

Super Digital Inverter 3 Phase 5/6HP(MEPS) ***Engineering Data Book***

Outdoor Unit

RAV-SP1404AT8-A

RAV-SP1604AT8-A

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1 Specifications

1-1. Indoor Unit

1-1-1. Indoor unit (4-way Cassette Type)

<Single type>

Model		Indoor unit		RAV-SM1404UT-E	RAV-SM1604UT-E		
		Outdoor unit		RAV-SP1404AT8-A	RAV-SP1604AT8-A		
Cooling capacity				(kW)	12.5(2.6-14.0)	14.0(2.6-16.0)	
Heating capacity				(kW)	14.0(2.4-18.0)	16.0(2.4-19.0)	
Power supply		Indoor unit		1 phase 220-240V 50Hz			
		Outdoor unit		3 phase 380-415V 50Hz			
Electrical characteristics	Cooling	Running current		(A)	6.03 - 5.52	7.55 - 6.91	
		Power consumption		(kW)	3.46	4.49	
		Power factor		(%)	87	90	
		EER			3.61	3.12	
	Heating	Running current		(A)	5.97 - 5.47	7.26 - 6.65	
		Power consumption		(kW)	3.42	4.30	
		Power factor		(%)	87	90	
		COP			4.09	3.72	
			Maximum current	(A)	14.7	14.7	
Indoor unit							
Appearance		Main unit		Zinc hot dipping steel plate			
		Ceiling panel (Sold separately)	Model	RBC-U31PG(W,WS)-E , RBC-U31PGS(W,WS)-E			
			Panel color	W: Moon-white(2.5GY 9.0/0.5), WS: Stripe-white(2.5GY 9.0/0.5,(Gray:8B 3/0.3))			
Outer dimension		Main unit		Height	(mm)	319	319
				Width	(mm)	840	840
				Depth	(mm)	840	840
		Ceiling panel (Sold separately)		Height	(mm)	30	30
				Width	(mm)	950	950
				Depth	(mm)	950	950
Total weight		Main unit		(kg)	24	24	
		Ceiling panel (Sold separately)		(kg)	4.2	4.2	
Heat exchanger				Finned tube			
Fan unit		Fan		Turbo fan			
		Standard air flow	H/M/L	(m3/min)	35.0/24.0/20.5	35.5/25.0/21.0	
		Motor		(W)	72	72	
Sound pressure level			H/M/L	(dB·A)	44/38/34	45/40/36	
Sound power level			H/M/L	(dB·A)	59/53/49	60/55/51	
Connecting pipe		Drain port		VP25			
Outdoor unit							
Outer dimension		Standard length		(m)	7.5	7.5	
		Min. length		(m)	3	3	
		Max. total length		(m)	75	75	
		Over 30m		40g/m (31m to 75m)			
		Height difference	Outdoor lower	(m)	30	30	
Outdoor high	(m)		30	30			
Connecting pipe		Gas side		(mm)	15.9	15.9	
		Liquid side		(mm)	9.5	9.5	
Fan unit		Fan		Propeller fan			
		Standard air flow high		(m3/min)	103	103	
		Motor		(W)	100 + 100	100 + 100	
Sound pressure level		Cooling / Heating		(dB·A)	51/52	51/53	
Sound power level		Cooling / Heating		(dB·A)	68/69	68/70	

Measured condition : Cooling capacity test condition Inside: 27°C (Db) / 19°C (Wb) Outside: 35°C (Db) / 24°C (Wb)

Heating capacity test condition Inside: 20°C (Db) Outside: 7°C (Db) / 6°C (Wb)

Piping length: 7.5m

1-1-2. Indoor unit (Duct Type)

<Single type>

Model		Indoor unit		RAV-SM1406BT-E
		Outdoor unit		RAV-SP1404AT8-A
Cooling capacity				(kW) 12.5 (2.6 - 14.0)
Heating capacity				(kW) 14.0 (2.4 - 18.0)
Power supply		Indoor unit		1 phase 220-240V 50Hz
		Outdoor unit		3 phase 380-415V 50Hz
Electrical characteristics	Cooling	Running current		(A) 6.74-6.17
		Power consumption		(kW) 3.86
		Power factor		(%) 87
		EER		3.24
	Heating	Running current		(A) 6.40-5.86
		Power consumption		(kW) 3.67
		Power factor		(%) 87
		COP		3.81
			Maximum current	(A) 16.5
Indoor unit				
Appearance		Main unit		Zinc hot dipping steel plate
Outer dimension		Main unit	Height	(mm) 275
			Width	(mm) 1,400
			Depth	(mm) 750
Total weight		Main unit		(kg) 40
Heat exchanger				Finned tube
Fan unit		Fan		Centrifugal fan
		Standard air flow		H/M/L (m3/min) 35.0/27.5/21.0
		Motor		(W) 250
		External static pressure	Standard (at shipment)	(Pa) 50
			Set up for tap exchange	(Pa) 50(120-30)
Sound pressure level			H/M/L (dB·A) 40/36/33	
Sound power level			H/M/L (dB·A) 63/58/54	
Connecting pipe		Drain port		VP25
Outdoor unit				
Outer dimension		Standard length		(m) 7.5
		Min. length		(m) 3
		Max. total length		(m) 75
		Over 30m		40g/m (31m to 75m)
		Hight difference	Outdoor lower	(m) 30
			Outdoor high	(m) 30
Connecting pipe		Gas side		(mm) 15.9
		Liquid side		(mm) 9.5
Fan unit		Fan		Propeller fan
		Standard air flow high		(m3/min) 103
		Motor		(W) 100 + 100
Sound pressure level		Cooling / Heating		(dB·A) 51/52
Sound power level		Cooling / Heating		(dB·A) 68/69

Measured condition : Cooling capacity test condition Inside: 27°C (Db) / 19°C (Wb) Outside: 35°C (Db) / 24°C (Wb)

Heating capacity test condition Inside: 20°C (Db) Outside: 7°C (Db) / 6°C (Wb)

Piping length: 7.5m

1-1-3. Indoor unit (Ceiling Type)

<Single type>

Model		Indoor unit		RAV-SM1404CT-E		
		Outdoor unit		RAV-SP1404AT8-A		
Cooling capacity				(kW)	12.5(2.6-14.0)	
Heating capacity				(kW)	14.0(2.4-18.0)	
Power supply		Indoor unit		1 phase 220-240V 50Hz		
		Outdoor unit		3 phase 380-415V 50Hz		
Electrical characteristics	Cooling	Running current		(A)	6.67 - 6.11	
		Power consumption		(kW)	3.83	
		Power factor		(%)	87	
		EER		(W/W)	3.26	
	Heating	Running current		(A)	6.46 - 5.92	
		Power consumption		(kW)	3.70	
		Power factor		(%)	87	
		COP		(W/W)	3.78	
			Maximum current		(A)	15.2
Indoor unit						
Appearance		Main unit			Shine white	
Outer dimension		Main unit		Height	(mm)	210
				Width	(mm)	1595
				Depth	(mm)	680
Total weight		Main unit			(kg)	33
Heat exchanger				Finned tube		
Fan unit		Fan			Centrifugal fan	
		Standard air flow		H/M/L	(m3/min)	30.0 / 26.0 / 23.1
		Motor			(W)	120
Sound pressure level			H/M/L	(dB·A)	43 / 40 / 37	
Sound power level			H/M/L	(dB·A)	58 / 55 / 52	
Connecting pipe		Drain port			VP20	
Outdoor unit						
Outer dimension		Standard length			(m)	7.5
		Min. length			(m)	3
		Max. total length			(m)	75
		Over 30m			40g/m (31m to 75m)	
		Hight difference	Outdoor lower		(m)	30
			Outdoor high		(m)	30
Connecting pipe		Gas side			(mm)	15.9
		Liquid side			(mm)	9.5
Fan unit		Fan			Propeller fan	
		Standard air flow high			(m3/min)	103
		Motor			(W)	100 + 100
Sound pressure level		Cooling / Heating			(dB·A)	51/52
Sound power level		Cooling / Heating			(dB·A)	68/69

Measured condition : Cooling capacity test condition Inside: 27°C (Db) / 19°C (Wb) Outside: 35°C (Db) / 24°C (Wb)
Heating capacity test condition Inside: 20°C (Db) Outside: 7°C (Db) / 6°C (Wb)
Piping length: 7.5m

1-1-4. Indoor unit (High Static Duct Type)

<Single type>

Model		Indoor unit		RAV-SM1603DT-A		
		Outdoor unit		RAV-SP1604AT8-A		
Cooling capacity				(kW)	13.6(3.3-16.0)	
Heating capacity				(kW)	16.0(4.2-19.0)	
Power supply		Indoor unit		1 phase 240V 50Hz		
		Outdoor unit		3 phase 380-415V 50Hz		
Electrical characteristics	Cooling	Running current		(A)	7.71	
		Power consumption		(kW)	4.12	
		Power factor		(%)	90	
		EER			2.85	
	Heating	Running current		(A)	6.85	
		Power consumption		(kW)	4.43	
		Power factor		(%)	90	
		COP			3.61	
		Maximum current		(A)	16.3	
Indoor unit						
Appearance		Main unit		Zinc hot dipping steel plate		
Outer dimension		Main unit		Height	(mm)	380
				Width	(mm)	1050
				Depth	(mm)	600
Total weight		Main unit		(kg)	57	
Heat exchanger				Finned tube		
Fan unit		Fan		Centrifugal fan		
		Standard air flow	at 100pa/HH tap	(m3/min)	58.0	
		Motor		(W)	600	
		External static pressure	Standard(at HH tap)	(Pa)	100	
			Range at HH tap	(Pa)	50 - 250	
Sound pressure level				H	(dB·A)	50
Sound power level				H	(dB·A)	65
Connecting pipe		Drain port				
Outdoor unit						
Outer dimension		Standard length		(m)	7.5	
		Min. length		(m)	3	
		Max. total length		(m)	75	
		Over 30m		40g/m (31m to 75m)		
		Hight difference	Outdoor lower	(m)	30	
			Outdoor high	(m)	30	
Connecting pipe		Gas side		(mm)	15.9	
		Liquid side		(mm)	9.5	
Fan unit		Fan		Propeller fan		
		Standard air flow high		(m3/min)	103	
		Motor		(W)	100 + 100	
Sound pressure level		Cooling / Heating		(dB·A)	51/53	
Sound power level		Cooling / Heating		(dB·A)	68/70	

Measured condition : Cooling capacity test condition Inside: 27°C (Db) / 19°C (Wb) Outside: 35°C (Db) / 24°C (Wb)
Heating capacity test condition Inside: 20°C (Db) Outside: 7°C (Db) / 6°C (Wb)
Piping length: 7.5m

1-2. Outdoor Unit

Model	Outdoor unit		RAV-SP	1404AT8-A	1604AT8-A	
Power supply				3 phase 4wired (3N-4pole) 380V - 415V 50Hz (Power exclusive to outdoor required.)		
Compressor	Type		Hermetic compressor			
	Motor		(kW)	3.75	3.75	
	Pole			4	4	
Refrigerant charged			(kg)	3.1	3.1	
Refrigerant control				Pulse motor valve		
Pipe	Standard length		(m)	7.5	7.5	
	Minmum length		(m)	3	3	
	Max. total length		(m)	75	75	
	Additional refrigerant charge under long piping connection			40g/m(31m to 75m)		
	Hight difference	Outdoor lower		(m)	30	30
		Outdoor high		(m)	30	30
Outer dimension	Height		(mm)	1340	1340	
	Width		(mm)	900	900	
	Depth		(mm)	320	320	
Appearance				Silky shade (Muncel 1Y8.5-0.5)		
Total weight			(kg)	95	95	
Heat exchanger				Finned tube		
Connecting pipe	Gas side		(mm)	15.9	15.9	
	Liquid side		(mm)	9.5	9.5	
Fan unit	Fan		Propeller fan			
	Standard air flow		(m3/min)	101	103	
	Motor		(W)	100 + 100	100 + 100	
Sound pressure level	Cooling/Heating		(dB/A)	51/52	51/53	
Sound power level	Cooling/Heating		(dB/A)	68/69	68/70	
Outside air temperature, cooling			(C)	46 to -15C		
Outside air temperature, heating			(C)	15 to -20C		

Measured condition : Cooling capacity test condition Inside: 27°C (Db) / 19°C (Wb) Outside: 35°C (Db) / 24°C (Wb)

Heating capacity test condition Inside: 20°C (Db) Outside: 7°C (Db) / 6°C (Wb)

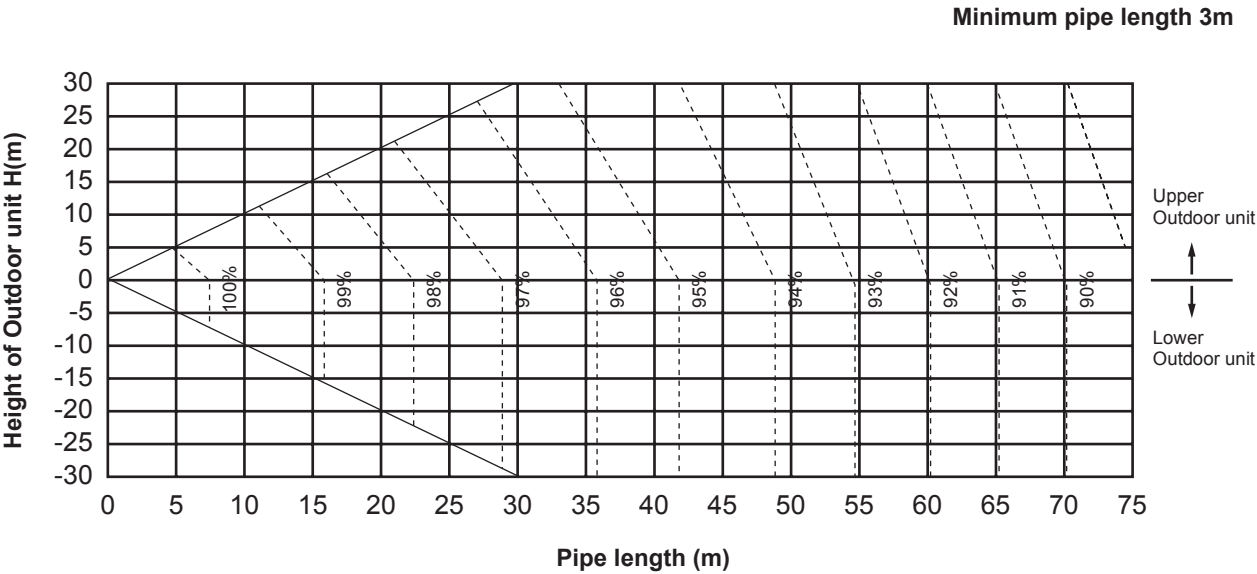
Piping length: 7.5m

2 Pipe Capacity Correction

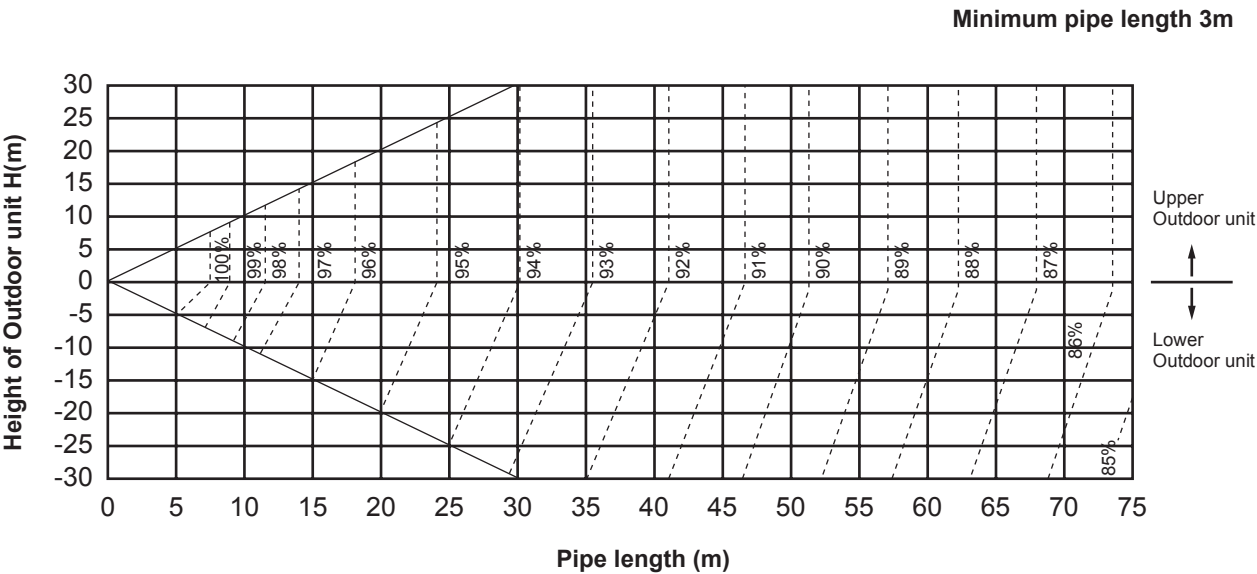
Connecting pipe length and lift difference between indoor units vs. capacity correction value

RAV-SP1404AT8-A
RAV-SP1604AT8-A

Heating

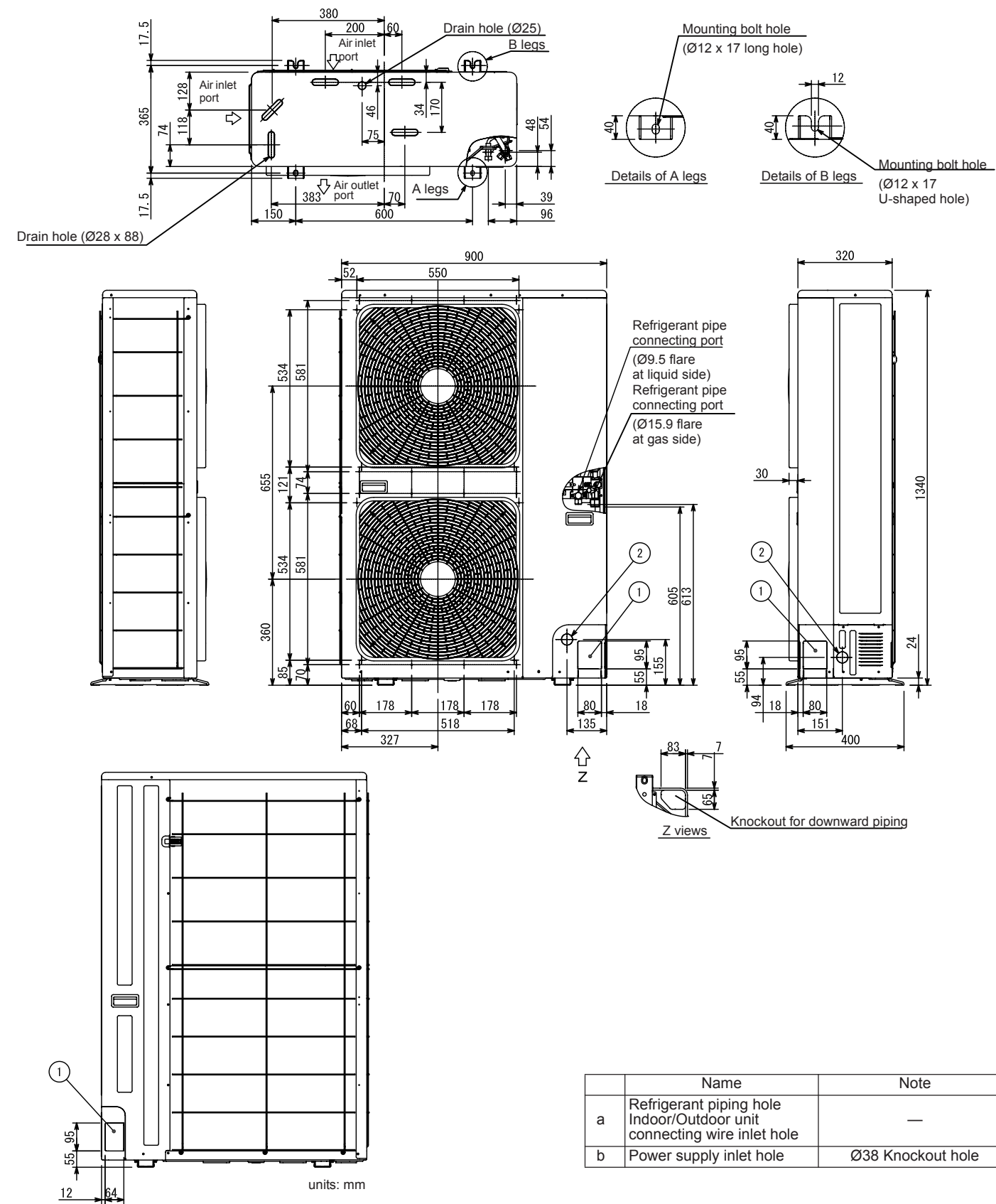


Cooling



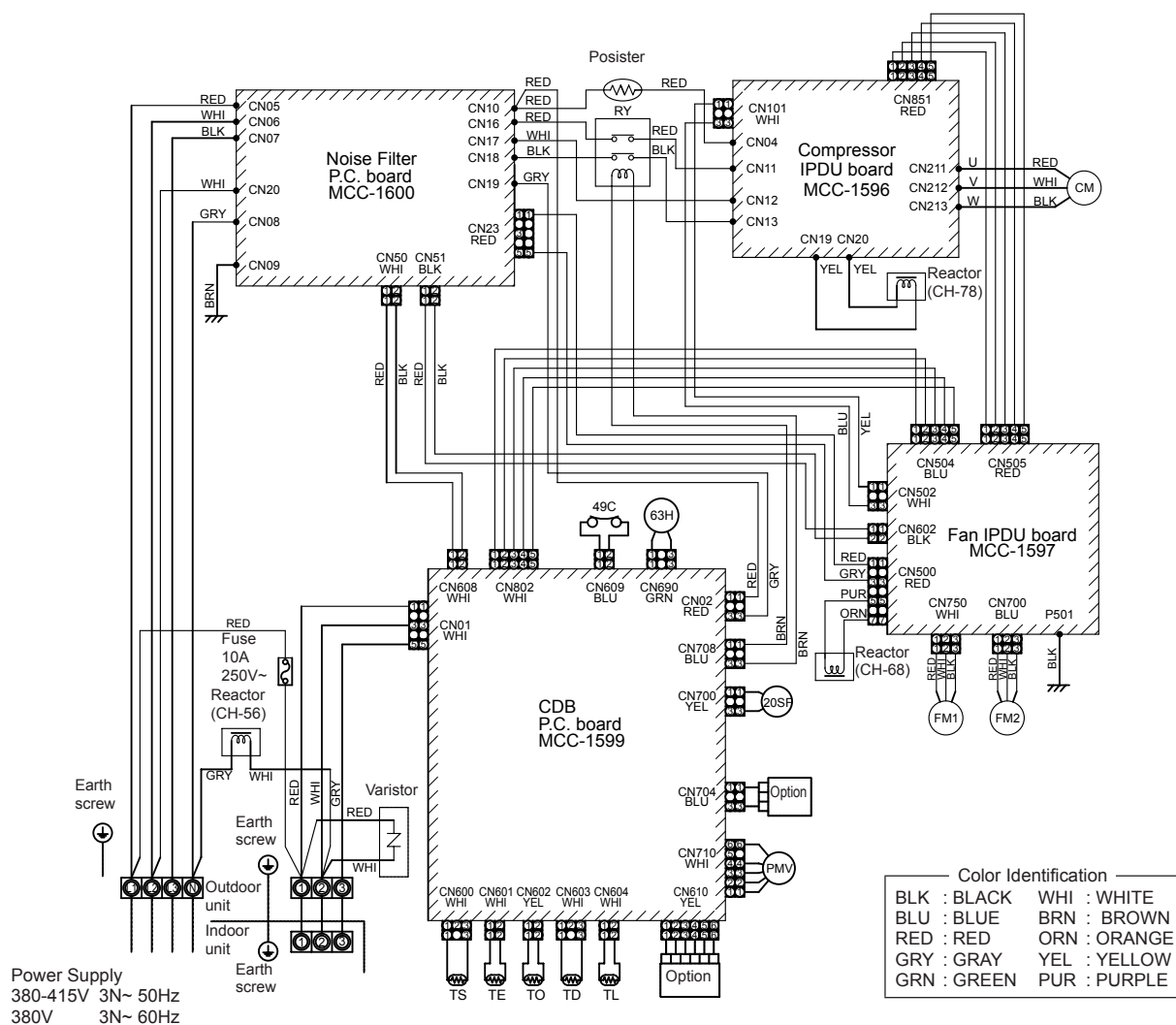
3 Dimensional Drawing

RAV-SP1404AT8-A
RAV-SP1604AT8-A



4 Wiring Diagrams

Model : RAV-SP1404AT8-A, RAV-SP1604AT8-A



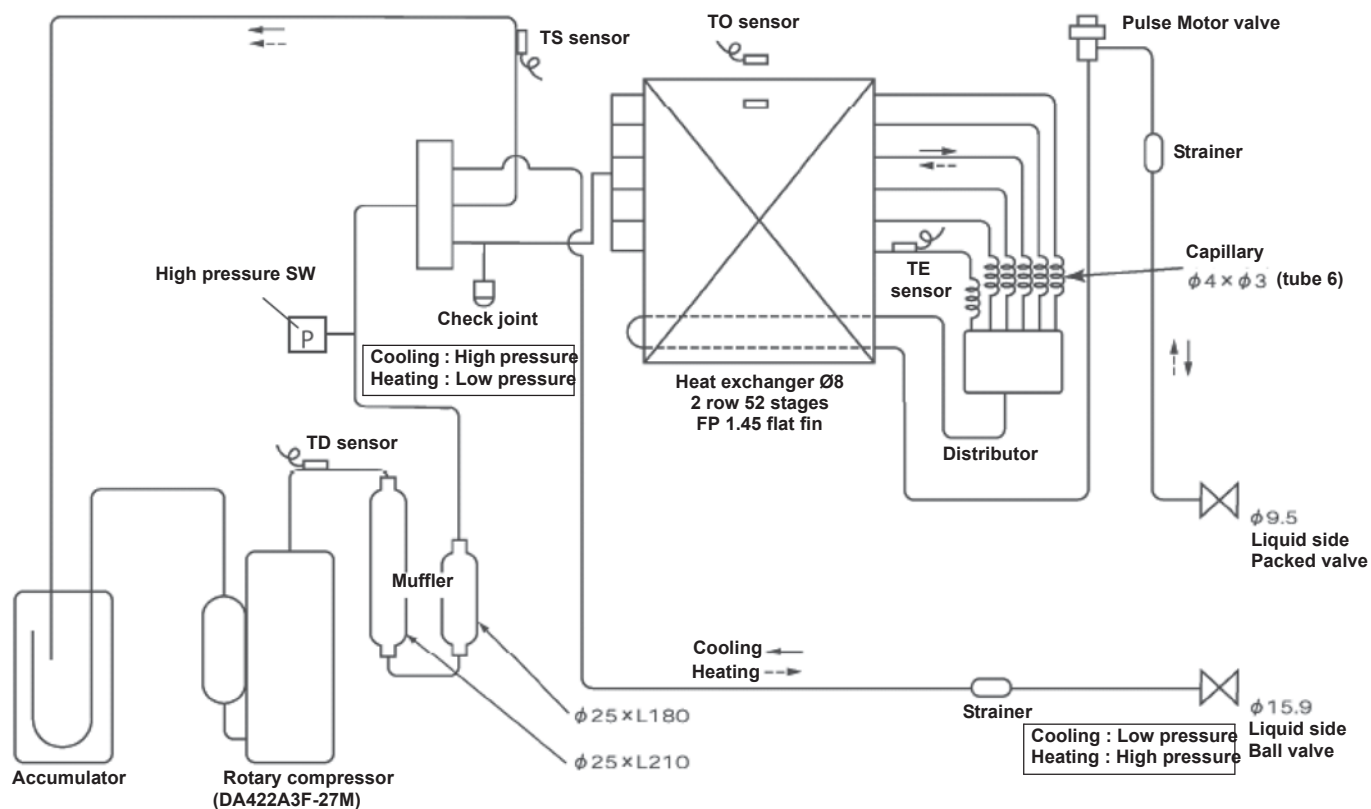
Symbol	Part Name	Symbol	Part Name
CM	Compressor	TL	Heat exchanger sensor 2
FM1, 2	Fan motor	TO	Outside temperature sensor
PMV	Pulse motor valve	20SF	4-way valve coil
TD	Pipe temperature sensor (Discharge)	49C	Compressor case thermostat
TS	Pipe temperature sensor (Suction)	63H	High-pressure switch
TE	Heat exchanger sensor 1	RY	Relay

1. ◎ indicates the terminal block. Alphanumeric characters in the cycle indicate the terminal No.
2. The two-dot chain line indicates the wiring procured locally.
3. ▨ indicates the P.C. board.
4. For the indoor unit circuit, refer to the wiring diagram of the indoor unit.

5 Refrigerating Cycle Diagram

RAV-SP1404AT8-A

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6 Sensible Capacity Table

3-phase Super Digital Inverter 4 Series Sensible Heat Capacity : RAV-SM***UT-E

RAV-SM1404UT-E / RAV-SP1404AT8-A

unit size	outdoor air temp. CDB	indoor air temp.																	
		14.0CWB 20.0CDB		15.0CWB 21.5CDB		16.0CWB 23.0CDB		17.0CWB 24.5CDB		18.0CWB 26.0CDB		19.0CWB 27.0CDB		20.0CWB 28.0CDB		22.0CWB 30.0CDB		24.0CWB 32.0CDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
1404	10.0	13.0	9.0	13.7	9.5	14.4	10.0	14.9	10.3	15.4	10.7	15.8	11.0	16.3	11.3	17.3	12.0	18.1	12.5
	12.0	12.8	8.9	13.5	9.3	14.1	9.8	14.6	10.1	15.1	10.5	15.6	10.8	16.0	11.1	17.0	11.8	17.7	12.3
	14.0	12.6	8.7	13.2	9.2	13.9	9.6	14.4	10.0	14.9	10.3	15.3	10.6	15.7	10.9	16.7	11.6	17.4	12.1
	16.0	12.4	8.6	13.0	9.0	13.6	9.5	14.1	9.8	14.6	10.1	15.0	10.4	15.5	10.7	16.4	11.4	17.1	11.9
	18.0	12.1	8.4	12.8	8.9	13.4	9.3	13.9	9.6	14.4	10.0	14.8	10.2	15.2	10.5	16.1	11.2	16.8	11.7
	20.0	11.9	8.3	12.5	8.7	13.2	9.1	13.6	9.5	14.1	9.8	14.5	10.1	14.9	10.3	15.8	11.0	16.5	11.5
	21.0	11.8	8.2	12.4	8.6	13.0	9.0	13.5	9.4	14.0	9.7	14.4	10.0	14.8	10.3	15.7	10.9	16.4	11.4
	23.0	11.6	8.0	12.2	8.5	12.8	8.9	13.2	9.2	13.7	9.5	14.1	9.8	14.5	10.1	15.4	10.7	16.1	11.1
	25.0	11.4	7.9	12.0	8.3	12.6	8.7	13.0	9.0	13.4	9.3	13.8	9.6	14.2	9.9	15.1	10.5	15.8	10.9
	27.0	11.1	7.7	11.7	8.1	12.3	8.5	12.7	8.8	13.2	9.1	13.6	9.4	14.0	9.7	14.8	10.3	15.5	10.7
	29.0	10.9	7.6	11.5	8.0	12.1	8.4	12.5	8.7	12.9	9.0	13.3	9.2	13.7	9.5	14.5	10.1	15.2	10.5
	31.0	10.7	7.4	11.3	7.8	11.8	8.2	12.2	8.5	12.7	8.8	13.0	9.0	13.4	9.3	14.2	9.8	14.9	10.3
	33.0	10.5	7.3	11.0	7.7	11.6	8.0	12.0	8.3	12.4	8.6	12.8	8.9	13.1	9.1	13.9	9.6	14.5	10.1
	35.0	10.3	7.1	10.8	7.5	11.3	7.9	11.7	8.1	12.1	8.4	12.5	8.7	12.9	8.9	13.6	9.4	14.2	9.9
	37.0	10.0	7.0	10.6	7.3	11.1	7.7	11.5	8.0	11.9	8.2	12.2	8.5	12.6	8.7	13.3	9.2	13.9	9.7
	39.0	9.8	6.8	10.3	7.2	10.9	7.5	11.2	7.8	11.6	8.1	12.0	8.3	12.3	8.5	13.0	9.0	13.6	9.5

RAV-SM1604UT-E / RAV-SP1604AT8-E

unit size	outdoor air temp. CDB	indoor air temp.																	
		14.0CWB 20.0CDB		15.0CWB 21.5CDB		16.0CWB 23.0CDB		17.0CWB 24.5CDB		18.0CWB 26.0CDB		19.0CWB 27.0CDB		20.0CWB 28.0CDB		22.0CWB 30.0CDB		24.0CWB 32.0CDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
1604	10.0	14.6	9.7	15.3	10.2	16.1	10.7	16.7	11.1	17.2	11.4	17.7	11.8	18.3	12.1	19.3	12.8	20.2	13.4
	12.0	14.3	9.5	15.1	10.0	15.8	10.5	16.4	10.9	16.9	11.2	17.4	11.6	17.9	11.9	19.0	12.6	19.9	13.2
	14.0	14.1	9.3	14.8	9.8	15.6	10.3	16.1	10.7	16.7	11.1	17.1	11.4	17.6	11.7	18.7	12.4	19.5	13.0
	16.0	13.8	9.2	14.6	9.7	15.3	10.1	15.8	10.5	16.4	10.9	16.8	11.2	17.3	11.5	18.4	12.2	19.2	12.7
	18.0	13.6	9.0	14.3	9.5	15.0	10.0	15.5	10.3	16.1	10.7	16.5	11.0	17.0	11.3	18.0	12.0	18.9	12.5
	20.0	13.3	8.9	14.0	9.3	14.7	9.8	15.3	10.1	15.8	10.5	16.2	10.8	16.7	11.1	17.7	11.7	18.5	12.3
	21.0	13.2	8.8	13.9	9.2	14.6	9.7	15.1	10.0	15.6	10.4	16.1	10.7	16.6	11.0	17.5	11.6	18.3	12.2
	23.0	13.0	8.6	13.7	9.1	14.3	9.5	14.8	9.8	15.3	10.2	15.8	10.5	16.2	10.8	17.2	11.4	18.0	11.9
	25.0	12.7	8.4	13.4	8.9	14.1	9.3	14.6	9.7	15.1	10.0	15.5	10.3	15.9	10.6	16.9	11.2	17.7	11.7
	27.0	12.5	8.3	13.1	8.7	13.8	9.1	14.3	9.5	14.8	9.8	15.2	10.1	15.6	10.4	16.6	11.0	17.3	11.5
	29.0	12.2	8.1	12.9	8.5	13.5	9.0	14.0	9.3	14.5	9.6	14.9	9.9	15.3	10.2	16.2	10.8	17.0	11.3
	31.0	12.0	8.0	12.6	8.4	13.2	8.8	13.7	9.1	14.2	9.4	14.6	9.7	15.0	10.0	15.9	10.6	16.6	11.0
	33.0	11.7	7.8	12.4	8.2	13.0	8.6	13.4	8.9	13.9	9.2	14.3	9.5	14.7	9.8	15.6	10.3	16.3	10.8
	35.0	11.5	7.6	12.1	8.0	12.7	8.4	13.1	8.7	13.6	9.0	14.0	9.3	14.4	9.6	15.3	10.1	16.0	10.6
	37.0	11.3	7.5	11.8	7.9	12.4	8.2	12.9	8.5	13.3	8.8	13.7	9.1	14.1	9.4	14.9	9.9	15.6	10.4
	39.0	11.0	7.3	11.6	7.7	12.2	8.1	12.6	8.4	13.0	8.6	13.4	8.9	13.8	9.1	14.6	9.7	15.3	10.1

3-phase Super Digital Inverter 4 Series Sensible Heat Capacity : RAV-SM***BT-E

RAV-SM1406BT-E / RAV-SP1404AT8-A

unit size	outdoor air temp. CDB	indoor air temp.																	
		14.0CWB 20.0CDB		15.0CWB 21.5CDB		16.0CWB 23.0CDB		17.0CWB 24.5CDB		18.0CWB 26.0CDB		19.0CWB 27.0CDB		20.0CWB 28.0CDB		22.0CWB 30.0CDB		24.0CWB 32.0CDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
1406	10.0	13.0	9.7	13.7	10.2	14.4	10.7	14.9	11.1	15.4	11.5	15.8	11.8	16.3	12.1	17.3	12.8	18.1	13.4
	12.0	12.8	9.5	13.5	10.0	14.1	10.5	14.6	10.9	15.1	11.3	15.6	11.6	16.0	11.9	17.0	12.6	17.7	13.2
	14.0	12.6	9.4	13.2	9.8	13.9	10.3	14.4	10.7	14.9	11.1	15.3	11.4	15.7	11.7	16.7	12.4	17.4	13.0
	16.0	12.4	9.2	13.0	9.7	13.6	10.2	14.1	10.5	14.6	10.9	15.0	11.2	15.5	11.5	16.4	12.2	17.1	12.7
	18.0	12.1	9.0	12.8	9.5	13.4	10.0	13.9	10.3	14.4	10.7	14.8	11.0	15.2	11.3	16.1	12.0	16.8	12.5
	20.0	11.9	8.9	12.5	9.3	13.2	9.8	13.6	10.1	14.1	10.5	14.5	10.8	14.9	11.1	15.8	11.8	16.5	12.3
	21.0	11.8	8.8	12.4	9.2	13.0	9.7	13.5	10.0	14.0	10.4	14.4	10.7	14.8	11.0	15.7	11.6	16.4	12.2
	23.0	11.6	8.6	12.2	9.1	12.8	9.5	13.2	9.9	13.7	10.2	14.1	10.5	14.5	10.8	15.4	11.4	16.1	12.0
	25.0	11.4	8.5	12.0	8.9	12.6	9.3	13.0	9.7	13.4	10.0	13.8	10.3	14.2	10.6	15.1	11.2	15.8	11.7
	27.0	11.1	8.3	11.7	8.7	12.3	9.2	12.7	9.5	13.2	9.8	13.6	10.1	14.0	10.4	14.8	11.0	15.5	11.5
	29.0	10.9	8.1	11.5	8.6	12.1	9.0	12.5	9.3	12.9	9.6	13.3	9.9	13.7	10.2	14.5	10.8	15.2	11.3
	31.0	10.7	8.0	11.3	8.4	11.8	8.8	12.2	9.1	12.7	9.4	13.0	9.7	13.4	10.0	14.2	10.6	14.9	11.0
	33.0	10.5	7.8	11.0	8.2	11.6	8.6	12.0	8.9	12.4	9.2	12.8	9.5	13.1	9.8	13.9	10.3	14.5	10.8
	35.0	10.3	7.6	10.8	8.0	11.3	8.4	11.7	8.7	12.1	9.0	12.5	9.3	12.9	9.6	13.6	10.1	14.2	10.6
	37.0	10.0	7.5	10.6	7.9	11.1	8.3	11.5	8.5	11.9	8.8	12.2	9.1	12.6	9.4	13.3	9.9	13.9	10.4
	39.0	9.8	7.3	10.3	7.7	10.9	8.1	11.2	8.4	11.6	8.6	12.0	8.9	12.3	9.2	13.0	9.7	13.6	10.1

TC:Total Capacity [kW]

SHC:Sensible Heat Capacity [kW]

3-phase Super Digital Inverter 4 Series Sensible Heat Capacity : RAV-SM***CT-E

RAV-SM1404CT-E / RAV-SP1404AT8-A

unit size	outdoor air temp. CDB	indoor air temp.																	
		14.0CWB 20.0CDB		15.0CWB 21.5CDB		16.0CWB 23.0CDB		17.0CWB 24.5CDB		18.0CWB 26.0CDB		19.0CWB 27.0CDB		20.0CWB 28.0CDB		22.0CWB 30.0CDB		24.0CWB 32.0CDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
1404	10.0	13.0	8.5	13.7	9.0	14.4	9.4	14.9	9.8	15.4	10.1	15.8	10.4	16.3	10.7	17.3	11.3	18.1	11.8
	12.0	12.8	8.4	13.5	8.8	14.1	9.3	14.6	9.6	15.1	9.9	15.6	10.2	16.0	10.5	17.0	11.1	17.7	11.6
	14.0	12.6	8.2	13.2	8.7	13.9	9.1	14.4	9.4	14.9	9.8	15.3	10.0	15.7	10.3	16.7	10.9	17.4	11.4
	16.0	12.4	8.1	13.0	8.5	13.6	9.0	14.1	9.3	14.6	9.6	15.0	9.9	15.5	10.1	16.4	10.7	17.1	11.2
	18.0	12.1	8.0	12.8	8.4	13.4	8.8	13.9	9.1	14.4	9.4	14.8	9.7	15.2	10.0	16.1	10.6	16.8	11.0
	20.0	11.9	7.8	12.5	8.2	13.2	8.6	13.6	8.9	14.1	9.2	14.5	9.5	14.9	9.8	15.8	10.4	16.5	10.8
	21.0	11.8	7.7	12.4	8.1	13.0	8.6	13.5	8.9	14.0	9.2	14.4	9.4	14.8	9.7	15.7	10.3	16.4	10.7
	23.0	11.6	7.6	12.2	8.0	12.8	8.4	13.2	8.7	13.7	9.0	14.1	9.3	14.5	9.5	15.4	10.1	16.1	10.5
	25.0	11.4	7.5	12.0	7.8	12.6	8.2	13.0	8.5	13.4	8.8	13.8	9.1	14.2	9.3	15.1	9.9	15.8	10.3
	27.0	11.1	7.3	11.7	7.7	12.3	8.1	12.7	8.4	13.2	8.6	13.6	8.9	14.0	9.2	14.8	9.7	15.5	10.1
	29.0	10.9	7.2	11.5	7.5	12.1	7.9	12.5	8.2	12.9	8.5	13.3	8.7	13.7	9.0	14.5	9.5	15.2	9.9
	31.0	10.7	7.0	11.3	7.4	11.8	7.8	12.2	8.0	12.7	8.3	13.0	8.6	13.4	8.8	14.2	9.3	14.9	9.7
	33.0	10.5	6.9	11.0	7.2	11.6	7.6	12.0	7.9	12.4	8.1	12.8	8.4	13.1	8.6	13.9	9.1	14.5	9.5
	35.0	10.3	6.7	10.8	7.1	11.3	7.4	11.7	7.7	12.1	8.0	12.5	8.2	12.9	8.4	13.6	8.9	14.2	9.3
	37.0	10.0	6.6	10.6	6.9	11.1	7.3	11.5	7.5	11.9	7.8	12.2	8.0	12.6	8.3	13.3	8.7	13.9	9.1
	39.0	9.8	6.4	10.3	6.8	10.9	7.1	11.2	7.4	11.6	7.6	12.0	7.8	12.3	8.1	13.0	8.5	13.6	8.9

TC:Total Capacity [kW]

SHC:Sensible Heat Capacity [kW]

3-phase Super Digital Inverter 4 Series Sensible Heat Capacity : RAV-SM***DT-A

RAV-SM1603DT-A / RAV-SP1604AT8-A

unit size	outdoor air temp. CDB	indoor air temp.																	
		14.0CWB 20.0CDB		15.0CWB 21.5CDB		16.0CWB 23.0CDB		17.0CWB 24.5CDB		18.0CWB 26.0CDB		19.0CWB 27.0CDB		20.0CWB 28.0CDB		22.0CWB 30.0CDB		24.0CWB 32.0CDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
1603	10.0	14.2	11.8	14.9	13.4	15.6	14.0	16.2	13.5	16.7	14.0	17.2	14.4	17.7	14.8	18.8	15.7	19.6	16.4
	12.0	13.9	11.6	14.6	13.2	15.4	13.7	15.9	13.3	16.5	13.7	16.9	14.2	17.4	14.6	18.5	15.4	19.3	16.1
	14.0	13.7	11.4	14.4	13.0	15.1	13.5	15.6	13.1	16.2	13.5	16.7	13.9	17.1	14.3	18.1	15.1	19.0	15.8
	16.0	13.4	11.2	14.1	12.7	14.8	13.3	15.4	12.8	15.9	13.3	16.4	13.7	16.8	14.1	17.8	14.9	18.6	15.6
	18.0	13.2	11.0	13.9	12.5	14.6	13.0	15.1	12.6	15.6	13.0	16.1	13.4	16.5	13.8	17.5	14.6	18.3	15.3
	20.0	13.0	10.8	13.6	12.3	14.3	12.8	14.8	12.4	15.3	12.8	15.8	13.2	16.2	13.6	17.2	14.4	18.0	15.0
	21.0	12.8	10.7	13.5	12.2	14.2	12.7	14.7	12.3	15.2	12.7	15.6	13.1	16.1	13.4	17.0	14.2	17.8	14.9
	23.0	12.6	10.5	13.3	11.9	13.9	12.4	14.4	12.0	14.9	12.4	15.3	12.8	15.8	13.2	16.7	14.0	17.5	14.6
	25.0	12.4	10.3	13.0	11.7	13.7	12.2	14.1	11.8	14.6	12.2	15.1	12.6	15.5	12.9	16.4	13.7	17.2	14.3
	27.0	12.1	10.1	12.8	11.5	13.4	12.0	13.9	11.6	14.3	12.0	14.8	12.3	15.2	12.7	16.1	13.4	16.8	14.0
	29.0	11.9	9.9	12.5	11.3	13.1	11.7	13.6	11.4	14.1	11.7	14.5	12.1	14.9	12.4	15.8	13.2	16.5	13.8
	31.0	11.6	9.7	12.3	11.0	12.9	11.5	13.3	11.1	13.8	11.5	14.2	11.8	14.6	12.2	15.4	12.9	16.2	13.5
	33.0	11.4	9.5	12.0	10.8	12.6	11.3	13.0	10.9	13.5	11.3	13.9	11.6	14.3	11.9	15.1	12.6	15.8	13.2
	35.0	11.2	9.3	11.8	10.6	12.3	11.0	12.8	10.7	13.2	11.0	13.6	11.4	14.0	11.7	14.8	12.4	15.5	12.9
	37.0	10.9	9.1	11.5	10.4	12.1	10.8	12.5	10.4	12.9	10.8	13.3	11.1	13.7	11.4	14.5	12.1	15.2	12.7
	39.0	10.7	8.9	11.3	10.1	11.8	10.6	12.2	10.2	12.6	10.6	13.0	10.9	13.4	11.2	14.2	11.8	14.8	12.4

TC:Total Capacity [kW]

SHC:Sensible Heat Capacity [kW]

7 Part Load Performance

7-1. Indoor unit: RAV-SM1404UT-E
Outdoor unit: RAV-SP1404AT8-A

	Cooling		Heating	
	Capacity Q(W)	Power consumption W(W)	Capacity Q(W)	Power consumption W(W)
MINIMUM	2600	660	2400	530
RATING	12500	3460	14000	3420

Cooling

Outdoor temperature(°C)		Load(%)									
		100	90	80	70	60	50	40	30	20	10
40	Q	11830	10640	9460	8280	7100	5910	4730	3550	2460	2460
	W	3710	3130	2620	2140	1660	1230	1000	780	710	710
35	Q	12500	11250	10000	8750	7500	6250	5000	3750	2600	2600
	W	3460	2920	2440	1990	1550	1150	930	730	660	660
30	Q	13180	11860	10540	9220	7910	6590	5270	3950	2740	2740
	W	3210	2710	2260	1840	1440	1070	860	680	610	610
25	Q	13840	12450	11070	9690	8300	6920	5540	4150	2880	2880
	W	2960	2500	2090	1700	1330	980	800	620	560	560
20	Q	14510	13060	11610	10160	8710	7260	5810	4350	3020	3020
	W	2720	2290	1920	1560	1220	900	730	570	520	520

Heating

Outdoor temperature(°C)		Load(%)									
		100	90	80	70	60	50	40	30	20	10
15	Q	16880	15190	13510	11820	10130	8440	6750	5060	3380	2890
	W	3770	3280	2750	2240	1830	1410	1070	790	620	580
10	Q	15330	13800	12260	10730	9200	7670	6130	4600	3070	2630
	W	3570	3100	2600	2120	1730	1340	1010	750	590	550
7	Q	14000	12600	11200	9800	8400	7000	5600	4200	2800	2400
	W	3420	2970	2490	2030	1660	1280	970	720	560	530
5	Q	13060	11760	10450	9140	7840	6530	5220	3920	2610	2240
	W	3310	2880	2410	1970	1610	1240	940	700	540	510
2	Q	11700	10530	9360	8190	7020	5850	4680	3510	2340	2010
	W	3150	2740	2300	1870	1530	1180	890	660	520	490
0	Q	9140	8230	7310	6400	5490	4570	3660	2740	1830	1570
	W	2800	2430	2040	1660	1360	1050	790	590	460	430
-5	Q	9140	8230	7310	6400	5490	4570	3660	2740	1830	1570
	W	2800	2430	2040	1660	1360	1050	790	590	460	430
-7	Q	8600	7740	6880	6020	5160	4300	3440	2580	1720	1470
	W	2720	2360	1980	1610	1320	1020	770	570	440	420
-10	Q	7870	7090	6300	5510	4720	3940	3150	2360	1570	1350
	W	2600	2260	1890	1540	1260	970	740	550	430	400
-15	Q	6640	5970	5310	4650	3980	3320	2650	1990	1330	1140
	W	2450	2130	1790	1460	1190	920	700	520	400	380
-20	Q	5430	4890	4350	3800	3260	2720	2170	1630	1090	930
	W	2310	2000	1680	1370	1120	860	650	490	380	360

7-2. Indoor unit: RAV-SM1604UT-E
Outdoor unit: RAV-SP1604AT8-A

	Cooling		Heating	
	Capacity Q(W)	Power consumption W(W)	Capacity Q(W)	Power consumption W(W)
MINIMUM	2600	660	2400	530
RATING	14000	4490	16000	4300

Cooling

Outdoor temperature(°C)		Load(%)									
		100	90	80	70	60	50	40	30	20	10
40	Q	13240	11920	10600	9270	7950	6620	5300	3970	2650	2460
	W	4820	4070	3400	2700	2060	1480	1140	850	730	710
35	Q	14000	12600	11200	9800	8400	7000	5600	4200	2800	2600
	W	4490	3790	3170	2520	1920	1380	1060	790	680	660
30	Q	14760	13280	11800	10330	8850	7380	5900	4430	2950	2740
	W	4160	3510	2940	2340	1780	1280	980	730	630	610
25	Q	15500	13950	12400	10850	9300	7750	6200	4650	3100	2880
	W	3840	3240	2710	2160	1640	1180	910	680	580	560
20	Q	16250	14630	13000	11380	9750	8130	6500	4880	3250	3020
	W	3520	2980	2490	1980	1510	1080	830	620	530	520

Heating

Outdoor temperature(°C)		Load(%)									
		100	90	80	70	60	50	40	30	20	10
15	Q	19290	17370	15440	13510	11580	9650	7720	5790	3860	2890
	W	4740	4110	3450	2820	2250	1650	1240	880	630	580
10	Q	17520	15770	14020	12260	10510	8760	7010	5260	3500	2630
	W	4490	3900	3270	2680	2130	1570	1170	840	600	550
7	Q	16000	14400	12800	11200	9600	8000	6400	4800	3200	2400
	W	4300	3730	3130	2560	2040	1500	1120	800	570	530
5	Q	14930	13440	11940	10450	8960	7460	5970	4480	2990	2240
	W	4170	3610	3030	2480	1980	1450	1090	780	550	510
2	Q	13380	12040	10700	9360	8030	6690	5350	4010	2680	2010
	W	3960	3440	2890	2360	1880	1380	1030	740	530	490
0	Q	10450	9400	8360	7310	6270	5220	4180	3130	2090	1570
	W	3520	3050	2560	2100	1670	1230	920	660	470	430
-5	Q	10450	9400	8360	7310	6270	5220	4180	3130	2090	1570
	W	3520	3050	2560	2100	1670	1230	920	660	470	430
-7	Q	9820	8840	7860	6880	5890	4910	3930	2950	1960	1470
	W	3410	2960	2490	2030	1620	1190	890	640	450	420
-10	Q	9000	8100	7200	6300	5400	4500	3600	2700	1800	1350
	W	3270	2840	2380	1950	1550	1140	850	610	430	400
-15	Q	7580	6830	6070	5310	4550	3790	3030	2280	1520	1140
	W	3090	2680	2250	1840	1460	1080	800	570	410	380
-20	Q	6210	5590	4970	4350	3720	3100	2480	1860	1240	930
	W	2900	2520	2110	1730	1380	1010	760	540	380	360

7-3. Indoor unit: RAV-SM1406BT-E
Outdoor unit: RAV-SP1404AT8-A

	Cooling		Heating	
	Capacity Q(W)	Power consumption W(W)	Capacity Q(W)	Power consumption W(W)
MINIMUM	2600	750	2400	630
RATING	12500	3860	14000	3670

Cooling

Outdoor temperature(°C)		Load(%)									
		100	90	80	70	60	50	40	30	20	10
40	Q	11830	10640	9460	8280	7100	5910	4730	3550	2460	2460
	W	4140	3500	2920	2380	1860	1370	1236	1090	807	807
35	Q	12500	11250	10000	8750	7500	6250	5000	3750	2600	2600
	W	3860	3260	2720	2220	1730	1280	1148	1015	750	750
30	Q	13180	11860	10540	9220	7910	6590	5270	3950	2740	2740
	W	3580	3020	2520	2060	1600	1190	1059	940	693	693
25	Q	13840	12450	11070	9690	8300	6920	5540	4150	2880	2880
	W	3300	2790	2330	1900	1480	1100	982	865	636	636
20	Q	14510	13060	11610	10160	8710	7260	5810	4350	3020	3020
	W	3030	2560	2140	1740	1360	1000	905	802	591	591

Heating

Outdoor temperature(°C)		Load(%)									
		100	90	80	70	60	50	40	30	20	10
15	Q	16880	15190	13510	11820	10130	8440	6750	5060	3380	2890
	W	4042	3515	2957	2409	1964	1520	1148	858	727	689
10	Q	15330	13800	12260	10730	9200	7670	6130	4600	3070	2630
	W	3835	3329	2802	2274	1861	1437	1096	806	688	654
7	Q	14000	12600	11200	9800	8400	7000	5600	4200	2800	2400
	W	3670	3184	2678	2181	1778	1375	1044	775	662	630
5	Q	13060	11760	10450	9140	7840	6530	5220	3920	2610	2240
	W	3556	3081	2595	2109	1726	1334	1013	755	639	606
2	Q	11700	10530	9360	8190	7020	5850	4680	3510	2340	2010
	W	3381	2936	2471	2016	1644	1272	961	713	611	582
0	Q	9140	8230	7310	6400	5490	4570	3660	2740	1830	1570
	W	3008	2605	2192	1788	1458	1127	858	631	538	511
-5	Q	9140	8230	7310	6400	5490	4570	3660	2740	1830	1570
	W	3008	2605	2192	1788	1458	1127	858	631	538	511
-7	Q	8600	7740	6880	6020	5160	4300	3440	2580	1720	1470
	W	2915	2533	2130	1737	1416	1096	827	620	526	499
-10	Q	7870	7090	6300	5510	4720	3940	3150	2360	1570	1350
	W	2791	2419	2037	1664	1354	1044	796	589	500	475
-15	Q	6640	5970	5310	4650	3980	3320	2650	1990	1330	1140
	W	2636	2285	1923	1561	1272	982	744	558	475	452
-20	Q	5430	4890	4350	3800	3260	2720	2170	1630	1090	930
	W	2481	2150	1809	1468	1199	930	703	527	451	428

7-4. Indoor unit: RAV-SM1404CT-E
Outdoor unit: RAV-SP1404AT8-A

	Cooling		Heating	
	Capacity Q(W)	Power consumption W(W)	Capacity Q(W)	Power consumption W(W)
MINIMUM	2600	660	2400	530
RATING	12500	3830	14000	3700

Cooling

Outdoor temperature(°C)		Load(%)									
		100	90	80	70	60	50	40	30	20	10
40	Q	11830	10640	9460	8280	7100	5910	4730	3550	2460	2460
	W	4110	3470	2900	2360	1850	1360	1110	860	710	710
35	Q	12500	11250	10000	8750	7500	6250	5000	3750	2600	2600
	W	3830	3230	2700	2200	1720	1270	1030	800	660	660
30	Q	13180	11860	10540	9220	7910	6590	5270	3950	2740	2740
	W	3550	2990	2500	2040	1590	1180	950	740	610	610
25	Q	13840	12450	11070	9690	8300	6920	5540	4150	2880	2880
	W	3280	2760	2310	1880	1470	1090	880	680	560	560
20	Q	14510	13060	11610	10160	8710	7260	5810	4350	3020	3020
	W	3010	2540	2120	1730	1350	1000	810	630	520	520

Heating

Outdoor temperature(°C)		Load(%)									
		100	90	80	70	60	50	40	30	20	10
15	Q	16880	15190	13510	11820	10130	8440	6750	5060	3380	2890
	W	4080	3540	2980	2430	1970	1530	1160	860	670	580
10	Q	15330	13800	12260	10730	9200	7670	6130	4600	3070	2630
	W	3870	3350	2820	2300	1870	1450	1100	820	640	550
7	Q	14000	12600	11200	9800	8400	7000	5600	4200	2800	2400
	W	3700	3210	2700	2200	1790	1390	1050	780	610	530
5	Q	13060	11760	10450	9140	7840	6530	5220	3920	2610	2240
	W	3590	3110	2620	2130	1730	1350	1020	760	590	510
2	Q	11700	10530	9360	8190	7020	5850	4680	3510	2340	2010
	W	3410	2960	2490	2030	1650	1280	970	720	560	490
0	Q	9140	8230	7310	6400	5490	4570	3660	2740	1830	1570
	W	3030	2630	2210	1800	1470	1140	860	640	500	430
-5	Q	9140	8230	7310	6400	5490	4570	3660	2740	1830	1570
	W	3030	2630	2210	1800	1470	1140	860	640	500	430
-7	Q	8600	7740	6880	6020	5160	4300	3440	2580	1720	1470
	W	2940	2550	2140	1750	1420	1100	830	620	480	420
-10	Q	7870	7090	6300	5510	4720	3940	3150	2360	1570	1350
	W	2820	2440	2050	1670	1360	1060	800	590	460	400
-15	Q	6640	5970	5310	4650	3980	3320	2650	1990	1330	1140
	W	2650	2300	1940	1580	1280	1000	750	560	440	380
-20	Q	5430	4890	4350	3800	3260	2720	2170	1630	1090	930
	W	2500	2170	1820	1490	1210	940	710	530	410	360

7-5. Indoor unit: RAV-SM1603DT-A
Outdoor unit: RAV-SP1604AT8-A

	Cooling		Heating	
	Capacity Q(W)	Power consumption W(W)	Capacity Q(W)	Power consumption W(W)
MINIMUM	3300	900	4200	800
RATING	13600	4120	16000	4430

Cooling

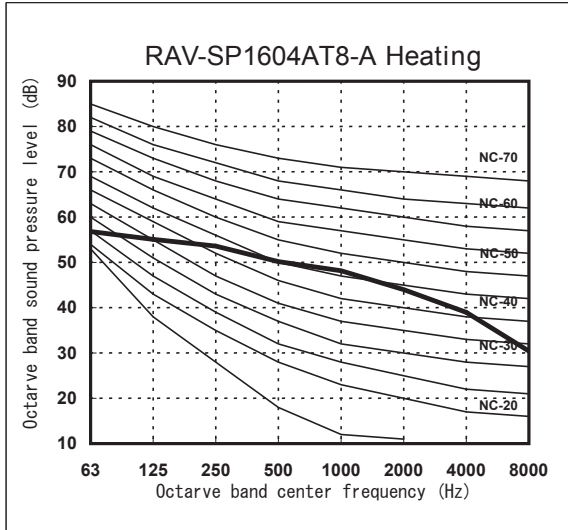
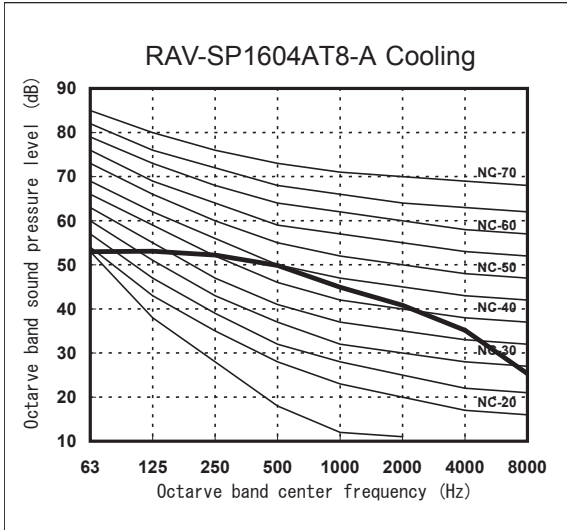
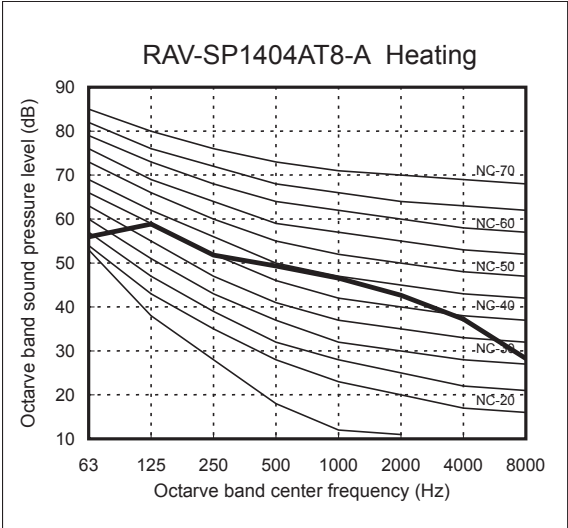
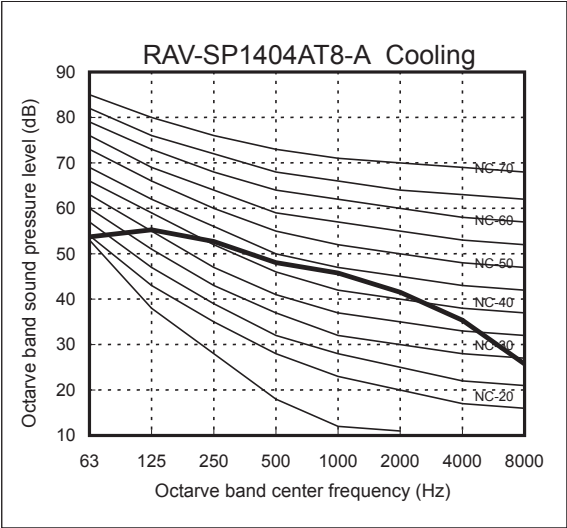
Outdoor temperature(°C)		Load(%)									
		100	90	80	70	60	50	40	30	20	10
40	Q	12870	11580	10300	9010	7720	6440	5150	3860	3120	3120
	W	4420	3860	3300	2750	2180	1630	1210	970	970	970
35	Q	13600	12240	10880	9520	8160	6800	5440	4080	3300	3300
	W	4120	3600	3080	2560	2030	1510	1130	900	900	900
30	Q	14330	12900	11460	10030	8600	7170	5730	4300	3480	3480
	W	3820	3340	2860	2380	1890	1410	1060	830	830	830
25	Q	15055	13550	12040	10540	9030	7530	6020	4520	3650	3650
	W	3530	3090	2650	2200	1750	1300	970	770	770	770
20	Q	15790	14210	12630	11050	9470	7890	6310	4740	3830	3830
	W	3230	2830	2420	2020	1610	1200	890	710	710	710

Heating

Outdoor temperature(°C)		Load(%)									
		100	90	80	70	60	50	40	30	20	10
15	Q	19290	17370	15440	13510	11580	9650	7720	5790	5060	5060
	W	4880	4320	3750	3190	2610	2050	1510	990	880	880
10	Q	17520	15770	14020	12260	10510	8760	7010	5260	4600	4600
	W	4630	4100	3550	3020	2480	1940	1430	940	840	840
7	Q	16000	14400	12800	11200	9600	8000	6400	4800	4200	4200
	W	4430	3920	3400	2890	2370	1860	1370	900	800	800
5	Q	14930	13440	11940	10450	8960	7460	5970	4480	3920	3920
	W	4290	3800	3290	2800	2300	1800	1330	870	780	780
2	Q	13380	12040	10700	9360	8030	6690	5350	4010	3510	3510
	W	4080	3610	3130	2660	2190	1710	1260	830	740	740
0	Q	10450	9400	8360	7310	6270	5220	4180	3130	2740	2740
	W	3630	3210	2780	2370	1940	1520	1120	740	660	660
-5	Q	10450	9400	8360	7310	6270	5220	4180	3130	2740	2740
	W	3630	3210	2780	2370	1940	1520	1120	740	660	660
-7	Q	9820	8840	7860	6880	5890	4910	3930	2950	2580	2580
	W	3520	3110	2700	2290	1880	1480	1090	710	640	640
-10	Q	9000	8100	7200	6300	5400	4500	3600	2700	2360	2360
	W	3370	2980	2590	2200	1800	1420	1040	680	610	610
-15	Q	7580	6830	6070	5310	4550	3790	3030	2280	1990	1990
	W	3180	2810	2440	2070	1700	1330	980	650	570	570
-20	Q	6210	5590	4970	4350	3720	3100	2480	1860	1630	1630
	W	2990	2650	2300	1950	1600	1260	920	610	540	540

8 Sound Characteristics (NC Curve)

Model name	Measuring location	Sound pressure level (dB)	
		Cooling	Heating
RAV-SP1404AT8-A	Unit frontside 1m Upper from floor 1.5m (JIS Standard) Microphone Unit 1.5m 1m Floor	51	52
RAV-SP1604AT8-A		51	53



TOSHIBA CARRIER CORPORATION

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