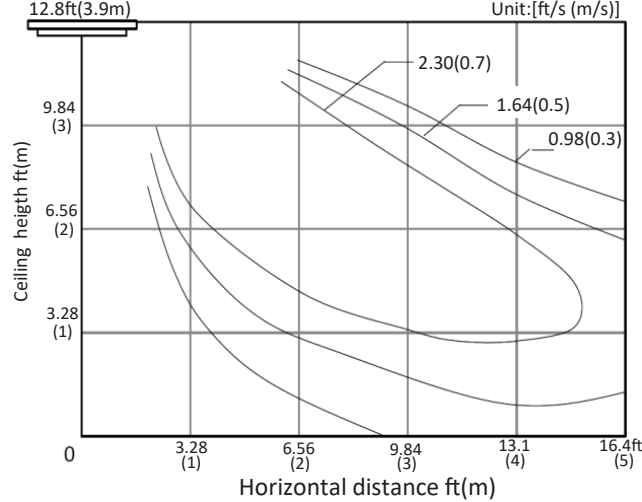
RAV-HB301UTP series



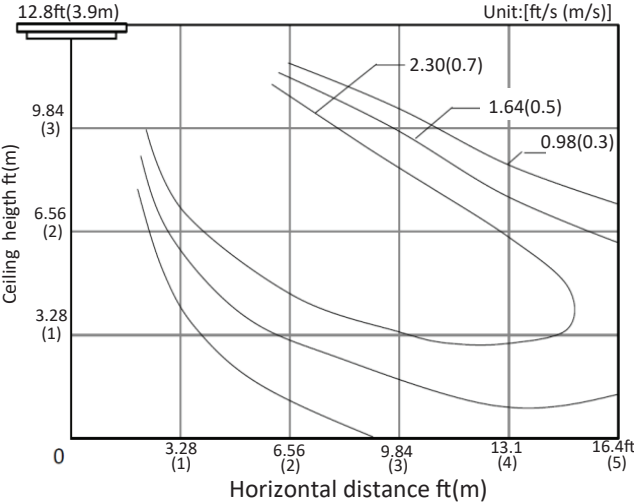
RAV-HB361UTP series



RAV-HB421UTP series

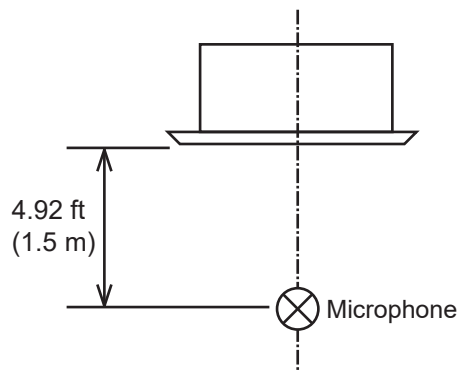


RAV-HB481UTP series



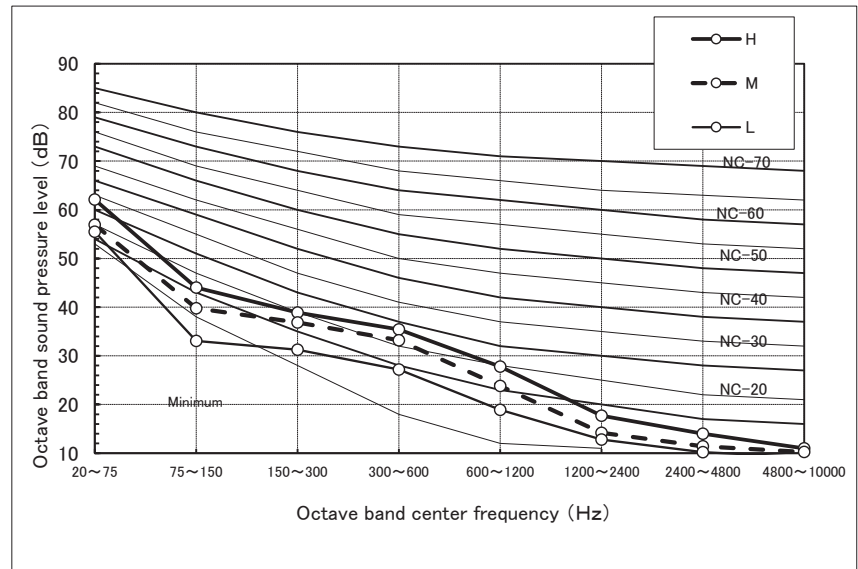
2-1-7. Sound characteristics (NC curve)

Sound pressure spectrum

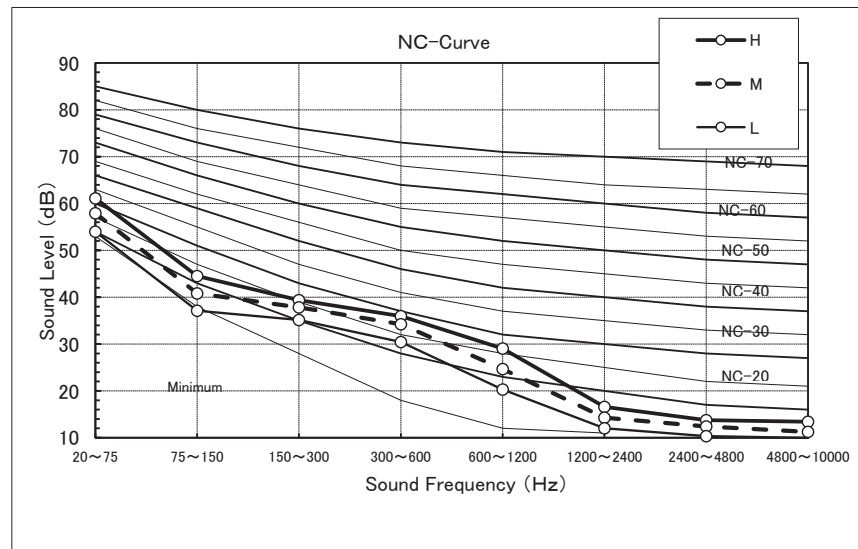


RAV-HB121UTP-UL

Cooling			
Specification (dB)			
Fan tap	H	M	L
Sound pressure level (dB(A))	35	33	31



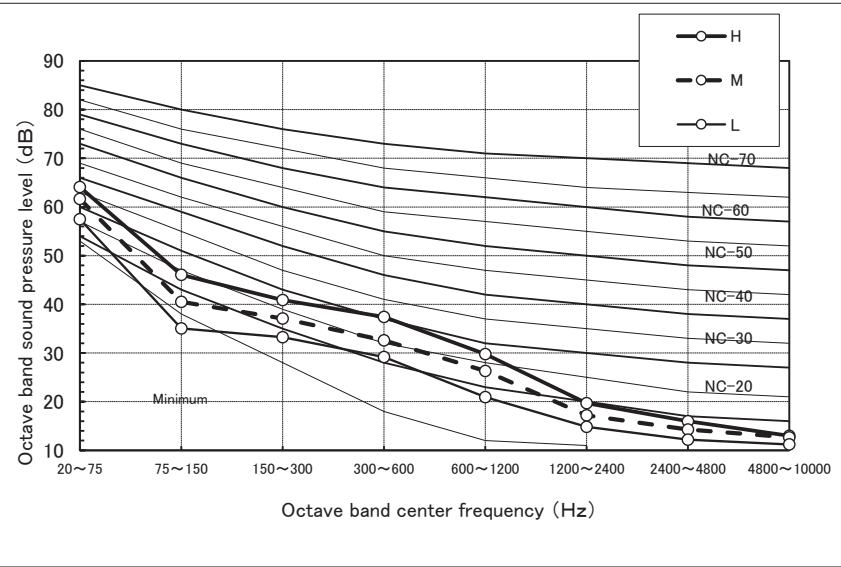
Heating			
Specification (dB)			
Fan tap	H	M	L
Sound pressure level (dB(A))	35	33	31



RAV-HB181UTP-UL

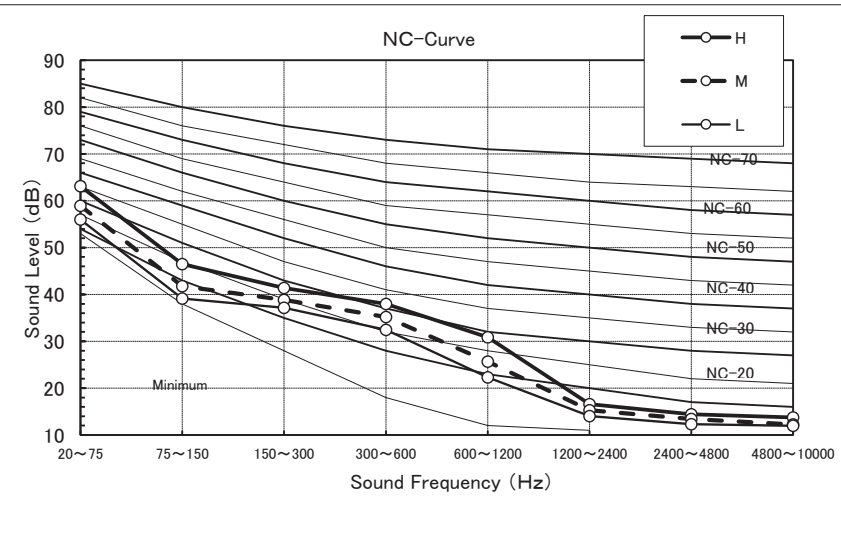
Cooling

Specification (dB)			
Fan tap	H	M	L
Sound pressure level (dB(A))	38	33	31



Heating

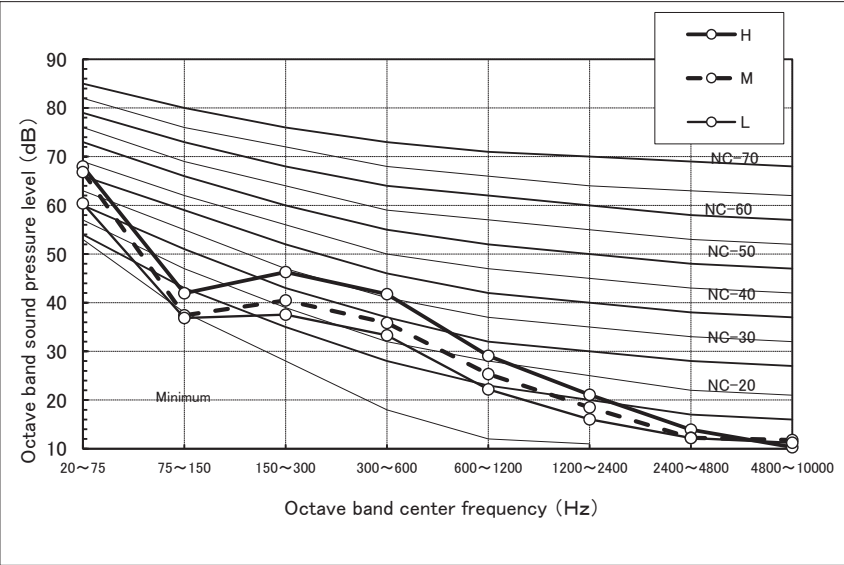
Specification (dB)			
Fan tap	H	M	L
Sound pressure level (dB(A))	38	33	31



RAV-HB241UTP-UL

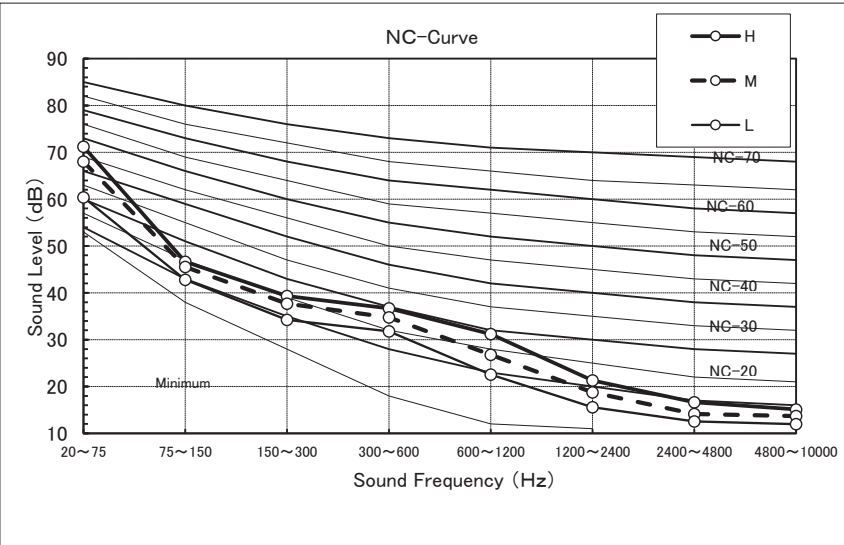
Cooling

Specification (dB)			
Fan tap	H	M	L
Sound pressure level (dB(A))	41	37	34



Heating

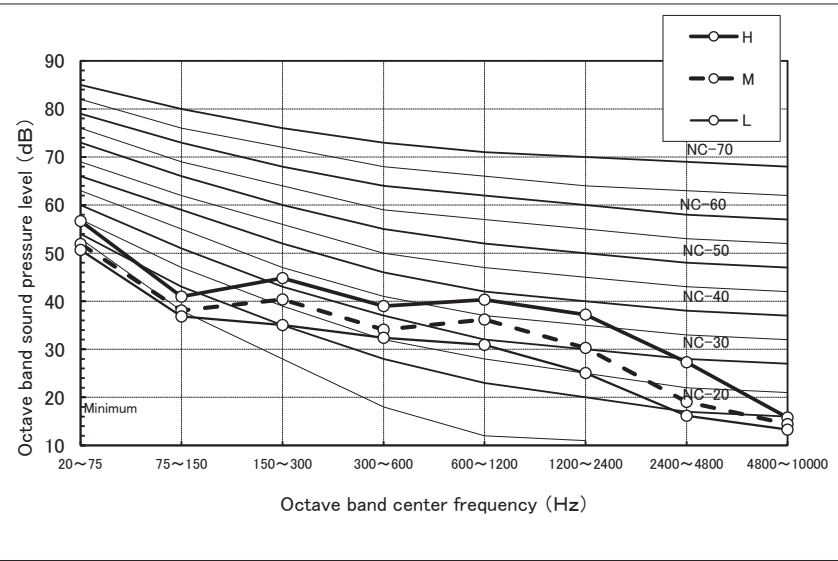
Specification (dB)			
Fan tap	H	M	L
Sound pressure level (dB(A))	41	37	34



RAV-HB301UTP-UL

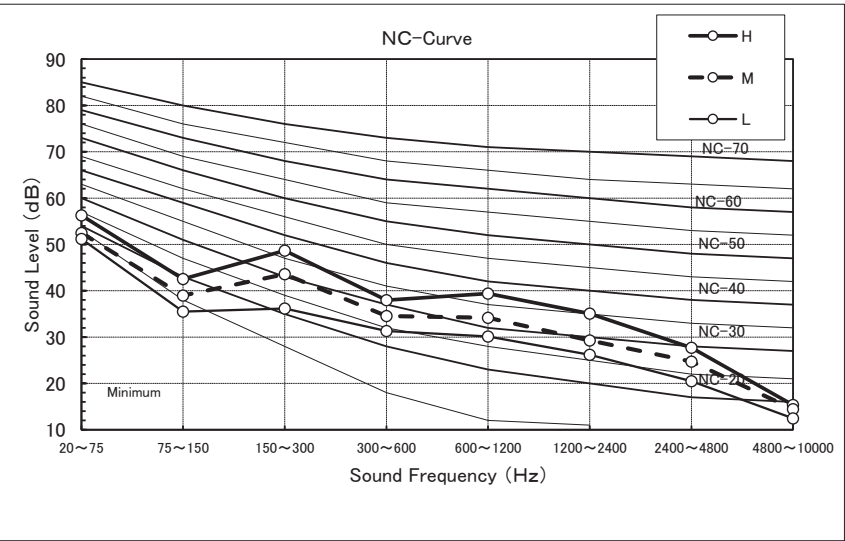
Cooling

Specification (dB)			
Fan tap	H	M	L
Sound pressure level (dB(A))	43	38	34



Heating

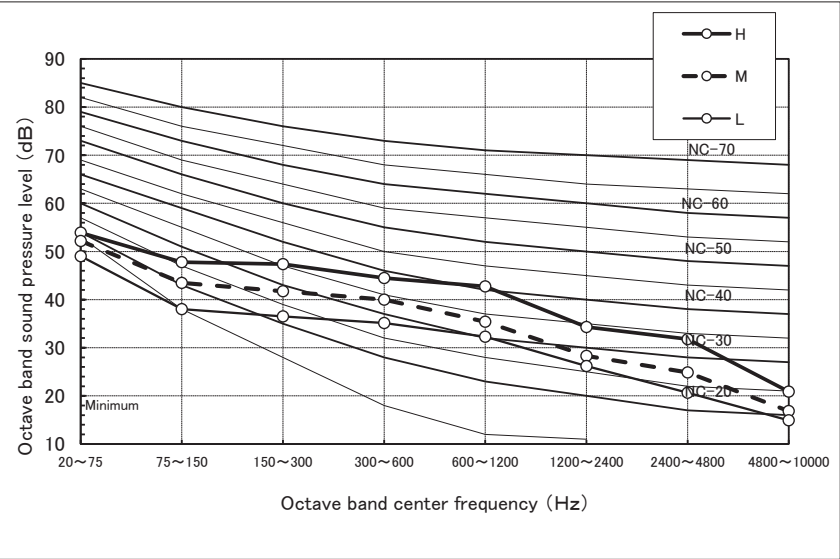
Specification (dB)			
Fan tap	H	M	L
Sound pressure level (dB(A))	43	38	34



RAV-HB361UTP-UL

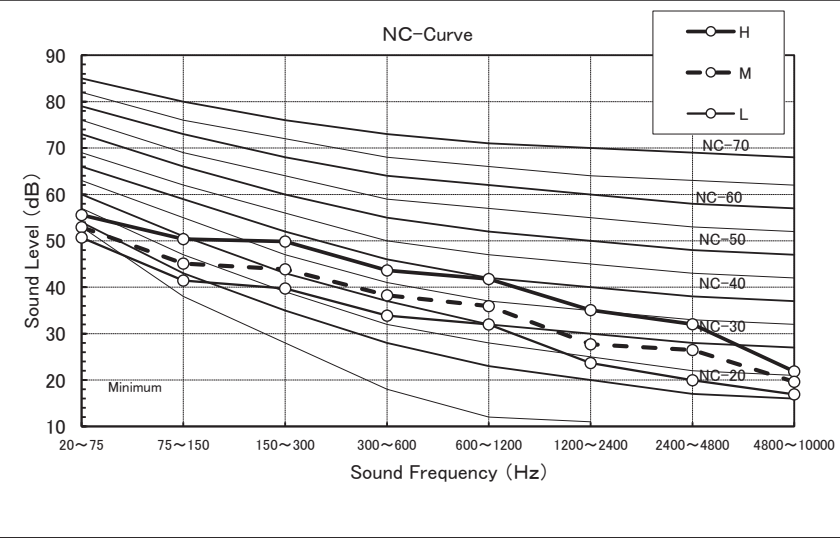
Cooling

Specification (dB)			
Fan tap	H	M	L
Sound pressure level (dB(A))	45	39	35



Heating

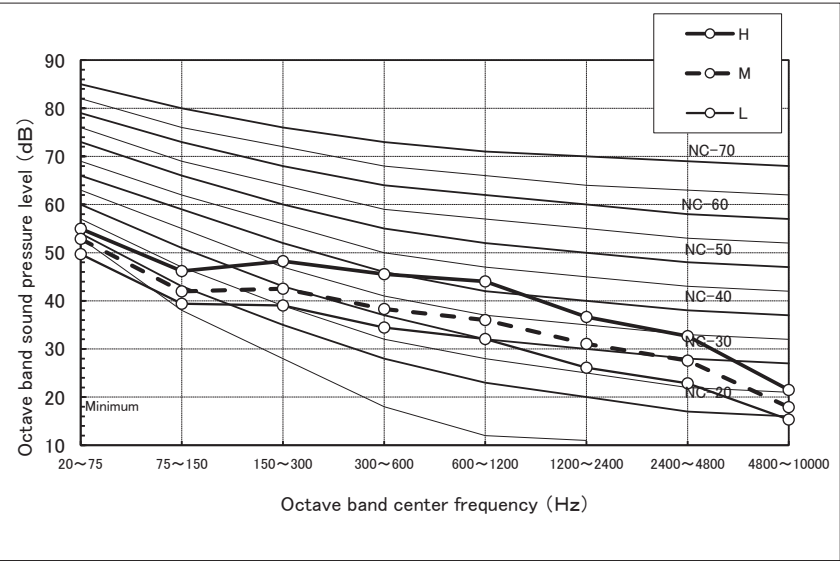
Specification (dB)			
Fan tap	H	M	L
Sound pressure level (dB(A))	45	39	35



RAV-HB421UTP-UL

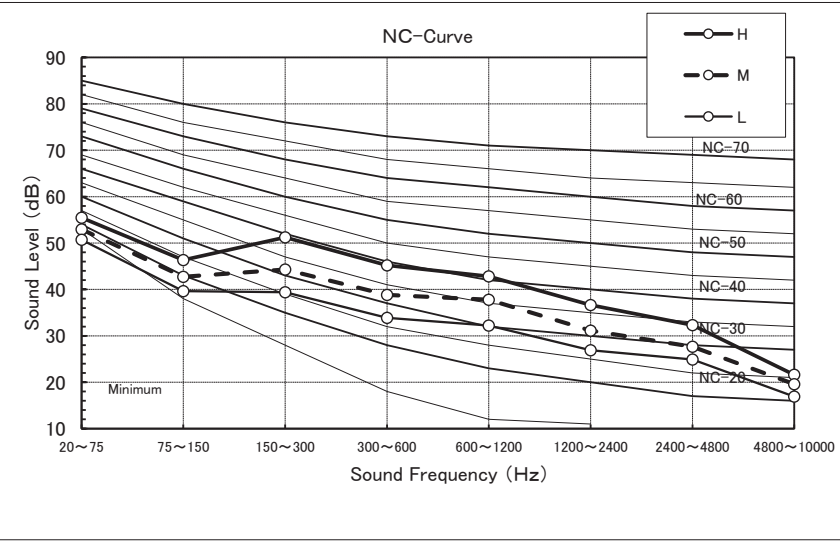
Cooling

Specification (dB)			
Fan tap	H	M	L
Sound pressure level (dB(A))	46	40	36



Heating

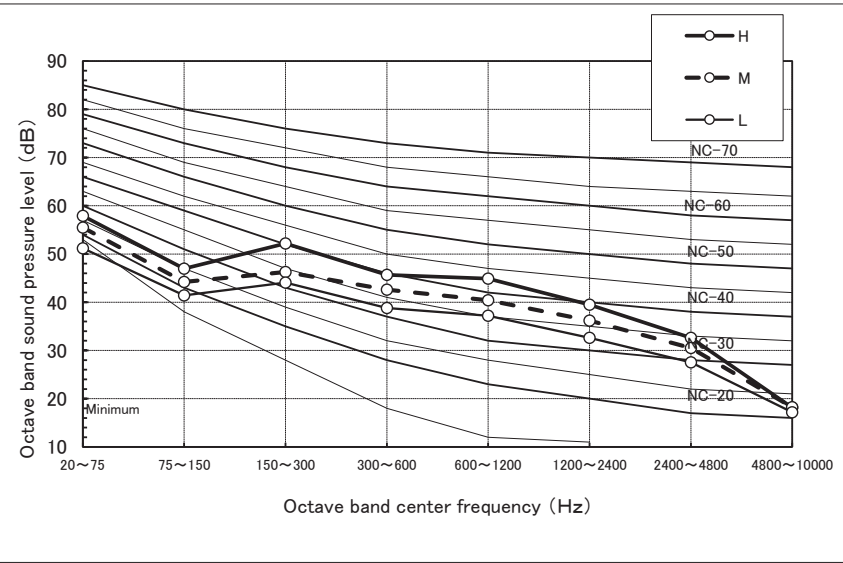
Specification (dB)			
Fan tap	H	M	L
Sound pressure level (dB(A))	46	40	36



RAV-HB481UTP-UL

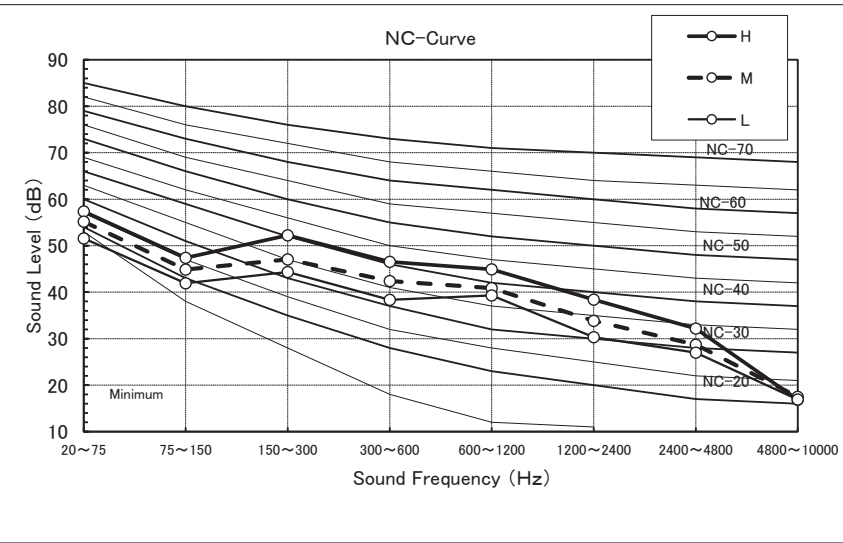
Cooling

Specification (dB)			
Fan tap	H	M	L
Sound pressure level (dB(A))	48	44	41



Heating

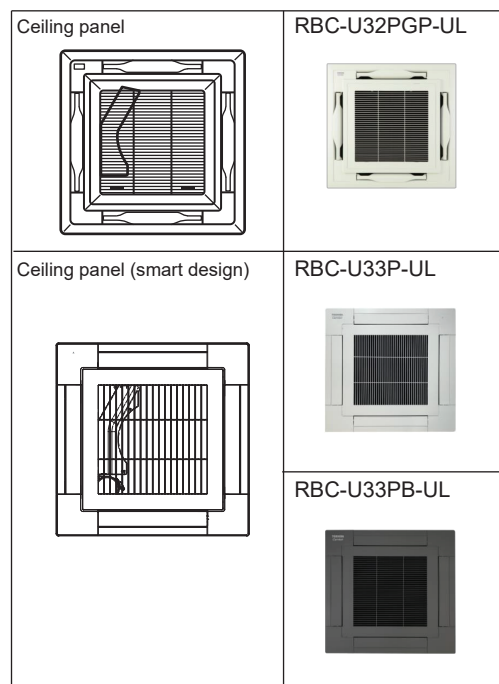
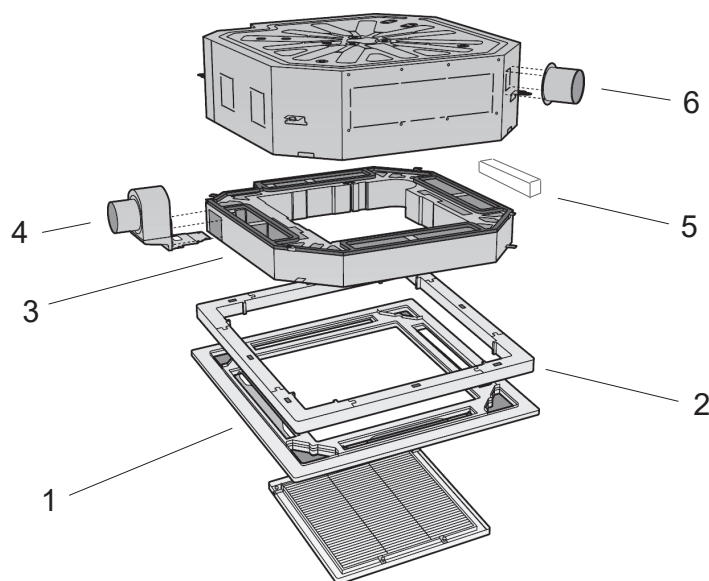
Specification (dB)			
Fan tap	H	M	L
Sound pressure level (dB(A))	48	44	41



2-1-8. Accessories

(Unit : in(mm))

Optional parts for 4-Way Cassette type



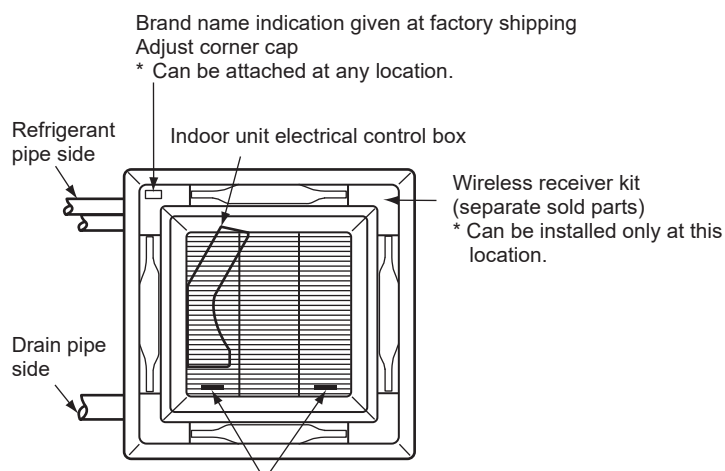
No	Type	Model name	Qty/unit	Note
1	1.1 Ceiling panel	RBC-U32PGP-UL	1	White (2.5GY9.0/0.5)
	1.2 Ceiling panel (smart design)	RBC-U33P-UL	1	White (5PB9/1)
	1.3 Ceiling panel (smart design)	RBC-U33PB-UL	1	Black (RAL9005)
2	Spacer for height adjustment	TCB-SP1602UUL	1	2.0" (50)
3	Outside air chamber	TCB-GFC1602UUL	1	Use with TCB-GB1602UUL
4	Outside air inlet box	TCB-GB1602UUL	1	Connection = Dia. 3.9" (100)
5	Air-discharge direction kit	TCB-BC1602UUL	1	6-direction patterns
6	Auxiliary outside air flange	TCB-FF101URUL	1	Connection = Dia.3.9" (100)

Combination pattern			Ceiling panel RBC-U32PGP-UL	Ceiling panel (smart design) RBC-U33P-UL	Ceiling panel (smart design, black) RBC-U33PB-UL	Wireless remote control kit RBC-AXU31UP-UL	Wireless remote control kit RBC-AXU33UP-UL	Wireless remote control kit RBC-AXU33UPB-UL	Spacer for height adjustment TCB-SP1602UUL	outside air inlet box + outside air chamber TCB-GB1602UUL + TCB-GFC1602UUL	Air-discharge direction kit TCB-BC1602UUL	Auxiliary outside air flange TCB-FF101URUL	Occupancy sensor TCB-SIR33UP-UL
Panel	Ceiling panel	RBC-U32PGP-UL				OK			OK	OK	OK	OK	
	Ceiling panel (smart design)	RBC-U33P-UL					OK					OK	OK
	Ceiling panel (smart design,black)	RBC-U33PB-UL						OK				OK	
Wireless remote control kit			OK						OK	OK	OK	OK	
Wireless remote control kit				OK								OK	OK
Wireless remote control kit					OK							OK	
Optional parts	Spacer for height adjustment	TCB-SP1602UUL	OK			OK				OK	OK	OK	
	Outside air inlet box + Outside air chamber	TCB-GB1602UUL + TCB-GFC1602UUL	OK			OK			OK		OK	OK	
	Air-discharge direction kit	TCB-BC1602UUL	OK			OK			OK	OK		OK	
	Auxiliary outside air flange	TCB-FF101URUL	OK	OK	OK	OK	OK	OK	OK	OK	OK		OK
	Occupancy sensor	TCB-SIR33UP-UL		OK			OK					OK	

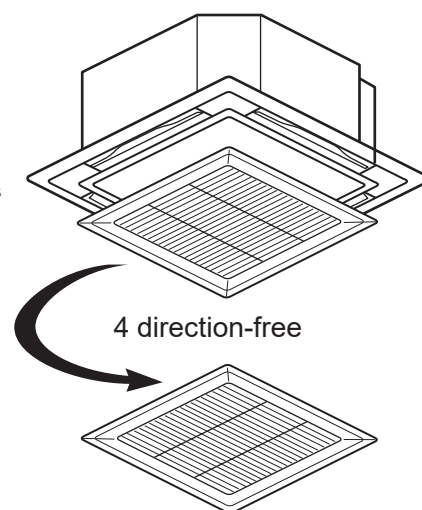
Appendix

1. Ceiling Panel

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



Locations of air inlet grille hook knobs (attached when the product was shipped)
* These knobs can be attached on any side of the four sides, but attaching them on this side is recommended.

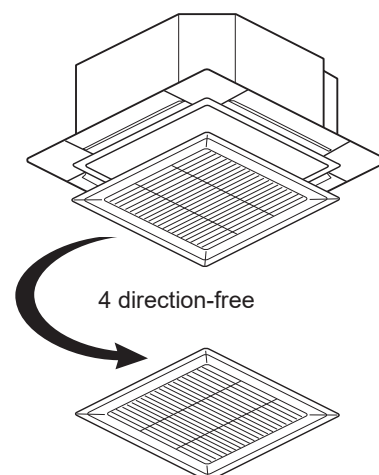
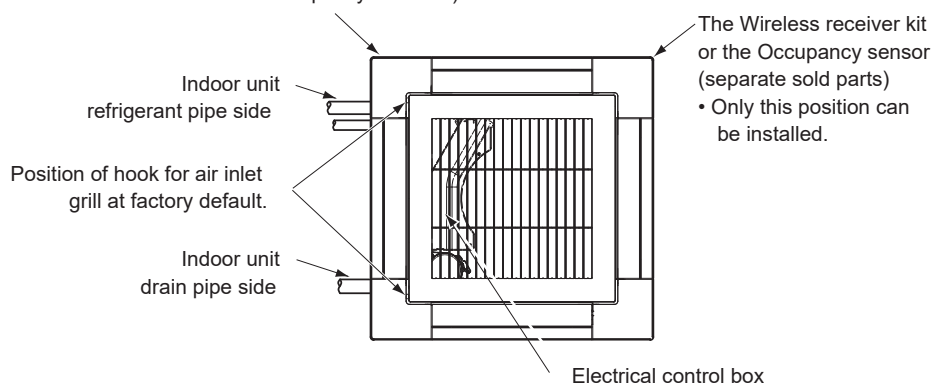


Wireless remote controller kit for standard panel : RBC-AXU31-UP-UL



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

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 or the Occupancy sensor.)



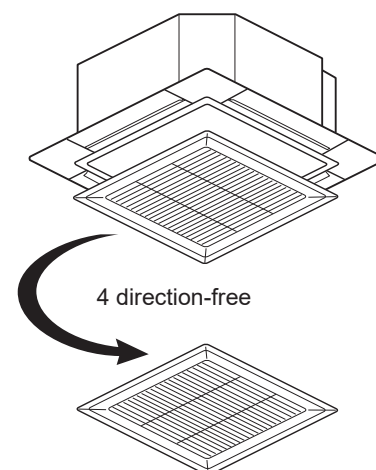
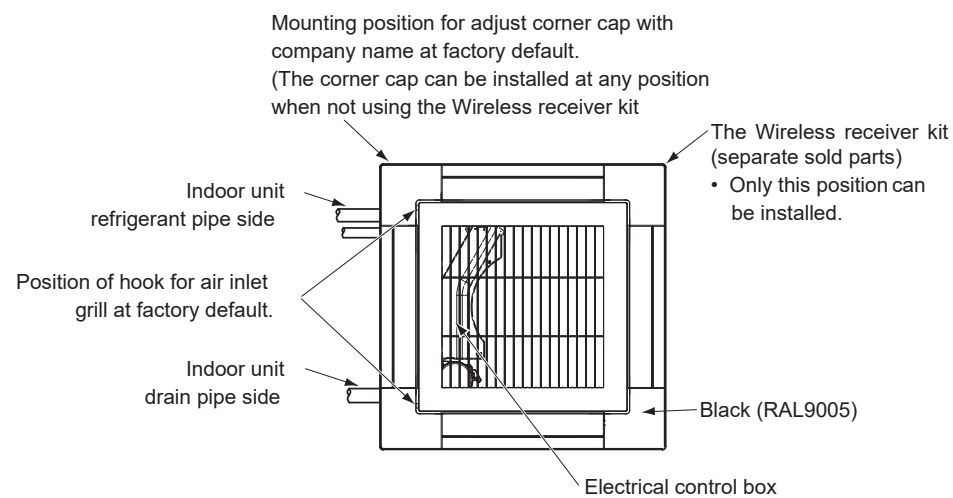
Wireless remote controller kit for Smart Design panel : RBC-U33P-UL



Occupancy sensor kit for Smart Design panel : TCB-SIR33UP-UL



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

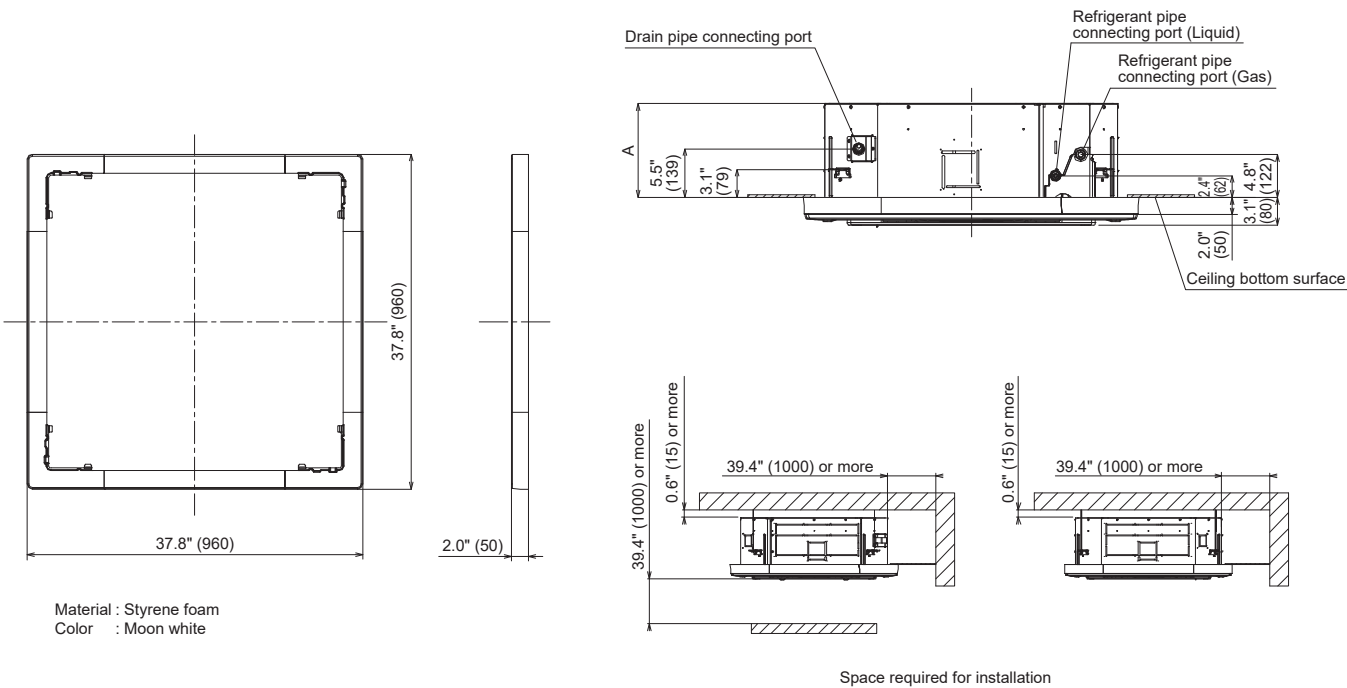


Wireless remote controller kit for
Smart Design panel : RBC-AXU33UPB-UL



2. Spacer for height adjustment : TCB-SP1602UUL

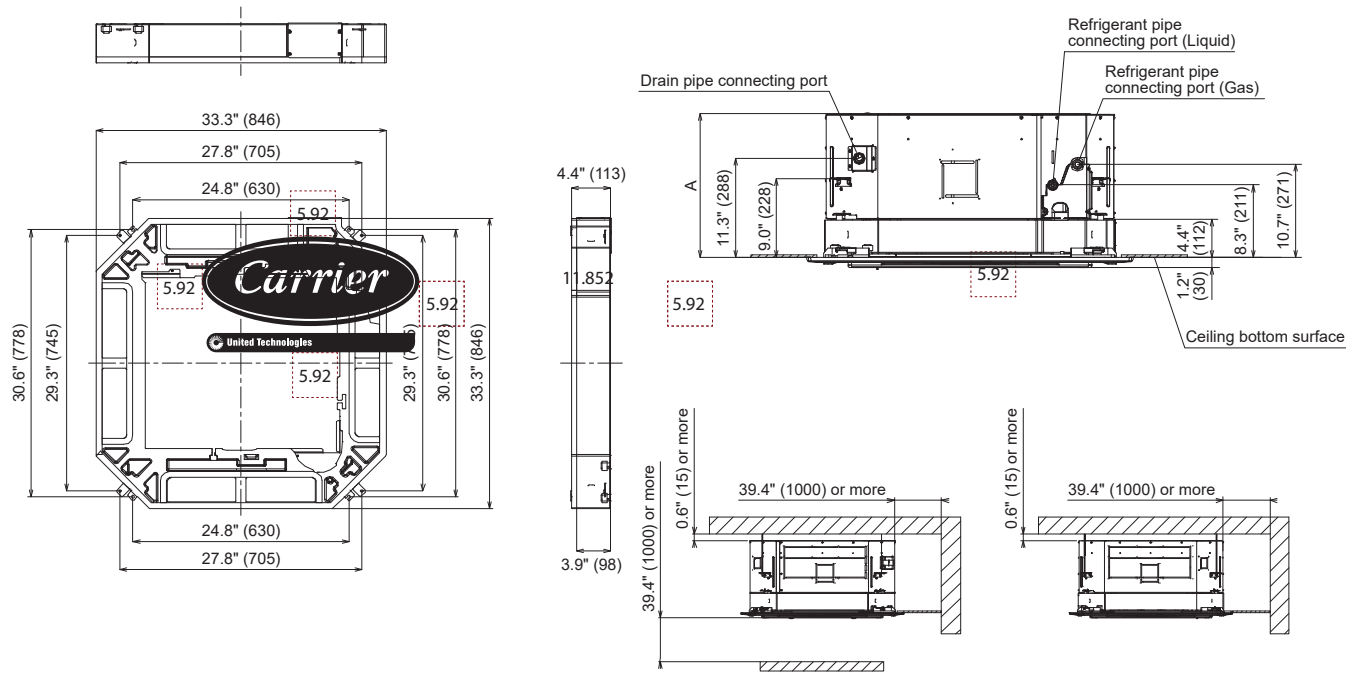
Unit: in (mm)



Model	A
12 to 24 type	8.1" (206)
30 to 48 type	10.6" (269)

3. Outside air chamber : TCB-GFC1602UUL

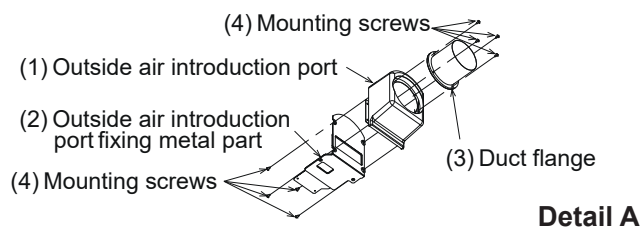
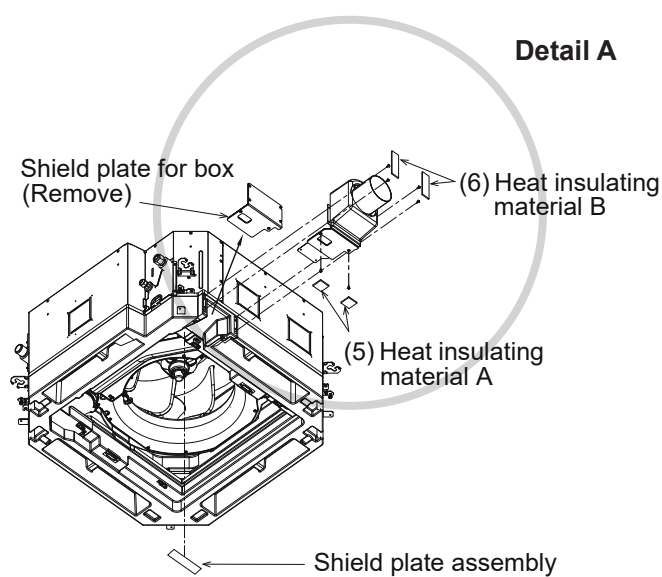
Unit: in (mm)



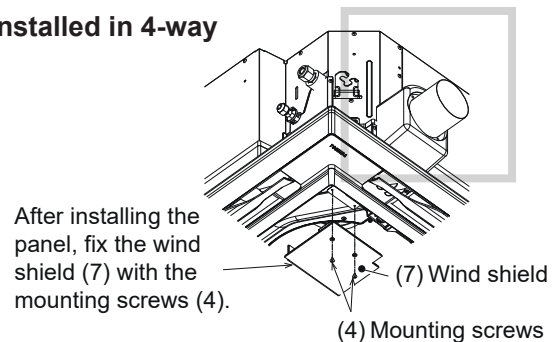
Space required for installation

Model	A
12 to 24 type	14.0" (356)
30 to 48 type	16.5" (419)

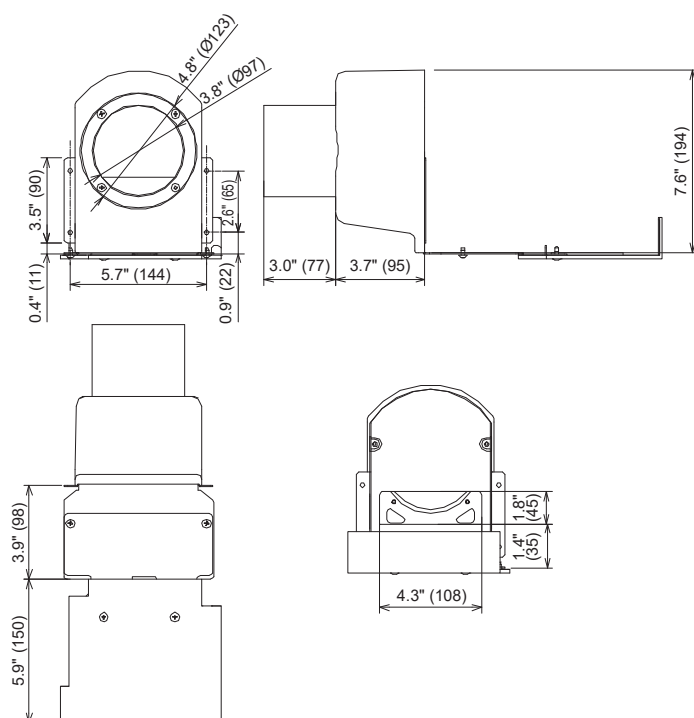
4. Outside air inlet box : TCB-GB1602UUL



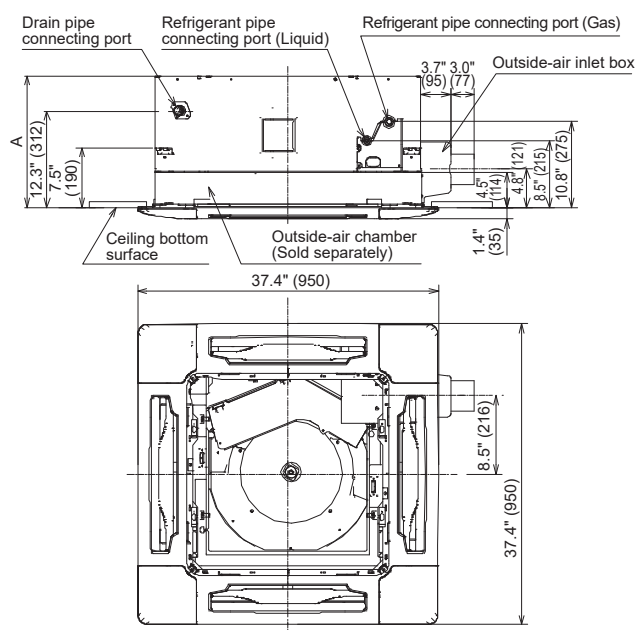
Installed in 4-way



Dimension



Unit: in (mm)

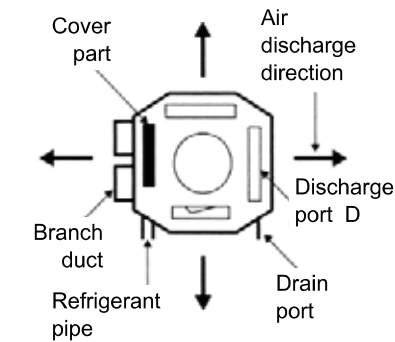


Model	A
12 to 24 type	14.1" (358)
30 to 48 type	16.6" (421)

NOTE

This inlet box shall be used with the outside air chamber.

5. Air-discharge direction kit : TCB-BC1602UUL

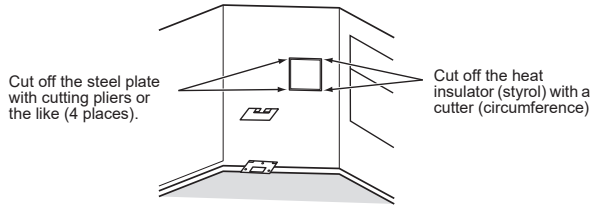


		Limited models only		
3-way air flow	 Wind shield C	 Wind shield A	 Wind shield B Wind shield A	 Wind shield B Wind shield A
	Available for all models	Available for all models	Available only for 18 to 24 type	Available only for 30 to 48 type
2-way air flow	 Wind shield B Wind shield A	 Wind shield A Wind shield C	 Wind shield B Wind shield C	
	Available for all models	Available for all models	Available for all models	

6. Auxiliary outside air flange : TCB-FF101URUL

Installation

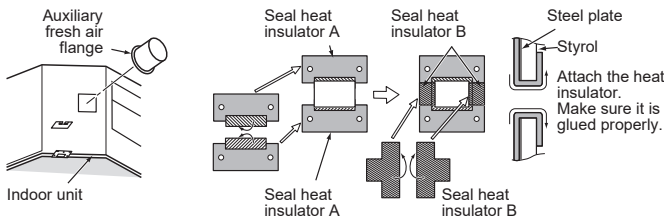
1. Using the knockout of the indoor unit main body, as a marker, cut off the flange with the heat insulator (styrol) with cutting pliers or cutter.



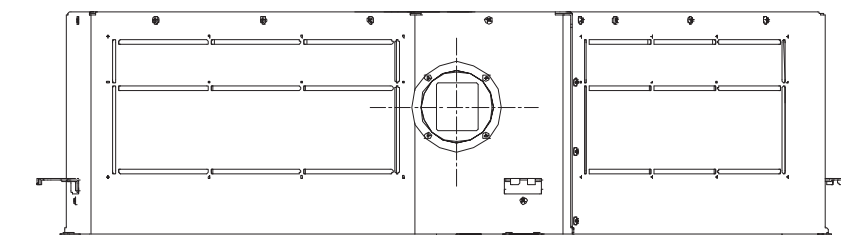
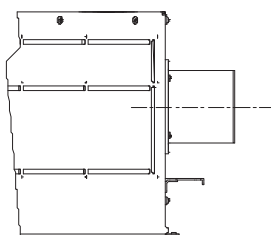
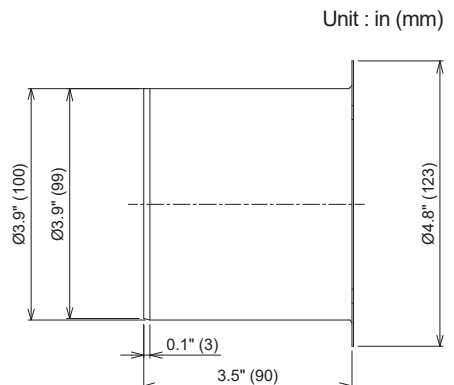
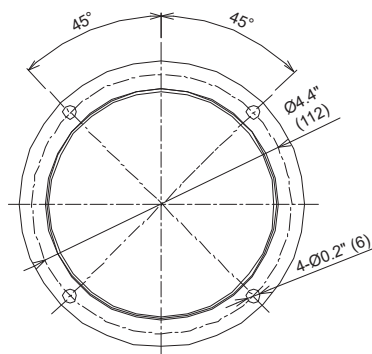
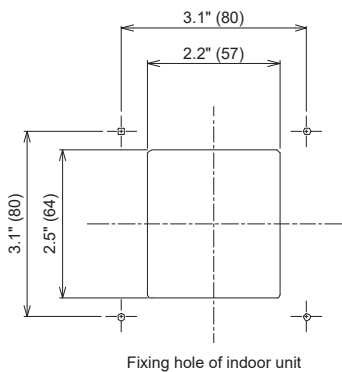
NOTE

When cutting off the styrol inside, be careful not to insert the cutter blade deeper than 1.2" (30mm). (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

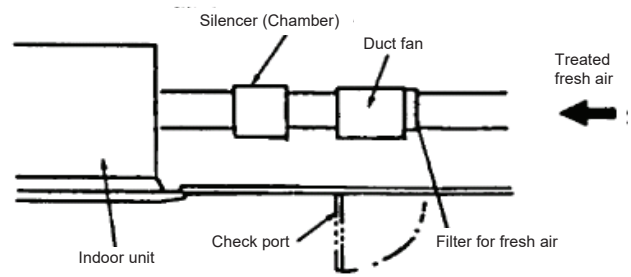


Installation status of indoor unit

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. Connect the duct fan and the indoor unit with inter-lock wiring.
4. Provide the silencer to prevent the effect of noise.



2-2. Under Ceiling

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. Air Throw Distance Chart

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

2-2-8. Accessories

2-2-1. Specifications

Under Ceiling type

Model name	Indoor unit		RAV -	HB181CTP-UL	HB241CTP-UL	HB301CTP-UL
	Outdoor unit		RAV -	BP181AT2P-UL	BP241AT2P-UL	BP301AT2P-UL
Cooling	Capacity		Btu/h	18000	24000	30000
	Power consumption		w	1364	1778	2290
	EER			13.2	13.5	13.1
	SEER			23.9	23.3	22.1
Heating	Capacity		Btu/h	20000	27000	34000
	Power consumption		w	1504	2077	2835
	COP			13.3	13.0	12.0
	HSPF			10.7	11.0	10.8
Power supply				1 Phase 208V/230V 60 Hz		
Indoor unit						
Outer dimension	Main unit	Height	In	9.3		
		Width	In	50.0		
		Depth	In	27.2		
Total weight	Main unit		lbs.	66.1		
Air flow volume	Indoor unit (H/M/L)	CFM		740 / 650 / 440	845 / 600 / 440	845 / 600 / 440
Sound Pressure Level (H/M+/M/L+/L)			dB(A)	39 / 37 / 36 / 30 / 29		41 / 37 / 36 / 30 / 29
Sound power level (High) Cooling / Heating			(dB)	54 / 54		56 / 56
Fan motor output			w	94		
Drain tube size (outside diameter)			In	1.1" (VP20)		1.3" (VP25)
Outdoor unit						
Air flow volume	Cooling / Heating	CFM		1590 / 1590		2300 / 2220
Sound Pressure Level Cooling / Heating			dB(A)	48 / 52		52 / 54
Sound power level (High) Cooling / Heating			(dB)	65 / 69		68 / 70
Outer dimension	Height	In		21.7		35.0
	Width	In		30.7		35.4
	Depth	In		11.4		12.6
Total weight	Main unit	lbs.		81.6		132.2
Pipe	Min. leghth	ft.	16'5"			
	Max. total length	ft.	164'1"			246'1"
Refrigerant	Type		R454B			
	Amount (charged)	lbs.	3.31		4.63	5.8
Flare Connections	Gas side	In	1 / 2"		5 / 8"	
	Liquid side	In	1 / 4"		3 / 8"	
Operating Range	Cooling	(°F)	5 to 115			
	Cooling with Wind buffels	(°F)	5 to 115			-13 to 115
	Heating	(°F)	-13 to 59			

Rated conditions Cooling : Indoor air temperature 80°F (27°C) DB / 67 (19°C) WB, Outdoor air temperature 95°F (35°C) DB
 Heating : Indoor air temperature 70°F (21°C) DB, Outdoor air temperature 47°F (8°C) DB/43°F (6°C) WB

Under Ceiling type

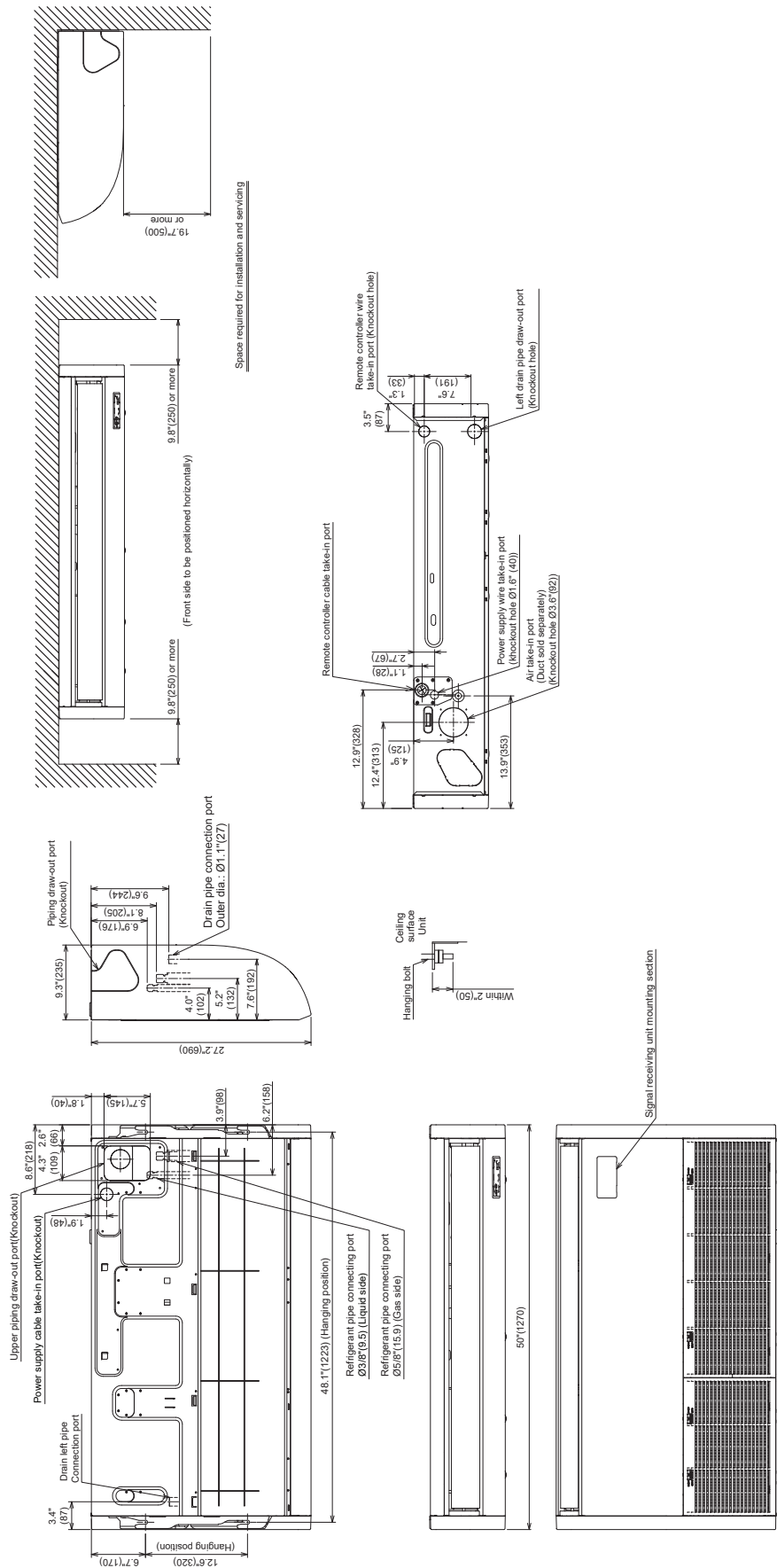
Model name	Indoor unit		RAV -	HB361CTP-UL	HB421CTP-UL	HB481CTP-UL
	Outdoor unit		RAV -	BP361AT2P-UL	BP421AT2P-UL	BP481AT2P-UL
Cooling	Capacity		Btu/h	36000	42000	48000
	Power consumption		w	2975	4243	5220
	EER			12.1	9.9	9.2
	SEER			22.6	20.2	19.6
Heating	Capacity		Btu/h	40000	47000	54000
	Power consumption		w	3080	3980	4910
	COP			13.0	11.8	11.0
	HSPF			11.1	11.1	10.9
Power supply			1 Phase 208V/230V 60 Hz			
Indoor unit						
Outer dimension	Main unit	Height	In	9.3		
		Width	In	62.5		
		Depth	In	27.2		
Total weight	Main unit	lbs.	83.8			
Air flow volume	Indoor unit (H/M/L)	CFM	1095 / 795 / 600		1095 / 900 / 705	1250 / 1125 / 925
Sound Pressure Level (H/M+/M/L+/L)		dB(A)	44 / 39 / 38 / 33 / 32		44 / 42 / 41 / 36 /35	47 / 46 / 45 / 43 / 41
Sound power level (High) Cooling / Heating		(dB)	59 / 59		59 / 59	62 / 62
Fan motor output		w	139			
Drain tube size (outside diameter)		In	1.3" (VP25)			
Outdoor unit						
Air flow volume	Cooling / Heating	CFM	3570 / 3100		3570 / 3290	4540 / 4060
Sound Pressure Level Cooling / Heating		dB(A)	54 / 54		54 / 54	60 / 60
Sound power level (High) Cooling / Heating		(dB)	71 / 71		71 / 71	77 / 77
Outer dimension	Height	In	52.8			
	Width	In	35.4			
	Depth	In	12.6			
Total weight	Main unit	lbs.	218.3		220.5	
Pipe	Min. leghth	ft.	16'5"			
	Max. total length	ft.	246'1"			
Refrigerant	Type		R454B			
	Amount (charged)	lbs.	5.8		6.6	
Flare Connections	Gas side	In	5 / 8"			
	Liquid side	In	3 / 8"			
Operating Range	Cooling	(°F)	5 to 115			
	Cooling with Wind buffels	(°F)	-13 to 115			
	Heating	(°F)	-13 to 59			

Rated conditions Cooling : Indoor air temperature 80°F (27°C) DB / 67 (19°C) WB, Outdoor air temperature 95°F (35°C) DB
 Heating : Indoor air temperature 70°F (21°C) DB, Outdoor air temperature 47°F (8°C) DB/43°F (6°C) WB

2-2-2. Dimension

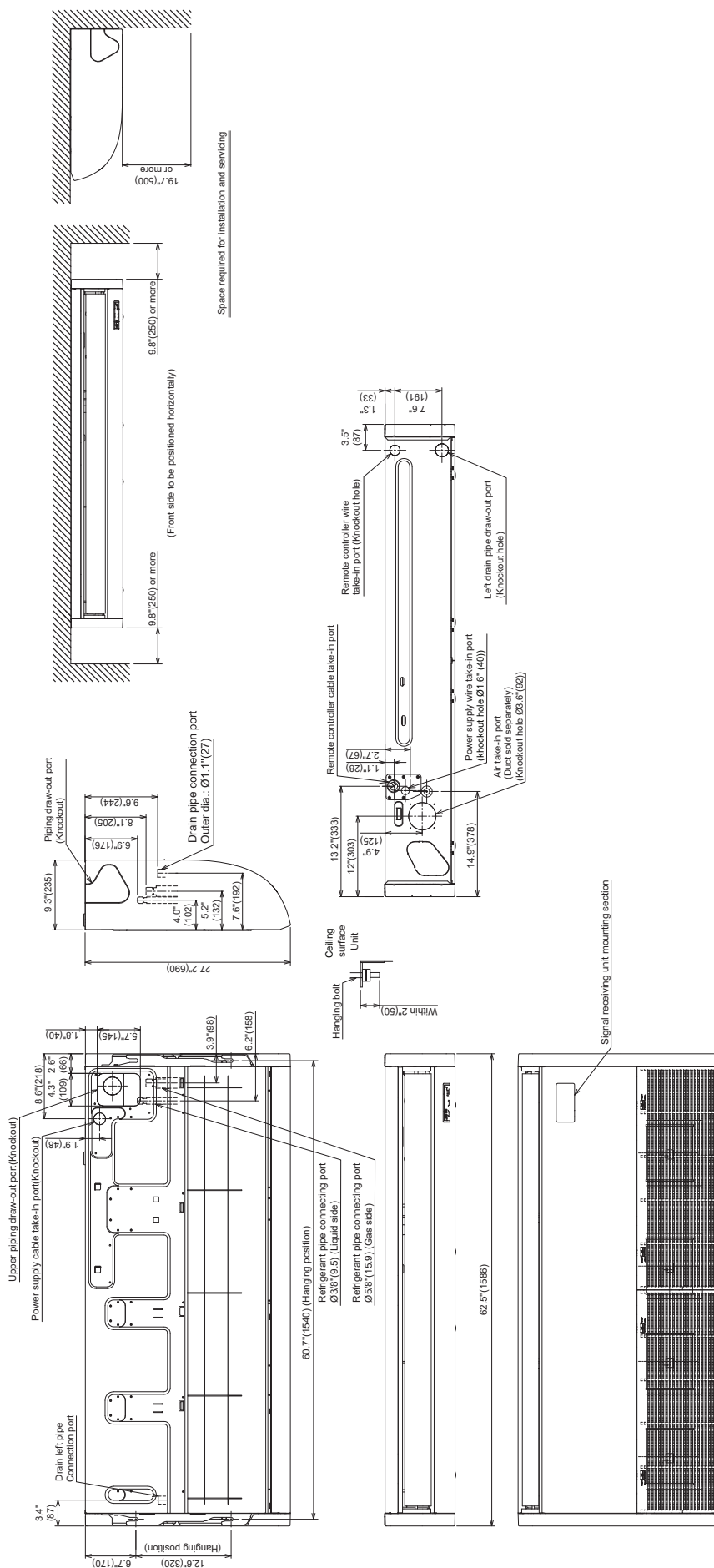
RAV-HB*_1CTP-UL (*18 / 24 / 30)

Unit : in (mm)



RAV-HB*_1CTP-UL (*36 / 42 / 48)

Unit : in (mm)

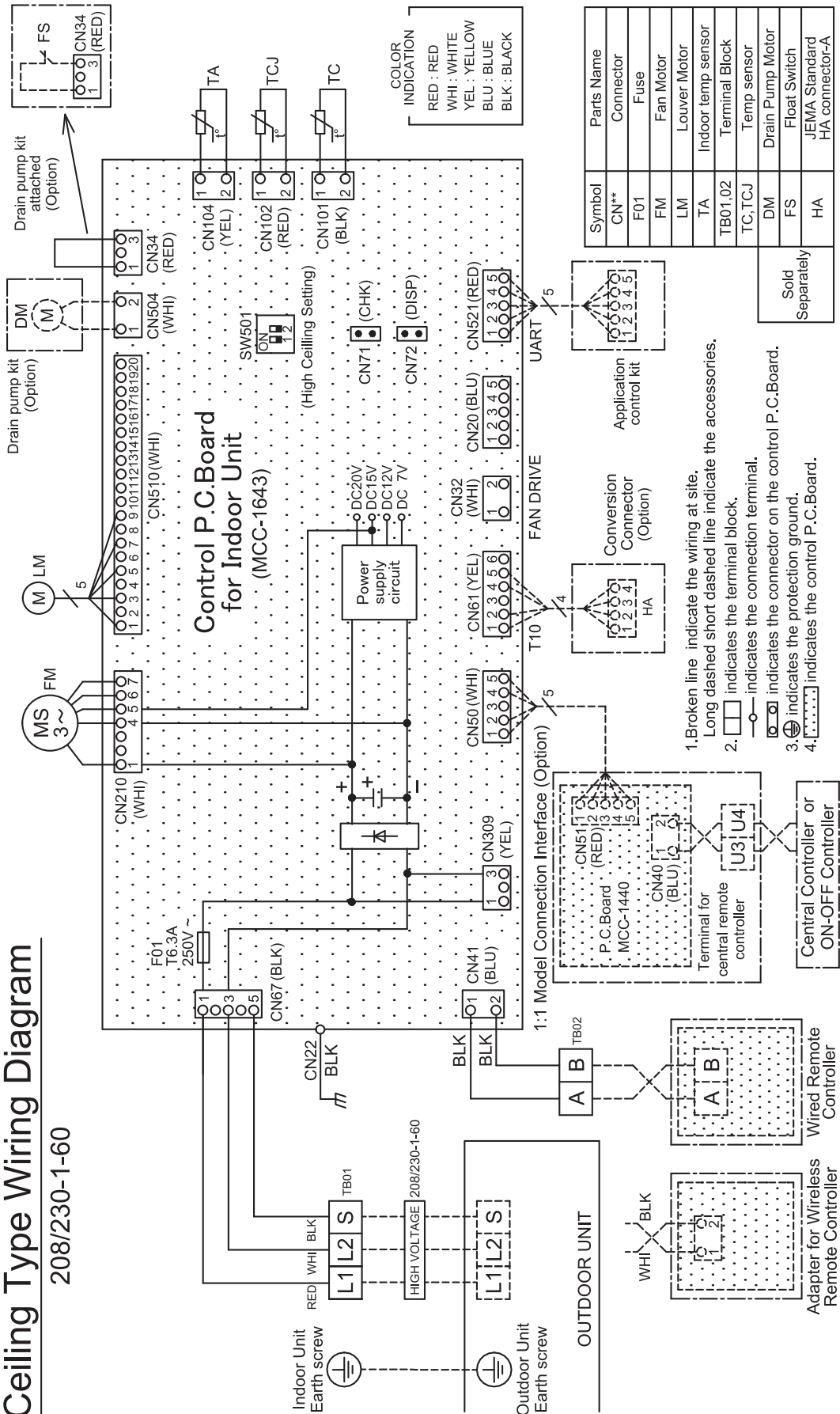


2-2-3. Wiring Diagrams

RAV-HB*_1CTP-UL (*18 / 24 / 30 / 36 / 42 / 48)

Ceiling Type Wiring Diagram

208/230-1-60



2-2-4. Sensible Capacity Table

Product models : RAV-HB181CTP-UL ; RAV-BP181AT2P-UL

Specification of product at standard condition

Standard Condition	Indoor	80°F (DB) / 67°F (WB)	Total Cooling Capacity (TC)	18000 Btu/hr
	Outdoor	95°F (DB) / 75°F (WB)	Sensible Heat Capacity (SHC)	14500 Btu/hr

Outdoor air temperature DB (°F)	Indoor air temperature													
	71°F (DB) 59°F (WB)		73°F (DB) 61°F (WB)		77°F (DB) 64°F (WB)		80°F (DB) 67°F (WB)		82°F (DB) 68°F (WB)		86°F (DB) 72°F (WB)		90°F (DB) 75°F (WB)	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
5	17800	15400	19700	16500	21100	17500	21700	17500	22300	17500	23600	17300	24700	17000
10	17800	15400	19700	16500	21100	17500	21700	17500	22300	17500	23600	17300	24700	17000
15	17800	15400	19700	16500	21100	17500	21700	17500	22300	17500	23600	17300	24700	17000
20	17800	15400	19700	16500	21100	17500	21700	17500	22300	17500	23600	17300	24700	17000
25	17800	15400	19700	16500	21100	17500	21700	17500	22300	17500	23600	17300	24700	17000
30	17800	15400	19700	16500	21100	17500	21700	17500	22300	17500	23600	17300	24700	17000
35	17800	15400	19700	16500	21100	17500	21700	17500	22300	17500	23600	17300	24700	17000
40	17800	15400	19700	16500	21100	17500	21700	17500	22300	17500	23600	17300	24700	17000
45	17800	15400	19700	16500	21100	17500	21700	17500	22300	17500	23600	17300	24700	17000
50	17800	15400	19700	16500	21100	17500	21700	17500	22300	17500	23600	17300	24700	17000
55	17800	15400	19700	16500	21100	17500	21700	17500	22300	17500	23600	17300	24700	17000
60	17800	15400	19700	16500	21100	17500	21700	17500	22300	17500	23600	17300	24700	17000
66	17800	15400	19700	16500	21100	17500	21700	17500	22300	17500	23600	17300	24700	17000
68	17600	15300	19500	16300	20900	17300	21500	17300	22100	17300	23400	17100	24500	16800
70	17400	15100	19300	16100	20600	17100	21200	17100	21800	17100	23100	16900	24200	16600
73	17100	14800	18800	15800	20200	16800	20800	16700	21400	16700	22600	16600	23700	16300
77	16700	14500	18400	15400	19700	16400	20300	16400	20900	16400	22100	16200	23100	15900
81	16300	14100	18000	15100	19300	16000	19800	16000	20400	16000	21600	15800	22600	15500
84	15900	13800	17600	14700	18800	15600	19400	15600	19900	15600	21100	15500	22100	15200
88	15500	13500	17200	14400	18400	15300	18900	15200	19500	15200	20600	15100	21600	14800
91	15200	13100	16700	14000	17900	14900	18500	14900	19000	14900	20100	14700	21000	14500
95	14800	12800	16300	13700	17500	14500	18000	14500	18500	14500	19600	14400	20500	14100
99	14400	12500	15900	13300	17000	14100	17500	14100	18000	14100	19100	14000	20000	13700
102	14000	12200	15500	13000	16600	13800	17100	13800	17600	13800	18600	13600	19500	13400
106	13600	11800	15100	12600	16100	13400	16600	13400	17100	13400	18100	13300	18900	13000
109	13200	11500	14600	12200	15700	13000	16100	13000	16600	13000	17600	12900	18400	12600
113	12200	10600	13500	11300	14500	12000	14900	12000	15300	12000	16200	11900	17000	11700
115	12000	10400	13200	11100	14200	11800	14600	11800	15000	11800	15900	11700	16600	11400

Product models : RAV-HB241CTP-UL ; RAV-BP241AT2P-UL

Specification of product at standard condition

Standard Condition

Indoor	80°F (DB) / 67°F (WB)
Outdoor	95°F (DB) / 75°F (WB)

Total Cooling Capacity (TC)	24000 Btu/hr
Sensible Heat Capacity (SHC)	18000 Btu/hr

Outdoor air temperature DB (°F)	Indoor air temperature													
	71°F (DB) 59°F (WB)		73°F (DB) 61°F (WB)		77°F (DB) 64°F (WB)		80°F (DB) 67°F (WB)		82°F (DB) 68°F (WB)		86°F (DB) 72°F (WB)		90°F (DB) 75°F (WB)	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
5	23800	19300	26200	20500	28100	21800	28900	21700	29800	21600	31500	21300	33000	20800
10	23800	19300	26200	20500	28100	21800	28900	21700	29800	21600	31500	21300	33000	20800
15	23800	19300	26200	20500	28100	21800	28900	21700	29800	21600	31500	21300	33000	20800
20	23800	19300	26200	20500	28100	21800	28900	21700	29800	21600	31500	21300	33000	20800
25	23800	19300	26200	20500	28100	21800	28900	21700	29800	21600	31500	21300	33000	20800
30	23800	19300	26200	20500	28100	21800	28900	21700	29800	21600	31500	21300	33000	20800
35	23800	19300	26200	20500	28100	21800	28900	21700	29800	21600	31500	21300	33000	20800
40	23800	19300	26200	20500	28100	21800	28900	21700	29800	21600	31500	21300	33000	20800
45	23800	19300	26200	20500	28100	21800	28900	21700	29800	21600	31500	21300	33000	20800
50	23800	19300	26200	20500	28100	21800	28900	21700	29800	21600	31500	21300	33000	20800
55	23800	19300	26200	20500	28100	21800	28900	21700	29800	21600	31500	21300	33000	20800
60	23800	19300	26200	20500	28100	21800	28900	21700	29800	21600	31500	21300	33000	20800
66	23800	19300	26200	20500	28100	21800	28900	21700	29800	21600	31500	21300	33000	20800
68	23500	19100	26000	20300	27800	21500	28600	21500	29400	21400	31200	21100	32600	20600
70	23300	18900	25700	20100	27500	21300	28300	21200	29100	21200	30800	20900	32300	20400
73	22700	18400	25100	19600	26900	20900	27700	20800	28500	20700	30200	20400	31600	19900
77	22200	18000	24600	19200	26300	20400	27100	20300	27900	20300	29500	20000	30900	19500
81	21700	17600	24000	18700	25700	19900	26500	19800	27200	19800	28800	19500	30200	19100
84	21200	17200	23400	18300	25100	19500	25800	19400	26600	19300	28200	19100	29400	18600
88	20700	16800	22900	17900	24500	19000	25200	18900	26000	18900	27500	18600	28700	18200
91	20200	16400	22300	17400	23900	18500	24600	18500	25300	18400	26800	18200	28000	17700
95	19700	16000	21800	17000	23300	18100	24000	18000	24700	18000	26100	17700	27300	17300
99	19200	15600	21200	16600	22700	17600	23400	17500	24100	17500	25500	17200	26600	16800
102	18700	15200	20700	16100	22100	17100	22800	17100	23400	17000	24800	16800	25900	16400
106	18200	14800	20100	15700	21500	16700	22200	16600	22800	16600	24100	16300	25200	15900
109	17700	14300	19500	15300	20900	16200	21500	16200	22200	16100	23500	15900	24500	15500
113	17200	13900	19000	14800	20300	15700	20900	15700	21500	15700	22800	15400	23800	15100
115	16900	13700	18700	14600	20000	15500	20600	15500	21200	15400	22500	15200	23500	14800

Product models : RAV-HB301CTP-UL ; RAV-BP301AT2P-UL

Specification of product at standard condition

Standard Condition	Indoor	80°F (DB) / 67°F (WB)	Total Cooling Capacity (TC)	30000 Btu/hr
	Outdoor	95°F (DB) / 75°F (WB)	Sensible Heat Capacity (SHC)	21000 Btu/hr

Outdoor air temperature DB (°F)	Indoor air temperature													
	71°F (DB) 59°F (WB)		73°F (DB) 61°F (WB)		77°F (DB) 64°F (WB)		80°F (DB) 67°F (WB)		82°F (DB) 68°F (WB)		86°F (DB) 72°F (WB)		90°F (DB) 75°F (WB)	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-13	32500	24800	35900	26300	38500	27900	39600	27700	40800	27600	43200	27100	45100	26300
-10	32500	24800	35900	26300	38500	27900	39600	27700	40800	27600	43200	27100	45100	26300
-5	32500	24800	35900	26300	38500	27900	39600	27700	40800	27600	43200	27100	45100	26300
0	32500	24800	35900	26300	38500	27900	39600	27700	40800	27600	43200	27100	45100	26300
5	32500	24800	35900	26300	38500	27900	39600	27700	40800	27600	43200	27100	45100	26300
10	32500	24800	35900	26300	38500	27900	39600	27700	40800	27600	43200	27100	45100	26300
15	32500	24800	35900	26300	38500	27900	39600	27700	40800	27600	43200	27100	45100	26300
20	32500	24800	35900	26300	38500	27900	39600	27700	40800	27600	43200	27100	45100	26300
25	32500	24800	35900	26300	38500	27900	39600	27700	40800	27600	43200	27100	45100	26300
30	32500	24800	35900	26300	38500	27900	39600	27700	40800	27600	43200	27100	45100	26300
35	32500	24800	35900	26300	38500	27900	39600	27700	40800	27600	43200	27100	45100	26300
40	32500	24800	35900	26300	38500	27900	39600	27700	40800	27600	43200	27100	45100	26300
45	32500	24800	35900	26300	38500	27900	39600	27700	40800	27600	43200	27100	45100	26300
50	32500	24800	35900	26300	38500	27900	39600	27700	40800	27600	43200	27100	45100	26300
55	31600	24000	34900	25500	37400	27100	38500	26900	39600	26800	41900	26300	43800	25500
60	31000	23600	34200	25000	36600	26600	37700	26400	38800	26300	41100	25800	43000	25000
66	29700	22600	32800	24000	35100	25500	36200	25300	37200	25200	39400	24700	41200	24000
68	29400	22400	32500	23700	34800	25200	35800	25000	36800	24900	39000	24400	40800	23700
70	29100	22100	32100	23500	34400	24900	35400	24800	36400	24700	38600	24200	40300	23500
73	28400	21600	31400	23000	33600	24400	34600	24200	35600	24100	37700	23700	39400	23000
77	27800	21200	30700	22400	32900	23800	33900	23700	34800	23600	36900	23100	38600	22400
81	27200	20700	30000	21900	32100	23300	33100	23200	34000	23000	36000	22600	37700	21900
84	26500	20200	29300	21400	31400	22800	32300	22600	33200	22500	35200	22100	36800	21400
88	25900	19700	28600	20900	30600	22200	31500	22100	32400	22000	34400	21500	35900	20900
91	25300	19200	27900	20400	29900	21700	30800	21500	31700	21400	33500	21000	35100	20400
95	24600	18700	27200	19900	29100	21100	30000	21000	30900	20900	32700	20500	34200	19900
99	24000	18300	26500	19400	28400	20600	29200	20500	30100	20400	31800	20000	33300	19400
102	23400	17800	25800	18900	27600	20000	28500	19900	29300	19800	31000	19400	32400	18900
106	22700	17300	25100	18400	26900	19500	27700	19400	28500	19300	30200	18900	31500	18400
109	22100	16800	24400	17900	26200	19000	26900	18800	27700	18800	29300	18400	30700	17800
113	21500	16300	23700	17300	25400	18400	26200	18300	26900	18200	28500	17900	29800	17300
115	21200	16100	23400	17100	25000	18100	25800	18000	26500	17900	28100	17600	29400	17100

Product models : RAV-HB361CTP-UL ; RAV-BP361AT2P-UL

Specification of product at standard condition

Standard Condition	Indoor	80°F (DB) / 67°F (WB)	Total Cooling Capacity (TC)	36000 Btu/hr
	Outdoor	95°F (DB) / 75°F (WB)	Sensible Heat Capacity (SHC)	25000 Btu/hr

Outdoor air temperature DB (°F)	Indoor air temperature													
	71°F (DB) 59°F (WB)		73°F (DB) 61°F (WB)		77°F (DB) 64°F (WB)		80°F (DB) 67°F (WB)		82°F (DB) 68°F (WB)		86°F (DB) 72°F (WB)		90°F (DB) 75°F (WB)	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-13	39100	29500	43100	31300	46200	33200	47600	33000	48900	32900	51800	32200	54200	31200
-10	39100	29500	43100	31300	46200	33200	47600	33000	48900	32900	51800	32200	54200	31200
-5	39100	29500	43100	31300	46200	33200	47600	33000	48900	32900	51800	32200	54200	31200
0	39100	29500	43100	31300	46200	33200	47600	33000	48900	32900	51800	32200	54200	31200
5	39100	29500	43100	31300	46200	33200	47600	33000	48900	32900	51800	32200	54200	31200
10	39100	29500	43100	31300	46200	33200	47600	33000	48900	32900	51800	32200	54200	31200
15	39100	29500	43100	31300	46200	33200	47600	33000	48900	32900	51800	32200	54200	31200
20	39100	29500	43100	31300	46200	33200	47600	33000	48900	32900	51800	32200	54200	31200
25	39100	29500	43100	31300	46200	33200	47600	33000	48900	32900	51800	32200	54200	31200
30	39100	29500	43100	31300	46200	33200	47600	33000	48900	32900	51800	32200	54200	31200
35	39100	29500	43100	31300	46200	33200	47600	33000	48900	32900	51800	32200	54200	31200
40	39100	29500	43100	31300	46200	33200	47600	33000	48900	32900	51800	32200	54200	31200
45	39100	29500	43100	31300	46200	33200	47600	33000	48900	32900	51800	32200	54200	31200
50	39100	29500	43100	31300	46200	33200	47600	33000	48900	32900	51800	32200	54200	31200
55	37900	28600	41900	30400	44800	32300	46200	32100	47500	31900	50300	31300	52600	30300
60	37200	28100	41000	29800	43900	31600	45200	31400	46500	31300	49300	30600	51500	29700
66	35600	26900	39400	28600	42200	30300	43400	30100	44600	30000	47300	29400	49400	28500
68	35300	26600	38900	28300	41700	30000	42900	29800	44200	29700	46800	29100	48900	28200
70	34900	26300	38500	27900	41300	29700	42500	29500	43700	29300	46300	28800	48400	27900
73	34100	25800	37700	27300	40400	29000	41500	28900	42700	28700	45300	28100	47300	27300
77	33400	25200	36800	26700	39500	28400	40600	28200	41800	28100	44200	27500	46300	26700
81	32600	24600	36000	26100	38600	27700	39700	27600	40800	27400	43200	26900	45200	26100
84	31800	24100	35200	25500	37700	27100	38800	26900	39900	26800	42200	26300	44200	25500
88	31100	23500	34300	24900	36800	26500	37800	26300	38900	26200	41200	25600	43100	24900
91	30300	22900	33500	24300	35900	25800	36900	25600	38000	25500	40200	25000	42100	24200
95	29600	22300	32700	23700	35000	25200	36000	25000	37000	24900	39200	24400	41000	23600
99	28800	21800	31800	23100	34100	24500	35100	24400	36100	24200	38200	23800	40000	23000
102	28100	21200	31000	22500	33200	23900	34200	23700	35100	23600	37200	23100	38900	22400
106	27300	20600	30100	21900	32300	23200	33200	23100	34200	23000	36200	22500	37900	21800
109	26500	20000	29300	21300	31400	22600	32300	22400	33200	22300	35200	21900	36800	21200
113	25800	19500	28500	20600	30500	21900	31400	21800	32300	21700	34200	21200	35800	20600
115	25400	19200	28000	20300	30000	21600	30900	21500	31800	21400	33700	20900	35200	20300

Product models : RAV-HB421CTP-UL ; RAV-BP421AT2P-UL**Specification of product at standard condition**

Standard Condition	Indoor	80°F (DB) / 67°F (WB)	Total Cooling Capacity (TC)	42000 Btu/hr
	Outdoor	95°F (DB) / 75°F (WB)	Sensible Heat Capacity (SHC)	28200 Btu/hr

Outdoor air temperature DB (°F)	Indoor air temperature													
	71°F (DB) 59°F (WB)		73°F (DB) 61°F (WB)		77°F (DB) 64°F (WB)		80°F (DB) 67°F (WB)		82°F (DB) 68°F (WB)		86°F (DB) 72°F (WB)		90°F (DB) 75°F (WB)	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-13	45600	33400	50300	35300	53900	37500	55500	37200	57100	37000	60400	36200	63200	35000
-10	45600	33400	50300	35300	53900	37500	55500	37200	57100	37000	60400	36200	63200	35000
-5	45600	33400	50300	35300	53900	37500	55500	37200	57100	37000	60400	36200	63200	35000
0	45600	33400	50300	35300	53900	37500	55500	37200	57100	37000	60400	36200	63200	35000
5	45600	33400	50300	35300	53900	37500	55500	37200	57100	37000	60400	36200	63200	35000
10	45600	33400	50300	35300	53900	37500	55500	37200	57100	37000	60400	36200	63200	35000
15	45600	33400	50300	35300	53900	37500	55500	37200	57100	37000	60400	36200	63200	35000
20	45600	33400	50300	35300	53900	37500	55500	37200	57100	37000	60400	36200	63200	35000
25	45600	33400	50300	35300	53900	37500	55500	37200	57100	37000	60400	36200	63200	35000
30	45600	33400	50300	35300	53900	37500	55500	37200	57100	37000	60400	36200	63200	35000
35	45600	33400	50300	35300	53900	37500	55500	37200	57100	37000	60400	36200	63200	35000
40	45600	33400	50300	35300	53900	37500	55500	37200	57100	37000	60400	36200	63200	35000
45	45600	33400	50300	35300	53900	37500	55500	37200	57100	37000	60400	36200	63200	35000
50	45600	33400	50300	35300	53900	37500	55500	37200	57100	37000	60400	36200	63200	35000
55	44200	32400	48900	34300	52300	36400	53900	36200	55400	35900	58700	35100	61400	34000
60	43400	31700	47900	33600	51300	35700	52800	35400	54300	35200	57500	34400	60100	33300
66	41600	30400	45900	32300	49200	34200	50600	34000	52100	33800	55100	33000	57700	31900
68	41100	30100	45400	31900	48700	33900	50100	33600	51500	33400	54600	32700	57100	31600
70	40700	29800	44900	31600	48100	33500	49500	33300	51000	33100	54000	32300	56400	31200
73	39800	29200	44000	30900	47100	32800	48500	32500	49900	32300	52800	31600	55200	30600
77	38900	28500	43000	30200	46000	32100	47400	31800	48700	31600	51600	30900	54000	29900
81	38000	27900	42000	29500	45000	31300	46300	31100	47600	30900	50400	30200	52800	29200
84	37200	27200	41000	28800	43900	30600	45200	30400	46500	30200	49300	29500	51500	28500
88	36300	26600	40100	28100	42900	29900	44200	29600	45400	29500	48100	28800	50300	27800
91	35400	25900	39100	27400	41800	29100	43100	28900	44300	28700	46900	28100	49100	27200
95	34500	25300	38100	26800	40800	28400	42000	28200	43200	28000	45800	27400	47900	26500
99	33600	24600	37100	26100	39800	27700	40900	27500	42100	27300	44600	26700	46600	25800
102	32700	24000	36100	25400	38700	27000	39800	26800	41000	26600	43400	26000	45400	25100
106	31800	23300	35200	24700	37700	26200	38800	26000	39900	25900	42200	25300	44200	24400
109	31000	22700	34200	24000	36600	25500	37700	25300	38800	25100	41100	24600	42900	23800
113	30100	22000	33200	23300	35600	24800	36600	24600	37700	24400	39900	23900	41700	23100
115	29600	21700	32700	23000	35000	24400	36100	24200	37100	24100	39300	23500	41100	22700

Product models : RAV-HB481CTP-UL ; RAV-BP481AT2P-UL

Specification of product at standard condition

Standard Condition	Indoor	80°F (DB) / 67°F (WB)
	Outdoor	95°F (DB) / 75°F (WB)

Total Cooling Capacity (TC)	48000 Btu/hr
Sensible Heat Capacity (SHC)	32300 Btu/hr

Outdoor air temperature DB (°F)	Indoor air temperature													
	71°F (DB) 59°F (WB)		73°F (DB) 61°F (WB)		77°F (DB) 64°F (WB)		80°F (DB) 67°F (WB)		82°F (DB) 68°F (WB)		86°F (DB) 72°F (WB)		90°F (DB) 75°F (WB)	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-13	52100	38200	57500	40500	61600	43000	63400	42700	65200	42400	69100	41400	72200	40100
-10	52100	38200	57500	40500	61600	43000	63400	42700	65200	42400	69100	41400	72200	40100
-5	52100	38200	57500	40500	61600	43000	63400	42700	65200	42400	69100	41400	72200	40100
0	52100	38200	57500	40500	61600	43000	63400	42700	65200	42400	69100	41400	72200	40100
5	52100	38200	57500	40500	61600	43000	63400	42700	65200	42400	69100	41400	72200	40100
10	52100	38200	57500	40500	61600	43000	63400	42700	65200	42400	69100	41400	72200	40100
15	52100	38200	57500	40500	61600	43000	63400	42700	65200	42400	69100	41400	72200	40100
20	52100	38200	57500	40500	61600	43000	63400	42700	65200	42400	69100	41400	72200	40100
25	52100	38200	57500	40500	61600	43000	63400	42700	65200	42400	69100	41400	72200	40100
30	52100	38200	57500	40500	61600	43000	63400	42700	65200	42400	69100	41400	72200	40100
35	52100	38200	57500	40500	61600	43000	63400	42700	65200	42400	69100	41400	72200	40100
40	52100	38200	57500	40500	61600	43000	63400	42700	65200	42400	69100	41400	72200	40100
45	52100	38200	57500	40500	61600	43000	63400	42700	65200	42400	69100	41400	72200	40100
50	52100	38200	57500	40500	61600	43000	63400	42700	65200	42400	69100	41400	72200	40100
55	50600	37100	55800	39300	59800	41700	61600	41400	63300	41200	67000	40200	70100	38900
60	49500	36400	54700	38500	58600	40900	60300	40600	62000	40300	65700	39400	68700	38100
66	47500	34900	52500	36900	56200	39200	57900	38900	59500	38700	63000	37800	65900	36600
68	47000	34500	51900	36500	55600	38800	57200	38500	58900	38300	62400	37400	65200	36200
70	46500	34100	51400	36200	55000	38400	56600	38100	58200	37900	61700	37000	64500	35800
73	45500	33400	50200	35400	53800	37600	55400	37300	57000	37000	60300	36200	63100	35000
77	44500	32600	49100	34600	52600	36700	54200	36400	55700	36200	59000	35400	61700	34200
81	43500	31900	48000	33800	51400	35900	52900	35600	54400	35400	57700	34600	60300	33500
84	42500	31200	46900	33000	50200	35000	51700	34800	53200	34600	56300	33800	58900	32700
88	41500	30400	45800	32200	49000	34200	50500	34000	51900	33800	55000	33000	57500	31900
91	40400	29700	44700	31400	47800	33400	49200	33100	50600	32900	53600	32200	56100	31100
95	39400	28900	43500	30600	46600	32500	48000	32300	49400	32100	52300	31400	54700	30300
99	38400	28200	42400	29900	45400	31700	46800	31500	48100	31300	50900	30600	53300	29600
102	37400	27400	41300	29100	44200	30900	45500	30600	46800	30500	49600	29800	51900	28800
106	36400	26700	40200	28300	43000	30000	44300	29800	45600	29600	48300	29000	50500	28000
109	35400	26000	39100	27500	41800	29200	43100	29000	44300	28800	46900	28200	49100	27200
113	28200	20700	31100	21900	33300	23200	34300	23100	35300	22900	37300	22400	39100	21700
115	26700	19600	29500	20800	31600	22100	32500	21900	33500	21800	35400	21300	37100	20600

Heating capacity table

Product model : RAV-HM_1CTP-UL : RAV-BP__1AT2P-UL

(TC : Btu/h, PI : W)

unit size	outdoor air temp.		indoor air temp.									
	FDB	FWB	61 (FDB)		64 (FDB)		70 (FDB)		72 (FDB)		75 (FDB)	
			TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
18	59	57	24500	1600	24300	1600	24100	1700	24000	1700	23800	1800
	50	48	22300	1500	22000	1500	21900	1600	21800	1600	21600	1700
	47	43	20300	1400	20100	1500	20000	1500	19900	1600	19800	1600
	41	39	19000	1400	18800	1400	18700	1500	18500	1500	18400	1600
	36	34	17000	1300	16800	1300	16700	1400	16600	1400	16500	1500
	32	31	15800	1300	15700	1300	15500	1400	15400	1400	15600	1500
	23	22	13300	1200	13100	1200	13100	1200	13000	1300	12900	1300
	19	18	12500	1100	12400	1200	12300	1200	12200	1300	12100	1300
	14	13	11400	1100	11300	1100	11300	1100	11200	1200	11100	1300
	5	4	9600	1000	9500	1000	9500	1100	9400	1100	9400	1200
	1	0	7300	900	7200	1000	7100	1000	7100	1000	7100	1100
	-3	-4	5700	900	5600	900	5600	900	5600	1000	5500	1000
	-13	-13	3000	800	3000	800	3000	800	3000	900	2900	900
unit size	outdoor air temp.		indoor air temp.									
	FDB	FWB	61 (FDB)		64 (FDB)		70 (FDB)		72 (FDB)		75 (FDB)	
			TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
24	59	57	33100	2200	32800	2200	32600	2300	32400	2400	32200	2500
	50	48	30100	2000	29700	2100	29600	2200	29400	2300	29200	2400
	47	43	27500	2000	27200	2000	27000	2100	26800	2200	26700	2300
	41	39	25600	1900	25300	1900	25200	2000	25000	2100	24900	2200
	36	34	23000	1800	22700	1900	22600	1900	22400	2000	22300	2100
	32	31	21300	1800	21200	1800	20900	1900	20800	1900	21100	2000
	23	22	17900	1600	17700	1600	17600	1700	17500	1800	17400	1900
	19	18	16800	1600	16700	1600	16600	1700	16500	1700	16400	1800
	14	13	15400	1500	15300	1500	15200	1600	15100	1600	15000	1700
	5	4	13000	1400	12900	1400	12800	1500	12700	1600	12600	1600
	1	0	9800	1300	9700	1300	9600	1400	9600	1400	9500	1500
	-3	-4	7700	1200	7600	1200	7500	1300	7500	1300	7400	1400
	-13	-13	4100	1100	4100	1100	4000	1100	4000	1200	4000	1300
unit size	outdoor air temp.		indoor air temp.									
	FDB	FWB	61 (FDB)		64 (FDB)		70 (FDB)		72 (FDB)		75 (FDB)	
			TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
30	59	57	41700	2900	41300	3000	41000	3100	40800	3300	40500	3400
	50	48	37900	2800	37500	2900	37200	3000	37000	3100	36800	3300
	47	43	34600	2700	34200	2700	34000	2800	33800	3000	33600	3100
	41	39	32200	2600	31900	2700	31700	2700	31500	2900	31300	3000
	36	34	28900	2500	28600	2500	28400	2600	28300	2700	28100	2900
	32	31	26900	2400	26700	2500	26300	2600	26200	2600	26500	2700
	23	22	22600	2200	22300	2200	22200	2300	22100	2400	21900	2500
	19	18	21200	2100	21000	2200	20900	2300	20700	2400	20600	2500
	14	13	19400	2000	19200	2100	19100	2200	19000	2200	18900	2400
	5	4	16400	1900	16200	2000	16100	2000	16000	2100	15900	2200
	1	0	12400	1800	12200	1800	12100	1900	12100	2000	12000	2100
	-3	-4	9700	1600	9600	1700	9500	1800	9500	1800	9400	1900
	-13	-13	5200	1500	5100	1500	5100	1600	5100	1600	5000	1700
unit size	outdoor air temp.		indoor air temp.									
	FDB	FWB	61 (FDB)		64 (FDB)		70 (FDB)		72 (FDB)		75 (FDB)	
			TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
36	59	57	49100	3200	48500	3300	48300	3400	48000	3600	47700	3700
	50	48	44500	3000	44100	3100	43800	3200	43500	3400	43300	3500
	47	43	40700	2900	40200	3000	40000	3100	39800	3200	39500	3400
	41	39	37900	2800	37500	2900	37300	3000	37100	3100	36900	3300
	36	34	34000	2700	33700	2700	33500	2800	33200	3000	33100	3100
	32	31	31600	2600	31500	2700	30900	2800	30800	2900	31200	3000
	23	22	26500	2400	26300	2400	26100	2500	25900	2600	25800	2800
	19	18	25000	2300	24700	2400	24600	2500	24400	2600	24300	2700
	14	13	22900	2200	22600	2300	22500	2300	22400	2400	22200	2600
	5	4	19300	2100	19100	2100	19000	2200	18800	2300	18700	2400
	1	0	14500	1900	14400	2000	14300	2000	14200	2100	14100	2200
	-3	-4	11400	1800	11300	1800	11200	1900	11100	2000	11000	2100
	-13	-13	6100	1600	6100	1600	6000	1700	6000	1800	5900	1900

TC:Total Heating Capacity [Btu/h]

PI:Power Input [W]

Product model : RAV-HM_1CTP-UL : RAV-BP__1AT2P-UL

(TC : Btu/h, PI : W)

unit size	outdoor air temp.		indoor air temp.									
	FDB	FWB	61 (FDB)		64 (FDB)		70 (FDB)		72 (FDB)		75 (FDB)	
			TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
42	59	57	57600	4100	57000	4300	56700	4400	56400	4600	56000	4800
	50	48	52300	3900	51800	4000	51500	4200	51200	4400	50900	4600
	47	43	47800	3700	47300	3800	47000	4000	46700	4200	46400	4400
	41	39	44600	3600	44100	3700	43800	3900	43600	4000	43300	4200
	36	34	40000	3400	39500	3500	39300	3700	39100	3800	38800	4000
	32	31	37100	3400	37000	3500	36300	3600	36200	3700	36700	3900
	23	22	31200	3100	30900	3100	30700	3300	30500	3400	30300	3600
	19	18	29300	3000	29000	3100	28800	3200	28700	3300	28500	3500
	14	13	26900	2800	26600	2900	26400	3000	26300	3200	26100	3300
	5	4	22600	2700	22400	2800	22300	2900	22100	3000	22000	3100
	1	0	17100	2500	16900	2500	16800	2600	16700	2700	16600	2900
	-3	-4	13400	2300	13200	2400	13100	2500	13100	2600	12900	2700
	-13	-13	7200	2100	7100	2100	7000	2200	7000	2300	6900	2400
unit size	outdoor air temp.		indoor air temp.									
	FDB	FWB	61 (FDB)		64 (FDB)		70 (FDB)		72 (FDB)		75 (FDB)	
			TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
48	59	57	66200	5100	65500	5200	65100	5400	64700	5700	64400	5900
	50	48	60100	4800	59500	5000	59100	5100	58800	5400	58400	5600
	47	43	54900	4600	54300	4700	54000	4900	53700	5100	53400	5400
	41	39	51200	4500	50700	4600	50400	4800	50100	5000	49800	5200
	36	34	45900	4300	45400	4400	45200	4500	44900	4700	44600	5000
	32	31	42700	4100	42500	4300	41700	4400	41600	4600	42100	4800
	23	22	35800	3800	35500	3900	35200	4000	35000	4200	34800	4400
	19	18	33700	3700	33300	3800	33100	3900	32900	4100	32700	4300
	14	13	30900	3500	30600	3600	30400	3700	30200	3900	30000	4100
	5	4	26000	3300	25700	3400	25600	3500	25400	3700	25300	3900
	1	0	19600	3000	19500	3100	19300	3200	19200	3400	19000	3600
	-3	-4	15400	2800	15200	2900	15100	3000	15000	3200	14900	3300
	-13	-13	8200	2500	8200	2600	8000	2700	8100	2800	7900	3000

TC:Total Heating Capacity [Btu/h]

PI:Power Input [W]

2-2-5. Part load performance

Indoor: RAV-HB181CTP-UL
Outdoor: RAV-BP181AT2P-UL

Operation range		Cooling		Heating	
		Q	P	Q	P
MINIMUM	Btu/h	4000	220	3000	220
RATING	Btu/h	18000	1364	20000	1504
MAXIMUM	Btu/h	19100	1850	21400	2250

Q : Capacity (Btu/h)
P : Power consumption (W)

Cooling		Parts Load (%)																			
Outdoor Temperature DB °F(°C)		100		90		80		70		60		50		40		30		20		10	
		Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P
68(20)		21470	1070	19320	960	17170	840	15030	720	12880	610	10730	490	8590	380	6440	260	4770	170	4770	170
70(21)		21230	1090	19110	970	16990	860	14860	740	12740	620	10620	500	8490	380	6370	270	4720	180	4720	180
72(22)		21000	1110	18900	990	16800	870	14700	750	12600	630	10500	510	8400	390	6300	270	4670	180	4670	180
73(23)		20770	1130	18690	1010	16620	890	14540	760	12460	640	10390	520	8310	400	6230	280	4620	180	4620	180
75(24)		20540	1150	18490	1030	16430	900	14380	780	12320	650	10270	530	8220	410	6160	280	4560	190	4560	190
77(25)		20310	1170	18280	1040	16250	920	14220	790	12190	660	10160	540	8120	410	6090	290	4510	190	4510	190
79(26)		20080	1190	18070	1060	16060	930	14060	800	12050	680	10040	550	8030	420	6020	290	4460	190	4460	190
81(27)		19850	1210	17860	1080	15880	950	13890	820	11910	690	9920	560	7940	430	5950	300	4410	190	4410	190
82(28)		19620	1230	17660	1090	15690	960	13730	830	11770	700	9810	570	7850	430	5890	300	4360	200	4360	200
84(29)		19390	1250	17450	1110	15510	980	13570	840	11630	710	9690	570	7750	440	5820	310	4310	200	4310	200
86(30)		19160	1270	17240	1130	15320	990	13410	860	11490	720	9580	580	7660	450	5750	310	4260	200	4260	200
88(31)		18920	1290	17030	1150	15140	1010	13250	870	11350	730	9460	590	7570	450	5680	320	4210	210	4210	210
90(32)		18690	1310	16820	1160	14950	1020	13090	880	11220	740	9350	600	7480	460	5610	320	4150	210	4150	210
91(33)		18460	1320	16620	1180	14770	1040	12920	900	11080	750	9230	610	7380	470	5540	320	4100	210	4100	210
93(34)		18230	1340	16410	1200	14580	1050	12760	910	10940	760	9120	620	7290	470	5470	330	4050	220	4050	220
95(35)		18000	1360	16200	1220	14400	1070	12600	920	10800	780	9000	630	7200	480	5400	330	4000	220	4000	220
97(36)		17770	1380	15990	1230	14220	1090	12440	940	10660	790	8880	640	7110	490	5330	340	3950	220	3950	220
99(37)		17540	1400	15780	1250	14030	1100	12280	950	10520	800	8770	650	7020	500	5260	340	3900	230	3900	230
100(38)		17310	1420	15580	1270	13850	1120	12110	960	10380	810	8650	660	6920	500	5190	350	3850	230	3850	230
102(39)		17080	1440	15370	1290	13660	1130	11950	980	10250	820	8540	660	6830	510	5120	350	3790	230	3790	230
104(40)		16850	1460	15160	1300	13480	1150	11790	990	10110	830	8420	670	6740	520	5050	360	3740	240	3740	240
106(41)		16610	1480	14950	1320	13290	1160	11630	1000	9970	840	8310	680	6650	520	4980	360	3690	240	3690	240
108(42)		16380	1500	14740	1340	13110	1180	11470	1020	9830	850	8190	690	6550	530	4910	370	3640	240	3640	240
109(43)		16130	1510	14520	1350	12900	1180	11290	1020	9680	860	8070	700	6450	530	4840	370	3580	240	3580	240
111(44)		15860	1510	14270	1350	12690	1180	11100	1020	9520	860	7930	700	6340	530	4760	370	3520	240	3520	240
113(45)		14880	1170	13390	1050	11900	920	10410	790	8930	670	7440	540	5950	410	4460	290	3310	190	3310	190
115(46)		14610	1170	13150	1050	11680	920	10220	790	8760	670	7300	540	5840	410	4380	290	3250	190	3250	190

Heating		Parts Load (%)																			
Outdoor Temperature DB °F(°C)		100		90		80		70		60		50		40		30		20		10	
		Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P
-13(-25)		8150	1040	7340	930	6520	830	5710	720	4890	620	4080	520	3260	410	2450	310	1630	200	1220	150
-11(-24)		8330	1050	7500	940	6670	840	5830	730	5000	630	4170	520	3330	420	2500	310	1670	210	1250	150
-9(-23)		8510	1060	7660	960	6810	850	5960	740	5110	640	4260	530	3410	420	2550	320	1700	210	1280	160
-8(-22)		8700	1080	7830	970	6960	860	6090	750	5220	650	4350	540	3480	430	2610	320	1740	210	1300	160
-6(-21)		8880	1090	7990	980	7100	870	6210	760	5330	650	4440	540	3550	430	2660	320	1780	220	1330	160
-4(-20)		9060	1110	8150	1000	7250	890	6340	770	5430	660	4530	550	3620	440	2720	330	1810	220	1360	160
-2(-19)		9420	1120	8480	1010	7540	900	6590	790	5650	670	4710	560	3770	450	2830	330	1880	220	1410	160
0(-18)		9780	1140	8800	1020	7830	910	6850	800	5870	680	4890	570	3910	450	2930	340	1960	220	1470	170
1(-17)		10140	1150	9130	1040	8120	920	7100	810	6090	690	5070	570	4060	460	3040	340	2030	230	1520	170
3(-16)		10510	1170	9460	1050	8410	930	7360	820	6300	700	5250	580	4200	460	3150	350	2100	230	1580	170
5(-15)		10870	1180	9780	1060	8700	950	7610	830	6520	710	5430	590	4350	470	3260	350	2170	230	1630	170
7(-14)		11210	1190	10090	1070	8970	950	7850	830	6730	710	5600	590	4480	470	3360	350	2240	230	1680	170
9(-13)		11550	1200	10390	1080	9240	960	8080	840	6930	720	5770	600	4620	480	3460	360	2310	240	1730	180
10(-12)		11890	1210	10700	1090	9510	970	8320	850	7130	720	5940	600	4760	480	3570	360	2380	240	1780	180
12(-11)		12230	1220	11010	1100	9780	970	8560	850	7340	730	6110	610	4890	480	3670	360	2450	240	1830	180
14(-10)		12570	1230	11310	1110	10050	980	8800	860	7540	740	6280	610	5030	490	3770	370	2510	240	1890	180
16(-9)		12910	1240	11620	1110	10330	990	9040	870	7740	740	6450	620	5160	490	3870	370	2580	240	1940	180
18(-8)		13250	1250	11920	1120	10600	1000	9270	870	7950	750	6620	620	5300	500	3970	370	2650	250	1990	180
19(-7)		13590	1260	12230	1130	10870	1000	9510	880	8150	750	6790	630	5430	500	4080	370	2720	250	2040	180
21(-6)		13690	1270	12320	1140	10950	1010	9580	880	8210	760	6840	630	5480	500	4110	380	2740	250	2050	190
23(-5)		13790	1270	12410	1150	11030	1020	9650	890	8270	760	6890	630	5520	510	4140	380	2760	250	2070	190
25(-4)		13890	1280	12500	1150	11110	1020	9720	900	8330	770	6940	640	5560	510	4170	380	2780	250	2080	190
27(-3)		13990	1290	12590	1160	11190	1030	9790	900	8390	770	6990	640	5600	510	4200	380	2800	250	2100	190
28(-2)		14090	1300	12680	1170	11270	1040	9860	910	8450	780	7050	650	5640	520	4230	390	2820	260	2110	190
30(-1)		14190	1310	12770	1180	11350	1040	9930	910	8510	780	7100	650	5680	520	4260	390	2840	260	2130	190
32(0)		14290	1310	12860	1180	11430	1050	10000	920	8570	790	7150	650	5720	520	4290	390	2860	260	2140	190
34(1)		14390	1320	12950	1190	11510	1060	10070	920	8640	790	7200	660	5760	530	4320	390	2880	260	2160	190
36(2)		14490	1330	13040	1200	11590	1060	10140	930	8700	800	7250	660	5800	530	4350	400	2900	260	2170	190
37(3)		14730	1350	13260	1210	11780	1080	10310	940	8840	810	7370	670	5890	540	4420	400	2950	270	2210	200
39(4)		14970	1370	13470	1230	11970	1090	10480	950	8980	820	7480	680	5990	540	4490	410	2990	270	2250	200
41(5)		15200	1380	13680	1250	12160	1110	10640	970	9120	830	7600	690	6080	550	4560	410	3040	270	2280	200
43(6)		19480	1480	17540	1330	15590	1180	13640	1030	11690	890	9740	740	7790	590	5850	440	3900	290	2920	220
45(7)	20000	1500	18000	1350	16000	1200	14000	1050	12000	900	10000	750	8000	600	6000	450	4000	300	3000	220	
46(8)		20520	1530	18460	1370	16410	1220	14360	1070	12310	910	10260	760	8210	610	6150	450	4100	300	3080	220
48(9)		21030	1550	18930	1390	16830	1240	14720	1080	12620	930	10520	770	8410	620	6310	460	4210	300	3150	230
50(10)		21550	1570	19390	1420	17240	1260	15080	1100	12930	940	10770	780	8620	630	6460	470	4310	310	3230	230
52(11)		22060	1600	19860	1440	17650	1280	15450	1120	13240	960	11030	800	8830	630	6620	470	4410	310	3310	230
54(12)		22580	1620	20320	1460	18060	1290	15810	1130	13550	970	11290	810	9030	640	6770	480	4520	320	3390	240
55(13)		23100	1640	20790	1480	18480	1310	16170	1150	13860	980	11550	820	9240	650	6930	490	4620	320	3460	240
57(14)		23610	1670	21250	1500	18890	1330	16530	1160	14170	1000	11810	830	9450	660	7080	490	4720	330	3540	240
59(15)		24130	1690	21720	1520	19300	1350	16890	1180	14480	1010	12060	840	9650	670	7240	500	4830	330	3620	250

Indoor: RAV-HB241CTP-UL
Outdoor: RAV-BP241AT2P-UL

Operation range		Cooling		Heating	
		Q	P	Q	P
MINIMUM	Btu/h	6500	300	5100	300
RATING	Btu/h	24000	1778	27000	2077
MAXIMUM	Btu/h	27300	2390	38500	3530

Q : Capacity (Btu/h)
P : Power consumption (W)

Cooling

Outdoor Temperature DB °F(°C)	Parts Load (%)																			
	100		90		80		70		60		50		40		30		20		10	
	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P
68(20)	28620	1400	25760	1240	22900	1080	20030	920	17170	760	14310	600	11450	440	8590	280	7750	240	7750	240
70(21)	28310	1420	25480	1260	22650	1100	19820	940	16990	770	14160	610	11320	450	8490	290	7670	240	7670	240
72(22)	28000	1450	25200	1280	22400	1120	19600	950	16800	790	14000	620	11200	460	8400	290	7580	240	7580	240
73(23)	27700	1470	24930	1300	22160	1140	19390	970	16620	800	13850	630	11080	470	8310	300	7500	250	7500	250
75(24)	27390	1500	24650	1330	21910	1160	19170	990	16430	810	13690	640	10960	470	8220	300	7420	250	7420	250
77(25)	27080	1520	24370	1350	21660	1180	18960	1000	16250	830	13540	650	10830	480	8120	310	7330	260	7330	260
79(26)	26770	1550	24090	1370	21420	1200	18740	1020	16060	840	13390	670	10710	490	8030	310	7250	260	7250	260
81(27)	26460	1570	23820	1390	21170	1220	18520	1040	15880	860	13230	680	10590	500	7940	320	7170	270	7170	270
82(28)	26160	1600	23540	1420	20920	1230	18310	1050	15690	870	13080	690	10460	510	7850	320	7080	270	7080	270
84(29)	25850	1630	23260	1440	20680	1250	18090	1070	15510	880	12920	700	10340	510	7750	330	7000	270	7000	270
86(30)	25540	1650	22990	1460	20430	1270	17880	1090	15320	900	12770	710	10220	520	7660	330	6920	280	6920	280
88(31)	25230	1680	22710	1480	20190	1290	17660	1100	15140	910	12620	720	10090	530	7570	340	6830	280	6830	280
90(32)	24920	1700	22430	1510	19940	1310	17450	1120	14950	930	12460	730	9970	540	7480	340	6750	290	6750	290
91(33)	24620	1730	22150	1530	19690	1330	17230	1140	14770	940	12310	740	9850	550	7380	350	6670	290	6670	290
93(34)	24310	1750	21880	1550	19450	1350	17020	1150	14580	950	12150	750	9720	550	7290	350	6580	300	6580	300
95(35)	24000	1780	21600	1580	19200	1370	16800	1170	14400	970	12000	760	9600	560	7200	360	6500	300	6500	300
97(36)	23690	1800	21320	1600	18950	1390	16580	1190	14220	980	11850	780	9480	570	7110	360	6420	300	6420	300
99(37)	23380	1830	21050	1620	18710	1410	16370	1200	14030	990	11690	790	9350	580	7020	370	6330	310	6330	310
100(38)	23080	1850	20770	1640	18460	1430	16150	1220	13850	1010	11540	800	9230	590	6920	370	6250	310	6250	310
102(39)	22770	1880	20490	1670	18210	1450	15940	1240	13660	1020	11380	810	9110	590	6830	380	6170	320	6170	320
104(40)	22460	1910	20210	1690	17970	1470	15720	1250	13480	1040	11230	820	8980	600	6740	380	6080	320	6080	320
106(41)	22150	1930	19940	1710	17720	1490	15510	1270	13290	1050	11080	830	8860	610	6650	390	6000	330	6000	330
108(42)	21840	1960	19660	1730	17480	1510	15290	1290	13110	1060	10920	840	8740	620	6550	400	5920	330	5920	330
109(43)	21540	1980	19380	1760	17230	1530	15080	1300	12920	1080	10770	850	8610	630	6460	400	5830	330	5830	330
111(44)	21230	2010	19110	1780	16980	1550	14860	1320	12740	1090	10610	860	8490	630	6370	410	5750	340	5750	340
113(45)	20920	2030	18830	1800	16740	1570	14640	1340	12550	1110	10460	870	8370	640	6280	410	5670	340	5670	340
115(46)	20610	2060	18550	1820	16490	1590	14430	1350	12370	1120	10310	890	8240	650	6180	420	5580	350	5580	350

Heating

Outdoor Temperature DB °F(°C)	Parts Load (%)																			
	100		90		80		70		60		50		40		30		20		10	
	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P
-13(-25)	11010	1430	9900	1280	8800	1130	7700	980	6600	830	5500	680	4400	520	3300	370	2200	220	2080	210
-11(-24)	11250	1450	10130	1300	9000	1140	7880	990	6750	840	5630	690	4500	530	3380	380	2250	230	2130	210
-9(-23)	11490	1470	10350	1320	9200	1160	8050	1010	6900	850	5750	690	4600	540	3450	380	2300	230	2170	210
-8(-22)	11740	1490	10570	1330	9390	1180	8220	1020	7040	860	5870	700	4700	550	3520	390	2350	230	2220	220
-6(-21)	11980	1510	10790	1350	9590	1190	8390	1030	7190	870	5990	710	4790	550	3600	400	2400	240	2260	220
-4(-20)	12230	1530	11010	1370	9780	1210	8560	1050	7340	890	6110	720	4890	560	3670	400	2450	240	2310	220
-2(-19)	12720	1550	11450	1390	10170	1220	8900	1060	7630	900	6360	730	5090	570	3820	410	2540	240	2400	220
0(-18)	13210	1570	11890	1410	10570	1240	9240	1070	7920	910	6600	740	5280	580	3960	410	2640	250	2490	230
1(-17)	13700	1590	12330	1420	10960	1260	9590	1090	8220	920	6850	750	5480	580	4110	420	2740	250	2590	230
3(-16)	14180	1610	12770	1440	11350	1270	9930	1100	8510	930	7090	760	5670	590	4260	420	2840	250	2680	230
5(-15)	14670	1630	13210	1460	11740	1290	10270	1120	8800	940	7340	770	5870	600	4400	430	2930	260	2770	240
7(-14)	15130	1650	13620	1470	12110	1300	10590	1130	9080	950	7570	780	6050	600	4540	430	3030	260	2860	240
9(-13)	15590	1660	14030	1480	12470	1310	10910	1130	9350	960	7800	780	6240	610	4680	430	3120	260	2940	240
10(-12)	16050	1670	14440	1500	12840	1320	11230	1140	9630	970	8020	790	6420	610	4810	440	3210	260	3030	240
12(-11)	16510	1680	14860	1510	13210	1330	11560	1150	9900	970	8250	800	6600	620	4950	440	3300	260	3120	240
14(-10)	16970	1700	15270	1520	13570	1340	11880	1160	10180	980	8480	800	6790	620	5090	440	3390	270	3200	250
16(-9)	17430	1710	15680	1530	13940	1350	12200	1170	10460	990	8710	810	6970	630	5230	450	3490	270	3290	250
18(-8)	17880	1720	16100	1540	14310	1360	12520	1180	10730	1000	8940	810	7150	630	5370	450	3580	270	3380	250
19(-7)	18340	1740	16510	1550	14670	1370	12840	1190	11010	1000	9170	820	7340	640	5500	450	3670	270	3460	250
21(-6)	18480	1750	16630	1560	14780	1380	12930	1190	11090	1010	9240	830	7390	640	5540	460	3700	270	3490	250
23(-5)	18610	1760	16750	1570	14890	1390	13030	1200	11170	1020	9310	830	7450	650	5580	460	3720	270	3520	250
25(-4)	18750	1770	16880	1580	15000	1400	13130	1210	11250	1020	9380	840	7500	650	5630	460	3750	280	3540	260
27(-3)	18890	1780	17000	1590	15110	1410	13220	1220	11330	1030	9440	840	7550	650	5670	470	3780	280	3570	260
28(-2)	19020	1790	17120	1600	15220	1410	13320	1230	11410	1040	9510	850	7610	660	5710	470	3800	280	3590	260
30(-1)	19160	1800	17240	1610	15330	1420	13410	1230	11490	1040	9580	850	7660	660	5750	470	3830	280	3620	260
32(0)	19290	1820	17360	1620	15430	1430	13510	1240	11580	1050	9650	860	7720	670	5790	470	3860	280	3640	260
34(1)	19430	1830	17490	1630	15540	1440	13600	1250	11660	1060	9710	860	7770	670	5830	480	3890	290	3670	260
36(2)	19570	1840	17610	1640	15650	1450	13700	1260	11740	1060	9780	870	7830	670	5870	480	3910	290	3700	270
37(3)	19890	1860	17900	1670	15910	1470	13920	1270	11930	1080	9940	880	7950	680	5970	490	3980	290	3760	270
39(4)	20210	1890	18190	1690	16160	1490	14140	1290	12120	1090	10100	890	8080	690	6060	490	4040	290	3820	270
41(5)	20530	1910	18470	1710	16420	1510	14370	1310	12320	1110	10260	900	8210	700	6160	500	4110	300	3880	280
43(6)	26300	2040	23670	1830	21040	1610	18410	1400	15780	1180	13150	970	10520	750	7890	540	5260	320	4970	300
45(7)	27000	2080	24300	1860	21600	1640	18900	1420	16200	1200	13500	980	10800	760	8100	540	5400	320	5100	300
46(8)	27700	2110	24930	1890	22160	1660	19390	1440	16620	1220	13850	1000	11080	770	8310	550	5540	330	5230	300
48(9)	28390	2140	25550	1920	22710	1690	19880	1460	17040	1240	14200	1010	11360	790	8520	560	5680	330	5360	310
50(10)	29090	2170	26180	1940	23270	1710	20360	1490	17450	1260	14550	1030	11640	800	8730	570	5820	340	5490	310
52(11)	29790	2210	26810	1970	23830	1740	20850	1510	17870	1280	14890	1040	11910	810	8940	580	5960	340	5630	320
54(12)	30480	2240	27440	2000	24390	1770	21340	1530	18290	1290	15240	1060	12190	820	9150	590	6100	350	5760	320
55(13)	31180	2270	28060	2030	24940	1790	21830	1550	18710	1310	15590	1070	12470	830	9350	590	6240	350	5890	330
57(14)	31880	2300	28690	2060	25500	1820	22310	1570	19130	1330	15940	1090	12750	850	9560	600	6380	360	6020	330
59(15)	32570	2330	29320	2090	26060	1840	22800	1600	19540	1350	16290	1100	13030	860	9770	610	6510	360	6150	340

Indoor: RAV-HB301CTP-UL
Outdoor: RAV-BP301AT2P-UL

Operation range	Cooling		Heating	
	Q	P	Q	P
MINIMUM	Btu/h 8900	600	8100	600
RATING	Btu/h 30000	2290	34000	2835
MAXIMUM	Btu/h 38500	3280	40900	4550

Q : Capacity (Btu/h)
P : Power consumption (W)

Cooling		Parts Load (%)																		
Outdoor Temperature DB °F(°C)	100		90		80		70		60		50		40		30		20		10	
	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P
68(20)	35780	1800	32200	1610	28620	1420	25040	1230	21470	1040	17890	850	14310	670	10730	480	10610	470	10610	470
70(21)	35390	1830	31850	1640	28310	1450	24770	1250	21230	1060	17700	870	14160	680	10620	490	10500	480	10500	480
72(22)	35010	1860	31500	1670	28000	1470	24500	1280	21000	1080	17500	890	14000	690	10500	490	10380	490	10380	490
73(23)	34620	1900	31160	1700	27700	1500	24230	1300	20770	1100	17310	900	13850	700	10390	500	10270	500	10270	500
75(24)	34240	1930	30810	1730	27390	1520	23960	1320	20540	1120	17120	920	13690	710	10270	510	10160	510	10160	510
77(25)	33850	1960	30470	1760	27080	1550	23700	1340	20310	1140	16930	930	13540	730	10160	520	10040	510	10040	510
79(26)	33470	1990	30120	1790	26770	1580	23430	1370	20080	1160	16730	950	13390	740	10040	530	9930	520	9930	520
81(27)	33080	2030	29770	1810	26460	1600	23160	1390	19850	1180	16540	960	13230	750	9920	540	9810	530	9810	530
82(28)	32700	2060	29430	1840	26160	1630	22890	1410	19620	1200	16350	980	13080	760	9810	550	9700	540	9700	540
84(29)	32310	2090	29080	1870	25850	1650	22620	1430	19390	1210	16160	990	12920	780	9690	560	9590	550	9590	550
86(30)	31930	2130	28730	1900	25540	1680	22350	1460	19160	1230	15960	1010	12770	790	9580	560	9470	560	9470	560
88(31)	31540	2160	28390	1930	25230	1710	22080	1480	18920	1250	15770	1030	12620	800	9460	570	9360	570	9360	570
90(32)	31160	2190	28040	1960	24920	1730	21810	1500	18690	1270	15580	1040	12460	810	9350	580	9240	570	9240	570
91(33)	30770	2220	27690	1990	24620	1760	21540	1520	18460	1290	15390	1060	12310	820	9230	590	9130	580	9130	580
93(34)	30390	2260	27350	2020	24310	1780	21270	1550	18230	1310	15190	1070	12150	840	9120	600	9010	590	9010	590
95(35)	30000	2290	27000	2050	24000	1810	21000	1570	18000	1330	15000	1090	12000	850	9000	610	8900	600	8900	600
97(36)	29620	2320	26650	2080	23690	1840	20730	1590	17770	1350	14810	1100	11850	860	8880	620	8790	610	8790	610
99(37)	29230	2360	26310	2110	23380	1860	20460	1610	17540	1370	14620	1120	11690	870	8770	630	8670	620	8670	620
100(38)	28850	2390	25960	2140	23080	1890	20190	1640	17310	1390	14420	1140	11540	880	8650	630	8560	630	8560	630
102(39)	28460	2420	25610	2170	22770	1910	19920	1660	17080	1410	14230	1150	11380	900	8540	640	8440	630	8440	630
104(40)	28080	2450	25270	2200	22460	1940	19650	1680	16850	1420	14040	1170	11230	910	8420	650	8330	640	8330	640
106(41)	27690	2490	24920	2230	22150	1970	19380	1700	16610	1440	13850	1180	11080	920	8310	660	8210	650	8210	650
108(42)	27310	2520	24570	2260	21840	1990	19110	1730	16380	1460	13650	1200	10920	930	8190	670	8100	660	8100	660
109(43)	26920	2550	24230	2280	21540	2020	18840	1750	16150	1480	13460	1210	10770	950	8080	680	7990	670	7990	670
111(44)	26540	2590	23880	2310	21230	2040	18570	1770	15920	1500	13270	1230	10610	960	7960	690	7870	680	7870	680
113(45)	26150	2620	23540	2340	20920	2070	18310	1790	15690	1520	13080	1240	10460	970	7850	700	7760	690	7760	690
115(46)	25770	2650	23190	2370	20610	2090	18040	1820	15460	1540	12880	1260	10310	980	7730	700	7640	690	7640	690

Heating		Parts Load (%)																			
Outdoor Temperature DB °F(°C)	100		90		80		70		60		50		40		30		20		10		
	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	
-13(-25)	13860	1950	12470	1750	11090	1550	9700	1350	8320	1140	6930	940	5540	740	4160	540	3300	410	3300	410	
-11(-24)	14170	1980	12750	1770	11330	1570	9920	1360	8500	1160	7080	960	5670	750	4250	550	3380	420	3380	420	
-9(-23)	14470	2010	13030	1800	11580	1590	10130	1380	8680	1180	7240	970	5790	760	4340	550	3450	420	3450	420	
-8(-22)	14780	2030	13300	1820	11830	1610	10350	1400	8870	1190	7390	980	5910	770	4430	560	3520	430	3520	430	
-6(-21)	15090	2060	13580	1850	12070	1640	10560	1420	9050	1210	7550	1000	6040	780	4530	570	3600	440	3600	440	
-4(-20)	15400	2090	13860	1870	12320	1660	10780	1440	9240	1230	7700	1010	6160	790	4620	580	3670	440	3670	440	
-2(-19)	16010	2120	14410	1900	12810	1680	11210	1460	9610	1240	8010	1020	6410	800	4800	580	3820	450	3820	450	
0(-18)	16630	2150	14970	1920	13300	1700	11640	1480	9980	1260	8320	1040	6650	810	4990	590	3960	450	3960	450	
1(-17)	17250	2170	15520	1950	13800	1720	12070	1500	10350	1270	8620	1050	6900	820	5170	600	4110	460	4110	460	
3(-16)	17860	2200	16080	1970	14290	1750	12500	1520	10720	1290	8930	1060	7140	830	5360	610	4260	470	4260	470	
5(-15)	18480	2230	16630	2000	14780	1770	12930	1540	11090	1310	9240	1080	7390	850	5540	610	4400	470	4400	470	
7(-14)	19060	2250	17150	2010	15240	1780	13340	1550	11430	1320	9530	1080	7620	850	5720	620	4540	480	4540	480	
9(-13)	19630	2260	17670	2030	15710	1800	13740	1560	11780	1330	9820	1090	7850	860	5890	620	4680	480	4680	480	
10(-12)	20210	2280	18190	2050	16170	1810	14150	1570	12130	1340	10110	1100	8080	870	6060	630	4810	480	4810	480	
12(-11)	20790	2300	18710	2060	16630	1820	14550	1590	12470	1350	10390	1110	8320	870	6240	630	4950	490	4950	490	
14(-10)	21370	2320	19230	2080	17090	1840	14960	1600	12820	1360	10680	1120	8550	880	6410	640	5090	490	5090	490	
16(-9)	21940	2330	19750	2090	17550	1850	15360	1610	13170	1370	10970	1130	8780	880	6580	640	5230	490	5230	490	
18(-8)	22520	2350	20270	2110	18020	1870	15760	1620	13510	1380	11260	1130	9010	890	6760	650	5370	500	5370	500	
19(-7)	23100	2370	20790	2120	18480	1880	16170	1630	13860	1390	11550	1140	9240	900	6930	650	5500	500	5500	500	
21(-6)	23270	2380	20940	2140	18620	1890	16290	1640	13960	1400	11630	1150	9310	900	6980	660	5540	500	5540	500	
23(-5)	23440	2400	21100	2150	18750	1900	16410	1660	14060	1410	11720	1160	9380	910	7030	660	5580	510	5580	510	
25(-4)	23610	2420	21250	2170	18890	1920	16530	1670	14170	1420	11810	1170	9440	920	7080	670	5630	510	5630	510	
27(-3)	23780	2430	21400	2180	19030	1930	16650	1680	14270	1420	11890	1170	9510	920	7130	670	5670	510	5670	510	
28(-2)	23950	2450	21560	2190	19160	1940	16770	1690	14370	1430	11980	1180	9580	930	7190	670	5710	520	5710	520	
30(-1)	24120	2460	21710	2210	19300	1950	16890	1700	14470	1440	12060	1190	9650	930	7240	680	5750	520	5750	520	
32(0)	24300	2480	21870	2220	19440	1960	17010	1710	14580	1450	12150	1200	9720	940	7290	680	5790	520	5790	520	
34(1)	24470	2490	22020	2240	19570	1980	17130	1720	14680	1460	12230	1200	9790	950	7340	690	5830	530	5830	530	
36(2)	24640	2510	22170	2250	19710	1990	17250	1730	14780	1470	12320	1210	9860	950	7390	690	5870	530	5870	530	
37(3)	25040	2540	22540	2280	20030	2020	17530	1750	15020	1490	12520	1230	10020	960	7510	700	5970	540	5970	540	
39(4)	25440	2580	22900	2310	20360	2040	17810	1780	15270	1510	12720	1240	10180	980	7630	710	6060	550	6060	550	
41(5)	25850	2610	23260	2340	20680	2070	18090	1800	15510	1530	12920	1260	10340	990	7750	720	6160	550	6160	550	
43(6)	33120	2790	29810	2500	26500	2210	23190	1920	19870	1640	16560	1350	13250	1060	9940	770	7890	590	7890	590	
45(7)	34000	2840	30600	2540	27200	2250	23800	1950	20400	1660	17000	1370	13600	1070	10200	780	8100	600	8100	600	
46(8)	34880	2880	31390	2580	27900	2280	24410	1990	20930	1690	17440	1390	13950	1090	10460	790	8310	610	8310	610	
48(9)	35750	2920	32180	2620	28600	2320	25030	2020	21450	1710	17880	1410	14300	1110	10730	810	8520	620	8520	620	
50(10)	36630	2970	32970	2660	29310	2350	25640	2050	21980	1740	18320	1430	14650	1120	10990	820	8730	630	8730	630	
52(11)	37510	3010	33760	2700	30010	2390	26260	2080	22510	1760	18750	1450	15000	1140	11250	830	8940	640	8940	640	
54(12)	38390	3050	34550	2740	30710	2420	26870	2110	23030	1790	19190	1470	15350	1160	11520	840	9150	650	9150	650	
55(13)	39260	3100	35340	2780	31410	2460	27490	2140	23560	1820	19630	1500	15710	1170	11780	850	9350	660	9350	660	
57(14)	40140	3140	36130	2820	32110	2490	28100	2170	24090	1840	20070	1520	16060	1190	12040	870	9560	670	9560	670	
59(15)	41020	3190	36920	2860	32820	2530	28710	2200	24610	1870	20510	1540	16410	1210	12310	880	9770	670	9770	670	

Indoor: RAV-HB361CTP-UL
Outdoor: RAV-BP361AT2P-UL

Operation range	Cooling		Heating		
	Q	P	Q	P	
MINIMUM	Btu/h	8900	660	8100	600
RATING	Btu/h	36000	2975	40000	3080
MAXIMUM	Btu/h	41000	4150	44300	4580

Q : Capacity (Btu/h)
P : Power consumption (W)

Cooling

Outdoor Temperature	Parts Load (%)																			
DB °F(°C)	100		90		80		70		60		50		40		30		20		10	
	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P
68(20)	42930	2340	38640	2090	34340	1850	30050	1610	25760	1370	21470	1130	17170	890	12880	650	10610	520	10610	520
70(21)	42470	2380	38220	2130	33970	1890	29730	1640	25480	1390	21230	1150	16990	900	12740	660	10500	530	10500	530
72(22)	42010	2420	37810	2170	33600	1920	29400	1670	25200	1420	21000	1170	16800	920	12600	670	10380	540	10380	540
73(23)	41540	2460	37390	2210	33240	1950	29080	1700	24930	1440	20770	1190	16620	940	12460	680	10270	550	10270	550
75(24)	41080	2510	36970	2250	32870	1990	28760	1730	24650	1470	20540	1210	16430	950	12320	690	10160	560	10160	560
77(25)	40620	2550	36560	2290	32500	2020	28430	1760	24370	1490	20310	1230	16250	970	12190	700	10040	570	10040	570
79(26)	40160	2590	36140	2320	32130	2060	28110	1790	24090	1520	20080	1250	16060	980	12050	720	9930	570	9930	570
81(27)	39700	2630	35730	2360	31760	2090	27790	1820	23820	1540	19850	1270	15880	1000	11910	730	9810	580	9810	580
82(28)	39230	2680	35310	2400	31390	2120	27460	1850	23540	1570	19620	1290	15690	1020	11770	740	9700	590	9700	590
84(29)	38770	2720	34890	2440	31020	2160	27140	1880	23260	1590	19390	1310	15510	1030	11630	750	9590	600	9590	600
86(30)	38310	2760	34480	2480	30650	2190	26820	1910	22990	1620	19160	1330	15320	1050	11490	760	9470	610	9470	610
88(31)	37850	2800	34060	2510	30280	2220	26490	1930	22710	1640	18920	1350	15140	1070	11350	780	9360	620	9360	620
90(32)	37390	2850	33650	2550	29910	2260	26170	1960	22430	1670	18690	1380	14950	1080	11220	790	9240	630	9240	630
91(33)	36920	2890	33230	2590	29540	2290	25850	1990	22150	1690	18460	1400	14770	1100	11080	800	9130	640	9130	640
93(34)	36460	2930	32820	2630	29170	2330	25520	2020	21880	1720	18230	1420	14580	1110	10940	810	9010	650	9010	650
95(35)	36000	2980	32400	2670	28800	2360	25200	2050	21600	1740	18000	1440	14400	1130	10800	820	8900	660	8900	660
97(36)	35540	3020	31980	2710	28430	2390	24880	2080	21320	1770	17770	1460	14220	1150	10660	830	8790	670	8790	670
99(37)	35080	3060	31570	2740	28060	2430	24550	2110	21050	1790	17540	1480	14030	1160	10520	850	8670	680	8670	680
100(38)	34610	3100	31150	2780	27690	2460	24230	2140	20770	1820	17310	1500	13850	1180	10380	860	8560	690	8560	690
102(39)	34150	3150	30740	2820	27320	2500	23910	2170	20490	1840	17080	1520	13660	1190	10250	870	8440	700	8440	700
104(40)	33690	3190	30320	2860	26950	2530	23580	2200	20210	1870	16850	1540	13480	1210	10110	880	8330	710	8330	710
106(41)	33230	3230	29910	2900	26580	2560	23260	2230	19940	1890	16610	1560	13290	1230	9970	890	8210	720	8210	720
108(42)	32770	3270	29490	2940	26210	2600	22940	2260	19660	1920	16380	1580	13110	1240	9830	900	8100	730	8100	730
109(43)	32300	3320	29070	2970	25840	2630	22610	2290	19380	1940	16150	1600	12920	1260	9690	920	7990	740	7990	740
111(44)	31840	3360	28660	3010	25470	2660	22290	2320	19110	1970	15920	1620	12740	1280	9550	930	7870	750	7870	750
113(45)	31380	3400	28240	3050	25100	2700	21970	2350	18830	1990	15690	1640	12550	1290	9410	940	7760	750	7760	750
115(46)	30920	3440	27830	3090	24730	2730	21640	2380	18550	2020	15460	1660	12370	1310	9280	950	7640	760	7640	760

Heating

Outdoor Temperature DB °F(°C)	Parts Load (%)																			
	100		90		80		70		60		50		40		30		20		10	
	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P
-13(-25)	16300	2120	14670	1910	13040	1690	11410	1480	9780	1260	8150	1050	6520	840	4890	620	3300	410	3300	410
-11(-24)	16670	2150	15000	1930	13330	1720	11670	1500	10000	1280	8330	1060	6670	850	5000	630	3380	420	3380	420
-9(-23)	17030	2180	15330	1960	13620	1740	11920	1520	10220	1300	8510	1080	6810	860	5110	640	3450	420	3450	420
-8(-22)	17390	2210	15650	1990	13910	1760	12170	1540	10430	1320	8700	1090	6960	870	5220	650	3520	430	3520	430
-6(-21)	17750	2240	15980	2010	14200	1790	12430	1560	10650	1340	8880	1110	7100	880	5330	660	3600	440	3600	440
-4(-20)	18120	2270	16300	2040	14490	1810	12680	1580	10870	1350	9060	1120	7250	900	5430	670	3670	440	3670	440
-2(-19)	18840	2300	16960	2070	15070	1840	13190	1600	11300	1370	9420	1140	7540	910	5650	670	3820	450	3820	450
0(-18)	19570	2330	17610	2100	15650	1860	13700	1630	11740	1390	9780	1150	7830	920	5870	680	3960	450	3960	450
1(-17)	20290	2360	18260	2120	16230	1890	14200	1650	12170	1410	10140	1170	8120	930	6090	690	4110	460	4110	460
3(-16)	21010	2390	18910	2150	16810	1910	14710	1670	12610	1430	10510	1180	8410	940	6300	700	4260	470	4260	470
5(-15)	21740	2420	19570	2180	17390	1930	15220	1690	13040	1440	10870	1200	8700	960	6520	710	4400	470	4400	470
7(-14)	22420	2440	20180	2200	17930	1950	15690	1700	13450	1460	11210	1210	8970	960	6730	720	4540	480	4540	480
9(-13)	23100	2460	20790	2210	18480	1960	16170	1720	13860	1470	11550	1220	9240	970	6930	720	4680	480	4680	480
10(-12)	23780	2480	21400	2230	19020	1980	16640	1730	14270	1480	11890	1230	9510	980	7130	730	4810	480	4810	480
12(-11)	24460	2500	22010	2250	19570	1990	17120	1740	14670	1490	12230	1240	9780	980	7340	730	4950	490	4950	490
14(-10)	25140	2520	22620	2260	20110	2010	17600	1750	15080	1500	12570	1250	10050	990	7540	740	5090	490	5090	490
16(-9)	25820	2540	23230	2280	20650	2020	18070	1770	15490	1510	12910	1260	10330	1000	7740	740	5230	490	5230	490
18(-8)	26490	2560	23850	2300	21200	2040	18550	1780	15900	1520	13250	1270	10600	1010	7950	750	5370	500	5370	500
19(-7)	27170	2570	24460	2310	21740	2050	19020	1790	16300	1530	13590	1270	10870	1010	8150	750	5500	500	5500	500
21(-6)	27380	2590	24640	2330	21900	2070	19160	1810	16430	1540	13690	1280	10950	1020	8210	760	5540	500	5540	500
23(-5)	27580	2610	24820	2340	22060	2080	19300	1820	16550	1550	13790	1290	11030	1030	8270	760	5580	510	5580	510
25(-4)	27780	2620	25000	2360	22220	2090	19440	1830	16670	1560	13890	1300	11110	1030	8330	770	5630	510	5630	510
27(-3)	27980	2640	25180	2370	22380	2110	19590	1840	16790	1570	13990	1310	11190	1040	8390	770	5670	510	5670	510
28(-2)	28180	2660	25360	2390	22540	2120	19730	1850	16910	1580	14090	1320	11270	1050	8450	780	5710	520	5710	520
30(-1)	28380	2680	25540	2410	22710	2130	19870	1860	17030	1590	14190	1320	11350	1050	8510	780	5750	520	5750	520
32(0)	28580	2690	25720	2420	22870	2150	20010	1880	17150	1600	14290	1330	11430	1060	8570	790	5790	520	5790	520
34(1)	28780	2710	25910	2440	23030	2160	20150	1890	17270	1610	14390	1340	11510	1070	8640	790	5830	530	5830	530
36(2)	28990	2730	26090	2450	23190	2180	20290	1900	17390	1620	14490	1350	11590	1070	8700	800	5870	530	5870	530
37(3)	29460	2760	26510	2480	23570	2200	20620	1930	17680	1650	14730	1370	11780	1090	8840	810	5970	540	5970	540
39(4)	29940	2800	26940	2520	23950	2230	20950	1950	17960	1670	14970	1390	11970	1100	8980	820	6060	550	6060	550
41(5)	30410	2840	27370	2550	24330	2260	21290	1980	18250	1690	15200	1400	12160	1120	9120	830	6160	550	6160	550
43(6)	38970	3030	35070	2730	31170	2420	27280	2110	23380	1810	19480	1500	15590	1200	11690	890	7890	590	7890	590
45(7)	40000	3080	36000	2770	32000	2460	28000	2150	24000	1840	20000	1530	16000	1210	12000	900	8100	600	8100	600
46(8)	41030	3130	36930	2810	32830	2500	28720	2180	24620	1860	20520	1550	16410	1230	12310	920	8310	610	8310	610
48(9)	42060	3180	37860	2850	33650	2530	29450	2210	25240	1890	21030	1570	16830	1250	12620	930	8520	620	8520	620
50(10)	43100	3220	38790	2900	34480	2570	30170	2250	25860	1920	21550	1600	17240	1270	12930	950	8730	630	8730	630
52(11)	44130	3270	39720	2940	35300	2610	30890	2280	26480	1950	22060	1620	17650	1290	13240	960	8940	640	8940	640
54(12)	45160	3320	40650	2980	36130	2650	31610	2310	27100	1980	22580	1640	18060	1310	13550	970	9150	650	9150	650
55(13)	46190	3370	41570	3030	36950	2690	32340	2350	27720	2010	23100	1670	18480	1330	13860	990	9350	660	9350	660
57(14)	47230	3410	42500	3070	37780	2720	33060	2380	28340	2040	23610	1690	18890	1350	14170	1000	9560	670	9560	670
59(15)	48260	3460	43430	3110	38610	2760	33780	2410	28950	2060	24130	1710	19300	1360	14480	1020	9770	670	9770	670

Indoor: RAV-HB421CTP-UL
Outdoor: RAV-BP421AT2P-UL

Operation range		Cooling		Heating	
		Q	P	Q	P
MINIMUM	Btu/h	8900	670	8100	460
RATING	Btu/h	42000	4243	47000	3980
MAXIMUM	Btu/h	47800	4700	61400	5910

Q : Capacity (Btu/h)
P : Power consumption (W)

Cooling

Outdoor Temperature DB °F(°C)	Parts Load (%)																			
	100		90		80		70		60		50		40		30		20		10	
	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P
68(20)	50090	3330	45080	2970	40070	2620	35060	2260	30050	1910	25040	1550	20030	1200	15030	840	10610	530	10610	530
70(21)	49550	3390	44590	3030	39640	2670	34680	2300	29730	1940	24770	1580	19820	1220	14860	850	10500	540	10500	540
72(22)	49010	3450	44110	3080	39210	2710	34300	2350	29400	1980	24500	1610	19600	1240	14700	870	10380	550	10380	550
73(23)	48470	3510	43620	3140	38770	2760	33930	2390	29080	2010	24230	1640	19390	1260	14540	890	10270	550	10270	550
75(24)	47930	3570	43140	3190	38340	2810	33550	2430	28760	2050	23960	1660	19170	1280	14380	900	10160	560	10160	560
77(25)	47390	3630	42650	3250	37910	2860	33170	2470	28430	2080	23700	1690	18960	1300	14220	920	10040	570	10040	570
79(26)	46850	3700	42170	3300	37480	2910	32800	2510	28110	2120	23430	1720	18740	1330	14060	930	9930	580	9930	580
81(27)	46310	3760	41680	3360	37050	2950	32420	2550	27790	2150	23160	1750	18520	1350	13890	950	9810	590	9810	590
82(28)	45770	3820	41200	3410	36620	3000	32040	2590	27460	2190	22890	1780	18310	1370	13730	960	9700	600	9700	600
84(29)	45230	3880	40710	3460	36190	3050	31660	2630	27140	2220	22620	1810	18090	1390	13570	980	9590	610	9590	610
86(30)	44700	3940	40230	3520	35760	3100	31290	2680	26820	2260	22350	1830	17880	1410	13410	990	9470	620	9470	620
88(31)	44160	4000	39740	3570	35320	3140	30910	2720	26490	2290	22080	1860	17660	1440	13250	1010	9360	630	9360	630
90(32)	43620	4060	39260	3630	34890	3190	30530	2760	26170	2330	21810	1890	17450	1460	13090	1020	9240	640	9240	640
91(33)	43080	4120	38770	3680	34460	3240	30150	2800	25850	2360	21540	1920	17230	1480	12920	1040	9130	650	9130	650
93(34)	42540	4180	38290	3740	34030	3290	29780	2840	25520	2390	21270	1950	17020	1500	12760	1050	9010	660	9010	660
95(35)	42000	4240	37800	3790	33600	3340	29400	2880	25200	2430	21000	1980	16800	1520	12600	1070	8900	670	8900	670
97(36)	41460	4300	37310	3840	33170	3380	29020	2920	24880	2460	20730	2000	16580	1540	12440	1080	8790	680	8790	680
99(37)	40920	4360	36830	3900	32740	3430	28650	2970	24550	2500	20460	2030	16370	1570	12280	1100	8670	690	8670	690
100(38)	40380	4430	36340	3950	32310	3480	28270	3010	24230	2530	20190	2060	16150	1590	12110	1120	8560	700	8560	700
102(39)	39840	4490	35860	4010	31880	3530	27890	3050	23910	2570	19920	2090	15940	1610	11950	1130	8440	710	8440	710
104(40)	39310	4550	35370	4060	31440	3580	27510	3090	23580	2600	19650	2120	15720	1630	11790	1150	8330	720	8330	720
106(41)	38770	4610	34890	4120	31010	3620	27140	3130	23260	2640	19380	2150	15510	1650	11630	1160	8210	730	8210	730
108(42)	38230	4670	34400	4170	30580	3670	26760	3170	22940	2670	19110	2170	15290	1680	11470	1180	8100	740	8100	740
109(43)	37690	4730	33920	4220	30150	3720	26380	3210	22610	2710	18840	2200	15080	1700	11310	1190	7990	750	7990	750
111(44)	37150	4790	33430	4280	29720	3770	26000	3250	22290	2740	18570	2230	14860	1720	11140	1210	7870	760	7870	760
113(45)	36610	4850	32950	4330	29290	3810	25630	3300	21970	2780	18310	2260	14640	1740	10980	1220	7760	770	7760	770
115(46)	36070	4910	32460	4390	28860	3860	25250	3340	21640	2810	18040	2290	14430	1760	10820	1240	7640	780	7640	780

Heating

Outdoor Temperature DB °F(°C)	Parts Load (%)																			
	100		90		80		70		60		50		40		30		20		10	
	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P
-13(-25)	19160	2740	17240	2450	15330	2150	13410	1860	11490	1570	9580	1280	7660	980	5750	690	3830	400	3300	320
-11(-24)	19580	2780	17630	2480	15670	2180	13710	1890	11750	1590	9790	1290	7830	1000	5880	700	3920	400	3380	320
-9(-23)	20010	2820	18010	2520	16010	2220	14010	1910	12010	1610	10000	1310	8000	1010	6000	710	4000	410	3450	330
-8(-22)	20430	2860	18390	2550	16350	2250	14300	1940	12260	1640	10220	1330	8170	1030	6130	720	4090	410	3520	330
-6(-21)	20860	2900	18770	2590	16690	2280	14600	1970	12520	1660	10430	1350	8340	1040	6260	730	4170	420	3600	330
-4(-20)	21290	2940	19160	2620	17030	2310	14900	1990	12770	1680	10640	1370	8510	1050	6390	740	4260	430	3670	340
-2(-19)	22140	2970	19920	2660	17710	2340	15500	2020	13280	1700	11070	1390	8860	1070	6640	750	4430	430	3820	340
0(-18)	22990	3010	20690	2690	18390	2370	16090	2050	13790	1730	11490	1400	9200	1080	6900	760	4600	440	3960	350
1(-17)	23840	3050	21460	2730	19070	2400	16690	2070	14300	1750	11920	1420	9540	1100	7150	770	4770	440	4110	350
3(-16)	24690	3090	22220	2760	19750	2430	17280	2100	14820	1770	12350	1440	9880	1110	7410	780	4940	450	4260	360
5(-15)	25540	3130	22990	2800	20430	2460	17880	2130	15330	1790	12770	1460	10220	1120	7660	790	5110	450	4400	360
7(-14)	26340	3160	23710	2820	21070	2480	18440	2140	15810	1810	13170	1470	10540	1130	7900	800	5270	460	4540	360
9(-13)	27140	3180	24430	2840	21710	2500	19000	2160	16280	1820	13570	1480	10860	1140	8140	800	5430	460	4680	370
10(-12)	27940	3200	25140	2860	22350	2520	19560	2180	16760	1830	13970	1490	11180	1150	8380	810	5590	470	4810	370
12(-11)	28740	3230	25860	2880	22990	2540	20120	2190	17240	1850	14370	1500	11490	1160	8620	810	5750	470	4950	370
14(-10)	29530	3250	26580	2910	23630	2560	20670	2210	17720	1860	14770	1510	11810	1170	8860	820	5910	470	5090	380
16(-9)	30330	3280	27300	2930	24270	2580	21230	2230	18200	1880	15170	1530	12130	1180	9100	830	6070	480	5230	380
18(-8)	31130	3300	28020	2950	24900	2600	21790	2240	18680	1890	15570	1540	12450	1180	9340	830	6230	480	5370	380
19(-7)	31930	3330	28740	2970	25540	2620	22350	2260	19160	1900	15960	1550	12770	1190	9580	840	6390	480	5500	380
21(-6)	32170	3350	28950	2990	25730	2630	22520	2270	19300	1920	16080	1560	12870	1200	9650	840	6430	490	5540	390
23(-5)	32400	3370	29160	3010	25920	2650	22680	2290	19440	1930	16200	1570	12960	1210	9720	850	6480	490	5580	390
25(-4)	32640	3390	29380	3030	26110	2670	22850	2300	19580	1940	16320	1580	13060	1220	9790	850	6530	490	5630	390
27(-3)	32880	3410	29590	3050	26300	2680	23010	2320	19730	1950	16440	1590	13150	1220	9860	860	6580	500	5670	390
28(-2)	33110	3440	29800	3070	26490	2700	23180	2330	19870	1970	16560	1600	13240	1230	9930	870	6620	500	5710	400
30(-1)	33350	3460	30010	3090	26680	2720	23340	2350	20010	1980	16670	1610	13340	1240	10000	870	6670	500	5750	400
32(0)	33580	3480	30230	3110	26870	2740	23510	2360	20150	1990	16790	1620	13430	1250	10080	880	6720	500	5790	400
34(1)	33820	3500	30440	3130	27060	2750	23680	2380	20290	2000	16910	1630	13530	1260	10150	880	6760	510	5830	400
36(2)	34060	3520	30650	3150	27250	2770	23840	2390	20430	2020	17030	1640	13620	1260	10220	890	6810	510	5870	410
37(3)	34620	3570	31150	3190	27690	2810	24230	2430	20770	2040	17310	1660	13850	1280	10380	900	6920	520	5970	410
39(4)	35170	3620	31660	3230	28140	2840	24620	2460	21100	2070	17590	1680	14070	1300	10550	910	7030	520	6060	420
41(5)	35730	3660	32160	3270	28590	2880	25010	2490	21440	2100	17870	1710	14290	1310	10720	920	7150	530	6160	420
43(6)	45790	3920	41210	3500	36630	3080	32050	2660	27470	2240	22890	1820	18310	1410	13740	990	9160	570	7890	450
45(7)	47000	3980	42300	3550	37600	3130	32900	2700	28200	2280	23500	1850	18800	1430	14100	1000	9400	580	8100	460
46(8)	48210	4040	43390	3610	38570	3180	33750	2750	28930	2310	24110	1880	19290	1450	14460	1020	9640	590	8310	470
48(9)	49430	4100	44480	3660	39540	3230	34600	2790	29660	2350	24710	1910	19770	1470	14830	1030	9890	600	8520	470
50(10)	50640	4160	45570	3720	40510	3270	35450	2830	30380	2380	25320	1940	20260	1490	15190	1050	10130	600	8730	480
52(11)	51850	4230	46670	3770	41480	3320	36300	2870	31110	2420	25930	1970	20740	1520	15560	1070	10370	610	8940	490
54(12)	53060	4290	47760	3830	42450	3370	37150	2910	31840	2460	26530	2000	21230	1540	15920	1080	10610	620	9150	500
55(13)	54280	4350	48850	3880	43420	3420	37990	2960	32570	2490	27140	2030	21710	1560	16280	1100	10860	630	9350	500
57(14)	55490	4410	49940	3940	44390	3470	38840	3000	33290	2530	27750	2050	22200	1580	16650	1110	11100	640	9560	510
59(15)	56700	4470	51030	4000	45360	3520	39690	3040	34020	2560	28350	2080	22680	1610	17010	1130	11340	650	9770	520

Indoor: RAV-HB481CTP-UL
Outdoor: RAV-BP481AT2P-UL

Operation range	Cooling		Heating		
	Q	P	Q	P	
MINIMUM	Btu/h	8900	670	8100	530
RATING	Btu/h	48000	5220	54000	4910
MAXIMUM	Btu/h	54600	5650	64800	5800

Q : Capacity (Btu/h)
P : Power consumption (W)

Cooling

Outdoor Temperature DB °F(°C)	Parts Load (%)																			
	100		90		80		70		60		50		40		30		20		10	
	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P
68(20)	57240	4100	51520	3660	45790	3220	40070	2780	34340	2340	28620	1910	22900	1470	17170	1030	11450	590	10610	530
70(21)	56620	4170	50960	3730	45300	3280	39640	2830	33970	2390	28310	1940	22650	1490	16990	1050	11320	600	10500	540
72(22)	56010	4250	50410	3790	44810	3340	39210	2880	33600	2430	28000	1970	22400	1520	16800	1070	11200	610	10380	550
73(23)	55390	4320	49850	3860	44310	3400	38770	2930	33240	2470	27700	2010	22160	1550	16620	1080	11080	620	10270	550
75(24)	54780	4400	49300	3930	43820	3460	38340	2990	32870	2510	27390	2040	21910	1570	16430	1100	10960	630	10160	560
77(25)	54160	4470	48740	3990	43330	3510	37910	3040	32500	2560	27080	2080	21660	1600	16250	1120	10830	640	10040	570
79(26)	53540	4550	48190	4060	42840	3570	37480	3090	32130	2600	26770	2110	21420	1630	16060	1140	10710	650	9930	580
81(27)	52930	4620	47640	4130	42340	3630	37050	3140	31760	2640	26460	2150	21170	1650	15880	1160	10590	670	9810	590
82(28)	52310	4700	47080	4190	41850	3690	36620	3190	31390	2690	26160	2180	20920	1680	15690	1180	10460	680	9700	600
84(29)	51700	4770	46530	4260	41360	3750	36190	3240	31020	2730	25850	2220	20680	1710	15510	1200	10340	690	9590	610
86(30)	51080	4850	45970	4330	40860	3810	35760	3290	30650	2770	25540	2250	20430	1730	15320	1220	10220	700	9470	620
88(31)	50460	4920	45420	4390	40370	3870	35320	3340	30280	2810	25230	2290	20190	1760	15140	1230	10090	710	9360	630
90(32)	49850	5000	44860	4460	39880	3930	34890	3390	29910	2860	24920	2320	19940	1790	14950	1250	9970	720	9240	640
91(33)	49230	5070	44310	4530	39390	3990	34460	3440	29540	2900	24620	2360	19690	1820	14770	1270	9850	730	9130	650
93(34)	48620	5150	43750	4590	38890	4040	34030	3490	29170	2940	24310	2390	19450	1840	14580	1290	9720	740	9010	660
95(35)	48000	5220	43200	4660	38400	4100	33600	3540	28800	2990	24000	2430	19200	1870	14400	1310	9600	750	8900	670
97(36)	47380	5290	42650	4730	37910	4160	33170	3600	28430	3030	23690	2460	18950	1900	14220	1330	9480	760	8790	680
99(37)	46770	5370	42090	4800	37410	4220	32740	3650	28060	3070	23380	2500	18710	1920	14030	1350	9350	770	8670	690
100(38)	46150	5440	41540	4860	36920	4280	32310	3700	27690	3110	23080	2530	18460	1950	13850	1370	9230	780	8560	700
102(39)	45540	5520	40980	4930	36430	4340	31880	3750	27320	3160	22770	2570	18210	1980	13660	1390	9110	790	8440	710
104(40)	44920	5590	40430	5000	35940	4400	31440	3800	26950	3200	22460	2600	17970	2000	13480	1400	8980	810	8330	720
106(41)	44300	5670	39870	5060	35440	4460	31010	3850	26580	3240	22150	2640	17720	2030	13290	1420	8860	820	8210	730
108(42)	43690	5740	39320	5130	34950	4510	30580	3900	26210	3290	21840	2670	17480	2060	13110	1440	8740	830	8100	740
109(43)	43070	5820	38760	5200	34460	4570	30150	3950	25840	3330	21540	2710	17230	2080	12920	1460	8610	840	7990	750
111(44)	36030	5470	32420	4880	28820	4300	25220	3710	21620	3130	18010	2540	14410	1960	10810	1370	7210	790	6680	700
113(45)	34290	5470	30860	4880	27430	4300	24000	3710	20570	3130	17140	2540	13710	1960	10290	1370	6860	790	6360	700
115(46)	32540	5470	29290	4880	26030	4300	22780	3710	19530	3130	16270	2540	13020	1960	9760	1370	6510	790	6030	700

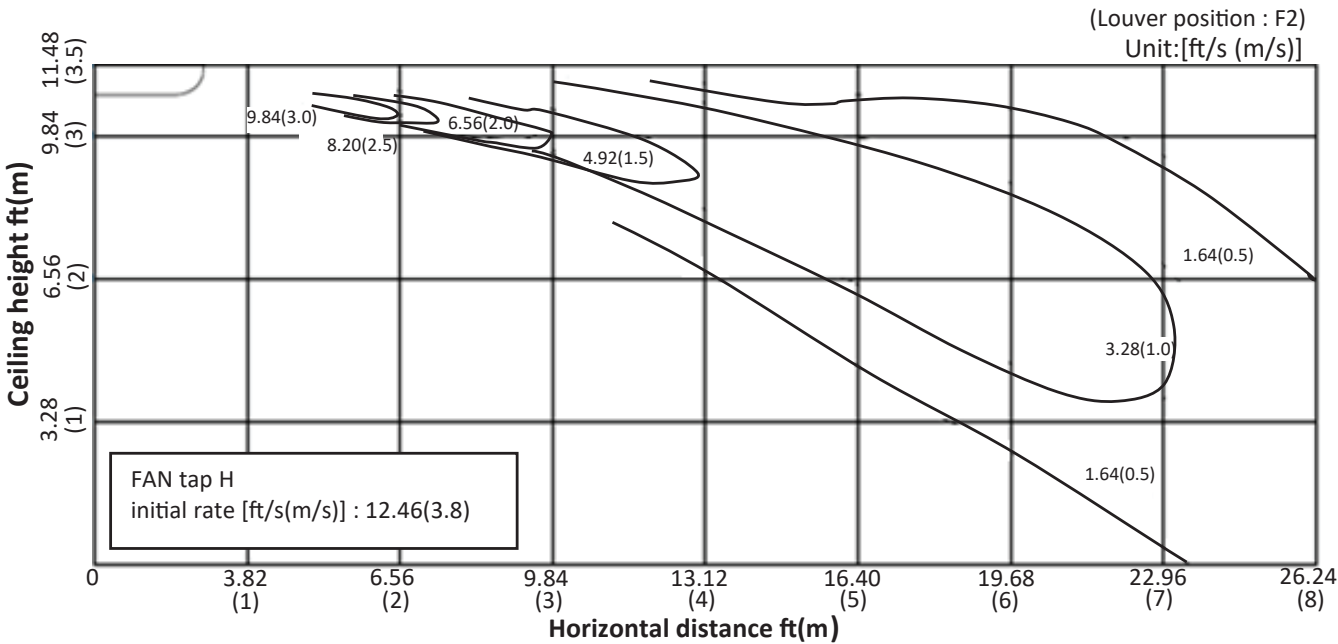
Heating

Outdoor Temperature DB °F(°C)	Parts Load (%)																			
	100		90		80		70		60		50		40		30		20		10	
	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P
-13(-25)	22010	3380	19810	3020	17610	2670	15410	2320	13210	1960	11010	1610	8800	1250	6600	900	4400	540	3300	360
-11(-24)	22500	3430	20250	3070	18000	2710	15750	2350	13500	1990	11250	1630	9000	1270	6750	910	4500	550	3380	370
-9(-23)	22990	3480	20690	3110	18390	2750	16090	2380	13790	2020	11490	1650	9200	1290	6900	920	4600	560	3450	380
-8(-22)	23480	3520	21130	3150	18780	2780	16430	2410	14090	2040	11740	1680	9390	1310	7040	940	4700	570	3520	380
-6(-21)	23970	3570	21570	3200	19170	2820	16780	2450	14380	2070	11980	1700	9590	1320	7190	950	4790	570	3600	390
-4(-20)	24460	3620	22010	3240	19570	2860	17120	2480	14670	2100	12230	1720	9780	1340	7340	960	4890	580	3670	390
-2(-19)	25430	3670	22890	3280	20350	2900	17800	2510	15260	2130	12720	1740	10170	1360	7630	970	5090	590	3820	400
0(-18)	26410	3720	23770	3330	21130	2940	18490	2550	15850	2160	13210	1770	10570	1380	7920	990	5280	600	3960	400
1(-17)	27390	3770	24650	3370	21910	2980	19170	2580	16430	2180	13700	1790	10960	1390	8220	1000	5480	600	4110	410
3(-16)	28370	3810	25530	3410	22700	3010	19860	2610	17020	2210	14180	1810	11350	1410	8510	1010	5670	610	4260	410
5(-15)	29350	3860	26410	3460	23480	3050	20540	2650	17610	2240	14670	1840	11740	1430	8800	1020	5870	620	4400	420
7(-14)	30260	3890	27240	3480	24210	3080	21190	2670	18160	2260	15130	1850	12110	1440	9080	1030	6050	620	4540	420
9(-13)	31180	3920	28060	3510	24950	3100	21830	2690	18710	2280	15590	1860	12470	1450	9350	1040	6240	630	4680	420
10(-12)	32100	3950	28890	3540	25680	3120	22470	2710	19260	2290	16050	1880	12840	1460	9630	1050	6420	630	4810	430
12(-11)	33020	3980	29710	3570	26410	3150	23110	2730	19810	2310	16510	1890	13210	1470	9900	1060	6600	640	4950	430
14(-10)	33930	4010	30540	3590	27150	3170	23750	2750	20360	2330	16970	1910	13570	1490	10180	1060	6790	640	5090	430
16(-9)	34850	4040	31370	3620	27880	3190	24400	2770	20910	2350	17430	1920	13940	1500	10460	1070	6970	650	5230	440
18(-8)	35770	4070	32190	3650	28610	3220	25040	2790	21460	2360	17880	1940	14310	1510	10730	1080	7150	650	5370	440
19(-7)	36680	4100	33020	3670	29350	3240	25680	2810	22010	2380	18340	1950	14670	1520	11010	1090	7340	660	5500	440
21(-6)	36960	4130	33260	3700	29570	3260	25870	2830	22170	2400	18480	1960	14780	1530	11090	1100	7390	660	5540	450
23(-5)	37230	4160	33510	3720	29780	3280	26060	2850	22340	2410	18610	1980	14890	1540	11170	1100	7450	670	5580	450
25(-4)	37500	4180	33750	3750	30000	3310	26250	2870	22500	2430	18750	1990	15000	1550	11250	1110	7500	670	5630	450
27(-3)	37770	4210	33990	3770	30220	3330	26440	2890	22660	2440	18890	2000	15110	1560	11330	1120	7550	680	5670	450
28(-2)	38040	4240	34240	3790	30430	3350	26630	2900	22830	2460	19020	2010	15220	1570	11410	1120	7610	680	5710	460
30(-1)	38320	4260	34480	3820	30650	3370	26820	2920	22990	2470	19160	2030	15330	1580	11490	1130	7660	680	5750	460
32(0)	38590	4290	34730	3840	30870	3390	27010	2940	23150	2490	19290	2040	15430	1590	11580	1140	7720	690	5790	460
34(1)	38860	4320	34970	3870	31090	3410	27200	2960	23320	2510	19430	2050	15540	1600	11660	1150	7770	690	5830	470
36(2)	39130	4350	35220	3890	31300	3430	27390	2980	23480	2520	19570	2070	15650	1610	11740	1150	7830	700	5870	470
37(3)	39770	4400	35790	3940	31820	3480	27840	3020	23860	2550	19890	2090	15910	1630	11930	1170	7950	710	5970	480
39(4)	40410	4460	36370	3990	32330	3530	28290	3060	24250	2590	20210	2120	16160	1650	12120	1180	8080	720	6060	480
41(5)	41050	4520	36950	4050	32840	3570	28740	3100	24630	2620	20530	2150	16420	1670	12320	1200	8210	730	6160	490
43(6)	52610	4830	47350	4330	42090	3820	36820	3310	31560	2800	26300	2300	21040	1790	15780	1280	10520	780	7890	520
45(7)	54000	4910	48600	4390	43200	3880	37800	3360	32400	2850	27000	2330	21600	1820	16200	1300	10800	790	8100	530
46(8)	55390	4990	49850	4460	44310	3940	38780	3420	33240	2890	27700	2370	22160	1850	16620	1320	11080	800	8310	540
48(9)	56790	5060	51110	4530	45430	4000	39750	3470	34070	2940	28390	2410	22710	1870	17040	1340	11360	810	8520	550
50(10)	58180	5140	52360	4600	46540	4060	40730	3520	34910	2980	29090	2440	23270	1900	17450	1360	11640	820	8730	560
52(11)	59570	5210	53620	4670	47660	4120	41700	3570	35740	3030	29790	2480	23830	1930	17870	1380	11910	840	8940	560
54(12)	60970	5290	54870	4730	48770	4180	42680	3620	36580	3070	30480	2510	24390	1960	18290	1400	12190	850	9150	570
55(13)	62360	5370	56130	4800	49890	4240	43650	3680	37420	3110	31180	2550	24940	1990	18710	1420	12470	860	9350	580
57(14)	63750	5440	57380	4870	51000	4300	44630	3730	38250	3160	31880	2590	25500	2020	19130	1440	12750	870	9560	590
59(15)	65150	5520	58630	4940	52120	4360	45600	3780	39090	3200	32570	2620	26060	2040	19540	1460	13030	890	9770	600

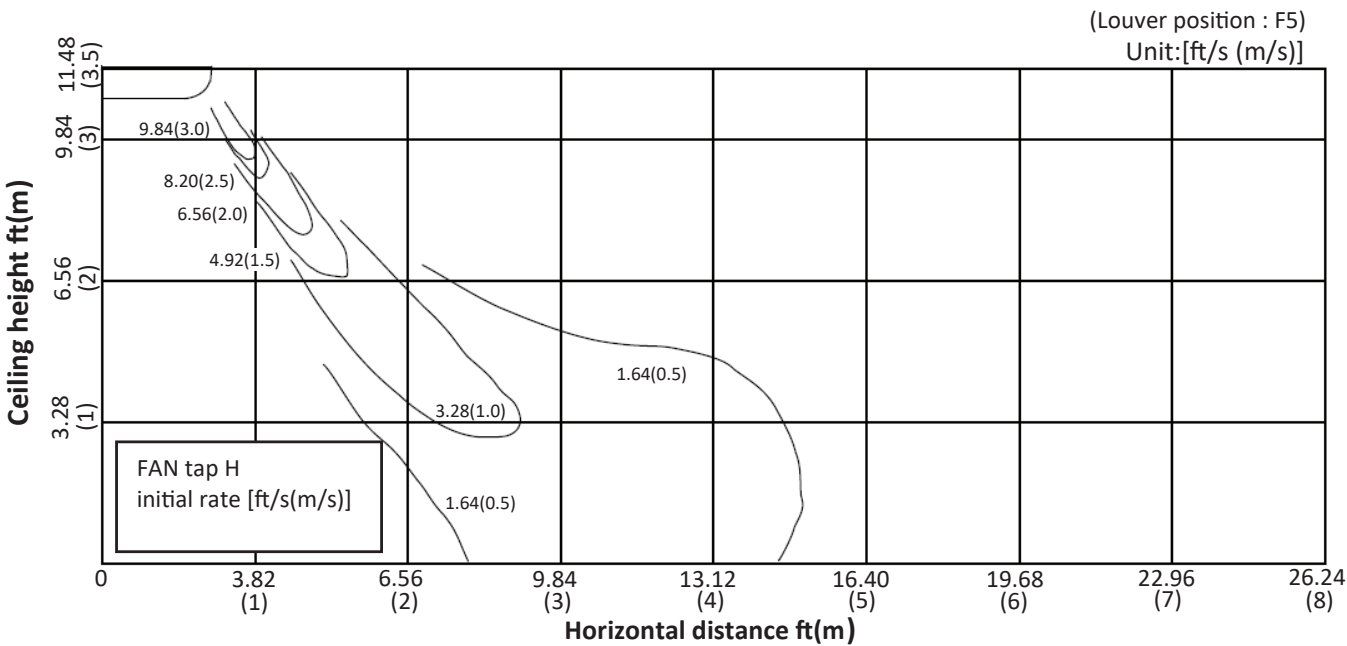
2-2-6. Air Throw Distance Chart

RAV-HB181CTP-UL

Cooling



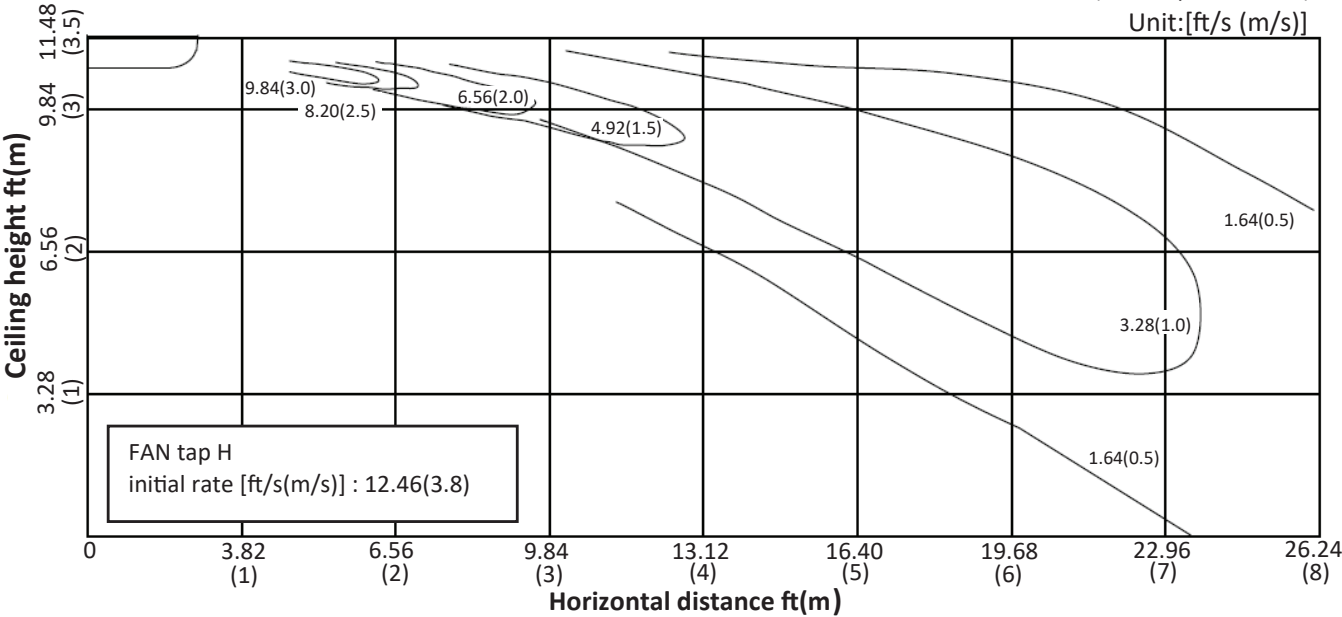
Heating



RAV-HB*__1CTP-UL (*24 / 30)

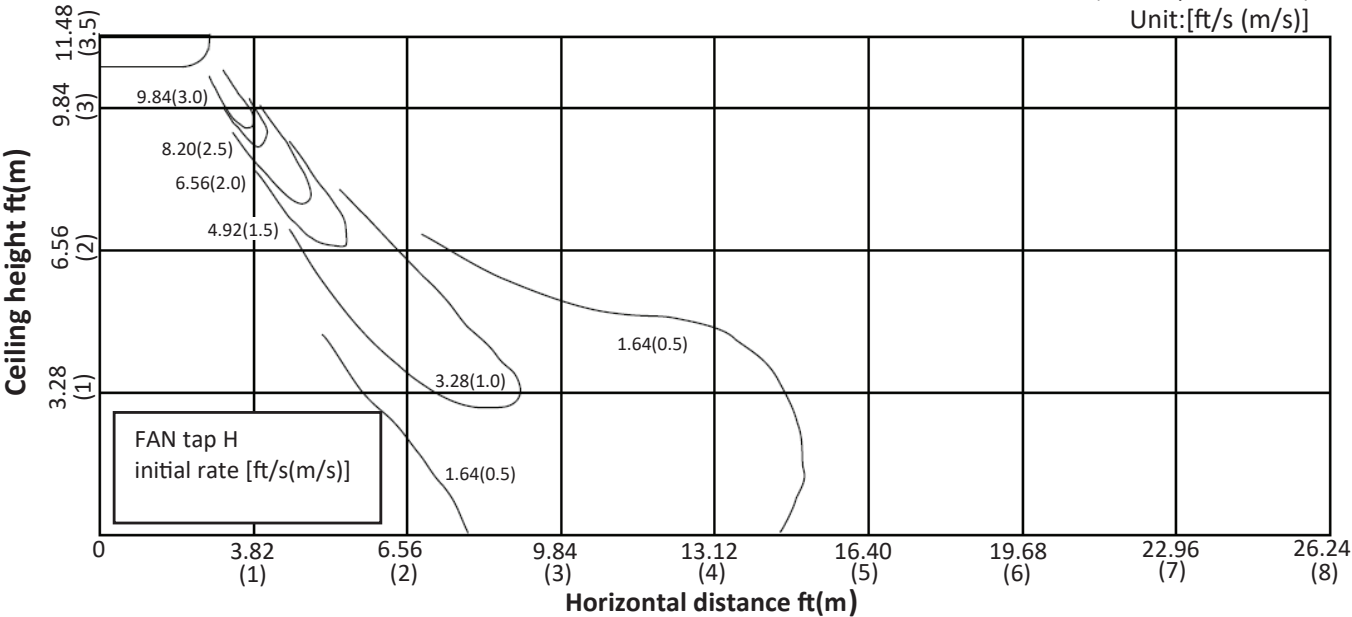
Cooling

(Louver position : F2)
Unit:[ft/s (m/s)]



Heating

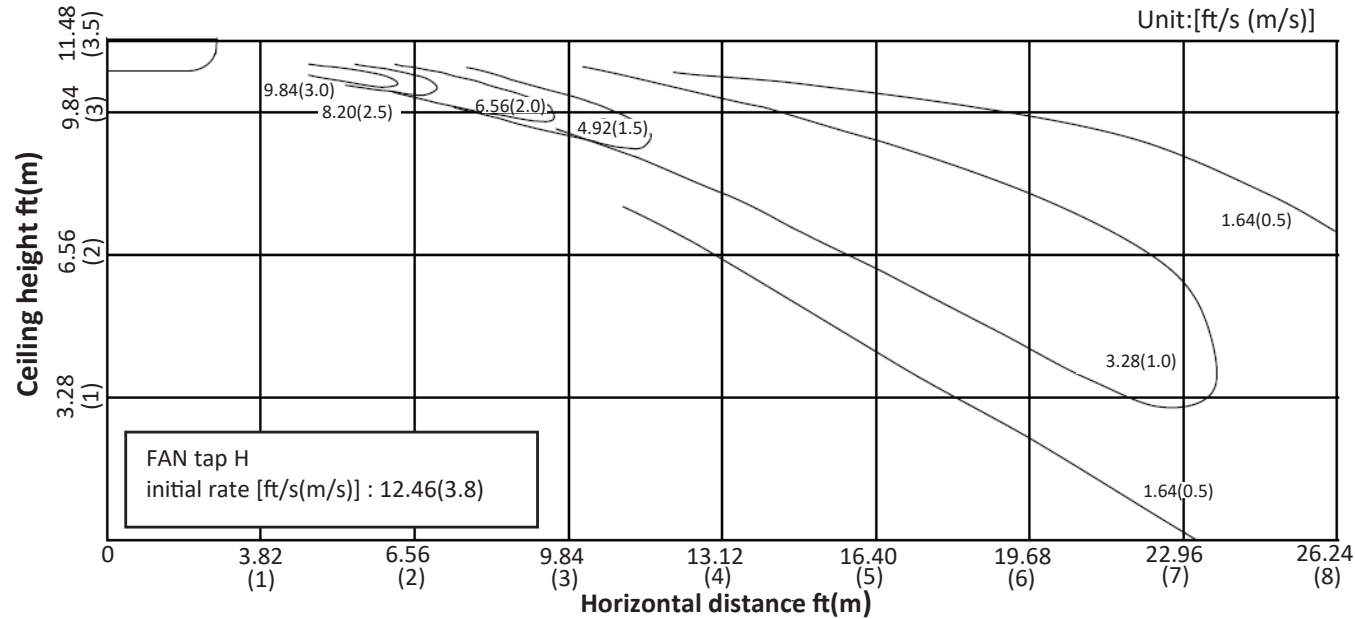
(Louver position : F5)
Unit:[ft/s (m/s)]



RAV-HB*__1CTP-UL (*36 / 42)

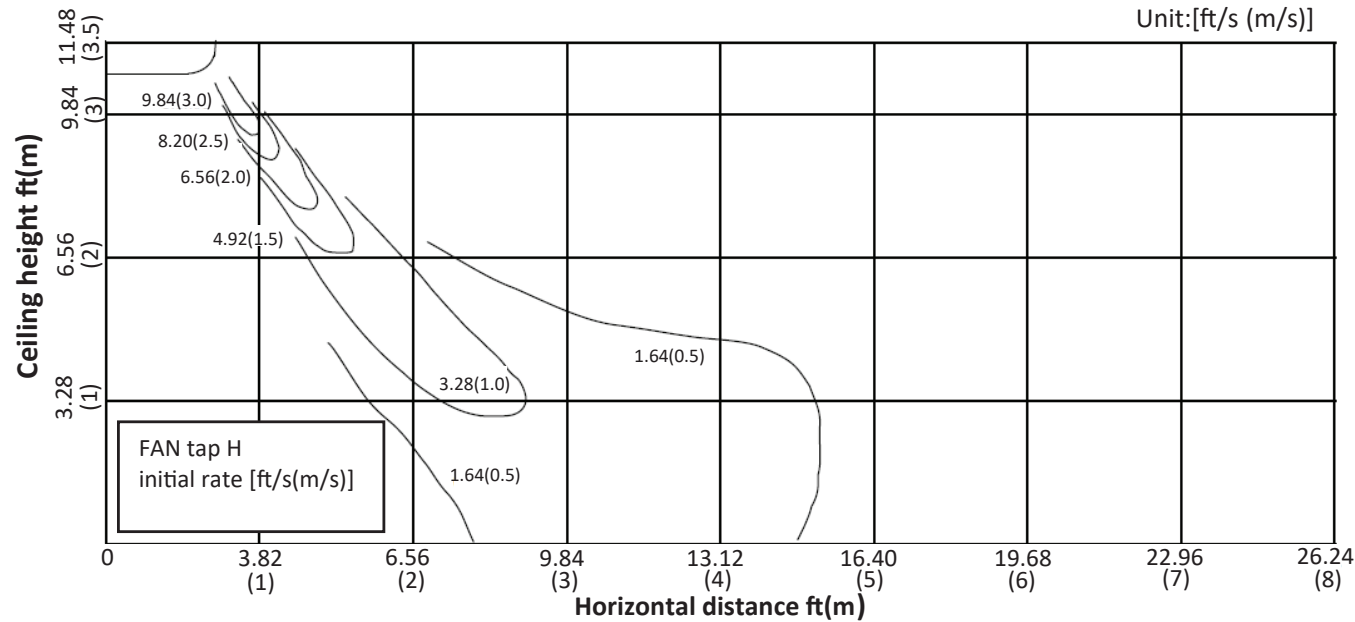
Cooling

(Louver position : F2)
Unit:[ft/s (m/s)]



Heating

(Louver position : F5)
Unit:[ft/s (m/s)]

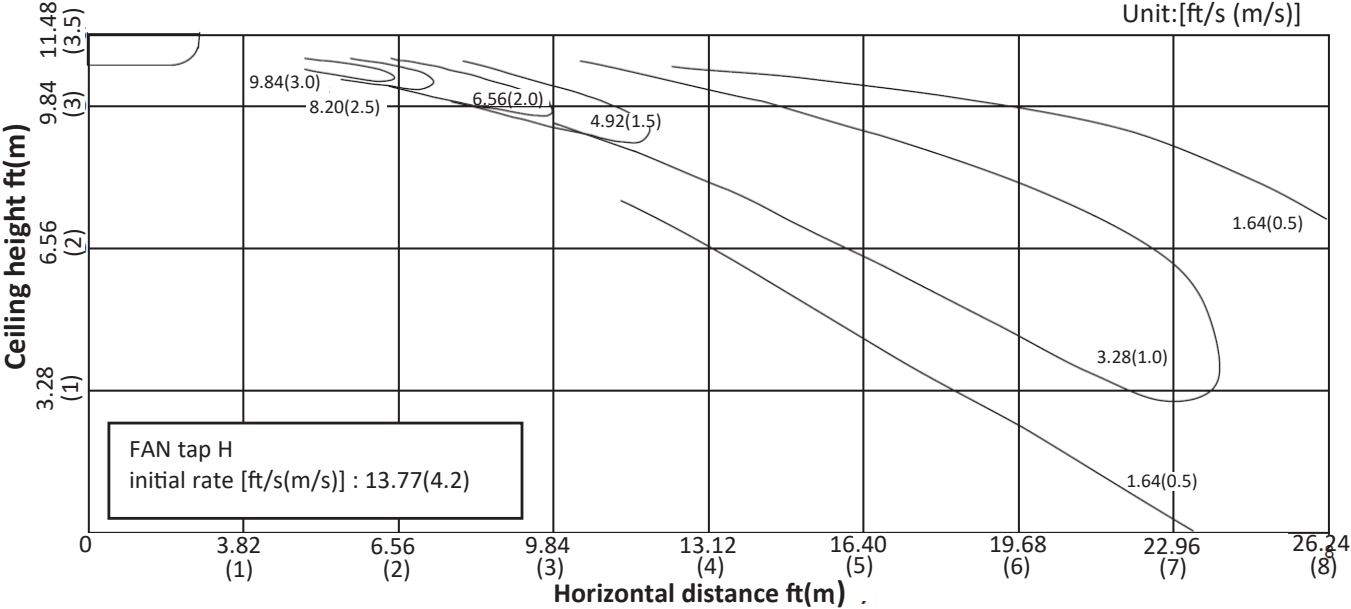


RAV-HB481CTP-UL

RAV-HB481CTP-UL

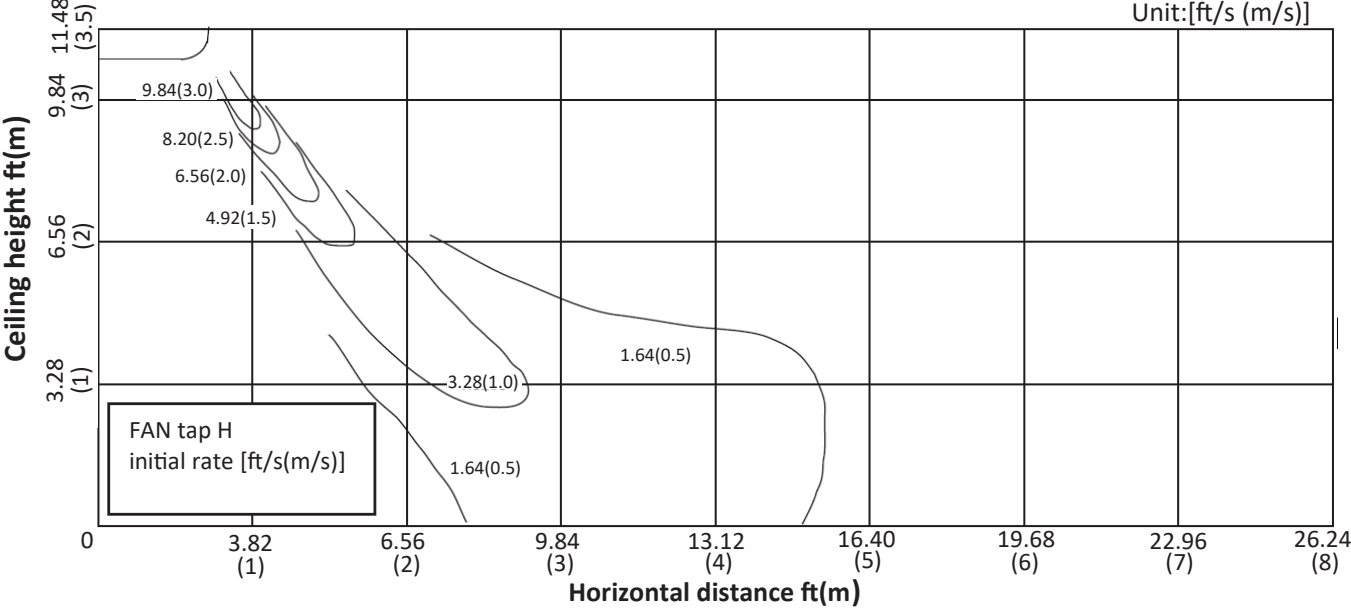
Cooling

(Louver position : F2)
Unit:[ft/s (m/s)]



Heating

(Louver position : F5)
Unit:[ft/s (m/s)]

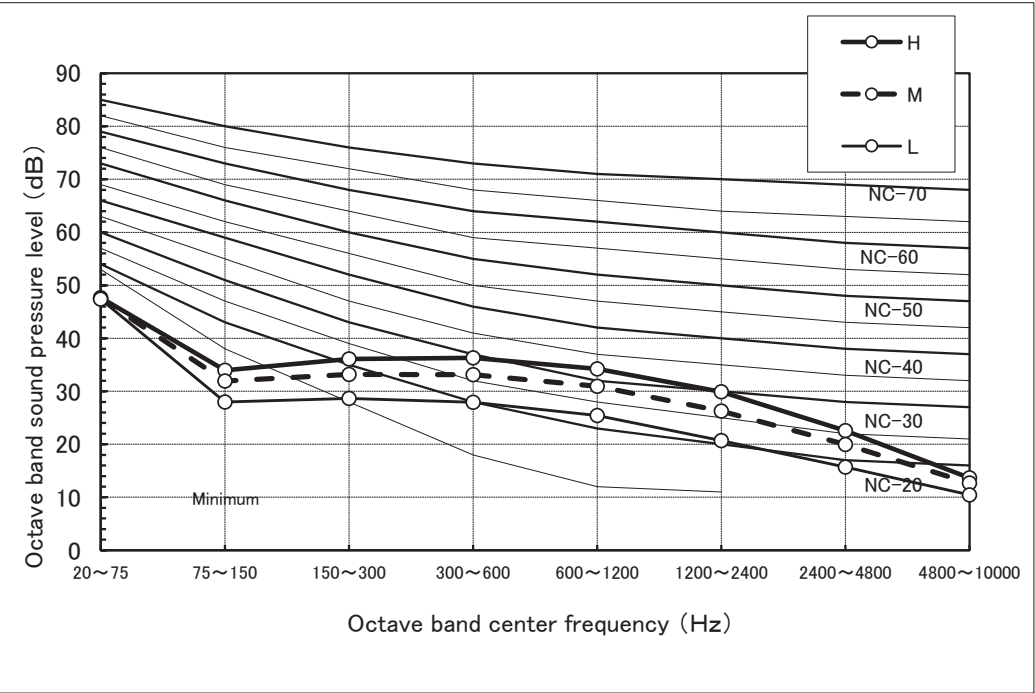
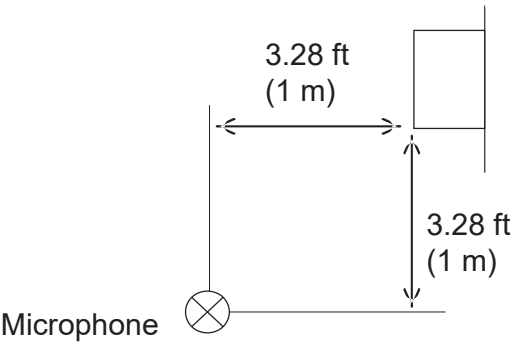


2-2-7. Sound characteristics (NC curve)

RAV-HB181CTP-UL

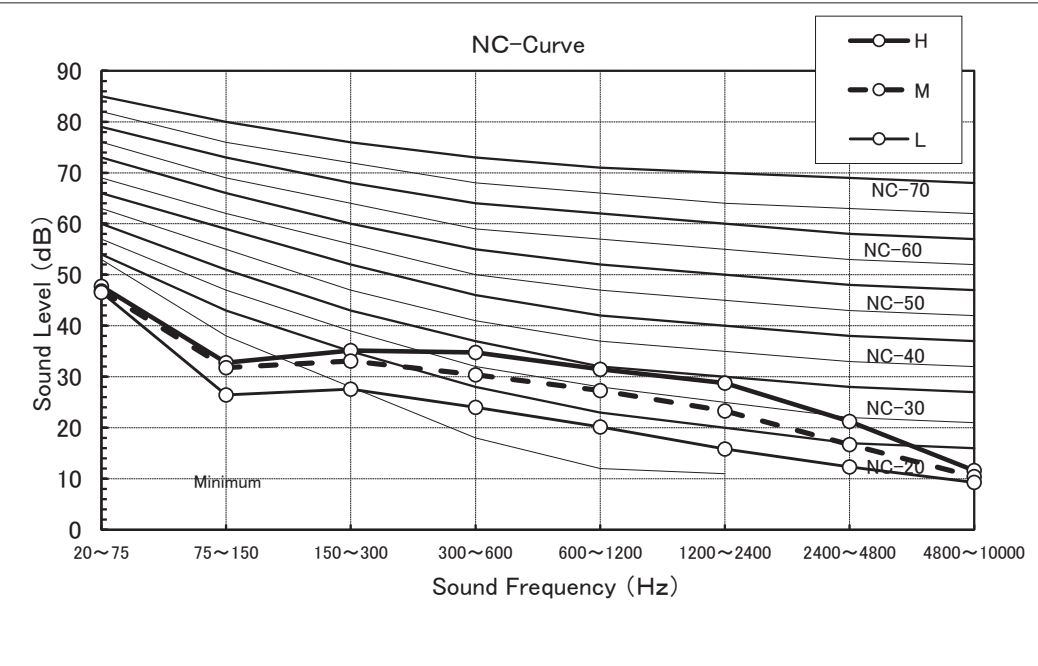
Cooling

Specification (dB)			
Fan tap	H	M	L
Sound pressure level (dB(A))	39	36	29



Heating

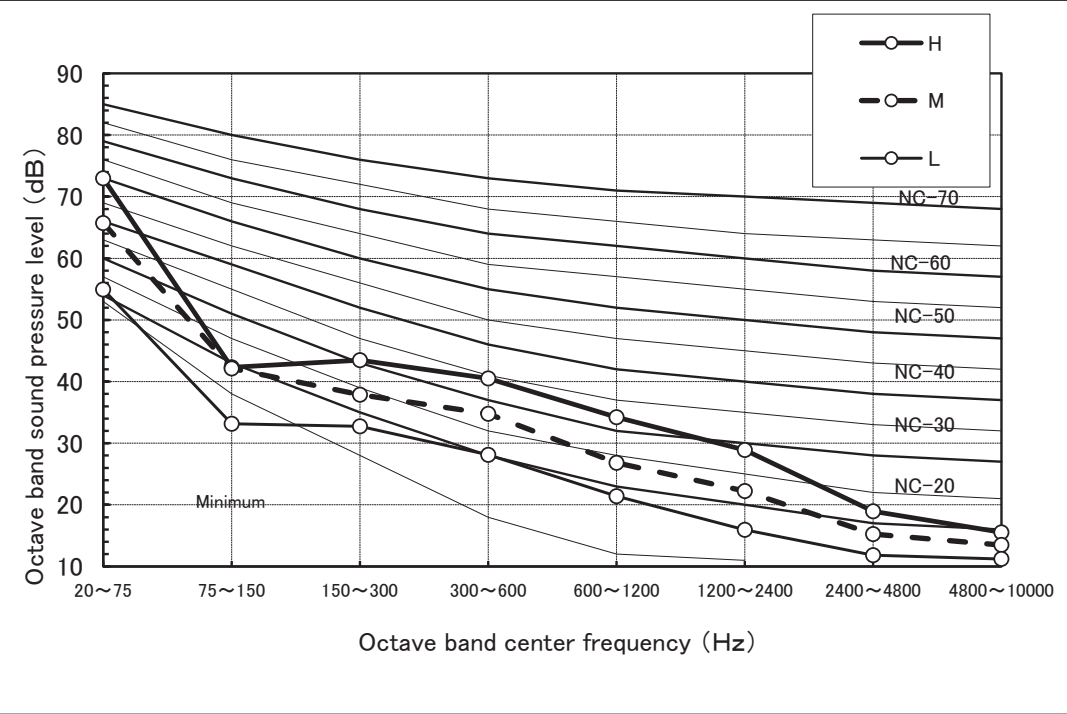
Specification (dB)			
Fan tap	H	M	L
Sound pressure level (dB(A))	39	36	29



RAV-HB241CTP-UL

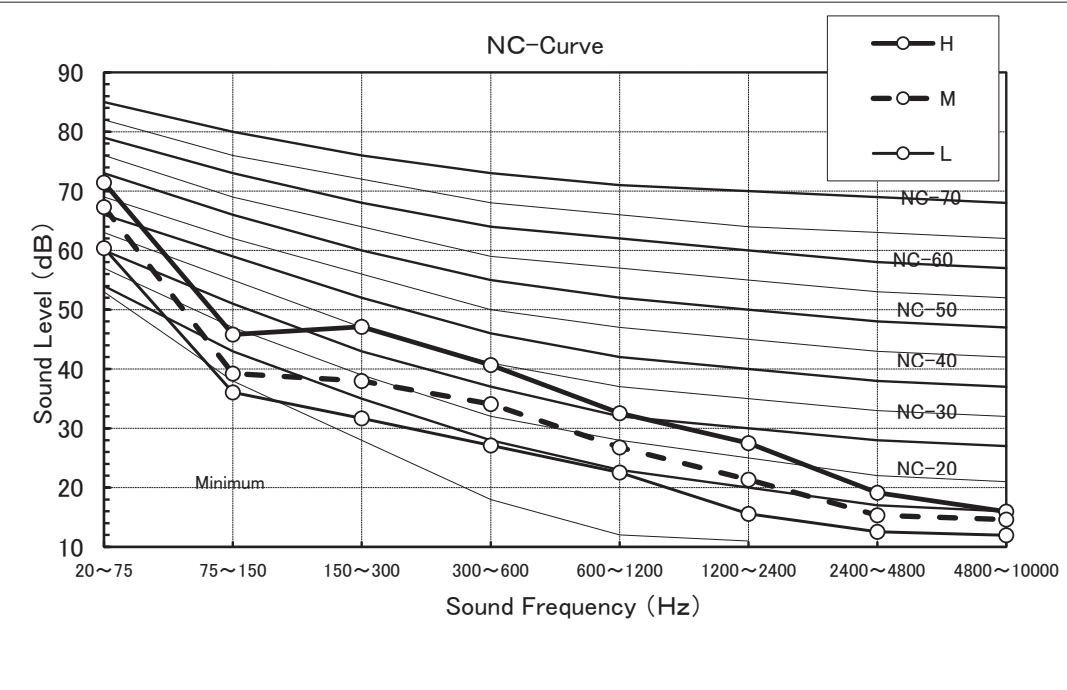
Cooling

Specification (dB)			
Fan tap	H	M	L
Sound pressure level (dB(A))	41	36	29



Heating

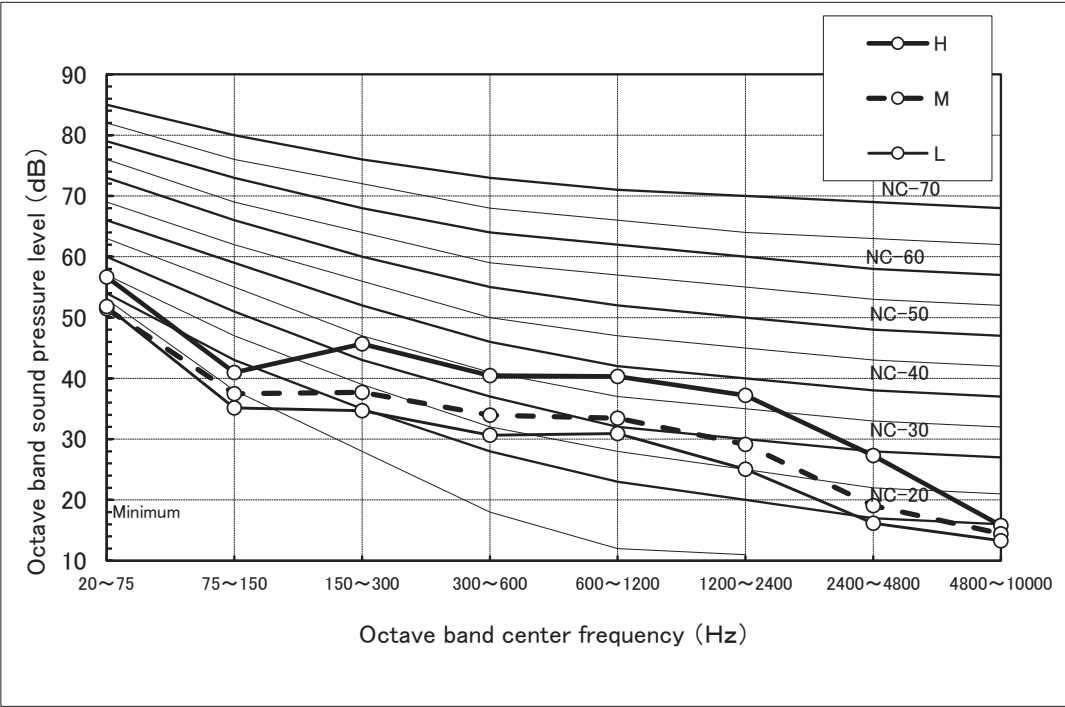
Specification (dB)			
Fan tap	H	M	L
Sound pressure level (dB(A))	41	36	29



RAV-HB301CTP-UL

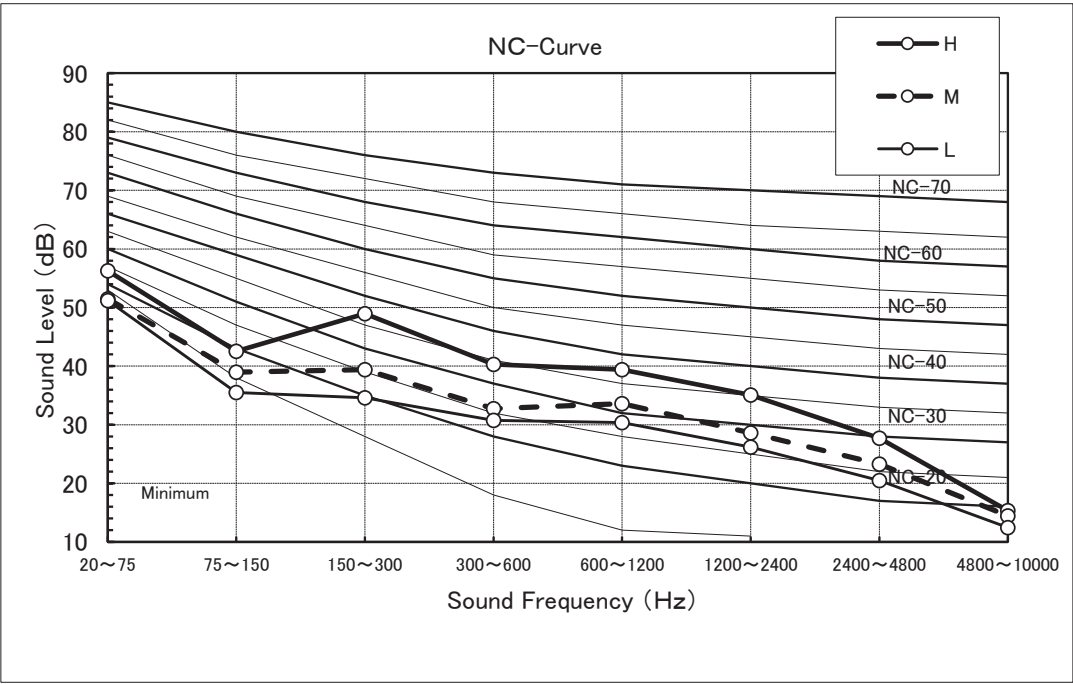
Cooling

Specification (dB)			
Fan tap	H	M	L
Sound pressure level (dB(A))	43	36	33



Heating

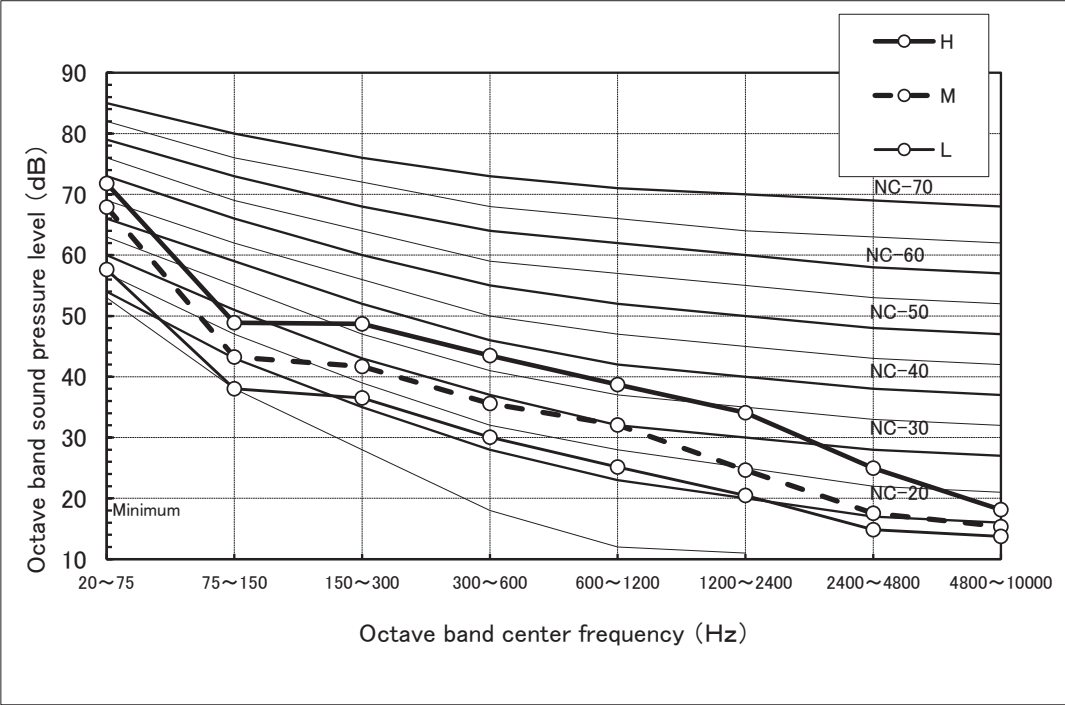
Specification (dB)			
Fan tap	H	M	L
Sound pressure level (dB(A))	43	36	33



RAV-HB361CTP-UL

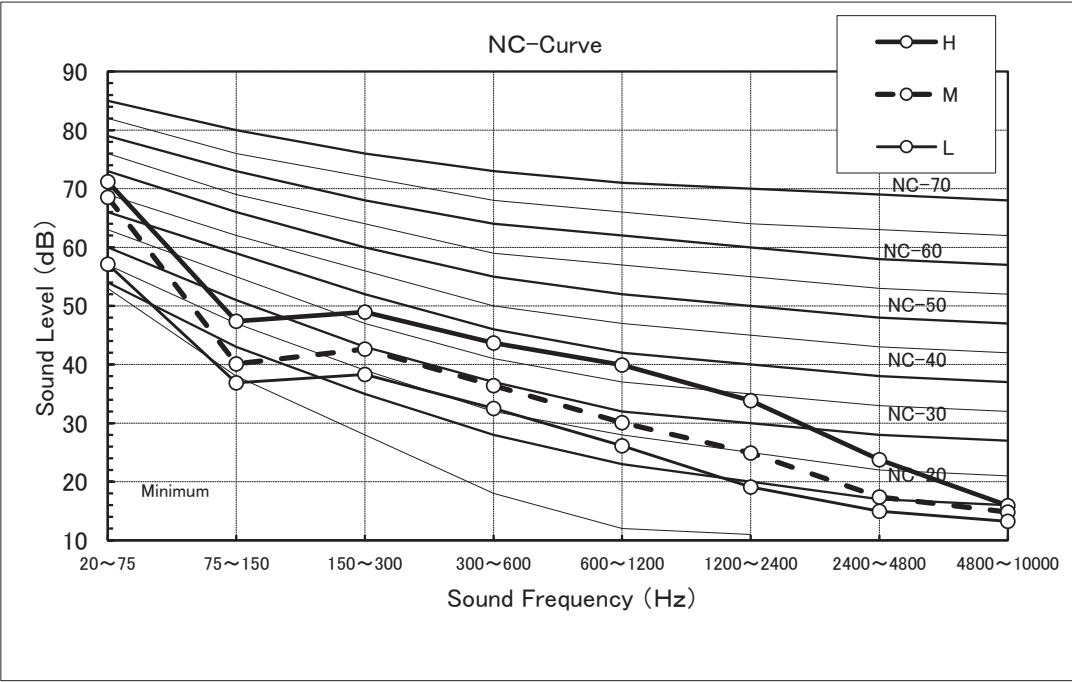
Cooling

Specification (dB)			
Fan tap	H	M	L
Sound pressure level (dB(A))	44	38	32



Heating

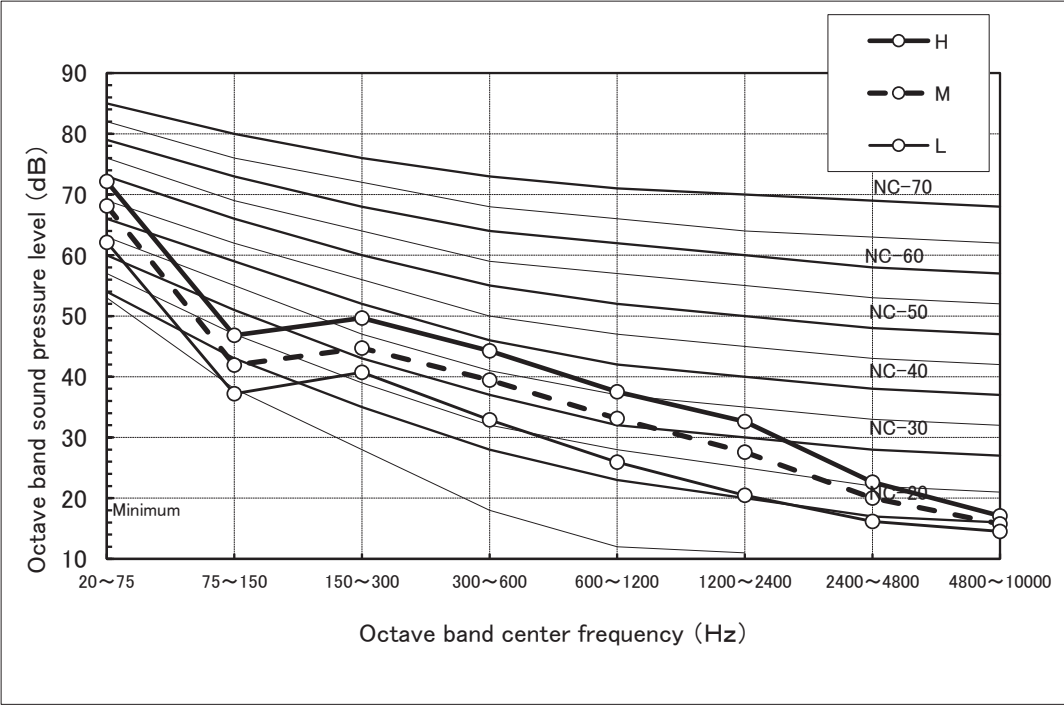
Specification (dB)			
Fan tap	H	M	L
Sound pressure level (dB(A))	44	38	32



RAV-HB421CTP-UL

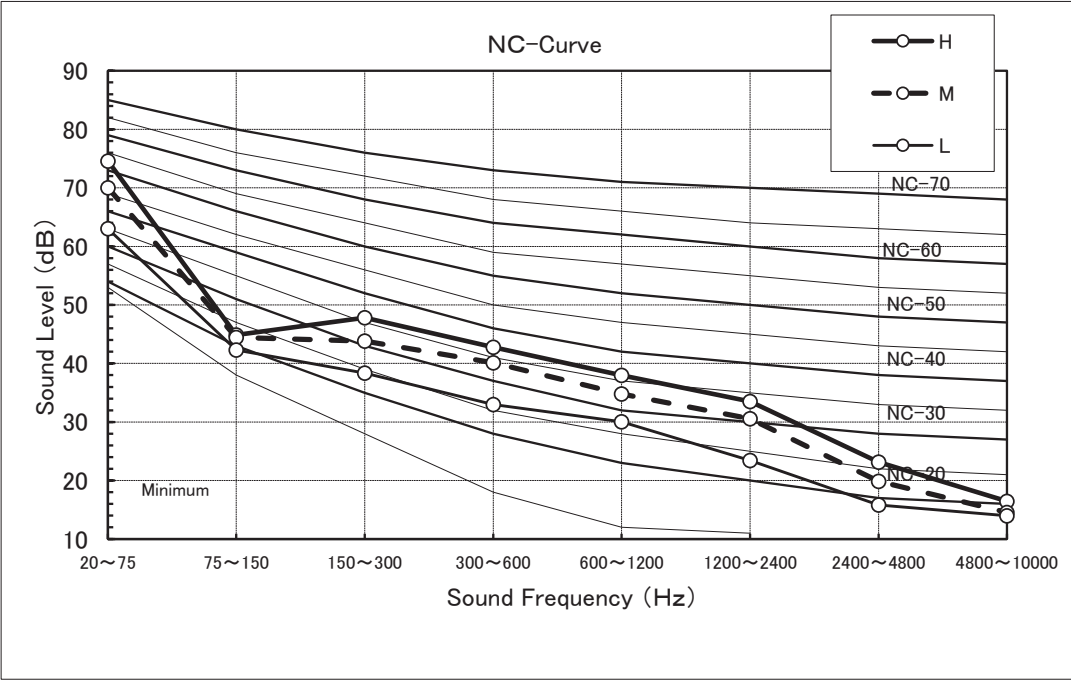
Cooling

Specification (dB)			
Fan tap	H	M	L
Sound pressure level (dB(A))	44	41	35



Heating

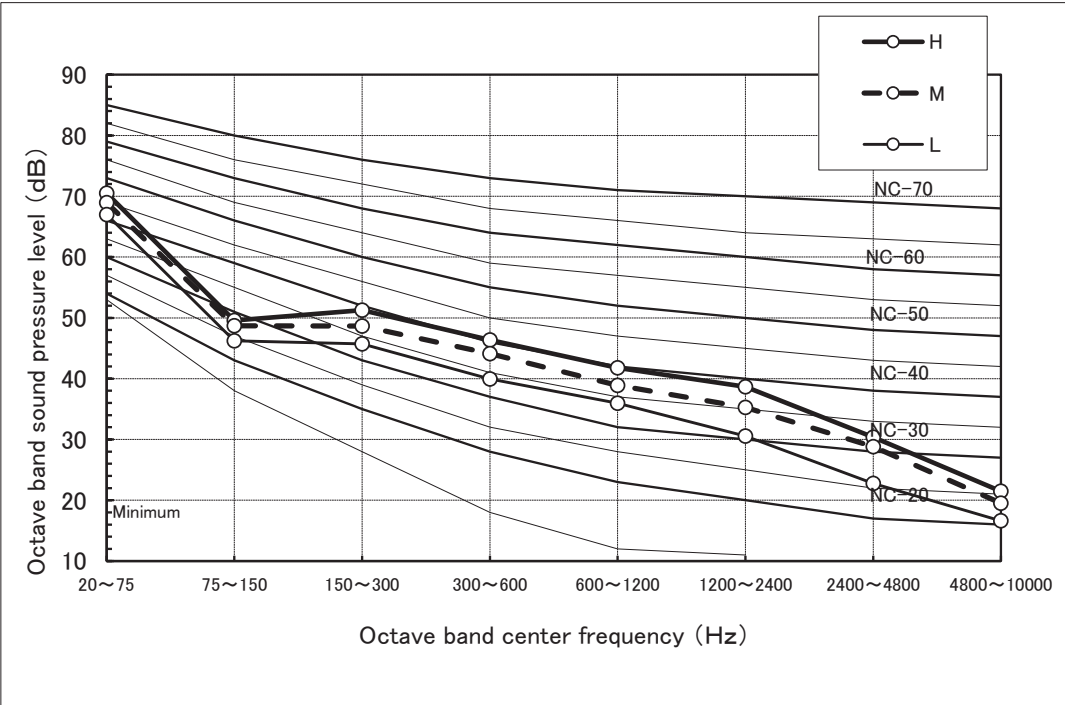
Specification (dB)			
Fan tap	H	M	L
Sound pressure level (dB(A))	44	41	35



RAV-HB481CTP-UL

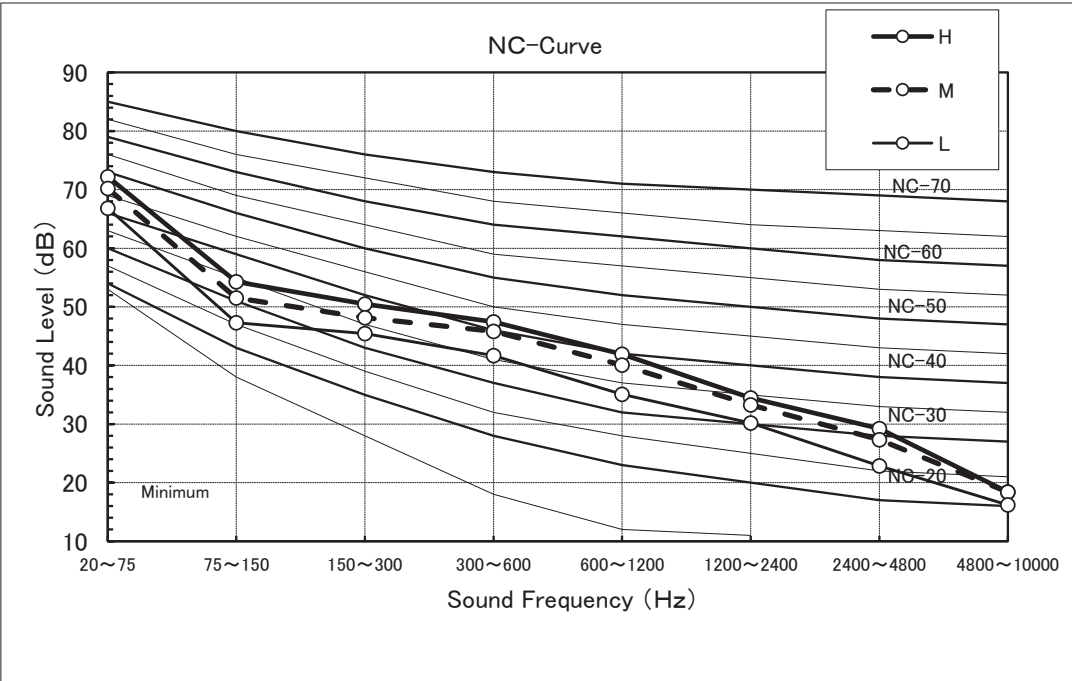
Cooling

Specification (dB)			
Fan tap	H	M	L
Sound pressure level (dB(A))	47	45	41



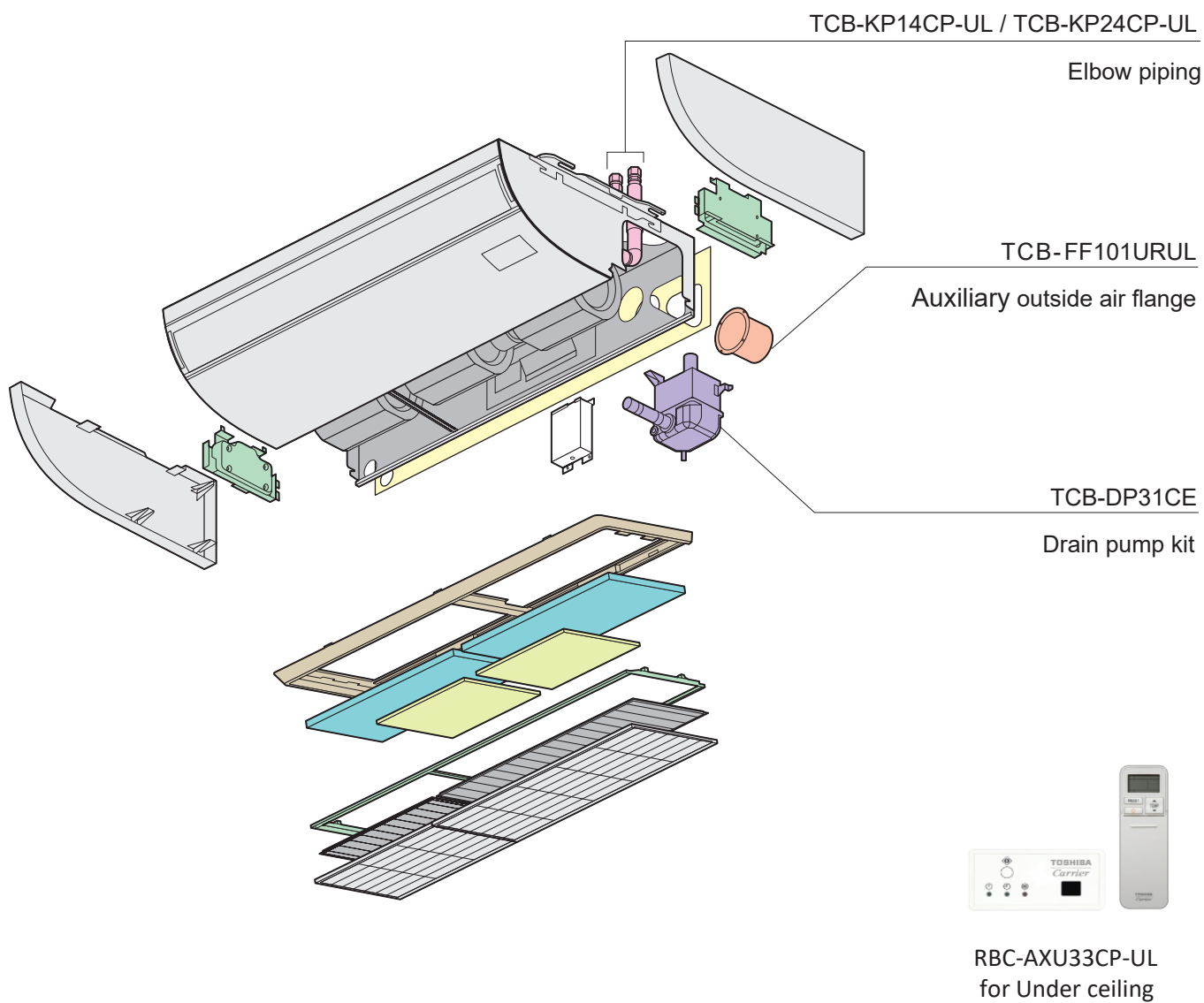
Heating

Specification (dB)			
Fan tap	H	M	L
Sound pressure level (dB(A))	47	45	41



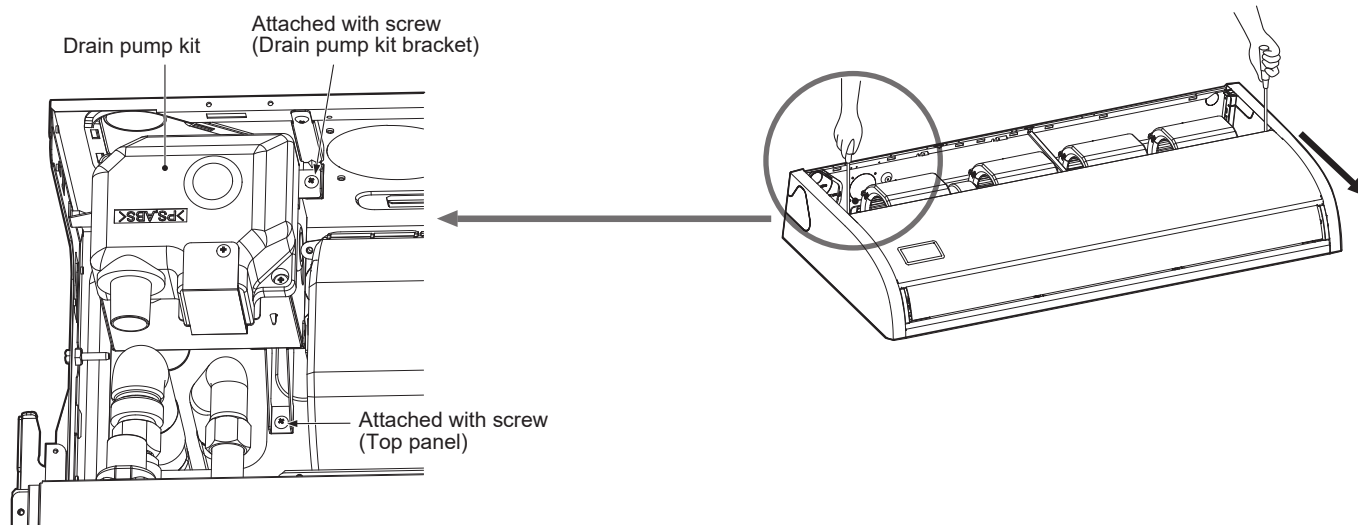
2-2-8. Accessories

Optional Parts	Model Name
Drain pump kit	TCB-DP31CE
Elbow piping kit	TCB-KP14CP-UL TCB-KP24CP-UL
Auxiliary outside air flange	TCB-FF101URUL
Wireless Remote Controller	RBC-AXU33CP-UL

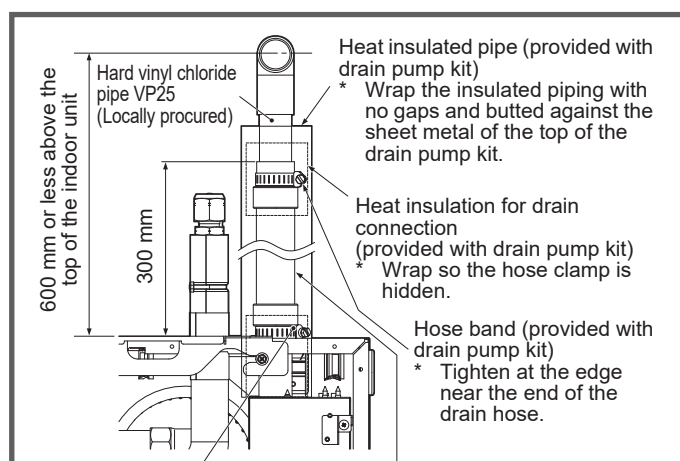
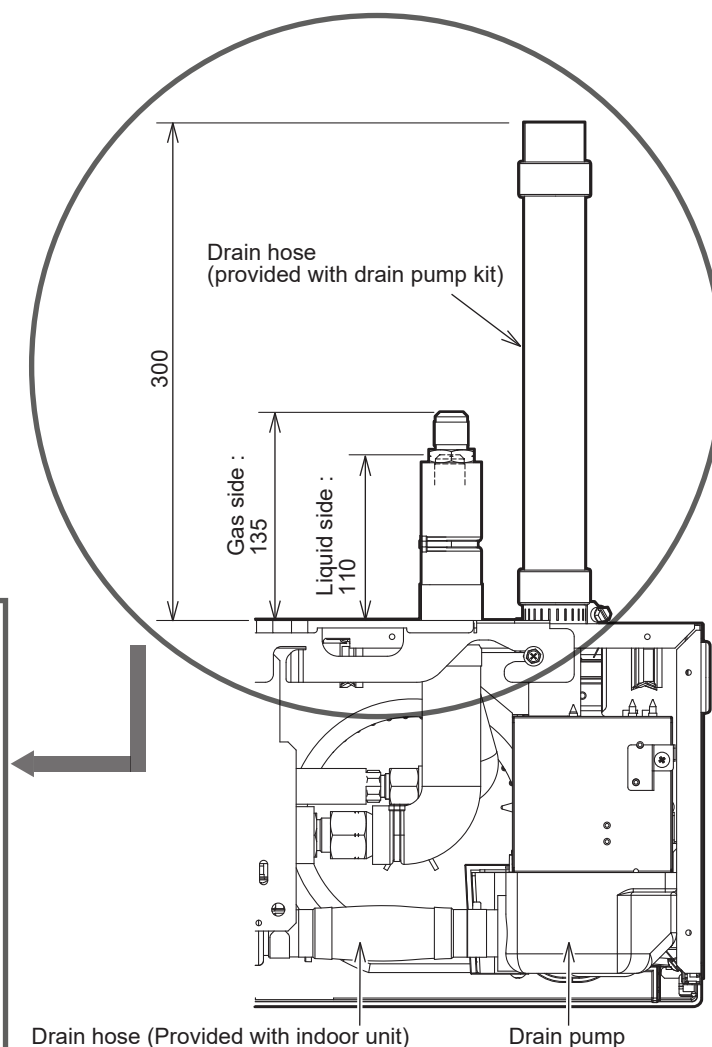
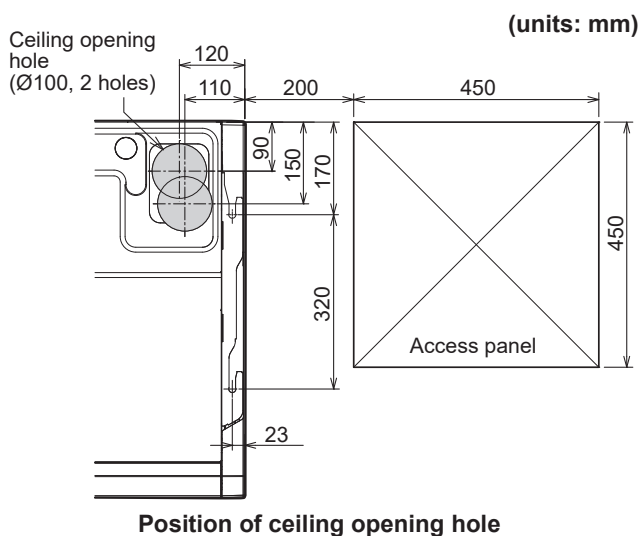


Appendix

1. Drain pump kit : TCB-DP31CE

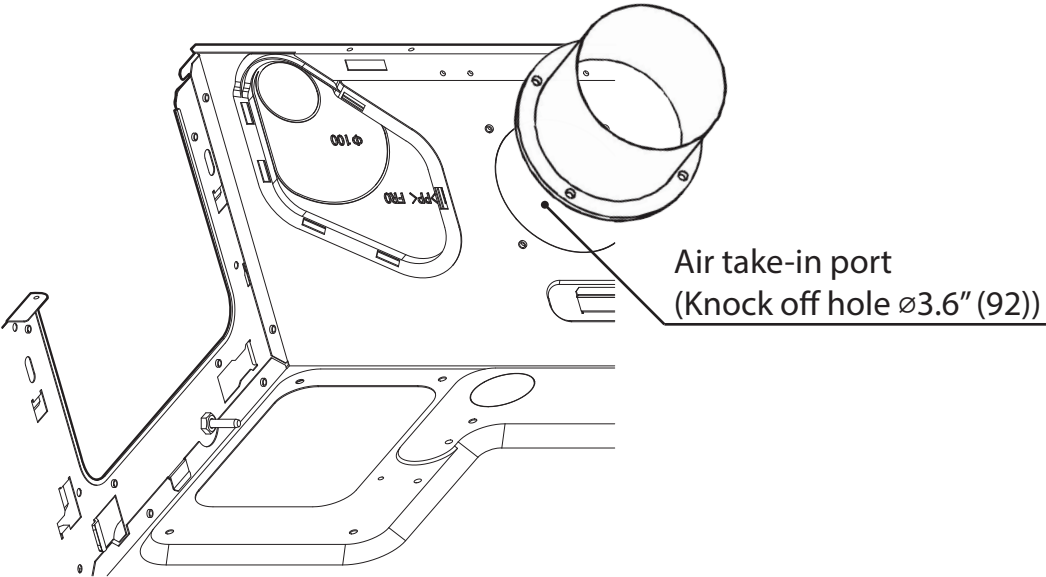


- The elbow piping kit (TCB-KP13CE, KP23CE) (sold separately) is also needed to install the drain pump kit because the pipes must be directed upward.
- Insulate all drain pipes.
- Cut two holes in the ceiling (Ø100) where the installation is being done through which to pass the refrigerant pipe and the drain pipe.
- Install a 450 × 450 access panel in the ceiling where the installation is being done.



2. Auxiliary outside air flange : TCB-FF101URUL

Name		Q'ty
Auxiliary fresh air flange (ø3.9" (100 mm))		1

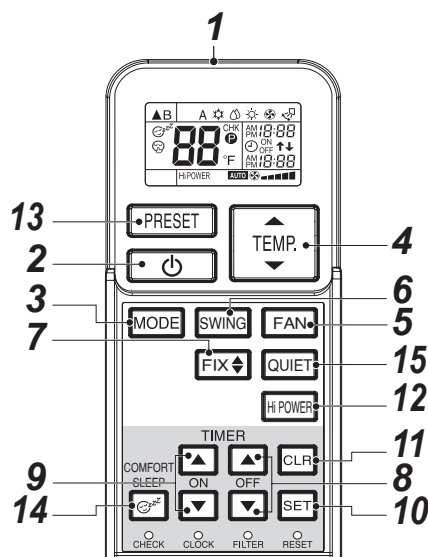


Approximately 5% or less of standard airflow volume will be reduced

3. Wireless Remote Controller (RBC-AX33C-UL)

3-1. Remote controller

- Max. 8 indoor units can be operated by a remote controller as a group.
- Illustration of LCD shown below is for explanation. It may differ from the actual LCD.



1 Infrared signal emitter

Transmits a signal to the indoor unit.

2 START/STOP button

Press the button to start operation.

(A receiving beep is heard.)

Press the button again to stop operation.

(A receiving beep is heard.)

If no receiving sound is heard from the indoor unit, press the button twice.

3 Mode select button (MODE)

Press this button to select a mode.

Each time you press the button, a mode is selected in a sequence that goes from A : Auto changeover control, : Cool, : Dry, : Heat, : Fan only, and back to A. (A receiving beep is heard.)

4 Temperature button ()

..... The set temperature is increased up to 86°F (30°C).

..... The set temperature is dropped down to 62°F (17°C). (A receiving beep is heard.)

5 Fan speed button (FAN)

Press this button to select fan speed.

When you select AUTO, the fan speed is automatically adjusted according to the room temperature.

You can also manually select the desired fan speed from among five settings.

(LOW , LOW+ , MED , MED+ , HIGH)

(A receiving beep is heard.)

6 Auto louver button (SWING)

Press this button to swing the louver.

(A receiving beep is heard.)

Press the SWING button to stop the louver swinging.

(A receiving beep is heard.)

7 Set louver button (FIX)

Press this button to adjust the airflow direction.

(A receiving beep is heard.) While this button is kept depressed, the receiving tone continuously sounds.

8 Off timer button (OFF)

Press this button to set the OFF timer.

9 On timer button (ON)

Press this button to set the ON timer.

10 Reserve button (SET)

Press this button to reserve time settings.

(A receiving beep is heard.)

11 Cancel button (CLR)

Press this button to cancel ON timer and OFF timer.

(A receiving beep is heard.)

12 High power button (Hi POWER)

Press this button to start the high power operation.

Only available during Auto changeover control or Cool operation.

This function is not operated group control.

13 PRESET button

Press this button to change the operation mode to the preferred operation mode memorized previously.

To memorize the operation mode, press this button for at least 3 seconds during the preferred operation mode. is displayed and the operation mode is memorized.

14 COMFORT SLEEP button

Press this button to start the OFF timer operation that automatically adjusts the room temperature and the fan speed.

You can select the OFF timer time from four durations (1, 3, 5 or 9 hours).

During group control operation, the set temperature and the fan speed are not automatically adjusted.

Only off timer function is activated.

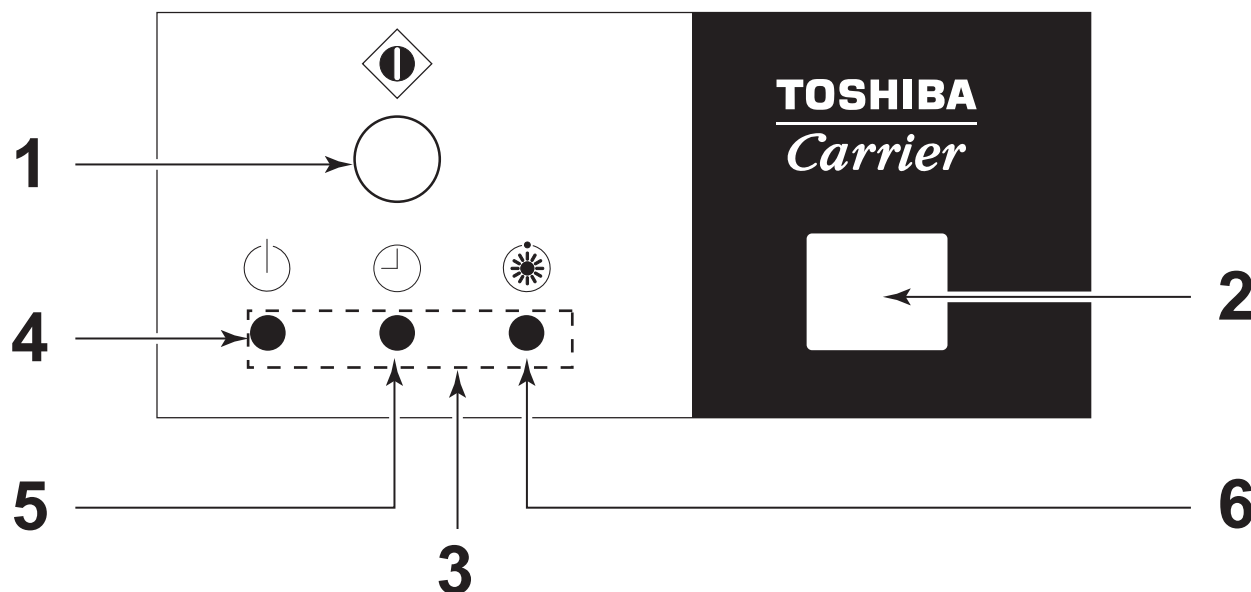
15 QUIET button

Press this button to start quiet operation.

Pressing this button again will restore normal operation.

3-2. Signal receiving unit

The signal receiving unit is attached to the indoor unit.



1 Temporary operation button

(See page 13)

2 Signal receiving part

The signal sent from the remote controller is received.

3 Display lamp

One of displays flashed while a trouble occurs. When the display lamp flashes, refer to "Before asking for repair work".

4 lamp (Green)

This lamp goes on during operation.

5 lamp (Green)

This lamp goes on while the timer is reserved.

6 lamp (Orange)

- In heating operation this lamp in the following cases;
The operation has started.
The temp. controller has worked.
The unit is under defrost operation.
- This lamp flashes while a trouble occurs.



CAUTION

Disagreement in operation mode

- If "pi, pi" sound is heard, the display lamp goes on, and the  lamp and  lamp flash alternately, the operation is not performed with the desired mode.
- Even if you push START/STOP, MODE, TEMPERATURE buttons when remote controller operation is disabled by the central control or other means, "pi" is heard 5 times and the button operation is not accepted.

2-3. Standard Duct 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. Fan Static Characteristic

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

2-3-8. Accessories

2-3-1. Specifications

Standard duct type

Model name	Indoor unit		RAV -	HB121BTP-UL	HB181BTP-UL	HB241BTP-UL
	Outdoor unit		RAV -	BP121AT2P-UL	BP181AT2P-UL	BP241AT2P-UL
Cooling	Capacity		Btu/h	12000	18000	24000
	Power consumption		w	984	1538	1920
	EER			12.2	11.7	12.5
	SEER			17.1	17.1	19.4
Heating	Capacity		Btu/h	14000	20000	27000
	Power consumption		w	1167	1667	2061
	COP			12.0	12.0	13.1
	HSPF			9.2	10.0	10.5
Power supply			1 Phase 208V/230V 60 Hz			
Indoor unit						
Outer dimension	Main unit	Height	In	10.9	10.9	
		Width	In	27.6	39.4	
		Depth	In	29.5	29.5	
Total weight	Main unit	lbs.	52.9	70.5		
Air flow volume	Indoor unit (H/M/L)		CFM	395 / 330 / 265	540 / 390 / 315	775 / 640 / 510
Sound Pressure Level (H/M+/M/L+/L)			dB(A)	33 / 32 / 29 / 28 / 25	36 / 35 / 31 / 30 / 37	36 / 35 / 31 / 30 / 27
Sound power level (High) Cooling / Heating			(dB)	48 / 48	54 / 54	51 / 51
External static pressure (standdard)			INwg(Pa)	0.12		
Fan motor output			w	150		
Drain tube size (outside diameter)			In	1.3" (VP25)		
Outdoor unit						
Air flow volume	Cooling / Heating		CFM	1590 / 1590	1590 / 1590	2300 / 2220
Sound Pressure Level Cooling / Heating			dB(A)	48 / 52	48 / 52	52 / 54
Sound power level (High) Cooling / Heating			(dB)	65 / 69	65 / 69	68 / 70
Outer dimension	Height	In	21.7			35.0
	Width	In	30.7			35.4
	Depth	In	11.4			12.6
Total weight	Main unit	lbs.	81.6			132
Pipe	Min. leghth	ft.	16'5"			
	Max. total length	ft.	164'1"			
Refrigerant	Type		R454B			
	Amount (charged)	lbs.	3.31			4.63
Flare Connections	Gas side	In	1 / 2"			5 / 8"
	Liquid side	In	1 / 4"			3 / 8"
Operating Range	Cooling	(°F)	5 to 115			
	Cooling with Wind buffels	(°F)	5 to 115			
	Heating	(°F)	-13 to 59			

Rated conditions Cooling : Indoor air temperature 80°F (27°C) DB / 67 (19°C) WB, Outdoor air temperature 95°F (35°C) DB
 Heating : Indoor air temperature 70°F (21°C) DB, Outdoor air temperature 47°F (8°C) DB/43°F (6°C) WB

Standard duct type

Model name	Indoor unit		RAV -	HB301BTP-UL	HB361BTP-UL	HB421BTP-UL
	Outdoor unit		RAV -	BP301AT2P-UL	BP361AT2P-UL	BP421AT2P-UL
Cooling	Capacity		Btu/h	30000	36000	42000
	Power consumption		w	2308	3051	4080
	EER			13.0	11.8	10.3
	SEER			19.5	18.1	17.4
Heating	Capacity		Btu/h	34000	40000	47000
	Power consumption		w	2519	3200	4260
	COP			13.5	12.5	11.0
	HSPF			10.7	10.1	9.4
Power supply			1 Phase 208V/230V 60 Hz			
Indoor unit						
Outer dimension	Main unit	Height	In	10.9		
		Width	In	55.2		
		Depth	In	29.5		
Total weight	Main unit	lbs.	92.6			
Air flow volume	Indoor unit (H/M/L)		CFM	990 / 780 / 650	1130 / 920 / 790	1130 / 955 / 810
Sound Pressure Level (H/M+/M/L+/L)			dB(A)	37 / 36 / 34 / 33 / 31	38 / 37 / 35 / 34 / 32	38 / 37 / 35 / 34 / 32
Sound power level (High) Cooling / Heating			(dB)	52 / 52	53 / 53	53 / 53
External static pressure (standdard)			INwg(Pa)	0.201		
Fan motor output			w	250		
Drain tube size (outside diameter)			In	1.3" (VP25)		
Outdoor unit						
Air flow volume	Cooling / Heating		CFM	3570 / 2870	3570 / 3100	3570 / 3290
Sound Pressure Level Cooling / Heating			dB(A)	54 / 54	54 / 54	54 / 54
Sound power level (High) Cooling / Heating			(dB)	71 / 68	71 / 71	71 / 71
Outer dimension	Height	In	52.8			
	Width	In	35.4			
	Depth	In	12.6			
Total weight	Main unit	lbs.	218.3			220.5
Pipe	Min. legth	ft.	16'5"			
	Max. total length	ft.	246'1"			
Refrigerant	Type		R454B			
	Amount (charged)	lbs.	5.84			6.61
Flare Connections	Gas side	In	5 / 8"			
	Liquid side	In	3 / 8"			
Operating Range	Cooling	(°F)	5 to 115			
	Cooling with Wind buffels	(°F)	-13 to 115			
	Heating	(°F)	-13 to 59			

Rated conditions Cooling : Indoor air temperature 80°F (27°C) DB / 67 (19°C) WB, Outdoor air temperature 95°F (35°C) DB
 Heating : Indoor air temperature 70°F (21°C) DB, Outdoor air temperature 47°F (8°C) DB/43°F (6°C) WB

Standard duct type

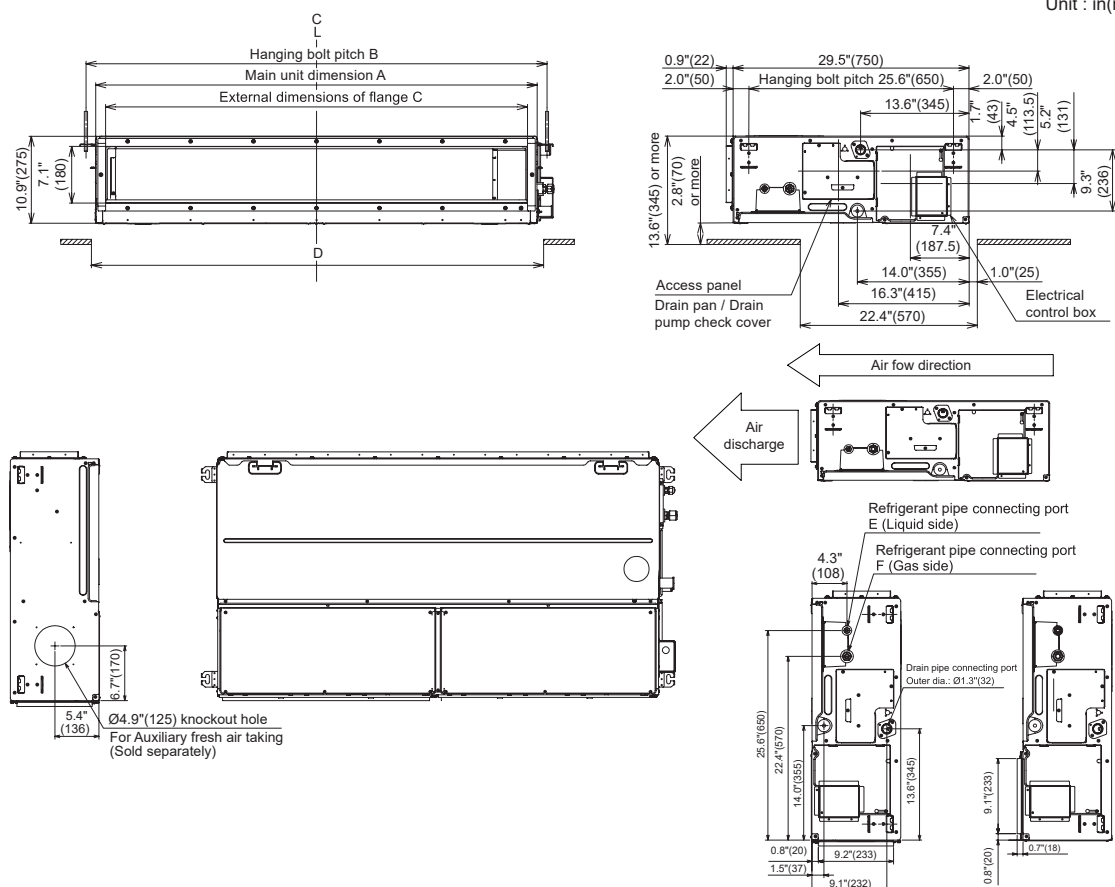
Model name	Indoor unit		RAV -	HB481BTP-UL	
	Outdoor unit		RAV -	BP481AT2P-UL	
Cooling	Capacity		Btu/h	48000	
	Power consumption		w	5450	
	EER			8.8	
	SEER			16.5	
Heating	Capacity		Btu/h	54000	
	Power consumption		w	5300	
	COP			10.2	
	HSPF			9.2	
Power supply			1 Phase 208V/230V 60 Hz		
Indoor unit					
Outer dimension	Main unit	Height	In	10.9	
		Width	In	55.2	
		Depth	In	29.5	
Total weight	Main unit	lbs.	92.6		
Air flow volume	Indoor unit (H/M/L)	CFM	1175 / 1025 / 885		
Sound Pressure Level (H/M+/M/L+/L)		dB(A)	40 / 39 / 36 / 35 / 33		
Sound power level (High) Cooling / Heating		(dB)	55 / 55		
External static pressure (standdard)		INwg(Pa)	0.201		
Fan motor output		w	250		
Drain tube size (outside diameter)		In	1.3" (VP25)		
Outdoor unit					
Air flow volume	Cooling / Heating	CFM	4540 / 4060		
Sound Pressure Level Cooling / Heating		dB(A)	60 / 60		
Sound power level (High) Cooling / Heating		(dB)	77 / 77		
Outer dimension	Height	In	52.8		
	Width	In	35.4		
	Depth	In	12.6		
Total weight	Main unit	lbs.	220.5		
Pipe	Min. leghth	ft.	16'5"		
	Max. total length	ft.	246'1"		
Refrigerant	Type		R454B		
	Amount (charged)	lbs.	6.61		
Flare Connections	Gas side	In	5 / 8"		
	Liquid side	In	3 / 8"		
Operating Range	Cooling	(°F)	5 to 115		
	Cooling with Wind buffels	(°F)	-13 to 115		
	Heating	(°F)	-13 to 59		

Rated conditions Cooling : Indoor air temperature 80°F (27°C) DB / 67 (19°C) WB, Outdoor air temperature 95°F (35°C) DB
 Heating : Indoor air temperature 70°F (21°C) DB, Outdoor air temperature 47°F (8°C) DB/43°F (6°C) WB

2-3-2. Dimension

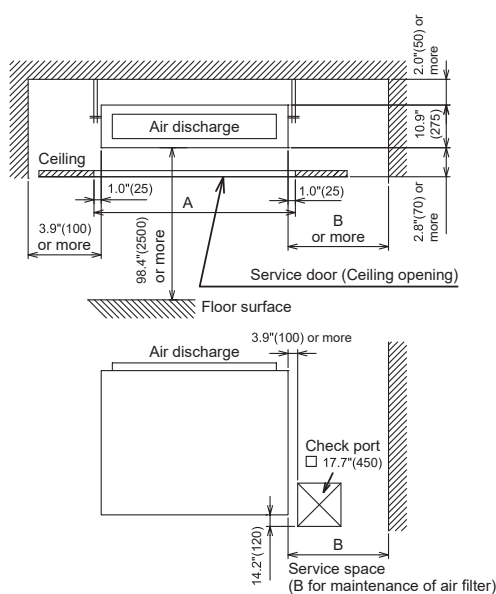
RAV-HB*__1CTP-UL (*12 / 18 / 24 / 30 / 36 / 42 /48)

Unit : in(mm)

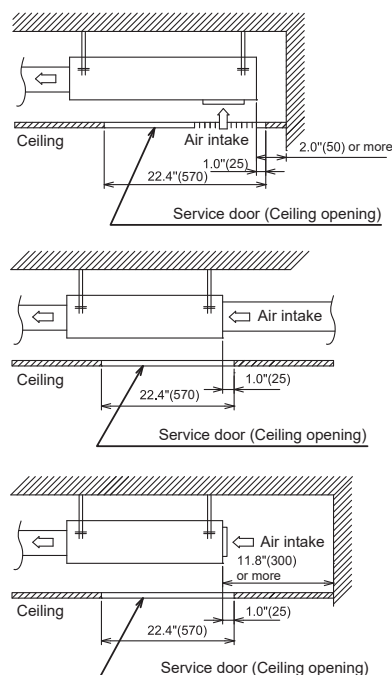


▼ Dimension

Model RAV-	A	B	C	D	E	F
HB12 Type	27.6"(700)	30.1"(765)	25.2"(640)	29.5"(750)	∅ 1/4"(6.4)	∅ 1/2"(12.7)
HB18 Type	39.4"(1000)	41.9"(1065)	37.0"(940)	41.3"(1050)	∅ 1/4"(6.4)	∅ 1/2"(12.7)
HB24 Type	39.4"(1000)	41.9"(1065)	37.0"(940)	41.3"(1050)	∅ 3/8"(9.5)	∅ 5/8"(15.9)
HB30, 36, 42, 48Type	55.2"(1400)	57.7"(1465)	52.8"(1340)	57.1"(1450)	∅ 3/8"(9.5)	∅ 5/8"(15.9)

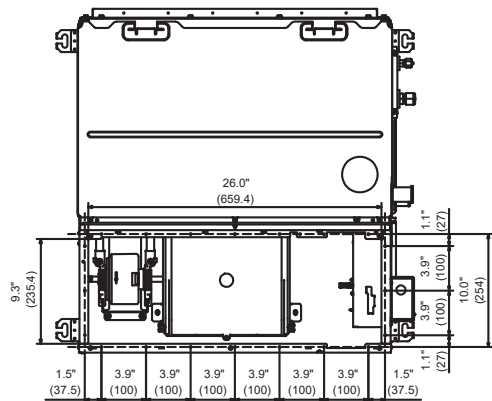


Model RAV-	A	B
HB12 Type	29.5" (750)	27.6" (700)
HB18, 24 Type	41.3" (1050)	19.7" (500)
HB30, 36, 42, 48 Type	57.1" (1450)	27.6" (700)



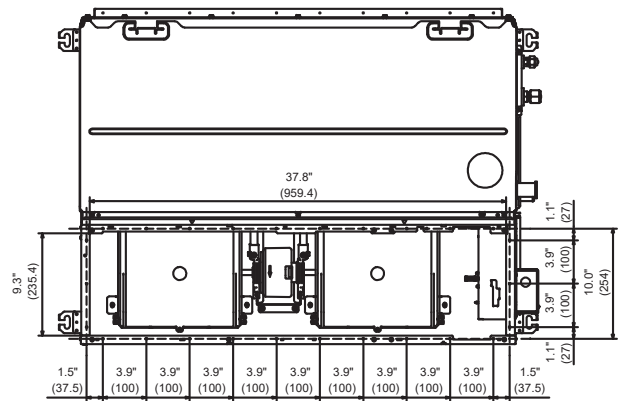
HB12 Type

<Bottom air intake>

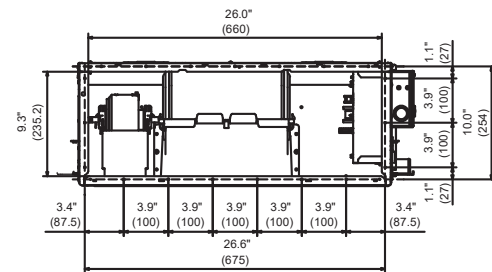


HB18, 24 Type

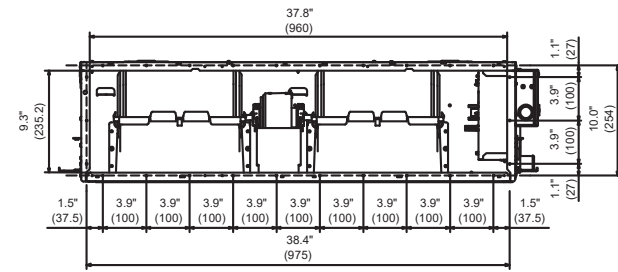
<Bottom air intake>



<Rear air intake>

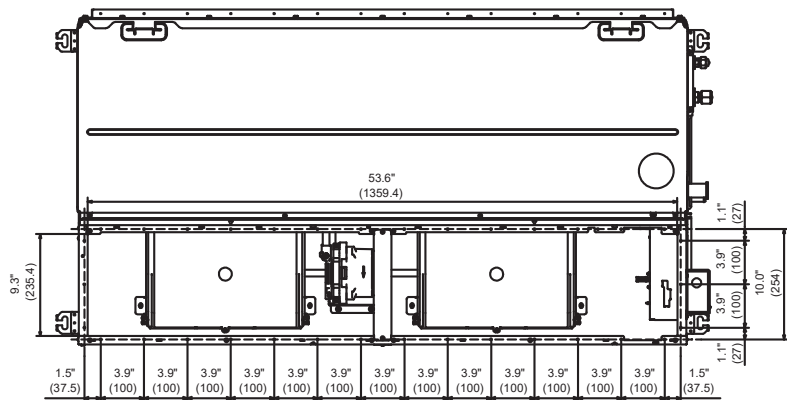


<Rear air intake>

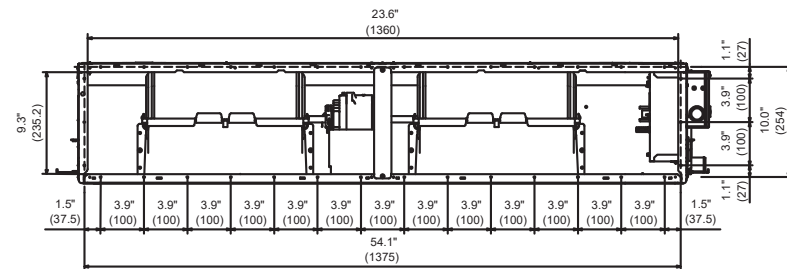


HB30, 36, 42, 48 Type

<Bottom air intake>



<Rear air intake>

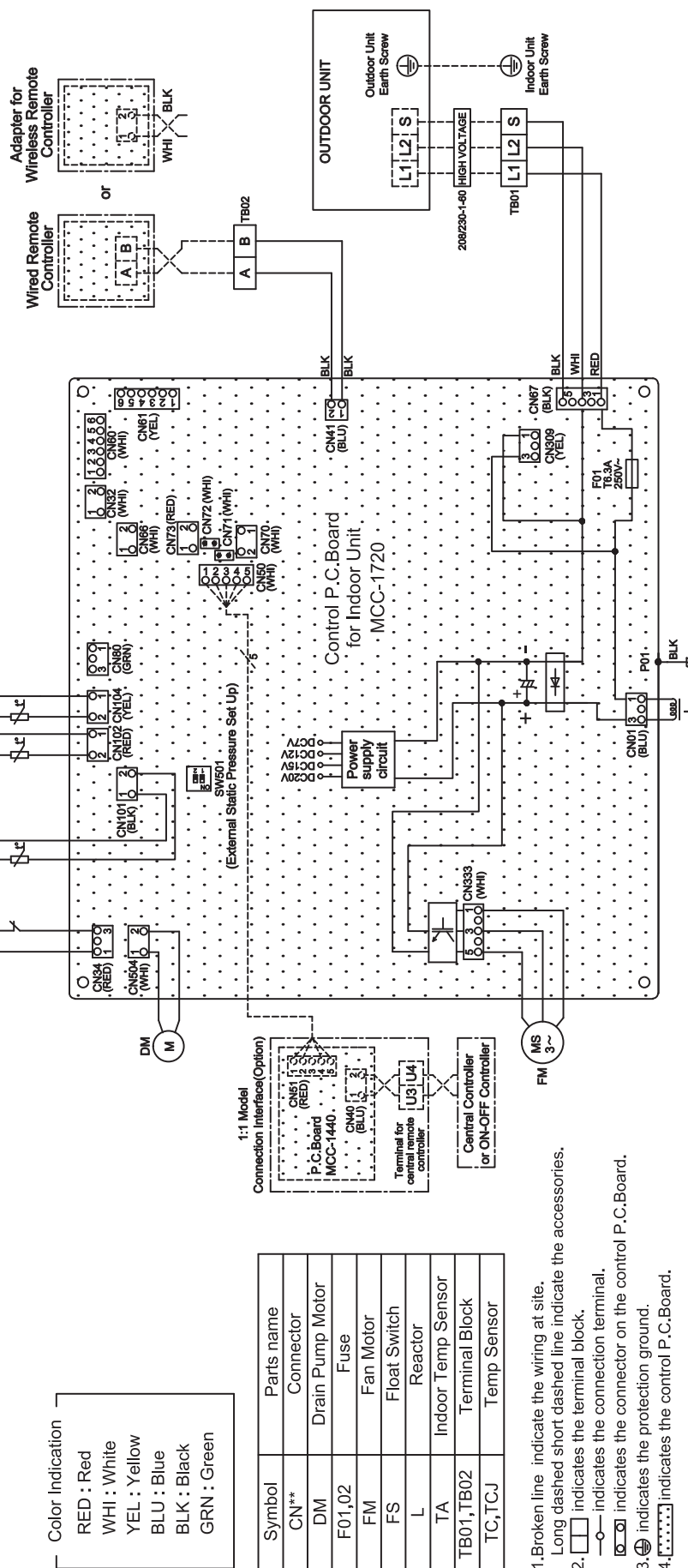


2-3-3. Wiring diagrams

RAV-HB*__1BTP-UL (*12 / 18 / 24 / 30 / 36 / 42 / 48)

Concealed Duct and High Static Pressure Duct Type Wiring Diagram

208/230-1-60



1. Broken line indicates the wiring at site.
2. Long dashed short dashed line indicates the accessories.
 indicates the terminal block.
3.  indicates the connection terminal.
4.  indicates the connector on the control P.C.Board.
5.  indicates the protection ground.
6.  indicates the control P.C.Board.

2-3-4. Sensible Capacity Table

Product models : RAV-HB121BTP-UL ; RAV-BP121AT2P-UL

Specification of product at standard condition

Standard Condition	Indoor	80°F (DB) / 67°F (WB)	Total Cooling Capacity (TC)	12000 Btu/hr
	Outdoor	95°F (DB) / 75°F (WB)	Sensible Heat Capacity (SHC)	10200 Btu/hr

Outdoor air temperature DB (°F)	Indoor air temperature													
	71°F (DB) 59°F (WB)		73°F (DB) 61°F (WB)		77°F (DB) 64°F (WB)		80°F (DB) 67°F (WB)		82°F (DB) 68°F (WB)		86°F (DB) 72°F (WB)		90°F (DB) 75°F (WB)	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
5	11900	10800	13100	11600	14100	12300	14500	12300	14900	12300	15800	12200	16500	12100
10	11900	10800	13100	11600	14100	12300	14500	12300	14900	12300	15800	12200	16500	12100
15	11900	10800	13100	11600	14100	12300	14500	12300	14900	12300	15800	12200	16500	12100
20	11900	10800	13100	11600	14100	12300	14500	12300	14900	12300	15800	12200	16500	12100
25	11900	10800	13100	11600	14100	12300	14500	12300	14900	12300	15800	12200	16500	12100
30	11900	10800	13100	11600	14100	12300	14500	12300	14900	12300	15800	12200	16500	12100
35	11900	10800	13100	11600	14100	12300	14500	12300	14900	12300	15800	12200	16500	12100
40	11900	10800	13100	11600	14100	12300	14500	12300	14900	12300	15800	12200	16500	12100
45	11900	10800	13100	11600	14100	12300	14500	12300	14900	12300	15800	12200	16500	12100
50	11900	10800	13100	11600	14100	12300	14500	12300	14900	12300	15800	12200	16500	12100
55	11900	10800	13100	11600	14100	12300	14500	12300	14900	12300	15800	12200	16500	12100
60	11900	10800	13100	11600	14100	12300	14500	12300	14900	12300	15800	12200	16500	12100
66	11900	10800	13100	11600	14100	12300	14500	12300	14900	12300	15800	12200	16500	12100
68	11800	10700	13000	11400	13900	12200	14300	12200	14700	12200	15600	12100	16300	11900
70	11600	10600	12800	11300	13800	12000	14200	12000	14600	12000	15400	12000	16100	11800
73	11400	10400	12600	11100	13500	11800	13800	11800	14200	11800	15100	11700	15800	11500
77	11100	10100	12300	10800	13200	11500	13500	11500	13900	11500	14700	11500	15400	11300
81	10900	9900	12000	10600	12900	11200	13200	11200	13600	11300	14400	11200	15100	11000
84	10600	9700	11700	10300	12600	11000	12900	11000	13300	11000	14100	10900	14700	10800
88	10400	9400	11400	10100	12300	10700	12600	10700	13000	10700	13700	10700	14400	10500
91	10100	9200	11200	9800	12000	10500	12300	10500	12700	10500	13400	10400	14000	10300
95	9900	9000	10900	9600	11700	10200	12000	10200	12300	10200	13100	10200	13700	10000
99	9600	8700	10600	9300	11400	9900	11700	9900	12000	9900	12700	9900	13300	9700
102	9400	8500	10300	9100	11100	9700	11400	9700	11700	9700	12400	9600	13000	9500
106	9100	8300	10000	8900	10800	9400	11100	9400	11400	9400	12100	9400	12600	9200
109	8800	8100	9800	8600	10500	9200	10800	9200	11100	9200	11700	9100	12300	9000
113	8600	7800	9500	8400	10200	8900	10500	8900	10800	8900	11400	8900	11900	8700
115	8500	7700	9300	8200	10000	8800	10300	8800	10600	8800	11200	8700	11700	8600

Product models : RAV-HB181BTP-UL ; RAV-BP181AT2P-UL

Specification of product at standard condition

Standard Condition	Indoor	80°F (DB) / 67°F (WB)	Total Cooling Capacity (TC)	18000 Btu/hr
	Outdoor	95°F (DB) / 75°F (WB)	Sensible Heat Capacity (SHC)	13500 Btu/hr

Outdoor air temperature DB (°F)	Indoor air temperature													
	71°F (DB) 59°F (WB)		73°F (DB) 61°F (WB)		77°F (DB) 64°F (WB)		80°F (DB) 67°F (WB)		82°F (DB) 68°F (WB)		86°F (DB) 72°F (WB)		90°F (DB) 75°F (WB)	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
5	17800	14400	19700	15400	21100	16300	21700	16300	22300	16200	23600	16000	24700	15600
10	17800	14400	19700	15400	21100	16300	21700	16300	22300	16200	23600	16000	24700	15600
15	17800	14400	19700	15400	21100	16300	21700	16300	22300	16200	23600	16000	24700	15600
20	17800	14400	19700	15400	21100	16300	21700	16300	22300	16200	23600	16000	24700	15600
25	17800	14400	19700	15400	21100	16300	21700	16300	22300	16200	23600	16000	24700	15600
30	17800	14400	19700	15400	21100	16300	21700	16300	22300	16200	23600	16000	24700	15600
35	17800	14400	19700	15400	21100	16300	21700	16300	22300	16200	23600	16000	24700	15600
40	17800	14400	19700	15400	21100	16300	21700	16300	22300	16200	23600	16000	24700	15600
45	17800	14400	19700	15400	21100	16300	21700	16300	22300	16200	23600	16000	24700	15600
50	17800	14400	19700	15400	21100	16300	21700	16300	22300	16200	23600	16000	24700	15600
55	17800	14400	19700	15400	21100	16300	21700	16300	22300	16200	23600	16000	24700	15600
60	17800	14400	19700	15400	21100	16300	21700	16300	22300	16200	23600	16000	24700	15600
66	17800	14400	19700	15400	21100	16300	21700	16300	22300	16200	23600	16000	24700	15600
68	17600	14300	19500	15200	20900	16200	21500	16100	22100	16100	23400	15800	24500	15500
70	17400	14100	19300	15000	20600	16000	21200	15900	21800	15900	23100	15700	24200	15300
73	17100	13800	18800	14700	20200	15600	20800	15600	21400	15500	22600	15300	23700	15000
77	16700	13500	18400	14400	19700	15300	20300	15200	20900	15200	22100	15000	23100	14600
81	16300	13200	18000	14100	19300	14900	19800	14900	20400	14800	21600	14600	22600	14300
84	15900	12900	17600	13700	18800	14600	19400	14500	19900	14500	21100	14300	22100	14000
88	15500	12600	17200	13400	18400	14200	18900	14200	19500	14200	20600	14000	21600	13600
91	15200	12300	16700	13100	17900	13900	18500	13800	19000	13800	20100	13600	21000	13300
95	14800	12000	16300	12800	17500	13600	18000	13500	18500	13500	19600	13300	20500	13000
99	14400	11700	15900	12400	17000	13200	17500	13200	18000	13100	19100	12900	20000	12600
102	14000	11400	15500	12100	16600	12900	17100	12800	17600	12800	18600	12600	19500	12300
106	13400	10800	14800	11500	15800	12200	16300	12200	16700	12200	17700	12000	18500	11700
109	12900	10500	14200	11100	15300	11800	15700	11800	16200	11700	17100	11600	17900	11300
113	11800	9600	13100	10200	14000	10800	14400	10800	14800	10800	15700	10600	16400	10400
115	11600	9400	12800	10000	13700	10600	14100	10600	14500	10600	15400	10400	16100	10200

Product models : RAV-HB241BTP-UL ; RAV-BP241AT2P-UL

Specification of product at standard condition

Standard Condition	Indoor	80°F (DB) / 67°F (WB)	Total Cooling Capacity (TC)	24000 Btu/hr
	Outdoor	95°F (DB) / 75°F (WB)	Sensible Heat Capacity (SHC)	19800 Btu/hr

Outdoor air temperature DB (°F)	Indoor air temperature													
	71°F (DB) 59°F (WB)		73°F (DB) 61°F (WB)		77°F (DB) 64°F (WB)		80°F (DB) 67°F (WB)		82°F (DB) 68°F (WB)		86°F (DB) 72°F (WB)		90°F (DB) 75°F (WB)	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
5	23800	21000	26200	22500	28100	23900	28900	23900	29800	23900	31500	23700	33000	23300
10	23800	21000	26200	22500	28100	23900	28900	23900	29800	23900	31500	23700	33000	23300
15	23800	21000	26200	22500	28100	23900	28900	23900	29800	23900	31500	23700	33000	23300
20	23800	21000	26200	22500	28100	23900	28900	23900	29800	23900	31500	23700	33000	23300
25	23800	21000	26200	22500	28100	23900	28900	23900	29800	23900	31500	23700	33000	23300
30	23800	21000	26200	22500	28100	23900	28900	23900	29800	23900	31500	23700	33000	23300
35	23800	21000	26200	22500	28100	23900	28900	23900	29800	23900	31500	23700	33000	23300
40	23800	21000	26200	22500	28100	23900	28900	23900	29800	23900	31500	23700	33000	23300
45	23800	21000	26200	22500	28100	23900	28900	23900	29800	23900	31500	23700	33000	23300
50	23800	21000	26200	22500	28100	23900	28900	23900	29800	23900	31500	23700	33000	23300
55	23800	21000	26200	22500	28100	23900	28900	23900	29800	23900	31500	23700	33000	23300
60	23800	21000	26200	22500	28100	23900	28900	23900	29800	23900	31500	23700	33000	23300
66	23800	21000	26200	22500	28100	23900	28900	23900	29800	23900	31500	23700	33000	23300
68	23500	20800	26000	22200	27800	23600	28600	23600	29400	23600	31200	23500	32600	23000
70	23300	20600	25700	22000	27500	23400	28300	23400	29100	23400	30800	23200	32300	22800
73	22700	20200	25100	21500	26900	22900	27700	22800	28500	22900	30200	22700	31600	22300
77	22200	19700	24600	21000	26300	22400	27100	22300	27900	22300	29500	22200	30900	21800
81	21700	19300	24000	20500	25700	21900	26500	21800	27200	21800	28800	21700	30200	21300
84	21200	18800	23400	20100	25100	21300	25800	21300	26600	21300	28200	21200	29400	20800
88	20700	18400	22900	19600	24500	20800	25200	20800	26000	20800	27500	20700	28700	20300
91	20200	17900	22300	19100	23900	20300	24600	20300	25300	20300	26800	20200	28000	19800
95	19700	17500	21800	18600	23300	19800	24000	19800	24700	19800	26100	19700	27300	19300
99	19200	17000	21200	18200	22700	19300	23400	19300	24100	19300	25500	19200	26600	18800
102	18700	16600	20700	17700	22100	18800	22800	18800	23400	18800	24800	18700	25900	18300
106	18200	16100	20100	17200	21500	18300	22200	18300	22800	18300	24100	18200	25200	17800
109	17700	15700	19500	16700	20900	17800	21500	17800	22200	17800	23500	17600	24500	17300
113	17200	15200	19000	16200	20300	17300	20900	17300	21500	17300	22800	17100	23800	16800
115	16900	15000	18700	16000	20000	17000	20600	17000	21200	17000	22500	16900	23500	16600

Product models : RAV-HB301BTP-UL ; RAV-BP301AT2P-UL**Specification of product at standard condition**

Standard Condition	Indoor	80°F (DB) / 67°F (WB)	Total Cooling Capacity (TC)	30000 Btu/hr
	Outdoor	95°F (DB) / 75°F (WB)	Sensible Heat Capacity (SHC)	21000 Btu/hr

Outdoor air temperature DB (°F)	Indoor air temperature													
	71°F (DB) 59°F (WB)		73°F (DB) 61°F (WB)		77°F (DB) 64°F (WB)		80°F (DB) 67°F (WB)		82°F (DB) 68°F (WB)		86°F (DB) 72°F (WB)		90°F (DB) 75°F (WB)	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-13	32500	24800	35900	26300	38500	27900	39600	27700	40800	27600	43200	27100	45100	26300
-10	32500	24800	35900	26300	38500	27900	39600	27700	40800	27600	43200	27100	45100	26300
-5	32500	24800	35900	26300	38500	27900	39600	27700	40800	27600	43200	27100	45100	26300
0	32500	24800	35900	26300	38500	27900	39600	27700	40800	27600	43200	27100	45100	26300
5	32500	24800	35900	26300	38500	27900	39600	27700	40800	27600	43200	27100	45100	26300
10	32500	24800	35900	26300	38500	27900	39600	27700	40800	27600	43200	27100	45100	26300
15	32500	24800	35900	26300	38500	27900	39600	27700	40800	27600	43200	27100	45100	26300
20	32500	24800	35900	26300	38500	27900	39600	27700	40800	27600	43200	27100	45100	26300
25	32500	24800	35900	26300	38500	27900	39600	27700	40800	27600	43200	27100	45100	26300
30	32500	24800	35900	26300	38500	27900	39600	27700	40800	27600	43200	27100	45100	26300
35	32500	24800	35900	26300	38500	27900	39600	27700	40800	27600	43200	27100	45100	26300
40	32500	24800	35900	26300	38500	27900	39600	27700	40800	27600	43200	27100	45100	26300
45	32500	24800	35900	26300	38500	27900	39600	27700	40800	27600	43200	27100	45100	26300
50	32500	24800	35900	26300	38500	27900	39600	27700	40800	27600	43200	27100	45100	26300
55	31600	24000	34900	25500	37400	27100	38500	26900	39600	26800	41900	26300	43800	25500
60	31000	23600	34200	25000	36600	26600	37700	26400	38800	26300	41100	25800	43000	25000
66	29700	22600	32800	24000	35100	25500	36200	25300	37200	25200	39400	24700	41200	24000
68	29400	22400	32500	23700	34800	25200	35800	25000	36800	24900	39000	24400	40800	23700
70	29100	22100	32100	23500	34400	24900	35400	24800	36400	24700	38600	24200	40300	23500
73	28400	21600	31400	23000	33600	24400	34600	24200	35600	24100	37700	23700	39400	23000
77	27800	21200	30700	22400	32900	23800	33900	23700	34800	23600	36900	23100	38600	22400
81	27200	20700	30000	21900	32100	23300	33100	23200	34000	23000	36000	22600	37700	21900
84	26500	20200	29300	21400	31400	22800	32300	22600	33200	22500	35200	22100	36800	21400
88	25900	19700	28600	20900	30600	22200	31500	22100	32400	22000	34400	21500	35900	20900
91	25300	19200	27900	20400	29900	21700	30800	21500	31700	21400	33500	21000	35100	20400
95	24600	18700	27200	19900	29100	21100	30000	21000	30900	20900	32700	20500	34200	19900
99	24000	18300	26500	19400	28400	20600	29200	20500	30100	20400	31800	20000	33300	19400
102	23400	17800	25800	18900	27600	20000	28500	19900	29300	19800	31000	19400	32400	18900
106	22700	17300	25100	18400	26900	19500	27700	19400	28500	19300	30200	18900	31500	18400
109	22100	16800	24400	17900	26200	19000	26900	18800	27700	18800	29300	18400	30700	17800
113	21500	16300	23700	17300	25400	18400	26200	18300	26900	18200	28500	17900	29800	17300
115	21200	16100	23400	17100	25000	18100	25800	18000	26500	17900	28100	17600	29400	17100

Product models : RAV-HB361BTP-UL ; RAV-BP361AT2P-UL

Specification of product at standard condition

Standard Condition	Indoor	80°F (DB) / 67°F (WB)	Total Cooling Capacity (TC)	36000 Btu/hr
	Outdoor	95°F (DB) / 75°F (WB)	Sensible Heat Capacity (SHC)	27800 Btu/hr

Outdoor air temperature DB (°F)	Indoor air temperature													
	71°F (DB) 59°F (WB)		73°F (DB) 61°F (WB)		77°F (DB) 64°F (WB)		80°F (DB) 67°F (WB)		82°F (DB) 68°F (WB)		86°F (DB) 72°F (WB)		90°F (DB) 75°F (WB)	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-13	39100	32500	43100	34600	46200	36800	47600	36700	48900	36700	51800	36200	54200	35400
-10	39100	32500	43100	34600	46200	36800	47600	36700	48900	36700	51800	36200	54200	35400
-5	39100	32500	43100	34600	46200	36800	47600	36700	48900	36700	51800	36200	54200	35400
0	39100	32500	43100	34600	46200	36800	47600	36700	48900	36700	51800	36200	54200	35400
5	39100	32500	43100	34600	46200	36800	47600	36700	48900	36700	51800	36200	54200	35400
10	39100	32500	43100	34600	46200	36800	47600	36700	48900	36700	51800	36200	54200	35400
15	39100	32500	43100	34600	46200	36800	47600	36700	48900	36700	51800	36200	54200	35400
20	39100	32500	43100	34600	46200	36800	47600	36700	48900	36700	51800	36200	54200	35400
25	39100	32500	43100	34600	46200	36800	47600	36700	48900	36700	51800	36200	54200	35400
30	39100	32500	43100	34600	46200	36800	47600	36700	48900	36700	51800	36200	54200	35400
35	39100	32500	43100	34600	46200	36800	47600	36700	48900	36700	51800	36200	54200	35400
40	39100	32500	43100	34600	46200	36800	47600	36700	48900	36700	51800	36200	54200	35400
45	39100	32500	43100	34600	46200	36800	47600	36700	48900	36700	51800	36200	54200	35400
50	39100	32500	43100	34600	46200	36800	47600	36700	48900	36700	51800	36200	54200	35400
55	37900	31600	41900	33600	44800	35800	46200	35600	47500	35600	50300	35200	52600	34400
60	37200	31000	41000	33000	43900	35000	45200	34900	46500	34900	49300	34500	51500	33700
66	35600	29700	39400	31600	42200	33600	43400	33500	44600	33500	47300	33100	49400	32300
68	35300	29400	38900	31300	41700	33200	42900	33200	44200	33100	46800	32700	48900	32000
70	34900	29100	38500	30900	41300	32900	42500	32800	43700	32700	46300	32400	48400	31600
73	34100	28400	37700	30300	40400	32200	41500	32100	42700	32000	45300	31700	47300	31000
77	33400	27800	36800	29600	39500	31500	40600	31400	41800	31300	44200	30900	46300	30300
81	32600	27200	36000	28900	38600	30700	39700	30700	40800	30600	43200	30200	45200	29600
84	31800	26500	35200	28200	37700	30000	38800	29900	39900	29900	42200	29500	44200	28900
88	31100	25900	34300	27600	36800	29300	37800	29200	38900	29200	41200	28800	43100	28200
91	30300	25300	33500	26900	35900	28600	36900	28500	38000	28500	40200	28100	42100	27500
95	29600	24600	32700	26200	35000	27900	36000	27800	37000	27800	39200	27400	41000	26800
99	28800	24000	31800	25600	34100	27200	35100	27100	36100	27000	38200	26700	40000	26100
102	28100	23400	31000	24900	33200	26400	34200	26400	35100	26300	37200	26000	38900	25500
106	27300	22700	30100	24200	32300	25700	33200	25700	34200	25600	36200	25300	37900	24800
109	26500	22100	29300	23500	31400	25000	32300	24900	33200	24900	35200	24600	36800	24100
113	25800	21500	28500	22900	30500	24300	31400	24200	32300	24200	34200	23900	35800	23400
115	25400	21200	28000	22500	30000	23900	30900	23900	31800	23800	33700	23600	35200	23000

Product models : RAV-HB421BTP-UL ; RAV-BP421AT2P-UL

Specification of product at standard condition

Standard Condition

Indoor	80°F (DB) / 67°F (WB)
Outdoor	95°F (DB) / 75°F (WB)

Total Cooling Capacity (TC)	42000 Btu/hr
Sensible Heat Capacity (SHC)	30100 Btu/hr

Outdoor air temperature DB (°F)	Indoor air temperature													
	71°F (DB) 59°F (WB)		73°F (DB) 61°F (WB)		77°F (DB) 64°F (WB)		80°F (DB) 67°F (WB)		82°F (DB) 68°F (WB)		86°F (DB) 72°F (WB)		90°F (DB) 75°F (WB)	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-13	45600	35400	50300	37600	53900	40000	55500	39800	57100	39600	60400	38900	63200	37800
-10	45600	35400	50300	37600	53900	40000	55500	39800	57100	39600	60400	38900	63200	37800
-5	45600	35400	50300	37600	53900	40000	55500	39800	57100	39600	60400	38900	63200	37800
0	45600	35400	50300	37600	53900	40000	55500	39800	57100	39600	60400	38900	63200	37800
5	45600	35400	50300	37600	53900	40000	55500	39800	57100	39600	60400	38900	63200	37800
10	45600	35400	50300	37600	53900	40000	55500	39800	57100	39600	60400	38900	63200	37800
15	45600	35400	50300	37600	53900	40000	55500	39800	57100	39600	60400	38900	63200	37800
20	45600	35400	50300	37600	53900	40000	55500	39800	57100	39600	60400	38900	63200	37800
25	45600	35400	50300	37600	53900	40000	55500	39800	57100	39600	60400	38900	63200	37800
30	45600	35400	50300	37600	53900	40000	55500	39800	57100	39600	60400	38900	63200	37800
35	45600	35400	50300	37600	53900	40000	55500	39800	57100	39600	60400	38900	63200	37800
40	45600	35400	50300	37600	53900	40000	55500	39800	57100	39600	60400	38900	63200	37800
45	45600	35400	50300	37600	53900	40000	55500	39800	57100	39600	60400	38900	63200	37800
50	45600	35400	50300	37600	53900	40000	55500	39800	57100	39600	60400	38900	63200	37800
55	44200	34400	48900	36500	52300	38800	53900	38600	55400	38400	58700	37800	61400	36700
60	43400	33700	47900	35800	51300	38000	52800	37800	54300	37700	57500	37000	60100	36000
66	41600	32300	45900	34300	49200	36500	50600	36300	52100	36100	55100	35500	57700	34500
68	41100	32000	45400	34000	48700	36100	50100	35900	51500	35800	54600	35100	57100	34200
70	40700	31600	44900	33600	48100	35700	49500	35500	51000	35400	54000	34700	56400	33800
73	39800	31000	44000	32900	47100	34900	48500	34700	49900	34600	52800	34000	55200	33100
77	38900	30300	43000	32100	46000	34100	47400	34000	48700	33800	51600	33200	54000	32300
81	38000	29600	42000	31400	45000	33400	46300	33200	47600	33100	50400	32500	52800	31600
84	37200	28900	41000	30700	43900	32600	45200	32400	46500	32300	49300	31700	51500	30800
88	36300	28200	40100	29900	42900	31800	44200	31600	45400	31500	48100	31000	50300	30100
91	35400	27500	39100	29200	41800	31000	43100	30900	44300	30700	46900	30200	49100	29400
95	34500	26800	38100	28500	40800	30300	42000	30100	43200	30000	45800	29500	47900	28600
99	33600	26100	37100	27800	39800	29500	40900	29300	42100	29200	44600	28700	46600	27900
102	32700	25400	36100	27000	38700	28700	39800	28600	41000	28400	43400	27900	45400	27200
106	31800	24800	35200	26300	37700	27900	38800	27800	39900	27700	42200	27200	44200	26400
109	31000	24100	34200	25600	36600	27200	37700	27000	38800	26900	41100	26400	42900	25700
113	29000	22500	32000	23900	34300	25400	35300	25300	36300	25200	38400	24700	40200	24100
115	28000	21800	30900	23100	33100	24500	34100	24400	35000	24300	37100	23900	38800	23200

Product models : RAV-HB481BTP-UL ; RAV-BP481AT2P-UL

Specification of product at standard condition

Standard Condition	Indoor	80°F (DB) / 67°F (WB)	Total Cooling Capacity (TC)	48000 Btu/hr
	Outdoor	95°F (DB) / 75°F (WB)	Sensible Heat Capacity (SHC)	33100 Btu/hr

Outdoor air temperature DB (°F)	Indoor air temperature													
	71°F (DB) 59°F (WB)		73°F (DB) 61°F (WB)		77°F (DB) 64°F (WB)		80°F (DB) 67°F (WB)		82°F (DB) 68°F (WB)		86°F (DB) 72°F (WB)		90°F (DB) 75°F (WB)	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-13	52100	39100	57500	41400	61600	44000	63400	43700	65200	43500	69100	42600	72200	41300
-10	52100	39100	57500	41400	61600	44000	63400	43700	65200	43500	69100	42600	72200	41300
-5	52100	39100	57500	41400	61600	44000	63400	43700	65200	43500	69100	42600	72200	41300
0	52100	39100	57500	41400	61600	44000	63400	43700	65200	43500	69100	42600	72200	41300
5	52100	39100	57500	41400	61600	44000	63400	43700	65200	43500	69100	42600	72200	41300
10	52100	39100	57500	41400	61600	44000	63400	43700	65200	43500	69100	42600	72200	41300
15	52100	39100	57500	41400	61600	44000	63400	43700	65200	43500	69100	42600	72200	41300
20	52100	39100	57500	41400	61600	44000	63400	43700	65200	43500	69100	42600	72200	41300
25	52100	39100	57500	41400	61600	44000	63400	43700	65200	43500	69100	42600	72200	41300
30	52100	39100	57500	41400	61600	44000	63400	43700	65200	43500	69100	42600	72200	41300
35	52100	39100	57500	41400	61600	44000	63400	43700	65200	43500	69100	42600	72200	41300
40	52100	39100	57500	41400	61600	44000	63400	43700	65200	43500	69100	42600	72200	41300
45	52100	39100	57500	41400	61600	44000	63400	43700	65200	43500	69100	42600	72200	41300
50	52100	39100	57500	41400	61600	44000	63400	43700	65200	43500	69100	42600	72200	41300
55	50600	37900	55800	40200	59800	42700	61600	42400	63300	42200	67000	41400	70100	40100
60	49500	37200	54700	39400	58600	41900	60300	41600	62000	41400	65700	40500	68700	39300
66	47500	35700	52500	37800	56200	40200	57900	39900	59500	39700	63000	38900	65900	37700
68	47000	35300	51900	37400	55600	39700	57200	39500	58900	39300	62400	38500	65200	37300
70	46500	34900	51400	37000	55000	39300	56600	39000	58200	38800	61700	38000	64500	36900
73	45500	34100	50200	36200	53800	38500	55400	38200	57000	38000	60300	37200	63100	36100
77	44500	33400	49100	35400	52600	37600	54200	37300	55700	37200	59000	36400	61700	35300
81	43500	32600	48000	34600	51400	36700	52900	36500	54400	36300	57700	35600	60300	34500
84	42500	31900	46900	33800	50200	35900	51700	35600	53200	35500	56300	34700	58900	33700
88	41500	31100	45800	33000	49000	35000	50500	34800	51900	34600	55000	33900	57500	32900
91	40400	30300	44700	32200	47800	34200	49200	33900	50600	33800	53600	33100	56100	32100
95	39400	29600	43500	31400	46600	33300	48000	33100	49400	32900	52300	32200	54700	31300
99	38400	28800	42400	30600	45400	32500	46800	32300	48100	32100	50900	31400	53300	30500
102	37400	28100	41300	29800	44200	31600	45500	31400	46800	31200	49600	30600	51900	29600
106	36400	27300	40200	28900	43000	30700	44300	30500	45600	30400	48200	29800	50500	28800
109	35400	26500	39000	28100	41800	29900	43000	29700	44300	29500	46900	28900	49000	28000
113	34300	25700	37900	27300	40500	29000	41700	28800	42900	28600	45500	28000	47500	27200
115	33800	25300	37300	26900	39900	28500	41100	28300	42300	28200	44800	27600	46800	26800

Heating capacity table

Product model : RAV-HB__1BTP-UL : RAV-BP__1AT2P-UL

(TC : Btu/h, PI : W)

unit size	outdoor air temp.		indoor air temp.									
	FDB	FWB	61 (FDB)		64 (FDB)		70 (FDB)		72 (FDB)		75 (FDB)	
			TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
12	59	57	17200	1210	17000	1250	16900	1290	16800	1350	16700	1410
	50	48	15600	1150	15400	1180	15300	1220	15200	1280	15100	1340
	47	43	14200	1100	14100	1130	14000	1170	13900	1220	13800	1280
	41	39	13300	1060	13100	1090	13100	1130	13000	1180	12900	1240
	36	34	11900	1010	11800	1040	11700	1080	11600	1120	11600	1180
	32	31	11100	990	11000	1030	10800	1060	10800	1090	10900	1130
	23	22	9300	900	9200	920	9100	950	9100	1000	9000	1050
	19	18	8700	870	8600	900	8600	930	8500	970	8500	1020
	14	13	8000	830	7900	860	7900	890	7800	930	7800	970
	5	4	6700	790	6700	810	6600	840	6600	870	6600	920
	1	0	5100	720	5000	740	5000	770	5000	800	4900	840
	-3	-4	4000	680	3900	700	3900	720	3900	750	3900	790
	-13	-13	2100	600	2100	620	2100	640	2100	670	2100	700
unit size	outdoor air temp.		indoor air temp.									
	FDB	FWB	61 (FDB)		64 (FDB)		70 (FDB)		72 (FDB)		75 (FDB)	
			TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
18	59	57	24500	1730	24300	1780	24100	1840	24000	1930	23800	2020
	50	48	22300	1640	22000	1690	21900	1750	21800	1820	21600	1910
	47	43	20300	1570	20100	1610	20000	1670	19900	1740	19800	1830
	41	39	19000	1520	18800	1560	18700	1610	18500	1690	18400	1770
	36	34	17000	1440	16800	1490	16700	1540	16600	1610	16500	1680
	32	31	15800	1410	15700	1470	15500	1510	15400	1550	15600	1620
	23	22	13300	1280	13100	1320	13100	1360	13000	1420	12900	1490
	19	18	12500	1250	12400	1280	12300	1330	12200	1390	12100	1450
	14	13	11400	1190	11300	1220	11300	1270	11200	1320	11100	1390
	5	4	9600	1120	9500	1160	9500	1200	9400	1250	9400	1310
	1	0	7300	1030	7200	1060	7100	1100	7100	1150	7100	1210
	-3	-4	5700	970	5600	1000	5600	1030	5600	1080	5500	1130
	-13	-13	3000	860	3000	890	3000	920	3000	960	2900	1010
unit size	outdoor air temp.		indoor air temp.									
	FDB	FWB	61 (FDB)		64 (FDB)		70 (FDB)		72 (FDB)		75 (FDB)	
			TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
24	59	57	33100	2140	32800	2200	32600	2280	32400	2380	32200	2500
	50	48	30100	2030	29700	2090	29600	2160	29400	2260	29200	2370
	47	43	27500	1940	27200	1990	27000	2060	26800	2150	26700	2260
	41	39	25600	1880	25300	1930	25200	2000	25000	2090	24900	2190
	36	34	23000	1780	22700	1840	22600	1900	22400	1990	22300	2080
	32	31	21300	1740	21200	1810	20900	1870	20800	1920	21100	2000
	23	22	17900	1580	17700	1630	17600	1680	17500	1760	17400	1850
	19	18	16800	1540	16700	1590	16600	1640	16500	1710	16400	1800
	14	13	15400	1470	15300	1510	15200	1560	15100	1640	15000	1720
	5	4	13000	1390	12900	1430	12800	1480	12700	1550	12600	1620
	1	0	9800	1280	9700	1320	9600	1360	9600	1420	9500	1490
	-3	-4	7700	1200	7600	1230	7500	1270	7500	1330	7400	1400
	-13	-13	4100	1060	4100	1100	4000	1130	4000	1190	4000	1240
unit size	outdoor air temp.		indoor air temp.									
	FDB	FWB	61 (FDB)		64 (FDB)		70 (FDB)		72 (FDB)		75 (FDB)	
			TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
30	59	57	41700	2610	41300	2690	41000	2780	40800	2910	40500	3050
	50	48	37900	2480	37500	2550	37200	2640	37000	2760	36800	2890
	47	43	34600	2370	34200	2440	34000	2520	33800	2630	33600	2760
	41	39	32200	2290	31900	2360	31700	2440	31500	2550	31300	2680
	36	34	28900	2180	28600	2240	28400	2320	28300	2430	28100	2550
	32	31	26900	2130	26700	2220	26300	2280	26200	2340	26500	2440
	23	22	22600	1930	22300	1990	22200	2060	22100	2150	21900	2260
	19	18	21200	1880	21000	1940	20900	2000	20700	2100	20600	2200
	14	13	19400	1800	19200	1850	19100	1910	19000	2000	18900	2100
	5	4	16400	1700	16200	1750	16100	1810	16000	1890	15900	1980
	1	0	12400	1560	12200	1610	12100	1660	12100	1740	12000	1820
	-3	-4	9700	1460	9600	1510	9500	1560	9500	1630	9400	1710
	-13	-13	5200	1300	5100	1340	5100	1380	5100	1450	5000	1520

TC:Total Heating Capacity [Btu/h]

PI:Power Input [W]

Product model : RAV-HB__1BTP-UL : RAV-BP__1AT2P-UL

(TC : Btu/h, PI : W)

unit size	outdoor air temp.		indoor air temp.									
	FDB	FWB	61 (FDB)		64 (FDB)		70 (FDB)		72 (FDB)		75 (FDB)	
			TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
36	59	57	49100	3320	48500	3420	48300	3540	48000	3700	47700	3880
	50	48	44500	3150	44100	3240	43800	3350	43500	3500	43300	3670
	47	43	40700	3010	40200	3090	40000	3200	39800	3350	39500	3510
	41	39	37900	2910	37500	3000	37300	3100	37100	3240	36900	3400
	36	34	34000	2770	33700	2850	33500	2950	33200	3080	33100	3230
	32	31	31600	2700	31500	2820	30900	2900	30800	2980	31200	3100
	23	22	26500	2460	26300	2530	26100	2610	25900	2730	25800	2870
	19	18	25000	2390	24700	2460	24600	2550	24400	2660	24300	2790
	14	13	22900	2280	22600	2350	22500	2430	22400	2540	22200	2660
	5	4	19300	2160	19100	2220	19000	2300	18800	2400	18700	2520
	1	0	14500	1980	14400	2040	14300	2110	14200	2210	14100	2320
	-3	-4	11400	1860	11300	1920	11200	1980	11100	2070	11000	2170
	-13	-13	6100	1650	6100	1700	6000	1760	6000	1840	5900	1930
unit size	outdoor air temp.		indoor air temp.									
	FDB	FWB	61 (FDB)		64 (FDB)		70 (FDB)		72 (FDB)		75 (FDB)	
			TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
42	59	57	57600	4420	57000	4550	56700	4710	56400	4920	56000	5160
	50	48	52300	4190	51800	4310	51500	4460	51200	4660	50900	4890
	47	43	47800	4000	47300	4120	47000	4260	46700	4450	46400	4670
	41	39	44600	3880	44100	3990	43800	4130	43600	4310	43300	4530
	36	34	40000	3690	39500	3790	39300	3930	39100	4100	38800	4300
	32	31	37100	3600	37000	3750	36300	3860	36200	3960	36700	4130
	23	22	31200	3270	30900	3360	30700	3480	30500	3640	30300	3820
	19	18	29300	3190	29000	3280	28800	3390	28700	3540	28500	3720
	14	13	26900	3040	26600	3130	26400	3230	26300	3380	26100	3550
	5	4	22600	2870	22400	2950	22300	3060	22100	3190	22000	3350
	1	0	17100	2640	16900	2720	16800	2810	16700	2940	16600	3080
	-3	-4	13400	2470	13200	2550	13100	2630	13100	2750	12900	2890
	-13	-13	7200	2200	7100	2270	7000	2340	7000	2450	6900	2570
unit size	outdoor air temp.		indoor air temp.									
	FDB	FWB	61 (FDB)		64 (FDB)		70 (FDB)		72 (FDB)		75 (FDB)	
			TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
48	59	57	66200	5500	65500	5660	65100	5850	64700	6120	64400	6420
	50	48	60100	5210	59500	5370	59100	5550	58800	5800	58400	6090
	47	43	54900	4980	54300	5120	54000	5300	53700	5540	53400	5810
	41	39	51200	4820	50700	4960	50400	5130	50100	5370	49800	5630
	36	34	45900	4590	45400	4720	45200	4880	44900	5110	44600	5360
	32	31	42700	4480	42500	4660	41700	4800	41600	4930	42100	5140
	23	22	35800	4070	35500	4180	35200	4330	35000	4520	34800	4750
	19	18	33700	3960	33300	4080	33100	4220	32900	4410	32700	4630
	14	13	30900	3780	30600	3890	30400	4020	30200	4210	30000	4410
	5	4	26000	3570	25700	3680	25600	3800	25400	3970	25300	4170
	1	0	19600	3280	19500	3380	19300	3490	19200	3650	19000	3830
	-3	-4	15400	3080	15200	3170	15100	3280	15000	3430	14900	3600
	-13	-13	8200	2730	8200	2820	8000	2910	8100	3050	7900	3200

TC:Total Heating Capacity [Btu/h]

PI:Power Input [W]

2-3-5. Part load performance

Indoor: RAV-HB121BTP-UL
Outdoor: RAV-BP121AT2P-UL

Operation range	Cooling		Heating	
	Q	P	Q	P
MINIMUM	Btu/h 4000	320	3000	310
RATING	Btu/h 12000	984	14000	1167
MAXIMUM	Btu/h 13600	1100	17000	1550

Q : Capacity (Btu/h)
P : Power consumption (W)

Outdoor Temperature DB °F(°C)	Parts Load (%)																			
	100		90		80		70		60		50		40		30		20		10	
	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P
68(20)	14310	770	12880	690	11450	620	10020	540	8590	460	7160	380	5720	300	4770	250	4770	250	4770	250
70(21)	14160	790	12740	710	11320	630	9910	550	8490	470	7080	390	5660	310	4720	260	4720	260	4720	260
72(22)	14000	800	12600	720	11200	640	9800	560	8400	480	7000	400	5600	310	4670	260	4670	260	4670	260
73(23)	13850	810	12460	730	11080	650	9690	570	8310	480	6920	400	5540	320	4620	260	4620	260	4620	260
75(24)	13690	830	12320	740	10960	660	9590	580	8220	490	6850	410	5480	330	4560	270	4560	270	4560	270
77(25)	13540	840	12190	760	10830	670	9480	590	8120	500	6770	420	5420	330	4510	270	4510	270	4510	270
79(26)	13390	860	12050	770	10710	680	9370	600	8030	510	6690	420	5350	340	4460	280	4460	280	4460	280
81(27)	13230	870	11910	780	10590	690	9260	610	7940	520	6620	430	5290	340	4410	280	4410	280	4410	280
82(28)	13080	890	11770	800	10460	710	9150	620	7850	530	6540	440	5230	350	4360	290	4360	290	4360	290
84(29)	12920	900	11630	810	10340	720	9050	630	7750	540	6460	440	5170	350	4310	290	4310	290	4310	290
86(30)	12770	910	11490	820	10220	730	8940	640	7660	540	6390	450	5110	360	4260	300	4260	300	4260	300
88(31)	12620	930	11350	830	10090	740	8830	650	7570	550	6310	460	5050	360	4210	300	4210	300	4210	300
90(32)	12460	940	11220	850	9970	750	8720	660	7480	560	6230	470	4980	370	4150	310	4150	310	4150	310
91(33)	12310	960	11080	860	9850	760	8620	670	7380	570	6150	470	4920	380	4100	310	4100	310	4100	310
93(34)	12150	970	10940	870	9720	770	8510	680	7290	580	6080	480	4860	380	4050	320	4050	320	4050	320
95(35)	12000	980	10800	880	9600	780	8400	690	7200	590	6000	490	4800	390	4000	320	4000	320	4000	320
97(36)	11850	1000	10660	900	9480	800	8290	700	7110	590	5920	490	4740	390	3950	320	3950	320	3950	320
99(37)	11690	1010	10520	910	9350	810	8180	700	7020	600	5850	500	4680	400	3900	330	3900	330	3900	330
100(38)	11540	1030	10380	920	9230	820	8080	710	6920	610	5770	510	4620	400	3850	330	3850	330	3850	330
102(39)	11380	1040	10250	940	9110	830	7970	720	6830	620	5690	510	4550	410	3790	340	3790	340	3790	340
104(40)	11230	1050	10110	950	8980	840	7860	730	6740	630	5620	520	4490	410	3740	340	3740	340	3740	340
106(41)	11080	1070	9970	960	8860	850	7750	740	6650	640	5540	530	4430	420	3690	350	3690	350	3690	350
108(42)	10920	1080	9830	970	8740	860	7650	750	6550	640	5460	530	4370	430	3640	350	3640	350	3640	350
109(43)	10770	1100	9690	990	8610	870	7540	760	6460	650	5380	540	4310	430	3590	360	3590	360	3590	360
111(44)	10610	1110	9550	1000	8490	890	7430	770	6370	660	5310	550	4250	440	3540	360	3540	360	3540	360
113(45)	10460	1130	9410	1010	8370	900	7320	780	6280	670	5230	560	4180	440	3490	370	3490	370	3490	370
115(46)	10310	1140	9280	1020	8240	910	7210	790	6180	680	5150	560	4120	450	3440	370	3440	370	3440	370

Heating		Parts Load (%)																			
Outdoor Temperature DB °F(°C)	100		90		80		70		60		50		40		30		20		10		
	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	
-13(-25)	5710	800	5140	730	4570	650	3990	580	3420	500	2850	430	2280	350	1710	280	1220	210	1220	210	
-11(-24)	5830	810	5250	740	4670	660	4080	590	3500	510	2920	430	2330	360	1750	280	1250	220	1250	220	
-9(-23)	5960	830	5360	750	4770	670	4170	590	3580	520	2980	440	2380	360	1790	290	1280	220	1280	220	
-8(-22)	6090	840	5480	760	4870	680	4260	600	3650	520	3040	450	2430	370	1830	290	1300	220	1300	220	
-6(-21)	6210	850	5590	770	4970	690	4350	610	3730	530	3110	450	2490	370	1860	290	1330	230	1330	230	
-4(-20)	6340	860	5710	780	5070	700	4440	620	3800	540	3170	460	2540	380	1900	300	1360	230	1360	230	
-2(-19)	6590	870	5930	790	5280	710	4620	630	3960	550	3300	460	2640	380	1980	300	1410	230	1410	230	
0(-18)	6850	880	6160	800	5480	720	4790	640	4110	550	3420	470	2740	390	2050	310	1470	230	1470	230	
1(-17)	7100	900	6390	810	5680	730	4970	640	4260	560	3550	480	2840	390	2130	310	1520	240	1520	240	
3(-16)	7360	910	6620	820	5880	740	5150	650	4410	570	3680	480	2940	400	2210	310	1580	240	1580	240	
5(-15)	7610	920	6850	830	6090	750	5330	660	4570	570	3800	490	3040	400	2280	320	1630	240	1630	240	
7(-14)	7850	930	7060	840	6280	750	5490	670	4710	580	3920	490	3140	410	2350	320	1680	250	1680	250	
9(-13)	8080	930	7280	850	6470	760	5660	670	4850	580	4040	500	3230	410	2430	320	1730	250	1730	250	
10(-12)	8320	940	7490	850	6660	760	5830	680	4990	590	4160	500	3330	410	2500	320	1780	250	1780	250	
12(-11)	8560	950	7700	860	6850	770	5990	680	5140	590	4280	500	3420	420	2570	330	1830	250	1830	250	
14(-10)	8800	950	7920	860	7040	780	6160	690	5280	600	4400	510	3520	420	2640	330	1890	250	1890	250	
16(-9)	9040	960	8130	870	7230	780	6320	690	5420	600	4520	510	3610	420	2710	330	1940	260	1940	260	
18(-8)	9270	970	8350	880	7420	790	6490	700	5560	610	4640	520	3710	430	2780	330	1990	260	1990	260	
19(-7)	9510	980	8560	880	7610	790	6660	700	5710	610	4760	520	3800	430	2850	340	2040	260	2040	260	
21(-6)	9580	980	8620	890	7670	800	6710	710	5750	610	4790	520	3830	430	2870	340	2050	260	2050	260	
23(-5)	9650	990	8690	900	7720	800	6760	710	5790	620	4830	530	3860	430	2900	340	2070	260	2070	260	
25(-4)	9720	990	8750	900	7780	810	6810	720	5830	620	4860	530	3890	440	2920	340	2080	260	2080	260	
27(-3)	9790	1000	8810	910	7830	810	6850	720	5880	630	4900	530	3920	440	2940	350	2100	270	2100	270	
28(-2)	9860	1010	8880	910	7890	820	6900	720	5920	630	4930	540	3950	440	2960	350	2110	270	2110	270	
30(-1)	9930	1010	8940	920	7950	820	6950	730	5960	630	4970	540	3970	450	2980	350	2130	270	2130	270	
32(0)	10000	1020	9000	920	8000	830	7000	730	6000	640	5000	540	4000	450	3000	350	2140	270	2140	270	
34(1)	10070	1030	9070	930	8060	830	7050	740	6040	640	5040	550	4030	450	3020	350	2160	270	2160	270	
36(2)	10140	1030	9130	940	8120	840	7100	740	6090	650	5070	550	4060	450	3040	360	2170	270	2170	270	
37(3)	10310	1050	9280	950	8250	850	7220	750	6190	660	5160	560	4120	460	3090	360	2210	280	2210	280	
39(4)	10480	1060	9430	960	8380	860	7330	760	6290	660	5240	560	4190	470	3140	370	2250	280	2250	280	
41(5)	10640	1070	9580	970	8510	870	7450	770	6390	670	5320	570	4260	470	3190	370	2280	290	2280	290	
43(6)	13640	1150	12270	1040	10910	930	9550	830	8180	720	6820	610	5460	500	4090	400	2920	310	2920	310	
45(7)	14000	1170	12600	1060	11200	950	9800	840	8400	730	7000	620	5600	510	4200	400	3000	310	3000	310	
46(8)	14360	1190	12930	1070	11490	960	10050	850	8620	740	7180	630	5740	520	4310	410	3080	310	3080	310	
48(9)	14720	1200	13250	1090	11780	980	10310	870	8830	750	7360	640	5890	530	4420	420	3150	320	3150	320	
50(10)	15080	1220	13580	1110	12070	990	10560	880	9050	760	7540	650	6030	540	4530	420	3230	320	3230	320	
52(11)	15450	1240	13900	1120	12360	1010	10810	890	9270	780	7720	660	6180	540	4630	430	3310	330	3310	330	
54(12)	15810	1260	14230	1140	12650	1020	11060	900	9480	790	7900	670	6320	550	4740	430	3390	330	3390	330	
55(13)	16170	1280	14550	1160	12930	1040	11320	920	9700	800	8080	680	6470	560	4850	440	3460	340	3460	340	
57(14)	16530	1290	14880	1170	13220	1050	11570	930	9920	810	8260	690	6610	570	4960	450	3540	340	3540	340	
59(15)	16890	1310	15200	1190	13510	1070	11820	940	10130	820	8450	700	6760	580	5070	450	3620	350	3620	350	

Indoor: RAV-HB181BTP-UL
Outdoor: RAV-BP181AT2P-UL

Operation range		Cooling		Heating	
		Q	P	Q	P
MINIMUM	Btu/h	4000	320	3000	300
RATING	Btu/h	18000	1538	20000	1667
MAXIMUM	Btu/h	19100	2000	21400	2250

Q : Capacity (Btu/h)
P : Power consumption (W)

Cooling

Outdoor Temperature DB °F(°C)	Parts Load (%)																			
	100		90		80		70		60		50		40		30		20		10	
	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P
68(20)	21470	1210	19320	1080	17170	960	15030	840	12880	720	10730	590	8590	470	6440	350	4770	250	4770	250
70(21)	21230	1230	19110	1100	16990	980	14860	850	12740	730	10620	600	8490	480	6370	350	4720	260	4720	260
72(22)	21000	1250	18900	1120	16800	1000	14700	870	12600	740	10500	610	8400	490	6300	360	4670	260	4670	260
73(23)	20770	1270	18690	1140	16620	1010	14540	880	12460	750	10390	630	8310	500	6230	370	4620	260	4620	260
75(24)	20540	1300	18490	1160	16430	1030	14380	900	12320	770	10270	640	8220	500	6160	370	4560	270	4560	270
77(25)	20310	1320	18280	1180	16250	1050	14220	920	12190	780	10160	650	8120	510	6090	380	4510	270	4510	270
79(26)	20080	1340	18070	1200	16060	1070	14060	930	12050	790	10040	660	8030	520	6020	380	4460	280	4460	280
81(27)	19850	1360	17860	1220	15880	1080	13890	950	11910	810	9920	670	7940	530	5950	390	4410	280	4410	280
82(28)	19620	1380	17660	1240	15690	1100	13730	960	11770	820	9810	680	7850	540	5890	400	4360	290	4360	290
84(29)	19390	1410	17450	1260	15510	1120	13570	980	11630	830	9690	690	7750	550	5820	400	4310	290	4310	290
86(30)	19160	1430	17240	1280	15320	1140	13410	990	11490	850	9580	700	7660	560	5750	410	4260	300	4260	300
88(31)	18920	1450	17030	1300	15140	1150	13250	1010	11350	860	9460	710	7570	560	5680	420	4210	300	4210	300
90(32)	18690	1470	16820	1320	14950	1170	13090	1020	11220	870	9350	720	7480	570	5610	420	4150	310	4150	310
91(33)	18460	1490	16620	1340	14770	1190	12920	1040	11080	890	9230	730	7380	580	5540	430	4100	310	4100	310
93(34)	18230	1520	16410	1360	14580	1210	12760	1050	10940	900	9120	740	7290	590	5470	440	4050	320	4050	320
95(35)	18000	1540	16200	1380	14400	1220	12600	1070	10800	910	9000	760	7200	600	5400	440	4000	320	4000	320
97(36)	17770	1560	15990	1400	14220	1240	12440	1080	10660	920	8880	770	7110	610	5330	450	3950	320	3950	320
99(37)	17540	1580	15780	1420	14030	1260	12280	1100	10520	940	8770	780	7020	620	5260	450	3900	330	3900	330
100(38)	17310	1600	15580	1440	13850	1280	12110	1110	10380	950	8650	790	6920	620	5190	460	3850	330	3850	330
102(39)	17080	1630	15370	1460	13660	1300	11950	1130	10250	960	8540	800	6830	630	5120	470	3790	340	3790	340
104(40)	16540	1510	14890	1360	13230	1200	11580	1050	9920	900	8270	740	6620	590	4960	430	3680	310	3680	310
106(41)	16260	1510	14630	1360	13010	1200	11380	1050	9760	900	8130	740	6500	590	4880	430	3610	310	3610	310
108(42)	15980	1510	14380	1360	12790	1200	11190	1050	9590	900	7990	740	6390	590	4790	430	3550	310	3550	310
109(43)	15700	1510	14130	1360	12560	1200	10990	1050	9420	900	7850	740	6280	590	4710	430	3490	310	3490	310
111(44)	15420	1510	13880	1360	12340	1200	10800	1050	9250	900	7710	740	6170	590	4630	430	3430	310	3430	310
113(45)	14400	1170	12960	1050	11520	930	10080	810	8640	690	7200	580	5760	460	4320	340	3200	240	3200	240
115(46)	14120	1170	12710	1050	11290	930	9880	810	8470	690	7060	580	5650	460	4240	340	3140	240	3140	240

Heating

Outdoor Temperature DB °F(°C)	Parts Load (%)																			
	100		90		80		70		60		50		40		30		20		10	
	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P
-13(-25)	8150	1150	7340	1040	6520	930	5710	820	4890	700	4080	590	3260	480	2450	370	1630	260	1220	210
-11(-24)	8330	1160	7500	1050	6670	940	5830	830	5000	710	4170	600	3330	490	2500	380	1670	270	1250	210
-9(-23)	8510	1180	7660	1070	6810	950	5960	840	5110	720	4260	610	3410	500	2550	380	1700	270	1280	210
-8(-22)	8700	1200	7830	1080	6960	970	6090	850	5220	730	4350	620	3480	500	2610	390	1740	270	1300	220
-6(-21)	8880	1210	7990	1100	7100	980	6210	860	5330	740	4440	630	3550	510	2660	390	1780	280	1330	220
-4(-20)	9060	1230	8150	1110	7250	990	6340	870	5430	750	4530	640	3620	520	2720	400	1810	280	1360	220
-2(-19)	9420	1250	8480	1130	7540	1010	6590	890	5650	770	4710	640	3770	520	2830	400	1880	280	1410	220
0(-18)	9780	1260	8800	1140	7830	1020	6850	900	5870	780	4890	650	3910	530	2930	410	1960	290	1470	230
1(-17)	10140	1280	9130	1160	8120	1030	7100	910	6090	790	5070	660	4060	540	3040	420	2030	290	1520	230
3(-16)	10510	1290	9460	1170	8410	1050	7360	920	6300	800	5250	670	4200	550	3150	420	2100	300	1580	230
5(-15)	10870	1310	9780	1180	8700	1060	7610	930	6520	810	5430	680	4350	550	3260	430	2170	300	1630	240
7(-14)	11210	1320	10090	1190	8970	1070	7850	940	6730	810	5600	680	4480	560	3360	430	2240	300	1680	240
9(-13)	11550	1330	10390	1200	9240	1070	8080	950	6930	820	5770	690	4620	560	3460	430	2310	300	1730	240
10(-12)	11890	1340	10700	1210	9510	1080	8320	950	7130	820	5940	690	4760	570	3570	440	2380	310	1780	240
12(-11)	12230	1350	11010	1220	9780	1090	8560	960	7340	830	6110	700	4890	570	3670	440	2450	310	1830	240
14(-10)	12570	1360	11310	1230	10050	1100	8800	970	7540	840	6280	710	5030	570	3770	440	2510	310	1890	250
16(-9)	12910	1370	11620	1240	10330	1110	9040	980	7740	840	6450	710	5160	580	3870	450	2580	310	1940	250
18(-8)	13250	1380	11920	1250	10600	1120	9270	980	7950	850	6620	720	5300	580	3970	450	2650	320	1990	250
19(-7)	13590	1390	12230	1260	10870	1120	9510	990	8150	860	6790	720	5430	590	4080	450	2720	320	2040	250
21(-6)	13690	1400	12320	1270	10950	1130	9580	1000	8210	860	6840	730	5480	590	4110	460	2740	320	2050	250
23(-5)	13790	1410	12410	1280	11030	1140	9650	1000	8270	870	6890	730	5520	590	4140	460	2760	320	2070	250
25(-4)	13890	1420	12500	1280	11110	1150	9720	1010	8330	870	6940	740	5560	600	4170	460	2780	320	2080	260
27(-3)	13990	1430	12590	1290	11190	1150	9790	1020	8390	880	6990	740	5600	600	4200	460	2800	330	2100	260
28(-2)	14090	1440	12680	1300	11270	1160	9860	1020	8450	880	7050	740	5640	610	4230	470	2820	330	2110	260
30(-1)	14190	1450	12770	1310	11350	1170	9930	1030	8510	890	7100	750	5680	610	4260	470	2840	330	2130	260
32(0)	14290	1460	12860	1320	11430	1180	10000	1040	8570	890	7150	750	5720	610	4290	470	2860	330	2140	260
34(1)	14390	1470	12950	1320	11510	1180	10070	1040	8640	900	7200	760	5760	620	4320	480	2880	330	2160	260
36(2)	14490	1480	13040	1330	11590	1190	10140	1050	8700	910	7250	760	5800	620	4350	480	2900	340	2170	270
37(3)	14730	1500	13260	1350	11780	1210	10310	1060	8840	920	7370	770	5890	630	4420	490	2950	340	2210	270
39(4)	14970	1510	13470	1370	11970	1220	10480	1080	8980	930	7480	780	5990	640	4490	490	2990	350	2250	270
41(5)	15200	1530	13680	1390	12160	1240	10640	1090	9120	940	7600	790	6080	650	4560	500	3040	350	2280	280
43(6)	19480	1640	17540	1480	15590	1320	13640	1170	11690	1010	9740	850	7790	690	5850	530	3900	370	2920	300
45(7)	20000	1670	18000	1510	16000	1350	14000	1180	12000	1020	10000	860	8000	700	6000	540	4000	380	3000	300
46(8)	20520	1690	18460	1530	16410	1370	14360	1200	12310	1040	10260	880	8210	710	6150	550	4100	390	3080	300
48(9)	21030	1720	18930	1550	16830	1390	14720	1220	12620	1060	10520	890	8410	720	6310	560	4210	390	3150	310
50(10)	21550	1740	19390	1580	17240	1410	15080	1240	12930	1070	10770	900	8620	730	6460	570	4310	400	3230	310
52(11)	22060	1770	19860	1600	17650	1430	15450	1260	13240	1090	11030	920	8830	750	6620	570	4410	400	3310	320
54(12)	22580	1800	20320	1620	18060	1450	15810	1280	13550	1100	11290	930	9030	760	6770	580	4520	410	3390	320
55(13)	23100	1820	20790	1650	18480	1470	16170	1290	13860	1120	11550	940	9240	770	6930	590	4620	420	3460	330
57(14)	23610	1850	21250	1670	18890	1490	16530	1310	14170	1130	11810	960	9450	780	7080	600	4720	420	3540	330
59(15)	24130	1870	21720	1690	19300	1510	16890	1330	14480	1150	12060	970	9650	790	7240	610	4830	430	3620	340

Indoor: RAV-HB241BTP-UL
Outdoor: RAV-BP241AT2P-UL

Operation range		Cooling		Heating	
		Q	P	Q	P
MINIMUM	Btu/h	6500	360	5100	350
RATING	Btu/h	24000	1920	27000	2061
MAXIMUM	Btu/h	27300	2630	38500	3350

Q : Capacity (Btu/h)
P : Power consumption (W)

Cooling

Outdoor Temperature DB °F(°C)	Parts Load (%)																			
	100		90		80		70		60		50		40		30		20		10	
	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P
68(20)	28620	1510	25760	1340	22900	1170	20030	1000	17170	840	14310	670	11450	500	8590	330	7750	280	7750	280
70(21)	28310	1530	25480	1360	22650	1190	19820	1020	16990	850	14160	680	11320	510	8490	340	7670	290	7670	290
72(22)	28000	1560	25200	1390	22400	1210	19600	1040	16800	870	14000	690	11200	520	8400	340	7580	290	7580	290
73(23)	27700	1590	24930	1410	22160	1240	19390	1060	16620	880	13850	700	11080	530	8310	350	7500	300	7500	300
75(24)	27390	1620	24650	1440	21910	1260	19170	1080	16430	900	13690	720	10960	540	8220	360	7420	300	7420	300
77(25)	27080	1640	24370	1460	21660	1280	18960	1090	16250	910	13540	730	10830	550	8120	360	7330	310	7330	310
79(26)	26770	1670	24090	1490	21420	1300	18740	1110	16060	930	13390	740	10710	550	8030	370	7250	310	7250	310
81(27)	26460	1700	23820	1510	21170	1320	18520	1130	15880	940	13230	750	10590	560	7940	370	7170	320	7170	320
82(28)	26160	1730	23540	1530	20920	1340	18310	1150	15690	960	13080	760	10460	570	7850	380	7080	320	7080	320
84(29)	25850	1750	23260	1560	20680	1360	18090	1170	15510	970	12920	780	10340	580	7750	390	7000	330	7000	330
86(30)	25540	1780	22990	1580	20430	1390	17880	1190	15320	990	12770	790	10220	590	7660	390	6920	330	6920	330
88(31)	25230	1810	22710	1610	20190	1410	17660	1200	15140	1000	12620	800	10090	600	7570	400	6830	340	6830	340
90(32)	24920	1840	22430	1630	19940	1430	17450	1220	14950	1020	12460	810	9970	610	7480	400	6750	340	6750	340
91(33)	24620	1860	22150	1660	19690	1450	17230	1240	14770	1030	12310	830	9850	620	7380	410	6670	350	6670	350
93(34)	24310	1890	21880	1680	19450	1470	17020	1260	14580	1050	12150	840	9720	630	7290	420	6580	350	6580	350
95(35)	24000	1920	21600	1710	19200	1490	16800	1280	14400	1060	12000	850	9600	640	7200	420	6500	360	6500	360
97(36)	23690	1950	21320	1730	18950	1510	16580	1300	14220	1080	11850	860	9480	650	7110	430	6420	370	6420	370
99(37)	23380	1980	21050	1750	18710	1530	16370	1310	14030	1090	11690	870	9350	650	7020	430	6330	370	6330	370
100(38)	23080	2000	20770	1780	18460	1560	16150	1330	13850	1110	11540	890	9230	660	6920	440	6250	380	6250	380
102(39)	22770	2030	20490	1800	18210	1580	15940	1350	13660	1130	11380	900	9110	670	6830	450	6170	380	6170	380
104(40)	22460	2060	20210	1830	17970	1600	15720	1370	13480	1140	11230	910	8980	680	6740	450	6080	390	6080	390
106(41)	22150	2090	19940	1850	17720	1620	15510	1390	13290	1160	11080	920	8860	690	6650	460	6000	390	6000	390
108(42)	21840	2110	19660	1880	17480	1640	15290	1410	13110	1170	10920	940	8740	700	6550	460	5920	400	5920	400
109(43)	21540	2140	19380	1900	17230	1660	15080	1420	12920	1190	10770	950	8610	710	6460	470	5830	400	5830	400
111(44)	21230	2170	19110	1930	16980	1680	14860	1440	12740	1200	10610	960	8490	720	6370	480	5750	410	5750	410
113(45)	20920	2200	18830	1950	16740	1710	14640	1460	12550	1220	10460	970	8370	730	6280	480	5670	410	5670	410
115(46)	20610	2220	18550	1980	16490	1730	14430	1480	12370	1230	10310	980	8240	740	6180	490	5580	420	5580	420

Heating

Outdoor Temperature DB °F(°C)	Parts Load (%)																			
	100		90		80		70		60		50		40		30		20		10	
	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P
-13(-25)	11010	1420	9900	1270	8800	1130	7700	980	6600	840	5500	690	4400	550	3300	400	2200	260	2080	240
-11(-24)	11250	1440	10130	1290	9000	1140	7880	1000	6750	850	5630	700	4500	560	3380	410	2250	260	2130	240
-9(-23)	11490	1460	10350	1310	9200	1160	8050	1010	6900	860	5750	710	4600	560	3450	410	2300	260	2170	250
-8(-22)	11740	1480	10570	1330	9390	1180	8220	1030	7040	870	5870	720	4700	570	3520	420	2350	270	2220	250
-6(-21)	11980	1500	10790	1350	9590	1190	8390	1040	7190	890	5990	730	4790	580	3600	430	2400	270	2260	250
-4(-20)	12230	1520	11010	1360	9780	1210	8560	1050	7340	900	6110	740	4890	590	3670	430	2450	280	2310	260
-2(-19)	12720	1540	11450	1380	10170	1220	8900	1070	7630	910	6360	750	5090	590	3820	440	2540	280	2400	260
0(-18)	13210	1560	11890	1400	10570	1240	9240	1080	7920	920	6600	760	5280	600	3960	440	2640	280	2490	260
1(-17)	13700	1580	12330	1420	10960	1260	9590	1100	8220	930	6850	770	5480	610	4110	450	2740	290	2590	270
3(-16)	14180	1600	12770	1440	11350	1270	9930	1110	8510	950	7090	780	5670	620	4260	450	2840	290	2680	270
5(-15)	14670	1620	13210	1460	11740	1290	10270	1120	8800	960	7340	790	5870	630	4400	460	2930	290	2770	280
7(-14)	15130	1630	13620	1470	12110	1300	10590	1130	9080	960	7570	800	6050	630	4540	460	3030	300	2860	280
9(-13)	15590	1650	14030	1480	12470	1310	10910	1140	9350	970	7800	800	6240	640	4680	470	3120	300	2940	280
10(-12)	16050	1660	14440	1490	12840	1320	11230	1150	9630	980	8020	810	6420	640	4810	470	3210	300	3030	280
12(-11)	16510	1670	14860	1500	13210	1330	11560	1160	9900	990	8250	820	6600	650	4950	470	3300	300	3120	280
14(-10)	16970	1680	15270	1510	13570	1340	11880	1170	10180	990	8480	820	6790	650	5090	480	3390	310	3200	290
16(-9)	17430	1700	15680	1520	13940	1350	12200	1180	10460	1000	8710	830	6970	650	5230	480	3490	310	3290	290
18(-8)	17880	1710	16100	1530	14310	1360	12520	1180	10730	1010	8940	830	7150	660	5370	480	3580	310	3380	290
19(-7)	18340	1720	16510	1550	14670	1370	12840	1190	11010	1020	9170	840	7340	660	5500	490	3670	310	3460	290
21(-6)	18480	1730	16630	1560	14780	1380	12930	1200	11090	1020	9240	850	7390	670	5540	490	3700	310	3490	290
23(-5)	18610	1750	16750	1570	14890	1390	13030	1210	11170	1030	9310	850	7450	670	5580	490	3720	320	3520	300
25(-4)	18750	1760	16880	1580	15000	1400	13130	1220	11250	1040	9380	860	7500	680	5630	500	3750	320	3540	300
27(-3)	18890	1770	17000	1590	15110	1410	13220	1220	11330	1040	9440	860	7550	680	5670	500	3780	320	3570	300
28(-2)	19020	1780	17120	1600	15220	1410	13320	1230	11410	1050	9510	870	7610	690	5710	500	3800	320	3590	300
30(-1)	19160	1790	17240	1610	15330	1420	13410	1240	11490	1060	9580	870	7660	690	5750	510	3830	320	3620	300
32(0)	19290	1800	17360	1620	15430	1430	13510	1250	11580	1060	9650	880	7720	700	5790	510	3860	330	3640	310
34(1)	19430	1810	17490	1630	15540	1440	13600	1260	11660	1070	9710	890	7770	700	5830	510	3890	330	3670	310
36(2)	19570	1820	17610	1640	15650	1450	13700	1260	11740	1080	9780	890	7830	700	5870	520	3910	330	3700	310
37(3)	19890	1850	17900	1660	15910	1470	13920	1280	11930	1090	9940	900	7950	710	5970	520	3980	330	3760	310
39(4)	20210	1870	18190	1680	16160	1490	14140	1300	12120	1110	10100	910	8080	720	6060	530	4040	340	3820	320
41(5)	20530	1900	18470	1700	16420	1510	14370	1310	12320	1120	10260	930	8210	730	6160	540	4110	340	3880	320
43(6)	26300	2030	23670	1820	21040	1610	18410	1410	15780	1200	13150	990	10520	780	7890	580	5260	370	4970	340
45(7)	27000	2060	24300	1850	21600	1640	18900	1430	16200	1220	13500	1010	10800	800	8100	580	5400	370	5100	350
46(8)	27700	2090	24930	1880	22160	1660	19390	1450	16620	1240	13850	1020	11080	810	8310	590	5540	380	5230	360
48(9)	28390	2120	25550	1910	22710	1690	19880	1470	17040	1250	14200	1040	11360	820	8520	600	5680	390	5360	360
50(10)	29090	2160	26180	1940	23270	1720	20360	1490	17450	1270	14550	1050	11640	830	8730	610	5820	390	5490	370
52(11)	29790	2190	26810	1960	23830	1740	20850	1520	17870	1290	14890	1070	11910	840	8940	620	5960	400	5630	370
54(12)	30480	2220	27440	1990	24390	1770	21340	1540	18290	1310	15240	1080	12190	860	9150	630	6100	400	5760	380
55(13)	31180	2250	28060	2020	24940	1790	21830	1560	18710	1330	15590	1100	12470	870	9350	640	6240	410	5890	380
57(14)	31880	2280	28690	2050	25500	1820	22310	1580	19130	1350	15940	1120	12750	880	9560	650	6380	410	6020	390
59(15)	32570	2320	29320	2080	26060	1840	22800	1610	19540	1370	16290	1130	13030	890	9770	660	6510	420	6150	390

Indoor: RAV-HB301BTP-UL
Outdoor: RAV-BP301AT2P-UL

Operation range		Cooling		Heating	
		Q	P	Q	P
MINIMUM	Btu/h	8900	760	8100	560
RATING	Btu/h	30000	2308	34000	2519
MAXIMUM	Btu/h	38500	3500	40900	3670

Q : Capacity (Btu/h)
P : Power consumption (W)

Cooling

Outdoor Temperature DB °F(°C)	Parts Load (%)																			
	100		90		80		70		60		50		40		30		20		10	
	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P
68(20)	35780	1810	32200	1640	28620	1470	25040	1290	21470	1120	17890	950	14310	780	10730	600	10610	600	10610	600
70(21)	35390	1840	31850	1670	28310	1490	24770	1320	21230	1140	17700	970	14160	790	10620	610	10500	610	10500	610
72(22)	35010	1880	31500	1700	28000	1520	24500	1340	21000	1160	17500	980	14000	800	10500	620	10380	620	10380	620
73(23)	34620	1910	31160	1730	27700	1550	24230	1360	20770	1180	17310	1000	13850	820	10390	640	10270	630	10270	630
75(24)	34240	1940	30810	1760	27390	1570	23960	1390	20540	1200	17120	1020	13690	830	10270	650	10160	640	10160	640
77(25)	33850	1980	30470	1790	27080	1600	23700	1410	20310	1220	16930	1030	13540	850	10160	660	10040	650	10040	650
79(26)	33470	2010	30120	1820	26770	1630	23430	1440	20080	1240	16730	1050	13390	860	10040	670	9930	660	9930	660
81(27)	33080	2040	29770	1850	26460	1650	23160	1460	19850	1260	16540	1070	13230	870	9920	680	9810	670	9810	670
82(28)	32700	2080	29430	1880	26160	1680	22890	1480	19620	1280	16350	1090	13080	890	9810	690	9700	680	9700	680
84(29)	32310	2110	29080	1910	25850	1710	22620	1510	19390	1300	16160	1100	12920	900	9690	700	9590	690	9590	690
86(30)	31930	2140	28730	1940	25540	1730	22350	1530	19160	1330	15960	1120	12770	920	9580	710	9470	710	9470	710
88(31)	31540	2180	28390	1970	25230	1760	22080	1550	18920	1350	15770	1140	12620	930	9460	720	9360	720	9360	720
90(32)	31160	2210	28040	2000	24920	1790	21810	1580	18690	1370	15580	1160	12460	940	9350	730	9240	730	9240	730
91(33)	30770	2240	27690	2030	24620	1810	21540	1600	18460	1390	15390	1170	12310	960	9230	750	9130	740	9130	740
93(34)	30390	2270	27350	2060	24310	1840	21270	1620	18230	1410	15190	1190	12150	970	9120	760	9010	750	9010	750
95(35)	30000	2310	27000	2090	24000	1870	21000	1650	18000	1430	15000	1210	12000	990	9000	770	8900	760	8900	760
97(36)	29620	2340	26650	2120	23690	1890	20730	1670	17770	1450	14810	1220	11850	1000	8880	780	8790	770	8790	770
99(37)	29230	2370	26310	2150	23380	1920	20460	1690	17540	1470	14620	1240	11690	1020	8870	790	8670	780	8670	780
100(38)	28850	2410	25960	2180	23080	1950	20190	1720	17310	1490	14420	1260	11540	1030	8650	800	8560	790	8560	790
102(39)	28460	2440	25610	2210	22770	1970	19920	1740	17080	1510	14230	1280	11380	1040	8540	810	8440	800	8440	800
104(40)	28080	2470	25270	2240	22460	2000	19650	1770	16850	1530	14040	1290	11230	1060	8420	820	8330	810	8330	810
106(41)	27690	2510	24920	2270	22150	2030	19380	1790	16610	1550	13850	1310	11080	1070	8310	830	8210	830	8210	830
108(42)	27310	2540	24570	2300	21840	2060	19110	1810	16380	1570	13650	1330	10920	1090	8190	840	8100	840	8100	840
109(43)	26920	2570	24230	2330	21540	2080	18840	1840	16150	1590	13460	1350	10770	1100	8080	860	7990	850	7990	850
111(44)	26540	2610	23880	2360	21230	2110	18570	1860	15920	1610	13270	1360	10610	1110	7960	870	7870	860	7870	860
113(45)	26150	2640	23540	2390	20920	2140	18310	1880	15690	1630	13080	1380	10460	1130	7850	880	7760	870	7760	870
115(46)	25770	2670	23190	2420	20610	2160	18040	1910	15460	1650	12880	1400	10310	1140	7730	890	7640	880	7640	880

Heating

Outdoor Temperature DB °F(°C)	Parts Load (%)																			
	100		90		80		70		60		50		40		30		20		10	
	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P
-13(-25)	13860	1730	12470	1560	11090	1380	9700	1200	8320	1030	6930	850	5540	670	4160	490	3300	390	3300	390
-11(-24)	14170	1760	12750	1580	11330	1400	9920	1220	8500	1040	7080	860	5670	680	4250	500	3380	390	3380	390
-9(-23)	14470	1780	13030	1600	11580	1420	10130	1240	8680	1060	7240	870	5790	690	4340	510	3450	400	3450	400
-8(-22)	14780	1810	13300	1620	11830	1440	10350	1250	8870	1070	7390	890	5910	700	4430	520	3520	400	3520	400
-6(-21)	15090	1830	13580	1650	12070	1460	10560	1270	9050	1080	7550	900	6040	710	4530	520	3600	410	3600	410
-4(-20)	15400	1860	13860	1670	12320	1480	10780	1290	9240	1100	7700	910	6160	720	4620	530	3670	410	3670	410
-2(-19)	16010	1880	14410	1690	12810	1500	11210	1310	9610	1110	8010	920	6410	730	4800	540	3820	420	3820	420
0(-18)	16630	1910	14970	1710	13300	1520	11640	1320	9980	1130	8320	930	6650	740	4990	540	3960	420	3960	420
1(-17)	17250	1930	15520	1730	13800	1540	12070	1340	10350	1140	8620	950	6900	750	5170	550	4110	430	4110	430
3(-16)	17860	1960	16080	1760	14290	1560	12500	1360	10720	1160	8930	960	7140	760	5360	560	4260	440	4260	440
5(-15)	18480	1980	16630	1780	14780	1580	12930	1370	11090	1170	9240	970	7390	770	5540	570	4400	440	4400	440
7(-14)	19060	2000	17150	1790	15240	1590	13340	1390	11430	1180	9530	980	7620	770	5720	570	4540	440	4540	440
9(-13)	19630	2010	17670	1810	15710	1600	13740	1400	11780	1190	9820	990	7850	780	5890	570	4680	450	4680	450
10(-12)	20210	2030	18190	1820	16170	1610	14150	1410	12130	1200	10110	990	8080	790	6060	580	4810	450	4810	450
12(-11)	20790	2040	18710	1830	16630	1630	14550	1420	12470	1210	10390	1000	8320	790	6240	580	4950	450	4950	450
14(-10)	21370	2060	19230	1850	17090	1640	14960	1430	12820	1220	10680	1010	8550	800	6410	590	5090	460	5090	460
16(-9)	21940	2070	19750	1860	17550	1650	15360	1440	13170	1230	10970	1020	8780	800	6580	590	5230	460	5230	460
18(-8)	22520	2090	20270	1880	18020	1660	15760	1450	13510	1240	11260	1020	9010	810	6760	600	5370	460	5370	460
19(-7)	23100	2110	20790	1890	18480	1680	16170	1460	13860	1250	11550	1030	9240	820	6930	600	5500	470	5500	470
21(-6)	23270	2120	20940	1900	18620	1690	16290	1470	13960	1250	11630	1040	9310	820	6980	600	5540	470	5540	470
23(-5)	23440	2130	21100	1920	18750	1700	16410	1480	14060	1260	11720	1040	9380	830	7030	610	5580	470	5580	470
25(-4)	23610	2150	21250	1930	18890	1710	16530	1490	14170	1270	11810	1050	9440	830	7080	610	5630	480	5630	480
27(-3)	23780	2160	21400	1940	19030	1720	16650	1500	14270	1280	11890	1060	9510	840	7130	620	5670	480	5670	480
28(-2)	23950	2170	21560	1950	19160	1730	16770	1510	14370	1290	11980	1060	9580	840	7190	620	5710	480	5710	480
30(-1)	24120	2190	21710	1960	19300	1740	16890	1520	14470	1290	12060	1070	9650	850	7240	620	5750	490	5750	490
32(0)	24300	2200	21870	1980	19440	1750	17010	1530	14580	1300	12150	1080	9720	850	7290	630	5790	490	5790	490
34(1)	24470	2220	22020	1990	19570	1760	17130	1540	14680	1310	12230	1080	9790	860	7340	630	5830	490	5830	4

Indoor: RAV-HB361BTP-UL
Outdoor: RAV-BP361AT2P-UL

Operation range		Cooling		Heating	
		Q	P	Q	P
MINIMUM	Btu/h	8900	760	8100	560
RATING	Btu/h	36000	3051	40000	3200
MAXIMUM	Btu/h	41000	4200	44300	4580

Q : Capacity (Btu/h)

P : Power consumption (W)

Cooling

Outdoor Temperature DB °F(°C)	Parts Load (%)																			
	100		90		80		70		60		50		40		30		20		10	
	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P
68(20)	42930	2400	38640	2160	34340	1920	30050	1680	25760	1440	21470	1200	17170	960	12880	720	10610	600	10610	600
70(21)	42470	2440	38220	2200	33970	1950	29730	1710	25480	1470	21230	1220	16990	980	12740	740	10500	610	10500	610
72(22)	42010	2480	37810	2230	33600	1990	29400	1740	25200	1490	21000	1240	16800	1000	12600	750	10380	620	10380	620
73(23)	41540	2530	37390	2270	33240	2020	29080	1770	24930	1520	20770	1270	16620	1010	12460	760	10270	630	10270	630
75(24)	41080	2570	36970	2310	32870	2060	28760	1800	24650	1540	20540	1290	16430	1030	12320	780	10160	640	10160	640
77(25)	40620	2610	36560	2350	32500	2090	28430	1830	24370	1570	20310	1310	16250	1050	12190	790	10040	650	10040	650
79(26)	40160	2660	36140	2390	32130	2130	28110	1860	24090	1600	20080	1330	16060	1070	12050	800	9930	660	9930	660
81(27)	39700	2700	35730	2430	31760	2160	27790	1890	23820	1620	19850	1350	15880	1080	11910	820	9810	670	9810	670
82(28)	39230	2740	35310	2470	31390	2200	27460	1920	23540	1650	19620	1380	15690	1100	11770	830	9700	680	9700	680
84(29)	38770	2790	34890	2510	31020	2230	27140	1950	23260	1680	19390	1400	15510	1120	11630	840	9590	690	9590	690
86(30)	38310	2830	34480	2550	30650	2270	26820	1980	22990	1700	19160	1420	15320	1140	11490	850	9470	710	9470	710
88(31)	37850	2880	34060	2590	30280	2300	26490	2020	22710	1730	18920	1440	15140	1150	11350	870	9360	720	9360	720
90(32)	37390	2920	33650	2630	29910	2340	26170	2050	22430	1750	18690	1460	14950	1170	11220	880	9240	730	9240	730
91(33)	36920	2960	33230	2670	29540	2370	25850	2080	22150	1780	18460	1490	14770	1190	11080	890	9130	740	9130	740
93(34)	36460	3010	32820	2710	29170	2410	25520	2110	21880	1810	18230	1510	14580	1210	10940	910	9010	750	9010	750
95(35)	36000	3050	32400	2750	28800	2440	25200	2140	21600	1830	18000	1530	14400	1220	10800	920	8900	760	8900	760
97(36)	35540	3090	31980	2790	28430	2480	24880	2170	21320	1860	17770	1550	14220	1240	10660	930	8790	770	8790	770
99(37)	35080	3140	31570	2830	28060	2510	24550	2200	21050	1890	17540	1570	14030	1260	10520	950	8670	780	8670	780
100(38)	34610	3180	31150	2860	27690	2550	24230	2230	20770	1910	17310	1600	13850	1280	10380	960	8560	790	8560	790
102(39)	34150	3230	30740	2900	27320	2580	23910	2260	20490	1940	17080	1620	13660	1300	10250	970	8440	800	8440	800
104(40)	33690	3270	30320	2940	26950	2620	23580	2290	20210	1970	16850	1640	13480	1310	10110	990	8330	810	8330	810
106(41)	33230	3310	29910	2980	26580	2650	23260	2320	19940	1990	16610	1660	13290	1330	9970	1000	8210	830	8210	830
108(42)	32770	3360	29490	3020	26210	2690	22940	2350	19660	2020	16380	1680	13110	1350	9830	1010	8100	840	8100	840
109(43)	32300	3400	29070	3060	25840	2720	22610	2380	19380	2040	16150	1700	12920	1370	9690	1030	7990	850	7990	850
111(44)	31840	3440	28660	3100	25470	2760	22290	2410	19110	2070	15920	1730	12740	1380	9550	1040	7870	860	7870	860
113(45)	31380	3490	28240	3140	25100	2790	21970	2440	18830	2100	15690	1750	12550	1400	9410	1050	7760	870	7760	870
115(46)	30920	3530	27830	3180	24730	2830	21640	2480	18550	2120	15460	1770	12370	1420	9280	1070	7640	880	7640	880

Heating

Outdoor Temperature DB °F(°C)	Parts Load (%)																			
	100		90		80		70		60		50		40		30		20		10	
	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P
-13(-25)	16300	2200	14670	1970	13040	1750	11410	1520	9780	1290	8150	1060	6520	840	4890	610	3300	390	3300	390
-11(-24)	16670	2230	15000	2000	13330	1770	11670	1540	10000	1310	8330	1080	6670	850	5000	620	3380	390	3380	390
-9(-23)	17030	2270	15330	2030	13620	1800	11920	1560	10220	1330	8510	1090	6810	860	5110	620	3450	400	3450	400
-8(-22)	17390	2300	15650	2060	13910	1820	12170	1580	10430	1350	8700	1110	6960	870	5220	630	3520	400	3520	400
-6(-21)	17750	2330	15980	2090	14200	1850	12430	1610	10650	1360	8880	1120	7100	880	5330	640	3600	410	3600	410
-4(-20)	18120	2360	16300	2120	14490	1870	12680	1630	10870	1380	9060	1140	7250	900	5430	650	3670	410	3670	410
-2(-19)	18840	2390	16960	2140	15070	1900	13190	1650	11300	1400	9420	1150	7540	910	5650	660	3820	420	3820	420
0(-18)	19570	2420	17610	2170	15650	1920	13700	1670	11740	1420	9780	1170	7830	920	5870	670	3960	420	3960	420
1(-17)	20290	2450	18260	2200	16230	1950	14200	1690	12170	1440	10140	1180	8120	930	6090	680	4110	430	4110	430
3(-16)	21010	2490	18910	2230	16810	1970	14710	1710	12610	1460	10510	1200	8410	940	6300	690	4260	440	4260	440
5(-15)	21740	2520	19570	2260	17390	2000	15220	1740	13040	1480	10870	1220	8700	950	6520	690	4400	440	4400	440
7(-14)	22420	2540	20180	2270	17930	2010	15690	1750	13450	1490	11210	1220	8970	960	6730	700	4540	440	4540	440
9(-13)	23100	2560	20790	2290	18480	2030	16170	1760	13860	1500	11550	1230	9240	970	6930	710	4680	450	4680	450
10(-12)	23780	2580	21400	2310	19020	2040	16640	1780	14270	1510	11890	1240	9510	980	7130	710	4810	450	4810	450
12(-11)	24460	2600	22010	2330	19570	2060	17120	1790	14670	1520	12230	1250	9780	980	7340	720	4950	450	4950	450
14(-10)	25140	2620	22620	2340	20110	2070	17600	1800	15080	1530	12570	1260	10050	990	7540	720	5090	460	5090	460
16(-9)	25820	2640	23230	2360	20650	2090	18070	1820	15490	1540	12910	1270	10330	1000	7740	730	5230	460	5230	460
18(-8)	26490	2650	23850	2380	21200	2110	18550	1830	15900	1560	13250	1280	10600	1010	7950	730	5370	460	5370	460
19(-7)	27170	2670	24460	2400	21740	2120	19020	1840	16300	1570	13590	1290	10870	1010	8150	740	5500	470	5500	470
21(-6)	27380	2690	24640	2410	21900	2140	19160	1860	16430	1580	13690	1300	10950	1020	8210	740	5540	470	5540	470
23(-5)	27580	2710	24820	2430	22060	2150	19300	1870	16550	1590	13790	1310	11030	1030	8270	750	5580	470	5580	470
25(-4)	27780	2730	25000	2440	22220	2160	19440	1880	16670	1600	13890	1320	11110	1030	8330	750	5630	480	5630	480
27(-3)	27980	2740	25180	2460	22380	2180	19590	1890	16790	1610	13990	1320	11190	1040	8390	760	5670	480	5670	480
28(-2)	28180	2760	25360	2480	22540	2190	19730	1900	16910	1620	14090	1330	11270	1050	8450	760	5710	480	5710	480
30(-1)	28380	2780	25540	2490	22710	2200	19870	1920	17030	1630	14190	1340	11350	1050	8510	770	5750	490	5750	490
32(0)	28580	2800	25720	2510	22870	2220	20010	1930	17150	1640	14290	1350	11430	1060	8570	770	5790	490	5790	490
34(1)	28780	2810	25910	2520	23030	2230	20150	1940	17270	1650	14390	1360	11510	1070	8640	780	5830	490	5830	490
36(2)	28990	2830	26090	2540	23190	2250	20290	1950	17390	1660	14490	1370	11590	1070	8700	780	5870	500	5870	500
37(3)	29460	2870	26510	2570	23570	2280	20620	1980	17680	1680	14730	1390	11780	1090	8840	790	5970	500	5970	500
39(4)	29940	2910	26940	2610	23950	2310	20950	2010	17960	1700	14970	1400	11970	1100	8980	800	6060	510	6060	510
41(5)	30410	2950	27370	2640	24330	2340	21290	2030	18250	1730	15200	1420	12160	1120	9120	810	6160	520	6160	520
43(6)	38970	3150	35070	2820	31170	2500	27280	2170	23380	1850	19480	1520	15590	1190	11690	870	7890	550	7890	550
45(7)	40000	3200	36000	2870	32000	2540	28000	2210	24000	1880	20000	1540	16000	1210	12000	880	8100	560	8100	560
46(8)	41030	3250	36930	2910	32830	2580	28720	2240	24620	1900	20520	1570	16410	1230	12310	900	8310	570	8310	570
48(9)	42060	3300	37860	2960	33650	2620	29450	2280	25240	1930	21030	1590	16830	1250	12620	910	8520	580	8520	580
50(10)	43100	3350	38790	3000	34480	2660	30170	2310	25860	1960	21550	1620	17240	1270	12930	920	8730	590	8730	590
52(11)	44130	3400	39720	3050	35300	2700	30890	2340	26480	1990	22060	1640	17650	1290	13240	940	8940	590	8940	590
54(12)	45160	3450	40650	3090	36130	2730	31610	2380	27100	2020	22580	1660	18060	1310	13550	950	9150	600	9150	600
55(13)	46190	3500	41570	3140	36950	2770	32340	2410	27720	2050	23100	1690	18480	1330	13860	960	9350	610	9350	610
57(14)	47230	3550	42500	3180	37780	2810	33060	2450	28340	2080	23610	1710	18890	1350	14170	980	9560	620	9560	620
59(15)	48260	3600	43430	3220	38610	2850	33780	2480	28950	2110	24130	1740	19300	360	14480	990	9770	630	9770	630

Indoor: RAV-HB421BTP-UL
Outdoor: RAV-BP421AT2P-UL

Operation range		Cooling		Heating	
		Q	P	Q	P
MINIMUM	Btu/h	8900	800	8100	590
RATING	Btu/h	42000	4080	47000	4260
MAXIMUM	Btu/h	47800	5390	61400	5700

Q : Capacity (Btu/h)
P : Power consumption (W)

Cooling

Outdoor Temperature DB °F(°C)	Parts Load (%)																			
	100		90		80		70		60		50		40		30		20		10	
	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P
68(20)	50090	3200	45080	2880	40070	2550	35060	2220	30050	1900	25040	1570	20030	1240	15030	920	10610	630	10610	630
70(21)	49550	3260	44590	2930	39640	2600	34680	2260	29730	1930	24770	1600	19820	1270	14860	930	10500	640	10500	640
72(22)	49010	3320	44110	2980	39210	2640	34300	2300	29400	1970	24500	1630	19600	1290	14700	950	10380	650	10380	650
73(23)	48470	3380	43620	3030	38770	2690	33930	2340	29080	2000	24230	1660	19390	1310	14540	970	10270	660	10270	660
75(24)	47930	3440	43140	3090	38340	2740	33550	2380	28760	2030	23960	1680	19170	1330	14380	980	10160	670	10160	670
77(25)	47390	3500	42650	3140	37910	2780	33170	2430	28430	2070	23700	1710	18960	1360	14220	1000	10040	690	10040	690
79(26)	46850	3550	42170	3190	37480	2830	32800	2470	28110	2100	23430	1740	18740	1380	14060	1020	9930	700	9930	700
81(27)	46310	3610	41680	3240	37050	2880	32420	2510	27790	2140	23160	1770	18520	1400	13890	1030	9810	710	9810	710
82(28)	45770	3670	41200	3300	36620	2920	32040	2550	27460	2170	22890	1800	18310	1420	13730	1050	9700	720	9700	720
84(29)	45230	3730	40710	3350	36190	2970	31660	2590	27140	2210	22620	1830	18090	1450	13570	1070	9590	730	9590	730
86(30)	44700	3790	40230	3400	35760	3010	31290	2630	26820	2240	22350	1860	17880	1470	13410	1080	9470	740	9470	740
88(31)	44160	3850	39740	3450	35320	3060	30910	2670	26490	2280	22080	1880	17660	1490	13250	1100	9360	750	9360	750
90(32)	43620	3900	39260	3510	34890	3110	30530	2710	26170	2310	21810	1910	17450	1510	13090	1120	9240	770	9240	770
91(33)	43080	3960	38770	3560	34460	3150	30150	2750	25850	2350	21540	1940	17230	1540	12920	1130	9130	780	9130	780
93(34)	42540	4020	38290	3610	34030	3200	29780	2790	25520	2380	21270	1970	17020	1560	12760	1150	9010	790	9010	790
95(35)	42000	4080	37800	3660	33600	3250	29400	2830	25200	2420	21000	2000	16800	1580	12600	1170	8900	800	8900	800
97(36)	41460	4140	37310	3720	33170	3290	29020	2870	24880	2450	20730	2030	16580	1610	12440	1180	8790	810	8790	810
99(37)	40920	4200	36830	3770	32740	3340	28650	2910	24550	2480	20460	2060	16370	1630	12280	1200	8670	820	8670	820
100(38)	40380	4260	36340	3820	32310	3390	28270	2950	24230	2520	20190	2080	16150	1650	12110	1220	8560	830	8560	830
102(39)	39840	4310	35860	3870	31880	3430	27890	2990	23910	2550	19920	2110	15940	1670	11950	1230	8440	850	8440	850
104(40)	39310	4370	35370	3930	31440	3480	27510	3030	23580	2590	19650	2140	15720	1700	11790	1250	8330	860	8330	860
106(41)	38770	4430	34890	3980	31010	3530	27140	3070	23260	2620	19380	2170	15510	1720	11630	1270	8210	870	8210	870
108(42)	38230	4490	34400	4030	30580	3570	26760	3120	22940	2660	19110	2200	15290	1740	11470	1280	8100	880	8100	880
109(43)	37690	4550	33920	4080	30150	3620	26380	3160	22610	2690	18840	2230	15080	1760	11310	1300	7990	890	7990	890
111(44)	36500	4550	32850	4090	29200	3620	25550	3160	21900	2690	18250	2230	14600	1770	10950	1300	7730	890	7730	890
113(45)	35280	4550	31760	4090	28230	3620	24700	3160	21170	2690	17640	2230	14110	1770	10590	1300	7480	890	7480	890
115(46)	34070	4550	30660	4090	27250	3620	23850	3160	20440	2690	17030	2230	13630	1770	10220	1300	7220	890	7220	890

Heating

Outdoor Temperature DB °F(°C)	Parts Load (%)																			
	100		90		80		70		60		50		40		30		20		10	
	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P
-13(-25)	19160	2930	17240	2630	15330	2320	13410	2020	11490	1710	9580	1410	7660	1100	5750	800	3830	490	3300	410
-11(-24)	19580	2970	17630	2660	15670	2350	13710	2050	11750	1740	9790	1430	7830	1120	5880	810	3920	500	3380	410
-9(-23)	20010	3020	18010	2700	16010	2390	14010	2070	12010	1760	10000	1450	8000	1130	6000	820	4000	500	3450	420
-8(-22)	20430	3060	18390	2740	16350	2420	14300	2100	12260	1780	10220	1470	8170	1150	6130	830	4090	510	3520	420
-6(-21)	20860	3100	18770	2780	16690	2450	14600	2130	12520	1810	10430	1490	8340	1160	6260	840	4170	520	3600	430
-4(-20)	21290	3140	19160	2810	17030	2490	14900	2160	12770	1830	10640	1510	8510	1180	6390	850	4260	530	3670	440
-2(-19)	22140	3180	19920	2850	17710	2520	15500	2190	13280	1860	11070	1530	8860	1200	6640	860	4430	530	3820	440
0(-18)	22990	3230	20690	2890	18390	2550	16090	2220	13790	1880	11490	1550	9200	1210	6900	880	4600	540	3960	450
1(-17)	23840	3270	21460	2930	19070	2590	16690	2250	14300	1910	11920	1570	9540	1230	7150	890	4770	550	4110	450
3(-16)	24690	3310	22220	2960	19750	2620	17280	2280	14820	1930	12350	1590	9880	1240	7410	900	4940	550	4260	460
5(-15)	25540	3350	22990	3000	20430	2650	17880	2300	15330	1960	12770	1610	10220	1260	7660	910	5110	560	4400	460
7(-14)	26340	3380	23710	3030	21070	2670	18440	2320	15810	1970	13170	1620	10540	1270	7900	920	5270	560	4540	470
9(-13)	27140	3400	24430	3050	21710	2690	19000	2340	16280	1990	13570	1630	10860	1280	8140	920	5430	570	4680	470
10(-12)	27940	3430	25140	3070	22350	2720	19560	2360	16760	2000	13970	1640	11180	1290	8380	930	5590	570	4810	470
12(-11)	28740	3460	25860	3100	22990	2740	20120	2380	17240	2020	14370	1660	11490	1300	8620	940	5750	580	4950	480
14(-10)	29530	3480	26580	3120	23630	2760	20670	2390	17720	2030	14770	1670	11810	1310	8860	940	5910	580	5090	480
16(-9)	30330	3510	27300	3140	24270	2780	21230	2410	18200	2050	15170	1680	12130	1320	9100	950	6070	590	5230	490
18(-8)	31130	3530	28020	3170	24900	2800	21790	2430	18680	2060	15570	1690	12450	1330	9340	960	6230	590	5370	490
19(-7)	31930	3560	28740	3190	25540	2820	22350	2450	19160	2080	15960	1710	12770	1340	9580	970	6390	600	5500	490
21(-6)	32170	3580	28950	3210	25730	2840	22520	2460	19300	2090	16080	1720	12870	1350	9650	970	6430	600	5540	500
23(-5)	32400	3610	29160	3230	25920	2860	22680	2480	19440	2110	16200	1730	12960	1350	9720	980	6480	600	5580	500
25(-4)	32640	3630	29380	3250	26110	2870	22850	2500	19580	2120	16320	1740	13060	1360	9790	990	6530	610	5630	500
27(-3)	32880	3650	29590	3270	26300	2890	23010	2510	19730	2130	16440	1750	13150	1370	9860	990	6580	610	5670	510
28(-2)	33110	3680	29800	3290	26490	2910	23180	2530	19870	2150	16560	1760	13240	1380	9930	1000	6620	620	5710	510
30(-1)	33350	3700	30010	3310	26680	2930	23340	2540	20010	2160	16670	1770	13340	1390	10000	1000	6670	620	5750	510
32(0)	33580	3720	30230	3340	26870	2950	23510	2560	20150	2170	16790	1790	13430	1400	10080	1010	6720	620	5790	520
34(1)	33820	3750	30440	3360	27060	2970	23680	2580	20290	2190	16910	1800	13530	1410	10150	1020	6760	630	5830	520
36(2)	34060	3770	30650	3380	27250	2990	23840	2590	20430	2200	17030	1810	13620	1420	10220	1020	6810	630	5870	520
37(3)	34620	3820	31150	3420	27690	3030	24230	2630	20770	2230	17310	1830	13850	1430	10380	1040	6920	640	5970	530
39(4)	35170	3870	31660	3470	28140	3070	24620	2660	21100	2260	17590	1860	14070	1450	10550	1050	7030	650	6060	540
41(5)	35730	3920	32160	3510	28590	3110	25010	2700	21440	2290	17870	1880	14290	1470	10720	1060	7150	660	6160	540
43(6)	45790	4190	41210	3760	36630	3320	32050	2880	27470	2450	22890	2010	18310	1570	13740	1140	9160	700	7890	580
45(7)	47000	4260	42300	3820	37600	3370	32900	2930	28200	2490	23500	2040	18800	1600	14100	1160	9400	710	8100	590
46(8)	48210	4330	43390	3880	38570	3430	33750	2980	28930	2520	24110	2070	19290	1620	14460	1170	9640	720	8310	600
48(9)	49430	4390	44480	3930	39540	3480	34600	3020	29660	2560	24710	2110	19770	1650	14830	1190	9890	730	8520	610
50(10)	50640	4460	45570	3990	40510	3530	35450	3070	30380	2600	25320	2140	20260	1670	15190	1210	10130	750	8730	620
52(11)	51850	4520	46670	4050	41480	3580	36300	3110	31110	2640	25930	2170	20740	1700	15560	1230	10370	760	8940	630
54(12)	53060	4590	47760	4110	42450	3630	37150	3160	31840	2680	26530	2200	21230	1720	15920	1250	10610	770	9150	640
55(13)	54280	4660	48850	4170	43420	3690	37990	3200	32570	2720	27140	2230	21710	1750	16280	1260	10860	780	9350	640
57(14)	55490	4720	49940	4230	44390	3740	38840	3250	33290	2760	27750	2260	22200	1770	16650	1280	11100	790	9560	650
59(15)	56700	4790	51030	4290	45360	3790	39690	3290	34020	2790	28350	2300	22680	1800	17010	1300	11340	800	9770	660

Indoor:
Outdoor:

RAV-HB481BTP-UL
RAV-BP481AT2P-UL

Operation range		Cooling		Heating	
		Q	P	Q	P
MINIMUM	Btu/h	8900	820	8100	650
RATING	Btu/h	48000	5450	54000	5300
MAXIMUM	Btu/h	54600	5900	64800	5800

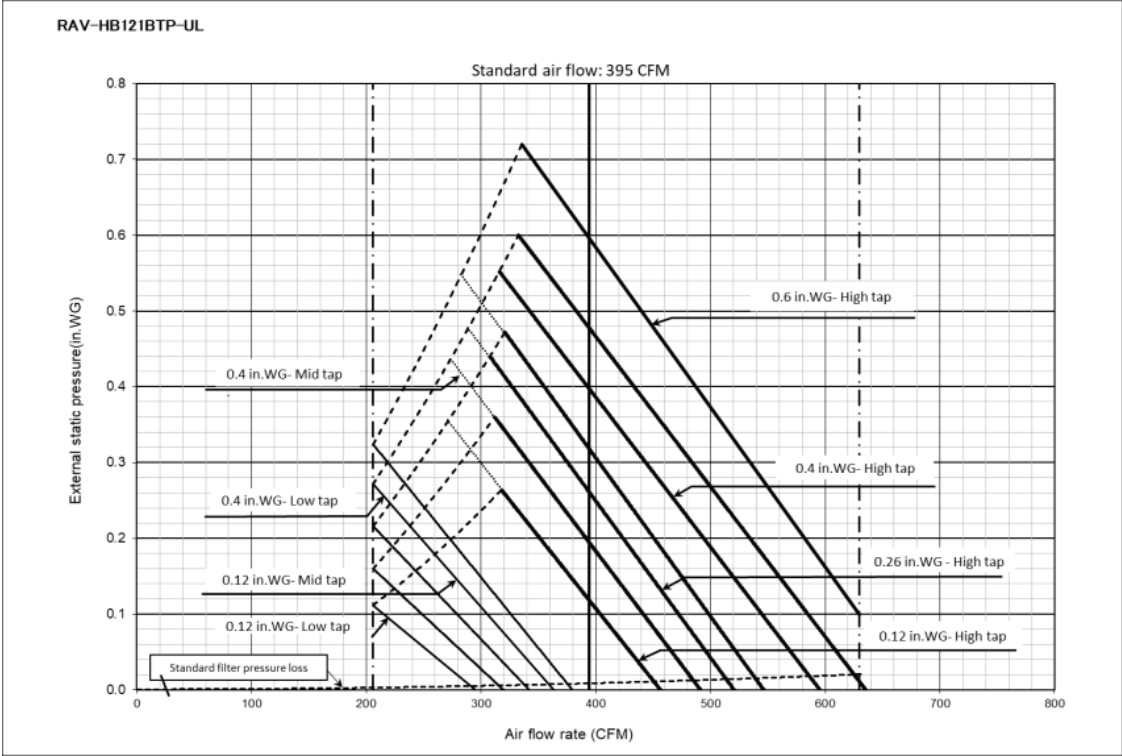
Q : Capacity (Btu/h)
P : Power consumption (W)

Cooling		Parts Load (%)																			
Outdoor Temperature DB °F(°C)		100		90		80		70		60		50		40		30		20		10	
		Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P
68(20)		57240	4280	51520	3830	45790	3390	40070	2940	34340	2490	28620	2050	22900	1600	17170	1150	11450	710	10610	640
70(21)		56620	4360	50960	3900	45300	3450	39640	2990	33970	2540	28310	2080	22650	1630	16990	1180	11320	720	10500	660
72(22)		56010	4430	50410	3970	44810	3510	39210	3050	33600	2580	28000	2120	22400	1660	16800	1200	11200	730	10380	670
73(23)		55390	4510	49850	4040	44310	3570	38770	3100	33240	2630	27700	2160	22160	1690	16620	1220	11080	750	10270	680
75(24)		54780	4590	49300	4110	43820	3630	38340	3150	32870	2680	27390	2200	21910	1720	16430	1240	10960	760	10160	690
77(25)		54160	4670	48740	4180	43330	3690	37910	3210	32500	2720	27080	2230	21660	1750	16250	1260	10830	770	10040	700
79(26)		53540	4750	48190	4250	42840	3760	37480	3260	32130	2770	26770	2270	21420	1780	16060	1280	10710	790	9930	710
81(27)		52930	4830	47640	4320	42340	3820	37050	3320	31760	2810	26460	2310	21170	1810	15880	1300	10590	800	9810	730
82(28)		52310	4900	47080	4390	41850	3880	36620	3370	31390	2860	26160	2350	20920	1840	15690	1320	10460	810	9700	740
84(29)		51700	4980	46530	4460	41360	3940	36190	3420	31020	2900	25850	2380	20680	1860	15510	1340	10340	830	9590	750
86(30)		51080	5060	45970	4530	40860	4000	35760	3460	30650	2950	25540	2420	20430	1890	15320	1370	10220	840	9470	760
88(31)		50460	5140	45420	4600	40370	4070	35320	3530	30280	2990	25230	2460	20190	1920	15140	1390	10090	850	9360	770
90(32)		49850	5220	44860	4670	39880	4130	34890	3580	29910	3040	24920	2500	19940	1950	14950	1410	9970	860	9240	780
91(33)		49230	5290	44310	4740	39390	4190	34460	3640	29540	3090	24620	2530	19690	1980	14770	1430	9850	880	9130	800
93(34)		48620	5370	43750	4810	38890	4250	34030	3690	29170	3130	24310	2570	19450	2010	14580	1450	9720	890	9010	810
95(35)		48000	5450	43200	4880	38400	4310	33600	3740	28800	3180	24000	2610	19200	2040	14400	1470	9600	900	8900	820
97(36)		47380	5530	42650	4950	37910	4380	33170	3800	28430	3220	23690	2650	18950	2070	14220	1490	9480	920	8790	830
99(37)		46770	5610	42090	5020	37410	4440	32740	3850	28060	3270	23380	2680	18710	2100	14030	1510	9350	930	8670	840
100(38)		46150	5680	41540	5090	36920	4500	32310	3910	27690	3310	23080	2720	18460	2130	13850	1530	9230	940	8560	860
102(39)		45540	5760	40980	5160	36430	4560	31880	3960	27320	3360	22770	2760	18210	2160	13660	1560	9110	950	8440	870
104(40)		44910	5790	40420	5190	35930	4580	31440	3980	26950	3370	22460	2770	17970	2170	13470	1560	8980	960	8330	870
106(41)		44290	5790	39860	5190	35430	4580	31000	3980	26570	3370	22140	2770	17720	2170	13290	1560	8860	960	8210	870
108(42)		43660	5790	39300	5190	34930	4580	30560	3980	26200	3370	21830	2770	17470	2170	13100	1560	8730	960	8100	870
109(43)		43040	5790	38730	5190	34430	4580	30130	3980	25820	3370	21520	2770	17220	2170	12910	1560	8610	960	7980	870
111(44)		42360	5350	38120	4790	33890	4240	29650	3680	25420	3120	21180	2560	16940	2000	12710	1450	8470	890	7850	810
113(45)		41730	5350	37560	4790	33390	4240	29210	3680	25040	3120	20870	2560	16690	2000	12520	1450	8350	890	7740	810
115(46)		41110	5350	37000	4790	32890	4240	28780	3680	24670	3120	20550	2560	16440	2000	12330	1450	8220	890	7620	810

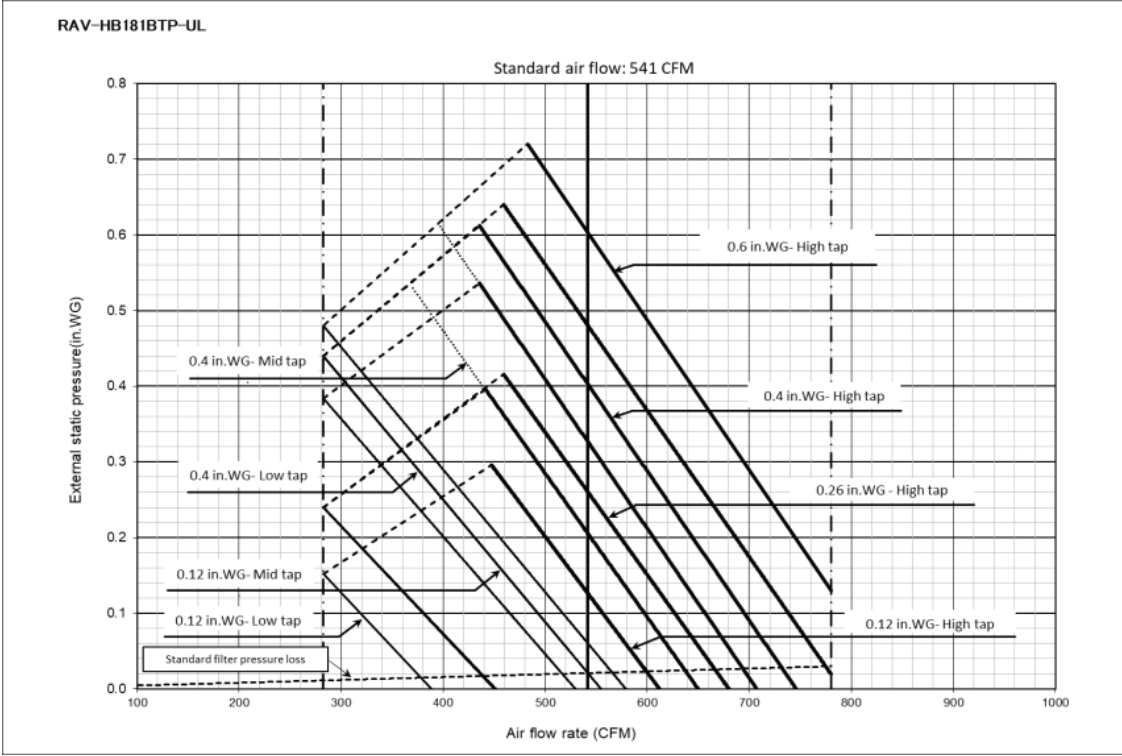
Heating		Parts Load (%)																			
Outdoor Temperature DB °F(°C)		100		90		80		70		60		50		40		30		20		10	
		Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P
-13(-25)		22010	3650	19810	3270	17610	2890	15410	2520	13210	2140	11010	1770	8800	1390	6600	1010	4400	640	3300	450
-11(-24)		22500	3700	20250	3320	18000	2940	15750	2550	13500	2170	11250	1790	9000	1410	6750	1030	4500	640	3380	450
-9(-23)		22990	3750	20690	3360	18390	2980	16090	2590	13790	2200	11490	1820	9200	1430	6900	1040	4600	650	3450	460
-8(-22)		23480	3800	21130	3410	18780	3020	16430	2630	14090	2230	11740	1840	9390	1450	7040	1060	4700	660	3520	470
-6(-21)		23970	3860	21570	3460	19170	3060	16780	2660	14380	2260	11980	1870	9590	1470	7190	1070	4790	670	3600	470
-4(-20)		24460	3910	22010	3510	19570	3100	17120	2700	14670	2290	12230	1890	9780	1490	7340	1080	4890	680	3670	480
-2(-19)		25430	3960	22890	3550	20350	3140	17800	2730	15260	2330	12720	1920	10170	1510	7630	1100	5090	690	3820	490
0(-18)		26410	4010	23770	3600	21130	3180	18490	2770	15850	2360	13210	1940	10570	1530	7920	1110	5280	700	3960	490
1(-17)		27390	4060	24650	3650	21910	3230	19170	2810	16430	2390	13700	1970	10960	1550	8220	1130	5480	710	4110	500
3(-16)		28370	4120	25530	3690	22700	3270	19860	2840	17020	2420	14180	1990	11350	1570	8510	1140	5670	720	4260	500
5(-15)		29350	4170	26410	3740	23480	3310	20540	2880	17610	2450	14670	2020	11740	1590	8800	1160	5870	730	4400	510
7(-14)		30260	4200	27240	3770	24210	3330	21190	2900	18160	2470	15130	2030	12110	1600	9080	1170	6050	730	4540	520
9(-13)		31180	4230	28060	3800	24950	3360	21830	2920	18710	2490	15590	2050	12470	1610	9350	1170	6240	740	4680	520
10(-12)		32100	4270	28890	3830	25680	3390	22470	2950	19260	2510	16050	2060	12840	1620	9630	1180	6420	740	4810	520
12(-11)		33020	4300	29710	3860	26410	3410	23110	2970	19810	2520	16510	2080	13210	1640	9900	1190	6600	750	4950	530
14(-10)		33930	4330	30540	3880	27150	3440	23750	2990	20360	2540	16970	2100	13570	1650	10180	1200	6790	750	5090	530
16(-9)		34850	4360	31370	3910	27880	3460	24400	3010	20910	2560	17430	2110	13940	1660	10460	1210	6970	760	5230	540
18(-8)		35770	4400	32190	3940	28610	3490	25040	3040	21460	2580	17880	2130	14310	1670	10730	1220	7150	770	5370	540
19(-7)		36680	4430	33020	3970	29350	3520	25680	3060	22010	2600	18340	2140	14670	1690	11010	1230	7340	770	5500	540
21(-6)		36960	4460	33260	4000	29570	3540	25870	3080	22170	2620	18480	2160	14780	1700	11090	1240	7390	780	5540	550
23(-5)		37230	4490	33510	4020	29780	3560	26060	3100	22340	2630	18610	2170	14890	1710	11170	1250	7450	780	5580	550
25(-4)		37500	4520	33750	4050	30000	3580	26250	3120	22500	2650	18750	2190	15000	1720	11250	1250	7500	790	5630	550
27(-3)		37770	4550	33990	4080	30220	3610	26440	3140	22660	2670	18890	2200	15110	1730	11330	1260	7550	790	5670	560
28(-2)		38040	4570	34240	4100	30430	3630	26630	3160	22830	2690	19020	2210	15220	1740	11410	1270	7610	800	5710	560
30(-1)		38320	4600	34480	4130	30650	3650	26820	3180	22990	2700	19160	2230	15330	1750	11490	1280	7660	800	5750	560

2-3-6. Fan Static Characteristic

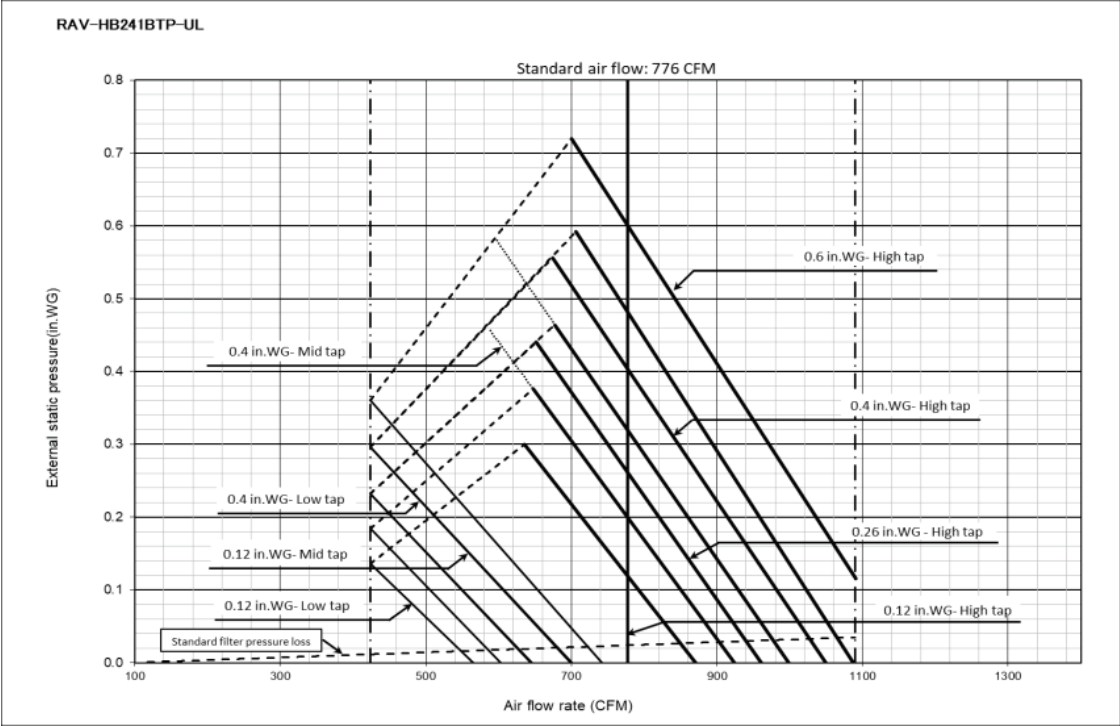
RAV-HB121BTP-UL



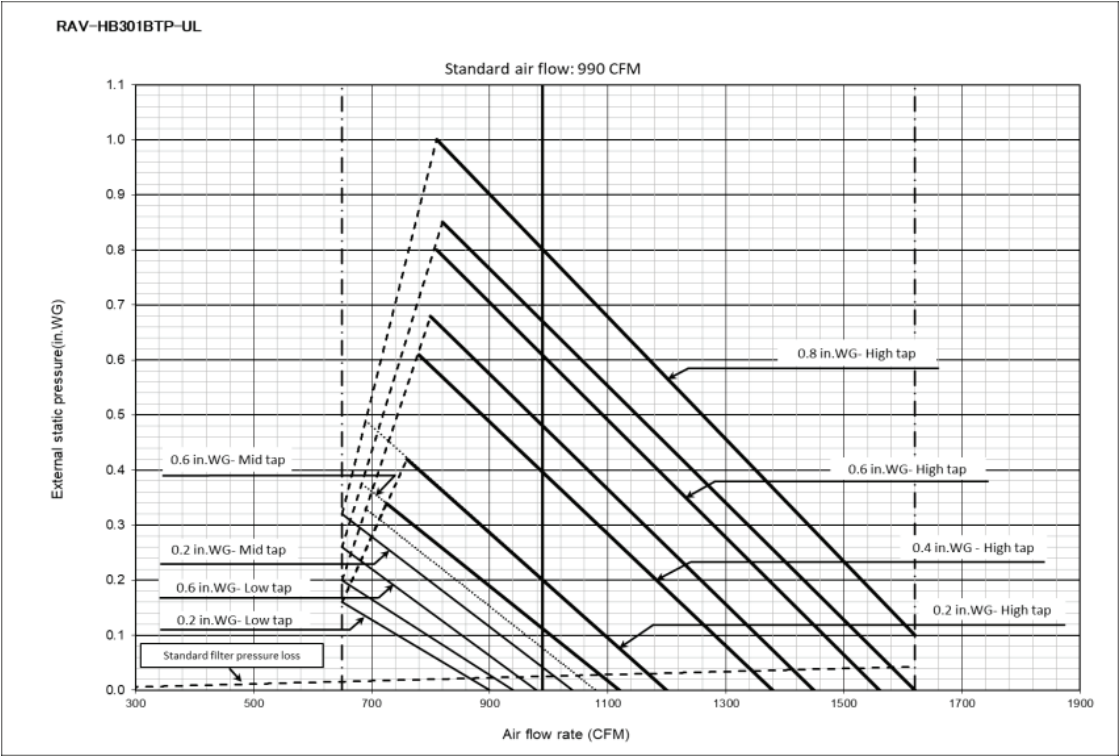
RAV-HB181BTP-UL



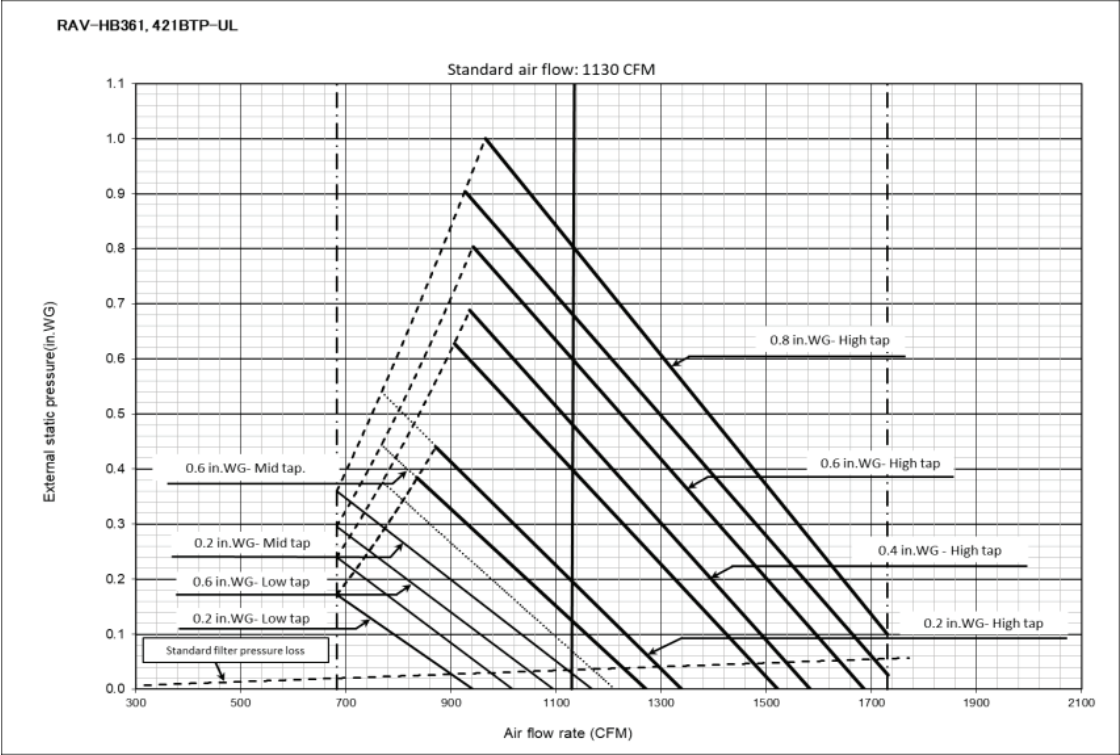
RAV-HB241BTP-UL



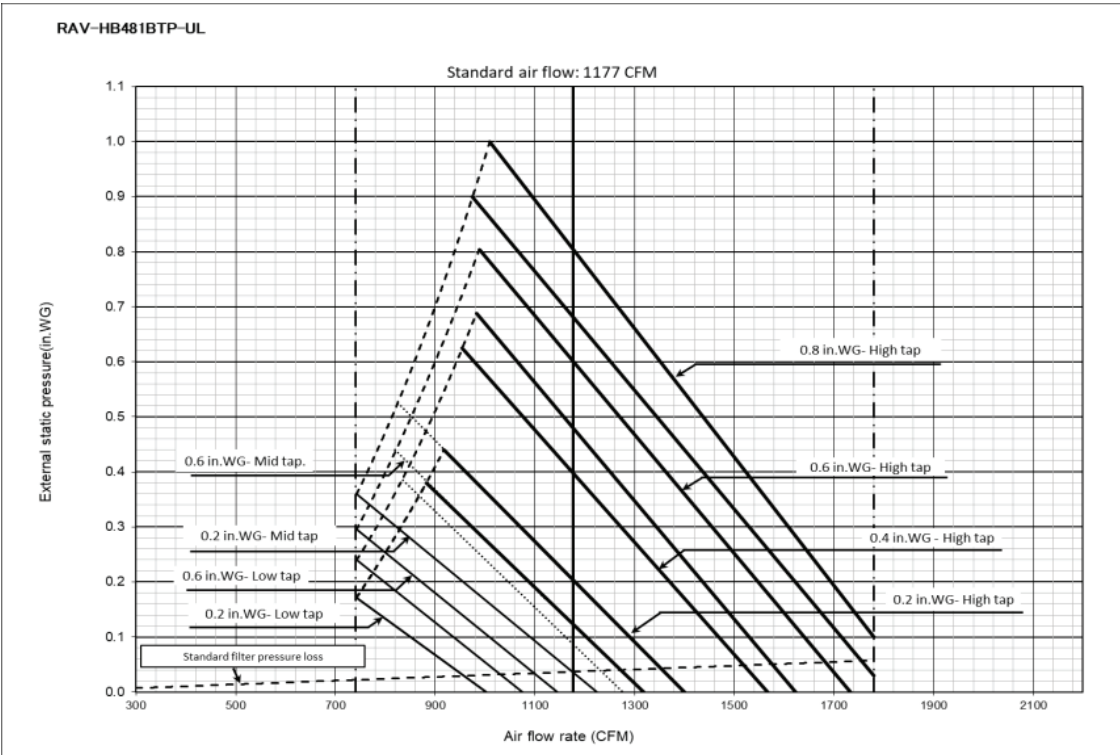
RAV-HB301BTP-UL



RAV-HB__BTP-UL (*36 / 42)



RAV-HB481UTP-UL

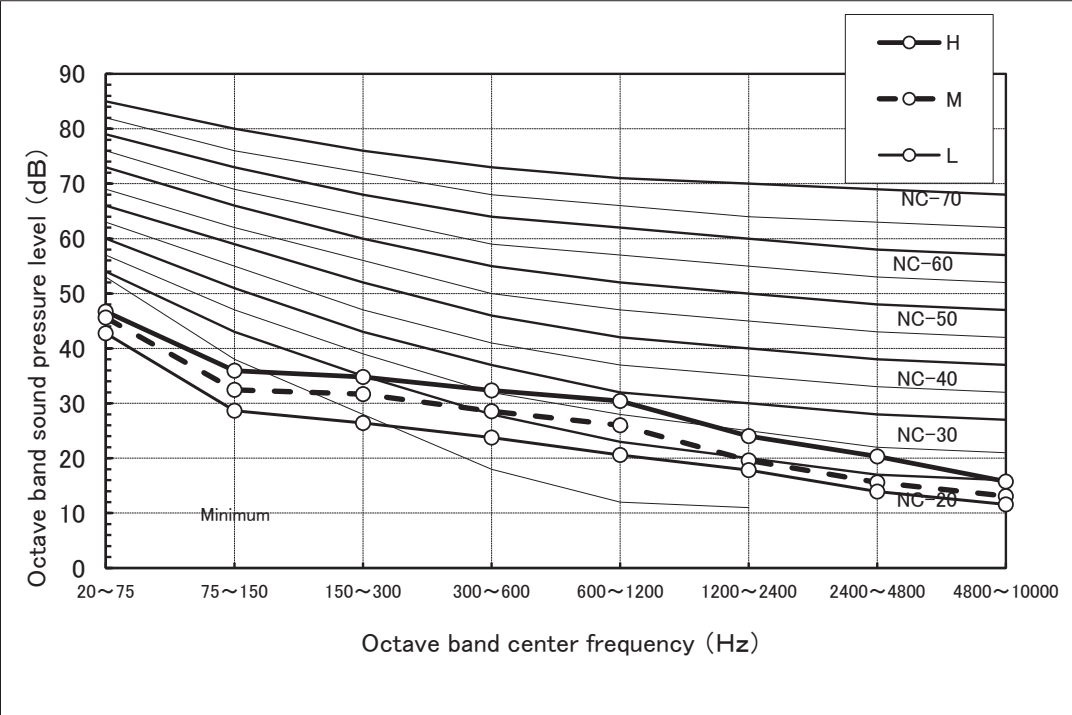
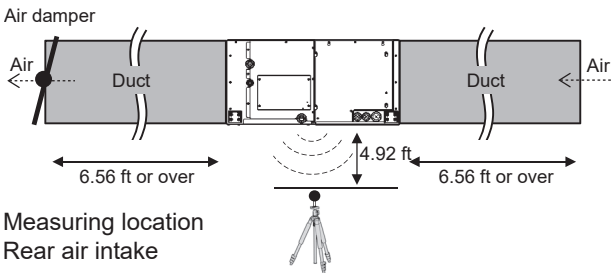


2-3-7. Sound Characteristics (NC curve)

Model : RAV-HB121BTP-UL

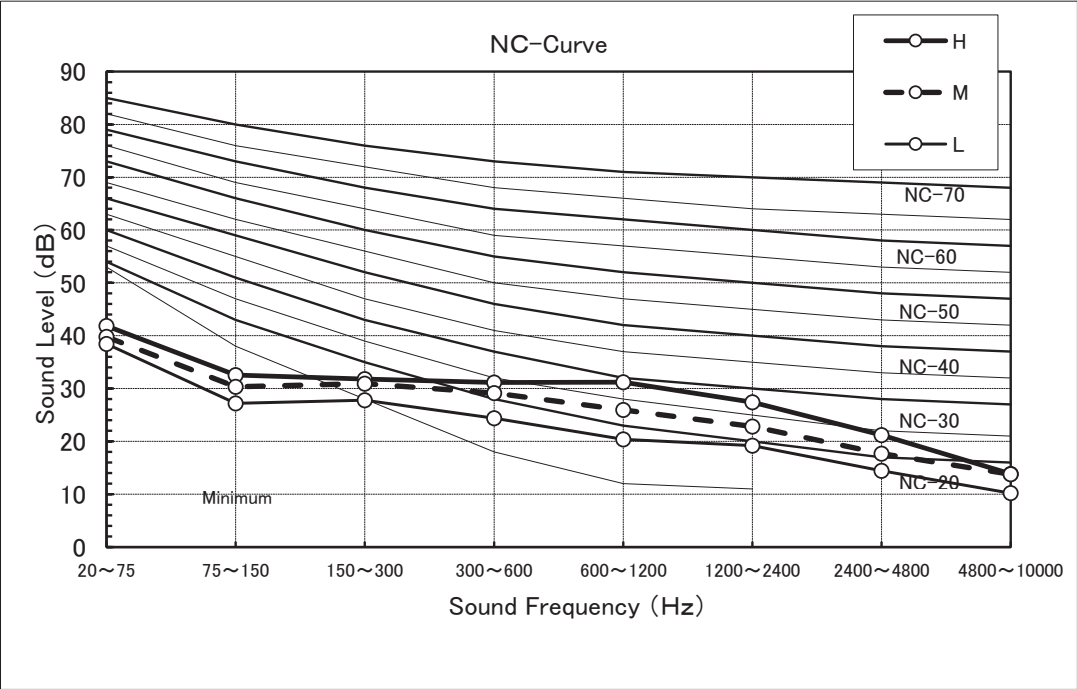
Cooling

Specification (dB)			
Fan tap	H	M	L
Sound pressure level (dB(A))	33	29	25



Heating

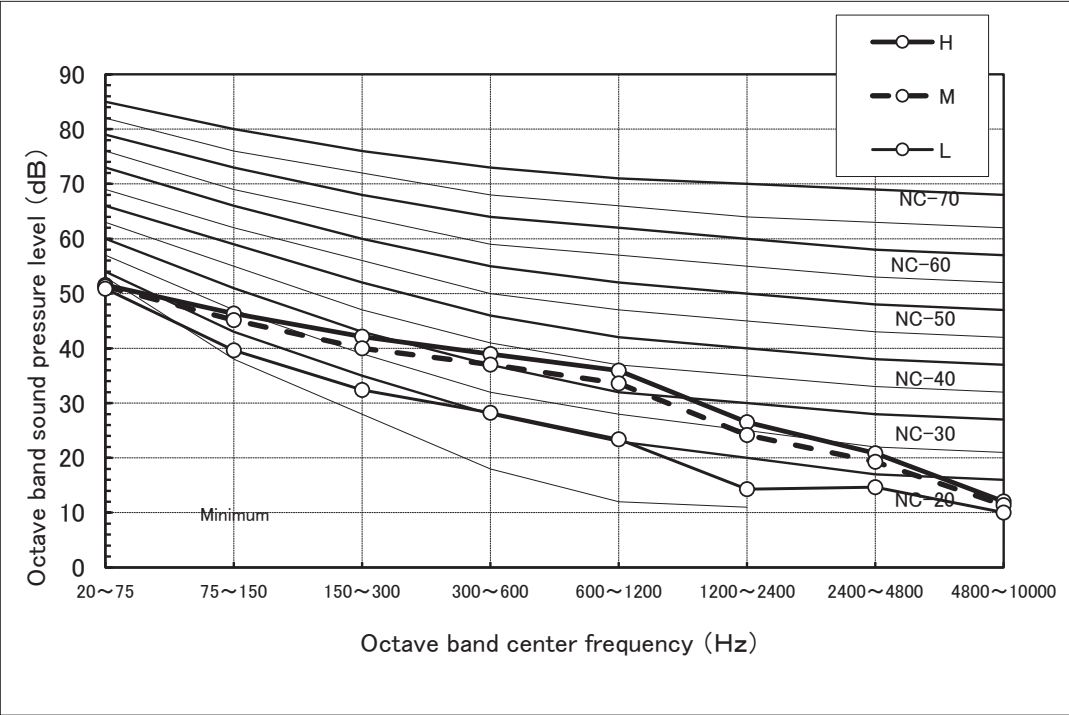
Specification (dB)			
Fan tap	H	M	L
Sound pressure level (dB(A))	33	29	25



Model : RAV-HB181BTP-UL

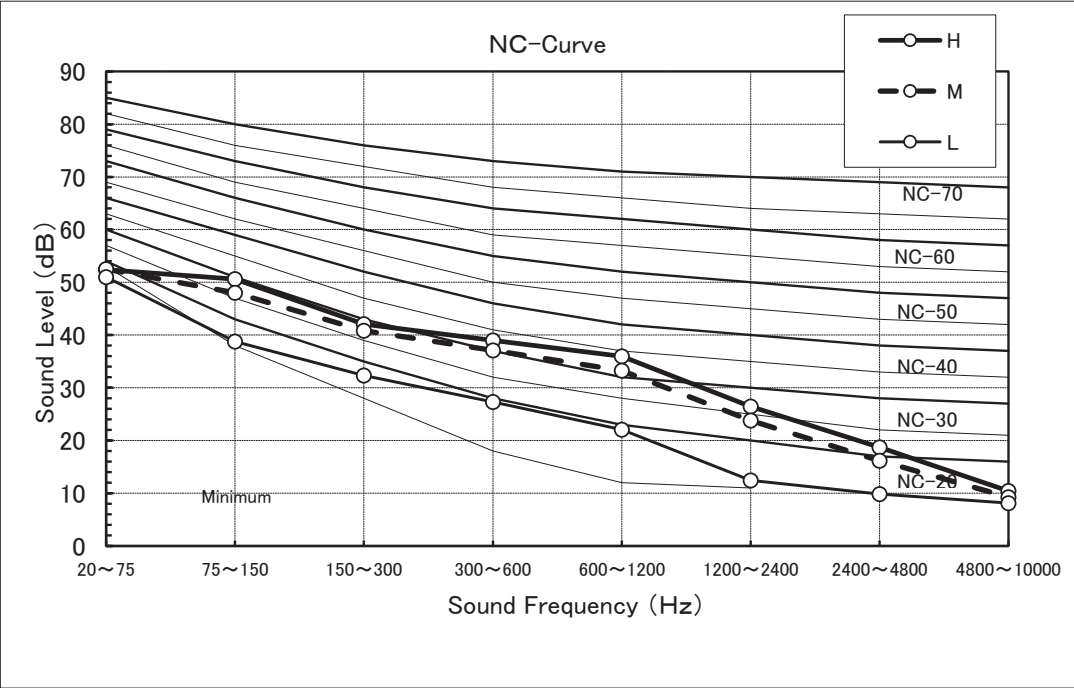
Cooling

Specification (dB)			
Fan tap	H	M	L
Sound pressure level (dB(A))	39	36	30



Heating

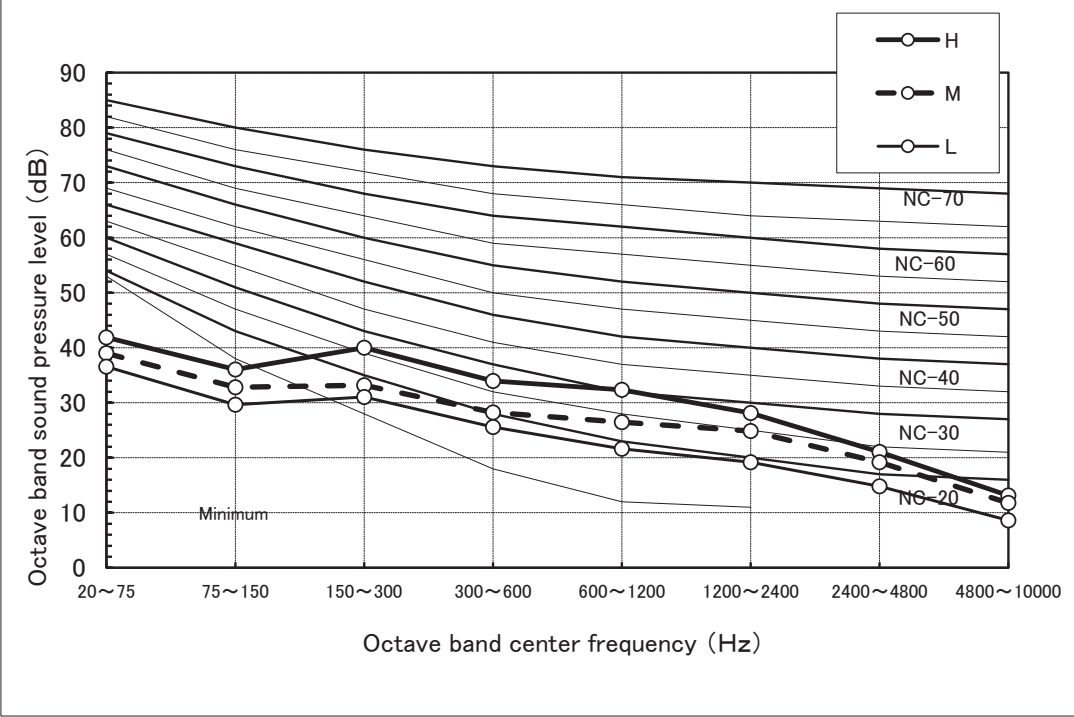
Specification (dB)			
Fan tap	H	M	L
Sound pressure level (dB(A))	39	36	30



Model : RAV-HB241BTP-UL

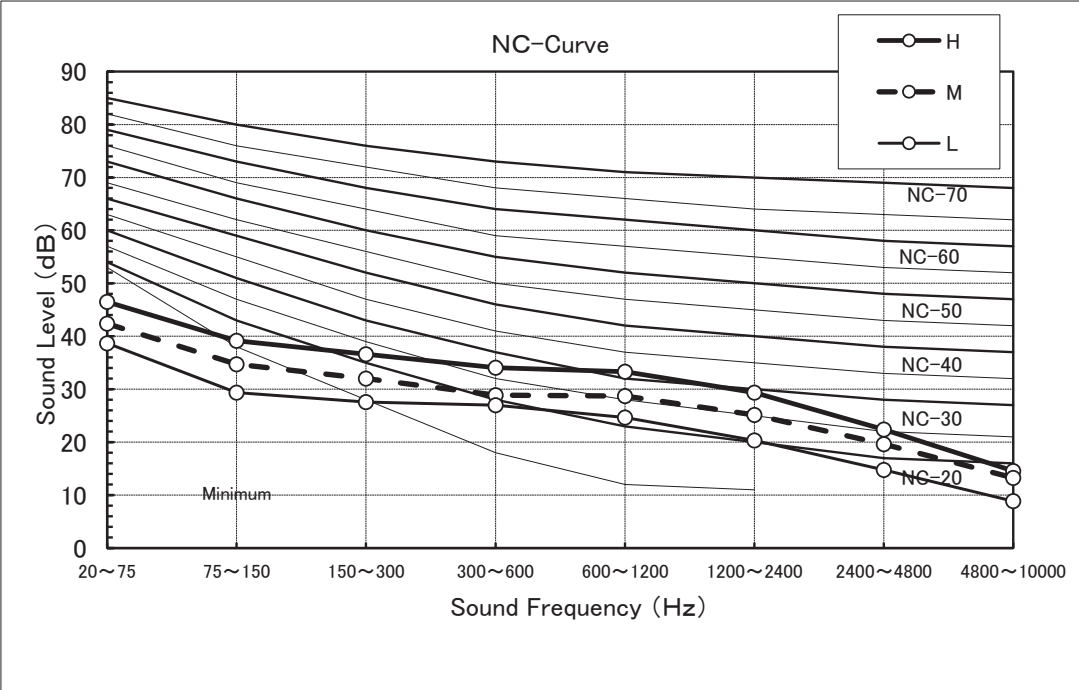
Cooling

Specification (dB)			
Fan tap	H	M	L
Sound pressure level (dB(A))	36	31	27



Heating

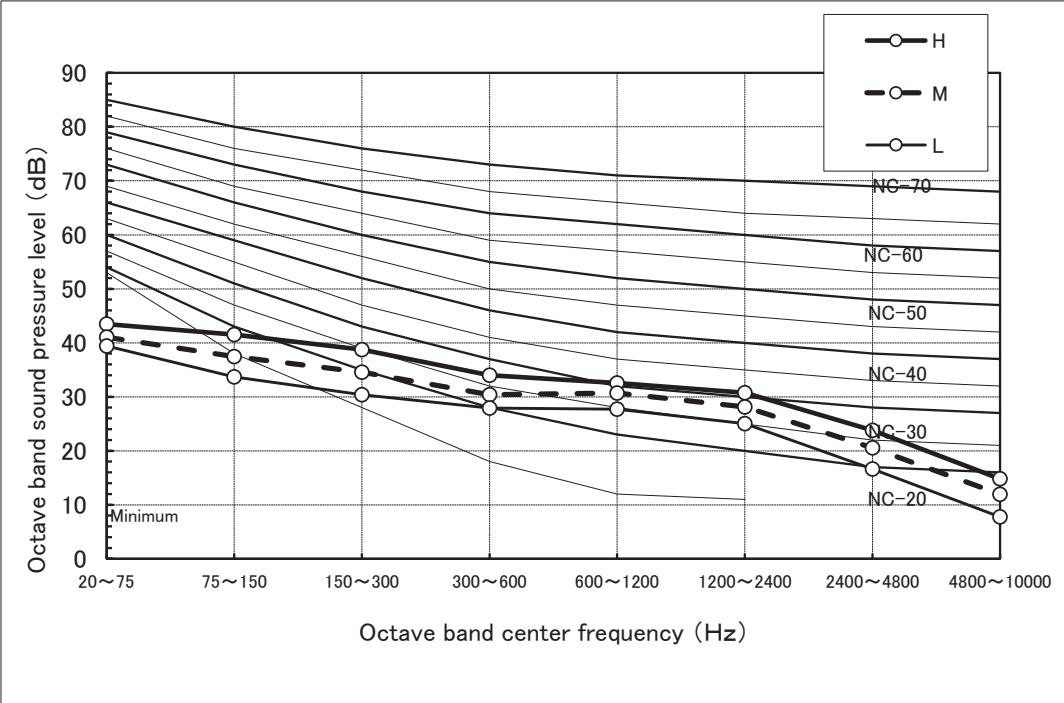
Specification (dB)			
Fan tap	H	M	L
Sound pressure level (dB(A))	36	31	27



Model : RAV-HB301BTP-UL

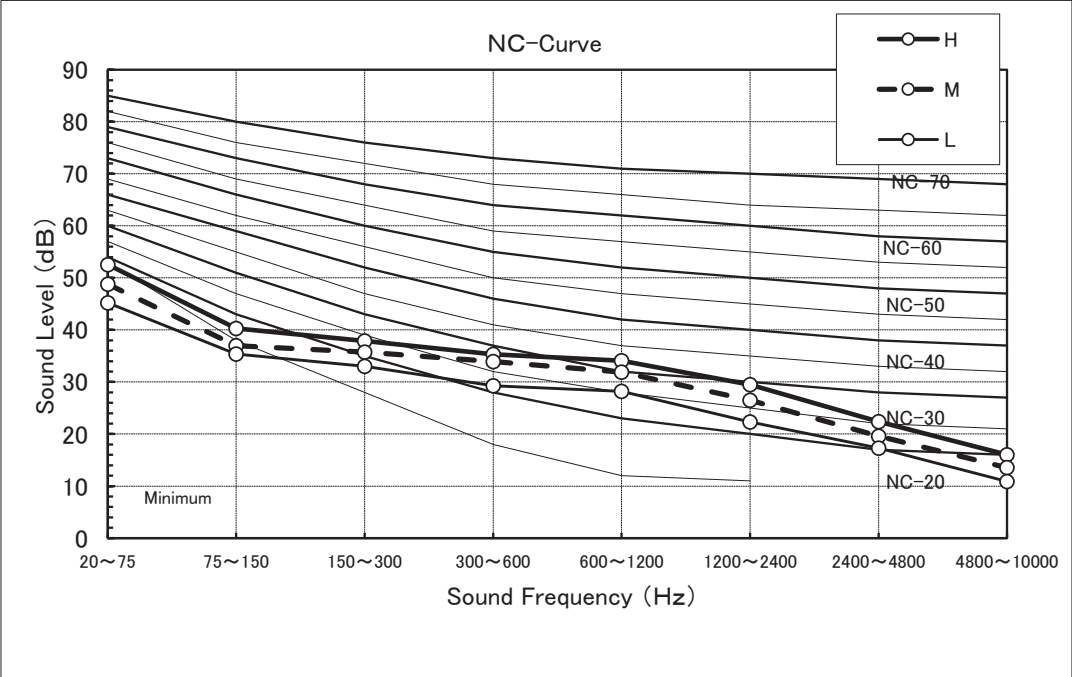
Cooling

Specification (dB)			
Fan tap	H	M	L
Sound pressure level (dB(A))	37	34	31



Heating

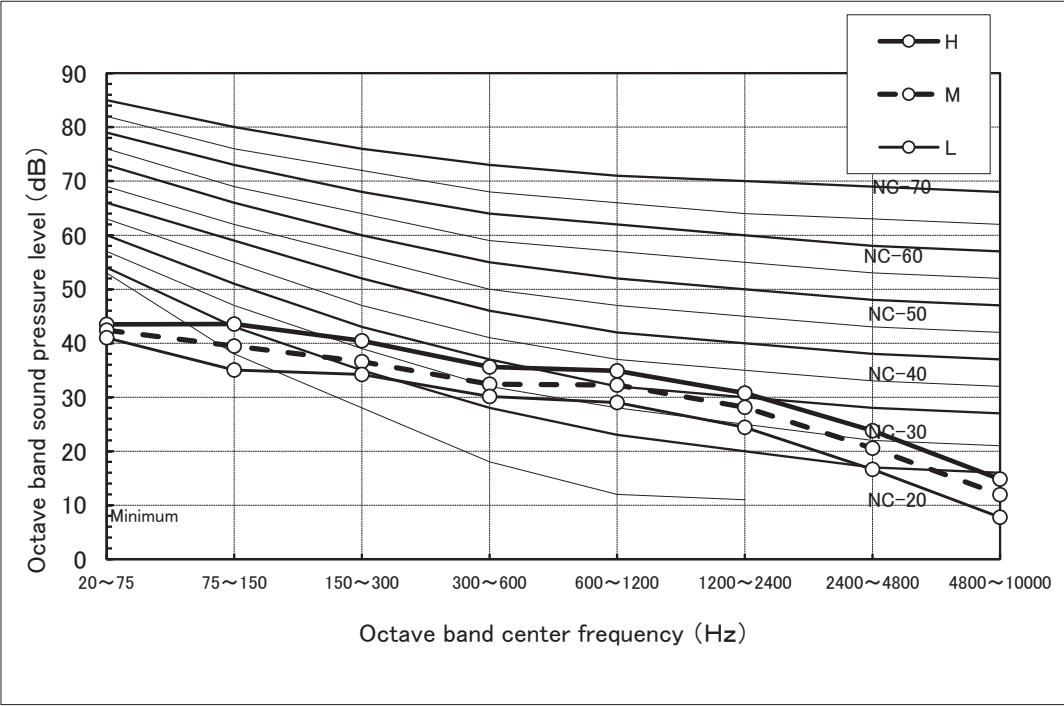
Specification (dB)			
Fan tap	H	M	L
Sound pressure level (dB(A))	37	34	31



Model : RAV-HB361BTP-UL

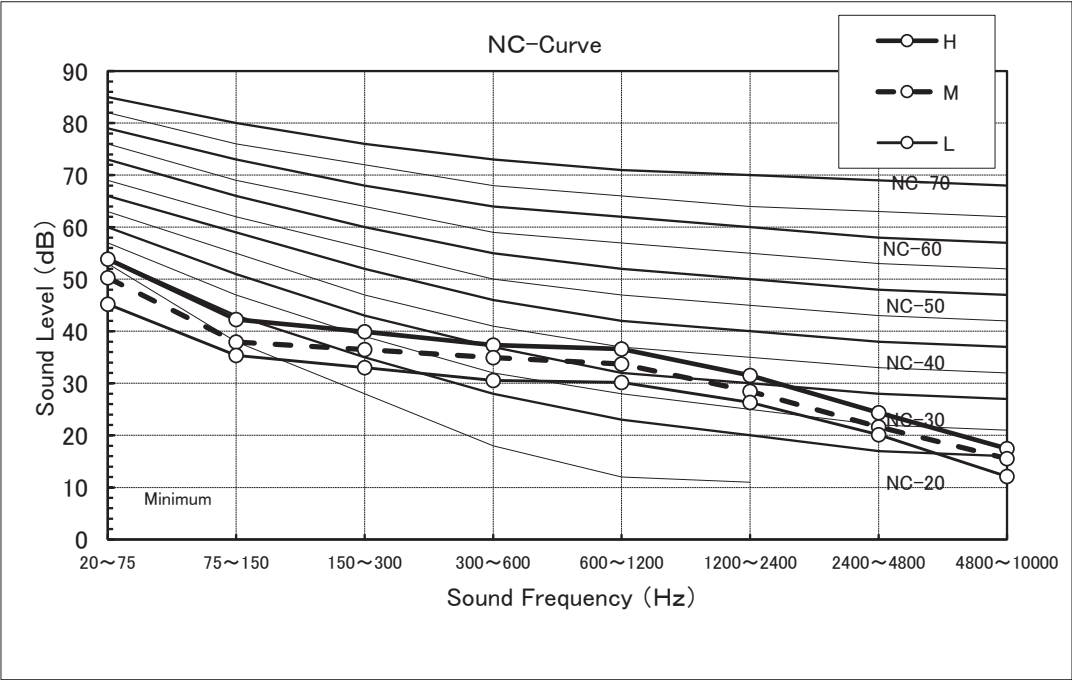
Cooling

Specification (dB)			
Fan tap	H	M	L
Sound pressure level (dB(A))	38	35	32



Heating

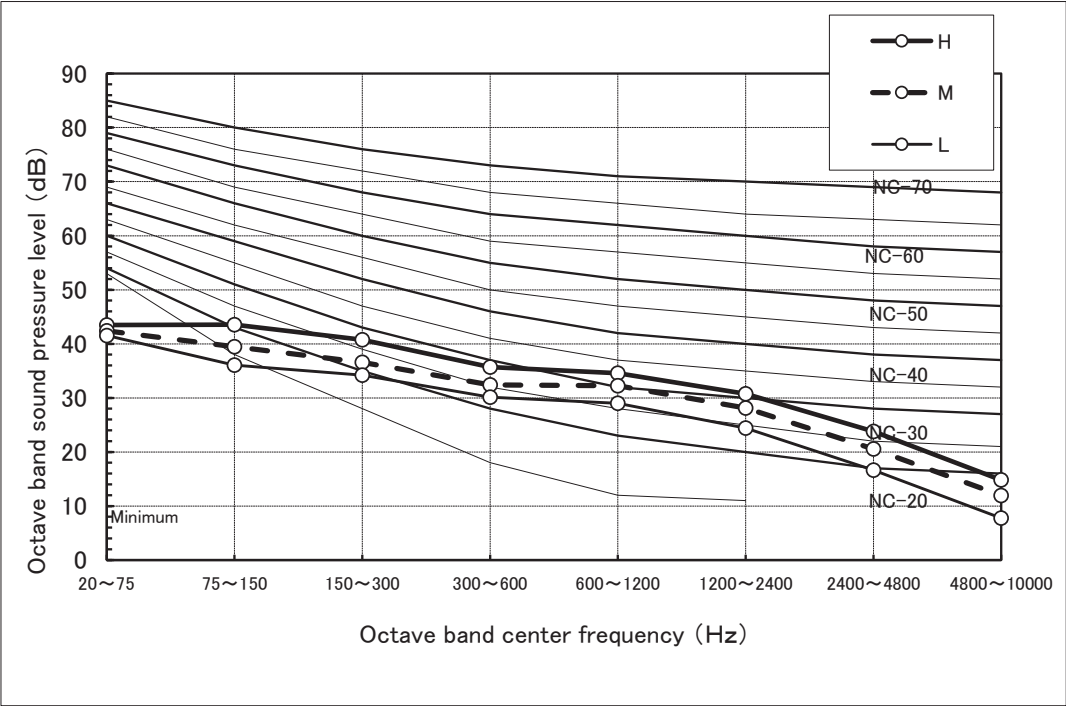
Specification (dB)			
Fan tap	H	M	L
Sound pressure level (dB(A))	38	35	32



Model : RAV-HB421BTP-UL

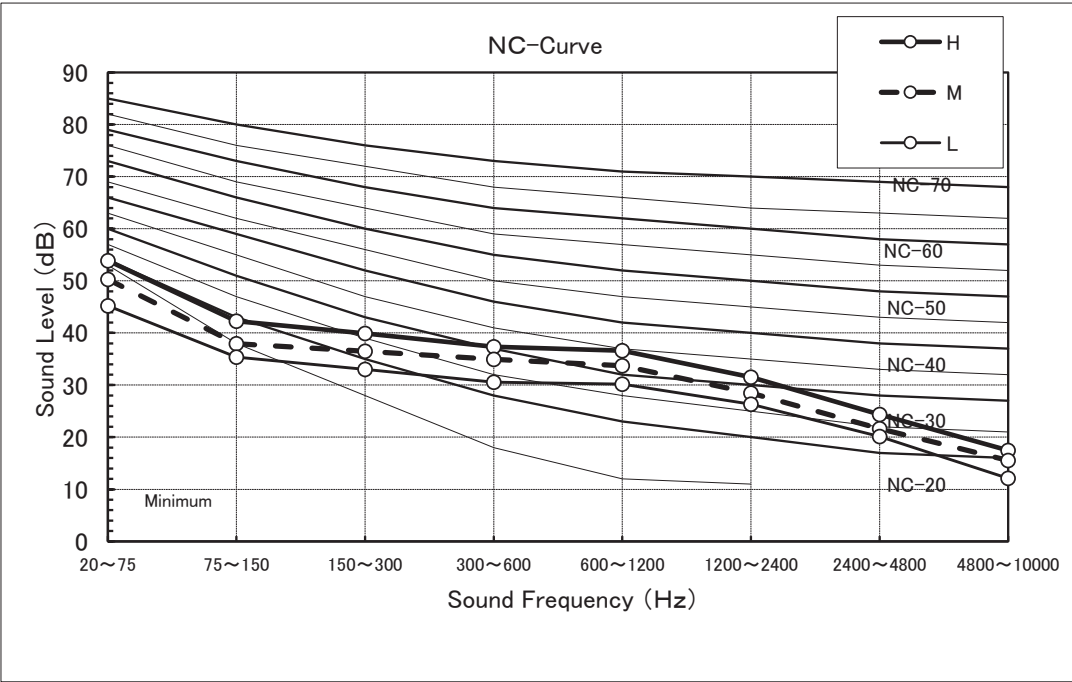
Cooling

Specification (dB)			
Fan tap	H	M	L
Sound pressure level (dB(A))	38	35	32



Heating

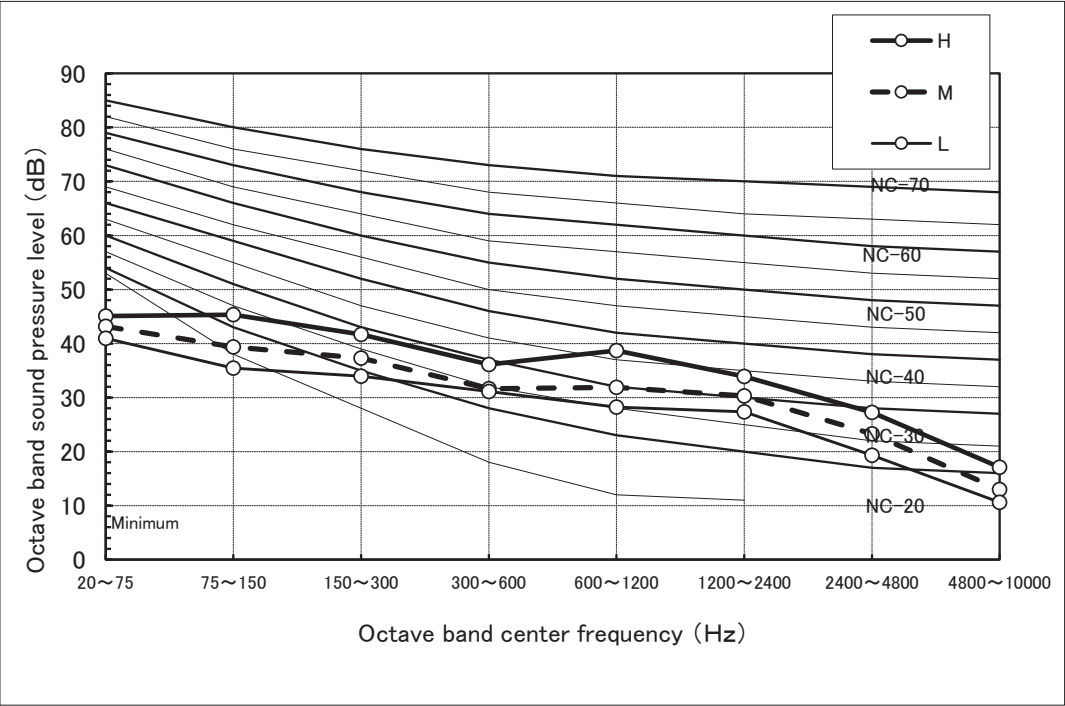
Specification (dB)			
Fan tap	H	M	L
Sound pressure level (dB(A))	38	35	32



Model : RAV-HB481BTP-UL

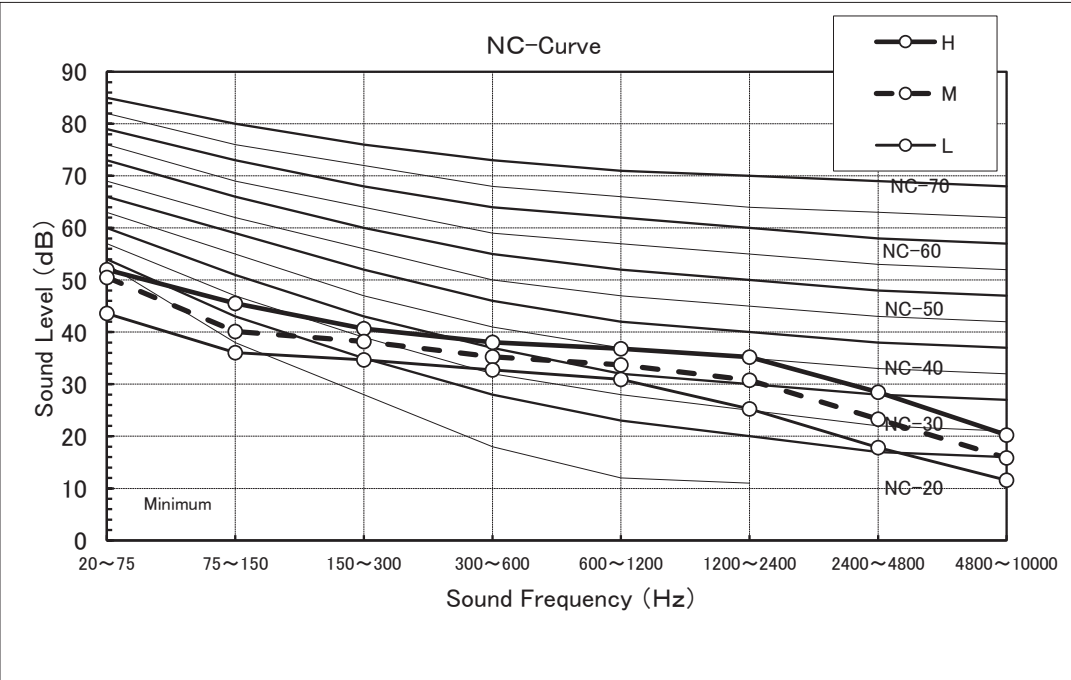
Cooling

Specification (dB)			
Fan tap	H	M	L
Sound pressure level (dB(A))	40	36	33



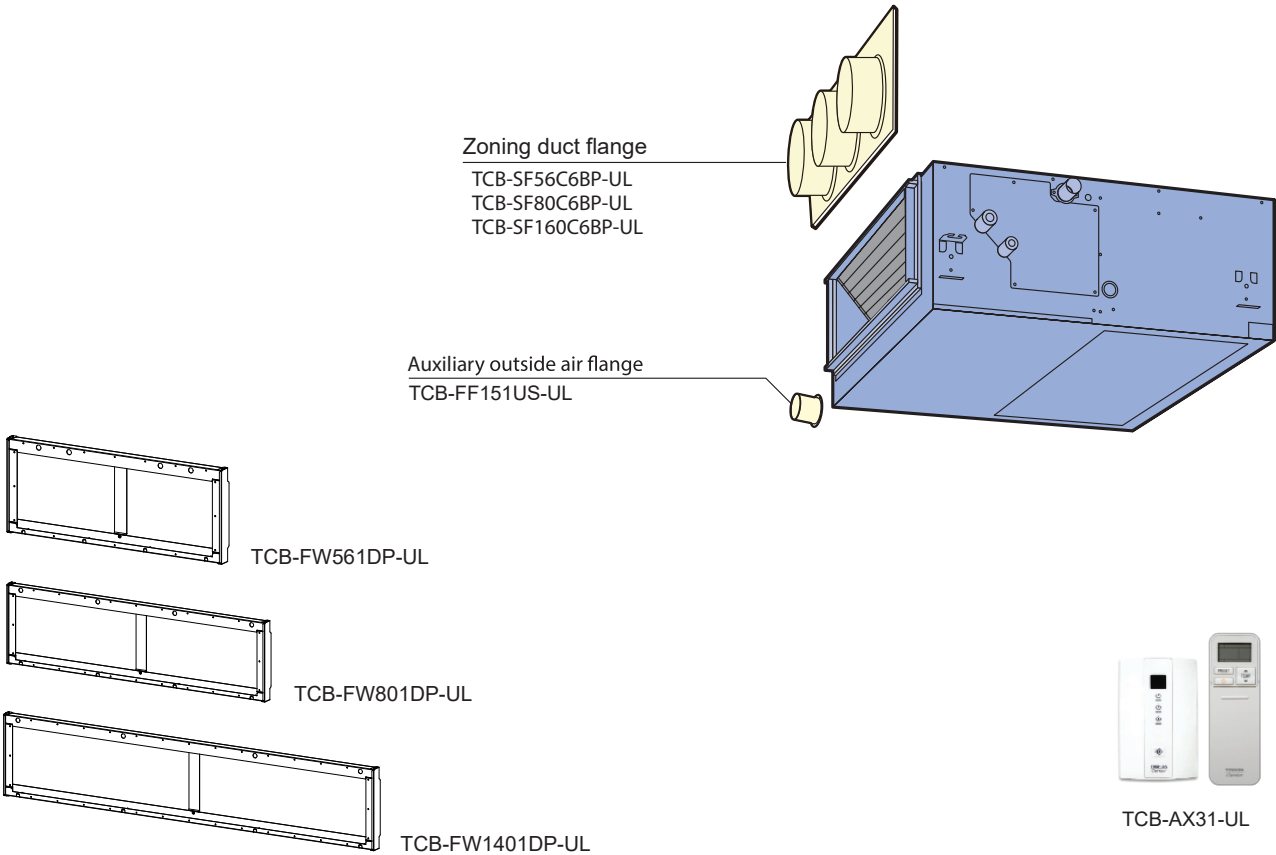
Heating

Specification (dB)			
Fan tap	H	M	L
Sound pressure level (dB(A))	40	36	33



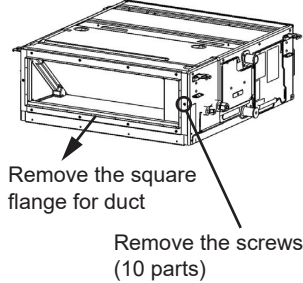
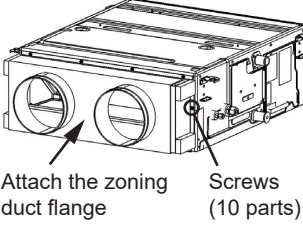
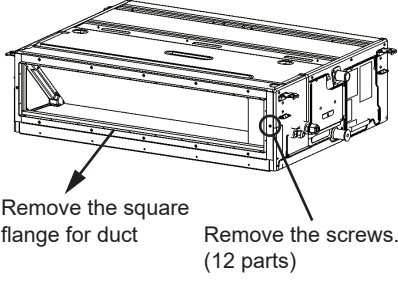
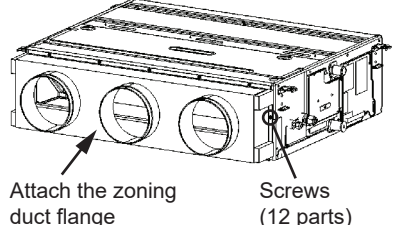
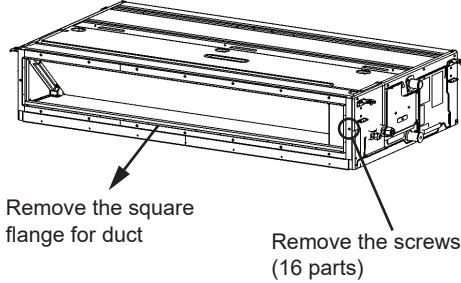
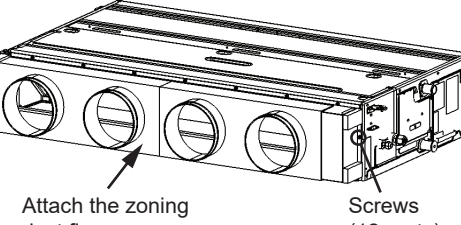
2-3-8. Accessories

Optional Parts	Model Name	Remarks
Wireless remote controller	TCB-AXU31-UL	All model
Zoning duct flange	TCB-SF56C6BP-UL	Zoning duct flange for chassis W27.6" (700mm)
	TCB-SF80C6BP-UL	Zoning duct flange for chassis W39.4" (1000mm)
	TCB-SF160C6BP-UL	Zoning duct flange for chassis W55.2" (1400mm)
Auxiliary outside air flange	TCB-FF151US-UL	All model
Filter rail kit	TCB-FW561DP-UL	
	TCB-FW801DP-UL	
	TCB-FW1401DP-UL	



Appendix

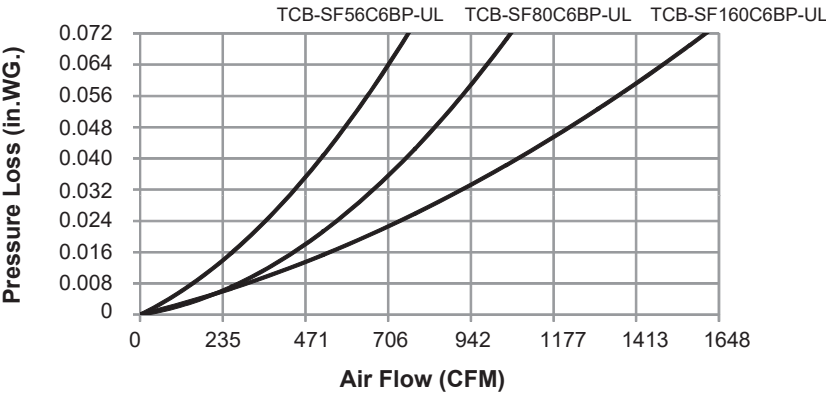
1. Zoning duct flange

Zoning duct flange TCB-SF56C6BP-UL	Zoning duct flange TCB-SF80C6BP-UL	Zoning duct flange TCB-SF160C6BP-UL
 Remove the square flange for duct Remove the screws. (10 parts)  Attach the zoning duct flange Screws (10 parts)	 Remove the square flange for duct Remove the screws. (12 parts)  Attach the zoning duct flange Screws (12 parts)	 Remove the square flange for duct Remove the screws. (16 parts)  Attach the zoning duct flange Screws (12 parts)

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 Presure type, pressure-loss characteristics depends on Air Flow.

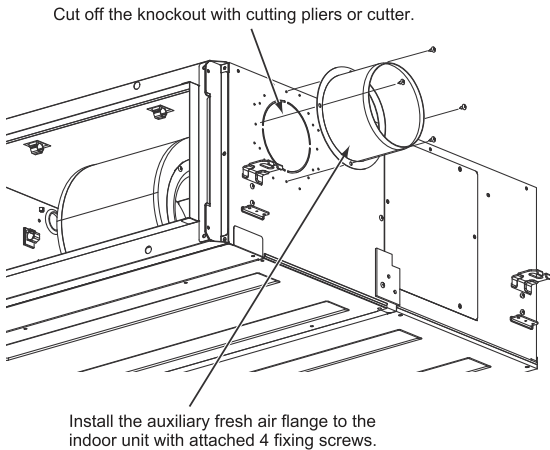


2. Auxiliary outside air flange

Arrange a flexible duct (locally procured).
It is necessary to install auxiliary outside 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.



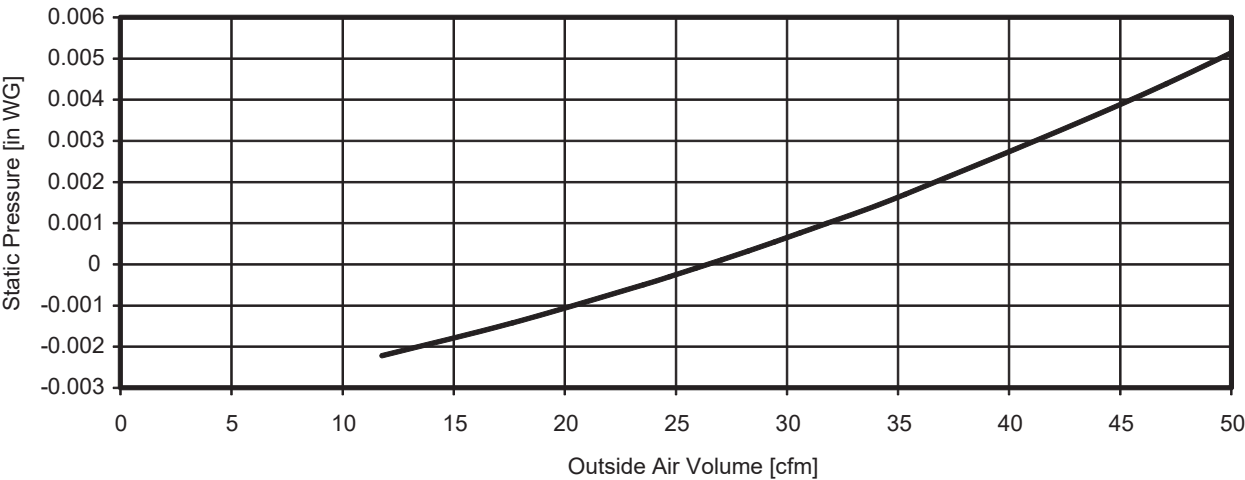
 CAUTION

The Outside air shall be conditioned by heat reclaim ventilator or similar.
Emsure the outside air volume is determined so that mixed suction air and outside air maintain the operating temperature.
Recommended conditioned air temperature is 54 °F to 86 °F
however, make a outside air volume within 10% of standard.

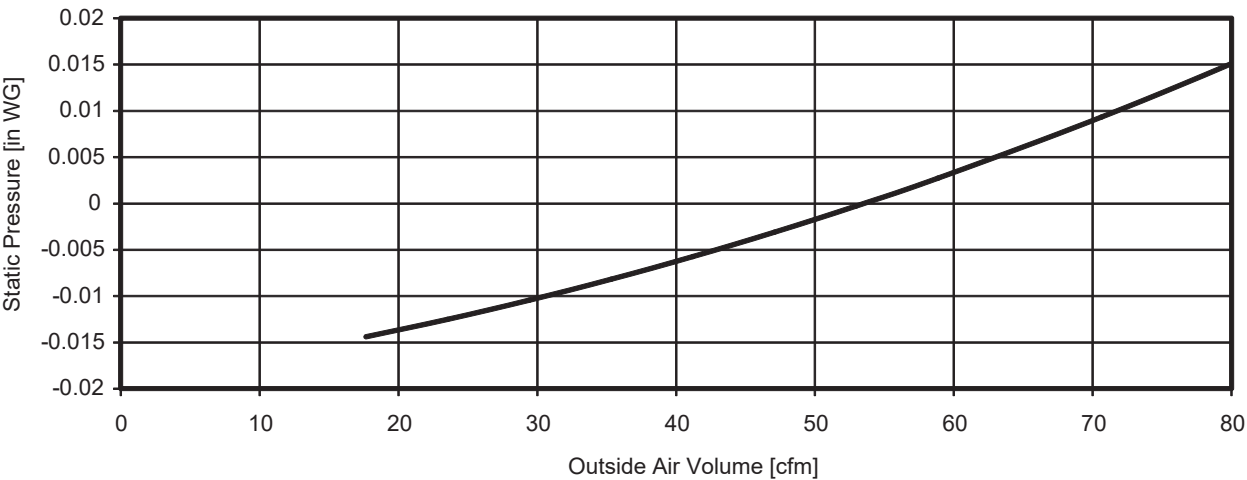
Model name	RAV-	HB121BTP	HB181BTP	HB241BTP	HB301BTP	HB361BTP HB421BTP	HB481BTP
Standard air flow	CFM	395	540	775	990	1130	1175

Provide an air filter in outside air duct. (Outside air doesn't pass through the filter of indoor unit.)
Besure to insulate outside air duct.
Please wire for inter-lock with fan of indoor unit.

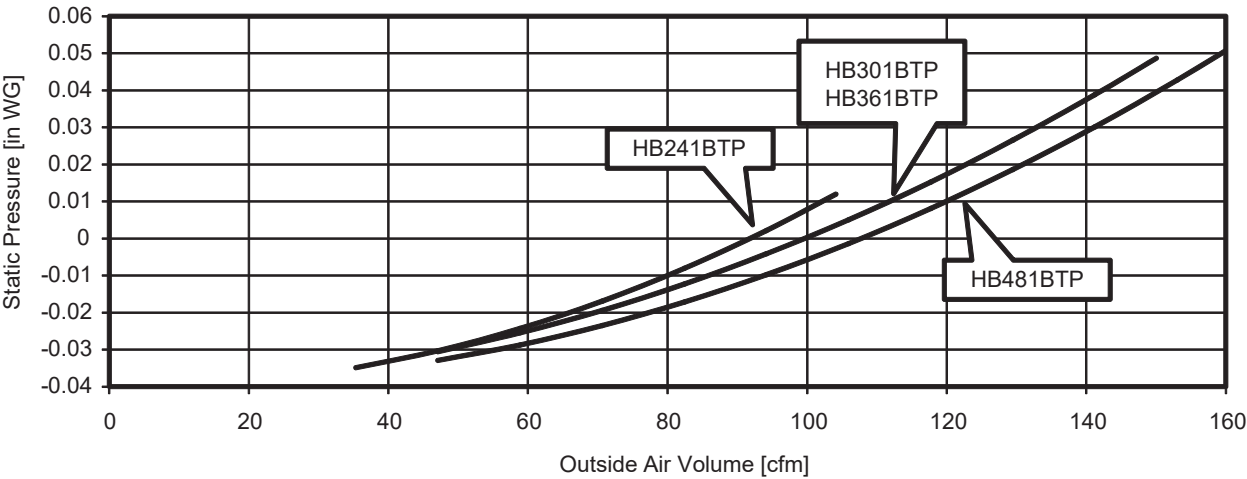
RAV-HB121BTP-UL



RAV-HB181BTP-UL



RAV-HB241BTP-UL to RAV-HB481BTP-UL



2-4. High-wall Type

2-4-1. Specifications

2-4-2. Dimension

2-4-3. Wiring Diagrams

2-4-4. Sensible Capacity Table

2-4-5. Part Load Performance

2-4-6. Air Throw Distance Chart

2-4-7. Sound Characteristics (NC Curve)

2-4-1. Specifications

High-wall type

Model name	Indoor unit		RAV -	HB121KRTP-UL	HB181KRTP-UL	HB241KRTP-UL
	Outdoor unit		RAV -	BP121AT2P-UL	BP181AT2P-UL	BP241AT2P-UL
Cooling	Capacity	Btu/h		12000	18000	24000
	Power consumption	w		765	1500	1778
	EER			15.7	12.0	11.8
	SEER			25.2	23.8	22.7
Heating	Capacity	Btu/h		14000	20000	27000
	Power consumption	w		1050	1800	2077
	COP			13.3	11.1	11.3
	HSPF			11.0	10.4	10.4
Power supply			1 Phase 208V/230V 60 Hz			
Indoor unit						
Outer dimension	Main unit	Height	In	12.6		
		Width	In	41.3		
		Depth	In	9.8		
Total weight	Main unit	lbs.	33.1			
Air flow volume	Indoor unit (H/M/L)	CFM	475 / 355 / 250		530 / 425 / 325	705 / 530 / 355
Sound Pressure Level (H/M+/M/L+/L)		dB(A)	37 / 36 / 33 / 32 / 28		41 / 39 / 37 / 35 / 32	46 / 42 / 41 / 36 / 35
Sound power level (High) Cooling / Heating		(dB)	52 / 52		56 / 56	61 / 61
Fan motor output		w	30			
Drain tube size (outside diameter)		In	0.9" (VP16)			
Outdoor unit						
Air flow volume	Cooling / Heating	CFM	1590 / 1590		1590 / 1590	2300 / 2220
Sound pressure level Cooling / Heating		dB(A)	48 / 52		48 / 52	52 / 54
Sound power level (High) Cooling / Heating		(dB)	65 / 69		65 / 69	68 / 70
Outer dimension	Height	In	21.7			35.0
	Width	In	30.7			35.4
	Depth	In	11.4			12.6
Total weight	Main unit	lbs.	81.6			132.2
Pipe	Min. leghth	ft.	16'5"			
	Max. total length	ft.	164'1"			
Refrigerant	Type		R454B			
	Amount (charged)	lbs.	3.31			4.63
Flare Connections	Gas side	In	1 / 2"			5 / 8"
	Liquid side	In	1 / 4"			3 / 8"
Operating Range	Cooling	(°F)	5 to 115			
	Cooling with Wind buffels	(°F)	5 to 115			
	Heating	(°F)	-13 to 59			

Rated conditions Cooling : Indoor air temperature 80°F (27°C) DB / 67 (19°C) WB, Outdoor air temperature 95°F (35°C) DB
 Heating : Indoor air temperature 70°F (21°C) DB, Outdoor air temperature 47°F (8°C) DB/43°F (6°C) WB

High-wall type

Model name	Indoor unit		RAV -	HB301KRTP-UL	HB361KRTP-UL
	Outdoor unit		RAV -	BP301AT2P-UL	BP361AT2P-UL
Cooling	Capacity		Btu/h	30000	32000
	Power consumption		w	2290	2735
	EER			13.1	11.7
	SEER			23.6	22.4
Heating	Capacity		Btu/h	34000	40000
	Power consumption		w	3160	4000
	COP			10.8	10.0
	HSPF			11.0	11.3
Power supply			1 Phase 208V/230V 60 Hz		
Indoor unit					
Outer dimension	Main unit	Height	In	13.7	
		Width	In	47.2	
		Depth	In	11.0	
Total weight	Main unit	lbs.		44.1	
Air flow volume	Indoor unit (H/M/L)		CFM	940 / 825 / 705	970 / 910 / 735
Sound Pressure Level (H/M+/M/L+/L)			dB(A)	48 / 46 / 45 / 43 / 41	50 / 48 / 47 / 44 / 43
Sound power level (High) Cooling / Heating			(dB)	63 / 63	65 / 65
Fan motor output			w	61	
Drain tube size (outside diameter)			In	0.9" (VP16)	
Outdoor unit					
Air flow volume	Cooling / Heating		CFM	3570 / 2870	3570 / 3100
Sound Pressure Level (High) Cooling / Heating			dB(A)	54 / 54	54 / 54
Sound power level (High) Cooling / Heating			(dB)	71 / 68	71 / 71
Outer dimension	Height		In	52.8	
	Width		In	35.4	
	Depth		In	12.6	
Total weight	Main unit	lbs.		218.3	
Pipe	Min. leghth		ft.	16'5"	
	Max. total length		ft.	246'1"	
Refrigerant	Type			R454B	
	Amount (charged)		lbs.	5.84	
Flare Connections	Gas side		In	5 / 8"	
	Liquid side		In	3 / 8"	
Operating Range	Cooling		(°F)	5 to 115	
	Cooling with Wind buffels		(°F)	-13 to 115	
	Heating		(°F)	-13 to 59	

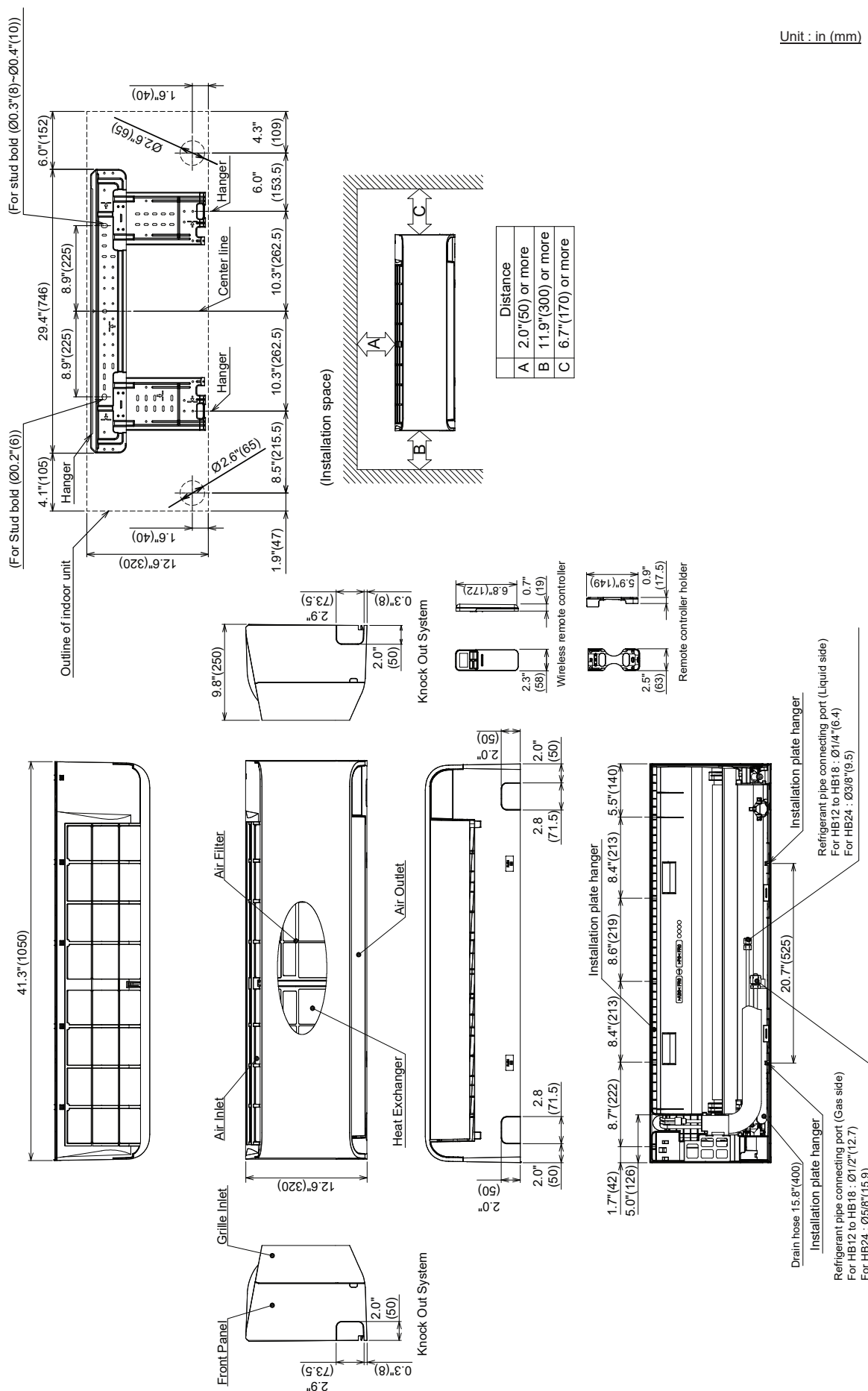
Rated conditions Cooling : Indoor air temperature 80°F (27°C) DB / 67 (19°C) WB, Outdoor air temperature 95°F (35°C) DB

Heating : Indoor air temperature 70°F (21°C) DB, Outdoor air temperature 47°F (8°C) DB/43°F (6°C) WB

2-4-2. Dimension

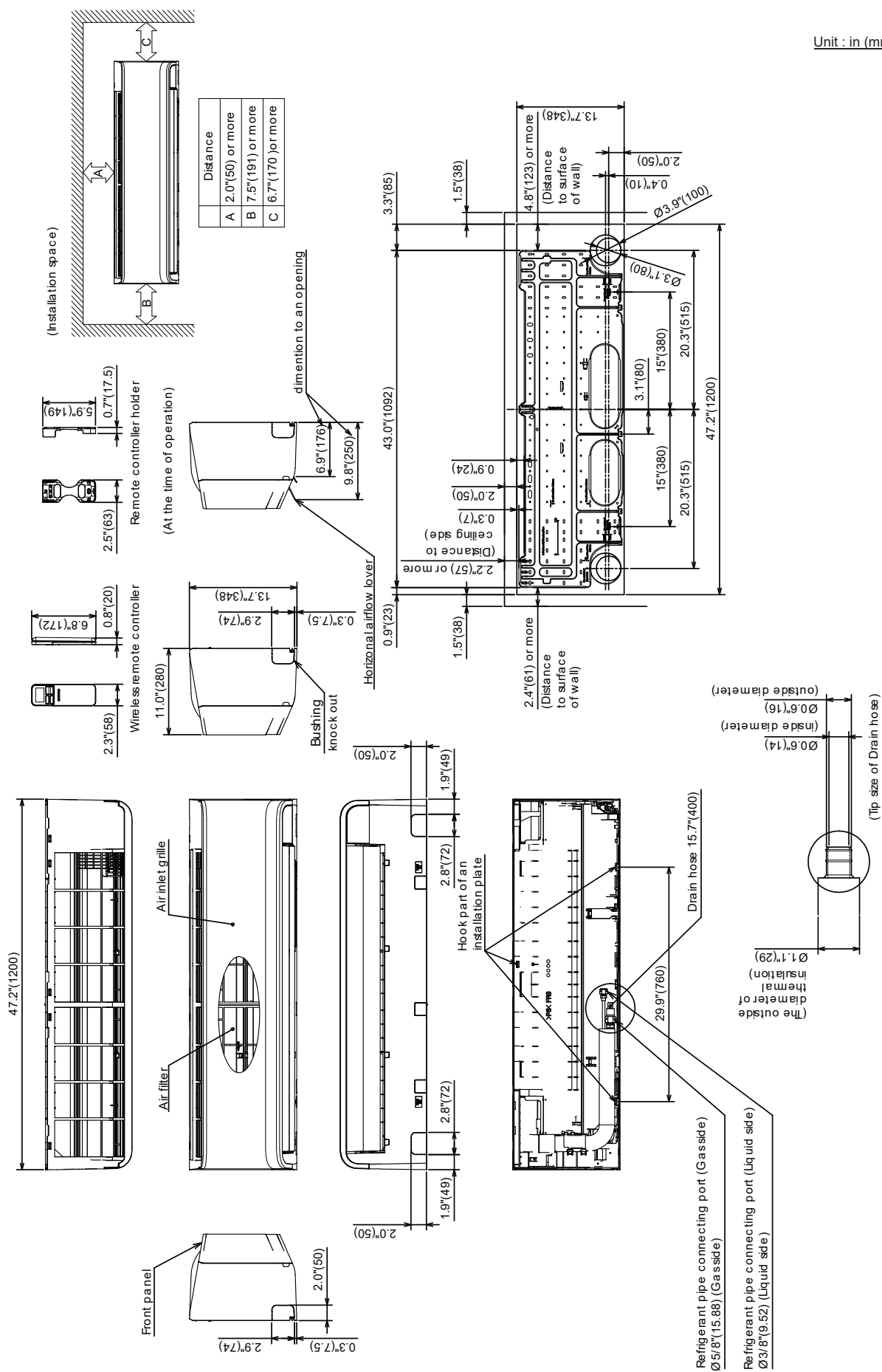
RAV-HB*__1KRTP-UL (*12 / 18 / 24)

Unit : in (mm)



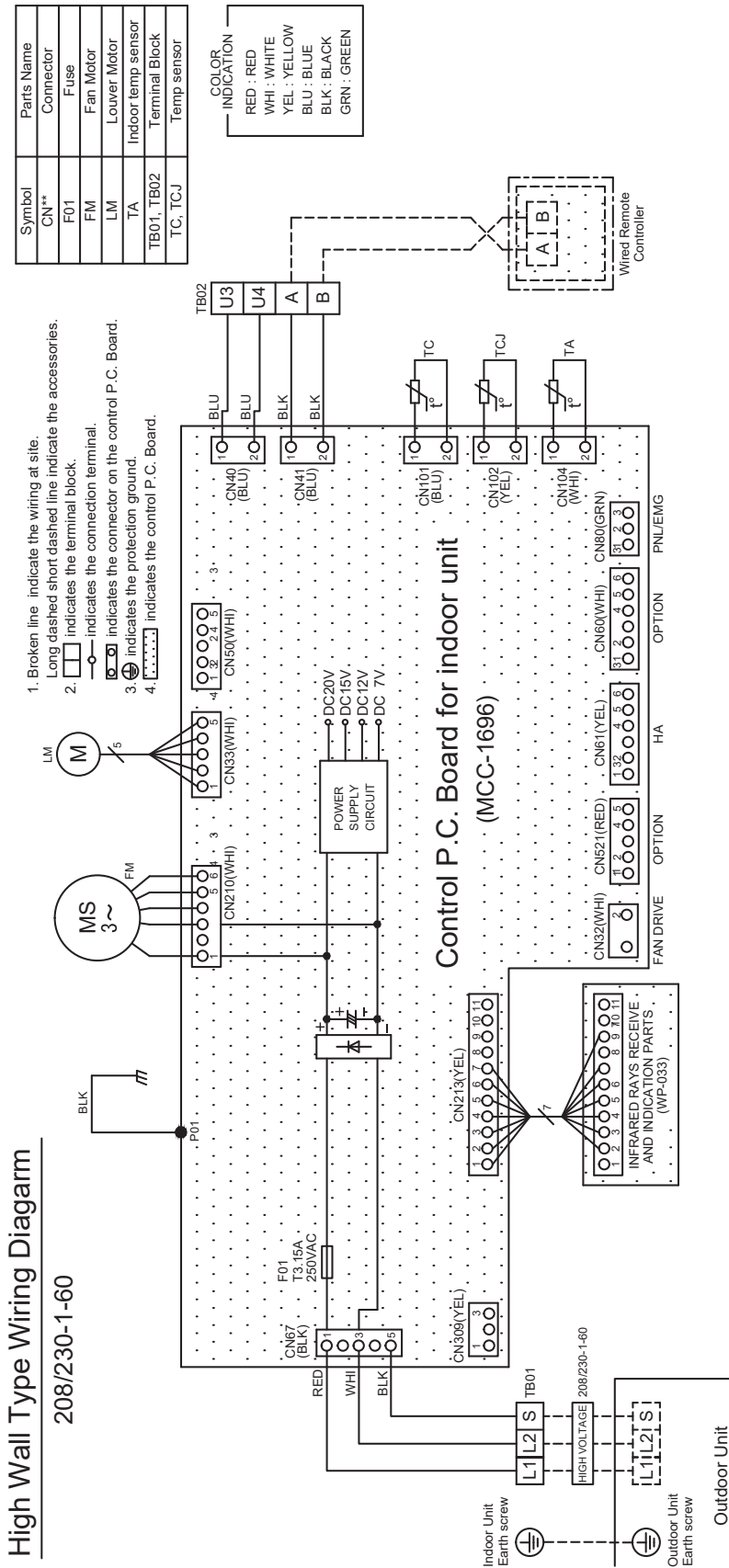
RAV-HB*_1KRTP-UL (*30 / 36)

Unit : in (mm)



2-4-3. Wiring diagrams

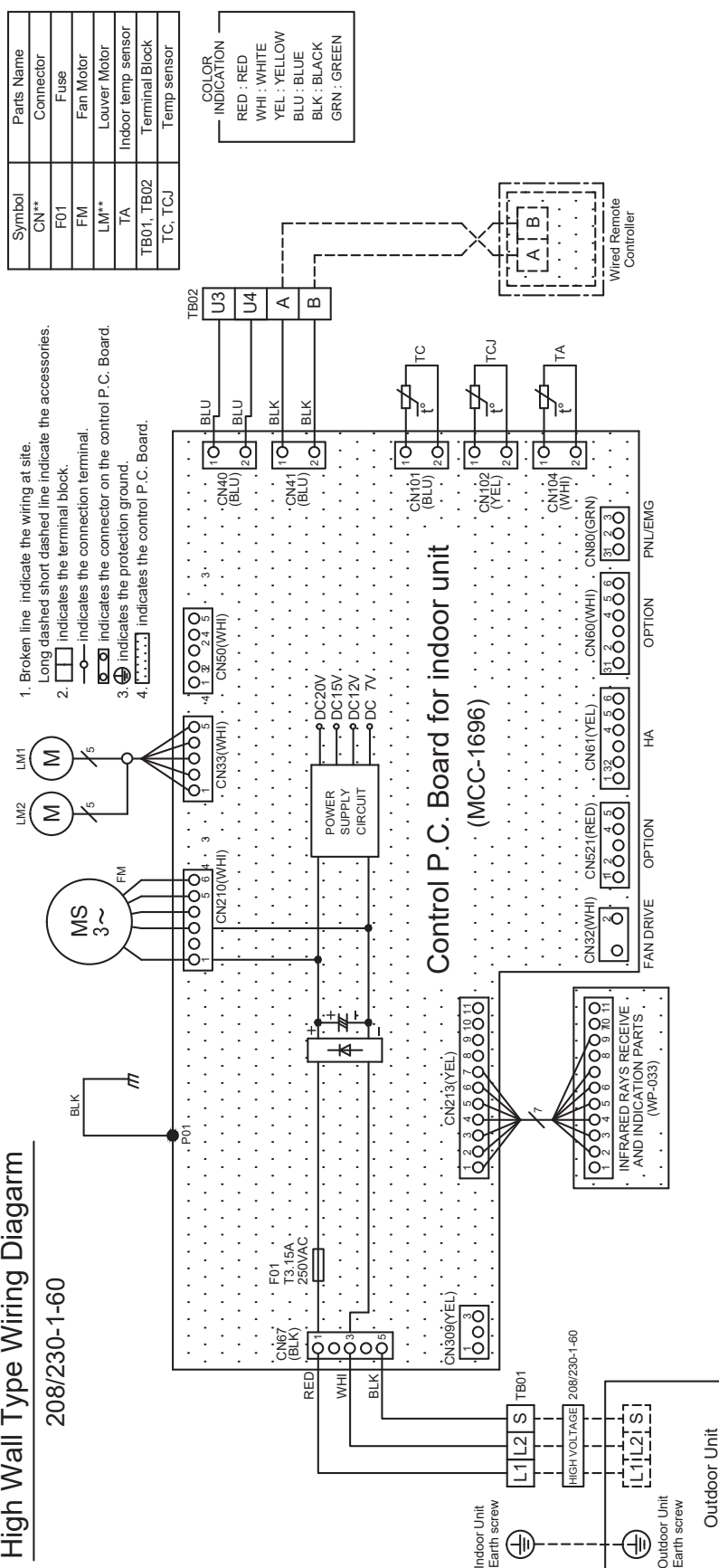
RAV-HB*__1KRTP-UL (*12 / 18 / 24)



RAV-HB*_1KRTP-UL (*30 / 36)

High Wall Type Wiring Diagram

208/230-1-60



2-4-4. Sensible Capacity Table

Product models : **RAV-HB121KRTP-UL ; RAV-BP121AT2P-UL**

Specification of product at standard condition

Standard Condition	Indoor	80°F (DB) / 67°F (WB)	Total Cooling Capacity (TC)	12000 Btu/hr
	Outdoor	95°F (DB) / 75°F (WB)	Sensible Heat Capacity (SHC)	10500 Btu/hr

Outdoor air temperature DB (°F)	Indoor air temperature													
	71°F (DB) 59°F (WB)		73°F (DB) 61°F (WB)		77°F (DB) 64°F (WB)		80°F (DB) 67°F (WB)		82°F (DB) 68°F (WB)		86°F (DB) 72°F (WB)		90°F (DB) 75°F (WB)	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
5	11900	11100	13100	11900	14100	12600	14500	12700	14900	12700	15800	12600	16500	12500
10	11900	11100	13100	11900	14100	12600	14500	12700	14900	12700	15800	12600	16500	12500
15	11900	11100	13100	11900	14100	12600	14500	12700	14900	12700	15800	12600	16500	12500
20	11900	11100	13100	11900	14100	12600	14500	12700	14900	12700	15800	12600	16500	12500
25	11900	11100	13100	11900	14100	12600	14500	12700	14900	12700	15800	12600	16500	12500
30	11900	11100	13100	11900	14100	12600	14500	12700	14900	12700	15800	12600	16500	12500
35	11900	11100	13100	11900	14100	12600	14500	12700	14900	12700	15800	12600	16500	12500
40	11900	11100	13100	11900	14100	12600	14500	12700	14900	12700	15800	12600	16500	12500
45	11900	11100	13100	11900	14100	12600	14500	12700	14900	12700	15800	12600	16500	12500
50	11900	11100	13100	11900	14100	12600	14500	12700	14900	12700	15800	12600	16500	12500
55	11900	11100	13100	11900	14100	12600	14500	12700	14900	12700	15800	12600	16500	12500
60	11900	11100	13100	11900	14100	12600	14500	12700	14900	12700	15800	12600	16500	12500
66	11900	11100	13100	11900	14100	12600	14500	12700	14900	12700	15800	12600	16500	12500
68	11800	11000	13000	11800	13900	12500	14300	12500	14700	12500	15600	12500	16300	12300
70	11600	10900	12800	11600	13800	12400	14200	12400	14600	12400	15400	12400	16100	12200
73	11400	10600	12600	11400	13500	12100	13800	12100	14200	12100	15100	12100	15800	11900
77	11100	10400	12300	11100	13200	11800	13500	11800	13900	11900	14700	11800	15400	11700
81	10900	10200	12000	10900	12900	11600	13200	11600	13600	11600	14400	11600	15100	11400
84	10600	9900	11700	10600	12600	11300	12900	11300	13300	11300	14100	11300	14700	11100
88	10400	9700	11400	10400	12300	11000	12600	11000	13000	11100	13700	11000	14400	10900
91	10100	9500	11200	10100	12000	10800	12300	10800	12700	10800	13400	10800	14000	10600
95	9900	9200	10900	9900	11700	10500	12000	10500	12300	10500	13100	10500	13700	10300
99	9600	9000	10600	9600	11400	10200	11700	10200	12000	10300	12700	10200	13300	10100
102	9400	8800	10300	9400	11100	10000	11400	10000	11700	10000	12400	9900	13000	9800
106	9100	8500	10000	9100	10800	9700	11100	9700	11400	9700	12100	9700	12600	9600
109	8800	8300	9800	8800	10500	9400	10800	9400	11100	9400	11700	9400	12300	9300
113	8600	8000	9500	8600	10200	9100	10500	9200	10800	9200	11400	9100	11900	9000
115	8500	7900	9300	8500	10000	9000	10300	9000	10600	9000	11200	9000	11700	8900

Product models : RAV-HB181KRTP-UL ; RAV-BP181AT2P-UL

Specification of product at standard condition

Standard Condition	Indoor	80°F (DB) / 67°F (WB)	Total Cooling Capacity (TC)	18000 Btu/hr
	Outdoor	95°F (DB) / 75°F (WB)	Sensible Heat Capacity (SHC)	13800 Btu/hr

Outdoor air temperature DB (°F)	Indoor air temperature													
	71°F (DB) 59°F (WB)		73°F (DB) 61°F (WB)		77°F (DB) 64°F (WB)		80°F (DB) 67°F (WB)		82°F (DB) 68°F (WB)		86°F (DB) 72°F (WB)		90°F (DB) 75°F (WB)	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
5	17800	14700	19700	15700	21100	16700	21700	16600	22300	16600	23600	16400	24700	16000
10	17800	14700	19700	15700	21100	16700	21700	16600	22300	16600	23600	16400	24700	16000
15	17800	14700	19700	15700	21100	16700	21700	16600	22300	16600	23600	16400	24700	16000
20	17800	14700	19700	15700	21100	16700	21700	16600	22300	16600	23600	16400	24700	16000
25	17800	14700	19700	15700	21100	16700	21700	16600	22300	16600	23600	16400	24700	16000
30	17800	14700	19700	15700	21100	16700	21700	16600	22300	16600	23600	16400	24700	16000
35	17800	14700	19700	15700	21100	16700	21700	16600	22300	16600	23600	16400	24700	16000
40	17800	14700	19700	15700	21100	16700	21700	16600	22300	16600	23600	16400	24700	16000
45	17800	14700	19700	15700	21100	16700	21700	16600	22300	16600	23600	16400	24700	16000
50	17800	14700	19700	15700	21100	16700	21700	16600	22300	16600	23600	16400	24700	16000
55	17800	14700	19700	15700	21100	16700	21700	16600	22300	16600	23600	16400	24700	16000
60	17800	14700	19700	15700	21100	16700	21700	16600	22300	16600	23600	16400	24700	16000
66	17800	14700	19700	15700	21100	16700	21700	16600	22300	16600	23600	16400	24700	16000
68	17600	14600	19500	15500	20900	16500	21500	16500	22100	16400	23400	16200	24500	15900
70	17400	14400	19300	15400	20600	16300	21200	16300	21800	16200	23100	16000	24200	15700
73	17100	14100	18800	15000	20200	16000	20800	15900	21400	15900	22600	15700	23700	15300
77	16700	13800	18400	14700	19700	15600	20300	15600	20900	15500	22100	15400	23100	15000
81	16300	13500	18000	14400	19300	15300	19800	15200	20400	15200	21600	15000	22600	14700
84	15900	13200	17600	14000	18800	14900	19400	14900	19900	14800	21100	14700	22100	14300
88	15500	12900	17200	13700	18400	14600	18900	14500	19500	14500	20600	14300	21600	14000
91	15200	12500	16700	13400	17900	14200	18500	14200	19000	14100	20100	14000	21000	13600
95	14800	12200	16300	13000	17500	13800	18000	13800	18500	13800	19600	13600	20500	13300
99	14400	11900	15900	12700	17000	13500	17500	13400	18000	13400	19100	13300	20000	13000
102	14000	11600	15500	12400	16600	13100	17100	13100	17600	13100	18600	12900	19500	12600
106	13300	11000	14700	11700	15700	12400	16200	12400	16600	12400	17600	12200	18400	11900
109	12800	10600	14100	11300	15100	12000	15600	11900	16000	11900	16900	11800	17700	11500
113	11300	9400	12500	10000	13400	10600	13800	10600	14200	10600	15000	10400	15700	10200
115	11100	9200	12200	9800	13100	10400	13500	10400	13900	10300	14700	10200	15400	10000

Product models : RAV-HB241KRTP-UL ; RAV-BP241AT2P-UL

Specification of product at standard condition

Standard Condition	Indoor	80°F (DB) / 67°F (WB)	Total Cooling Capacity (TC)	24000 Btu/hr
	Outdoor	95°F (DB) / 75°F (WB)	Sensible Heat Capacity (SHC)	16900 Btu/hr

Outdoor air temperature DB (°F)	Indoor air temperature													
	71°F (DB) 59°F (WB)		73°F (DB) 61°F (WB)		77°F (DB) 64°F (WB)		80°F (DB) 67°F (WB)		82°F (DB) 68°F (WB)		86°F (DB) 72°F (WB)		90°F (DB) 75°F (WB)	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
5	23800	18100	26200	19200	28100	20400	28900	20300	29700	20200	31500	19800	32900	19200
10	23800	18100	26200	19200	28100	20400	28900	20300	29700	20200	31500	19800	32900	19200
15	23800	18100	26200	19200	28100	20400	28900	20300	29700	20200	31500	19800	32900	19200
20	23800	18100	26200	19200	28100	20400	28900	20300	29700	20200	31500	19800	32900	19200
25	23800	18100	26200	19200	28100	20400	28900	20300	29700	20200	31500	19800	32900	19200
30	23800	18100	26200	19200	28100	20400	28900	20300	29700	20200	31500	19800	32900	19200
35	23800	18100	26200	19200	28100	20400	28900	20300	29700	20200	31500	19800	32900	19200
40	23800	18100	26200	19200	28100	20400	28900	20300	29700	20200	31500	19800	32900	19200
45	23800	18100	26200	19200	28100	20400	28900	20300	29700	20200	31500	19800	32900	19200
50	23800	18100	26200	19200	28100	20400	28900	20300	29700	20200	31500	19800	32900	19200
55	23800	18100	26200	19200	28100	20400	28900	20300	29700	20200	31500	19800	32900	19200
60	23800	18100	26200	19200	28100	20400	28900	20300	29700	20200	31500	19800	32900	19200
66	23800	18100	26200	19200	28100	20400	28900	20300	29700	20200	31500	19800	32900	19200
68	23500	17900	26000	19000	27800	20200	28600	20100	29500	20000	31200	19600	32600	19000
70	23300	17700	25700	18800	27500	20000	28300	19900	29100	19800	30800	19400	32300	18800
73	22700	17400	25100	18400	26900	19600	27700	19400	28500	19400	30200	19000	31600	18400
77	22200	17000	24600	18000	26300	19100	27100	19000	27800	18900	29500	18600	30800	18000
81	21700	16600	24000	17600	25700	18700	26500	18600	27200	18500	28800	18100	30200	17600
84	21200	16200	23400	17200	25100	18300	25800	18100	26600	18100	28200	17700	29400	17200
88	20700	15800	22900	16800	24500	17800	25200	17700	25900	17600	27500	17300	28700	16800
91	20200	15400	22300	16400	23900	17400	24600	17300	25300	17200	26800	16900	28100	16400
95	19700	15000	21800	16000	23300	17000	24000	16900	24700	16800	26100	16500	27300	16000
99	19200	14600	21200	15500	22700	16500	23400	16400	24000	16300	25500	16000	26600	15600
102	18700	14300	20700	15100	22100	16100	22800	16000	23400	15900	24800	15600	25900	15200
106	18200	13900	20100	14700	21500	15600	22200	15600	22800	15500	24100	15200	25200	14700
109	17700	13500	19500	14300	20900	15200	21500	15100	22100	15000	23500	14800	24500	14300
113	17200	13100	19000	13900	20300	14800	20900	14700	21500	14600	22800	14300	23800	13900
115	16900	12900	18700	13700	20000	14600	20600	14500	21200	14400	22500	14100	23500	13700

Product models : RAV-HB301KRTP-UL ; RAV-BP301AT2P-UL

Specification of product at standard condition

Standard Condition	Indoor	80°F (DB) / 67°F (WB)	Total Cooling Capacity (TC)	30000 Btu/hr
	Outdoor	95°F (DB) / 75°F (WB)	Sensible Heat Capacity (SHC)	22000 Btu/hr

Outdoor air temperature DB (°F)	Indoor air temperature													
	71°F (DB) 59°F (WB)		73°F (DB) 61°F (WB)		77°F (DB) 64°F (WB)		80°F (DB) 67°F (WB)		82°F (DB) 68°F (WB)		86°F (DB) 72°F (WB)		90°F (DB) 75°F (WB)	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-13	32500	25800	35900	27500	38500	29200	39600	29100	40800	29000	43200	28500	45100	27800
-10	32500	25800	35900	27500	38500	29200	39600	29100	40800	29000	43200	28500	45100	27800
-5	32500	25800	35900	27500	38500	29200	39600	29100	40800	29000	43200	28500	45100	27800
0	32500	25800	35900	27500	38500	29200	39600	29100	40800	29000	43200	28500	45100	27800
5	32500	25800	35900	27500	38500	29200	39600	29100	40800	29000	43200	28500	45100	27800
10	32500	25800	35900	27500	38500	29200	39600	29100	40800	29000	43200	28500	45100	27800
15	32500	25800	35900	27500	38500	29200	39600	29100	40800	29000	43200	28500	45100	27800
20	32500	25800	35900	27500	38500	29200	39600	29100	40800	29000	43200	28500	45100	27800
25	32500	25800	35900	27500	38500	29200	39600	29100	40800	29000	43200	28500	45100	27800
30	32500	25800	35900	27500	38500	29200	39600	29100	40800	29000	43200	28500	45100	27800
35	32500	25800	35900	27500	38500	29200	39600	29100	40800	29000	43200	28500	45100	27800
40	32500	25800	35900	27500	38500	29200	39600	29100	40800	29000	43200	28500	45100	27800
45	32500	25800	35900	27500	38500	29200	39600	29100	40800	29000	43200	28500	45100	27800
50	32500	25800	35900	27500	38500	29200	39600	29100	40800	29000	43200	28500	45100	27800
55	31600	25100	34900	26700	37400	28300	38500	28200	39600	28100	41900	27700	43800	27000
60	31000	24600	34200	26100	36600	27800	37700	27600	38800	27600	41100	27100	43000	26400
66	29700	23600	32800	25100	35100	26600	36200	26500	37200	26400	39400	26000	41200	25300
68	29400	23300	32500	24800	34800	26400	35800	26200	36800	26200	39000	25700	40800	25100
70	29100	23100	32100	24500	34400	26100	35400	26000	36400	25900	38600	25500	40300	24800
73	28400	22600	31400	24000	33600	25500	34600	25400	35600	25300	37700	24900	39400	24300
77	27800	22100	30700	23500	32900	24900	33900	24800	34800	24700	36900	24400	38600	23700
81	27200	21600	30000	22900	32100	24400	33100	24300	34000	24200	36000	23800	37700	23200
84	26500	21100	29300	22400	31400	23800	32300	23700	33200	23600	35200	23200	36800	22600
88	25900	20600	28600	21900	30600	23200	31500	23100	32400	23100	34400	22700	35900	22100
91	25300	20100	27900	21300	29900	22700	30800	22600	31700	22500	33500	22100	35100	21600
95	24600	19600	27200	20800	29100	22100	30000	22000	30900	21900	32700	21600	34200	21000
99	24000	19100	26500	20300	28400	21500	29200	21400	30100	21400	31800	21000	33300	20500
102	23400	18600	25800	19700	27600	21000	28500	20900	29300	20800	31000	20500	32400	19900
106	22700	18100	25100	19200	26900	20400	27700	20300	28500	20200	30200	19900	31500	19400
109	22100	17600	24400	18700	26200	19800	26900	19700	27700	19700	29300	19400	30700	18900
113	21500	17100	23700	18100	25400	19300	26200	19200	26900	19100	28500	18800	29800	18300
115	21200	16800	23400	17900	25000	19000	25800	18900	26500	18800	28100	18500	29400	18100

Product models : RAV-HB361KRTP-UL ; RAV-BP361AT2P-UL

Specification of product at standard condition

Standard Condition	Indoor	80°F (DB) / 67°F (WB)	Total Cooling Capacity (TC)	32000 Btu/hr
	Outdoor	95°F (DB) / 75°F (WB)	Sensible Heat Capacity (SHC)	23400 Btu/hr

Outdoor air temperature DB (°F)	Indoor air temperature													
	71°F (DB) 59°F (WB)		73°F (DB) 61°F (WB)		77°F (DB) 64°F (WB)		80°F (DB) 67°F (WB)		82°F (DB) 68°F (WB)		86°F (DB) 72°F (WB)		90°F (DB) 75°F (WB)	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-13	34700	27500	38300	29200	41100	31000	42300	30900	43500	30800	46000	30300	48200	29500
-10	34700	27500	38300	29200	41100	31000	42300	30900	43500	30800	46000	30300	48200	29500
-5	34700	27500	38300	29200	41100	31000	42300	30900	43500	30800	46000	30300	48200	29500
0	34700	27500	38300	29200	41100	31000	42300	30900	43500	30800	46000	30300	48200	29500
5	34700	27500	38300	29200	41100	31000	42300	30900	43500	30800	46000	30300	48200	29500
10	34700	27500	38300	29200	41100	31000	42300	30900	43500	30800	46000	30300	48200	29500
15	34700	27500	38300	29200	41100	31000	42300	30900	43500	30800	46000	30300	48200	29500
20	34700	27500	38300	29200	41100	31000	42300	30900	43500	30800	46000	30300	48200	29500
25	34700	27500	38300	29200	41100	31000	42300	30900	43500	30800	46000	30300	48200	29500
30	34700	27500	38300	29200	41100	31000	42300	30900	43500	30800	46000	30300	48200	29500
35	34700	27500	38300	29200	41100	31000	42300	30900	43500	30800	46000	30300	48200	29500
40	34700	27500	38300	29200	41100	31000	42300	30900	43500	30800	46000	30300	48200	29500
45	34700	27500	38300	29200	41100	31000	42300	30900	43500	30800	46000	30300	48200	29500
50	34700	27500	38300	29200	41100	31000	42300	30900	43500	30800	46000	30300	48200	29500
55	33700	26700	37200	28400	39900	30100	41000	30000	42200	29900	44700	29400	46800	28700
60	33000	26200	36500	27800	39100	29500	40200	29400	41400	29300	43800	28800	45800	28100
66	31700	25100	35000	26700	37500	28300	38600	28200	39700	28100	42000	27700	43900	26900
68	31300	24800	34600	26400	37100	28000	38200	27900	39300	27800	41600	27400	43500	26700
70	31000	24600	34200	26100	36700	27700	37700	27600	38800	27500	41100	27100	43000	26400
73	30300	24000	33500	25500	35900	27100	36900	27000	38000	26900	40200	26500	42100	25800
77	29700	23500	32800	25000	35100	26500	36100	26400	37100	26300	39300	25900	41100	25200
81	29000	23000	32000	24400	34300	25900	35300	25800	36300	25700	38400	25300	40200	24600
84	28300	22400	31300	23800	33500	25300	34500	25200	35400	25100	37500	24700	39300	24100
88	27600	21900	30500	23300	32700	24700	33600	24600	34600	24500	36600	24100	38300	23500
91	27000	21400	29800	22700	31900	24100	32800	24000	33800	23900	35800	23500	37400	22900
95	26300	20800	29000	22100	31100	23500	32000	23400	32900	23300	34900	23000	36500	22400
99	25600	20300	28300	21600	30300	22900	31200	22800	32100	22700	34000	22400	35500	21800
102	24900	19800	27500	21000	29500	22300	30400	22200	31200	22100	33100	21800	34600	21200
106	24300	19200	26800	20400	28700	21700	29500	21600	30400	21500	32200	21200	33700	20600
109	23600	18700	26000	19900	27900	21100	28700	21000	29500	20900	31300	20600	32700	20100
113	22900	18100	25300	19300	27100	20500	27900	20400	28700	20300	30400	20000	31800	19500
115	22600	17900	24900	19000	26700	20200	27500	20100	28300	20000	29900	19700	31300	19200

Heating capacity table

Product model : RAV-HM_1KRP-UL : RAV-BP__1AT2P-UL

(TC : Btu/h, PI : W)

unit size	outdoor air temp.		indoor air temp.									
	FDB	FWB	61 (FDB)		64 (FDB)		70 (FDB)		72 (FDB)		75 (FDB)	
			TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
12	59	57	17200	1100	17000	1100	16900	1200	16800	1200	16700	1300
	50	48	15600	1000	15400	1100	15300	1100	15200	1100	15100	1200
	47	43	14200	1000	14100	1000	14000	1100	13900	1100	13800	1200
	41	39	13300	1000	13100	1000	13100	1000	13000	1100	12900	1100
	36	34	11900	900	11800	900	11700	1000	11600	1000	11600	1100
	32	31	11100	900	11000	900	10800	1000	10800	1000	10900	1000
	23	22	9300	800	9200	800	9100	900	9100	900	9000	900
	19	18	8700	800	8600	800	8600	800	8500	900	8500	900
	14	13	8000	700	7900	800	7900	800	7800	800	7800	900
	5	4	6700	700	6700	700	6600	800	6600	800	6600	800
	1	0	5100	600	5000	700	5000	700	5000	700	4900	800
	-3	-4	4000	600	3900	600	3900	600	3900	700	3900	700
	-13	-13	2100	500	2100	600	2100	600	2100	600	2100	600
unit size	outdoor air temp.		indoor air temp.									
	FDB	FWB	61 (FDB)		64 (FDB)		70 (FDB)		72 (FDB)		75 (FDB)	
			TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
18	59	57	24500	1900	24300	1900	24100	2000	24000	2100	23800	2200
	50	48	22300	1800	22000	1800	21900	1900	21800	2000	21600	2100
	47	43	20300	1700	20100	1700	20000	1800	19900	1900	19800	2000
	41	39	19000	1600	18800	1700	18700	1700	18500	1800	18400	1900
	36	34	17000	1600	16800	1600	16700	1700	16600	1700	16500	1800
	32	31	15800	1500	15700	1600	15500	1600	15400	1700	15600	1700
	23	22	13300	1400	13100	1400	13100	1500	13000	1500	12900	1600
	19	18	12500	1300	12400	1400	12300	1400	12200	1500	12100	1600
	14	13	11400	1300	11300	1300	11300	1400	11200	1400	11100	1500
	5	4	9600	1200	9500	1200	9500	1300	9400	1300	9400	1400
	1	0	7300	1100	7200	1100	7100	1200	7100	1200	7100	1300
	-3	-4	5700	1000	5600	1100	5600	1100	5600	1200	5500	1200
	-13	-13	3000	900	3000	1000	3000	1000	3000	1000	2900	1100
unit size	outdoor air temp.		indoor air temp.									
	FDB	FWB	61 (FDB)		64 (FDB)		70 (FDB)		72 (FDB)		75 (FDB)	
			TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
24	59	57	33100	2500	32800	2600	32600	2700	32400	2800	32200	2900
	50	48	30100	2400	29700	2400	29600	2500	29400	2600	29200	2800
	47	43	27500	2300	27200	2300	27000	2400	26800	2500	26700	2600
	41	39	25600	2200	25300	2200	25200	2300	25000	2400	24900	2500
	36	34	23000	2100	22700	2100	22600	2200	22400	2300	22300	2400
	32	31	21300	2000	21200	2100	20900	2200	20800	2200	21100	2300
	23	22	17900	1800	17700	1900	17600	2000	17500	2000	17400	2100
	19	18	16800	1800	16700	1800	16600	1900	16500	2000	16400	2100
	14	13	15400	1700	15300	1800	15200	1800	15100	1900	15000	2000
	5	4	13000	1600	12900	1700	12800	1700	12700	1800	12600	1900
	1	0	9800	1500	9700	1500	9600	1600	9600	1700	9500	1700
	-3	-4	7700	1400	7600	1400	7500	1500	7500	1600	7400	1600
	-13	-13	4100	1200	4100	1300	4000	1300	4000	1400	4000	1400

TC:Total Heating Capacity [Btu/h]

PI:Power Input [W]

Product model : RAV-HM_1KRTP-UL : RAV-BP__1AT2P-UL

(TC : Btu/h, PI : W)

unit size	outdoor air temp.		indoor air temp.									
	FDB	FWB	61 (FDB)		64 (FDB)		70 (FDB)		72 (FDB)		75 (FDB)	
			TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
30	59	57	41700	3300	41300	3400	41000	3500	40800	3600	40500	3800
	50	48	37900	3100	37500	3200	37200	3300	37000	3500	36800	3600
	47	43	34600	3000	34200	3100	34000	3200	33800	3300	33600	3500
	41	39	32200	2900	31900	3000	31700	3100	31500	3200	31300	3400
	36	34	28900	2700	28600	2800	28400	2900	28300	3000	28100	3200
	32	31	26900	2700	26700	2800	26300	2900	26200	2900	26500	3100
	23	22	22600	2400	22300	2500	22200	2600	22100	2700	21900	2800
	19	18	21200	2400	21000	2400	20900	2500	20700	2600	20600	2800
	14	13	19400	2300	19200	2300	19100	2400	19000	2500	18900	2600
	5	4	16400	2100	16200	2200	16100	2300	16000	2400	15900	2500
	1	0	12400	2000	12200	2000	12100	2100	12100	2200	12000	2300
36	-3	-4	9700	1800	9600	1900	9500	2000	9500	2000	9400	2100
	-13	-13	5200	1600	5100	1700	5100	1700	5100	1800	5000	1900
unit size	outdoor air temp.		indoor air temp.									
	FDB	FWB	61 (FDB)		64 (FDB)		70 (FDB)		72 (FDB)		75 (FDB)	
			TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
36	59	57	49100	4200	48500	4300	48300	4400	48000	4600	47700	4800
	50	48	44500	3900	44100	4000	43800	4200	43500	4400	43300	4600
	47	43	40700	3800	40200	3900	40000	4000	39800	4200	39500	4400
	41	39	37900	3600	37500	3700	37300	3900	37100	4000	36900	4200
	36	34	34000	3500	33700	3600	33500	3700	33200	3900	33100	4000
	32	31	31600	3400	31500	3500	30900	3600	30800	3700	31200	3900
	23	22	26500	3100	26300	3200	26100	3300	25900	3400	25800	3600
	19	18	25000	3000	24700	3100	24600	3200	24400	3300	24300	3500
	14	13	22900	2900	22600	2900	22500	3000	22400	3200	22200	3300
	5	4	19300	2700	19100	2800	19000	2900	18800	3000	18700	3100
	1	0	14500	2500	14400	2600	14300	2600	14200	2800	14100	2900
36	-3	-4	11400	2300	11300	2400	11200	2500	11100	2600	11000	2700
	-13	-13	6100	2100	6100	2100	6000	2200	6000	2300	5900	2400

TC:Total Heating Capacity [Btu/h]

PI:Power Input [W]

2-4-5. Part load performance

Indoor: RAV-HB121K RTP-UL
Outdoor: RAV-BP121AT2P-UL

Operation range	Cooling		Heating	
	Q	P	Q	P
MINIMUM	Btu/h 4000	220	3000	220
RATING	Btu/h 12000	765	14000	1050
MAXIMUM	Btu/h 13600	970	17000	1550

Q : Capacity (Btu/h)
P : Power consumption (W)

Outdoor Temperature DB °F(°C)	Parts Load (%)																			
	100		90		80		70		60		50		40		30		20		10	
	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P
68(20)	14310	600	12880	540	11450	470	10020	410	8590	340	7160	280	5720	220	4770	170	4770	170	4770	170
70(21)	14160	610	12740	550	11320	480	9910	420	8490	350	7080	280	5660	220	4720	180	4720	180	4720	180
72(22)	14000	620	12600	560	11200	490	9800	420	8400	360	7000	290	5600	220	4670	180	4670	180	4670	180
73(23)	13850	630	12460	570	11080	500	9690	430	8310	360	6920	290	5540	230	4620	180	4620	180	4620	180
75(24)	13690	640	12320	580	10960	510	9590	440	8220	370	6850	300	5480	230	4560	190	4560	190	4560	190
77(25)	13540	660	12190	590	10830	520	9480	450	8120	380	6770	310	5420	240	4510	190	4510	190	4510	190
79(26)	13390	670	12050	600	10710	520	9370	450	8030	380	6690	310	5350	240	4460	190	4460	190	4460	190
81(27)	13230	680	11910	600	10590	530	9260	460	7940	390	6620	320	5290	240	4410	190	4410	190	4410	190
82(28)	13080	690	11770	610	10460	540	9150	470	7850	390	6540	320	5230	250	4360	200	4360	200	4360	200
84(29)	12920	700	11630	620	10340	550	9050	480	7750	400	6460	330	5170	250	4310	200	4310	200	4310	200
86(30)	12770	710	11490	630	10220	560	8940	480	7660	410	6390	330	5110	250	4260	200	4260	200	4260	200
88(31)	12620	720	11350	640	10090	570	8830	490	7570	410	6310	340	5050	260	4210	210	4210	210	4210	210
90(32)	12460	730	11220	650	9970	580	8720	500	7480	420	6230	340	4980	260	4150	210	4150	210	4150	210
91(33)	12310	740	11080	660	9850	580	8620	500	7380	430	6150	350	4920	270	4100	210	4100	210	4100	210
93(34)	12150	750	10940	670	9720	590	8510	510	7290	430	6080	350	4860	270	4050	220	4050	220	4050	220
95(35)	12000	770	10800	680	9600	600	8400	520	7200	440	6000	360	4800	270	4000	220	4000	220	4000	220
97(36)	11850	780	10660	690	9480	610	8290	530	7110	440	5920	360	4740	280	3950	220	3950	220	3950	220
99(37)	11690	790	10520	700	9350	620	8180	530	7020	450	5850	370	4680	280	3900	230	3900	230	3900	230
100(38)	11540	800	10380	710	9230	630	8080	540	6920	460	5770	370	4620	290	3850	230	3850	230	3850	230
102(39)	11380	810	10250	720	9110	640	7970	550	6830	460	5690	380	4550	290	3790	230	3790	230	3790	230
104(40)	11230	820	10110	730	8980	640	7860	560	6740	470	5620	380	4490	290	3740	240	3740	240	3740	240
106(41)	11080	830	9970	740	8860	650	7750	560	6650	480	5540	390	4430	300	3690	240	3690	240	3690	240
108(42)	10920	840	9830	750	8740	660	7650	570	6550	480	5460	390	4370	300	3640	240	3640	240	3640	240
109(43)	10770	850	9690	760	8610	670	7540	580	6460	490	5380	400	4310	310	3590	250	3590	250	3590	250
111(44)	10610	860	9550	770	8490	680	7430	590	6370	490	5310	400	4250	310	3540	250	3540	250	3540	250
113(45)	10460	870	9410	780	8370	690	7320	590	6280	500	5230	410	4180	310	3490	250	3490	250	3490	250
115(46)	10310	890	9280	790	8240	700	7210	600	6180	510	5150	410	4120	320	3440	250	3440	250	3440	250

Heating																				
Outdoor Temperature DB °F(°C)	Parts Load (%)																			
	100		90		80		70		60		50		40		30		20		10	
	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P
-13(-25)	5710	720	5140	650	4570	580	3990	500	3420	430	2850	360	2280	290	1710	210	1220	150	1220	150
-11(-24)	5830	730	5250	660	4670	590	4080	510	3500	440	2920	360	2330	290	1750	220	1250	150	1250	150
-9(-23)	5960	740	5360	670	4770	590	4170	520	3580	440	2980	370	2380	290	1790	220	1280	160	1280	160
-8(-22)	6090	750	5480	680	4870	600	4260	530	3650	450	3040	370	2430	300	1830	220	1300	160	1300	160
-6(-21)	6210	760	5590	690	4970	610	4350	530	3730	460	3110	380	2490	300	1860	230	1330	160	1330	160
-4(-20)	6340	770	5710	700	5070	620	4440	540	3800	460	3170	380	2540	310	1900	230	1360	160	1360	160
-2(-19)	6590	780	5930	710	5280	630	4620	550	3960	470	3300	390	2640	310	1980	230	1410	160	1410	160
0(-18)	6850	790	6160	720	5480	640	4790	560	4110	480	3420	400	2740	320	2050	240	1470	170	1470	170
1(-17)	7100	810	6390	720	5680	640	4970	560	4260	480	3550	400	2840	320	2130	240	1520	170	1520	170
3(-16)	7360	820	6620	730	5880	650	5150	570	4410	490	3680	410	2940	320	2210	240	1580	170	1580	170
5(-15)	7610	830	6850	740	6090	660	5330	580	4570	490	3800	410	3040	330	2280	240	1630	170	1630	170
7(-14)	7850	830	7060	750	6280	660	5490	580	4710	500	3920	410	3140	330	2350	250	1680	170	1680	170
9(-13)	8080	840	7280	750	6470	670	5660	590	4850	500	4040	420	3230	330	2430	250	1730	180	1730	180
10(-12)	8320	850	7490	760	6660	680	5830	590	4990	510	4160	420	3330	340	2500	250	1780	180	1780	180
12(-11)	8560	850	7700	770	6850	680	5990	590	5140	510	4280	420	3420	340	2570	250	1830	180	1830	180
14(-10)	8800	860	7920	770	7040	690	6160	600	5280	510	4400	430	3520	340	2640	250	1890	180	1890	180
16(-9)	9040	860	8130	780	7230	690	6320	600	5420	520	4520	430	3610	340	2710	260	1940	180	1940	180
18(-8)	9270	870	8350	780	7420	700	6490	610	5560	520	4640	430	3710	350	2780	260	1990	180	1990	180
19(-7)	9510	880	8560	790	7610	700	6660	610	5710	520	4760	440	3800	350	2850	260	2040	180	2040	180
21(-6)	9580	880	8620	790	7670	710	6710	620	5750	530	4790	440	3830	350	2870	260	2050	190	2050	190
23(-5)	9650	890	8690	800	7720	710	6760	620	5790	530	4830	440	3860	350	2900	260	2070	190	2070	190
25(-4)	9720	890	8750	800	7780	710	6810	620	5830	530	4860	440	3890	350	2920	260	2080	190	2080	190
27(-3)	9790	900	8810	810	7830	720	6850	630	5880	540	4900	450	3920	360	2940	270	2100	190	2100	190
28(-2)	9860	910	8880	820	7890	720	6900	630	5920	540	4930	450	3950	360	2960	270	2110	190	2110	190
30(-1)	9930	910	8940	820	7950	730	6950	640	5960	540	4970	450	3970	360	2980	270	2130	190	2130	190
32(0)	10000	920	9000	830	8000	730	7000	640	6000	550	5000	460	4000	360	3000	270	2140	190	2140	190
34(1)	10070	920	9070	830	8060	740	7050	640	6040	550	5040	460	4030	370	3020	270	2160	190	2160	190
36(2)	10140	930	9130	840	8120	740	7100	650	6090	560	5070	460	4060	370	3040	270	2170	190	2170	190
37(3)	10310	940	9280	850	8250	750	7220	660	6190	560	5160	470	4120	370	3090	280	2210	200	2210	200
39(4)	10480	950	9430	860	8380	760	7330	670	6290	570	5240	470	4190	380	3140	280	2250	200	2250	200
41(5)	10640	970	9580	870	8510	770	7450	670	6390	580	5320	480	4260	380	3190	290	2280	200	2280	200
43(6)	13640	1030	12270	930	10910	830	9550	720	8180	620	6820	510	5460	410	4090	310	2920	220	2920	220
45(7)	14000	1050	12600	940	11200	840	9800	730	8400	630	7000	520	5600	420	4200	310	3000	220	3000	220
46(8)	14360	1070	12930	960	11490	850	10050	740	8620	640	7180	530	5740	420	4310	320	3080	220	3080	220
48(9)	14720	1080	13250	970	11780	860	10310	760	8830	650	7360	540	5890	430	4420	320	3150	230	3150	230
50(10)	15080	1100	13580	990	12070	880	10560	770	9050	660	7540	550	6030	440	4530	320	3230	230	3230	230
52(11)	15450	1120	13900	1000	12360	890	10810	780	9270	670	7720	550	6180	440	4630	330	3310	230	3310	230
54(12)	15810	1130	14230	1020	12650	900	11060	790	9480	680	7900	560	6320	450	4740	330	3390	240	3390	240
55(13)	16170	1150	14550	1030	12930	920	11320	800	9700	690	8080	570	6470	450	4850	340	3460	240	3460	240
57(14)	16530	1160	14880	1050	13220	930	11570	810	9920	700	8260	580	6610	460	4960	340	3540	240	3540	240
59(15)	16890	1180	15200	1060	13510	940	11820	820	10130	710	8450	590	6760	470	5070	350	3620	250	3620	250

Indoor: RAV-HB181KRTP-UL
Outdoor: RAV-BP181AT2P-UL

Operation range	Cooling		Heating	
	Q	P	Q	P
MINIMUM	Btu/h	4000	220	3000
RATING	Btu/h	18000	1500	20000
MAXIMUM	Btu/h	19100	1800	21400

Q : Capacity (Btu/h)
P : Power consumption (W)

Cooling

Outdoor Temperature DB °F(°C)	Parts Load (%)																			
	100		90		80		70		60		50		40		30		20		10	
	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P
68(20)	21470	1180	19320	1050	17170	920	15030	790	12880	660	10730	530	8590	400	6440	270	4770	170	4770	170
70(21)	21230	1200	19110	1070	16990	940	14860	800	12740	670	10620	540	8490	410	6370	280	4720	180	4720	180
72(22)	21000	1220	18900	1090	16800	950	14700	820	12600	680	10500	550	8400	420	6300	280	4670	180	4670	180
73(23)	20770	1240	18690	1110	16620	970	14540	830	12460	700	10390	560	8310	420	6230	290	4620	180	4620	180
75(24)	20540	1260	18490	1120	16430	990	14380	850	12320	710	10270	570	8220	430	6160	290	4560	190	4560	190
77(25)	20310	1290	18280	1140	16250	1000	14220	860	12190	720	10160	580	8120	440	6090	300	4510	190	4510	190
79(26)	20080	1310	18070	1160	16060	1020	14060	880	12050	730	10040	590	8030	450	6020	300	4460	190	4460	190
81(27)	19850	1330	17860	1180	15880	1040	13890	890	11910	750	9920	600	7940	450	5950	310	4410	190	4410	190
82(28)	19620	1350	17660	1200	15690	1050	13730	910	11770	760	9810	610	7850	460	5890	310	4360	200	4360	200
84(29)	19390	1370	17450	1220	15510	1070	13570	920	11630	770	9690	620	7750	470	5820	320	4310	200	4310	200
86(30)	19160	1390	17240	1240	15320	1090	13410	930	11490	780	9580	630	7660	480	5750	320	4260	200	4260	200
88(31)	18920	1410	17030	1260	15140	1100	13250	950	11350	790	9460	640	7570	480	5680	330	4210	210	4210	210
90(32)	18690	1440	16820	1280	14950	1120	13090	960	11220	810	9350	650	7480	490	5610	330	4150	210	4150	210
91(33)	18460	1460	16620	1300	14770	1140	12920	980	11080	820	9230	660	7380	500	5540	340	4100	210	4100	210
93(34)	18230	1480	16410	1320	14580	1150	12760	990	10940	830	9120	670	7290	510	5470	340	4050	220	4050	220
95(35)	18000	1500	16200	1340	14400	1170	12600	1010	10800	840	9000	680	7200	510	5400	350	4000	220	4000	220
97(36)	17770	1520	15990	1350	14220	1190	12440	1020	10660	850	8880	690	7110	520	5330	350	3950	220	3950	220
99(37)	17540	1540	15780	1370	14030	1200	12280	1040	10520	870	8770	700	7020	530	5260	360	3900	230	3900	230
100(38)	17310	1560	15580	1390	13850	1220	12110	1050	10380	880	8650	710	6920	530	5190	360	3850	230	3850	230
102(39)	17080	1590	15370	1410	13660	1240	11950	1060	10250	890	8540	720	6830	540	5120	370	3790	230	3790	230
104(40)	16460	1490	14820	1330	13170	1170	11520	1000	9880	840	8230	670	6580	510	4940	350	3660	220	3660	220
106(41)	16160	1490	14540	1330	12930	1170	11310	1000	9690	840	8080	670	6460	510	4850	350	3590	220	3590	220
108(42)	15850	1490	14270	1330	12680	1170	11100	1000	9510	840	7930	670	6340	510	4760	350	3520	220	3520	220
109(43)	15550	1490	14000	1330	12440	1170	10890	1000	9330	840	7780	670	6220	510	4670	350	3460	220	3460	220
111(44)	15250	1490	13720	1330	12200	1170	10670	1000	9150	840	7620	670	6100	510	4570	350	3390	220	3390	220
113(45)	13810	1160	12420	1030	11040	910	9660	780	8280	650	6900	520	5520	400	4140	270	3070	170	3070	170
115(46)	13500	1160	12150	1030	10800	910	9450	780	8100	650	6750	520	5400	400	4050	270	3000	170	3000	170

Heating

Outdoor DB °F(°C)	Parts Load (%)																			
	100		90		80		70		60		50		40		30		20		10	
	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P
-13(-25)	8150	1240	7340	1110	6520	980	5710	860	4890	730	4080	600	3260	470	2450	340	1630	220	1220	150
-11(-24)	8330	1260	7500	1130	6670	1000	5830	870	5000	740	4170	610	3330	480	2500	350	1670	220	1250	150
-9(-23)	8510	1270	7660	1140	6810	1010	5960	880	5110	750	4260	620	3410	480	2550	350	1700	220	1280	160
-8(-22)	8700	1290	7830	1160	6960	1030	6090	890	5220	760	4350	620	3480	490	2610	360	1740	220	1300	160
-6(-21)	8880	1310	7990	1170	7100	1040	6210	900	5330	770	4440	630	3550	500	2660	360	1780	230	1330	160
-4(-20)	9060	1330	8150	1190	7250	1050	6340	920	5430	780	4530	640	3620	500	2720	370	1810	230	1360	160
-2(-19)	9420	1350	8480	1210	7540	1070	6590	930	5650	790	4710	650	3770	510	2830	370	1880	230	1410	160
0(-18)	9780	1360	8800	1220	7830	1080	6850	940	5870	800	4890	660	3910	520	2930	380	1960	240	1470	170
1(-17)	10140	1380	9130	1240	8120	1100	7100	950	6090	810	5070	670	4060	530	3040	380	2030	240	1520	170
3(-16)	10510	1400	9460	1250	8410	1110	7360	970	6300	820	5250	680	4200	530	3150	390	2100	240	1580	170
5(-15)	10870	1420	9780	1270	8700	1120	7610	980	6520	830	5430	680	4350	540	3260	390	2170	250	1630	170
7(-14)	11210	1430	10090	1280	8970	1130	7850	980	6730	840	5600	690	4480	540	3360	400	2240	250	1680	170
9(-13)	11550	1440	10390	1290	9240	1140	8080	990	6930	840	5770	700	4620	550	3460	400	2310	250	1730	180
10(-12)	11890	1450	10700	1300	9510	1150	8320	1000	7130	850	5940	700	4760	550	3570	400	2380	250	1780	180
12(-11)	12230	1460	11010	1310	9780	1160	8560	1010	7340	860	6110	710	4890	560	3670	400	2450	250	1830	180
14(-10)	12570	1470	11310	1320	10050	1170	8800	1020	7540	860	6280	710	5030	560	3770	410	2510	260	1890	180
16(-9)	12910	1480	11620	1330	10330	1180	9040	1020	7740	870	6450	720	5160	560	3870	410	2580	260	1940	180
18(-8)	13250	1490	11920	1340	10600	1180	9270	1030	7950	880	6620	720	5300	570	3970	410	2650	260	1990	180
19(-7)	13590	1500	12230	1350	10870	1190	9510	1040	8150	880	6790	730	5430	570	4080	420	2720	260	2040	180
21(-6)	13690	1510	12320	1360	10950	1200	9580	1050	8210	890	6840	730	5480	580	4110	420	2740	260	2050	190
23(-5)	13790	1520	12410	1370	11030	1210	9650	1050	8270	890	6890	740	5520	580	4140	420	2760	260	2070	190
25(-4)	13890	1530	12500	1380	11110	1220	9720	1060	8330	900	6940	740	5560	580	4170	430	2780	270	2080	190
27(-3)	13990	1540	12590	1380	11190	1220	9790	1070	8390	910	6990	750	5600	590	4200	430	2800	270	2100	190
28(-2)	14090	1550	12680	1390	11270	1230	9860	1070	8450	910	7050	750	5640	590	4230	430	2820	270	2110	190
30(-1)	14190	1560	12770	1400	11350	1240	9930	1080	8510	920	7100	760	5680	590	4260	430	2840	270	2130	190
32(0)	14290	1570	12860	1410	11430	1250	10000	1090	8570	920	7150	760	5720	600	4290	440	2860	270	2140	190
34(1)	14390	1580	12950	1420	11510	1260	10070	1090	8640	930	7200	770	5760	600	4320	440	2880	280	2160	190
36(2)	14490	1590	13040	1430	11590	1260	10140	1100	8700	930	7250	770	5800	610	4350	440	2900	280	2170	190
37(3)	14730	1610	13260	1450	11780	1280	10310	1110	8840	950	7370	780	5890	610	4420	450	2950	280	2210	200
39(4)	14970	1640	13470	1470	11970	1300	10480	1130	8980	960	7480	790	5990	620	4490	450	2990	280	2250	200
41(5)	15200	1660	13680	1490	12160	1310	10640	1140	9120	970	7600	800	6080	630	4560	460	3040	290	2280	200
43(6)	19480	1770	17540	1590	15590	1410	13640	1220	11690	1040	9740	860	7790	670	5850	490	3900	310	2920	220
45(7)	20000	1800	18000	1610	16000	1430	14000	1240	12000	1060	10000	870	8000	680	6000	500	4000	310	3000	220
46(8)	20520	1830	18460	1640	16410	1450	14360	1260	12310	1070	10260	880	8210	700	6150	510	4100	320	3080	220
48(9)	21030	1860	18930	1660	16830	1470	14720	1280	12620	1090	10520	900	8410	710	6310	510	4210	320	3150	230
50(10)	21550	1880	19390	1690	17240	1490	15080	1300	12930	1110	10770	910	8620	720	6460	520	4310	330	3230	230
52(11)	22060	1910	19860	1710	17650	1520	15450	1320	13240	1120	11030	920	8830	730	6620	530	4410	330	3310	230
54(12)	22580	1940	20320	1740	18060	1540	15810	1340	13550	1140	11290	940	9030	740	6770	540	4520	340	3390	240
55(13)	23100	1970	20790	1760	18480	1560	16170	1360	13860	1150	11550	950	9240	750	6930	550	4620	340	3460	240
57(14)	23610	2000	21250	1790	18890	1580	16530	1380	14170	1170	11810	960	9450	760	7080	550	4720	350	3540	240
59(15)	24130	2020	21720	1810	19300	1610	16890	1400	14480	1190	12060	980	9650	770	7240	560	4830	350	3620	250

Indoor: RAV-HB241KRTP-UL
Outdoor: RAV-BP241AT2P-UL

Operation range	Cooling		Heating	
	Q	P	Q	P
MINIMUM	Btu/h	6500	300	5100
RATING	Btu/h	24000	1778	27000
MAXIMUM	Btu/h	27300	2390	38500

Q : Capacity (Btu/h)
P : Power consumption (W)

Cooling

Outdoor Temperature DB °F(°C)	Parts Load (%)																	
	100		90		80		70		60		50		40		30		20	
	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P
68(20)	28620	1400	25760	1240	22900	1080	20030	920	17170	770	14310	600	11450	440	8590	280	7750	240
70(21)	28310	1420	25480	1260	22650	1100	19820	940	16990	790	14160	610	11320	450	8490	290	7670	240
72(22)	28000	1450	25200	1280	22400	1120	19600	950	16800	790	14000	620	11200	460	8400	290	7580	240
73(23)	27700	1470	24930	1300	22160	1140	19390	970	16620	800	13850	630	11080	470	8310	300	7500	250
75(24)	27390	1500	24650	1330	21910	1160	19170	990	16430	810	13690	640	10960	470	8220	300	7420	250
77(25)	27080	1520	24370	1350	21660	1180	18960	1000	16250	830	13540	650	10830	480	8120	310	7330	260
79(26)	26770	1550	24090	1370	21420	1200	18740	1020	16060	840	13390	670	10710	490	8030	310	7250	260
81(27)	26460	1570	23820	1390	21170	1220	18520	1040	15880	860	13230	680	10590	500	7940	320	7170	270
82(28)	26160	1600	23540	1420	20920	1230	18310	1050	15690	870	13080	690	10460	510	7850	320	7080	270
84(29)	25850	1630	23260	1440	20680	1250	18090	1070	15510	880	12920	700	10340	510	7750	330	7000	270
86(30)	25540	1650	22990	1460	20430	1270	17880	1090	15320	900	12770	710	10220	520	7660	330	6920	280
88(31)	25230	1680	22710	1480	20190	1290	17660	1100	15140	910	12620	720	10090	530	7570	340	6830	280
90(32)	24920	1700	22430	1510	19940	1310	17450	1120	14950	930	12460	730	9970	540	7480	340	6750	290
91(33)	24620	1730	22150	1530	19690	1330	17230	1140	14770	940	12310	740	9850	550	7380	350	6670	290
93(34)	24310	1750	21880	1550	19450	1350	17020	1150	14580	950	12150	750	9720	550	7290	350	6580	300
95(35)	24000	1780	21600	1580	19200	1370	16800	1170	14400	970	12000	760	9600	560	7200	360	6500	300
97(36)	23690	1800	21320	1600	18950	1390	16580	1190	14220	980	11850	780	9480	570	7110	360	6420	300
99(37)	23380	1830	21050	1620	18710	1410	16370	1200	14030	990	11690	790	9350	580	7020	370	6330	310
100(38)	23080	1850	20770	1640	18460	1430	16150	1220	13850	1010	11540	800	9230	590	6920	370	6250	310
102(39)	22770	1880	20490	1670	18210	1450	15940	1240	13660	1020	11380	810	9110	590	6830	380	6170	320
104(40)	22460	1910	20210	1690	17970	1470	15720	1250	13480	1040	11230	820	8980	600	6740	380	6080	320
106(41)	22150	1930	19940	1710	17720	1490	15510	1270	13290	1050	11080	830	8860	610	6650	390	6000	330
108(42)	21840	1960	19660	1730	17480	1510	15290	1290	13110	1060	10920	840	8740	620	6550	400	5920	330
109(43)	21540	1980	19380	1760	17230	1530	15080	1300	12920	1080	10770	850	8610	630	6460	400	5830	330
111(44)	21230	2010	19110	1780	16980	1550	14860	1320	12740	1090	10610	860	8490	630	6370	410	5750	340
113(45)	20920	2030	18830	1800	16740	1570	14640	1340	12550	1110	10460	870	8370	640	6280	410	5670	340
115(46)	20610	2060	18550	1820	16490	1590	14430	1350	12370	1120	10310	890	8240	650	6180	420	5580	350

Heating

Outdoor Temperature DB °F(°C)	Parts Load (%)																			
	100		90		80		70		60		50		40		30		20		10	
	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P
-13(-25)	11010	1430	9900	1280	8800	1130	7700	980	6600	830	5500	680	4400	520	3300	370	2200	220	2080	210
-11(-24)	11250	1450	10130	1300	9000	1140	7880	990	6750	840	5630	690	4500	530	3380	380	2250	230	2130	210
-9(-23)	11490	1470	10350	1320	9200	1160	8050	1010	6900	850	5750	690	4600	540	3450	380	2300	230	2170	210
-8(-22)	11740	1490	10570	1330	9390	1180	8220	1020	7040	860	5870	700	4700	550	3520	390	2350	230	2220	220
-6(-21)	11980	1510	10790	1350	9590	1190	8390	1030	7190	870	5990	710	4790	550	3600	400	2400	240	2260	220
-4(-20)	12230	1530	11010	1370	9780	1210	8560	1050	7340	890	6110	720	4890	560	3670	400	2450	240	2310	220
-2(-19)	12720	1550	11450	1390	10170	1220	8900	1060	7630	900	6360	730	5090	570	3820	410	2540	240	2400	220
0(-18)	13210	1570	11890	1410	10570	1240	9240	1070	7920	910	6600	740	5280	580	3960	410	2640	250	2490	230
1(-17)	13700	1590	12330	1420	10960	1260	9590	1090	8220	920	6850	750	5480	580	4110	420	2740	250	2590	230
3(-16)	14180	1610	12770	1440	11350	1270	9930	1100	8510	930	7090	760	5670	590	4260	420	2840	250	2680	230
5(-15)	14670	1630	13210	1460	11740	1290	10270	1120	8800	940	7340	770	5870	600	4400	430	2930	260	2770	240
7(-14)	15130	1650	13620	1470	12110	1300	10590	1130	9080	950	7570	780	6050	600	4540	430	3030	260	2860	240
9(-13)	15590	1660	14030	1480	12470	1310	10910	1130	9350	960	7800	780	6240	610	4680	430	3120	260	2940	240
10(-12)	16050	1670	14440	1500	12840	1320	11230	1140	9630	970	8020	790	6420	610	4810	440	3210	260	3030	240
12(-11)	16510	1680	14860	1510	13210	1330	11560	1150	9900	970	8250	800	6600	620	4950	440	3300	260	3120	240
14(-10)	16970	1700	15270	1520	13570	1340	11880	1160	10180	980	8480	800	6790	620	5090	440	3390	270	3200	250
16(-9)	17430	1710	15680	1530	13940	1350	12200	1170	10460	990	8710	810	6970	630	5230	450	3490	270	3290	250
18(-8)	17880	1720	16100	1540	14310	1360	12520	1180	10730	1000	8940	810	7150	630	5370	450	3580	270	3380	250
19(-7)	18340	1740	16510	1550	14670	1370	12840	1190	11010	1000	9170	820	7340	640	5500	450	3670	270	3460	250
21(-6)	18480	1750	16630	1560	14780	1380	12930	1190	11090	1010	9240	830	7390	640	5540	460	3700	270	3490	250
23(-5)	18610	1760	16750	1570	14890	1390	13030	1200	11170	1020	9310	830	7450	650	5580	460	3720	270	3520	250
25(-4)	18750	1770	16880	1580	15000	1400	13130	1210	11250	1020	9380	840	7500	650	5630	460	3750	280	3540	260
27(-3)	18890	1780	17000	1590	15110	1410	13220	1220	11330	1030	9440	840	7550	650	5670	470	3780	280	3570	260
28(-2)	19020	1790	17120	1600	15220	1410	13320	1230	11410	1040	9510	850	7610	660	5710	470	3800	280	3590	260
30(-1)	19160	1800	17240	1610	15330	1420	13410	1230	11490	1040	9580	850	7660	660	5750	470	3830	280	3620	260
32(0)	19290	1820	17360	1620	15430	1430	13510	1240	11580	1050	9650	860	7720	670	5790	470	3860	280	3640	260
34(1)	19430	1830	17490	1630	15540	1440	13600	1250	11660	1060	9710	860	7770	670	5830	480	3890	290	3670	260
36(2)	19570	1840	17610	1640	15650	1450	13700	1260	11740	1060	9780	870	7830	670	5870	480	3910	290	3700	270
37(3)	19890	1860	17900	1670	15910	1470	13920	1270	11930	1080	9940	880	7950	680	5970	490	3980	290	3760	270
39(4)	20210	1890	18190	1690	16160	1490	14140	1290	12120	1090	10100	890	8080	690	6060	490	4040	290	3820	270
41(5)	20530	1910	18470	1710	16420	1510	14370	1310	12320	1110	10260	900	8210	700	6160	500	4110	300	3880	280
43(6)	26300	2040	23670	1830	21040	1610	18410	1400	15780	1180	13150	970	10520	750	7890	540	5260	320	4970	300
45(7)	27000	2080	24300	1860	21600	1640	18900	1420	16200	1200	13500	980	10800	760	8100	540	5400	320	5100	300
46(8)	27700	2110	24930	1890	22160	1660	19390	1440	16620	1220	13850	1000	11080	770	8310	550	5540	330	5230	300
48(9)	28390	2140	25550	1920	22710	1690	19880	1460	17040	1240	14200	1010	11360	790	8520	560	5680	330	5360	310
50(10)	29090	2170	26180	1940	23270	1710	20360	1490	17450	1260	14550	1030	11640	800	8730	570	5820	340	5490	310
52(11)	29790	2210	26810	1970	23830	1740	20850	1510	17870	1280	14890	1040	11910	810	8940	580	5960	340	5630	320
54(12)	30480	2240	27440	2000	24390	1770	21340	1530	18290	1290	15240	1060	12190	820	9150	590	6100	350	5760	320
55(13)	31180	2270	28060	2030	24940	1790	21830	1550	18710	1310	15590	1070	12470	830	9350	590	6240	350	5890	330
57(14)	31880	2300	28690	2060	25500	1820	22310	1570	19130	1330	15940	1090	12750	850	9560	600	6380	360	6020	330
59(15)	32570	2330	29320	2090	26060	1840	22800	1600	19540	1350	16290	1100	13030	860	9770	610	6510	360	6150	340

Indoor: RAV-HB301KRTP-UL
 Outdoor: RAV-BP301AT2P-UL

Operation range		Cooling		Heating	
		Q	P	Q	P
MINIMUM	Btu/h	8900	600	8100	530
RATING	Btu/h	30000	2290	34000	3160
MAXIMUM	Btu/h	38500	3380	40900	4500

Q : Capacity (Btu/h)

P : Power consumption (W)

Cooling

Outdoor Temperature DB °F(°C)	Parts Load (%)																			
	100		90		80		70		60		50		40		30		20		10	
	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P
68(20)	35780	1800	32200	1610	28620	1420	25040	1230	21470	1040	17890	850	14310	670	10730	480	10610	470	10610	470
70(21)	35390	1830	31850	1640	28310	1450	24770	1250	21230	1060	17700	870	14160	680	10620	490	10500	480	10500	480
72(22)	35010	1860	31500	1670	28000	1470	24500	1280	21000	1080	17500	890	14000	690	10500	490	10380	490	10380	490
73(23)	34620	1900	31160	1700	27700	1500	24230	1300	20770	1100	17310	900	13850	700	10390	500	10270	500	10270	500
75(24)	34240	1930	30810	1730	27390	1520	23960	1320	20540	1120	17120	920	13690	710	10270	510	10160	510	10160	510
77(25)	33850	1960	30470	1760	27080	1550	23700	1340	20310	1140	16930	930	13540	730	10160	520	10040	510	10040	510
79(26)	33470	1990	30120	1790	26770	1580	23430	1370	20080	1160	16730	950	13390	740	10040	530	9930	520	9930	520
81(27)	33080	2030	29770	1810	26460	1600	23160	1390	19850	1180	16540	960	13230	750	9920	540	9810	530	9810	530
82(28)	32700	2060	29430	1840	26160	1630	22890	1410	19620	1200	16350	980	13080	760	9810	550	9700	540	9700	540
84(29)	32310	2090	29080	1870	25850	1650	22620	1430	19390	1210	16160	990	12920	780	9690	560	9590	550	9590	550
86(30)	31930	2130	28730	1900	25540	1680	22350	1460	19160	1230	15960	1010	12770	790	9580	560	9470	560	9470	560
88(31)	31540	2160	28390	1930	25230	1710	22080	1480	18920	1250	15770	1030	12620	800	9460	570	9360	570	9360	570
90(32)	31160	2190	28040	1960	24920	1730	21810	1500	18690	1270	15580	1040	12460	810	9350	580	9240	570	9240	570
91(33)	30770	2220	27690	1990	24620	1760	21540	1520	18460	1290	15390	1060	12310	820	9230	590	9130	580	9130	580
93(34)	30390	2260	27350	2020	24310	1780	21270	1550	18230	1310	15190	1070	12150	840	9120	600	9010	590	9010	590
95(35)	30000	2290	27000	2050	24000	1810	21000	1570	18000	1330	15000	1090	12000	850	9000	610	8900	600	8900	600
97(36)	29620	2320	26650	2080	23690	1840	20730	1590	17770	1350	14810	1100	11850	860	8880	620	8790	610	8790	610
99(37)	29230	2360	26310	2110	23380	1860	20460	1610	17540	1370	14620	1120	11690	870	8770	630	8670	620	8670	620
100(38)	28850	2390	25960	2140	23080	1890	20190	1640	17310	1390	14420	1140	11540	880	8650	630	8560	630	8560	630
102(39)	28460	2420	25610	2170	22770	1910	19920	1660	17080	1410	14230	1150	11380	900	8540	640	8440	630	8440	630
104(40)	28080	2450	25270	2200	22460	1940	19650	1680	16850	1420	14040	1170	11230	910	8420	650	8330	640	8330	640
106(41)	27690	2490	24920	2230	22150	1970	19380	1700	16610	1440	13850	1180	11080	920	8310	660	8210	650	8210	650
108(42)	27310	2520	24570	2260	21840	1990	19110	1730	16380	1460	13650	1200	10920	930	8190	670	8100	660	8100	660
109(43)	26920	2550	24230	2280	21540	2020	18840	1750	16150	1480	13460	1210	10770	950	8080	680	7990	670	7990	670
111(44)	26540	2590	23880	2310	21230	2040	18570	1770	15920	1500	13270	1230	10610	960	7960	690	7870	680	7870	680
113(45)	26150	2620	23540	2340	20920	2070	18310	1790	15690	1520	13080	1240	10460	970	7850	700	7760	690	7760	690
115(46)	25770	2650	23190	2370	20610	2090	18040	1820	15460	1540	12880	1260	10310	980	7730	700	7640	690	7640	690

Heating

Outdoor Temperature DB °F(°C)	Parts Load (%)																			
	100		90		80		70		60		50		40		30		20		10	
	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P
-13(-25)	13860	2180	12470	1940	11090	1700	9700	1460	8320	1220	6930	990	5540	750	4160	510	3300	360	3300	360
-11(-24)	14170	2210	12750	1970	11330	1720	9920	1480	8500	1240	7080	1000	5670	760	4250	520	3380	370	3380	370
-9(-23)	14470	2240	13030	1990	11580	1750	10130	1500	8680	1260	7240	1020	5790	770	4340	530	3450	380	3450	380
-8(-22)	14780	2270	13300	2020	11830	1770	10350	1520	8870	1280	7390	1030	5910	780	4430	530	3520	380	3520	380
-6(-21)	15090	2300	13580	2050	12070	1800	10560	1550	9050	1290	7550	1040	6040	790	4530	540	3600	390	3600	390
-4(-20)	15400	2330	13860	2080	12320	1820	10780	1570	9240	1310	7700	1060	6160	800	4620	550	3670	390	3670	390
-2(-19)	16010	2360	14410	2100	12810	1850	11210	1590	9610	1330	8010	1070	6410	810	4800	560	3820	400	3820	400
0(-18)	16630	2390	14970	2130	13300	1870	11640	1610	9980	1350	8320	1090	6650	820	4990	560	3960	400	3960	400
1(-17)	17250	2420	15520	2160	13800	1890	12070	1630	10350	1360	8620	1100	6900	830	5170	570	4110	410	4110	410
3(-16)	17860	2450	16080	2190	14290	1920	12500	1650	10720	1380	8930	1110	7140	850	5360	580	4260	410	4260	410
5(-15)	18480	2490	16630	2210	14780	1940	12930	1670	11090	1400	9240	1130	7390	860	5540	580	4400	420	4400	420
7(-14)	19060	2510	17150	2230	15240	1960	13340	1680	11430	1410	9530	1140	7620	860	5720	590	4540	420	4540	420
9(-13)	19630	2520	17670	2250	15710	1970	13740	1700	11780	1420	9820	1150	7850	870	5890	590	4680	420	4680	420
10(-12)	20210	2540	18190	2270	16170	1990	14150	1710	12130	1430	10110	1150	8080	880	6060	600	4810	430	4810	430
12(-11)	20790	2560	18710	2280	16630	2000	14550	1720	12470	1440	10390	1160	8320	880	6240	600	4950	430	4950	430
14(-10)	21370	2580	19230	2300	17090	2020	14960	1740	12820	1450	10680	1170	8550	890	6410	610	5090	430	5090	430
16(-9)	21940	2600	19750	2320	17550	2030	15360	1750	13170	1470	10970	1180	8780	900	6580	610	5230	440	5230	440
18(-8)	22520	2620	20270	2340	18020	2050	15760	1760	13510	1480	11260	1190	9010	900	6760	620	5370	440	5370	440
19(-7)	23100	2640	20790	2350	18480	2060	16170	1780	13860	1490	11550	1200	9240	910	6930	620	5500	440	5500	440
21(-6)	23270	2660	20940	2370	18620	2080	16290	1790	13960	1500	11630	1210	9310	920	6980	630	5540	450	5540	450
23(-5)	23440	2680	21100	2380	18750	2090	16410	1800	14060	1510	11720	1210	9380	920	7030	630	5580	450	5580	450
25(-4)	23610	2690	21250	2400	18890	2100	16530	1810	14170	1520	11810	1220	9440	930	7080	630	5630	450	5630	450
27(-3)	23780	2710	21400	2410	19030	2120	16650	1820	14270	1530	11890	1230	9510	930	7130	640	5670	450	5670	450
28(-2)	23950	2730	21560	2430	19160	2130	16770	1830	14370	1540	11980	1240	9580	940	7190	640	5710	460	5710	460
30(-1)	24120	2740	21710	2440	19300	2140	16890	1850	14470	1550	12060	1250	9650	950	7240	650	5750	460	5750	460
32(0)	24300	2760	21870	2460	19440	2160	17010	1860	14580	1550	12150	1250	9720	950	7290	650	5790	460	5790	460

Indoor: RAV-HB361KRTP-UL
Outdoor: RAV-BP361AT2P-UL

Operation range		Cooling		Heating	
		Q	P	Q	P
MINIMUM	Btu/h	8900	600	8100	530
RATING	Btu/h	32000	2735	40000	4000
MAXIMUM	Btu/h	41000	4500	44300	5880

Q : Capacity (Btu/h)
P : Power consumption (W)

Cooling

Outdoor Temperature DB °F(°C)	Parts Load (%)																	
	100		90		80		70		60		50		40		30		20	
	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P
68(20)	38160	2150	34340	1910	30530	1680	26710	1450	22900	1220	19080	990	15260	750	11450	520	10610	470
70(21)	37750	2190	33970	1950	30200	1710	26420	1480	22650	1240	18870	1000	15100	770	11320	530	10500	480
72(22)	37340	2230	33600	1980	29870	1740	26140	1500	22400	1260	18670	1020	14940	780	11200	540	10380	490
73(23)	36930	2260	33240	2020	29540	1770	25850	1530	22160	1290	18460	1040	14770	800	11080	550	10270	500
75(24)	36520	2300	32870	2050	29210	1810	25560	1560	21910	1310	18260	1060	14610	810	10960	560	10160	510
77(25)	36110	2340	32500	2090	28890	1840	25270	1580	21660	1330	18050	1080	14440	820	10830	570	10040	510
79(26)	35700	2380	32130	2120	28560	1870	24990	1610	21420	1350	17850	1090	14280	840	10710	580	9930	520
81(27)	35290	2420	31760	2160	28230	1900	24700	1640	21170	1370	17640	1110	14110	850	10590	590	9810	530
82(28)	34870	2460	31390	2190	27900	1930	24410	1660	20920	1400	17440	1130	13950	860	10460	600	9700	540
84(29)	34460	2500	31020	2230	27570	1960	24120	1690	20680	1420	17230	1150	13790	880	10340	610	9590	550
86(30)	34050	2540	30650	2260	27240	1990	23840	1720	20430	1440	17030	1170	13620	890	10220	620	9470	560
88(31)	33640	2580	30280	2300	26910	2020	23550	1740	20190	1460	16820	1180	13460	910	10090	630	9360	570
90(32)	33230	2620	29910	2330	26590	2050	23260	1770	19940	1490	16620	1200	13290	920	9970	640	9240	570
91(33)	32820	2660	29540	2370	26260	2080	22970	1790	19690	1510	16410	1220	13130	930	9850	650	9130	580
93(34)	32410	2700	29170	2400	25930	2110	22690	1820	19450	1530	16210	1240	12960	950	9720	660	9010	590
95(35)	32000	2740	28800	2440	25600	2140	22400	1850	19200	1550	16000	1260	12800	960	9600	660	8900	600
97(36)	31590	2780	28430	2470	25270	2170	22110	1870	18950	1570	15790	1270	12640	970	9480	670	8790	610
99(37)	31180	2810	28060	2510	24940	2200	21830	1900	18710	1600	15590	1290	12470	990	9350	680	8670	620
100(38)	30770	2850	27690	2540	24610	2240	21540	1930	18460	1620	15380	1310	12310	1000	9230	690	8560	630
102(39)	30360	2890	27320	2580	24290	2270	21250	1950	18210	1640	15180	1330	12140	1020	9110	700	8440	630
104(40)	29950	2930	26950	2610	23960	2300	20960	1980	17970	1660	14970	1350	11980	1030	8980	710	8330	640
106(41)	29540	2970	26580	2650	23630	2330	20680	2010	17720	1690	14770	1360	11810	1040	8860	720	8210	650
108(42)	29130	3010	26210	2680	23300	2360	20390	2030	17480	1710	14560	1380	11650	1060	8740	730	8100	660
109(43)	28710	3050	25840	2720	22970	2390	20100	2060	17230	1730	14360	1400	11490	1070	8610	740	7990	670
111(44)	28300	3090	25470	2750	22640	2420	19810	2090	16980	1750	14150	1420	11320	1080	8490	750	7870	680
113(45)	27890	3130	25100	2790	22310	2450	19530	2110	16740	1770	13950	1440	11160	1100	8370	760	7760	690
115(46)	27480	3170	24730	2820	21990	2480	19240	2140	16490	1800	13740	1450	10990	1110	8240	770	7640	690

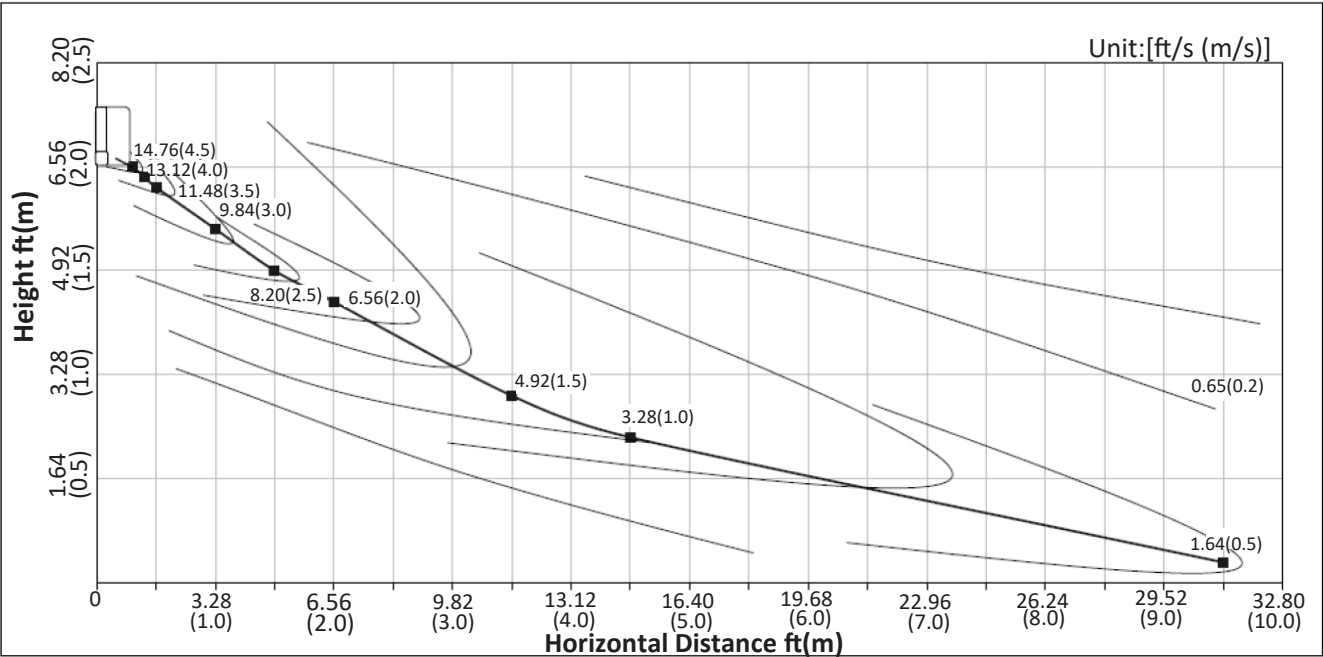
Heating

Outdoor Temperature DB °F(°C)	Parts Load (%)																			
	100		90		80		70		60		50		40		30		20		10	
	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P
-13(-25)	16300	2750	14670	2450	13040	2150	11410	1850	9780	1560	8150	1260	6520	960	4890	660	3300	360	3300	360
-11(-24)	16670	2790	15000	2490	13330	2180	11670	1880	10000	1580	8330	1270	6670	970	5000	670	3380	370	3380	370
-9(-23)	17030	2830	15330	2520	13620	2220	11920	1910	10220	1600	8510	1290	6810	980	5110	680	3450	380	3450	380
-8(-22)	17390	2870	15650	2560	13910	2250	12170	1930	10430	1620	8700	1310	6960	1000	5220	680	3520	380	3520	380
-6(-21)	17750	2910	15980	2590	14200	2280	12430	1960	10650	1640	8880	1330	7100	1010	5330	690	3600	390	3600	390
-4(-20)	18120	2950	16300	2630	14490	2310	12680	1990	10870	1670	9060	1350	7250	1020	5430	700	3670	390	3670	390
-2(-19)	18840	2990	16960	2660	15070	2340	13190	2010	11300	1690	9420	1360	7540	1040	5650	710	3820	400	3820	400
0(-18)	19570	3030	17610	2700	15650	2370	13700	2040	11740	1710	9780	1380	7830	1050	5870	720	3960	400	3960	400
1(-17)	20290	3070	18260	2730	16230	2400	14200	2070	12170	1730	10140	1400	8120	1070	6090	730	4110	410	4110	410
3(-16)	21010	3110	18910	2770	16810	2430	14710	2090	12610	1760	10510	1420	8410	1080	6300	740	4260	410	4260	410
5(-15)	21740	3150	19570	2800	17390	2460	15220	2120	13040	1780	10870	1440	8700	1090	6520	750	4400	420	4400	420
7(-14)	22420	3170	20180	2830	17930	2480	15690	2140	13450	1790	11210	1450	8970	1100	6730	760	4540	420	4540	420
9(-13)	23100	3200	20790	2850	18480	2500	16170	2150	13860	1810	11550	1460	9240	1110	6930	760	4680	420	4680	420
10(-12)	23780	3220	21400	2870	19020	2520	16640	2170	14270	1820	11890	1470	9510	1120	7130	770	4810	430	4810	430
12(-11)	24460	3240	22010	2890	19570	2540	17120	2190	14670	1830	12230	1480	9780	1130	7340	770	4950	430	4950	430
14(-10)	25140	3270	22620	2910	20110	2560	17600	2200	15080	1850	12570	1490	10050	1140	7540	780	5090	430	5090	430
16(-9)	25820	3290	23230	2940	20650	2580	18070	2220	15490	1860	12910	1500	10330	1140	7740	790	5230	440	5230	440
18(-8)	26490	3320	23850	2960	21200	2600	18550	2240	15900	1870	13250	1510	10600	1150	7950	790	5370	440	5370	440
19(-7)	27170	3340	24460	2980	21740	2620	19020	2250	16300	1890	13590	1520	10870	1160	8150	800	5500	440	5500	440
21(-6)	27380	3370	24640	3000	21900	2630	19160	2270	16430	1900	13690	1530	10950	1170	8210	800	5540	450	5540	450
23(-5)	27580	3390	24820	3020	22060	2650	19300	2280	16550	1910	13790	1540	11030	1180	8270	810	5580	450	5580	450
25(-4)	27780	3410	25000	3040	22220	2670	19440	2300	16670	1930	13890	1550	11110	1180	8330	810	5630	450	5630	450
27(-3)	27980	3430	25180	3060	22380	2680	19590	2310	16790	1940	13990	1560	11190	1190	8390	820	5670	450	5670	450
28(-2)	28180	3450	25360	3080	22540	2700	19730	2330	16910	1950	14090	1570	11270	1200	8450	820	5710	460	5710	460
30(-1)	28380	3470	25540	3100	22710	2720	19870	2340	17030	1960	14190	1580	11350	1210	8510	830	5750	460	5750	460
32(0)	28580	3500	25720	3120	22870	2740	20010	2360	17150	1970	14290	1590	11430	1210	8570	830	5790	460	5790	460
34(1)	28780	3520	25910	3140	23030	2750	20150	2370	17270	1990	14390	1600	11510	1220	8640	840	5830	470	5830	470
36(2)	28990	3540	26090	3150	23190	2770	20290	2380	17390	2000	14490	1610	11590	1230	8700	840	5870	470	5870	470
37(3)	29460	3590	26510	3200	23570	2810	20620	2420	17680	2030	14730	1640	11780	1250	8840	860	5970	480	5970	480
39(4)	29940	3640	26940	3240	23950	2840	20950	2450	17960	2050	14970	1660	11970	1260	8980	870	6060	480	6060	480
41(5)	30410	3680	27370	3280	24330	2880	21290	2480	18250	2080	15200	1680	12160	1280	9120	880	6160	490	6160	490
43(6)	38970	3940	35070	3510	31170	3080	27280	2650	23380	2220	19480	1800	15590	1370	11690	940	7890	520	7890	520
45(7)	40000	4000	36000	3560	32000	3130	28000	2690	24000	2260	20000	1820	16000	1390	12000	950	8100	530	8100	530
46(8)	41030	4060	36930	3620	32830	3180	28720	2740	24620	2290	20520	1850	16410	1410	12310	970	8310	540	8310	540
48(9)	42060	4120	37860	3680	33650	3230	29450	2780	25240	2330	21030	1880	16830	1430	12620	980	8520	550	8520	550
50(10)	43100	4190	38790	3730	34480	3280	30170	2820	25860	2360	21550	1910	17240	1450	12930	1000	8730	550	8730	550
52(11)	44130	4250	39720	3790	35300	3320	30890	2860	26480	2400	22060	1940	17650	1480	13240	1010	8940	560	8940	560
54(12)	45160	4310	40650	3840	36130	3370	31610	2900	27100	2430	22580	1970	18060	1500	13550	1030	9150	570	9150	570
55(13)	46190	4370	41570	3900	36950	3420	32340	2950	27720	2470	23100	1990	18480	1520	13860	1040	9350	580	9350	580
57(14)	47230	4430	42500	3950	37780	3470	33060	2990	28340	2500	23610	2020	18890	1540	14170	1060	9560	590	9560	590
59(15)	48260	4500	43430	4010	38610	3520	33780	3030	28950	2540	24130	2050	19300	1560	14480	1070	9770	600	9770	600

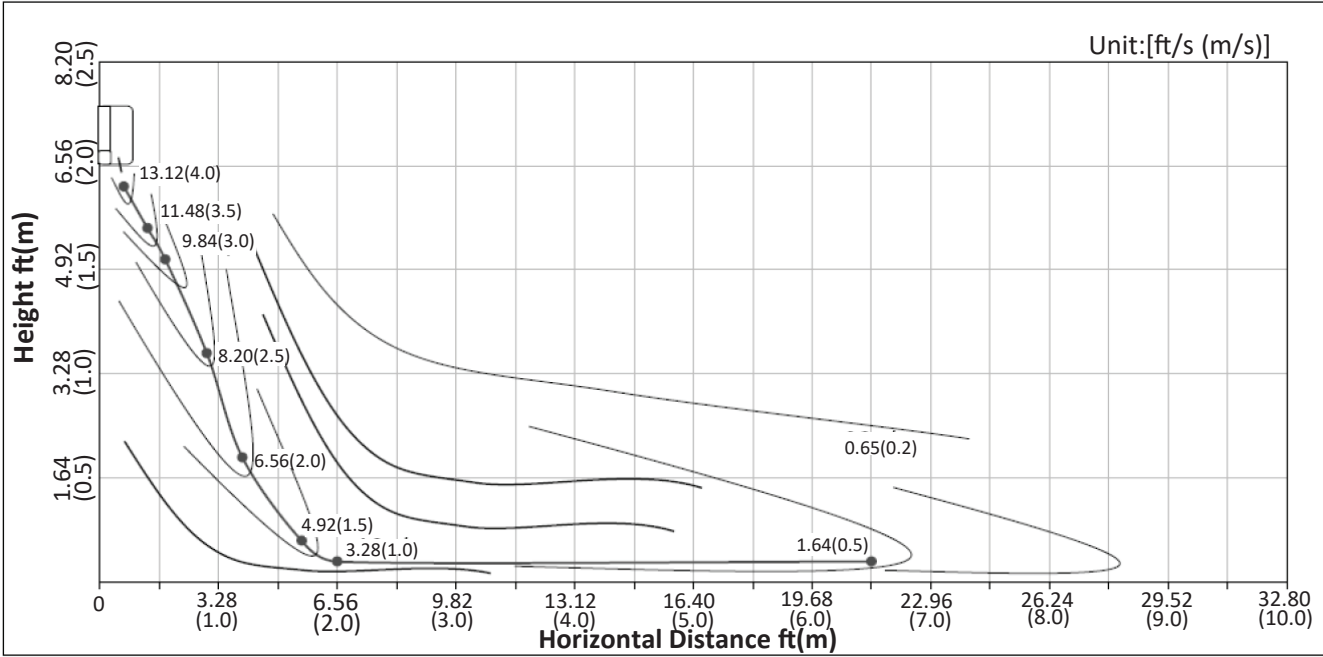
2-4-6. Air Speed Distribution

RAV-HB*__1KRTP-UL (*12 / 18)

Cooling

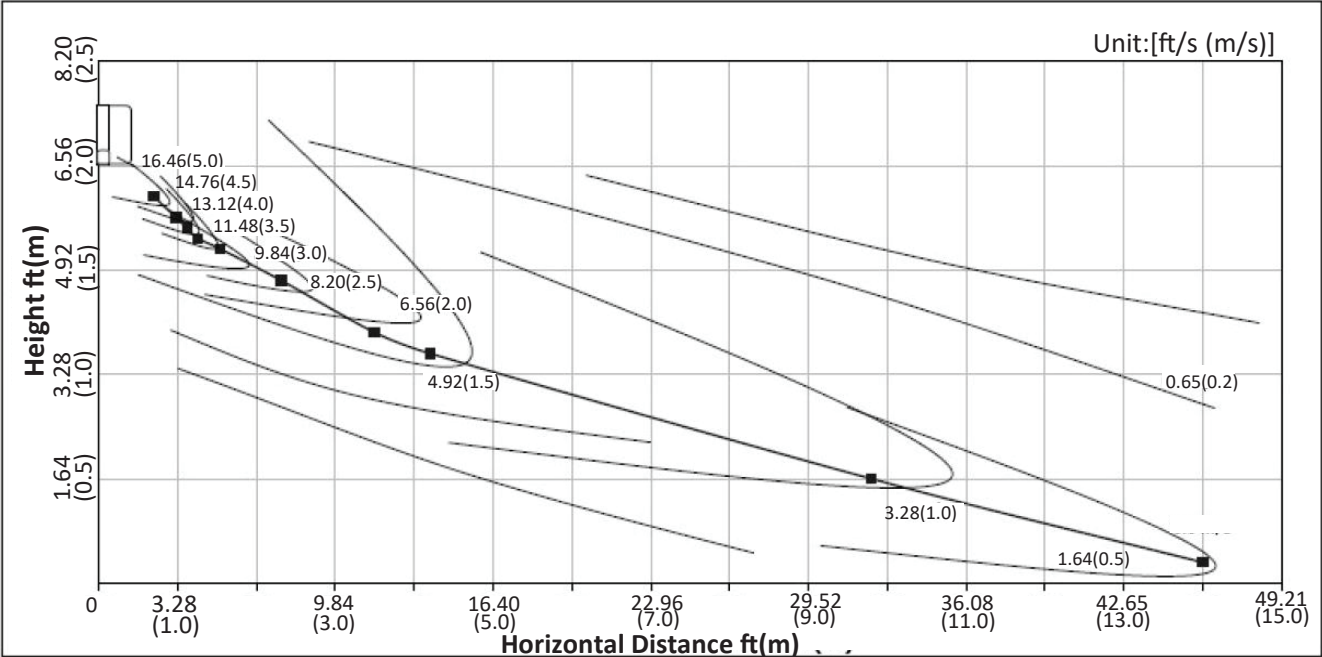


Heating

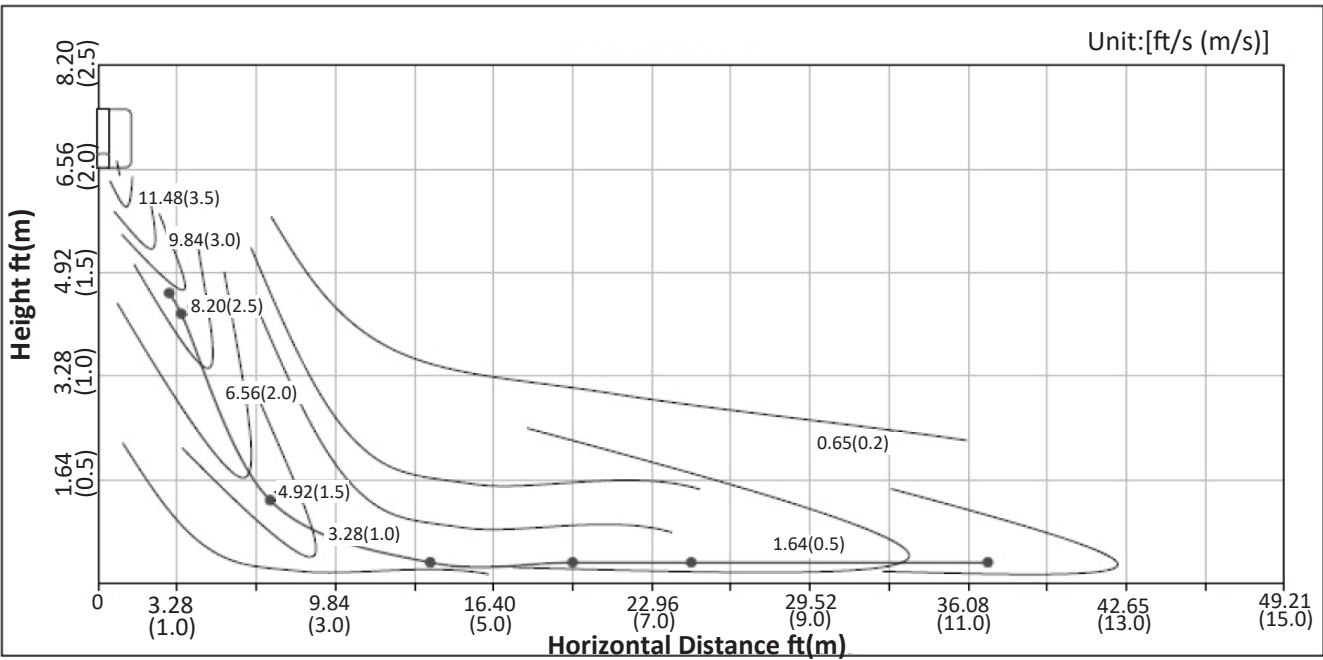


RAV-HB241KRTP-UL

Cooling

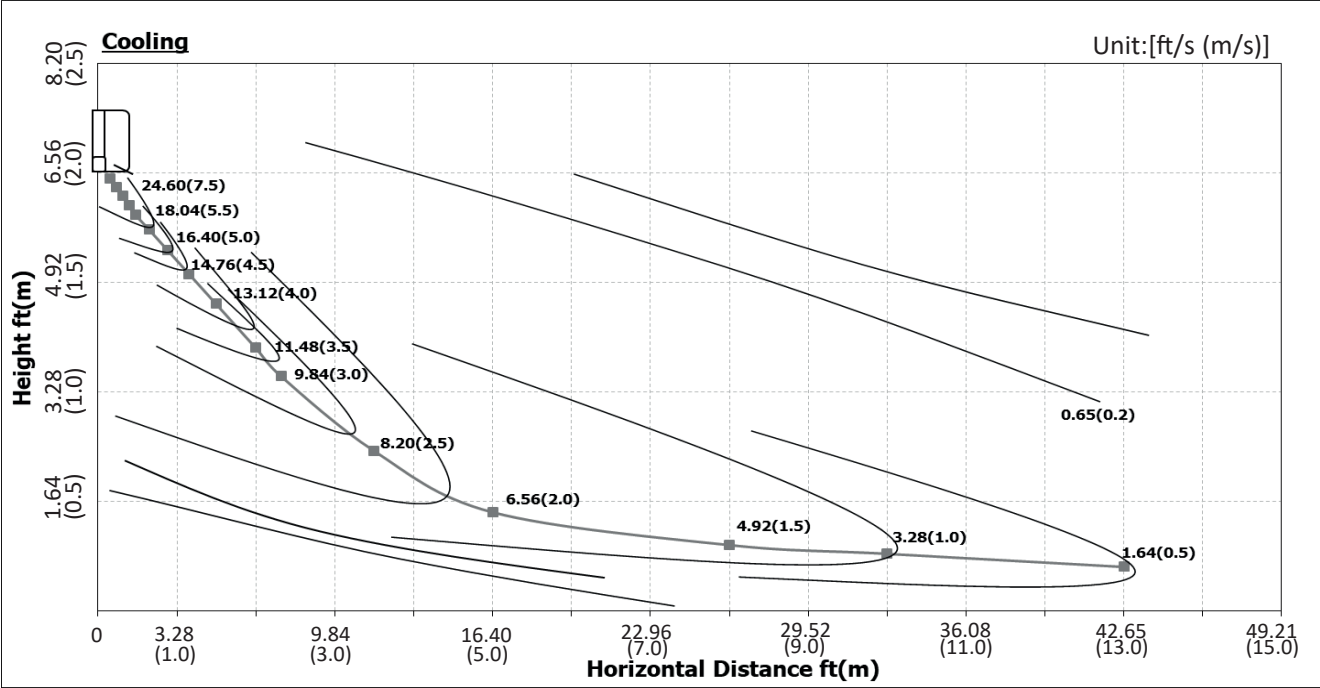


Heating

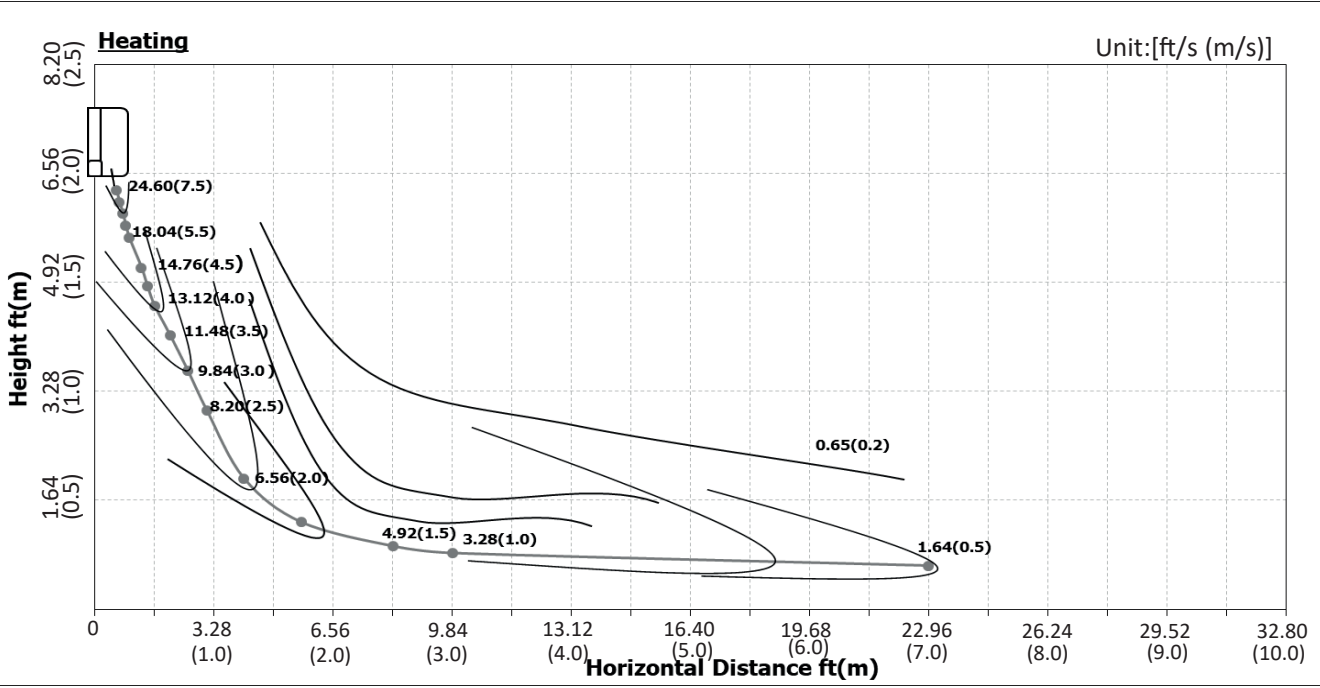


RAV-SM302KRTP-UL

Cooling

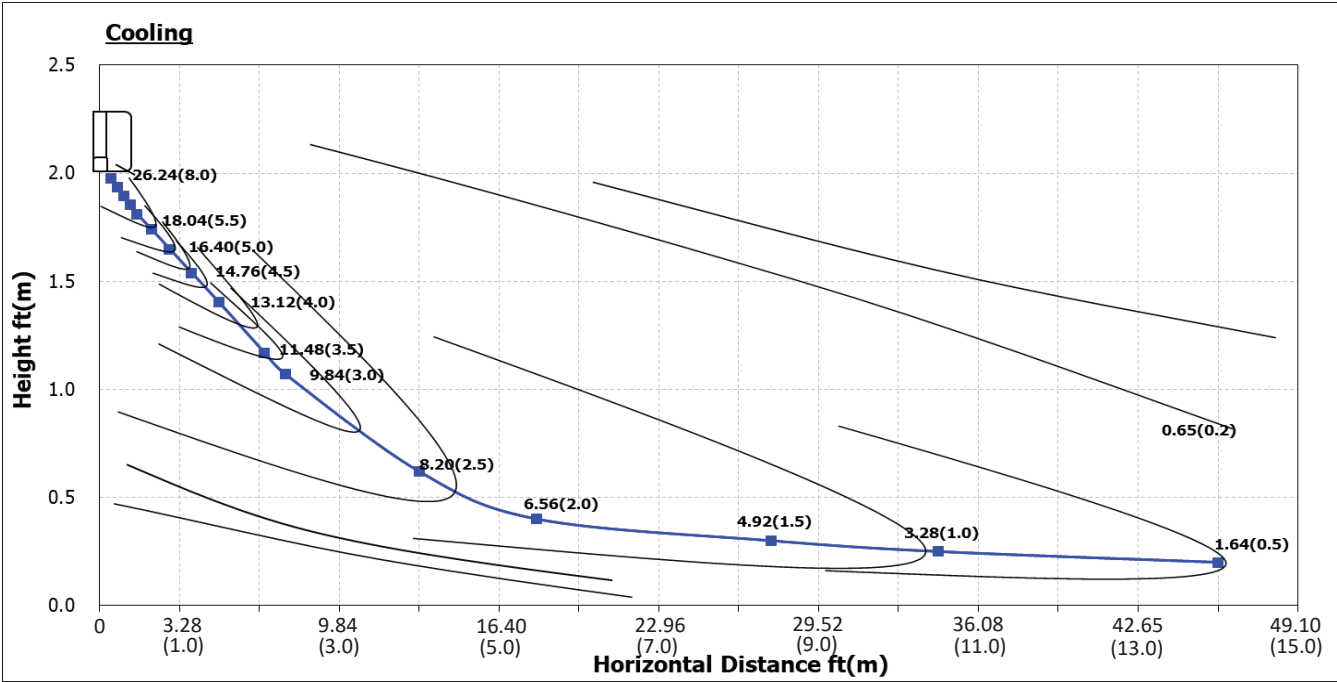


Heating

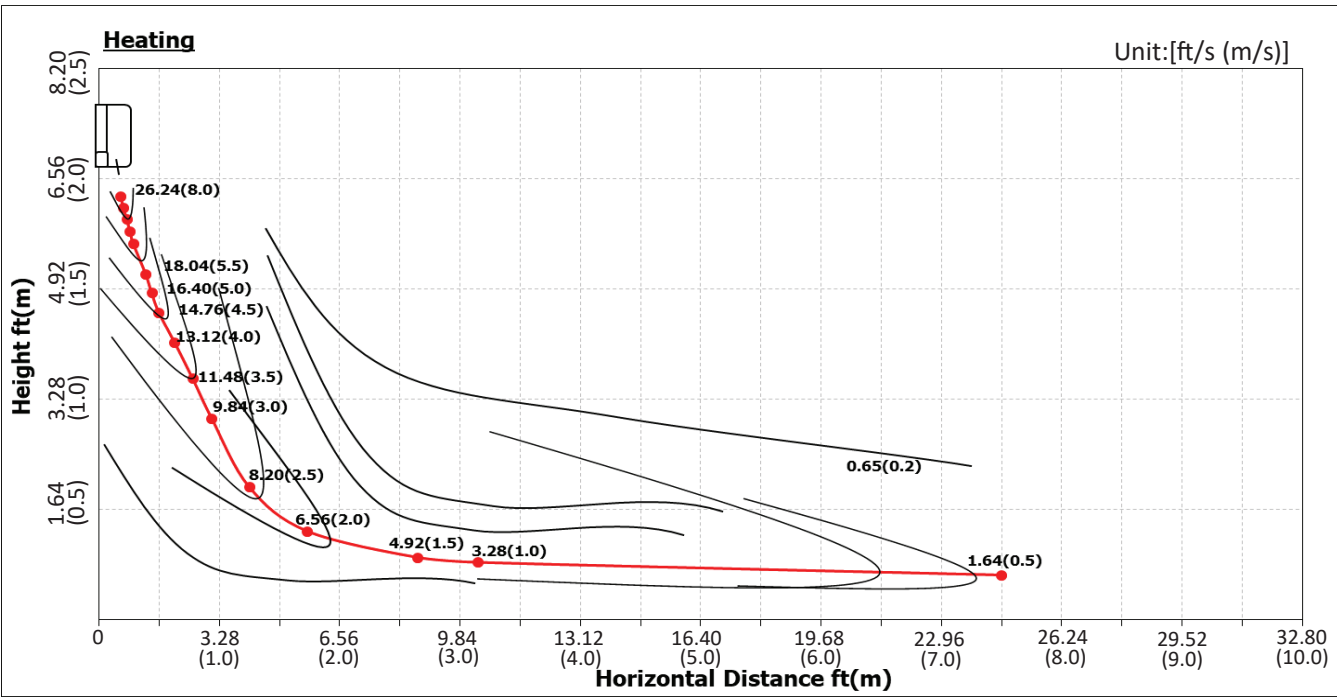


RAV-HB361KRTP-UL

Cooling



Heating

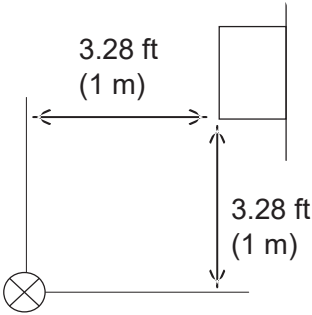


2-4-7. Sound Characteristics (NC curve)

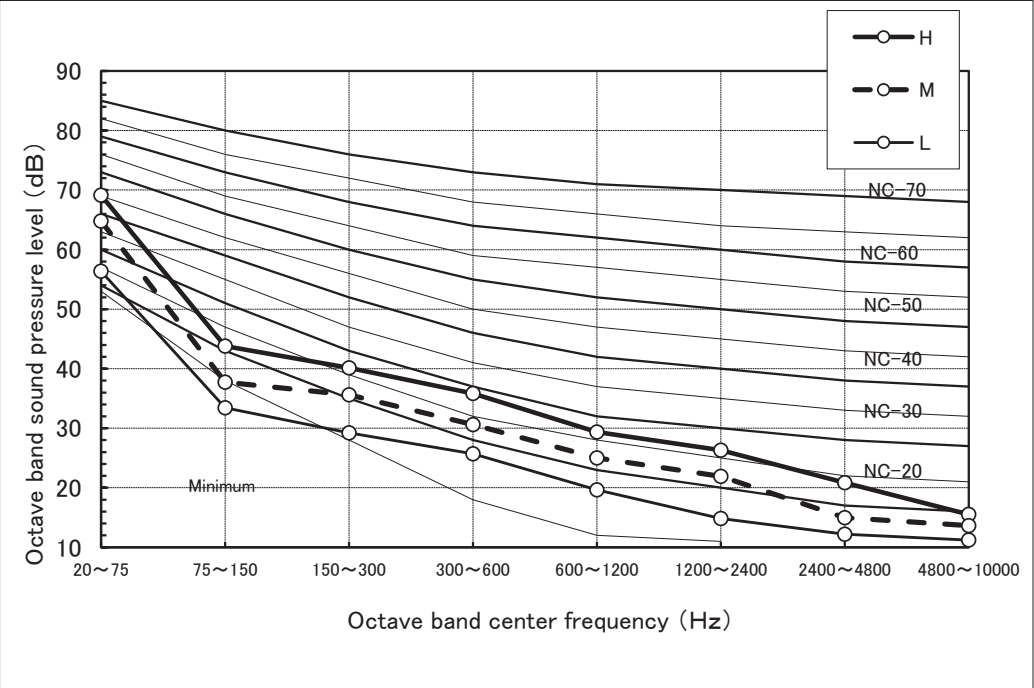
Model : RAV-HB121KRTP-UL

Cooling

Specification (dB)			
Fan tap	H	M	L
Sound pressure level (dB(A))	37	33	28

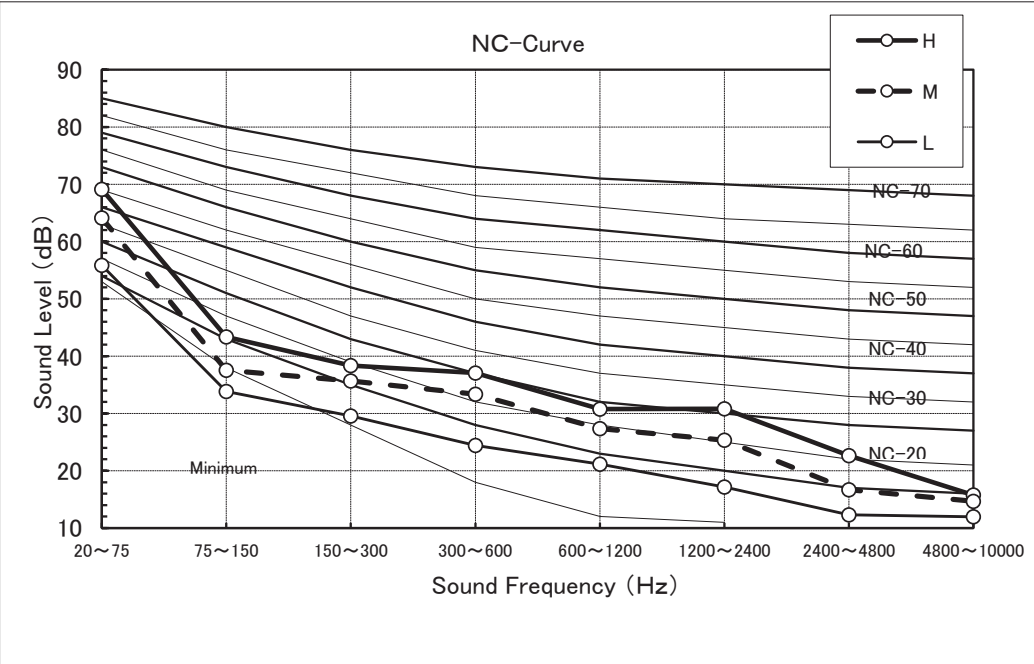


Microphone



Heating

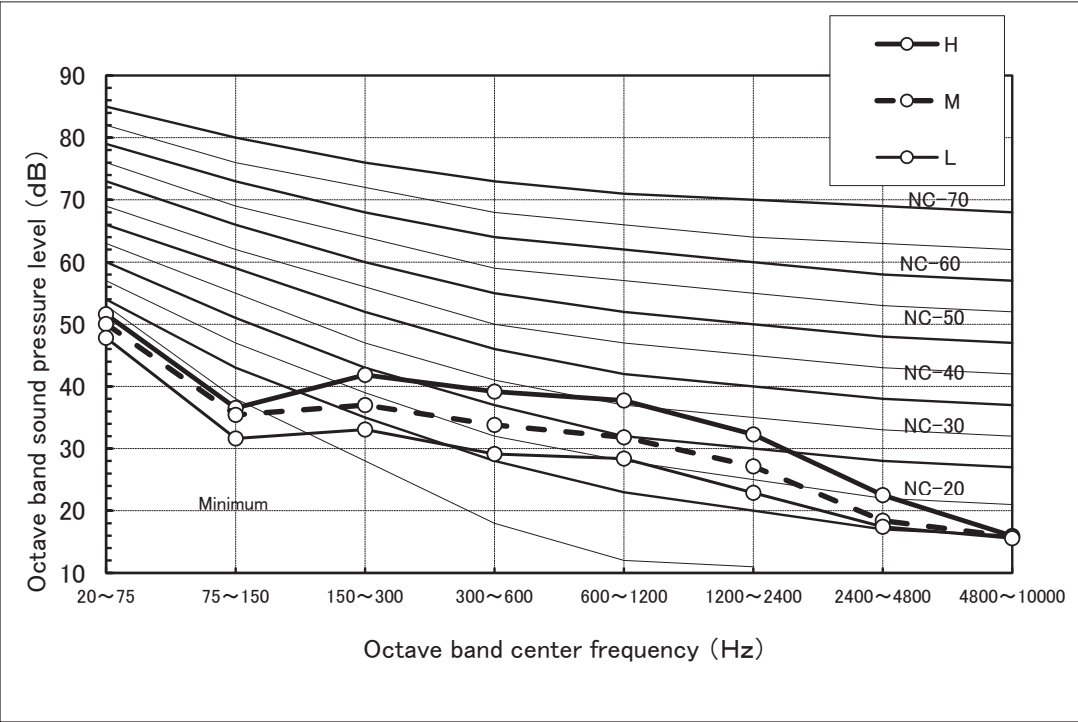
Specification (dB)			
Fan tap	H	M	L
Sound pressure level (dB(A))	37	33	28



Model : RAV-HB181KRTP-UL

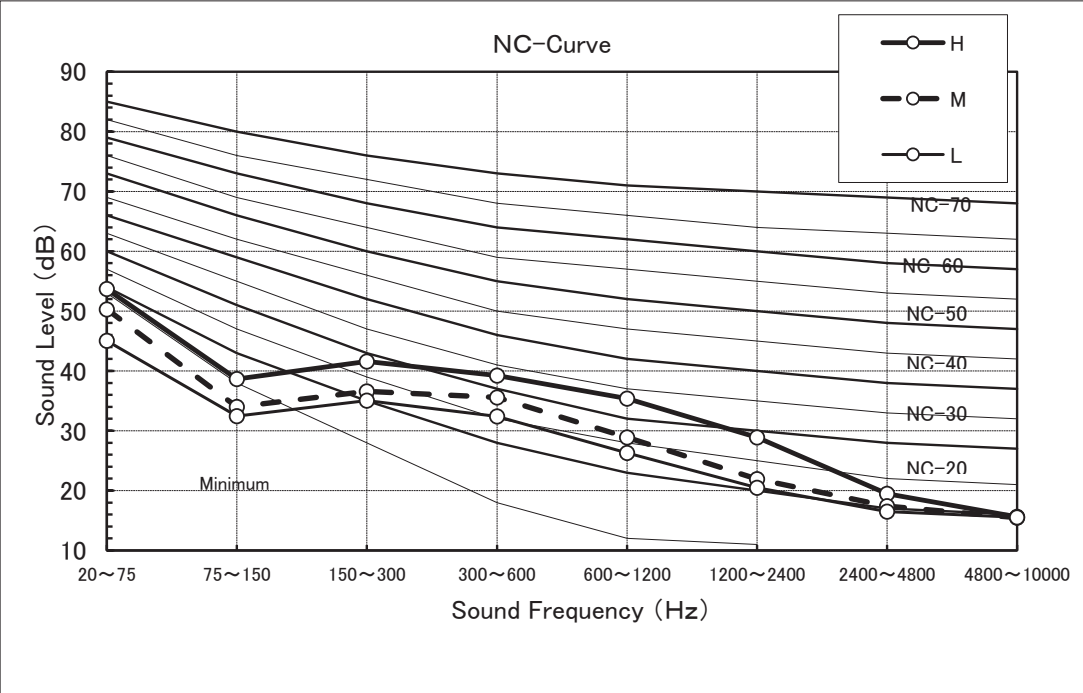
Cooling

Specification (dB)			
Fan tap	H	M	L
Sound pressure level (dB(A))	41	37	32



Heating

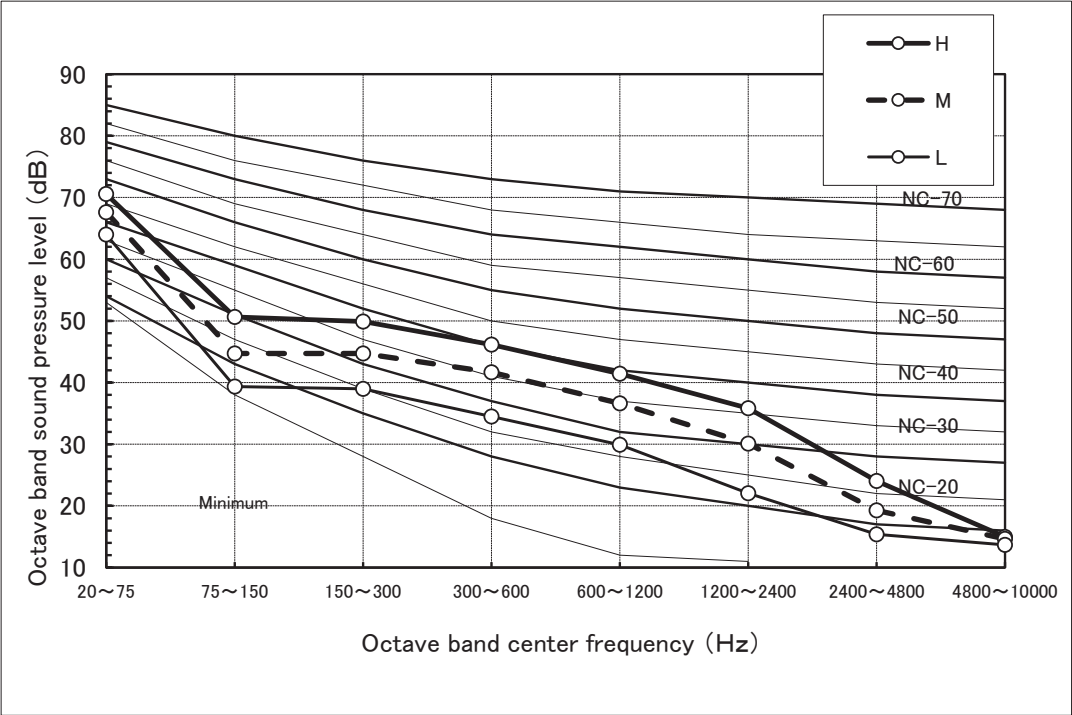
Specification (dB)			
Fan tap	H	M	L
Sound pressure level (dB(A))	41	37	32



Model : RAV-HB241KRTP-UL

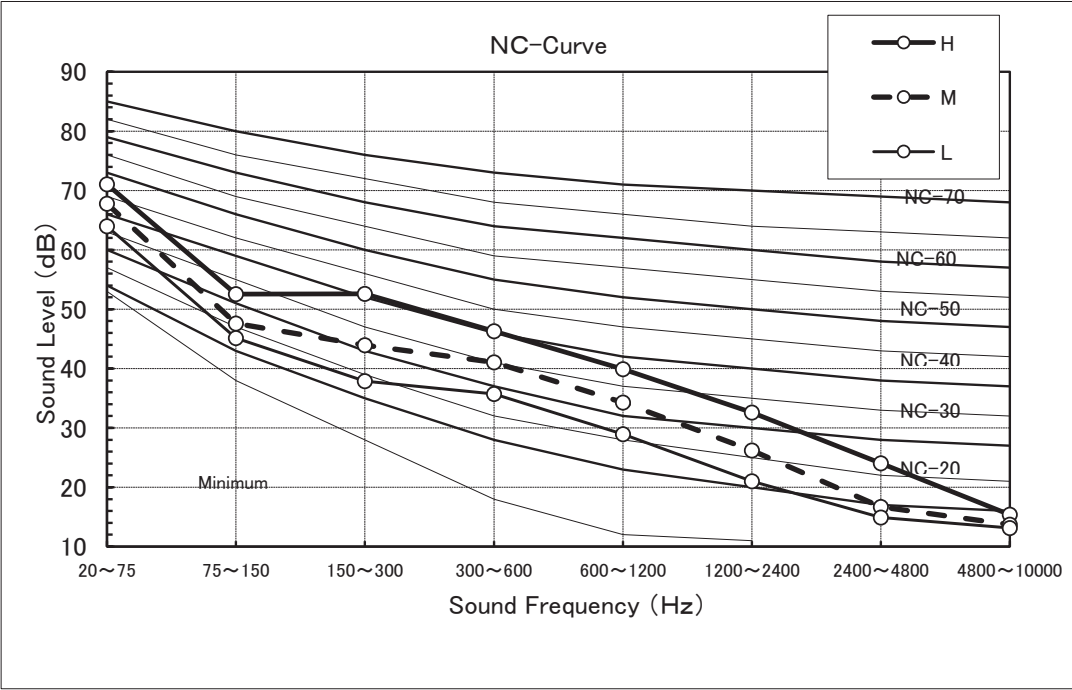
Cooling

Specification (dB)			
Fan tap	H	M	L
Sound pressure level (dB(A))	46	41	35



Heating

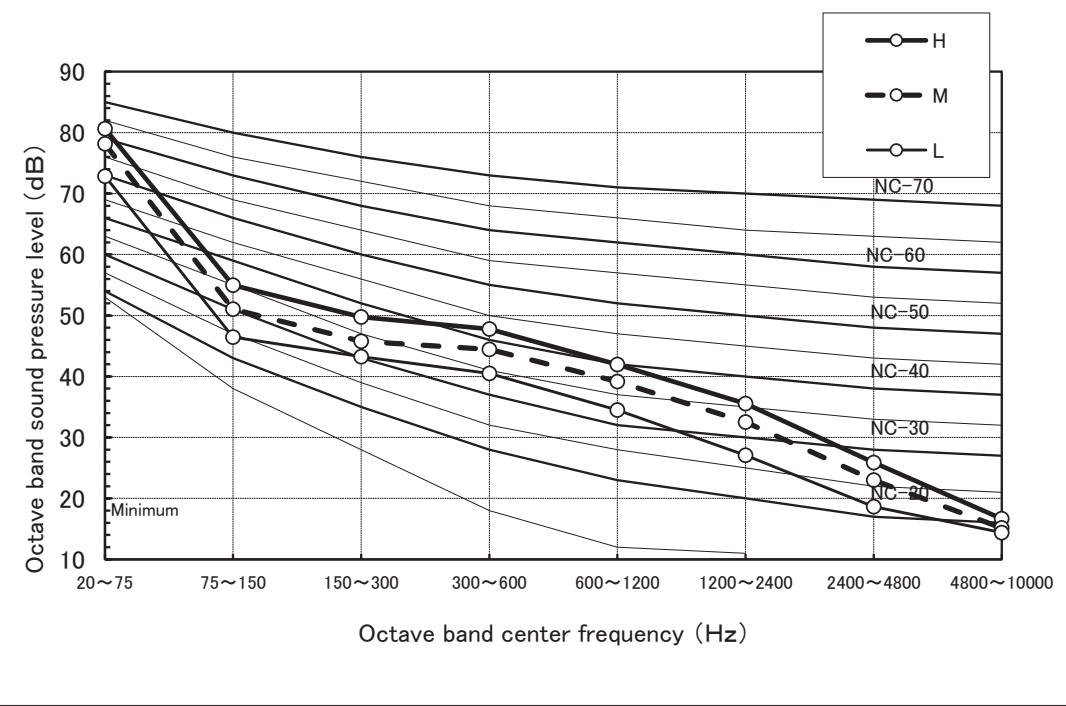
Specification (dB)			
Fan tap	H	M	L
Sound pressure level (dB(A))	46	41	35



Model : RAV-HB301KRTP-UL

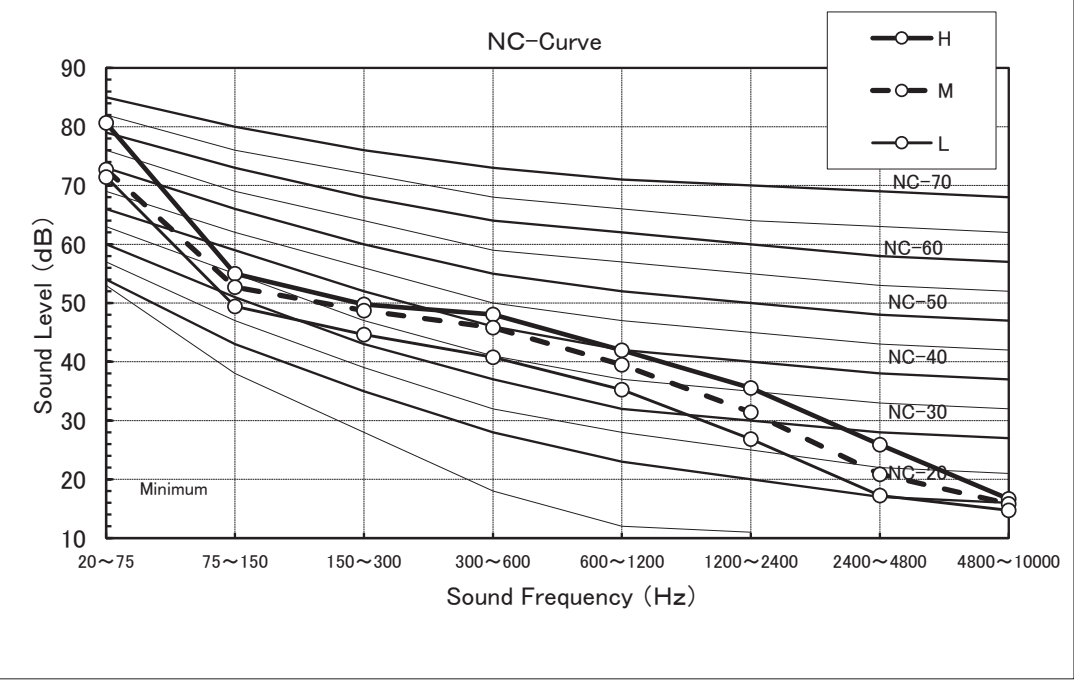
Cooling

Specification (dB)			
Fan tap	H	M	L
Sound pressure level (dB(A))	48	45	41



Heating

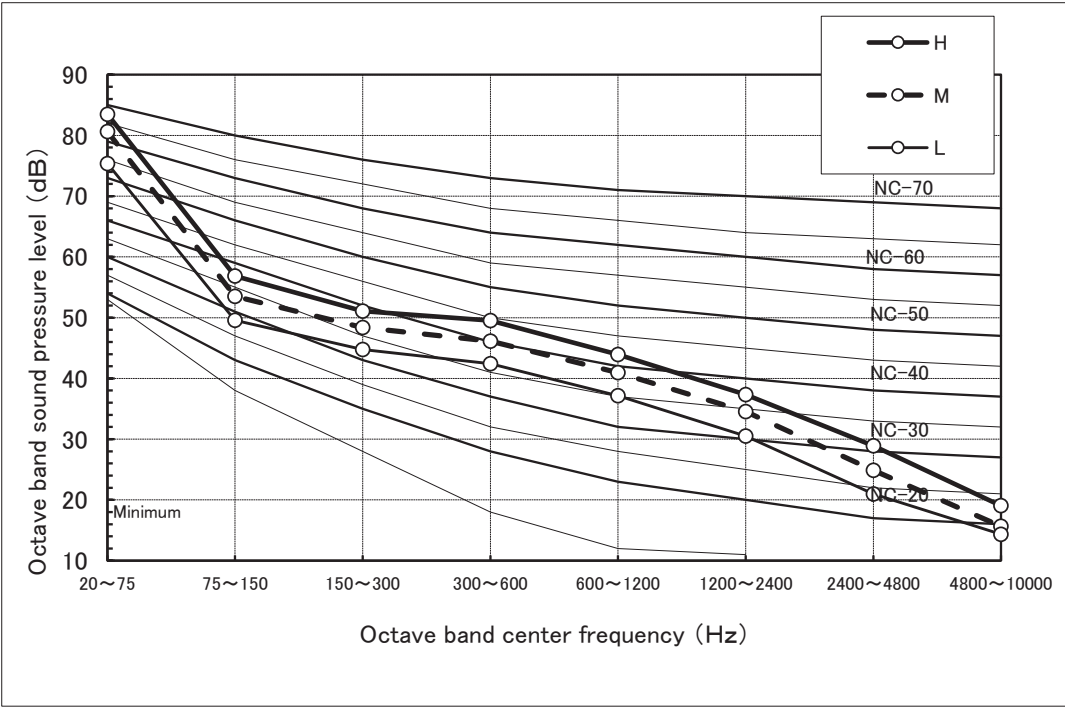
Specification (dB)			
Fan tap	H	M	L
Sound pressure level (dB(A))	48	45	41



Model : RAV-HB361KRTP-UL

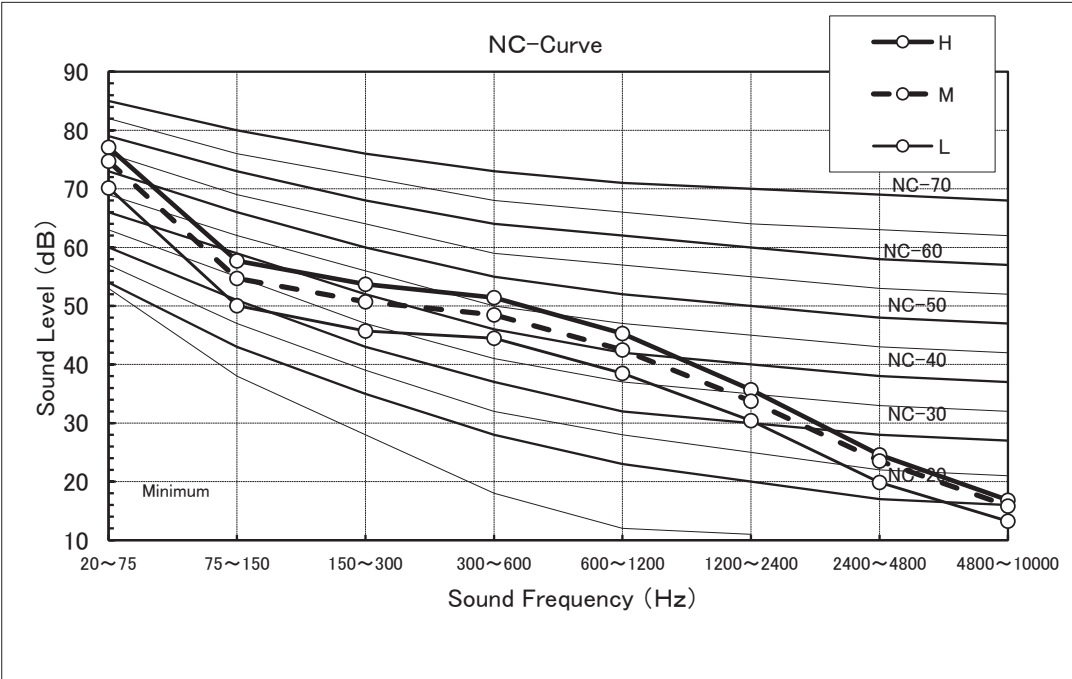
Cooling

Specification (dB)			
Fan tap	H	M	L
Sound pressure level (dB(A))	50	47	43



Heating

Specification (dB)			
Fan tap	H	M	L
Sound pressure level (dB(A))	50	47	43



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

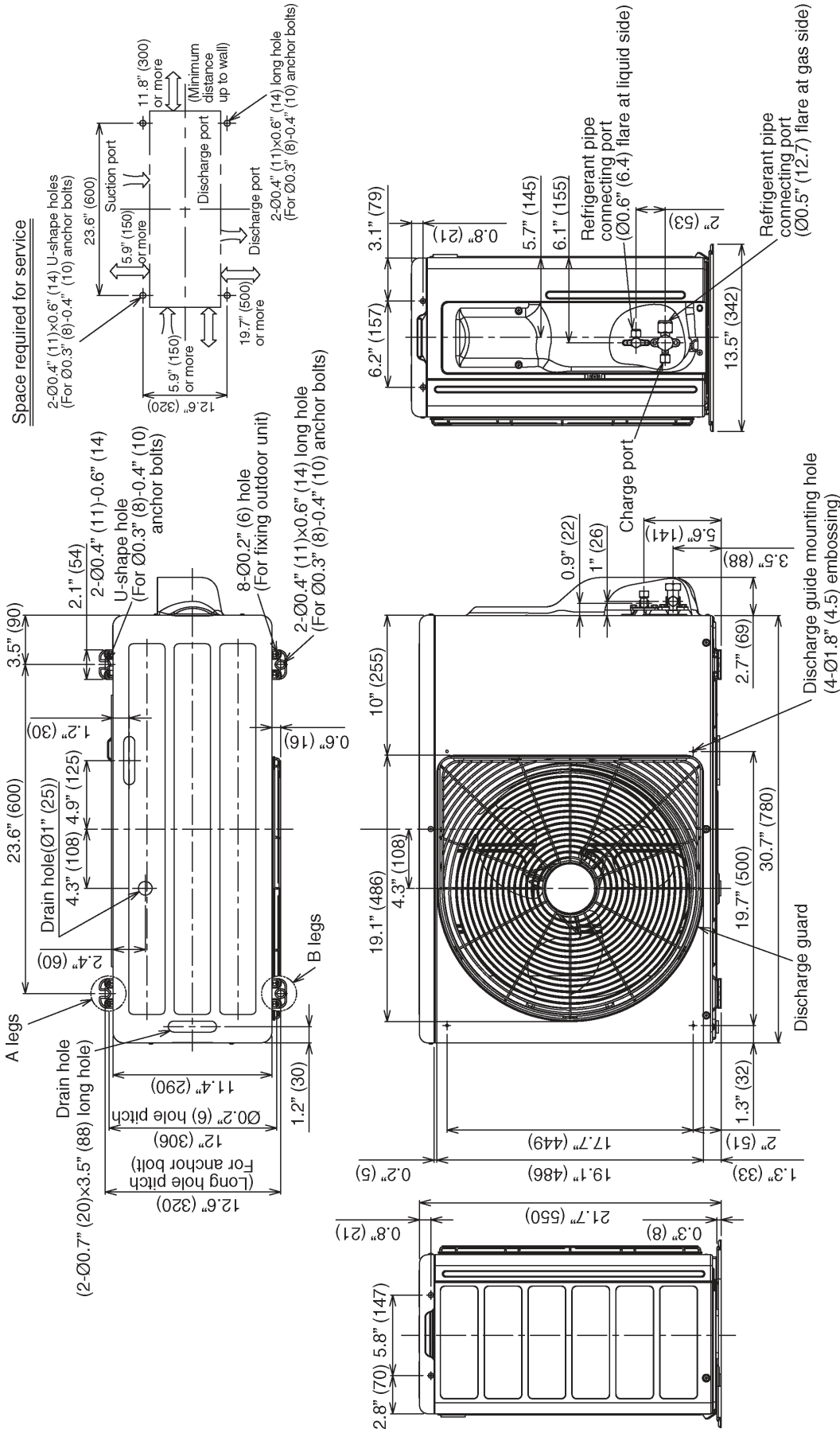
System	Capacity Rank		012	018
	Outdoor Model		RAV-BP121AT2P-UL	RAV-BP181AT2P-UL
Operating Range	Cooling	Indoor Min - Max DB (°F)	70 to 89	70 to 89
		Outdoor Min - Max DB (°F)	5 to 115	5 to 115
		Outdoor Min - Max DB (°F) with wind buffels	5 to 115	5 to 115
	Heating	Indoor Min - Max DB (°F)	59 to 86	59 to 86
		Outdoor Min - Max DB (°F)	-13 to 59	-13 to 59
Piping	Standard Piping Length (ft)		24'7"	24'7"
	Min. Piping Length (ft)		16'5"	16'5"
	Max. Piping Length (ft)		164'1"	164'1"
	Lift (Outdoor below Indoor) (ft)		98'5"	98'5"
	Lift (Outdoor above Indoor) (ft)		98'5"	98'5"
	Gas Pipe (size/connection type)		1/2"	1/2"
	Liquid Pipe (size/connection type)		1/4"	1/4"
	Additional refrigerant charge under long piping connection		0.22oz/ft (65'7" to 164'1")	0.22oz/ft (65'7" to 164'1")
Electrical	Voltage		1Ph, 208/230V ~ 60Hz.	1Ph, 208/230V ~ 60Hz.
	Minimum Current Amps (A)		14	14
	Maximum Overcurrent Protection Device Amps (A)		20	20
Outdoor	Dimensions	Height (in)	21.7	21.7
		Width (in)	30.7	30.7
		Depth (in)	11.4	11.4
	Weight-Net/Gross (lbs)		82/89	82/89
	Refrigerant charged (lbs)		3.31	3.31
	Sound Pressure (dBA)		48/52	48/52

System	Capacity Rank		024
	Outdoor Model		RAV-BP241AT2P-UL
Operating Range	Cooling	Indoor Min - Max DB (°F)	70 to 89
		Outdoor Min - Max DB (°F)	5 to 115
		Outdoor Min - Max DB (°F) with wind buffels	5 to 115
	Heating	Indoor Min - Max DB (°F)	59 to 86
		Outdoor Min - Max DB (°F)	-13 to 59
Piping	Standard Piping Length (ft)		24'7"
	Min. Piping Length (ft)		16'5"
	Max. Piping Length (ft)		164'1"
	Lift (Outdoor below Indoor) (ft)		98'5"
	Lift (Outdoor above Indoor) (ft)		98'5"
	Gas Pipe (size/connection type)		5/8"
	Liquid Pipe (size/connection type)		3/8"
	Additional refrigerant charge under long piping connection		0.376oz/ft (98'5" to 164'1")
Electrical	Voltage		1Ph, 208V/230V ~ 60Hz.
	Minimum Current Amps (A)		17
	Maximum Overcurrent Protection Device Amps (A)		25
Outdoor	Dimensions	Height (in)	35.0
		Width (in)	35.4
		Depth (in)	12.6
	Weight-Net/Gross (lbs)		133/144
	Refrigerant charged (lbs)		4.63
	Sound Pressure (dBA)		52/54

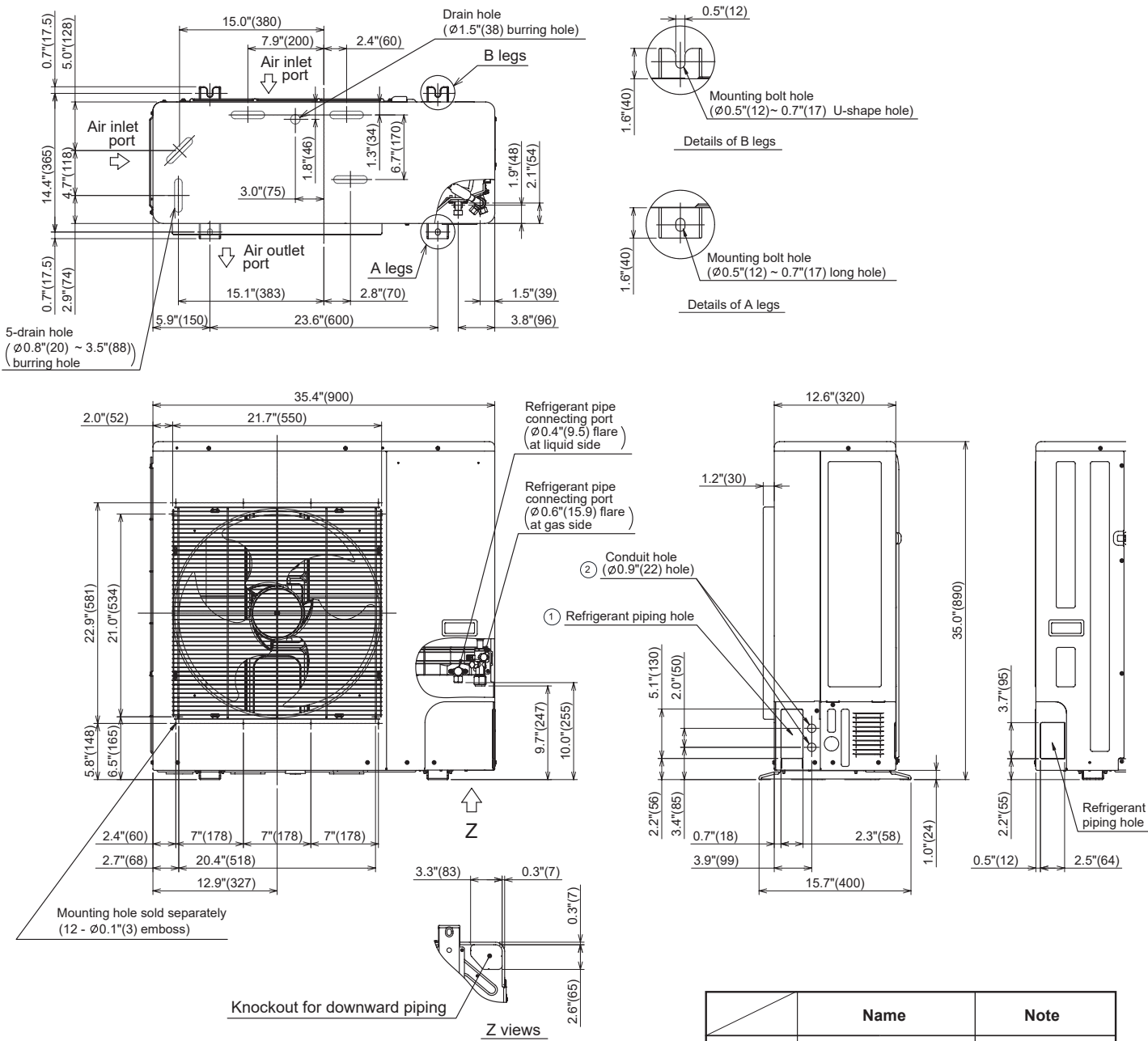
System	Capacity Rank		030	036	042	048
	Outdoor Model		RAV-BP301AT2P-UL	RAV-BP361AT2P-UL	RAV-BP421AT2P-UL	RAV-BP481AT2P-UL
Operating Range	Cooling	Indoor Min - Max DB (°F)	70 to 89	70 to 89	70 to 89	70 to 89
		Outdoor Min - Max DB (°F)	5 to 115	5 to 115	5 to 115	5 to 115
		Outdoor Min - Max DB (°F) with wind buffels	-13 to 115	-13 to 115	-13 to 115	-13 to 115
	Heating	Indoor Min - Max DB (°F)	59 to 86	59 to 86	59 to 86	59 to 86
		Outdoor Min - Max DB (°F)	-13 to 59	-13 to 59	-13 to 59	-13 to 59
Piping	Standard Piping Length (ft)		24'7"	24'7"	24'7"	24'7"
	Min. Piping Length (ft)		16'5"	16'5"	16'5"	16'5"
	Max. Piping Length (ft)		246'1"	246'1"	246'1"	246'1"
	Lift (Outdoor below Indoor) (ft)		98'5"	98'5"	98'5"	98'5"
	Lift (Outdoor above Indoor) (ft)		98'5"	98'5"	98'5"	98'5"
	Gas Pipe (size/connection type)		5/8"	5/8"	5/8"	5/8"
	Liquid Pipe (size/connection type)		3/8"	3/8"	3/8"	3/8"
	Additional refrigerant charge under long piping connection		0.376oz/ft (98'5" to 246'1")	0.376oz/ft (98'5" to 246'1")	0.376oz/ft (98'5" to 246'1")	0.376oz/ft (98'5" to 246'1")
Electrical	Voltage		1Ph, 208V/230V ~ 60Hz.			
	Minimum Current Amps (A)		31	31	31	31
	Maximum Overcurrent Protection Device Amps (A)		40	40	40	40
Outdoor	Dimensions	Height (in)	52.8	52.8	52.8	52.8
		Width (in)	35.4	35.4	35.4	35.4
		Depth (in)	12.6	12.6	12.6	12.6
	Weight-Net/Gross (lbs)		218/232	218/232	221/234	221/234
	Refrigerant charged (lbs)		5.84	5.84	6.61	6.61
	Sound Pressure (dBA)		54/54	54/54	54/54	60/60

3-2. Dimension

RAV-BP*_AT2P-UL (*12 / 18)

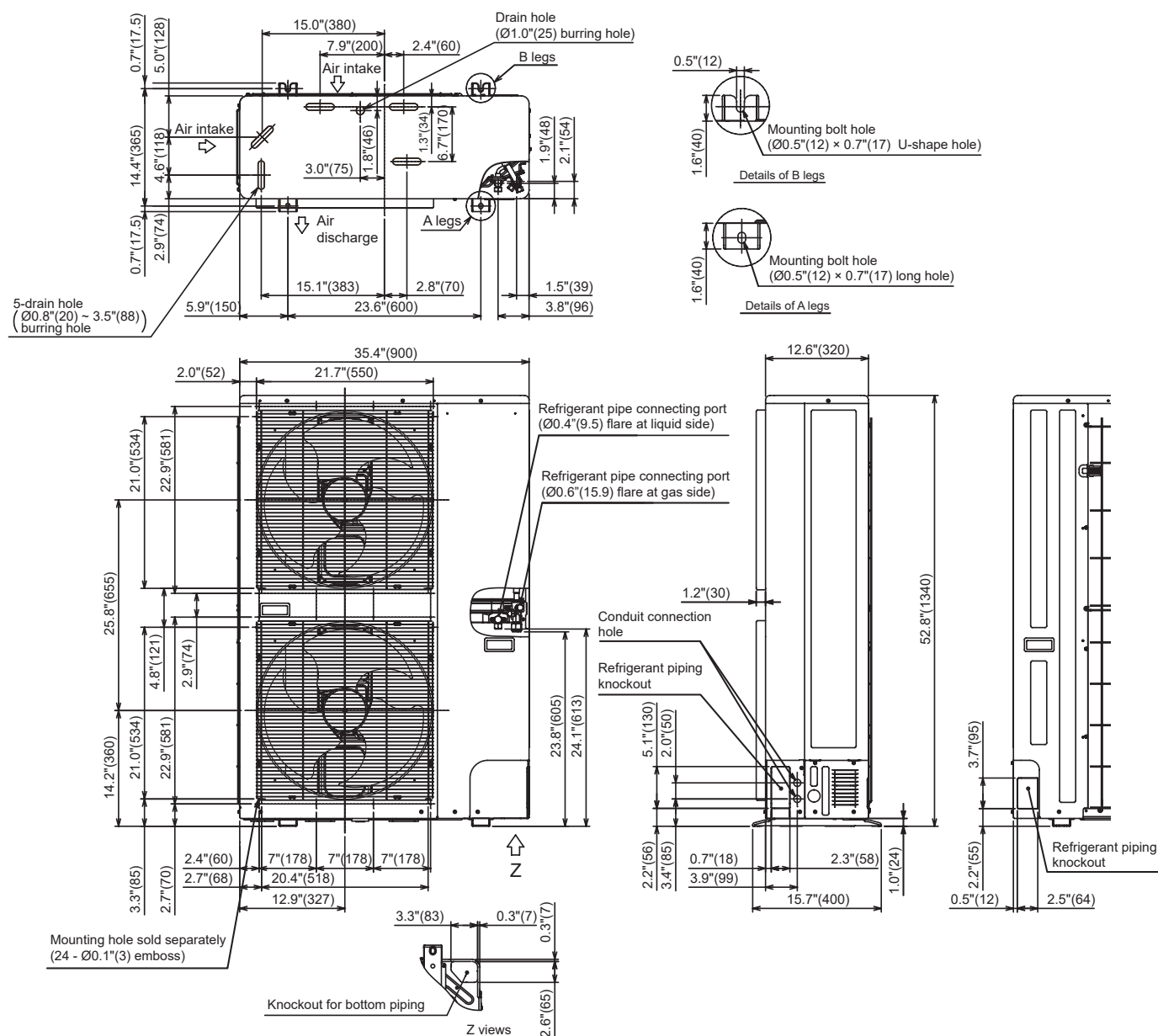


RAV-BP241AT2P-UL



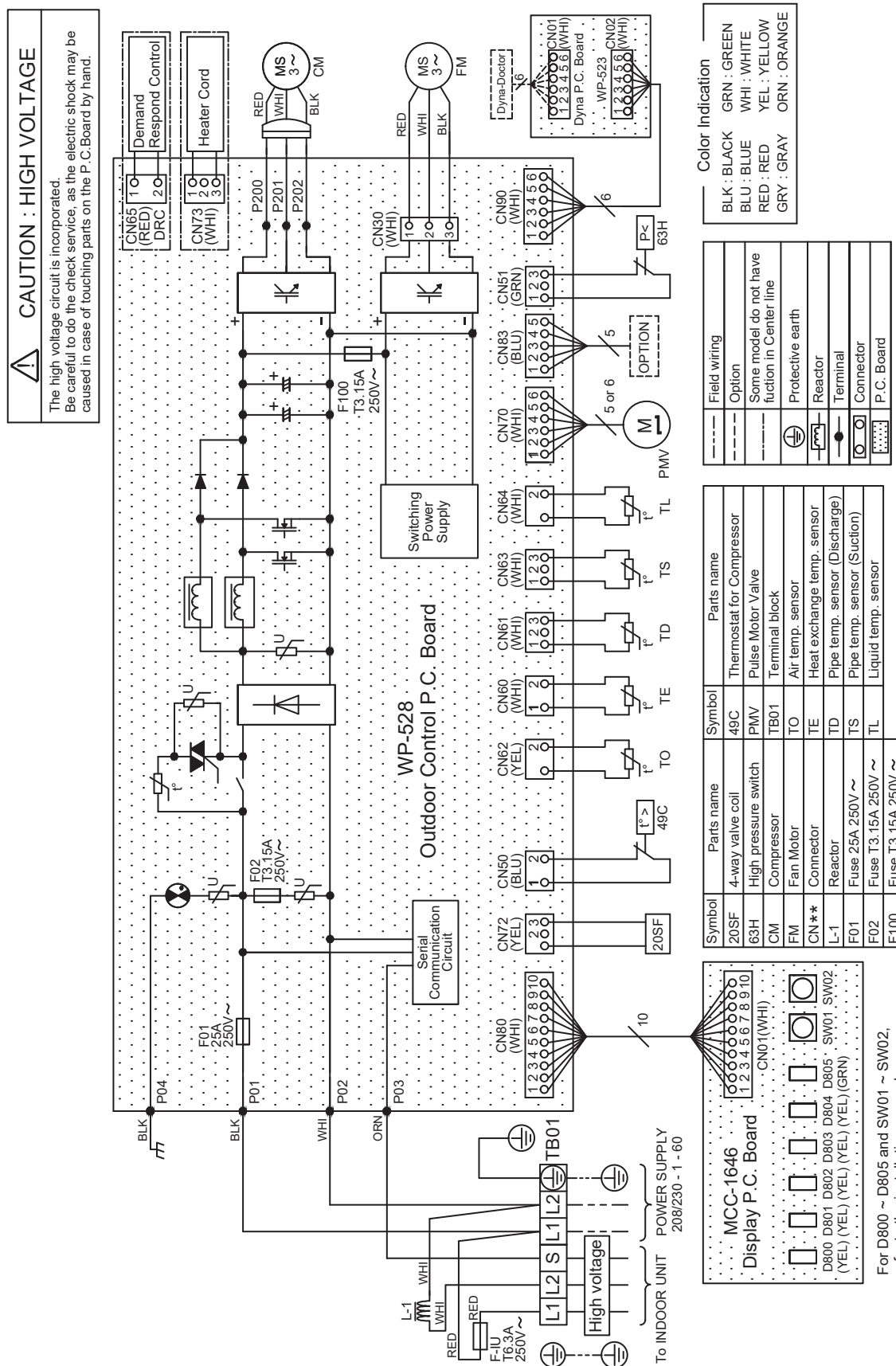
	Name	Note
①	Refrigerant Piping	-
②	Conduit hole	Ø0.9" (22) hole

RAV-BP*__1AT2P-UL (*30 / 36 / 42 / 48)



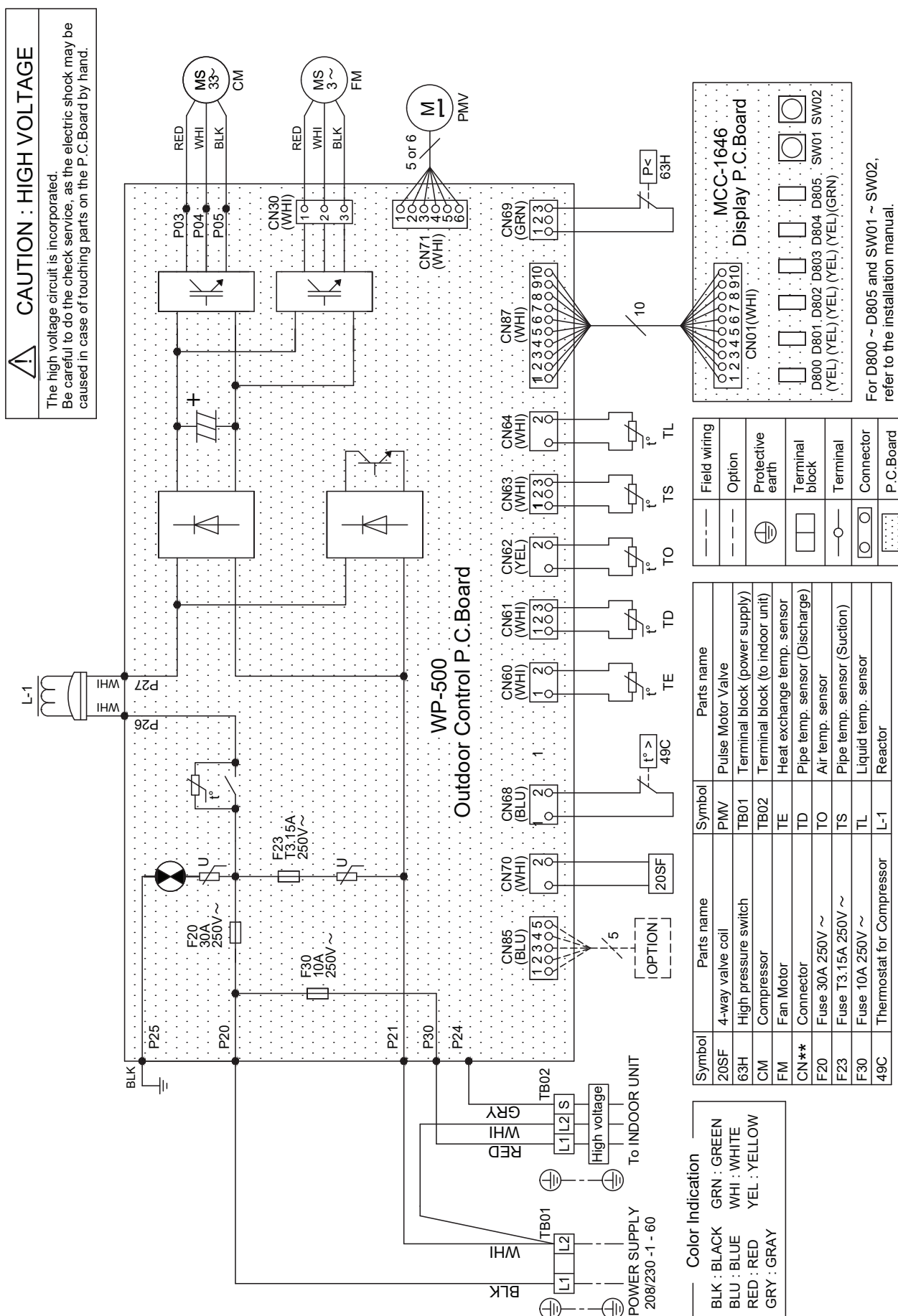
3-3. Wiring Diagram

RAV-BP*__AT2P-UL (*12 / 18)

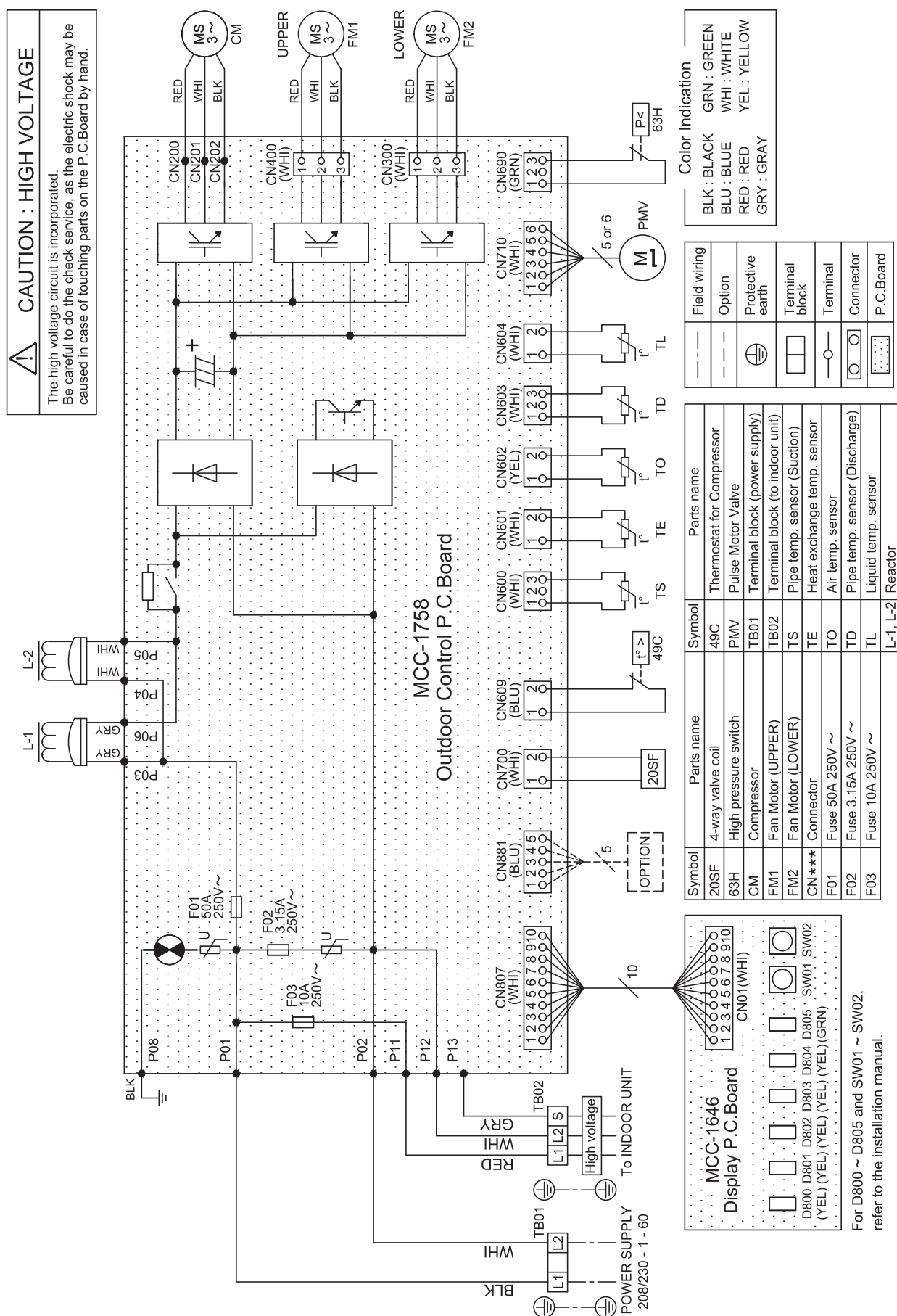


For D800 ~ D805 and SW01 ~ SW02, refer to the installation manual.

RAV-BP241AT2P-UL



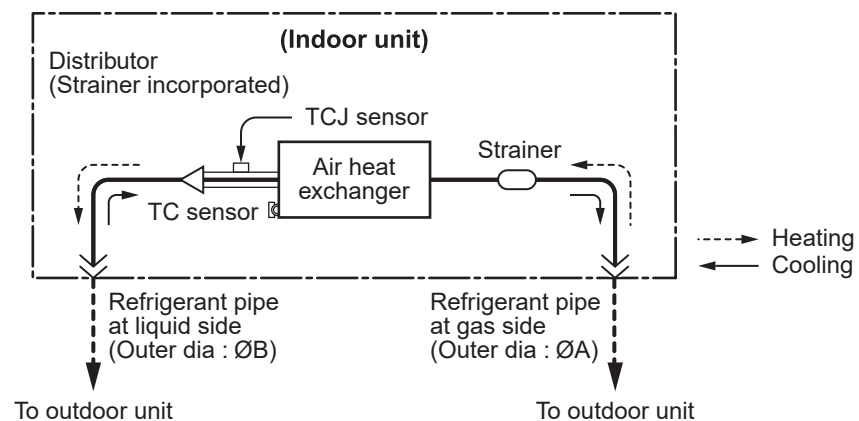
RAV-BP*_1AT2P-UL (*30 / 36 / 42 /48)



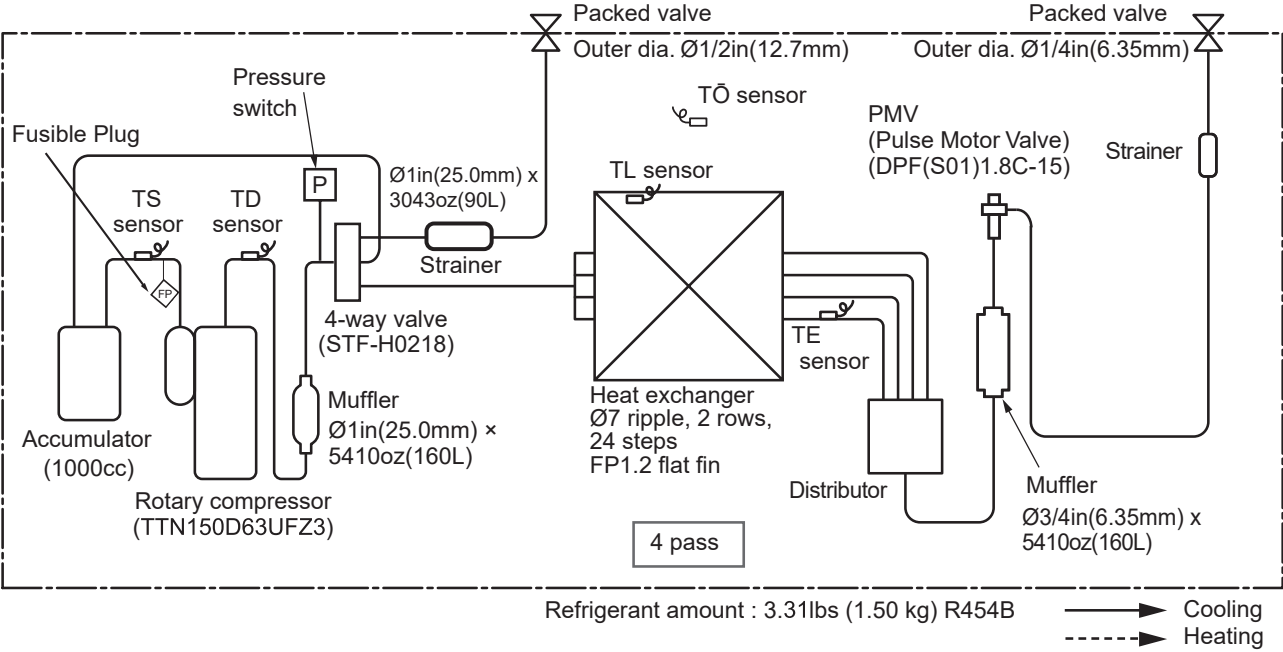
3-4. Refrigerant cycle diagram

Indoor Unit

- Single type (Combination of 1 indoor unit and 1 outdoor unit)

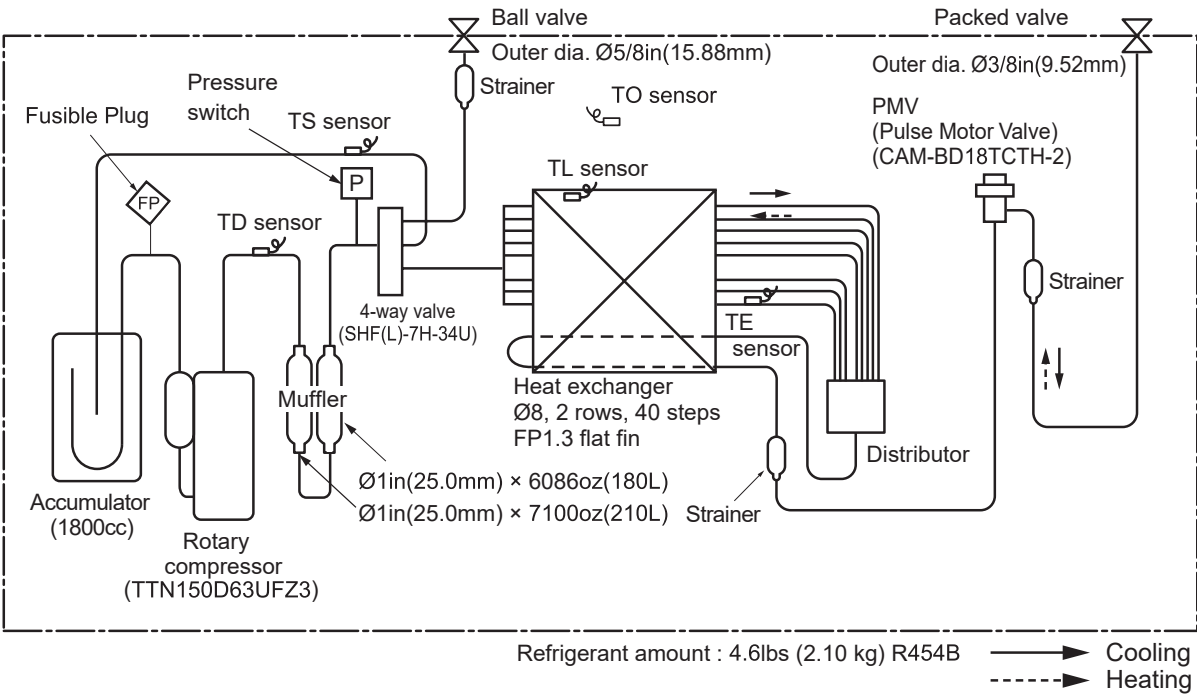


RAV-BP*_1AT2P-UL (*12 / 18)



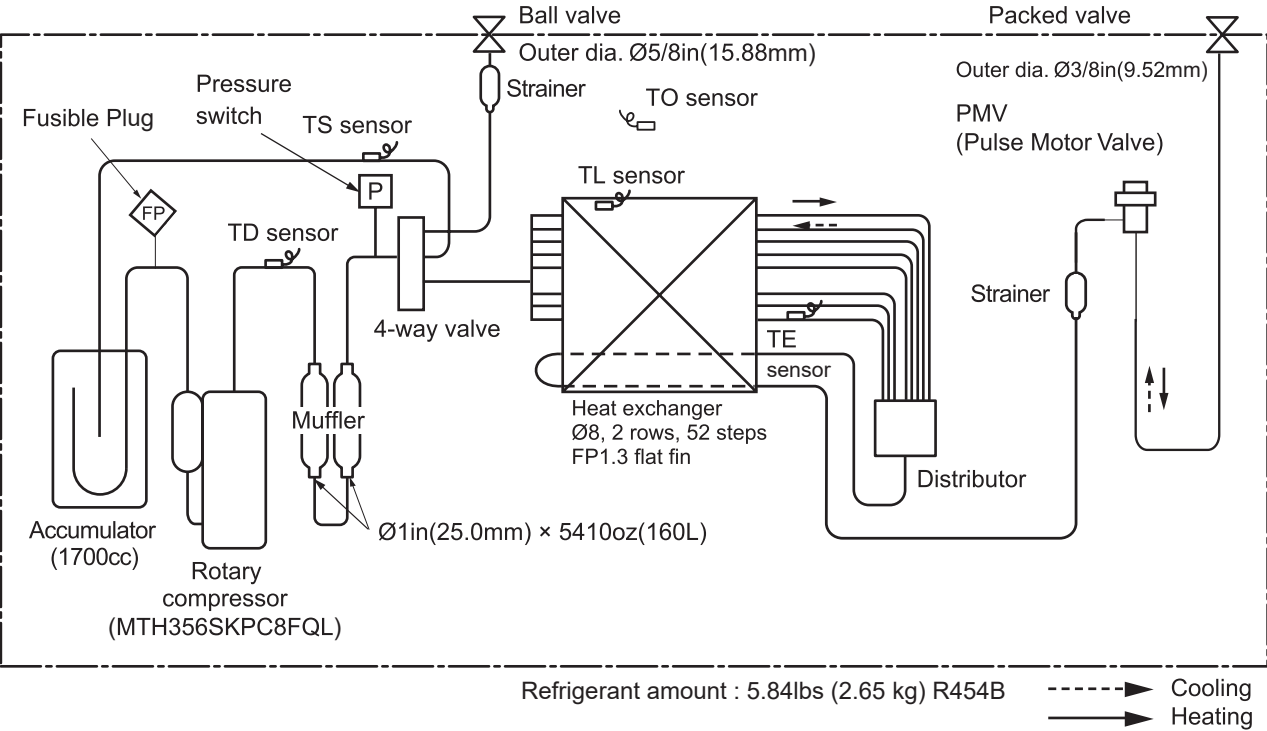
		Pressure		Pipe surface temperature °F(°C)				Comp. Hz	Temp. °F(°C)	
		PSI (Mpa)								
		Pd	Ps	TD	TS	TC	TE		In	Out
Cooling	Standard	443(3.057)	137(0.945)	158(70)	55(13)	55(13)	96(36)	61	80(27)	95(35)
	Over load	472(3.256)	154(1.064)	159(71)	68(20)	68(20)	123(51)	52	89(32)	115(46)
	Low temp.	323(2.232)	118(0.818)	111(44)	42(6)	46(8)	46(8)	29	64(18)	5(-15)
Heating	Standard	370(2.555)	90(0.623)	150(66)	33(1)	104(40)	46(8)	75	68(20)	44(7)
	Over load	461(3.181)	119(0.822)	186(86)	50(10)	129(54)	51(11)	78	80(27)	75(24)
	Low temp.	134(0.930)	38(0.264)	55(13)	-16(-27)	48(9)	-9(-23)	99	59(15)	-13(-25)

RAV-BP241AT2P-UL



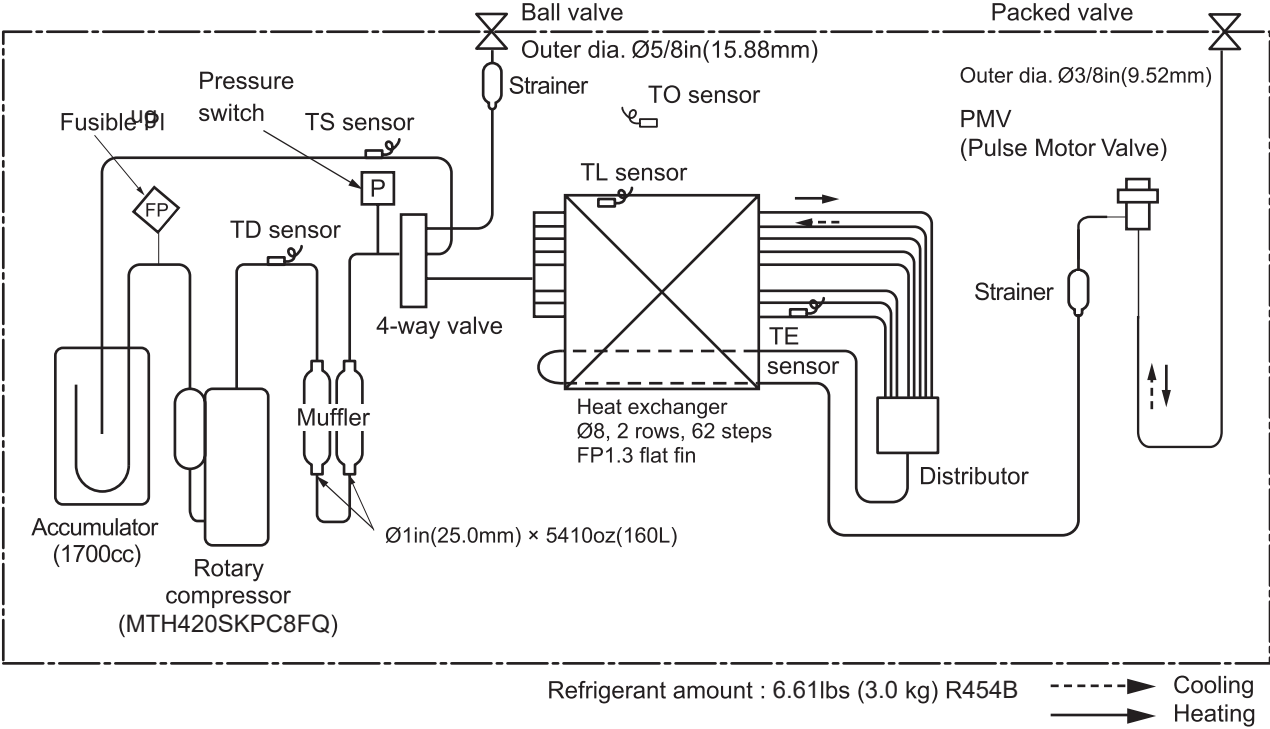
		Pressure		Pipe surface temperature °F(°C)				Comp. Hz	Temp. °F(°C)	
		PSI (Mpa)								
		Pd	Ps	TD	TS	TC	TE		In	Out
Cooling	Standard	366(2.530)	138(0.955)	158(70)	50(10)	51(11)	102(39)	60	80(27)	95(35)
	Over load	444(3.064)	177(1.223)	158(70)	66(19)	64(18)	123(51)	45	89(32)	115(46)
	Low temp.	291(2.008)	143(0.991)	123(51)	55(13)	50(10)	80(27)	21	64(18)	5(-15)
Heating	Standard	396(2.737)	101(0.703)	168(76)	35(2)	114(46)	35(2)	64	68(20)	44(7)
	Over load	467(3.220)	157(1.087)	172(78)	59(15)	129(54)	57(14)	49	80(27)	75(24)
	Low temp.	185(1.280)	37(0.256)	86(30)	-14(-26)	60(16)	-11(-24)	97	59(15)	-13(-25)

RAV-BP*_1AT2P-UL (*30 / 36)



		Pressure		Pipe surface temperature °F(°C)				Comp. Hz	Temp. °F(°C)	
		PSI (Mpa)								
		Pd	Ps	TD	TS	TC	TE		In	Out
Cooling	Standard	377(2.604)	124(0.855)	158(70)	50(10)	51(11)	102(39)	55	80(27)	95(35)
	Over load	460(3.175)	133(0.919)	176(80)	57(14)	57(14)	129(54)	55	89(32)	115(46)
	Low temp.	254(1.753)	97(0.672)	105(41)	35(2)	42(6)	93(34)	33	64(18)	-13(-25)
Heating	Standard	359(2.476)	116(0.800)	165(74)	35(2)	109(43)	35(2)	58	68(20)	44(7)
	Over load	449(3.101)	139(0.962)	161(72)	57(14)	127(53)	57(14)	56	80(27)	75(24)
	Low temp.	182(1.259)	54(0.373)	93(34)	-16(-27)	64(18)	-13(-25)	91	59(15)	-13(-25)

RAV-BP*_1AT2P-UL (*42 / 48)

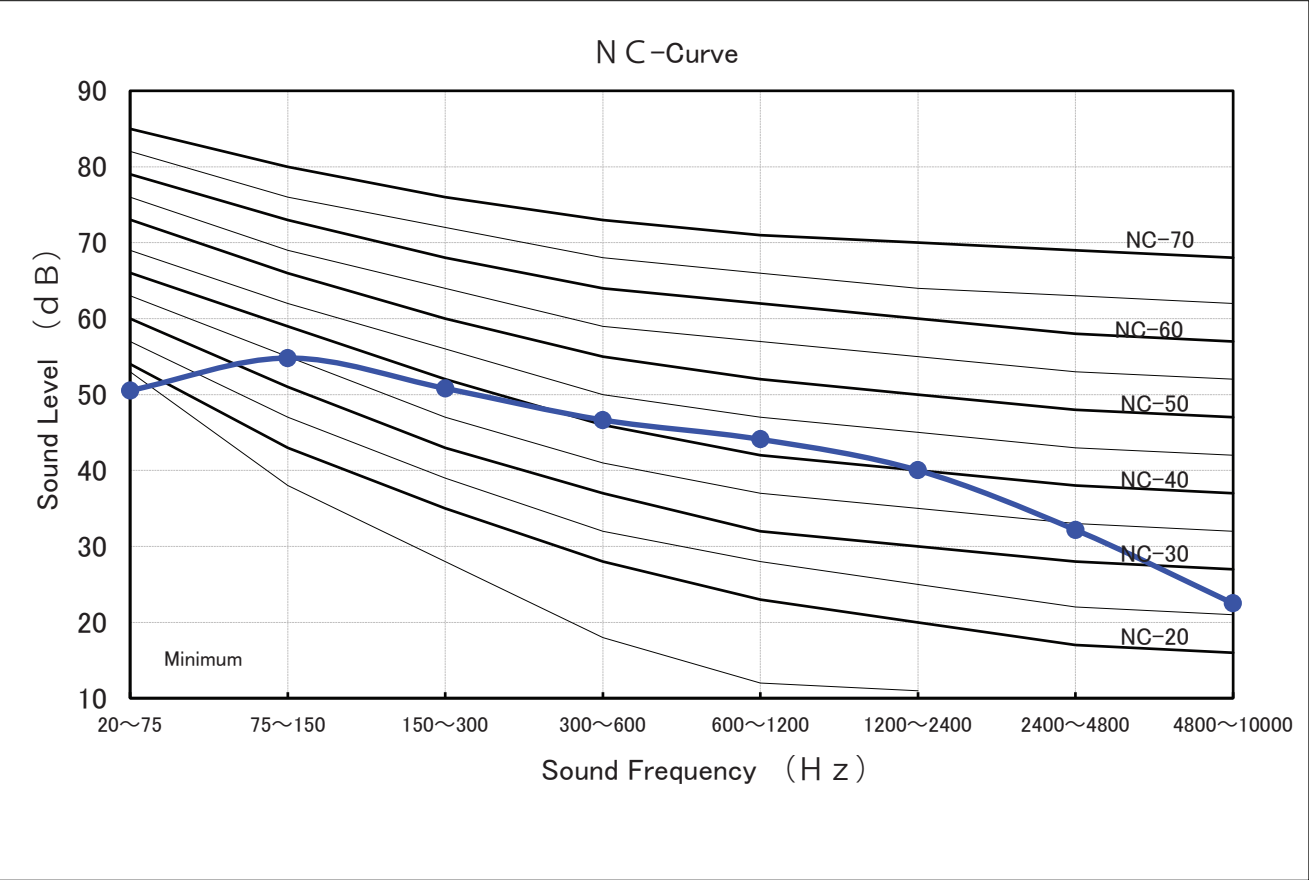


		Pressure		Pipe surface temperature °F(°C)				Comp. Hz	Temp. °F(°C)	
		PSI (Mpa)								
		Pd	Ps	TD	TS	TC	TE		In	Out
Cooling	Standard	372(2.569)	121(0.840)	172(78)	46(8)	50(10)	100(38)	69	80(27)	95(35)
	Over load	454(3.132)	126(0.875)	177(81)	55(13)	57(14)	131(55)	52	89(32)	115(46)
	Low temp.	274(1.895)	91(0.631)	144(46)	41(5)	37(3)	51(11)	33	64(18)	-13(-25)
Heating	Standard	441(3.047)	100(0.691)	176(80)	32(0)	123(51)	37(3)	69	68(20)	44(7)
	Over load	401(2.769)	147(1.017)	149(65)	59(15)	120(49)	60(16)	41	80(27)	75(24)
	Low temp.	237(1.636)	48(0.331)	183(84)	-18(-28)	71(22)	-14(-26)	99	59(15)	-13(-25)

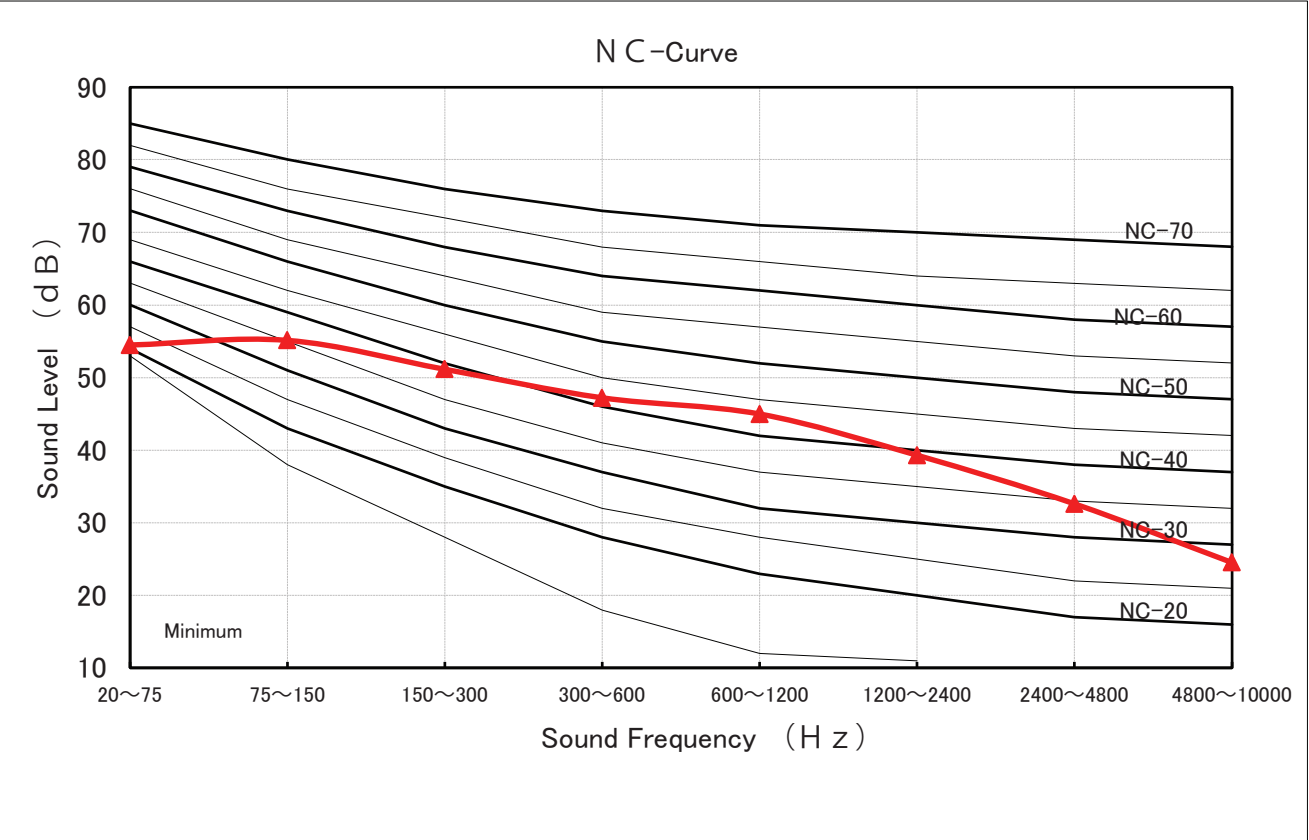
3-5. Sound characteristics (NC curve)

RAV-BP121AT2P-UL (Rate Hz)

Cooling mode

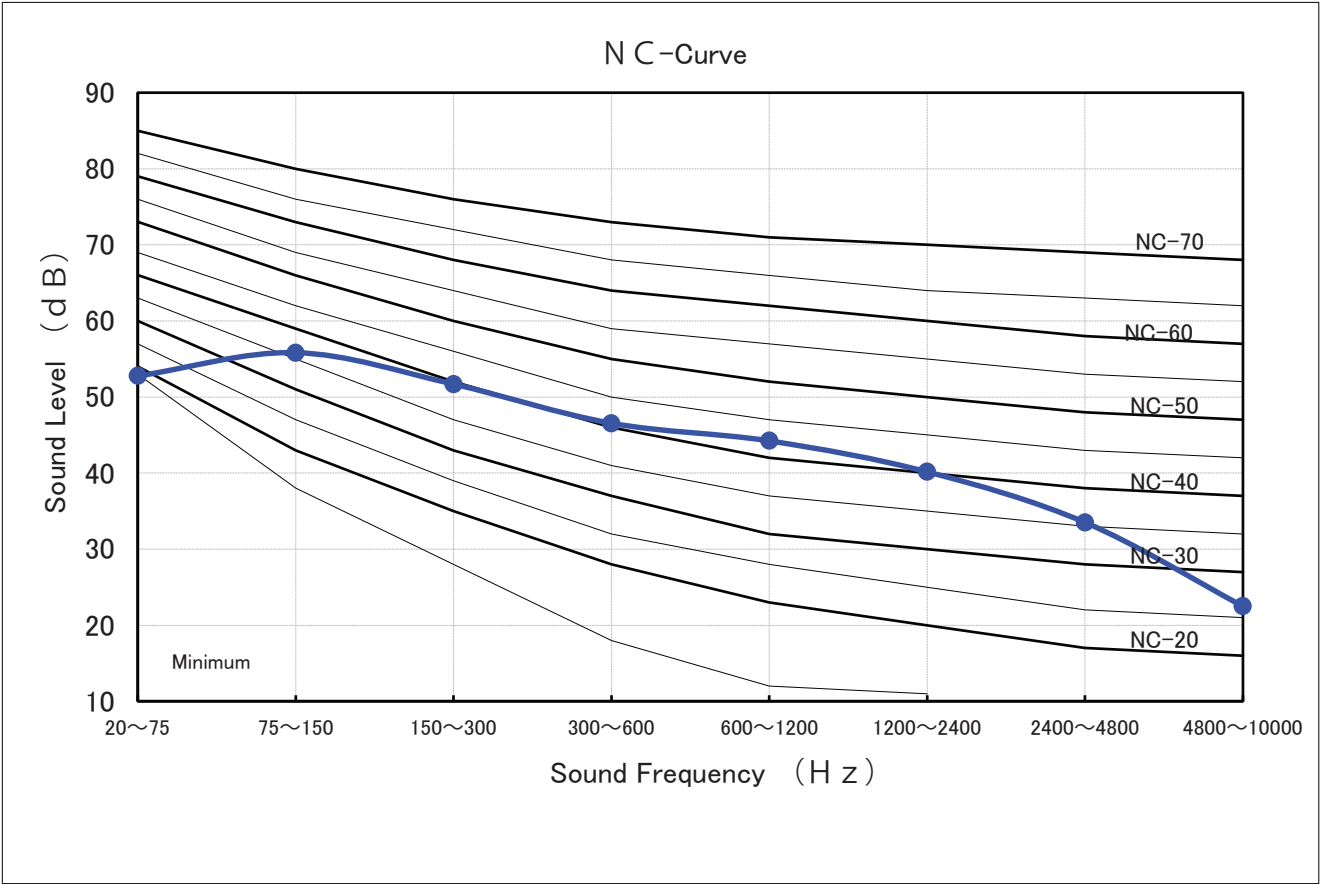


Heating mode

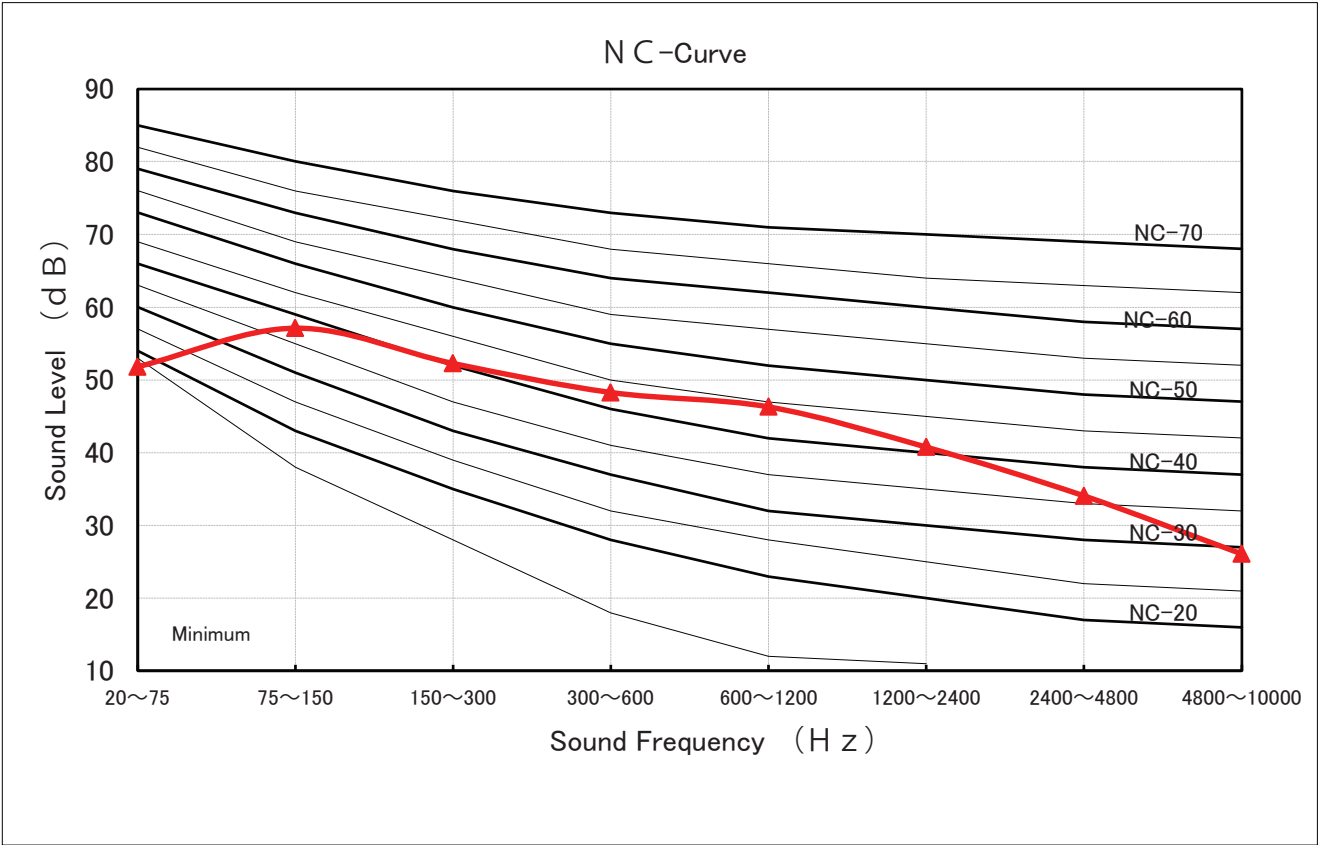


RAV-BP181AT2P-UL (Rate Hz)

Cooling mode

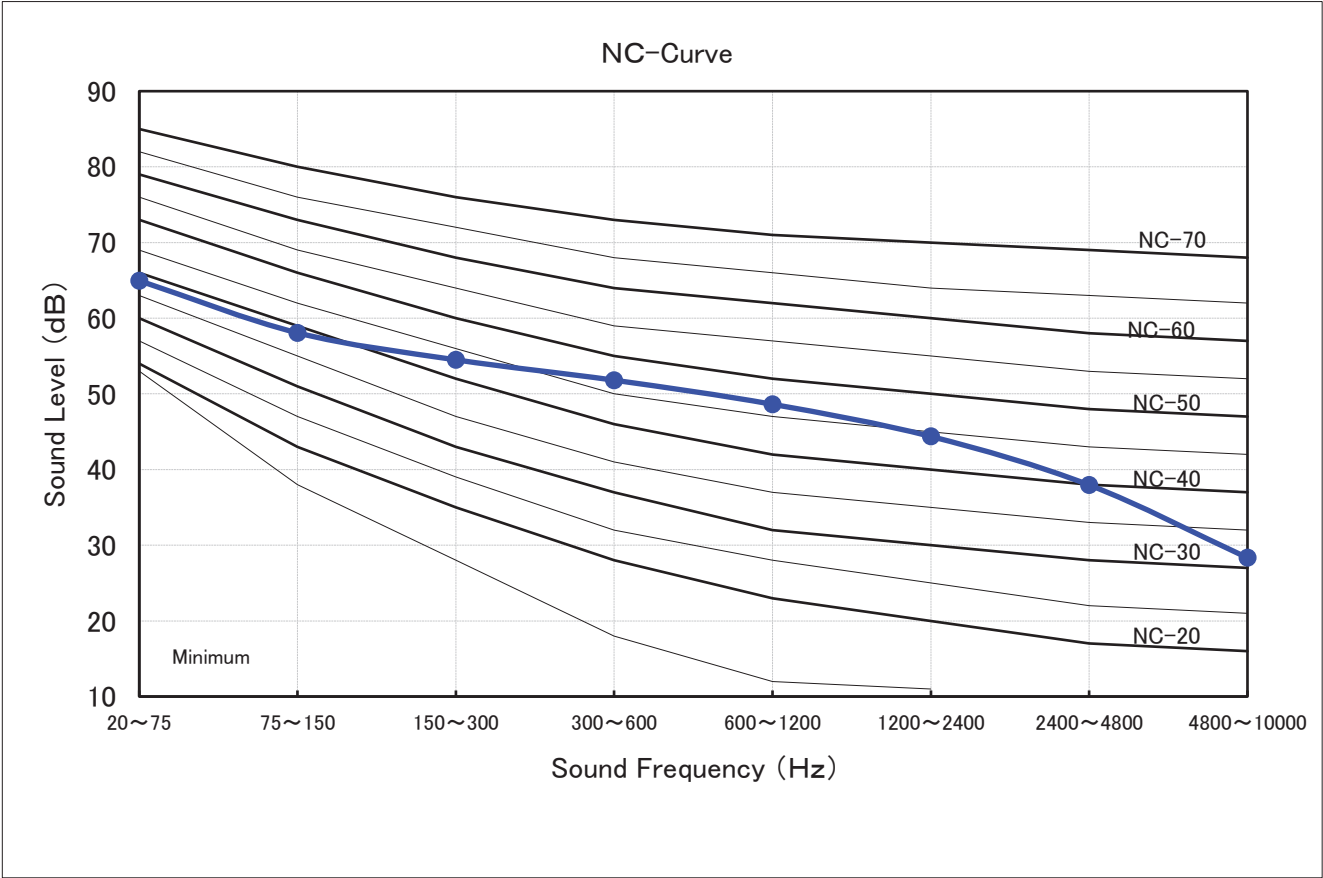


Heating mode

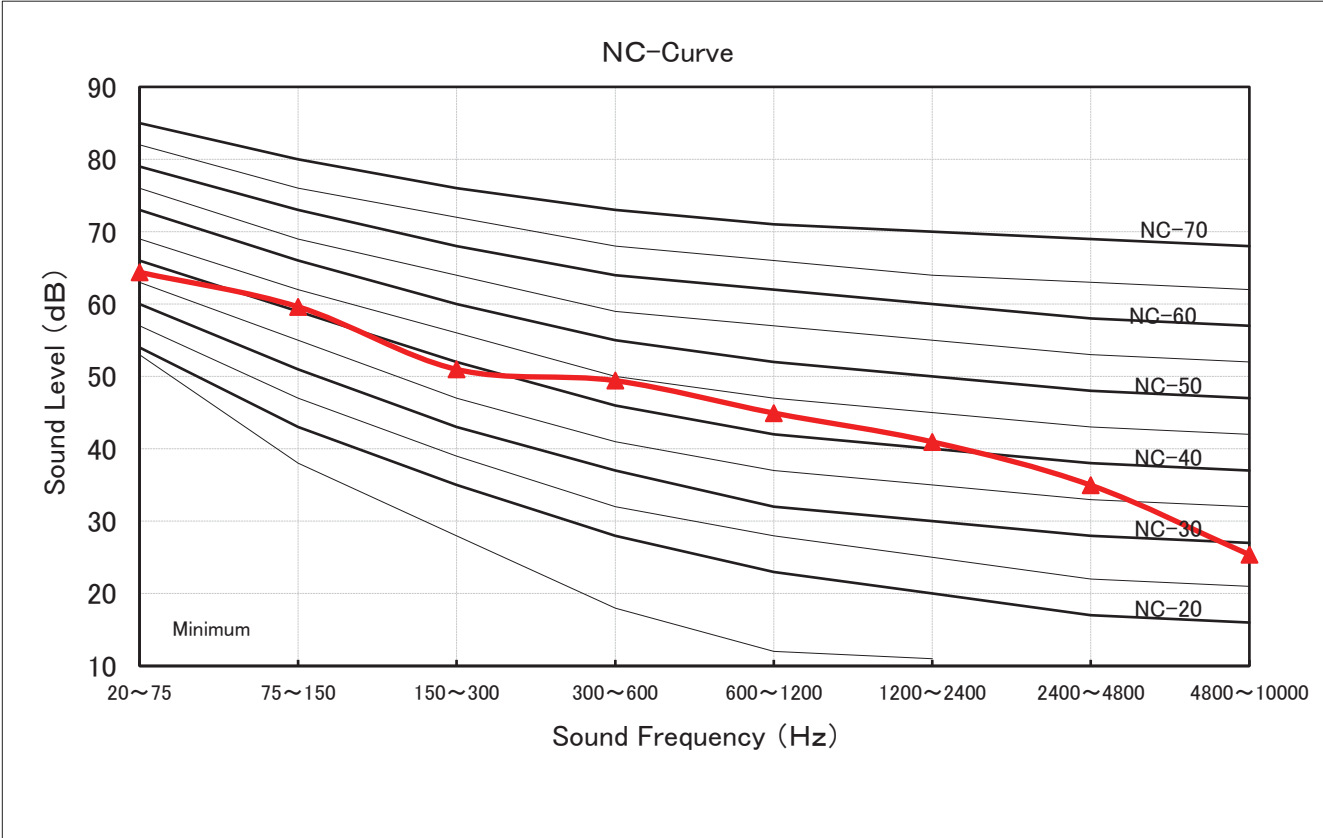


RAV-BP301AT2P-UL (Rate Hz)

Cooling

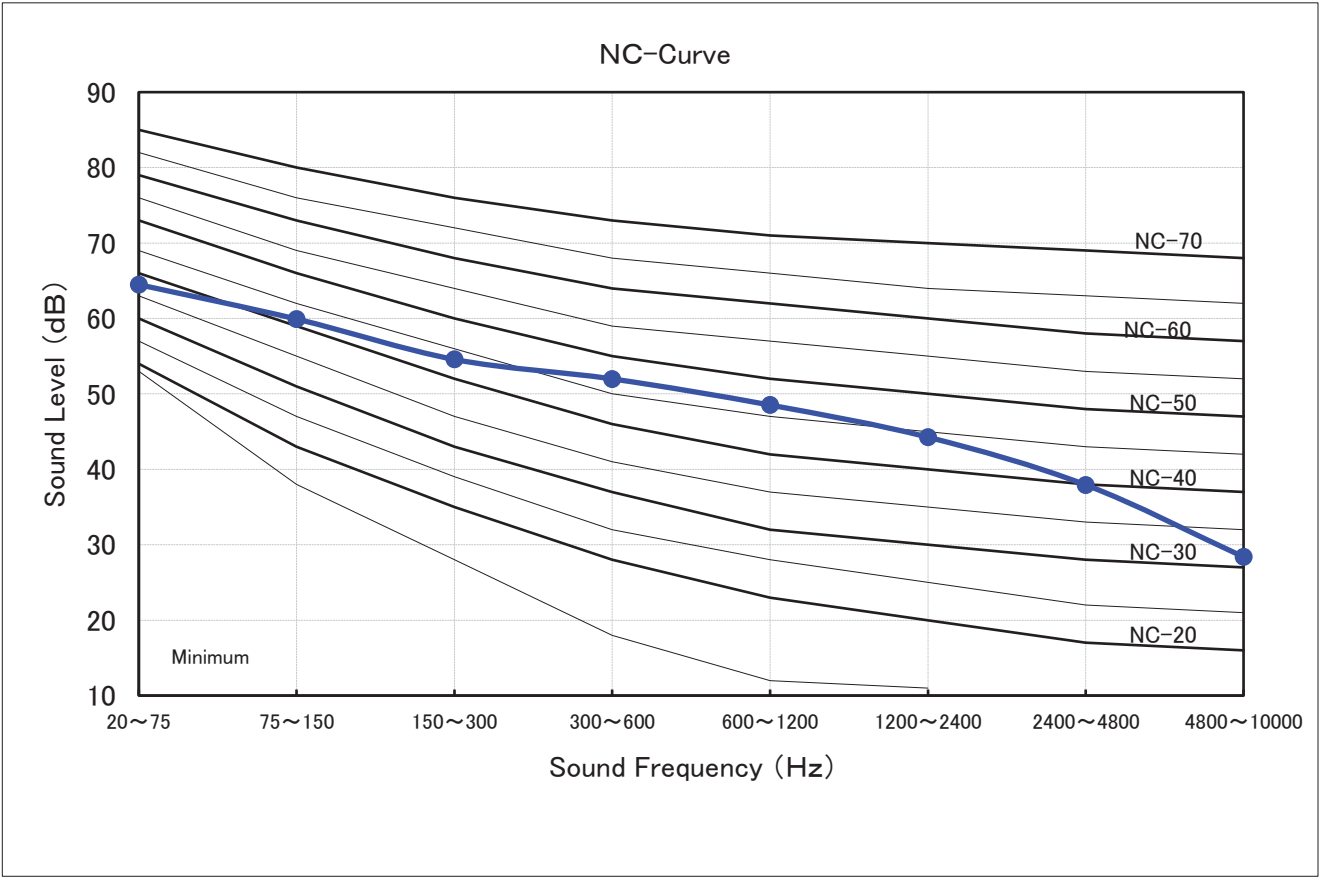


Heating

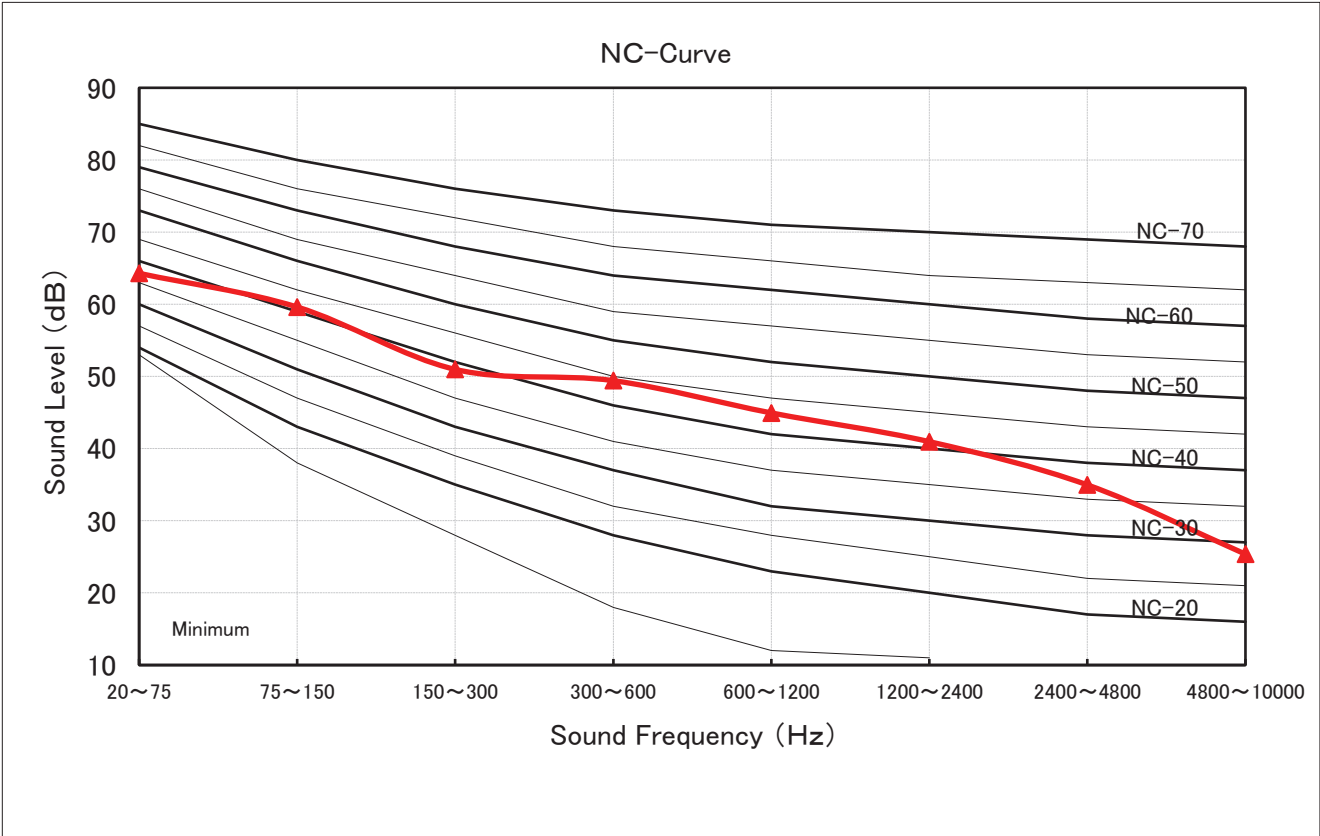


RAV-BP361AT2P-UL (Rate Hz)

Cooling

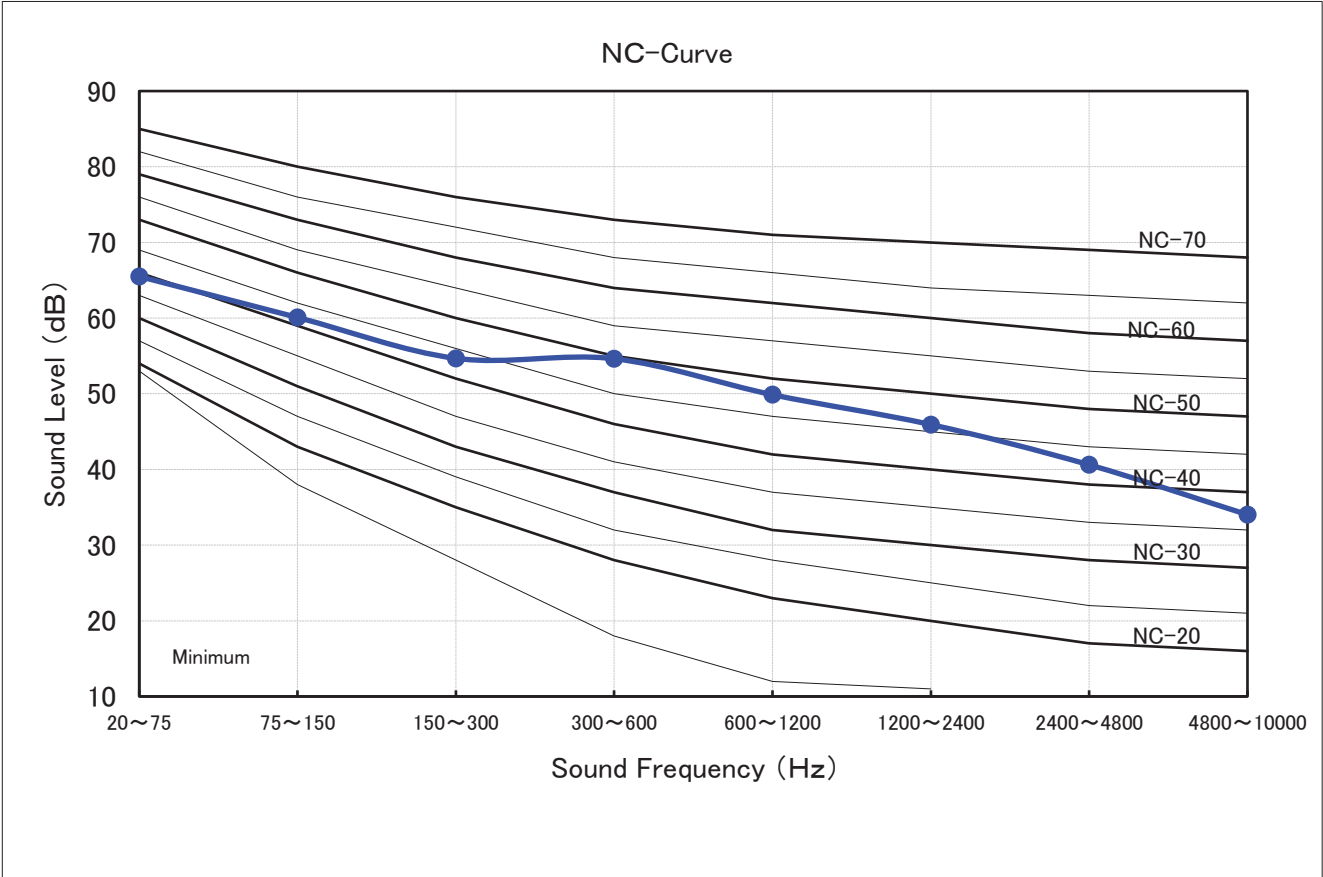


Heating

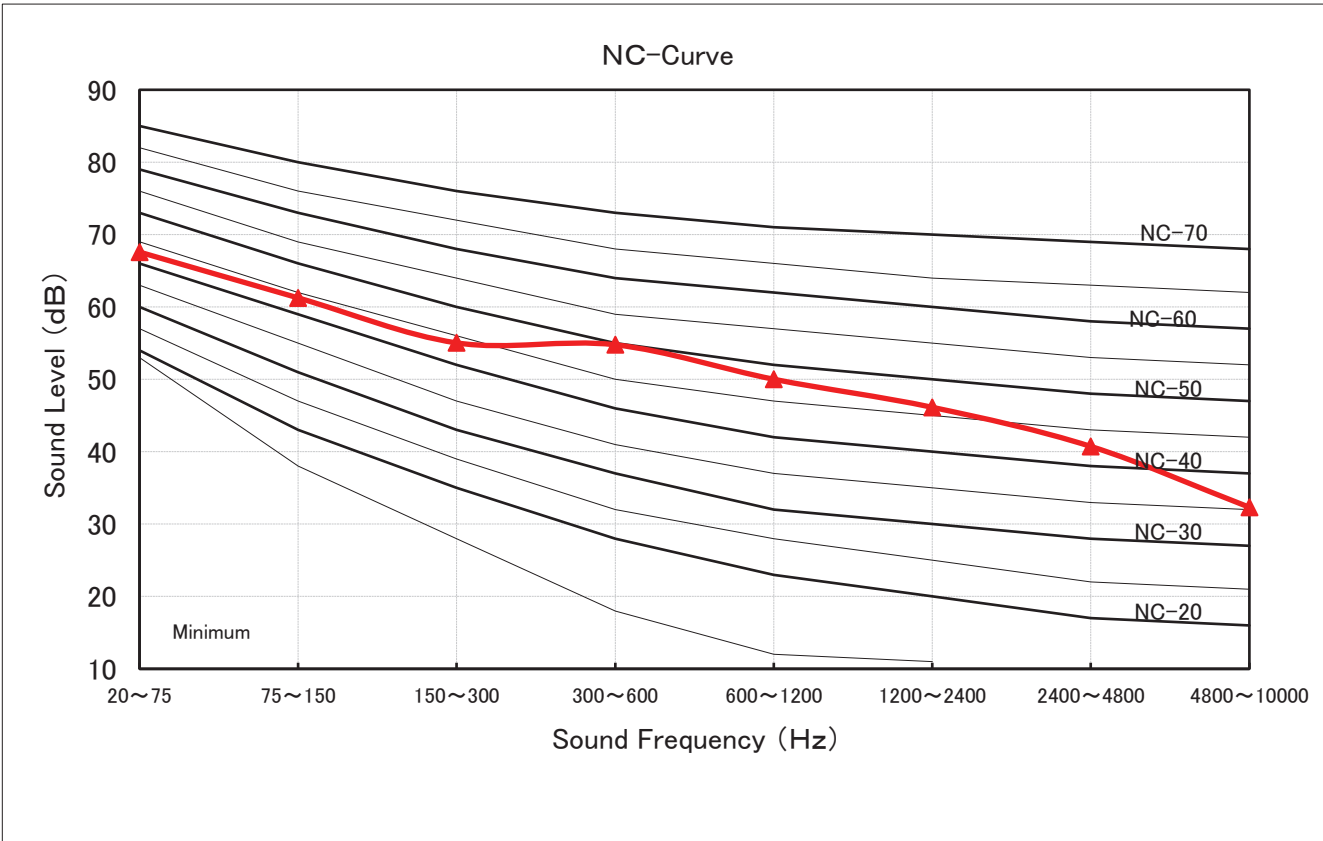


RAV-BP421AT2P-UL (Rate Hz)

Cooling

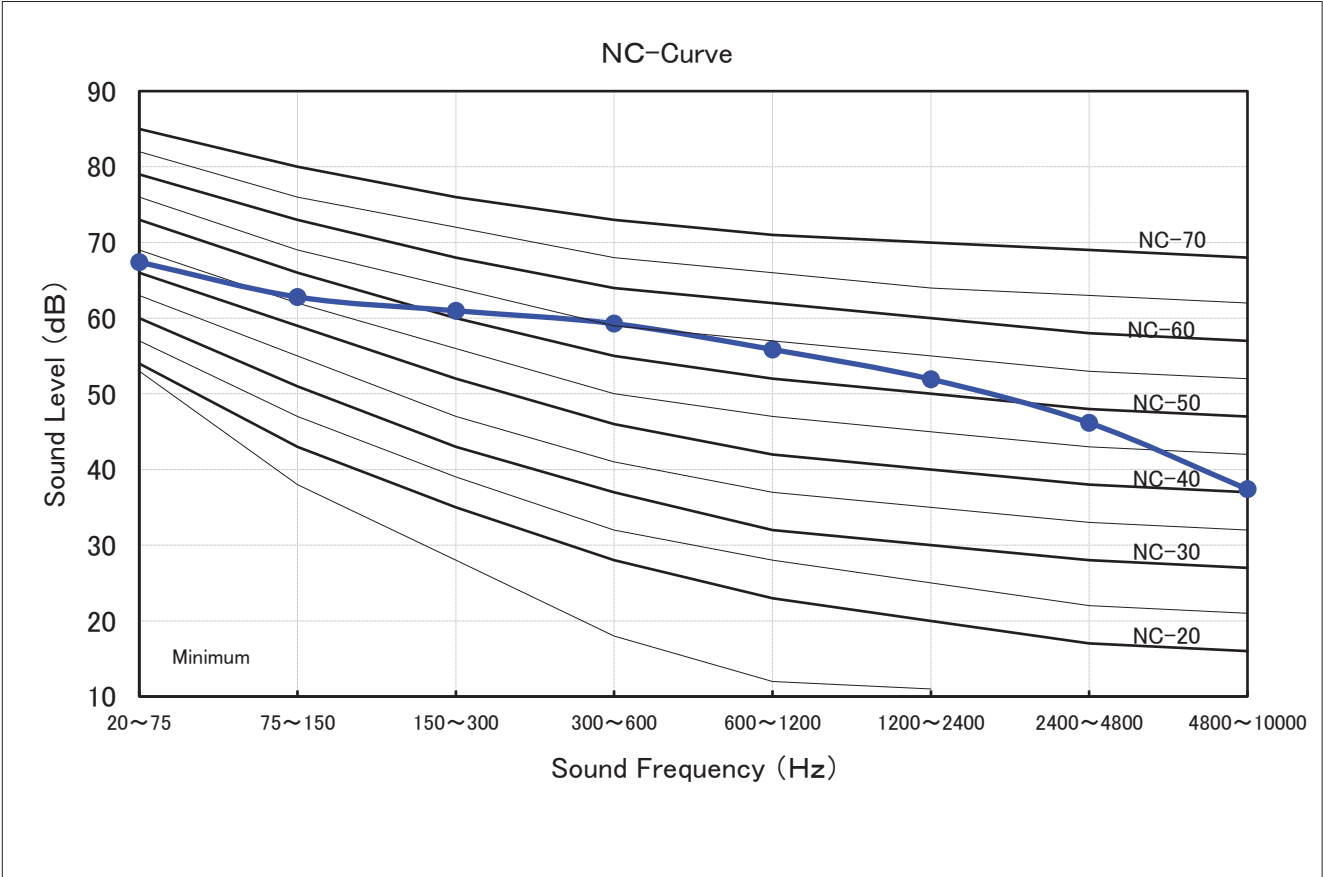


Heating

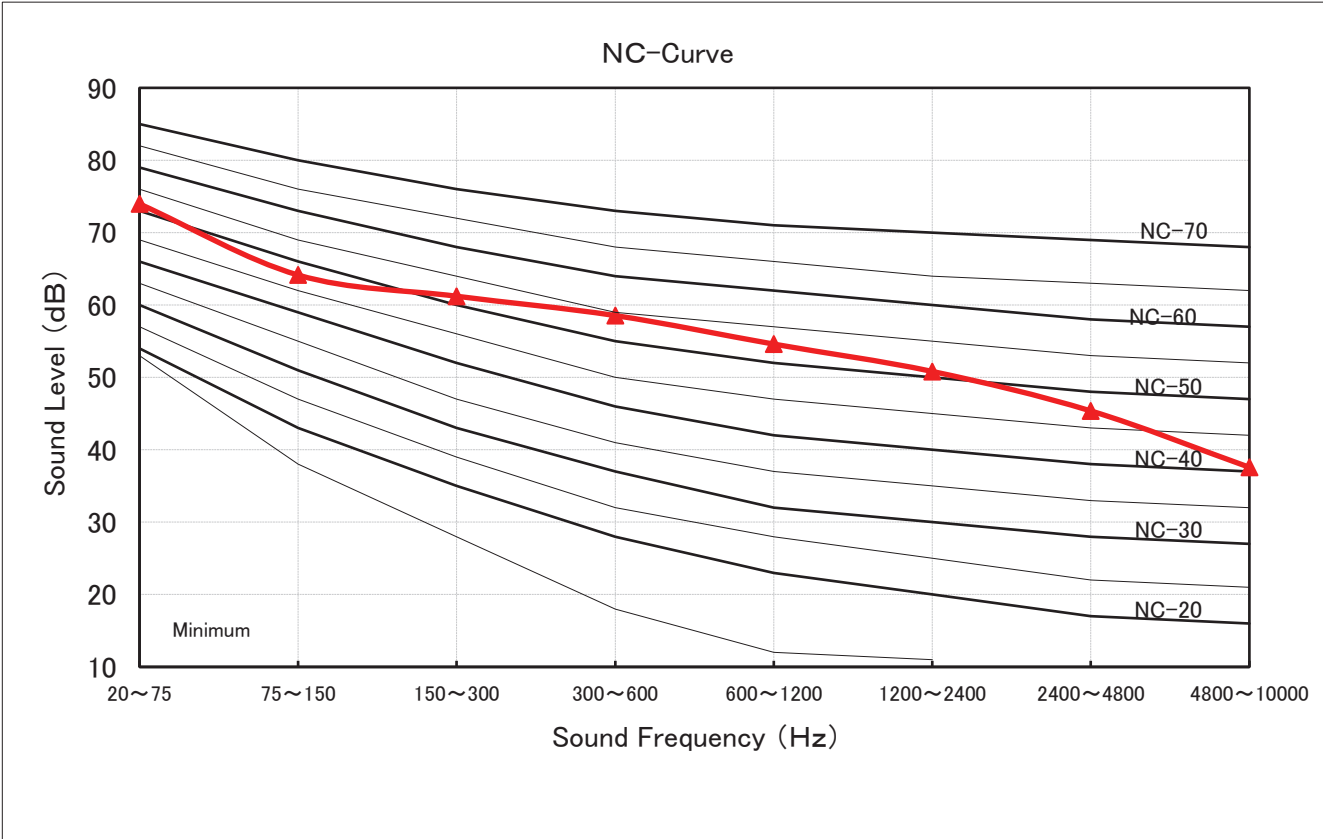


RAV-BP481AT2P-UL (Rate Hz)

Cooling



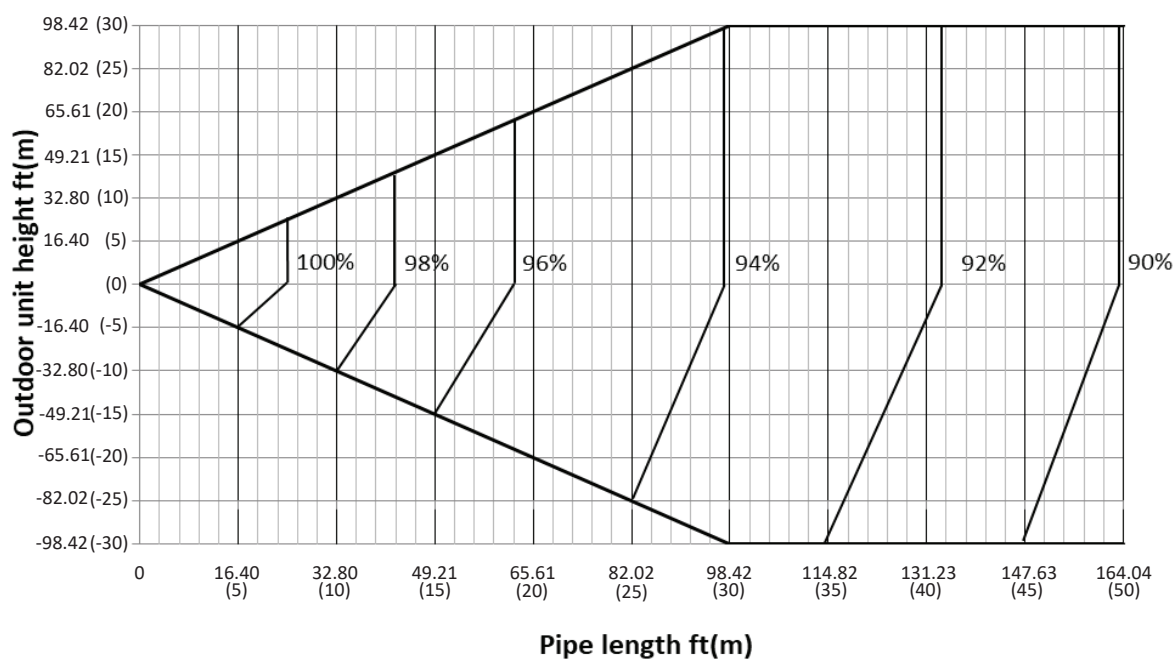
Heating



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

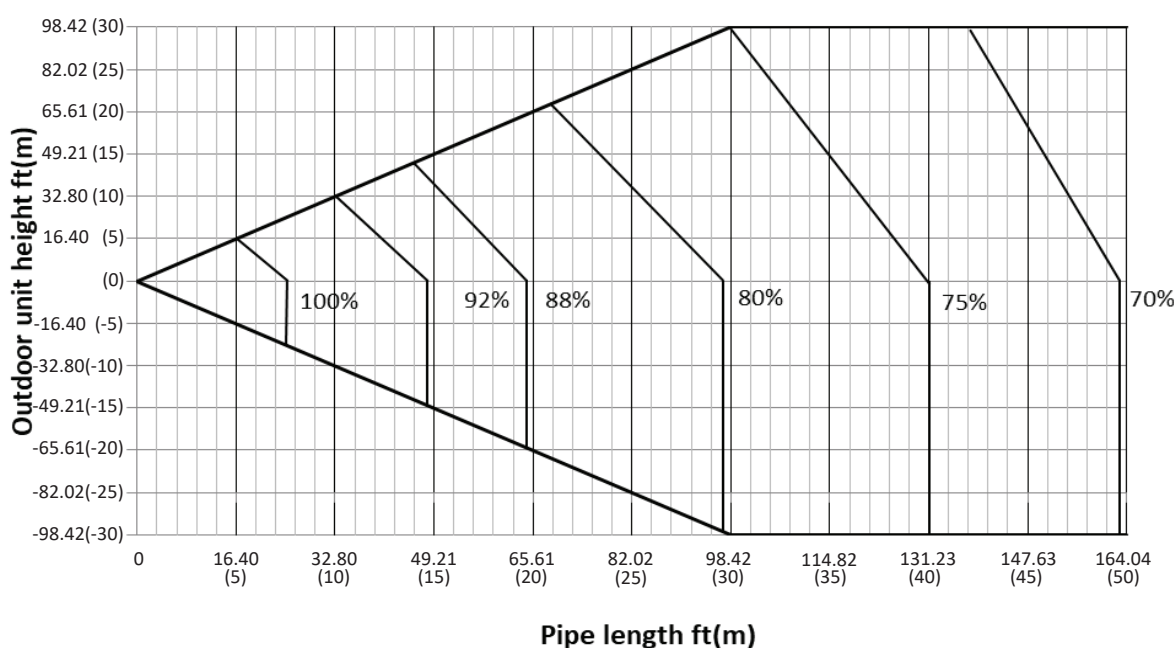
RAV-BP*_1AT2P-UL (*12 / 18)

Cooling capacity



*164'1"(50) [68'9"(21) to 164'1"(50) , need to extra charge 0.22oz/ft

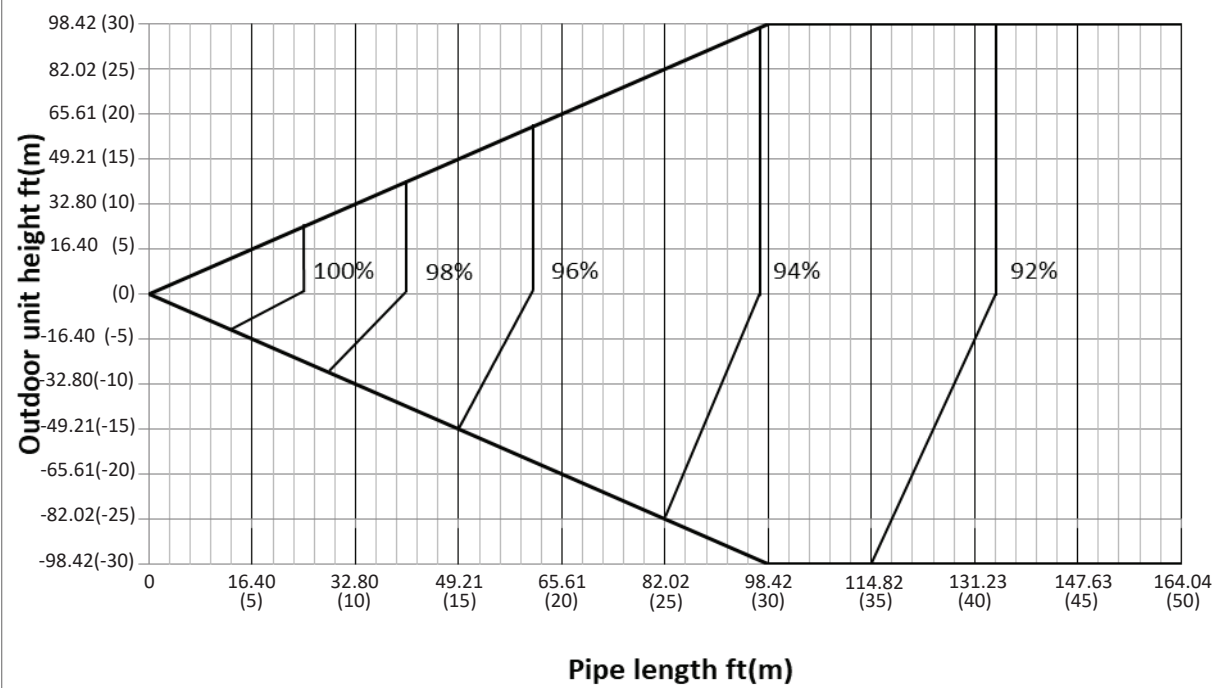
Heating capacity



*164'1"(50) [68'9"(21) to 164'1"(50) , need to extra charge 0.22oz/ft

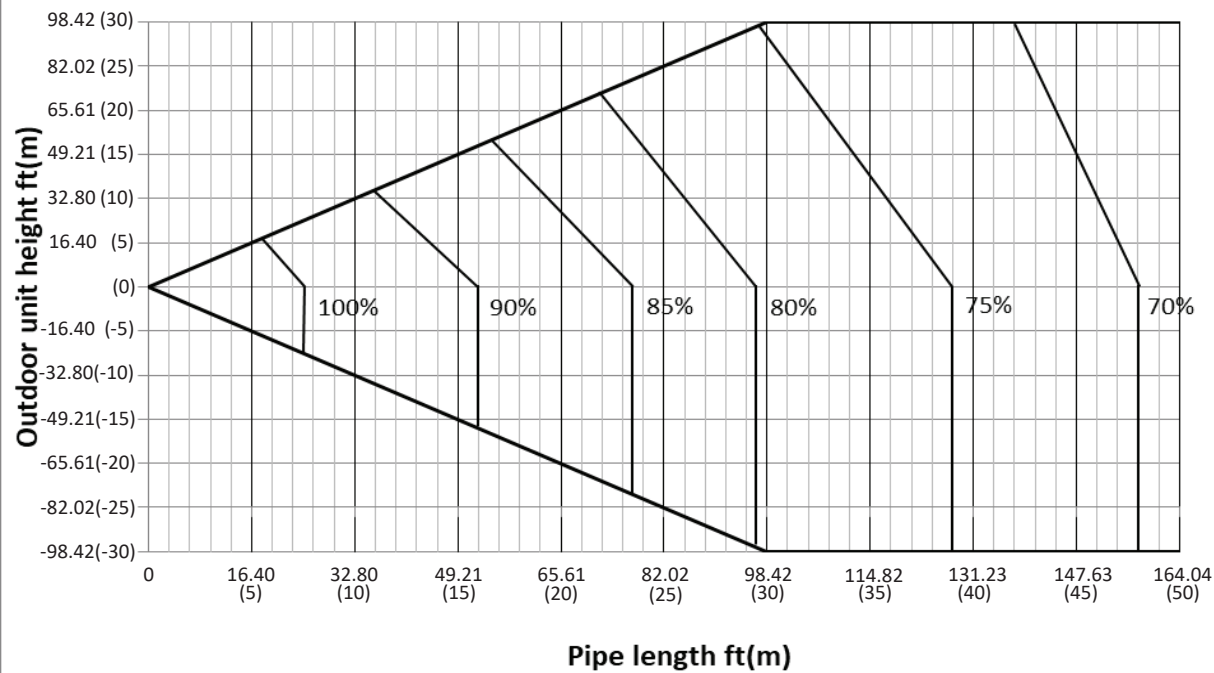
RAV-BP241AT2P-UL

Cooling capacity



*164'1"(50) [101'8"(31) to 164'1"(50) , need to extra charge 0.376oz/ft

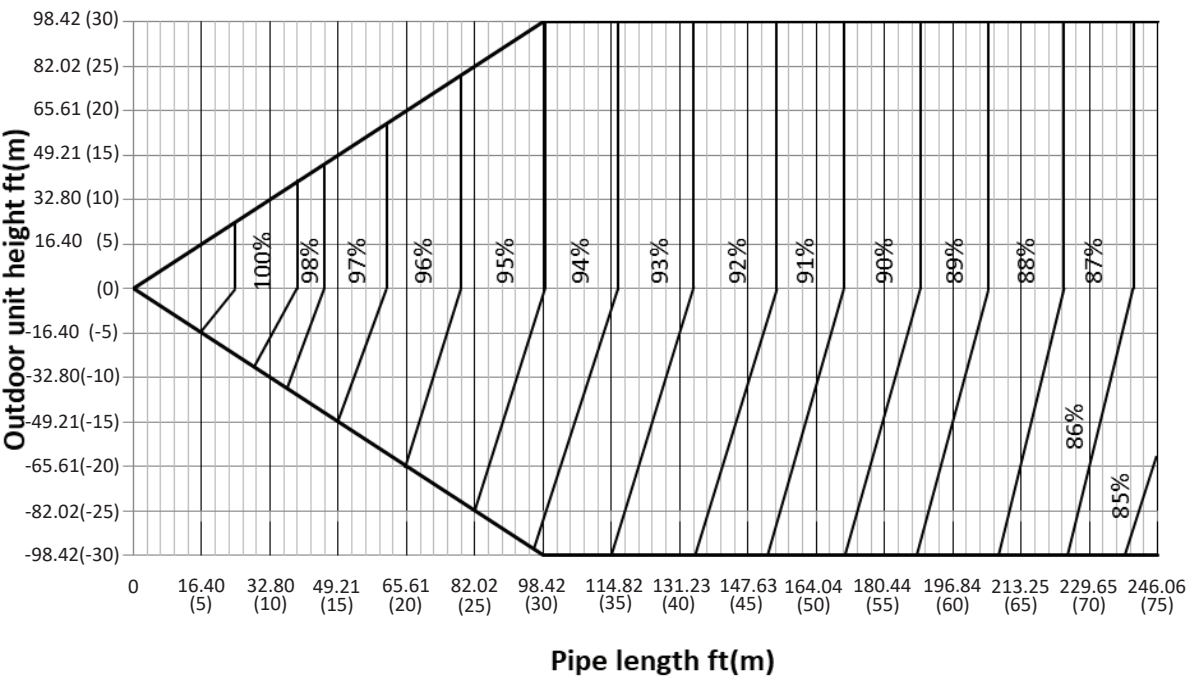
Heating capacity



*164'1"(50) [101'8"(31) to 164'1"(50) , need to extra charge 0.376oz/ft

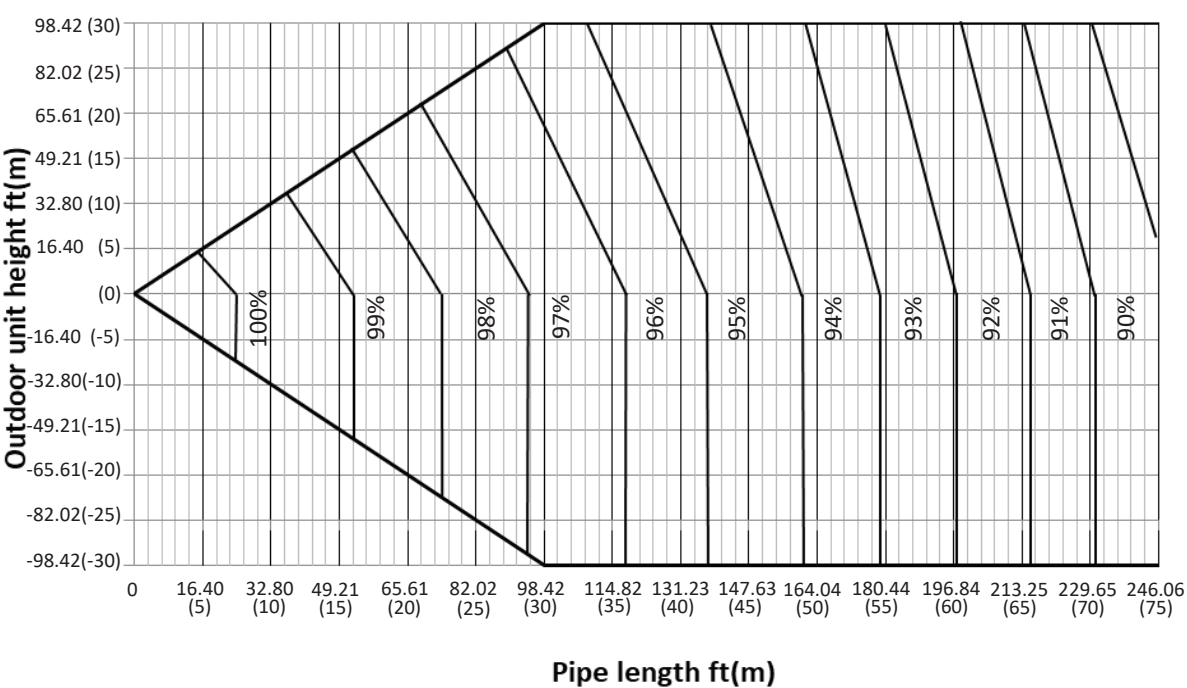
RAV-BP* __1AT2P-UL (*30 / 36 / 42 / 48)

Cooling capacity



*164'1"(50) [101'8"(31) to 246'1"(75) , need to extra charge 0.376oz/ft

Heating capacity



*164'1"(50) [101'8"(31) to 246'1"(75) , need to extra charge 0.376oz/ft

4. Controller

4-1. Wired remote controller



RBC-AWSU52-UL



RBC-ASCU11-UL

CARRIER AIR CONDITIONING (THAILAND) CO.,LTD.

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