

4-way Cassette Type

MMU-UP0091HP-E / TR

MMU-UP0121HP-E / TR

MMU-UP0151HP-E / TR

MMU-UP0181HP-E / TR

MMU-UP0241HP-E / TR

MMU-UP0271HP-E / TR

MMU-UP0301HP-E / TR

MMU-UP0361HP-E / TR

MMU-UP0481HP-E / TR

MMU-UP0561HP-E / TR

Contents

1. Specifications.....	2
2. Dimensions.....	4
3. Center of gravity.....	6
4. Piping diagram.....	7
5. Wiring diagram.....	8
6. Electrical characteristics.....	9
7. Sensible capacity table.....	10
8. Air flow distance charts.....	13
9. Sound characteristics (NC curve).....	14
10. Fresh air intake (Design guide).....	16
11. Branching duct (Design guide).....	17
12. Accessories.....	18

1. Specifications

Model name		MMU-	UP0091HP-E / TR	UP0121HP-E / TR	UP0151HP-E / TR	UP0181HP-E / TR	UP0241HP-E / TR
Power supply		1 ph 230V (220-240V) ~ 50 Hz & 1 ph 220V (208-230V) ~ 60 Hz					
Cooling capacity (*1)	(kW)	2.8	3.6	4.5	5.6	7.1	
Heating capacity (*1)	(kW)	3.2	4.0	5.0	6.3	8.0	
Running current	(A)	0.23	0.23	0.27	0.29	0.38	
Power consumption	(kW)	0.021	0.021	0.023	0.026	0.036	
Starting current	(A)	0.30	0.30	0.33	0.36	0.42	
FCU dimension (Panel)	Height	(mm)	256 (30)				
	Width	(mm)	840 (950)				
	Depth	(mm)	840 (950)				
Total weight	(kg)	18 (4)			20 (4)		
Heat exchanger		Finned tube					
Soundproof / Heat-insulation material		Non-flammable insulation					
Fan		Turbo fan					
Air flow volume	Indoor unit (H/M/L)	(m ³ /h)	800 / 730 / 680	800 / 730 / 680	930 / 830 / 790	1050 / 920 / 800	1290 / 920 / 800
Sound pressure	Indoor unit (H/M/L)	dB(A)	30 / 29 / 27	30 / 29 / 27	31 / 29 / 27	32 / 29 / 27	35 / 31 / 28
Motor output		(W)	14				20
Connecting pipe	Gas side	(mm)	Ø 9.52		Ø 12.7		Ø 15.9
	Liquid side	(mm)	Ø 6.35				Ø 9.52
	Drain pipe	(mm)	25 (Polyvinyl chloride tube)				
Operating Range for SMMS-u	Cooling	(°C)	5 ~ 46 - 52 (*2)				
	Heating	(°C)	-10 ~ 46				

(*1) Rated testing conditions Cooling : Indoor air temperature 27 °C DB/ 19°C WB, Outdoor 35 °C DB

Heating : Indoor air temperature 20 °C DB, Outdoor 7°C DB / 6°C WB

(*2) 46-52 °C is also available but temporary operate

Model name		MMU-	UP0271HP-E / TR	UP0301HP-E / TR	UP0361HP-E / TR	UP0481HP-E / TR	UP0561HP-E / TR
Power supply		1 ph 230V (220-240V) ~ 50 Hz & 1 ph 220V (208-230V) ~ 60 Hz					
Cooling capacity (*1)	(kW)	8.0	9.0	11.2	14.0	16.0	
Heating capacity (*1)	(kW)	9.0	10.0	12.5	16.0	18.0	
Running current	(A)	0.38	0.43	0.73	0.88	0.88	
Power consumption	(kW)	0.036	0.043	0.088	0.112	0.112	
Starting current	(A)	0.42	0.59	0.87	1.23	1.26	
FCU dimension	Height (mm)	256 (30)			319 (30)		
	Width (mm)	840 (950)					
	Depth (mm)	840 (950)					
Total weight	(kg)	20 (4)			25 (4)		
Heat exchanger	Finned tube						
Soundproof / Heat-insulation material	Non-flammable insulation						
Fan	Turbo fan						
Air flow volume	Indoor unit (H/M/L) (m ³ /h)	1290 / 920 / 800	1320 / 1110 / 850	1970/1430/1070	2130/1430/1130	2130/1520/1230	
Sound pressure	Indoor unit (H/M/L) dB(A)	35 / 31 / 28	38 / 33 / 30	43 / 38 / 32	46 / 38 / 33	46 / 40 / 33	
Motor output	(W)	20		68	72		
Connecting pipe	Gas side (mm)	Ø 15.9					
	Liquid side (mm)	Ø 9.52					
	Drain pipe (mm)	25 (Polyvinyl chloride tube)					
Operating Range for SMMS-u	Cooling (°C)	5 ~ 46 - 52 (*2)					
	Heating (°C)	-10 ~ 46					

(*1) Rated testing conditions Cooling : Indoor air tempreature 27 °C DB/ 19°C WB, Outdoor 35 °C DB

Heating : Indoor air tempreature 20 °C DB, Outdoor 7°C DB / 6°C WB

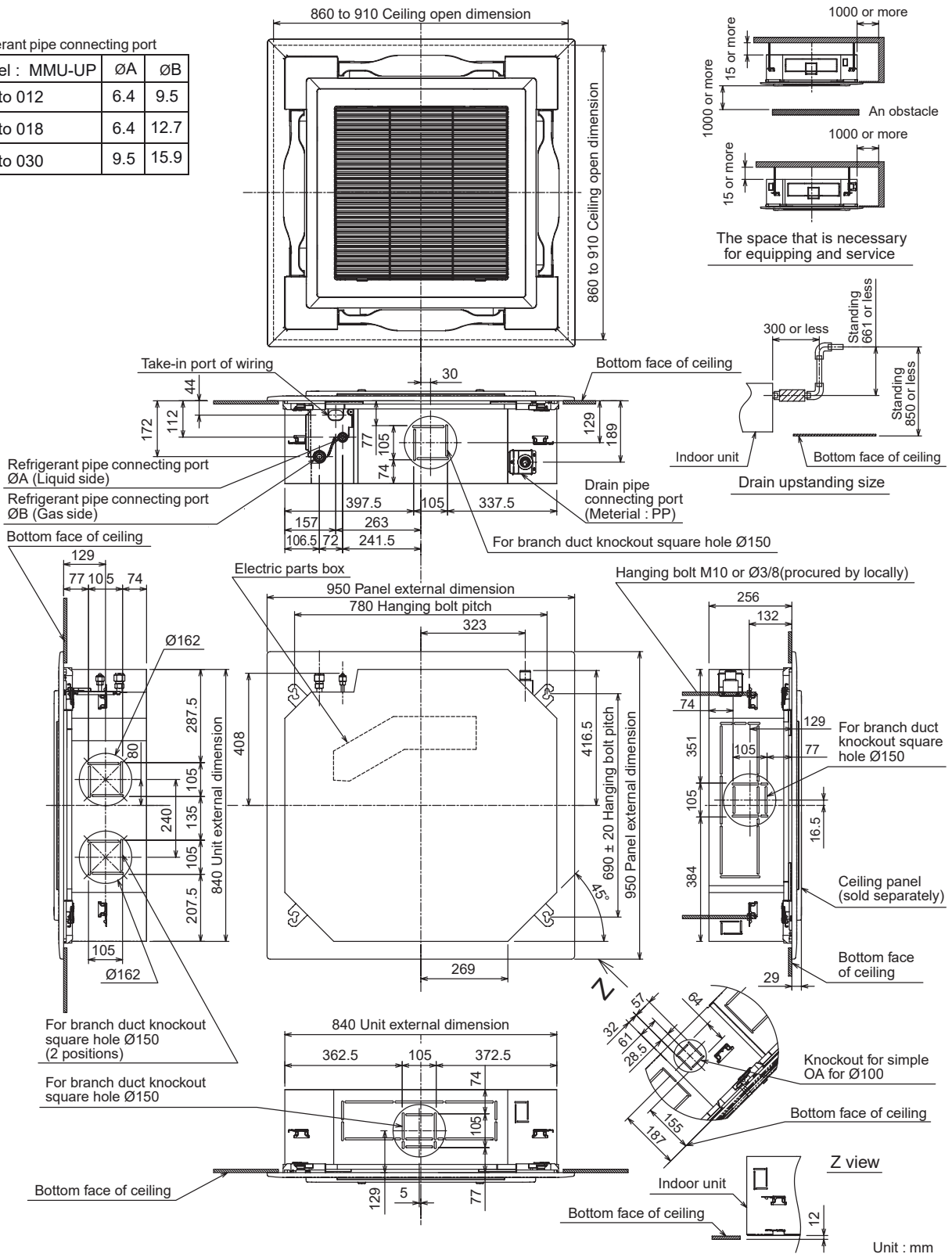
(*2) 46-52 °C is also availabel but temporary oparate

2. Dimensions

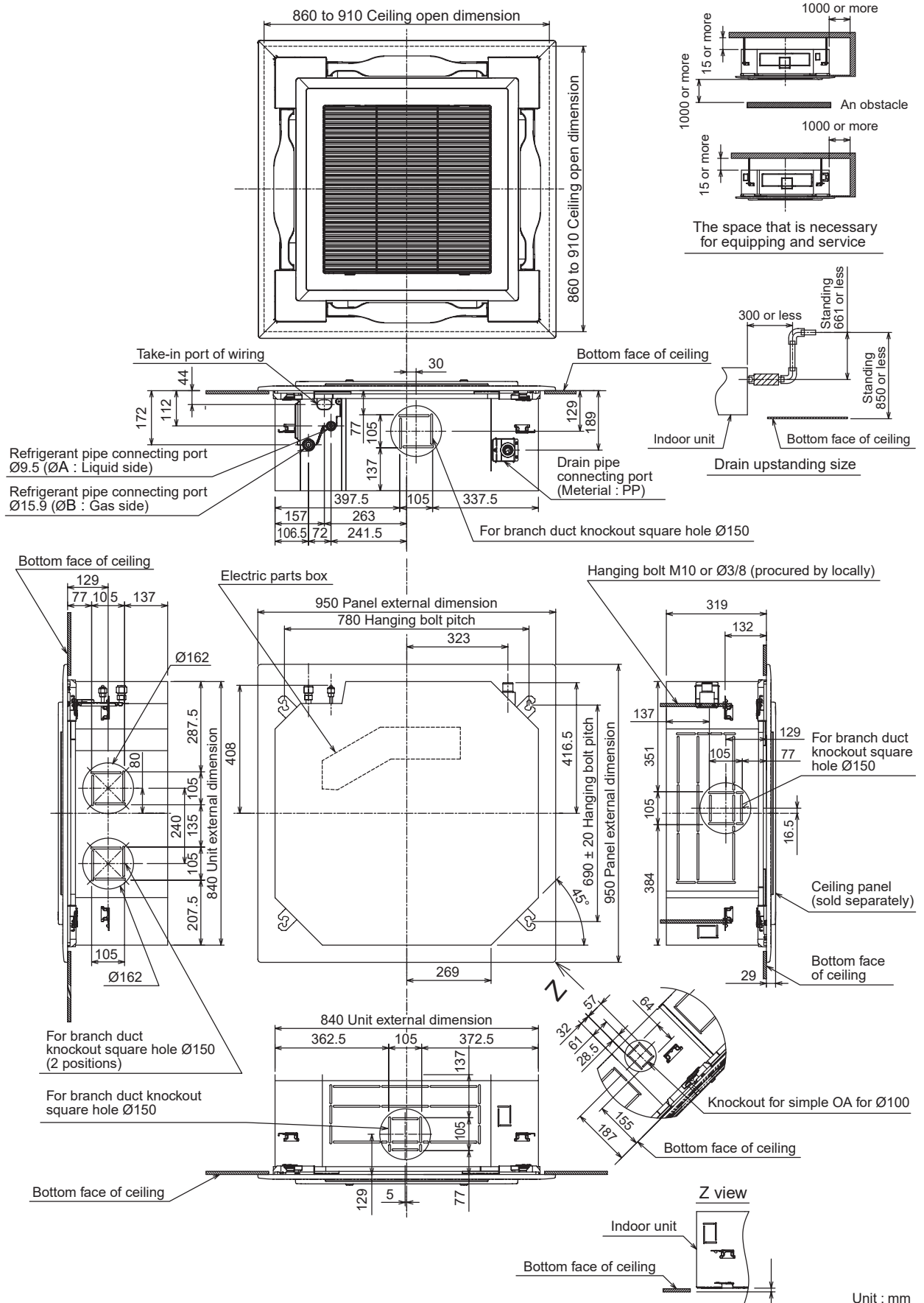
MMU-UP_*1HP-E / TR (*009 / 012 / 015 / 018 / 024 / 027 / 030)

Refrigerant pipe connecting port

Model : MMU-UP	ØA	ØB
009 to 012	6.4	9.5
015 to 018	6.4	12.7
024 to 030	9.5	15.9

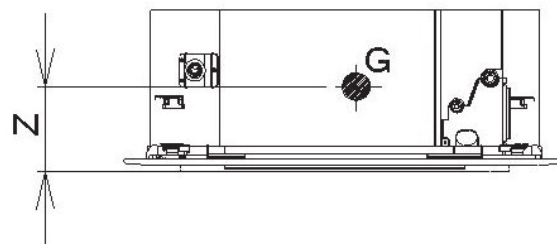
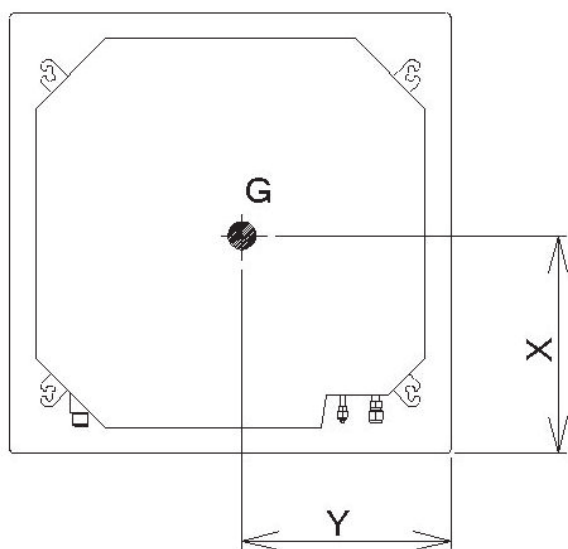


MMU-UP__*1HP-E / TR (*036 / 048 / 056)



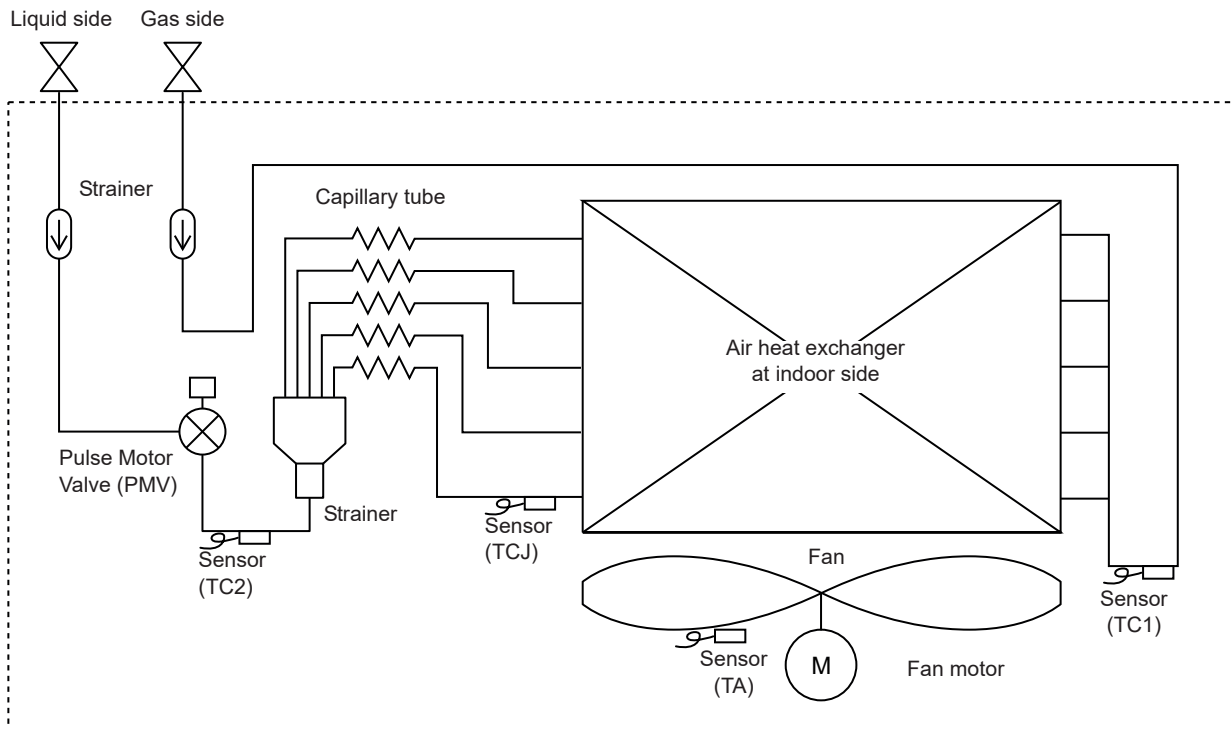
3. Center of gravity

Model name	X(mm)	Y(mm)	Z(mm)	Total weight	
				Main unit (kg)	Ceiling panel (kg)
MMU-UP0091HP-E / TR	470	455	154	18	4.0
MMU-UP0121HP-E / TR					
MMU-UP0151HP-E / TR	470	455	154	20	4.0
MMU-UP0181HP-E / TR					
MMU-UP0241HP-E / TR					
MMU-UP0271HP-E / TR					
MMU-UP0301HP-E / TR	470	450	184	25	4.0
MMU-UP0361HP-E / TR					
MMU-UP0481HP-E / TR					
MMU-UP0561HP-E / TR					



4. Piping diagram

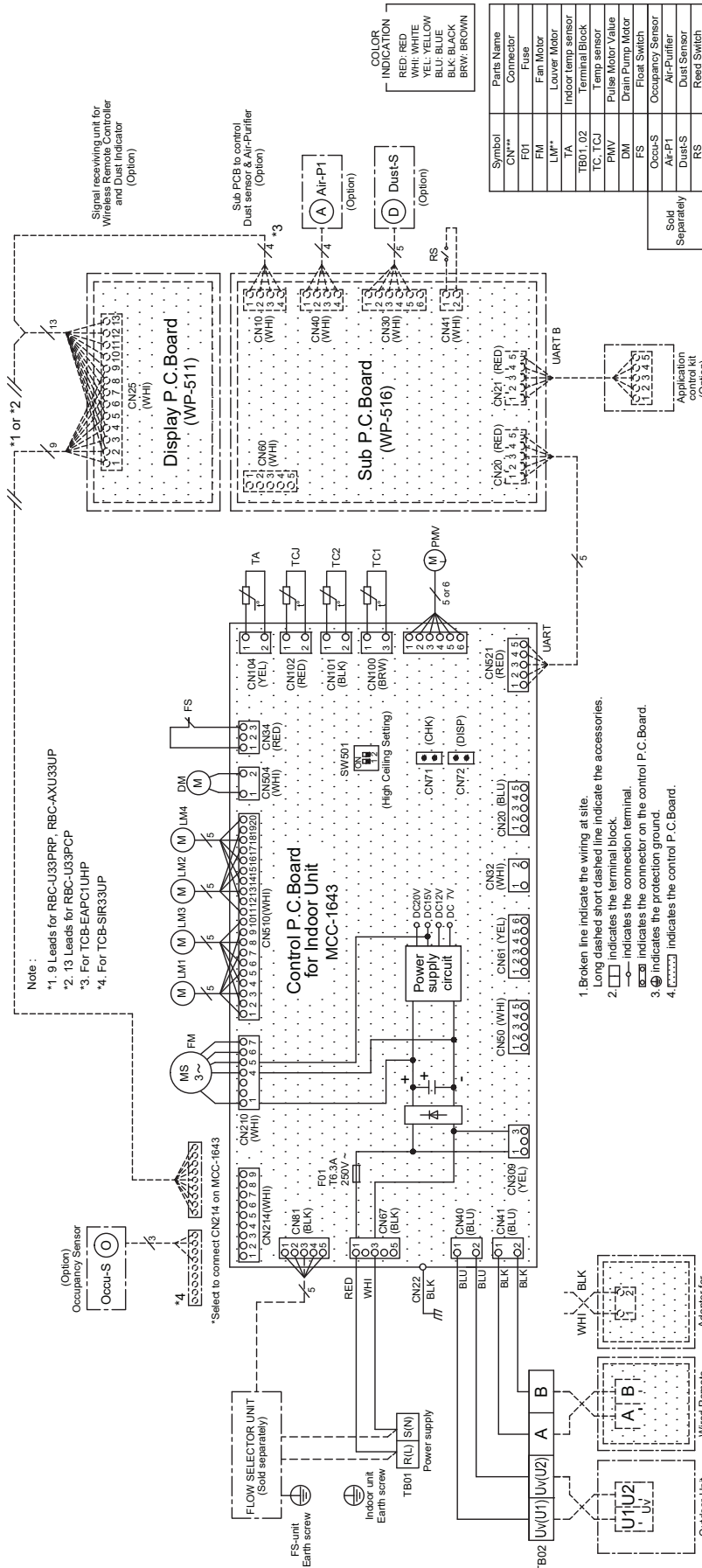
MMU-UP__*1HP-E / TR (*009 / 012 / 015 / 018 / 024 / 027 / 030 / 036 / 048 / 056)



Functional part name		Functional outline
Pulse Motor Valve	PMV	(Connector CN082 (6P): Blue) 1) Controls super heat in cooling operation 2) Controls sub cool in heating operation 3) Recovers refrigerant oil in cooling operation 4) Recovers refrigerant oil in heating operation
Temp. sensor	1. TA	(Connector CN104 (2P): Yellow) 1) Detects indoor suction temperature
	2. TC1	(Connector CN100 (3P): Brown) 1) Controls PMV super heat in cooling operation
	3. TC2	(Connector CN101 (2P): Black) 1) Controls PMV sub cool in heating operation
	4. TCJ	(Connector CN102 (2P): Red) 1) Controls PMV super heat in cooling operation

5. Wiring diagram

MMU-UP_*1HP-E / TR (*009 / 012 / 015 / 018 / 024 / 027 / 030 / 036 / 048 / 056)



6. Electrical characteristics

50 Hz

Type	Model name	Normal Voltage (V-Ph-Hz)	Voltage Range		Fan Motor		Power Supply	
			Min.	Max.	kW	FLA	MCA	MOCP
4-Way Air Discharge Cassette Type	MMU-UP0091HP-E / TR	230-1-50	198	264	0.060	0.63	0.79	15
	MMU-UP0121HP-E / TR	230-1-50	198	264	0.060	0.63	0.79	15
	MMU-UP0151HP-E / TR	230-1-50	198	264	0.060	0.80	1.00	15
	MMU-UP0181HP-E / TR	230-1-50	198	264	0.060	0.80	1.00	15
	MMU-UP0241HP-E / TR	230-1-50	198	264	0.060	0.87	1.09	15
	MMU-UP0271HP-E / TR	230-1-50	198	264	0.060	0.87	1.09	15
	MMU-UP0301HP-E / TR	230-1-50	198	264	0.060	0.87	1.09	15
	MMU-UP0361HP-E / TR	230-1-50	198	264	0.130	1.15	1.44	15
	MMU-UP0481HP-E / TR	230-1-50	198	264	0.130	1.15	1.44	15
MMU-UP0561HP-E / TR	230-1-50	198	264	0.130	1.15	1.44	15	

MCA : Minimum Circuit Amps

FLA : Full Load Amps

MOCP : Maximum Overcurrent Protection (Amps)

kW : Fan Motor Rated Output (kW)

60 Hz

Type	Model name	Normal Voltage (V-Ph-Hz)	Voltage Range		Fan Motor		Power Supply	
			Min.	Max.	kW	FLA	MCA	MOCP
4-Way Air Discharge Cassette Type	MMU-UP0091HP-E / TR	220-1-60	198	242	0.060	0.63	0.79	15
	MMU-UP0121HP-E / TR	220-1-60	198	242	0.060	0.63	0.79	15
	MMU-UP0151HP-E / TR	220-1-60	198	242	0.060	0.80	1.00	15
	MMU-UP0181HP-E / TR	220-1-60	198	242	0.060	0.80	1.00	15
	MMU-UP0241HP-E / TR	220-1-60	198	242	0.060	0.87	1.09	15
	MMU-UP0271HP-E / TR	220-1-60	198	242	0.060	0.87	1.09	15
	MMU-UP0301HP-E / TR	220-1-60	198	242	0.060	0.87	1.09	15
	MMU-UP0361HP-E / TR	220-1-60	198	242	0.130	1.15	1.44	15
	MMU-UP0481HP-E / TR	220-1-60	198	242	0.130	1.15	1.44	15
MMU-UP0561HP-E / TR	220-1-60	198	242	0.130	1.15	1.44	15	

MCA : Minimum Circuit Amps

FLA : Full Load Amps

MOCP : Maximum Overcurrent Protection (Amps)

kW : Fan Motor Rated Output (kW)

7. Sensible capacity table

4-way Cassette type (MMU-UP__1HP-E / TR)

Unit size	Outdoor air temp. °CDB	Indoor air temp.													
		14.0°CWB		16.0°CWB		18.0°CWB		19.0°CWB		20.0°CWB		22.0°CWB		24.0°CWB	
		20°CDB	23°CDB	26°CDB	27°CDB	28°CDB	30°CDB	32°CDB	TC	SHC	TC	SHC	TC	SHC	TC
009	10.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	12.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	14.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	16.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	18.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	20.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	21.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	23.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	25.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	27.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	29.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	31.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	33.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	35.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
37.0	2.2	1.8	2.5	1.9	2.6	2.0	2.7	2.0	2.8	2.0	3.0	2.0	3.1	2.0	
39.0	2.2	1.8	2.4	1.9	2.6	2.0	2.6	2.0	2.7	2.0	2.9	2.0	3.0	1.9	
012	10.0	3.0	2.3	3.3	2.5	3.5	2.6	3.6	2.6	3.7	2.6	3.9	2.6	4.1	2.5
	12.0	3.0	2.3	3.3	2.5	3.5	2.6	3.6	2.6	3.7	2.6	3.9	2.6	4.1	2.5
	14.0	3.0	2.3	3.3	2.5	3.5	2.6	3.6	2.6	3.7	2.6	3.9	2.6	4.1	2.5
	16.0	3.0	2.3	3.3	2.5	3.5	2.6	3.6	2.6	3.7	2.6	3.9	2.6	4.1	2.5
	18.0	3.0	2.3	3.3	2.5	3.5	2.6	3.6	2.6	3.7	2.6	3.9	2.6	4.1	2.5
	20.0	3.0	2.3	3.3	2.5	3.5	2.6	3.6	2.6	3.7	2.6	3.9	2.6	4.1	2.5
	21.0	3.0	2.3	3.3	2.5	3.5	2.6	3.6	2.6	3.7	2.6	3.9	2.6	4.1	2.5
	23.0	3.0	2.3	3.3	2.5	3.5	2.6	3.6	2.6	3.7	2.6	3.9	2.6	4.1	2.5
	25.0	3.0	2.3	3.3	2.5	3.5	2.6	3.6	2.6	3.7	2.6	3.9	2.6	4.1	2.5
	27.0	3.0	2.3	3.3	2.5	3.5	2.6	3.6	2.6	3.7	2.6	3.9	2.6	4.1	2.5
	29.0	3.0	2.3	3.3	2.5	3.5	2.6	3.6	2.6	3.7	2.6	3.9	2.6	4.1	2.5
	31.0	3.0	2.3	3.3	2.5	3.5	2.6	3.6	2.6	3.7	2.6	3.9	2.6	4.1	2.5
	33.0	3.0	2.3	3.3	2.5	3.5	2.6	3.6	2.6	3.7	2.6	3.9	2.6	4.1	2.5
	35.0	3.0	2.3	3.3	2.5	3.5	2.6	3.6	2.6	3.7	2.6	3.9	2.6	4.1	2.5
37.0	2.9	2.2	3.2	2.4	3.4	2.5	3.5	2.5	3.6	2.5	3.8	2.5	4.0	2.4	
39.0	2.8	2.2	3.1	2.3	3.3	2.5	3.4	2.4	3.5	2.4	3.7	2.4	3.9	2.4	
015	10.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	12.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	14.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	16.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	18.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	20.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	21.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	23.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	25.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	27.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	29.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	31.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	33.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	35.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
37.0	3.6	2.7	4.0	2.9	4.2	3.1	4.4	3.1	4.5	3.1	4.7	3.1	5.0	3.0	
39.0	3.5	2.7	3.8	2.8	4.1	3.0	4.2	3.0	4.4	3.0	4.6	3.0	4.8	2.9	
018	10.0	4.6	3.5	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9
	12.0	4.6	3.5	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9
	14.0	4.6	3.5	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9
	16.0	4.6	3.5	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9
	18.0	4.6	3.5	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9
	20.0	4.6	3.5	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9
	21.0	4.6	3.5	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9
	23.0	4.6	3.5	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9
	25.0	4.6	3.5	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9
	27.0	4.6	3.5	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9
	29.0	4.6	3.5	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9
	31.0	4.6	3.5	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9
	33.0	4.6	3.5	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9
	35.0	4.6	3.5	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9
37.0	4.5	3.4	4.9	3.7	5.3	3.9	5.4	3.9	5.6	3.9	5.9	3.8	6.2	3.7	
39.0	4.3	3.3	4.8	3.6	5.1	3.8	5.3	3.8	5.4	3.8	5.7	3.7	6.0	3.6	

TC: Total Capacity [kW]

SHC: Sensible Capacity [kW]

4-way Cassette type (MMU-UP__1HP-E / TR)

Unit size	Outdoor air temp. °CDB	Indoor air temp.													
		14.0°CWB		16.0°CWB		18.0°CWB		19.0°CWB		20.0°CWB		22.0°CWB		24.0°CWB	
		20°CDB		23°CDB		26°CDB		27°CDB		28°CDB		30°CDB		32°CDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
024	10.0	5.8	4.3	6.4	4.6	6.9	4.9	7.1	4.9	7.3	4.9	7.7	4.9	8.1	4.7
	12.0	5.8	4.3	6.4	4.6	6.9	4.9	7.1	4.9	7.3	4.9	7.7	4.9	8.1	4.7
	14.0	5.8	4.3	6.4	4.6	6.9	4.9	7.1	4.9	7.3	4.9	7.7	4.9	8.1	4.7
	16.0	5.8	4.3	6.4	4.6	6.9	4.9	7.1	4.9	7.3	4.9	7.7	4.9	8.1	4.7
	18.0	5.8	4.3	6.4	4.6	6.9	4.9	7.1	4.9	7.3	4.9	7.7	4.9	8.1	4.7
	20.0	5.8	4.3	6.4	4.6	6.9	4.9	7.1	4.9	7.3	4.9	7.7	4.9	8.1	4.7
	21.0	5.8	4.3	6.4	4.6	6.9	4.9	7.1	4.9	7.3	4.9	7.7	4.9	8.1	4.7
	23.0	5.8	4.3	6.4	4.6	6.9	4.9	7.1	4.9	7.3	4.9	7.7	4.9	8.1	4.7
	25.0	5.8	4.3	6.4	4.6	6.9	4.9	7.1	4.9	7.3	4.9	7.7	4.9	8.1	4.7
	27.0	5.8	4.3	6.4	4.6	6.9	4.9	7.1	4.9	7.3	4.9	7.7	4.9	8.1	4.7
	29.0	5.8	4.3	6.4	4.6	6.9	4.9	7.1	4.9	7.3	4.9	7.7	4.9	8.1	4.7
	31.0	5.8	4.3	6.4	4.6	6.9	4.9	7.1	4.9	7.3	4.9	7.7	4.9	8.1	4.7
	33.0	5.8	4.3	6.4	4.6	6.9	4.9	7.1	4.9	7.3	4.9	7.7	4.9	8.1	4.7
	35.0	5.8	4.3	6.4	4.6	6.9	4.9	7.1	4.9	7.3	4.9	7.7	4.9	8.1	4.7
37.0	5.6	4.2	6.2	4.5	6.7	4.8	6.9	4.7	7.1	4.7	7.5	4.7	7.8	4.6	
39.0	5.5	4.1	6.1	4.4	6.5	4.6	6.7	4.6	6.9	4.6	7.3	4.6	7.6	4.5	
027	10.0	6.6	4.9	7.3	5.2	7.8	5.5	8.0	5.5	8.2	5.5	8.7	5.4	9.1	5.3
	12.0	6.6	4.9	7.3	5.2	7.8	5.5	8.0	5.5	8.2	5.5	8.7	5.4	9.1	5.3
	14.0	6.6	4.9	7.3	5.2	7.8	5.5	8.0	5.5	8.2	5.5	8.7	5.4	9.1	5.3
	16.0	6.6	4.9	7.3	5.2	7.8	5.5	8.0	5.5	8.2	5.5	8.7	5.4	9.1	5.3
	18.0	6.6	4.9	7.3	5.2	7.8	5.5	8.0	5.5	8.2	5.5	8.7	5.4	9.1	5.3
	20.0	6.6	4.9	7.3	5.2	7.8	5.5	8.0	5.5	8.2	5.5	8.7	5.4	9.1	5.3
	21.0	6.6	4.9	7.3	5.2	7.8	5.5	8.0	5.5	8.2	5.5	8.7	5.4	9.1	5.3
	23.0	6.6	4.9	7.3	5.2	7.8	5.5	8.0	5.5	8.2	5.5	8.7	5.4	9.1	5.3
	25.0	6.6	4.9	7.3	5.2	7.8	5.5	8.0	5.5	8.2	5.5	8.7	5.4	9.1	5.3
	27.0	6.6	4.9	7.3	5.2	7.8	5.5	8.0	5.5	8.2	5.5	8.7	5.4	9.1	5.3
	29.0	6.6	4.9	7.3	5.2	7.8	5.5	8.0	5.5	8.2	5.5	8.7	5.4	9.1	5.3
	31.0	6.6	4.9	7.3	5.2	7.8	5.5	8.0	5.5	8.2	5.5	8.7	5.4	9.1	5.3
	33.0	6.6	4.9	7.3	5.2	7.8	5.5	8.0	5.5	8.2	5.5	8.7	5.4	9.1	5.3
	35.0	6.6	4.9	7.3	5.2	7.8	5.5	8.0	5.5	8.2	5.5	8.7	5.4	9.1	5.3
37.0	6.4	4.7	7.0	5.0	7.5	5.3	7.7	5.3	8.0	5.3	8.4	5.3	8.8	5.2	
39.0	6.2	4.6	6.8	4.9	7.3	5.2	7.5	5.2	7.8	5.2	8.2	5.1	8.6	5.0	
030	10.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	12.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	14.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	16.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	18.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	20.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	21.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	23.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	25.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	27.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	29.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	31.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	33.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	35.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
37.0	7.2	5.3	7.9	5.7	8.5	6.0	8.7	6.0	9.0	6.0	9.5	5.9	9.9	5.8	
39.0	7.0	5.2	7.7	5.5	8.2	5.9	8.5	5.8	8.7	5.8	9.2	5.8	9.7	5.6	
036	10.0	9.2	6.8	10.2	7.3	10.9	7.7	11.2	7.7	11.5	7.7	12.2	7.6	12.8	7.5
	12.0	9.2	6.8	10.2	7.3	10.9	7.7	11.2	7.7	11.5	7.7	12.2	7.6	12.8	7.5
	14.0	9.2	6.8	10.2	7.3	10.9	7.7	11.2	7.7	11.5	7.7	12.2	7.6	12.8	7.5
	16.0	9.2	6.8	10.2	7.3	10.9	7.7	11.2	7.7	11.5	7.7	12.2	7.6	12.8	7.5
	18.0	9.2	6.8	10.2	7.3	10.9	7.7	11.2	7.7	11.5	7.7	12.2	7.6	12.8	7.5
	20.0	9.2	6.8	10.2	7.3	10.9	7.7	11.2	7.7	11.5	7.7	12.2	7.6	12.8	7.5
	21.0	9.2	6.8	10.2	7.3	10.9	7.7	11.2	7.7	11.5	7.7	12.2	7.6	12.8	7.5
	23.0	9.2	6.8	10.2	7.3	10.9	7.7	11.2	7.7	11.5	7.7	12.2	7.6	12.8	7.5
	25.0	9.2	6.8	10.2	7.3	10.9	7.7	11.2	7.7	11.5	7.7	12.2	7.6	12.8	7.5
	27.0	9.2	6.8	10.2	7.3	10.9	7.7	11.2	7.7	11.5	7.7	12.2	7.6	12.8	7.5
	29.0	9.2	6.8	10.2	7.3	10.9	7.7	11.2	7.7	11.5	7.7	12.2	7.6	12.8	7.5
	31.0	9.2	6.8	10.2	7.3	10.9	7.7	11.2	7.7	11.5	7.7	12.2	7.6	12.8	7.5
	33.0	9.2	6.8	10.2	7.3	10.9	7.7	11.2	7.7	11.5	7.7	12.2	7.6	12.8	7.5
	35.0	9.2	6.8	10.2	7.3	10.9	7.7	11.2	7.7	11.5	7.7	12.2	7.6	12.8	7.5
37.0	8.9	6.6	9.8	7.0	10.5	7.5	10.8	7.5	11.2	7.5	11.8	7.4	12.4	7.2	
39.0	8.7	6.4	9.6	6.8	10.2	7.3	10.5	7.2	10.9	7.2	11.5	7.2	12.0	7.0	

TC: Total Capacity [kW]

SHC: Sensible Capacity [kW]

4-way Cassette type (MMU-UP__1HP-E / TR)

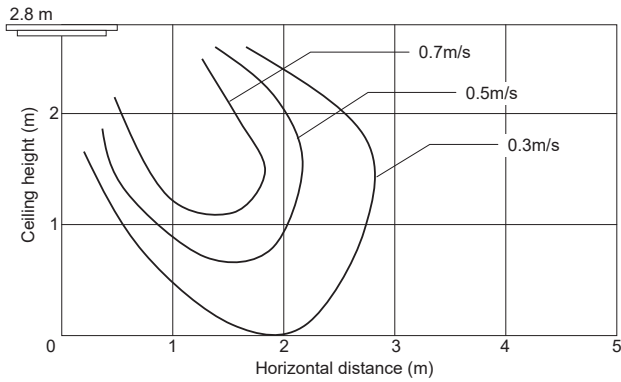
Unit size	Outdoor air temp. °CDB	Indoor air temp.													
		14.0°CWB 20°CDB		16.0°CWB 23°CDB		18.0°CWB 26°CDB		19.0°CWB 27°CDB		20.0°CWB 28°CDB		22.0°CWB 30°CDB		24.0°CWB 32°CDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
048	10.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	12.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	14.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	16.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	18.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	20.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	21.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	23.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	25.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	27.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	29.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	31.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	33.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	35.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
37.0	11.1	8.4	12.3	9.0	13.1	9.5	13.6	9.5	14.0	9.5	14.8	9.4	15.4	9.2	
39.0	10.8	8.2	12.0	8.7	12.8	9.2	13.2	9.2	13.6	9.2	14.4	9.1	15.0	8.9	
056	10.0	13.1	9.8	14.5	10.4	15.5	11.0	16.0	11.0	16.5	11.0	17.4	10.9	18.2	10.6
	12.0	13.1	9.8	14.5	10.4	15.5	11.0	16.0	11.0	16.5	11.0	17.4	10.9	18.2	10.6
	14.0	13.1	9.8	14.5	10.4	15.5	11.0	16.0	11.0	16.5	11.0	17.4	10.9	18.2	10.6
	16.0	13.1	9.8	14.5	10.4	15.5	11.0	16.0	11.0	16.5	11.0	17.4	10.9	18.2	10.6
	18.0	13.1	9.8	14.5	10.4	15.5	11.0	16.0	11.0	16.5	11.0	17.4	10.9	18.2	10.6
	20.0	13.1	9.8	14.5	10.4	15.5	11.0	16.0	11.0	16.5	11.0	17.4	10.9	18.2	10.6
	21.0	13.1	9.8	14.5	10.4	15.5	11.0	16.0	11.0	16.5	11.0	17.4	10.9	18.2	10.6
	23.0	13.1	9.8	14.5	10.4	15.5	11.0	16.0	11.0	16.5	11.0	17.4	10.9	18.2	10.6
	25.0	13.1	9.8	14.5	10.4	15.5	11.0	16.0	11.0	16.5	11.0	17.4	10.9	18.2	10.6
	27.0	13.1	9.8	14.5	10.4	15.5	11.0	16.0	11.0	16.5	11.0	17.4	10.9	18.2	10.6
	29.0	13.1	9.8	14.5	10.4	15.5	11.0	16.0	11.0	16.5	11.0	17.4	10.9	18.2	10.6
	31.0	13.1	9.8	14.5	10.4	15.5	11.0	16.0	11.0	16.5	11.0	17.4	10.9	18.2	10.6
	33.0	13.1	9.8	14.5	10.4	15.5	11.0	16.0	11.0	16.5	11.0	17.4	10.9	18.2	10.6
	35.0	13.1	9.8	14.5	10.4	15.5	11.0	16.0	11.0	16.5	11.0	17.4	10.9	18.2	10.6
37.0	12.7	9.4	14.1	10.1	15.0	10.7	15.5	10.6	16.0	10.6	16.9	10.5	17.7	10.3	
39.0	12.4	9.2	13.7	9.8	14.6	10.4	15.1	10.4	15.5	10.4	16.4	10.3	17.2	10.0	

TC: Total Capacity [kW]

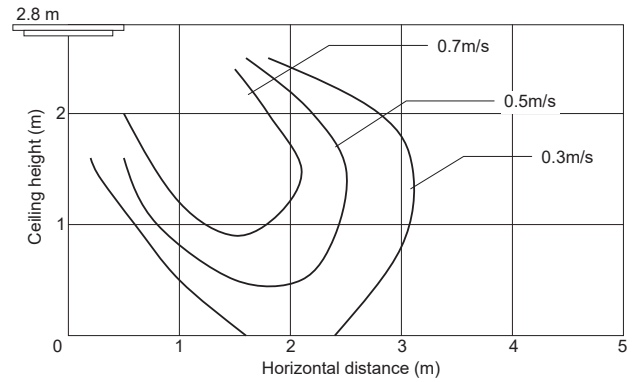
SHC: Sensible Capacity [kW]

8. Air flow distance chart

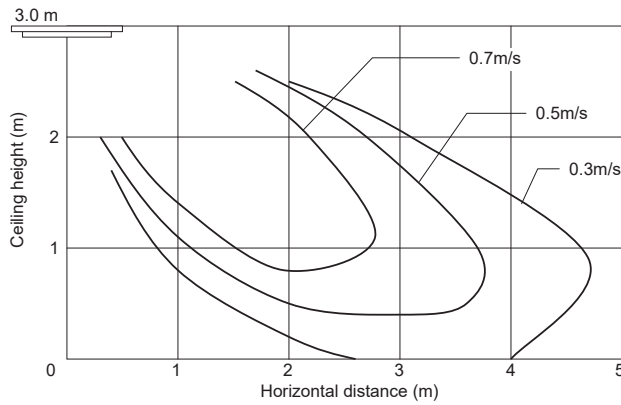
MMU-UP0091HP* / UP0121HP*



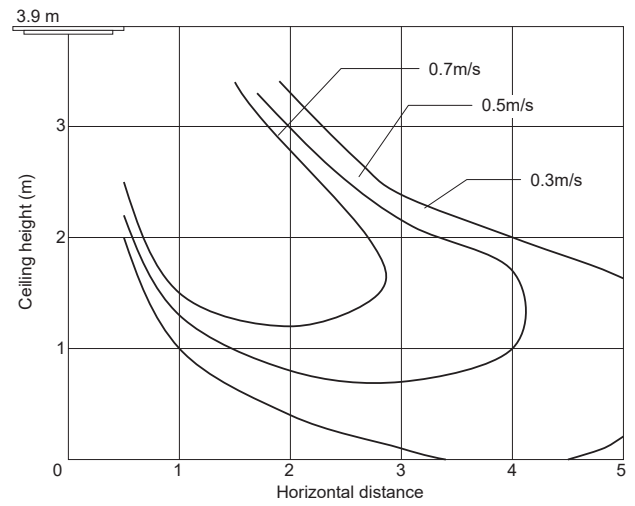
MMU-UP0151HP* / UP0181HP*



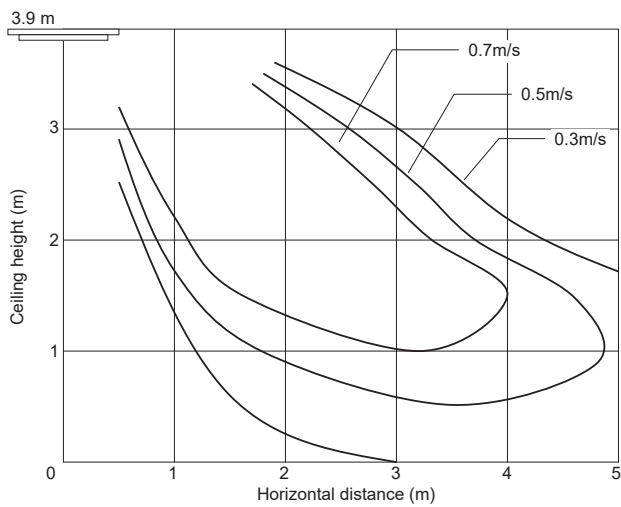
MMU-UP0241HP* / UP0271HP* / UP0301HP*



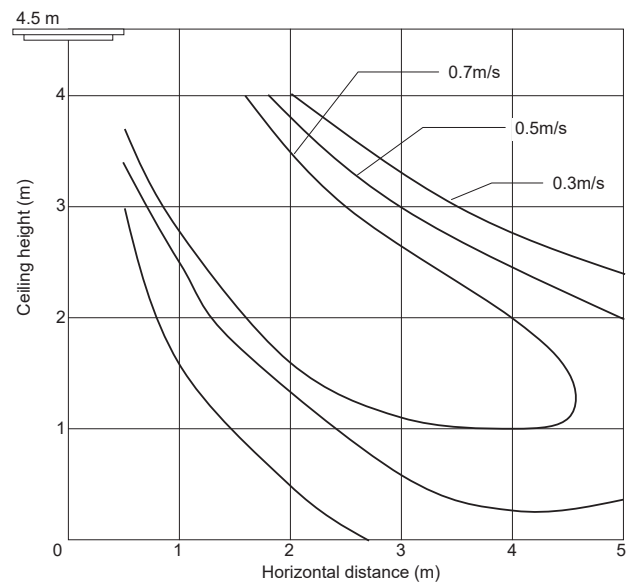
MMU-UP0361HP*



MMU-UP0481HP* / UP0561HP*

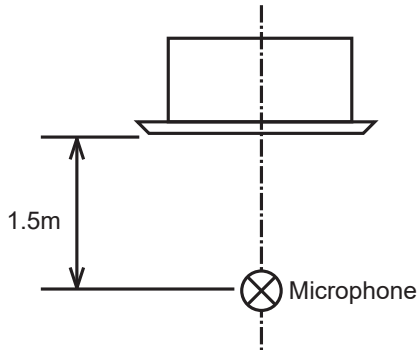


MMU-UP0361HP* / UP0481HP* / UP0561HP* (High ceiling 3)



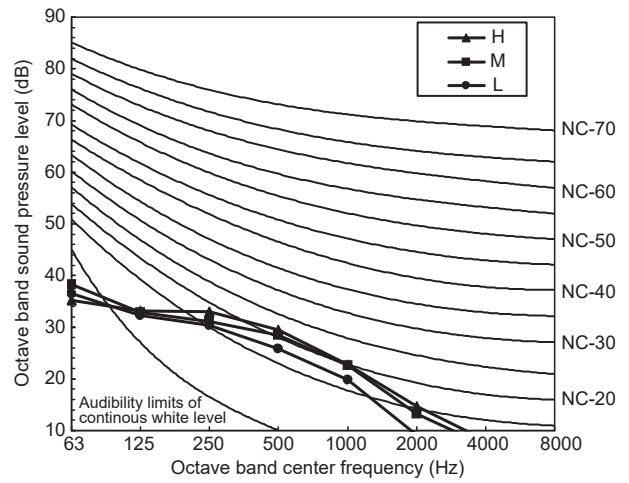
Remark : * - E / TR

9. Sound characteristics (NC Curve)



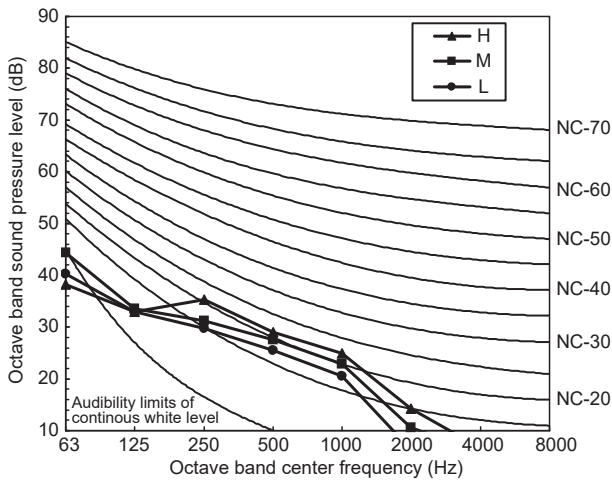
MMU-UP0091HP* / UP0121HP*

Sound pressure level(dB)(A)	H-M-L
	30-29-27



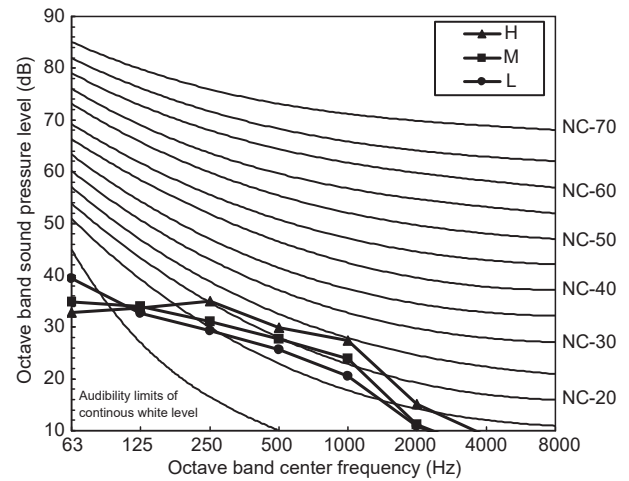
MMU-UP0151HP*

Sound pressure level(dB)(A)	H-M-L
	31-29-27



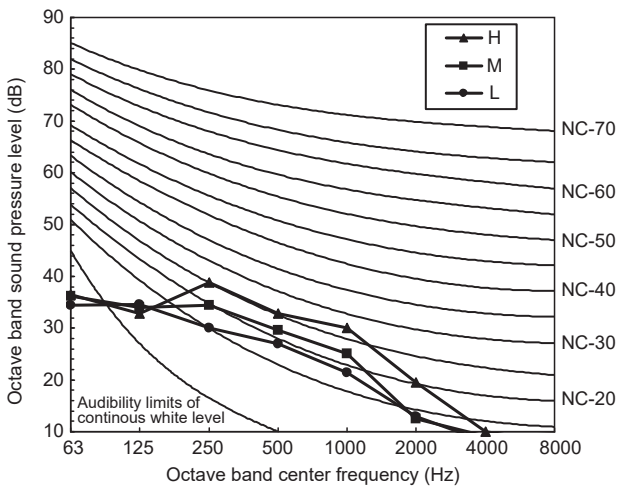
MMU-UP0181HP*

Sound pressure level(dB)(A)	H-M-L
	32-29-27



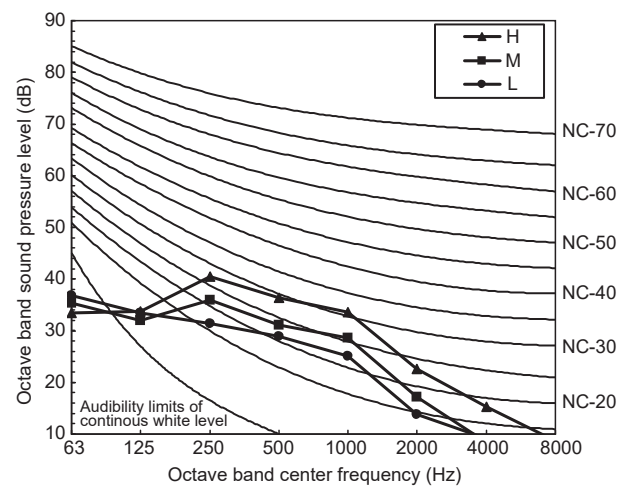
MMU-UP0241HP* / UP0271HP*

Sound pressure level(dB)(A)	H-M-L
	35-31-28



MMU-UP0301HP*

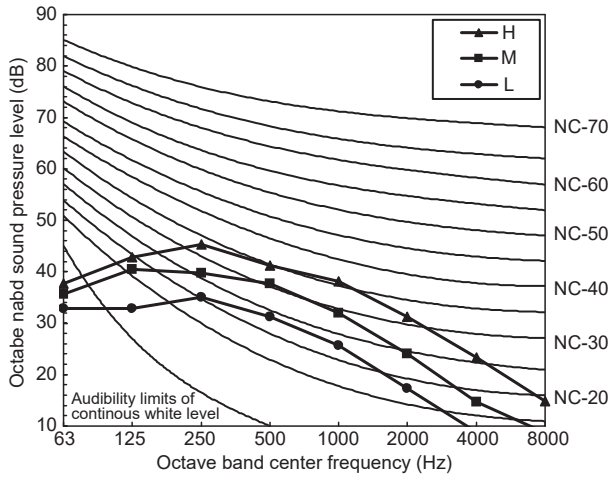
Sound pressure level(dB)(A)	H-M-L
	38-33-30



Remark : * - E / TR

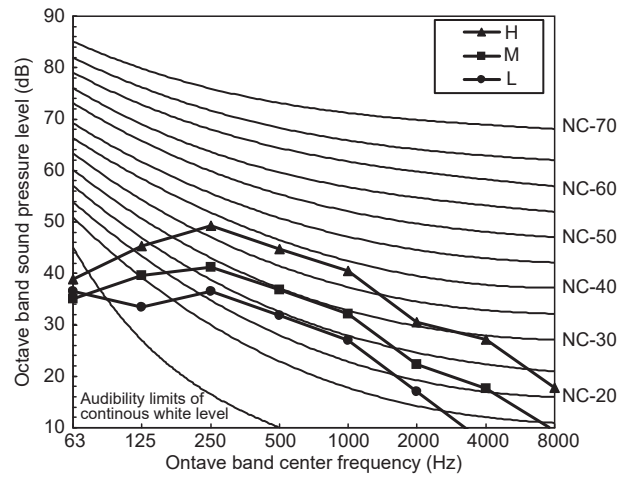
MMU-UP0361HP*

Sound pressure level(dB)(A)	H-M-L
	43-38-32



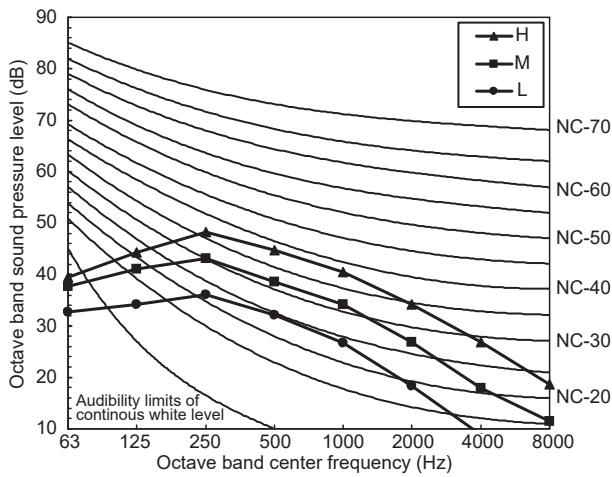
MMU-UP0481HP*

Sound pressure level(dB)(A)	H-M-L
	46-38-33



MMU-UP0561HP*

Sound pressure level(dB)(A)	H-M-L
	46-40-33



10. Fresh air intake (Design guide)

Usage

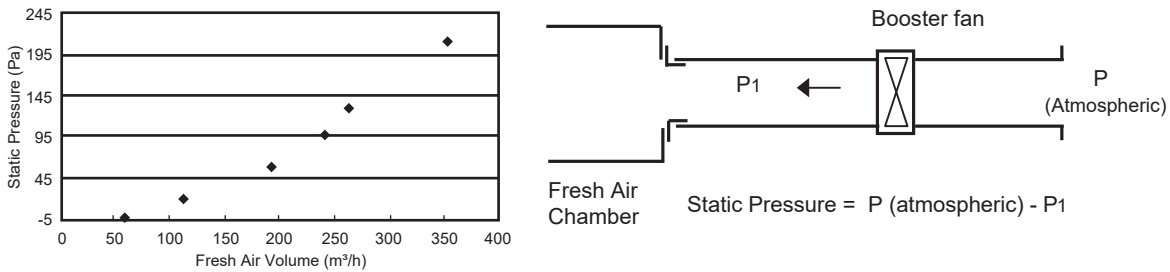
The fresh air and filter chamber is used as the filter chamber.
 Fresh air intake by using the fresh air and filter chamber and fresh air intake box.

Usage as the filter chamber

In case the optional filter is used, air volume may decrease. This can cause decrease temperature of cooling air flow and dew drop.

Caution

1. Be sure to provide air return.
2. The fresh air shall be treated by heat reclaim ventilator or the like.
3. Recommended treated air temperature is 12 °C to 30 °C
4. Be sure to decide the fresh air volume so that mixed suction air with fresh air keep operating temperature. Provide an air filter in fresh air way to prevent sucking dust.
5. Be sure to insulate the fresh air duct.
 In order to accelate starting up in heating mode, implement pre-heating operation by cutting off fresh air intake.

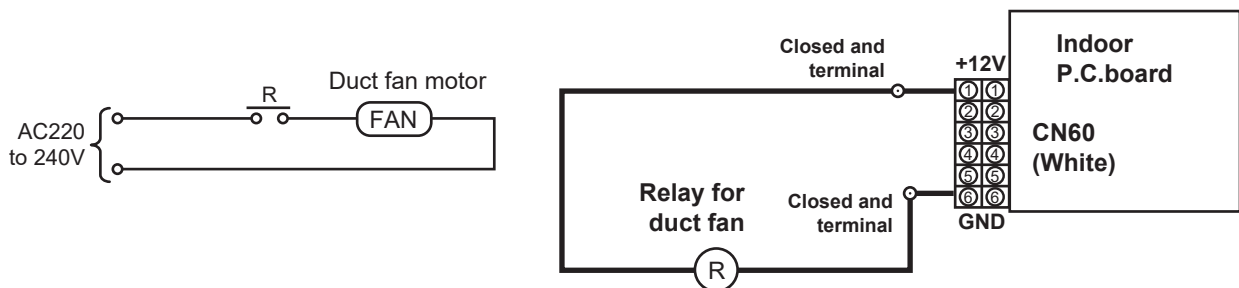


Characteristics between air volume of branching duct and static pressure

Up to 20% fresh air intake ratio is available by using the booster fan.
 fresh air intake ratio = (fresh air volume) / (total air volume) X 100 %

Inter - lock circuit

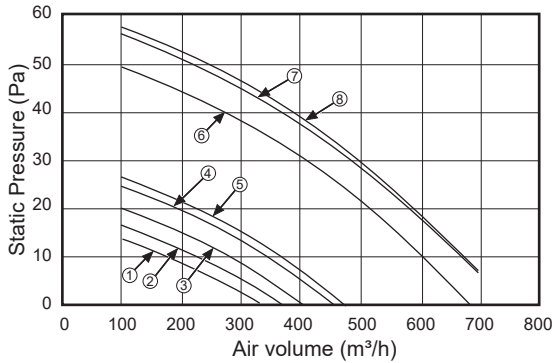
1. Connect the driving relay of the duct fan (DC 12 V) between 1 and 6 on the indoor P.C.board.
 Part indicated with a bold line is the connecting circuit.
 After installation, implement a test run to check that the duct fan of the indoor unit start / stop simultaneously.
 (Implement the test run following to the installation manual of the indoor unit.)



11. Branching duct (Design guide)

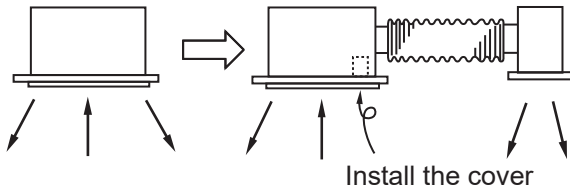
Characteristics between air volume of branching duct and static pressure

In case of connecting dia.=150mm branching duct, static pressure is as follows.



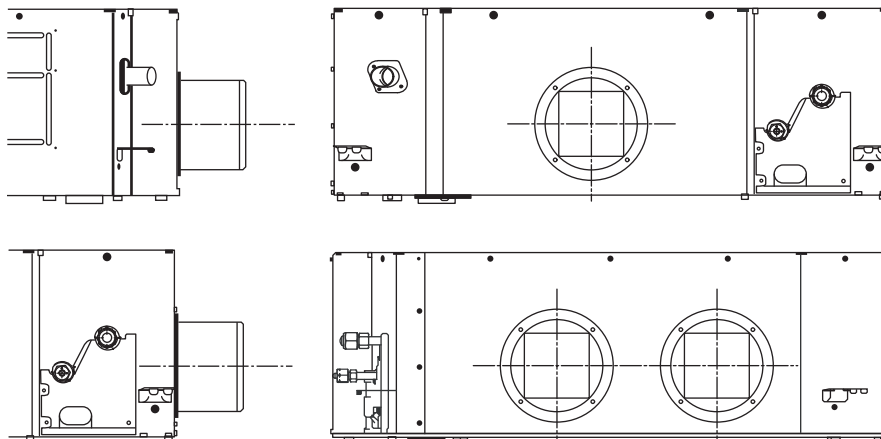
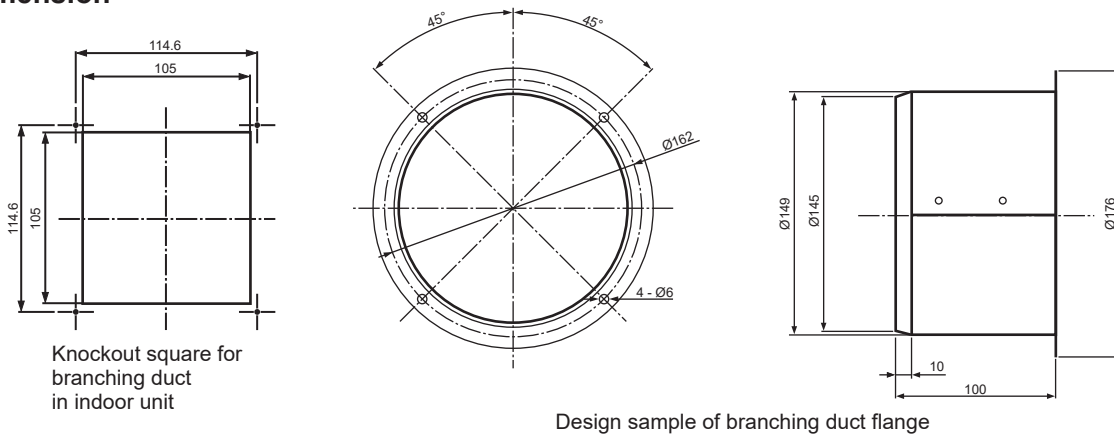
VRF	
①	009type,012type
②	015type
③	018type
④	024type,027type
⑤	030type
⑥	036type
⑦	048type
⑧	056type

Cover method



Use air discharge direction kit (TCB-BC1602UE) to cover the air discharge port.

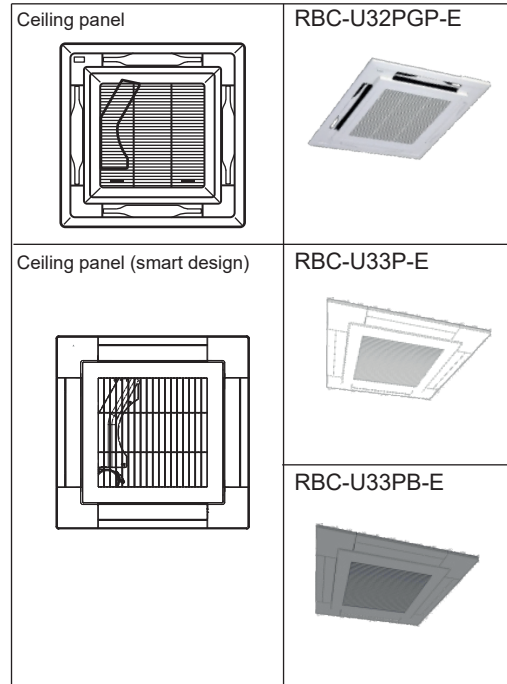
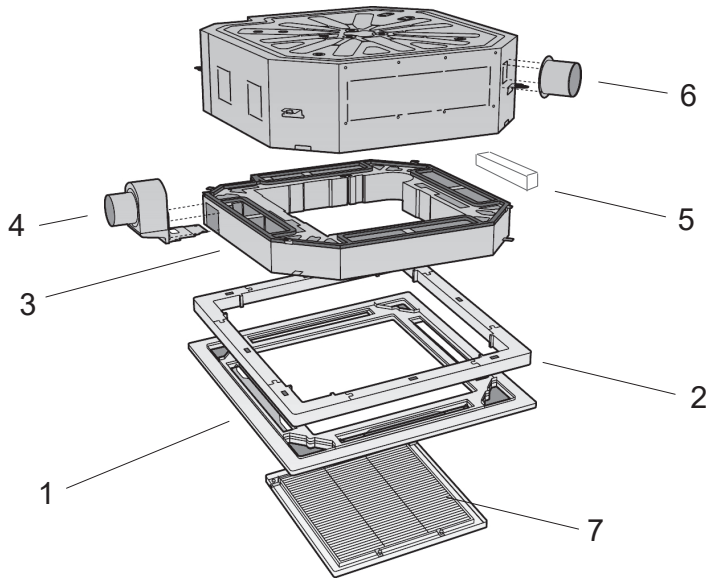
Dimension



Installation sample

12. Accessories

Optional parts for 4-Way Cassette type



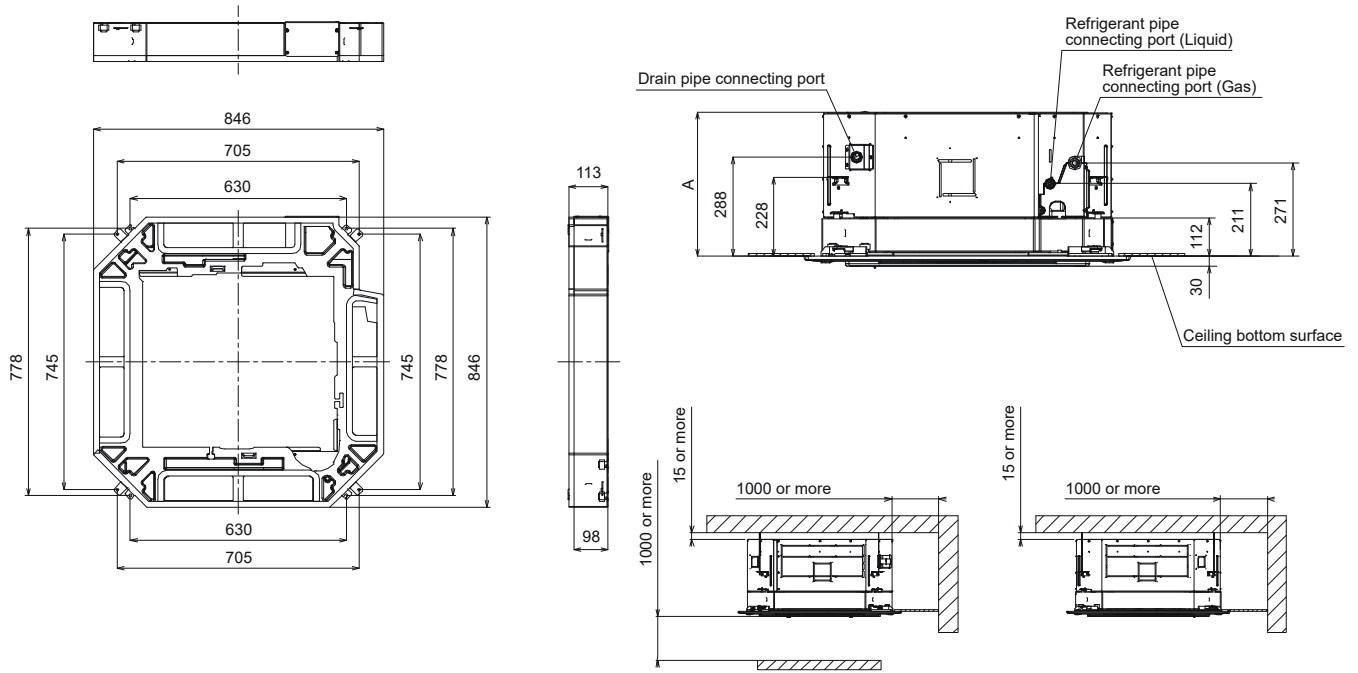
No	Type	Model name	Qty/unit	Note
1	1.1 Ceiling panel	RBC-U32PGP-E	1	White (2.5GY9.0/0.5)
	1.2 Ceiling panel (smart design)	RBC-U33P-E	1	White (5PB9/1)
	1.3 Ceiling panel (smart design)	RBC-U33PB-E	1	Black (RAL9005)
2	Spacer for height adjustment	TCB-SP1602UE	1	50 mm
3	Fresh-air chamber	TCB-GFC1602UE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

Combination pattern		Ceiling panel RBC-U32PGP-E	Ceiling panel (smart design) RBC-U33P-E	Ceiling panel (smart design, black) RBC-U33PB-E	Wireless remote control kit RBC-AXU31UP-E	Wireless remote control kit RBC-AXU33UP-E	Wireless remote control kit RBC-AXU33UPB-E	Spacer for height adjustment TCB-SP1602UE	Fresh-air inlet box + Fresh-air chamber TCB-GB1602UE+TCB-GFC1602UE	Air-discharge direction kit TCB-BC1602UE	Auxiliary fresh air flange TCB-FF101URE2	Occupancy sensor TCB-SIR41UM-E	PM2.5 filter TCB-PLFC1UPE-120	PM2.5 filter TCB-PLFC8UPE-80
Panel	Ceiling panel	RBC-U32PGP-E			OK			OK	OK	OK	OK		OK	OK
	Ceiling panel (smart design)	RBC-U33P-E				OK					OK	OK	OK	OK
	Ceiling panel (smart design,black)	RBC-U33PB-E					OK				OK		OK	OK
Wireless remote control kit		RBC-AXU31UP-E	OK					OK	OK	OK	OK		OK	OK
Wireless remote control kit		RBC-AXU33UP-E		OK							OK	OK	OK	OK
Wireless remote control kit		RBC-AXU33UPB-E			OK						OK		OK	OK
Optional parts	Spacer for height adjustment	TCB-SP1602UE	OK					OK	OK	OK	OK		OK	OK
	Fresh-air inlet box + Fresh-air chamber	TCB-GB1602UE+TCB-GFC1602UE	OK					OK	OK	OK	OK		OK	OK
	Air-discharge direction kit	TCB-BC1602UE	OK					OK	OK		OK		OK	OK
	Auxiliary fresh air flange	TCB-FF101URE2	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
	Occupancy sensor	TCB-SIR41UM-E		OK							OK	OK	OK	OK
	PM2.5 filter	TCB-PLFC1UPE-120	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK		
PM2.5 filter		TCB-PLFC2UPE-80	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK		

Appendix

1. Fresh-air chamber (TCB-GFC1602UE)

Unit : mm



Space required for installation

	A
009 to 030 type	356
036 to 056 type	419

2. Fresh-air inlet box (TCB-GB1602UE)

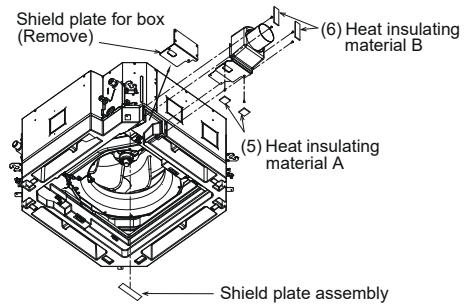
Accessories

(The following parts are included.)

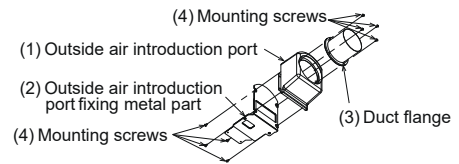
No.	Name	Qty	Remark
(1)	Outside air introduction port	1	
(2)	Outside air introduction port fixing metal part	1	
(3)	Duct flange 100 mm	1	
(4)	Mounting screws 4 × 10 mm	16	
(5)	Heat insulating material A	2	
(6)	Heat insulating material B	2	
(7)	Wind shield	1	
(8)	Installation manual	1	
(9)	Wire	1	

Installation

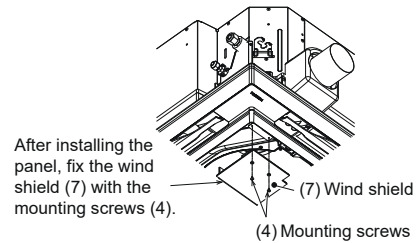
(Fig. 1)



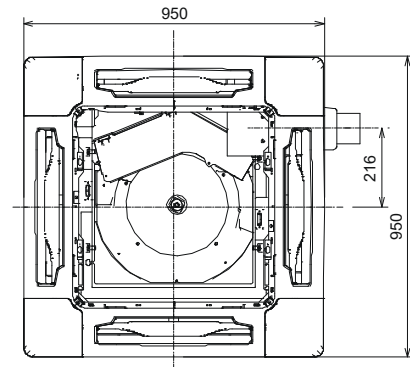
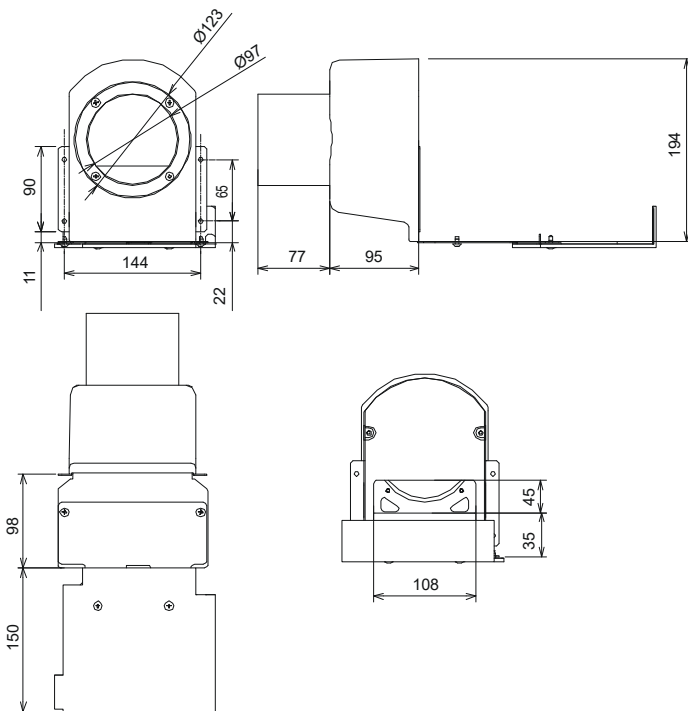
(Fig. 2)



(Fig. 3)



Dimension



Unit: mm

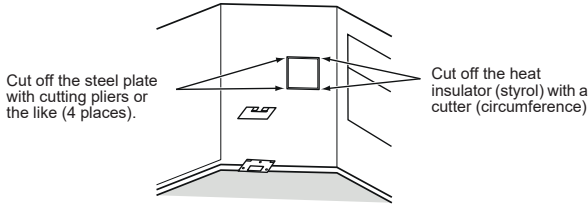
NOTE

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

3. Auxiliary fresh air flange (TCB-FF101URE2)

Installation

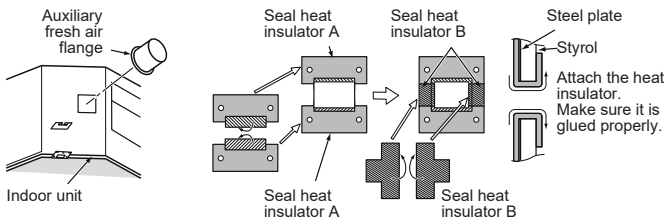
- Using the knockout of the indoor unit main body, as a marker, cut off the flange with the heat insulator (styrol) with cutting pliers or cutter.



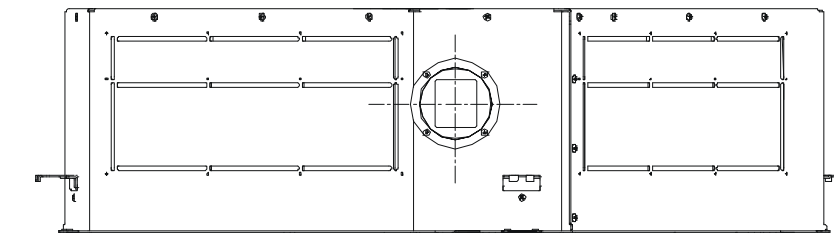
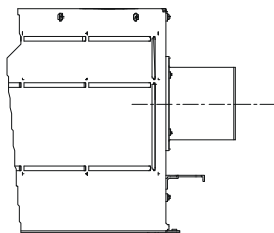
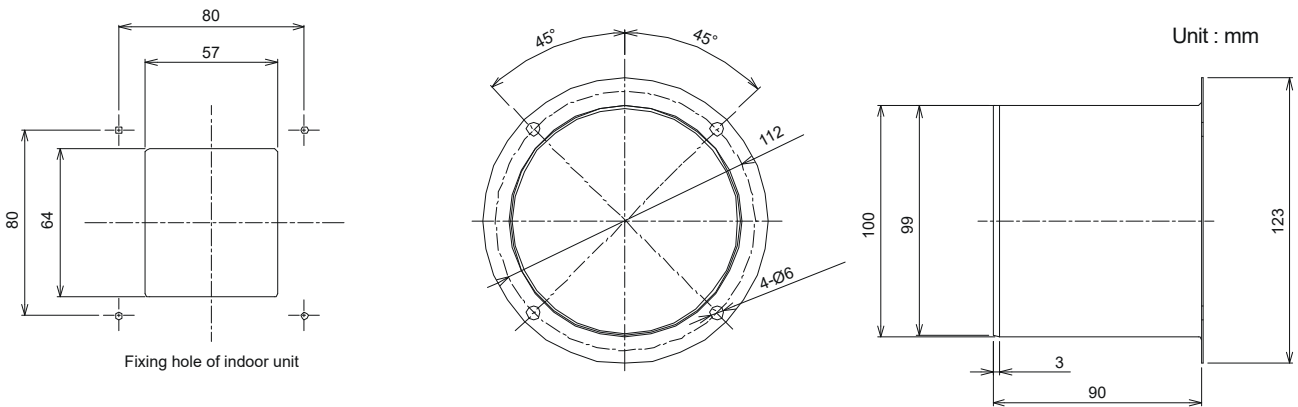
NOTE

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

- 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.
- Install the auxiliary fresh air flange to the indoor unit main body with attached 4 fixing screws.



Dimension

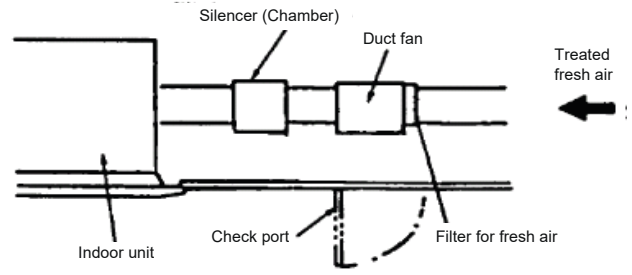


Installation status of indoor unit

Duct fan

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

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



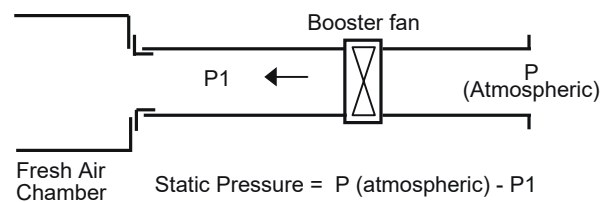
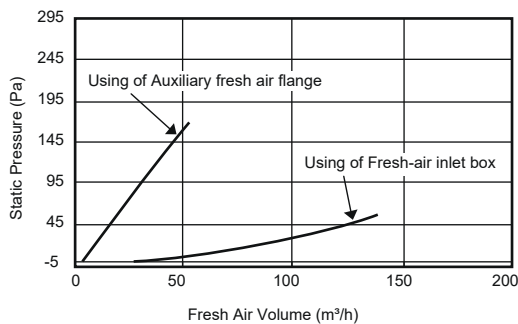
4. Fresh Air Intake

Usage

Fresh air is taken by using Fresh-air chamber and Fresh-air inlet box. And also is subsidiarily taken by using Auxiliary fresh air flange through the knock-out hole of the indoor unit body.

Caution

1. Be sure to provide air return.
2. The fresh air shall be treated by heat reclaim ventilator or the like.
3. Recommended treated air temperature is 12 °C to 30 °C.
4. Be sure to decide the fresh air volume so that mixed suction air with fresh air keep operating temperature.
Provide an air filter in fresh air way to prevent sucking dust.
5. Be sure to insulate the fresh air duct.
In order to accelerate starting up in heating mode, implement pre-heating operation by cutting off Fresh Air Intake.
6. The operating sound might increase when fresh air intake.



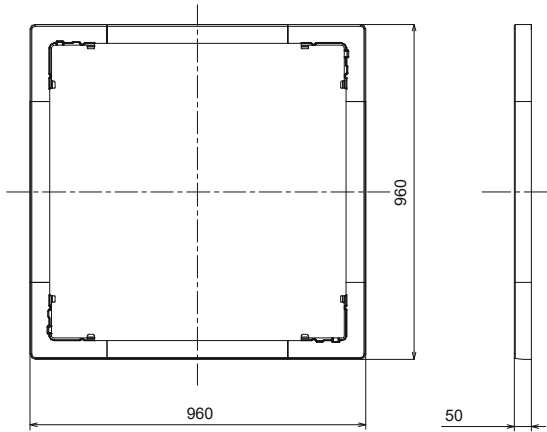
Characteristics between air volume of branching duct and static pressure

Following fresh air intake ratio is available by using the booster fan.

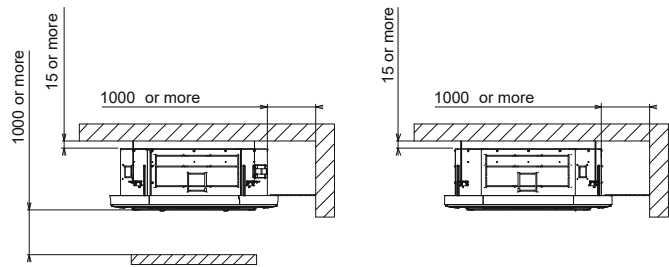
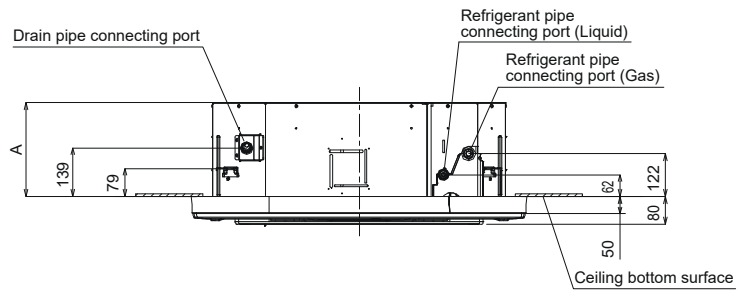
1. Fresh-air inlet box with Fresh-air chamber.
By using duct fan (local procurement), it is available to inlet up to 110 m³/h and 5% of rated air volume.
2. Auxiliary fresh air flange through the knock-out hole of the indoor unit body.
By using duct fan (local procurement), it is available to inlet up to 30 m³/h and 2% of rated air volume.

5. Spacer for height adjustment (TCB-SP1602UE)

Unit : mm



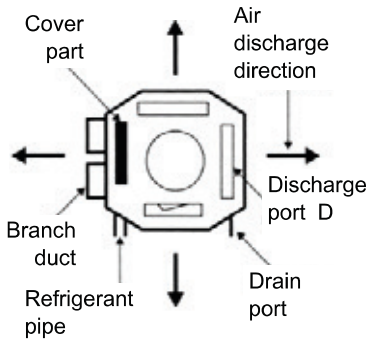
Material : Styrene foam
Color : Moon white



Space required for installation

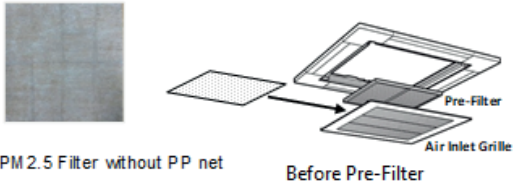
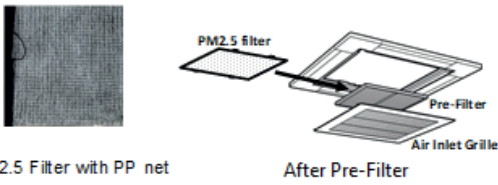
	A
009 to 030 type	206
036 to 056 type	269

6. Air discharge direction kit (TCB-BC1602UE)



		Limited models only		
3-way air flow	<p>Wind shield C</p>	<p>Wind shield A</p>	<p>Wind shield B</p>	<p>Wind shield A</p>
	Available for all models	Available for all models	Available only for 009 to 030 type	Available only for 036 to 056 type
2-way air flow	<p>Wind shield B Wind shield A</p>	<p>Wind shield A Wind shield C</p>	<p>Wind shield B Wind shield C</p>	
	Available for all models	Available for all models	Available for all models	

7. PM2.5 filter

	TCB-PLFC1UPE -120	TCB-PLFC2UPE -80
Appearance and installation image	 <p>PM 2.5 Filter without PP net Before Pre-Filter</p>	 <p>PM 2.5 Filter with PP net After Pre-Filter</p>
Air volume flow rate*	Drop 10%	Drop 15%
Replacement	Change filter	Change filter and reuse strap
Lifetime**	2-3 months	3-4 months

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

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

Particle reduction efficiency of filter

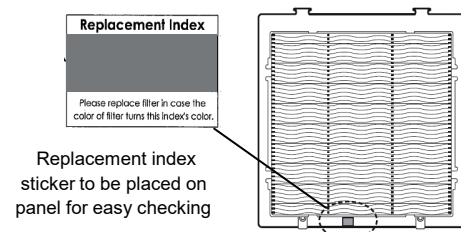
Reference filter specification from supplier based on JIS B9908 Standard (EFR15 is PM2.5 Filter material)

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

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

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

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



CARRIER AIR CONDITIONING (THAILAND) CO.,LTD.

144/9 Moo 5, Bangkadi Industrial Park, Tivanon Road, Tambol Bangkadi,
Amphur Muang, Pathumthani 12000, Thailand

Copyright © 2024 TOSHIBA CARRIER (THAILAND), All Rights Reserved

Notice : Toshiba is committed to continuously improving its products to ensure the highest quality and reliability standard, and to meet local regulations and market requirements. All features and specifications are subject to change without prior notice.
