Service manual

MIV V4+ Indoor units

Middle Static Pressure Duct Type

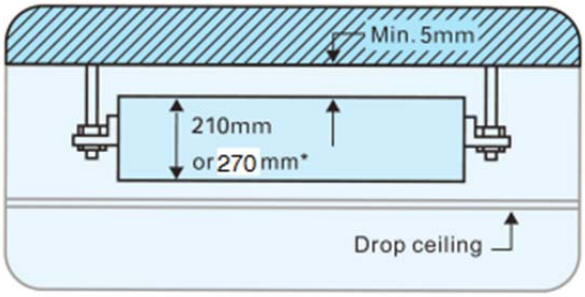
MVM22A-VA1	MVM71A-VA1
MVM28A-VA1	MVM80A-VA1
MVM36A-VA1	MVM90A-VA1
MVM45A-VA1	MVM112A-VA1
MVM56A-VA1	MVM140A-VA1

Middle Static Pressure Duct Type

1. Feature

1.1 Compact size

1.1.1 Only 210 mm (22~56 models) or 270mm (71 to 140 model) in height, this model can be installed in rooms with as little as 240 mm~300 mm depth between the drop-ceiling and ceiling slab.



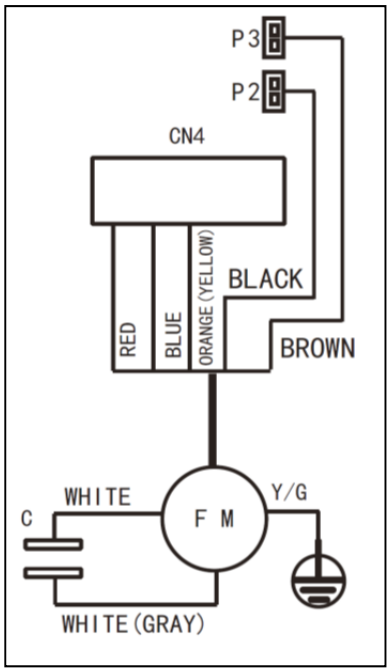
1.1.2 **The EXV is built-in** design of the indoor unit, makes the main body without an extra throttle kit box.

1.2 Wide capacity range

—The capacity ranges from 2.2 kW to 14.0 kW, totally ten models.

1.3 Two external static pressure settings for added flexibility

just exchange the wiring connection of ‘SH’ and ‘Hi’. P2 and P3 as the right side diagram.



1.4 Convenient installation

1.4.1 The EXV is fixed inside of the indoor unit

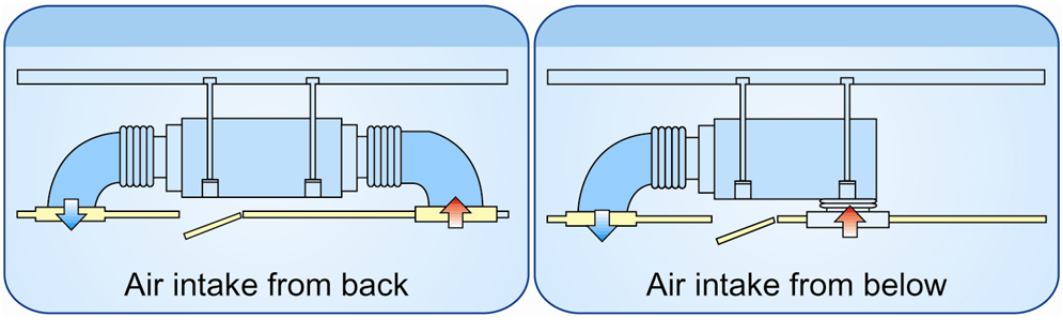
1.4.2 Standard filter with aluminum frame, which is removable downward from bottom.

1.4.3.Suction chamber is included as standard equipment

1.4.4 Flange for air in/outlet duct connection is standard.

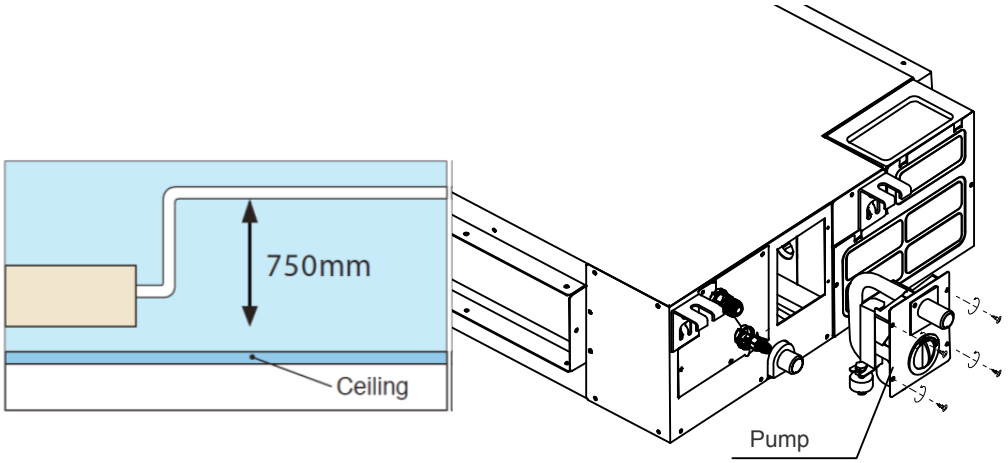
1.4.5 Air inlet from back standard and from bottom optional.

Size of the plate from bottom and flange from back is same, which makes it is possible to easily convert the air return from back to bottom by installer.



1.4.6 Standard **built-in** drain pump

Drain pump is equipped as standard accessory with 750 mm pumphead.



1.5 Flexible control and convenient for maintenance

1.5.1 The display board is connected with the E-box in factory, which makes trouble-shooting easier by LED display.

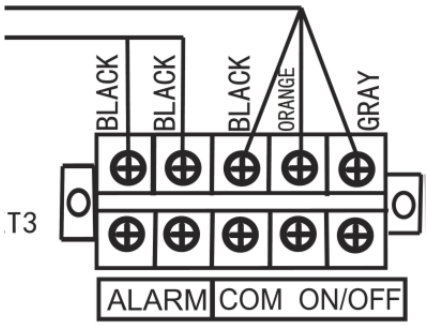
22~56 model

71~140 model

1.5.2 The Electrical control box is possible to remove 1m far away from the main unit, which is suitable for the small space hard to maintain.

1.5.3 The EXV is fixed inside of the indoor unit, which **is screw connected**, can unscrew from the liquid pipe which is very convenient for maintenance.

1.5.4 Standard functional port such as Remote On/Off Dry contact switch, and Alarm signal output (220V)



2. Specifications

Model			MVM22A-VA1	MVM28A-VA1	MVM36A-VA1
Power supply		V- Ph-Hz	220-240V~, 1Ph, 50Hz		
Cooling	Capacity	kW	2.2	2.8	3.6
	Input	W	59	57	61
	Rated current	A	0.28	0.28	0.28
Heating	Capacity	kW	2.6	3.2	4.0
	Input	W	59	57	61
	Rated current	A	0.28	0.28	0.28
Indoor fan motor	Model		YSK27-4C	YSK27-4C	YSK27-4C
	Type		AC Motor		
	Brand		Welling		
	Input	W	50.4	50.4	51.2
	Capacitor	μF	1.5uF/450V	1.5UF/450V	2UF/450V
	Speed (hi/mid/lo)	r/min	1180/960/830/730	1180/960/830/730	1270/1090/960/860
Indoor coil	Number of rows		2	2	3
	Tube pitch(a)* row pitch(b)	mm	21*13.5	21*13.5	21*13.5
	Fin spacing	mm	1.5	1.5	1.5
	Fin type		Hydrophilic aluminum		
	Tube outside diameter and type	mm	Φ7, Inner groove tube		
	length * height * width	mm	515*41*254	515*41*254	735x40.1x252
	Number of circuits		3	3	3
Indoor air flow (H/M/L)		m^3/h	570/530/410/320	570/530/410/320	570/530/410/320
Indoor external static pressure (Hi)		Pa	10(10~30)		
Indoor noise level (Hi/Mid/Lo)		dB(A)	38/35/32	38/35/32	40/38/36
Indoor unit	Dimension (W×H×D)	mm	700x210x570	700x210x570	700x210x570
	Packing (W×H×D)	mm	915*290*655	915*290*655	915*290*655
	Net/Gross weight	kg	21.5/26	21.5/26	22/27
Fresh Air intake hole diameter (round)		mm	Φ92	Φ92	Φ92
Refrigerant type			R410A		
Throttle		Type	Removable EXV (screw connection)		
		Model	BD20FKS(L)		
Design pressure		MPa	4.4/2.6		
Refrigerant piping	Liquid / Gas	mm	Φ6.35/ Φ12.7	Φ6.35/ Φ12.7	Φ6.35/ Φ12.7
Connecting wiring	Power wiring	mm^2	3*2.5(L≤20m); 3*3.5(L≤50m)		
	Signal wiring	mm^2	3*0.75		
Drainage water pipe diameter			Φ32 (ID Φ25, OD Φ32)		
Controller			Wireless remote controller (RM05/BG(T)E-A) - Standard KJR-12B/DP(T)-E/ KJR-10B/DP(T)-E (6 m connection wire) - optional		
Operation temp		℃	Cooling：17～32；Heating:10～28		

Notes: 1. Nominal cooling capacities are based on the following conditions: return air temp. : 27°CDB, 19°CWB, outdoor temp.:35°CDB,equivalent ref. Piping: 8m(horizontal)

2. Nominal heating capacities are based on the following conditions: return air temp.: 20°CDB,outdoor temp.: 7°CDB,6°CWB,equivalent ref. Piping: 8m(horizontal)

Model			MVM45A-VA1	MVM56A-VA1	MVM71A-VA1
Power supply		V- Ph-Hz	220-240V~, 1Ph, 50Hz		
Cooling	Capacity	kW	4.5	5.6	7.1
	Input	W	92	92	149
	Rated current	A	0.5	0.5	0.7
Heating	Capacity	kW	5	6.3	8
	Input	W	92	92	149
	Rated current	A	0.5	0.5	0.7
Indoor fan motor	Model		YSK68-4P	YSK68-4P	YSK74-4P
	Type		AC MOTOR		
	Brand		Welling		
	Input	W	91	91	120
	Capacitor	μF	3.5UF/450V	3.5UF/450V	3.5UF/450V
	Speed (hi/mid/lo)	r/min	1150/1020/800/700	1150/1020/800/700	1000/870/750/680
Indoor coil	Number of rows		3	3	4
	Tube pitch(a)* row pitch(b)	mm	21X13.37	21X13.37	21X13.37
	Fin spacing	mm	1.5	1.5	1.5
	Fin type		Hydrophilic aluminum		
	Tube outside diameter and type	mm	Φ7 inner groove tube		
	length * height * width	mm	735*40.1*254	735*40.1*254	735*53.5*254
	Number of circuits		4	4	6
Indoor air flow (H/M/L)		m^3/h	958/850/667/583	958/850/667/583	1207/1050/905/821
Indoor external static pressure (Hi)		Pa	10(10~30)		
Indoor noise level (Hi/Mid/Lo)		dB(A)	41/38.9/36	41/38.9/36	43.4/40/36
Indoor unit	Dimension (W×H×D)	mm	920×210×570	920×210×570	920×210×570
	Packing (W×H×D)	mm	1135×290×655	1135×290×655	1135×350×655
	Net/Gross weight	kg	27/32	27/32	30/34
Fresh Air intake hole diameter (round)		mm	Φ92	Φ92	Φ92
Refrigerant type			R410A		
Throttle		Type	Removable EXV (screw connection)		
		Model	BD20FKS(L)		
Design pressure		MPa	4.4/2.6		
Refrigerant piping	Liquid / Gas	mm	Φ6.35/ Φ12.7	Φ9.52/ Φ15.9	Φ9.52/ Φ15.9
Connecting wiring	Power wiring	mm^2	3*2.5(L≤20m); 3*3.5(L≤50m)		
	Signal wiring	mm^2	3*0.75		
Drainage water pipe diameter			Φ32 (ID Φ25, OD Φ32)		
Controller			Wireless remote controller (RM05/BG(T)E-A) - Standard KJR-12B/DP(T)-E/ KJR-10B/DP(T)-E (6 m connection wire) - optional		
Operation temp		℃	Cooling：17～32；Heating:10～28		

Notes: 1. Nominal cooling capacities are based on the following conditions: return air temp. : 27°CDB, 19°CWB, outdoor temp.:35°CDB,equivalent ref. Piping: 8m(horizontal)

2. Nominal heating capacities are based on the following conditions: return air temp.: 20°CDB,outdoor temp.: 7°CDB,6°CWB,equivalent ref. Piping: 8m(horizontal)

Model			MVM80A-VA1	MVM90A-VA1	MVM112A-VA1	MVM140A-VA1
Power supply		V- Ph-Hz	220-240V~, 1Ph, 50Hz			
Cooling	Capacity	kW	8	9	11.2	14
	Input	W	198	200	313	274
	Rated current	A	1	1	1.8	1.8
Heating	Capacity	kW	9	10	12.5	15.5
	Input	W	198	200	313	274
	Rated current	A	1.16	1.16	1.65	1.8
Indoor fan motor	Model		YSK100-4P	YSK100-4P	YSK200-4P	YSK180-4P
	Type		AC MOTOR			
	Brand		Welling			
	Input	W	179	179	300	255
	Capacitor	μF	10UF/450V	10UF/450V	10UF/450V	10UF/450V
	Speed (hi/mid/lo)	r/min	935/810/700/620	935/810/700/620	1130/1000/870/770	1080/960/830/710
Indoor coil	Number of rows		4	4	4	4
	Tube pitch(a)*rowpitch(b)	mm	21X13.5	21X13.5	21X13.5	25.4X22
	Fin spacing	mm	1.5	1.5	1.5	1.5
	Fin type		Hydrophilic aluminum			
	Tube outside diameter and type	mm	Φ7			
			inner groove tube			
	length * height * width	mm	955*54*336	955*54*336	955*54*336	103088*457.2
	Number of circuits		5	8	8	8
Indoor air flow ((SH)/H/M/L)		m^3/h	(1400)1226/1018/861	(1400)1226/1018/861	(1750)/1752/1552/1389	(2138)/ 1918/1539/1250
Indoor external static pressure (Hi)		Pa	20(10~50))	20(10~50))	40(10~80))	40(10~80)
Indoor noise level (Hi/Mid/Lo)		dB(A)	45.4/39.8/37	45.4/39.8/37	48.0 /41.9/38	47.7/43.2/39.0
Indoor unit	Dimension (W×H×D)	mm	1140*270*710	1140*270*710	1140*270*710	1200*300*800
	Packing (W×H×D)	mm	1355*350*795	1355*350*795	1355*350*795	1385*375*920
	Net/Gross weight	kg	38/46.5	40/48	40/48	49/58
Fresh Air intake hole diameter (round)		mm	Φ125	Φ125	Φ125	Φ125
Refrigerant type			R410A			
Throttle		Type	Removable EXV (screw connection)			
		Model	BD24FKS(L)			
Design pressure		MPa	4.4/2.6			
Refrigerant piping	Liquid / Gas	mm	Φ9.53/Φ15.9	9.53/Φ15.9	Φ9.53/Φ15.9	Φ9.53/Φ15.9
Connecting wiring	Power wiring	mm^2	3×2.5(L≤20m); 3×3.5(L≤50m)			
	Signal wiring	mm^2	3*0.75			
Drainage water pipe diameter			Φ32 (ID Φ25, OU Φ32)			
Controller			Wireless remote controller (RM05/BG(T)E-A) - Standard KJR-12B/DP(T)-E/ KJR-10B/DP(T)-E (6 m connection wire) - optional			
Operation temp		℃	Cooling：17～32；Heating:10～28			

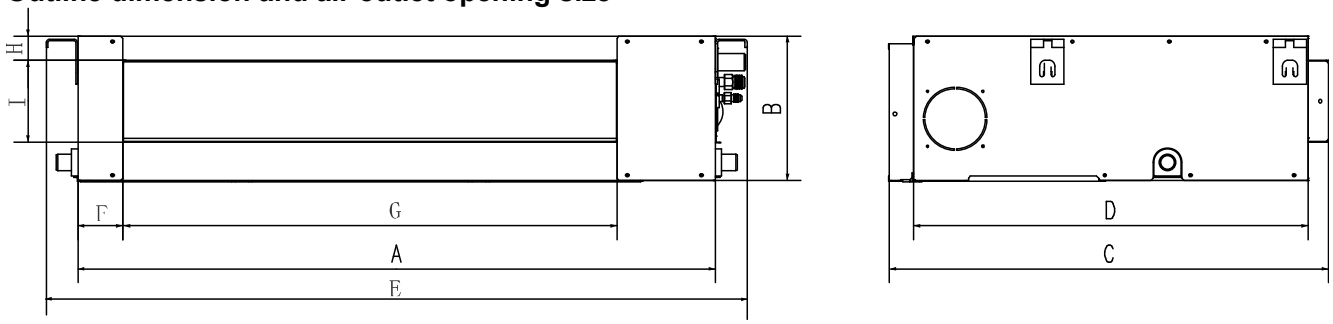
Notes: 1. Nominal cooling capacities are based on the following conditions: return air temp. : 27°CDB, 19°CWB, outdoor temp.:35°CDB,equivalent ref. Piping: 8m(horizontal)

2. Nominal heating capacities are based on the following conditions: return air temp.: 20°CDB,outdoor temp.: 7°CDB,6°CWB,equivalent ref. Piping: 8m(horizontal)

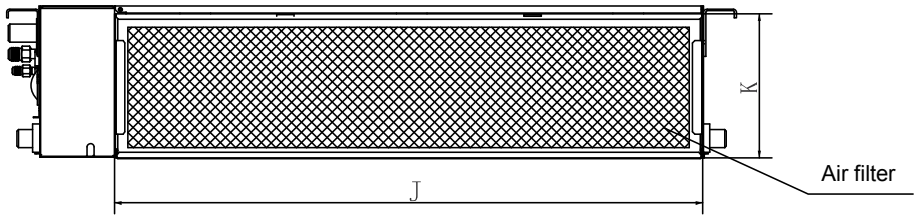
3. Dimension

MVM22A-VA1, MVM28A-VA1, MVM36A-VA1, MVM45A-VA1, MVM56A-VA1, MVM71A-VA1, MVM80A-VA1, MVM90A-VA1, MVM112A-VA1, MVM140A-VA1

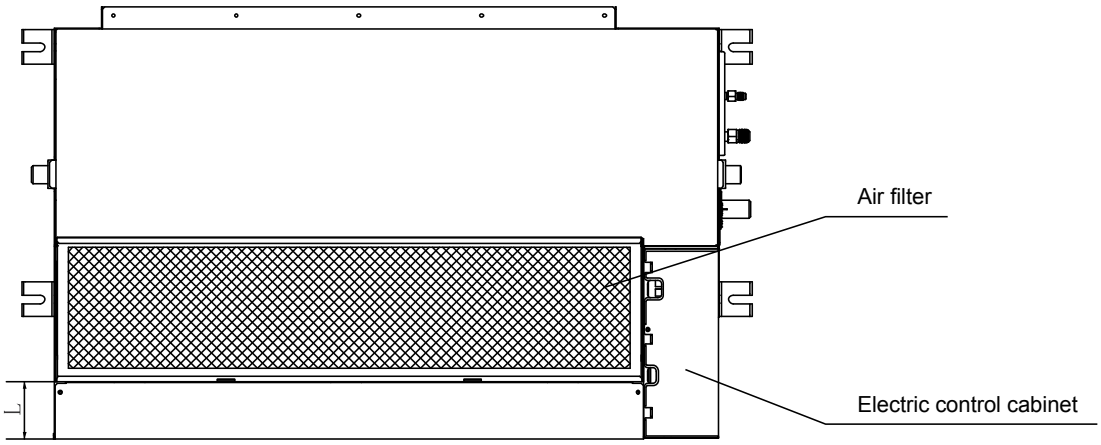
Outline dimension and air outlet opening size



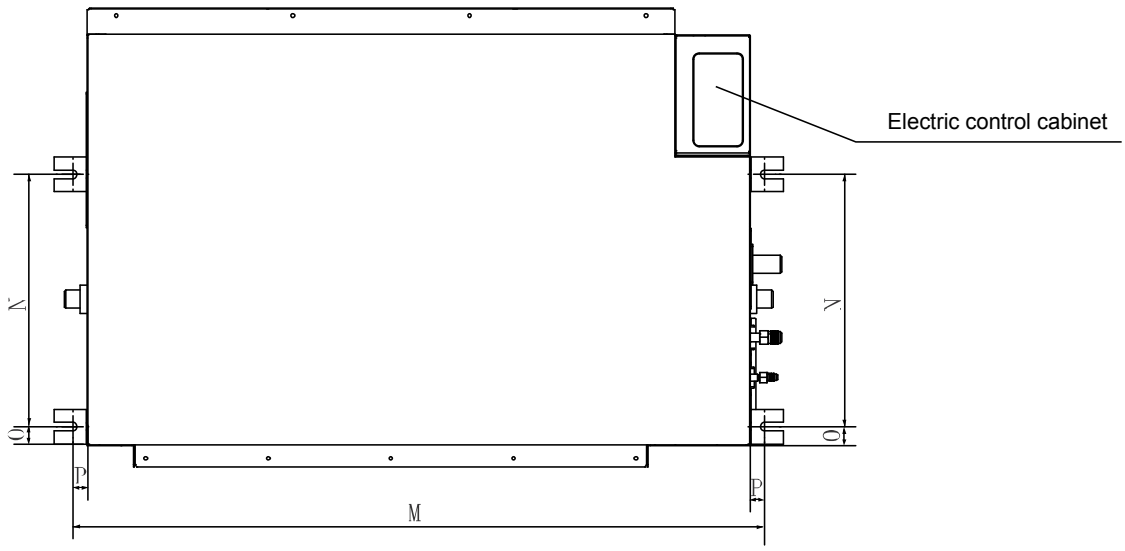
Air return opening size:



Position size of declensional ventilation opening



Size of mounted lug



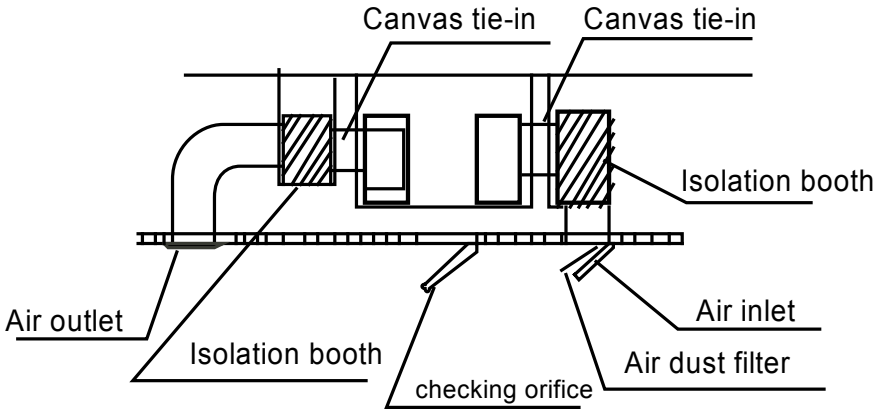
MODEL (MVM-A-VA1)	Outline dimension					Air outlet opening size		
	A	B	C	D	E	F	G	H
22~36	700	210	635	570	790	65	493	35
45~56	920	210	635	570	1010	65	713	35
71	920	210	635	570	1010	65	713	35
80~112	1140	270	775	710	1230	65	933	35
140	1200	300	865	800	1290	80	968	40

MODEL (MVM-A-VA1)	Air return opening size				Size of mounted lug			
	I	J	K	L	M	N	O	P
22~36	119	595	200	80	740	350	26	20
45~56	119	815	200	80	960	350	26	20
71	179	815	260	20	960	350	26	20
80~112	179	1035	260	20	1180	490	26	20
140	204	1094	288	45	1240	500	26	20

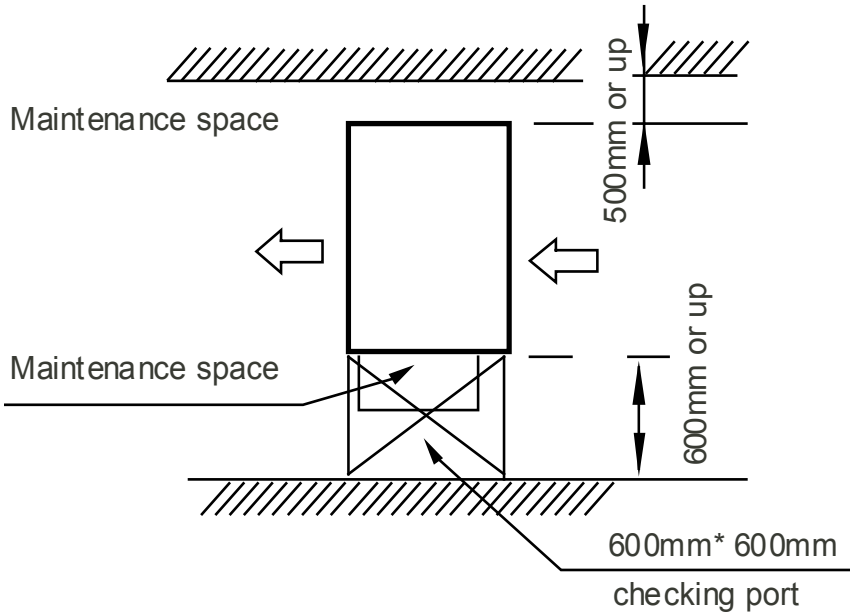
Note: Fresh air intake connection size is **Φ125 mm.**

4. Service Space

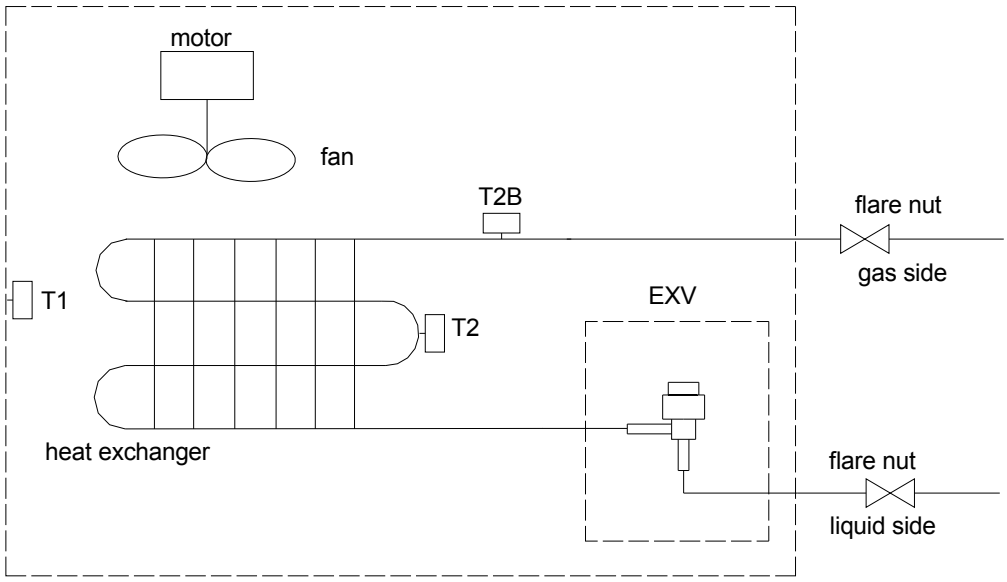
- Ensure the needed spaces for installation and maintenance.
- The ceiling is horizontal, and its structure can endure the weight of the indoor unit.
- The outlet and the inlet are not impeded, and the influence of external air is the least.
- The air flow can reach throughout the room.
- The connecting pipe and drainpipe could be extracted out easily.
- There is no direct radiation from heaters.
- **Below is the recommended duct installation method:**



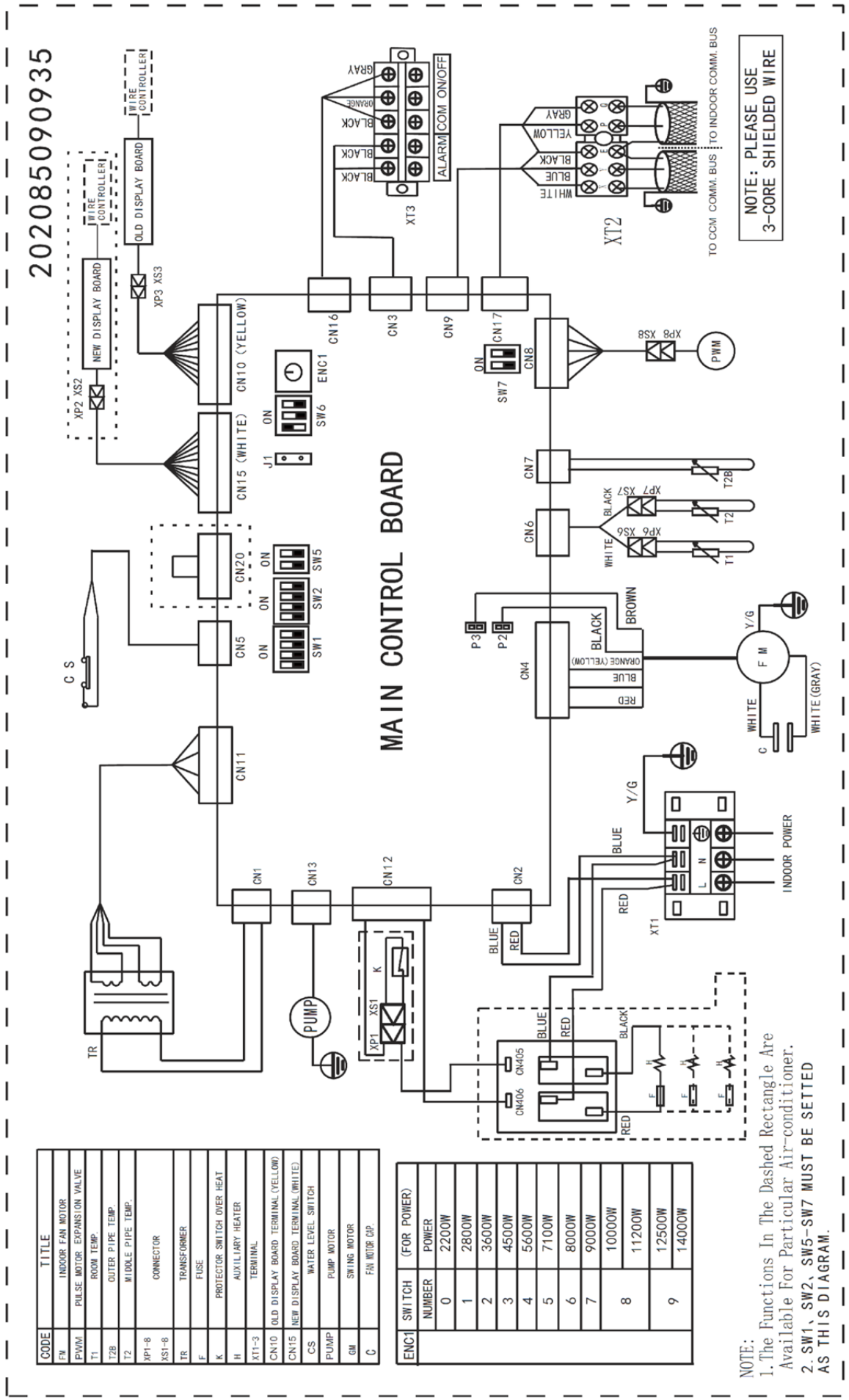
- **Keep min. 600*600 space for checking &maintenance:**



5. Piping Diagram



6. Wiring Diagram



CODE	TITLE
FM	INDOOR FAN MOTOR
PVM	PULSE MOTOR EXPANSION VALVE
T1	ROOM TEMP.
T2B	OUTER PIPE TEMP.
T2	MIDDLE PIPE TEMP.
XP1-8 XS1-8	CONNECTOR
TR	TRANSFORMER
F	FUSE
K	PROTECTOR SWITCH OVER HEAT
H	AUXILIARY HEATER
XT1-3	TERMINAL
CN10	OLD DISPLAY BOARD TERMINAL(YELLOW)
CN15	NEW DISPLAY BOARD TERMINAL(WHITE)
CS	WATER LEVEL SWITCH
PUMP	PUMP MOTOR
SM	SWING MOTOR
C	FAN MOTOR CAP

ENC1 SWITCH NUMBER	(FOR POWER) POWER
0	2200W
1	2800W
2	3600W
3	4500W
4	5600W
5	7100W
6	8000W
7	9000W
8	10000W
	11200W
9	12500W
	14000W

7. Fan Performance

How to Read the Diagram

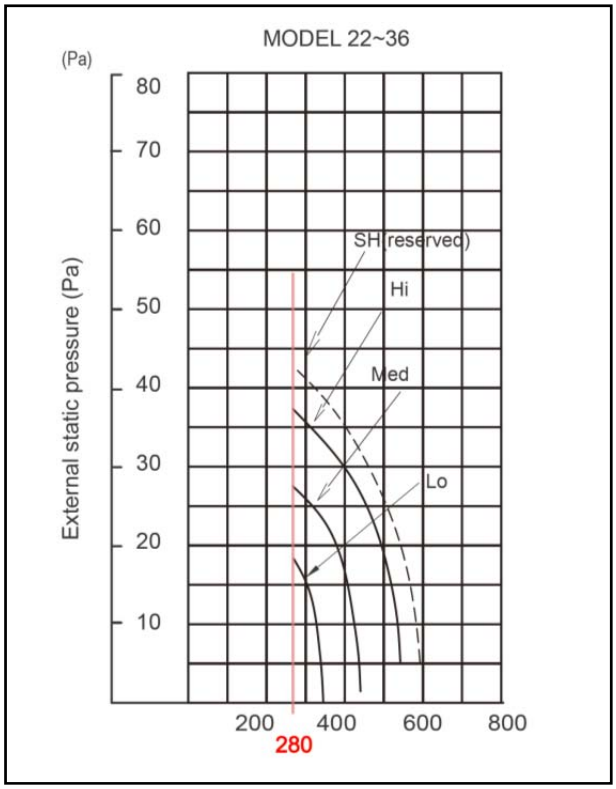
The vertical axis is the External Static Pressure **(Pa)** while the horizontal axis represents theAir Flow **(CMH).**

The characteristic curve for the “Hi,” “Med, ” and “Lo ” fan speed control, as well the reserved “SH” speed.

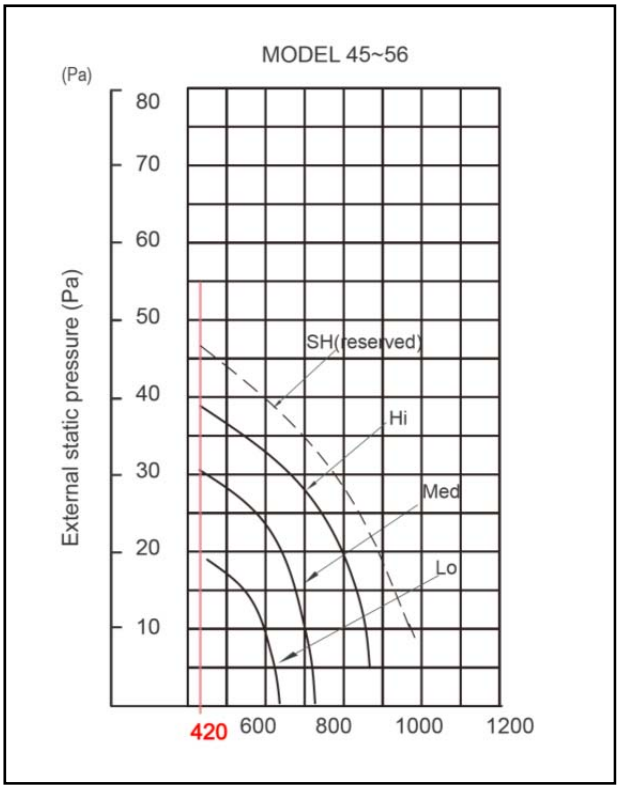
The nameplate values are shown based on the “Hi ” air flow.

Therefore in the case of **22T2**Type, the air flow is 530 **CMH** , while the External Static Pressure is 10Pa at “Hi ” position. If 30Pa needed, the airflow is at ‘SH’

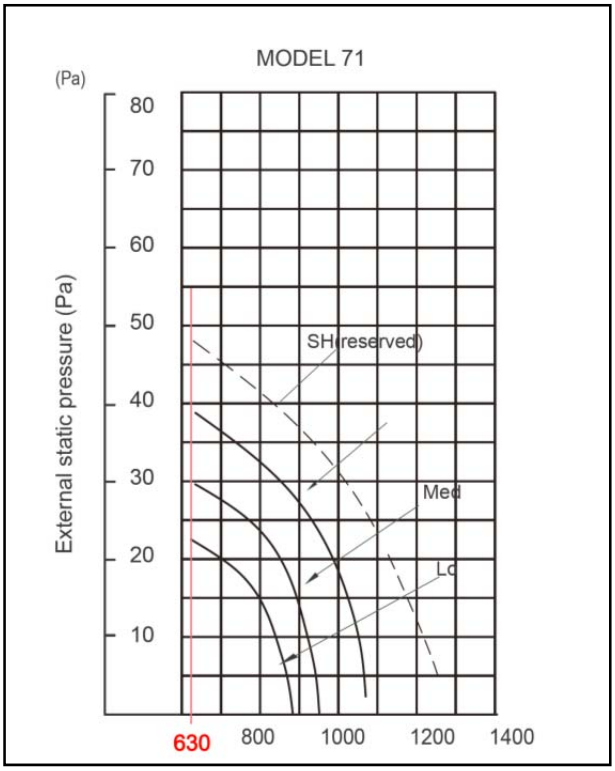
MVM22(28)(36)A-VA1



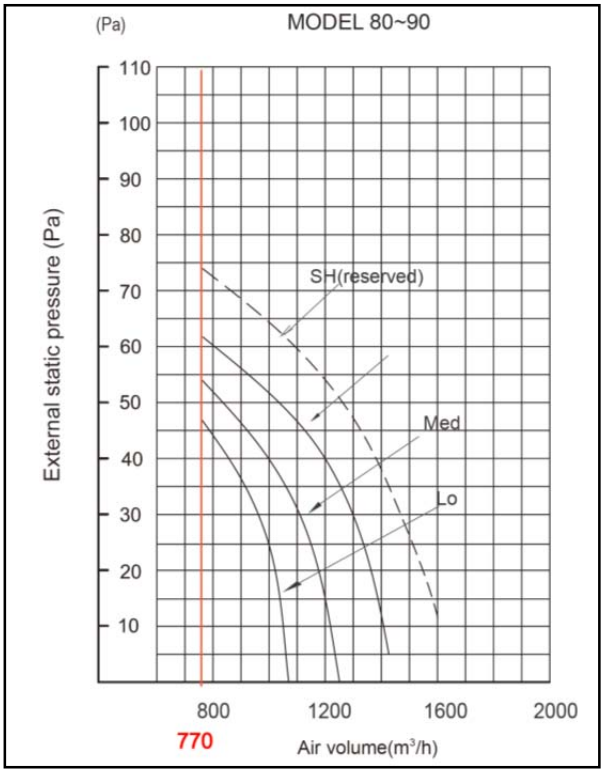
MVM45(56)A-VA1



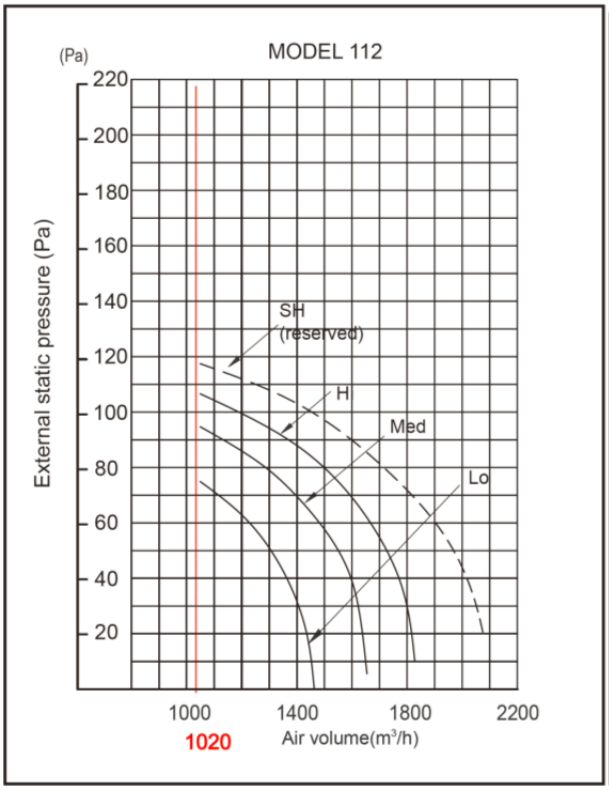
MVM71A-VA1



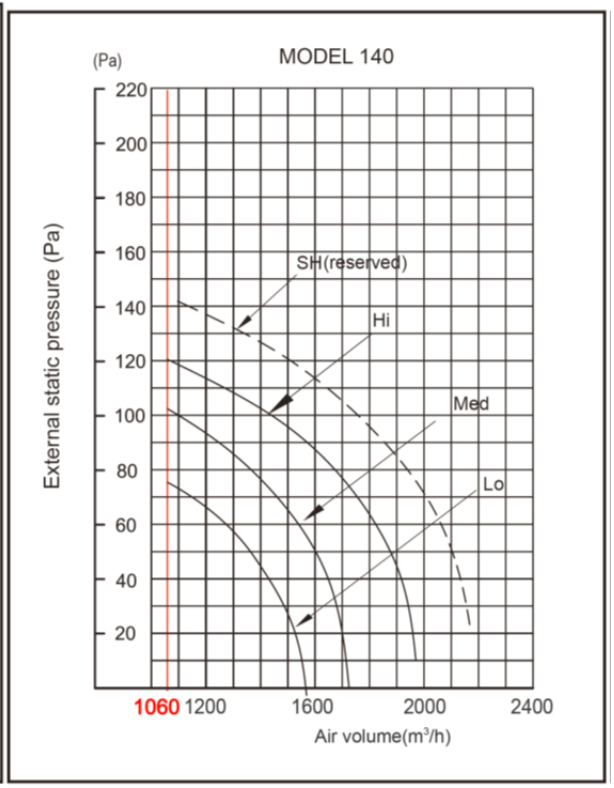
MVM80(90)A-VA1



MVM112A-VA1



MVM140A-VA1



- If the external static pressure is too great (due to long extension of duct, for example), the air flowvolume may drop too low at each air outlet.
- So there's a **limit air flow volume** line for each speed, which is the min. airflow of this duct unit. At this flow volume, the fan achieve the max. ESP, and indoor evaporator may protect by low temp.
- As well, there's a limit airflow volume, which is the max. Value at each speed. It request the unit to connect duct for air-inlet and outlet, to prevent damage from the high temp. of motor/evaporator.
- **E.g. for MVM140A-VA1 model, if at high speed, it is required to connect duct with min. 10Pa resistence.If set to SH, it should be at least 20Pa duct.Similarly , it only allow max. 100Pa duct resistence @ Hi speed. If need 120Pa, should set to SH.**

8. Capacity Tables

8.1 Cooling **TC**: total capacity **SC**: sensible capacity

WB: wet-bulb temperature **DB**: dry-bulb temperature

Indoor Unit size (kW)	Outdoor temperature (□DB)	Indoor temperature (□WB/DB)													
		14/20		16/23		18/26		19/27		20/28		22/30		24/32	
		TC	SC	TC	SC	TC	SC	TC	SC	TC	SC	TC	SC	TC	SC
		kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
2.2	10.0	1.5	1.4	1.8	1.5	2.1	1.6	2.2	1.6	2.3	1.7	2.6	1.7	2.9	1.7
	12.0	1.5	1.4	1.8	1.5	2.1	1.6	2.2	1.6	2.3	1.7	2.6	1.7	2.8	1.6
	14.0	1.5	1.4	1.8	1.5	2.1	1.6	2.2	1.6	2.3	1.7	2.6	1.7	2.8	1.6
	16.0	1.5	1.4	1.8	1.5	2.1	1.6	2.2	1.6	2.3	1.7	2.6	1.7	2.8	1.6
	18.0	1.5	1.4	1.8	1.5	2.1	1.6	2.2	1.6	2.3	1.7	2.6	1.7	2.8	1.6
	20.0	1.5	1.4	1.8	1.5	2.1	1.6	2.2	1.6	2.3	1.7	2.6	1.7	2.7	1.5
	21.0	1.5	1.4	1.8	1.5	2.1	1.6	2.2	1.6	2.3	1.7	2.6	1.7	2.7	1.5
	23.0	1.5	1.4	1.8	1.5	2.1	1.6	2.2	1.6	2.3	1.7	2.5	1.6	2.7	1.5
	25.0	1.5	1.4	1.8	1.5	2.1	1.6	2.2	1.6	2.3	1.7	2.5	1.6	2.6	1.5
	27.0	1.5	1.4	1.8	1.5	2.1	1.6	2.2	1.6	2.3	1.7	2.5	1.6	2.6	1.5
	29.0	1.5	1.4	1.8	1.5	2.1	1.6	2.2	1.6	2.3	1.7	2.4	1.5	2.5	1.5
	31.0	1.5	1.4	1.8	1.5	2.1	1.6	2.2	1.6	2.3	1.7	2.4	1.5	2.5	1.5
	33.0	1.5	1.4	1.8	1.5	2.1	1.6	2.2	1.6	2.3	1.7	2.4	1.5	2.4	1.5
	35.0	1.5	1.4	1.8	1.5	2.1	1.6	2.2	1.6	2.3	1.7	2.3	1.5	2.4	1.5
	37.0	1.5	1.4	1.8	1.5	2.1	1.6	2.2	1.6	2.3	1.7	2.3	1.5	2.3	1.5
	39.0	1.5	1.4	1.8	1.5	2.1	1.6	2.2	1.6	2.2	1.6	2.3	1.5	2.3	1.5
	42.0	1.5	1.4	1.8	1.5	2.1	1.6	2.2	1.6	2.2	1.6	2.3	1.5	2.3	1.5
	44.0	1.5	1.4	1.8	1.5	2.1	1.6	2.2	1.6	2.2	1.6	2.3	1.5	2.3	1.5
	46.0	1.5	1.4	1.8	1.5	2.1	1.6	2.2	1.6	2.2	1.6	2.3	1.5	2.3	1.5
2.8	10.0	1.9	1.7	2.3	1.9	2.6	2.1	2.8	2.1	3.0	2.1	3.3	2.2	3.7	2.2
	12.0	1.9	1.7	2.3	1.9	2.6	2.1	2.8	2.1	3.0	2.1	3.3	2.2	3.6	2.1
	14.0	1.9	1.7	2.3	1.9	2.6	2.1	2.8	2.1	3.0	2.1	3.3	2.2	3.6	2.1
	16.0	1.9	1.7	2.3	1.9	2.6	2.1	2.8	2.1	3.0	2.1	3.3	2.2	3.5	2.1
	18.0	1.9	1.7	2.3	1.9	2.6	2.1	2.8	2.1	3.0	2.1	3.3	2.2	3.5	2.1
	20.0	1.9	1.7	2.3	1.9	2.6	2.1	2.8	2.1	3.0	2.1	3.3	2.2	3.4	2.1
	21.0	1.9	1.7	2.3	1.9	2.6	2.1	2.8	2.1	3.0	2.1	3.3	2.2	3.4	2.1
	23.0	1.9	1.7	2.3	1.9	2.6	2.1	2.8	2.1	3.0	2.1	3.3	2.1	3.4	2.1
	25.0	1.9	1.7	2.3	1.9	2.6	2.1	2.8	2.1	3.0	2.1	3.2	2.1	3.3	2.0
	27.0	1.9	1.7	2.3	1.9	2.6	2.1	2.8	2.1	3.0	2.1	3.2	2.1	3.3	2.0
	29.0	1.9	1.7	2.3	1.9	2.6	2.1	2.8	2.1	3.0	2.1	3.1	2.0	3.2	1.9
	31.0	1.9	1.7	2.3	1.9	2.6	2.1	2.8	2.1	3.0	2.1	3.1	2.0	3.2	1.9
	33.0	1.9	1.7	2.3	1.9	2.6	2.1	2.8	2.1	3.0	2.1	3.1	2.0	3.1	1.9
	35.0	1.9	1.7	2.3	1.9	2.6	2.1	2.8	2.1	2.9	2.0	3.0	2.0	3.1	1.9
	37.0	1.9	1.7	2.3	1.9	2.6	2.1	2.8	2.1	2.9	2.0	3.0	2.0	3.0	1.8
	39.0	1.9	1.7	2.3	1.9	2.6	2.1	2.8	2.1	2.9	2.0	3.0	2.1	3.0	1.9
	42.0	1.9	1.7	2.3	1.9	2.6	2.1	2.8	2.1	2.9	2.0	3.0	2.1	3.0	1.9
	44.0	1.9	1.7	2.3	1.9	2.6	2.1	2.8	2.1	2.9	2.0	3.0	2.1	3.0	1.9
	46.0	1.9	1.7	2.3	1.9	2.6	2.1	2.8	2.1	2.9	2.0	3.0	2.1	3.0	1.9
3.6	10.0	2.5	2.1	2.9	2.3	3.4	2.5	3.6	2.6	3.8	2.7	4.3	2.6	4.7	2.7
	12.0	2.5	2.1	2.9	2.3	3.4	2.5	3.6	2.6	3.8	2.7	4.3	2.6	4.7	2.7
	14.0	2.5	2.1	2.9	2.3	3.4	2.5	3.6	2.6	3.8	2.7	4.3	2.6	4.6	2.6
	16.0	2.5	2.1	2.9	2.3	3.4	2.5	3.6	2.6	3.8	2.7	4.3	2.6	4.5	2.6
	18.0	2.5	2.1	2.9	2.3	3.4	2.5	3.6	2.6	3.8	2.7	4.3	2.6	4.5	2.6
	20.0	2.5	2.1	2.9	2.3	3.4	2.5	3.6	2.6	3.8	2.7	4.3	2.6	4.4	2.5
	21.0	2.5	2.1	2.9	2.3	3.4	2.5	3.6	2.6	3.8	2.7	4.3	2.6	4.4	2.5
	23.0	2.5	2.1	2.9	2.3	3.4	2.5	3.6	2.6	3.8	2.7	4.1	2.5	4.3	2.4
	25.0	2.5	2.1	2.9	2.3	3.4	2.5	3.6	2.6	3.8	2.7	4.1	2.5	4.2	2.4
	27.0	2.5	2.1	2.9	2.3	3.4	2.5	3.6	2.6	3.8	2.7	4.0	2.4	4.2	2.4
	29.0	2.5	2.1	2.9	2.3	3.4	2.5	3.6	2.6	3.8	2.7	4.0	2.4	4.1	2.4
	31.0	2.5	2.1	2.9	2.3	3.4	2.5	3.6	2.6	3.8	2.7	4.2	2.8	4.1	2.4
	33.0	2.5	2.1	2.9	2.3	3.4	2.5	3.6	2.6	3.8	2.7	4.2	2.8	3.9	2.3
	35.0	2.5	2.1	2.9	2.3	3.4	2.5	3.6	2.6	3.8	2.7	4.2	2.8	3.9	2.3
	37.0	2.5	2.1	2.9	2.3	3.4	2.5	3.6	2.6	3.7	2.6	3.8	2.5	3.9	2.3
	39.0	2.5	2.1	2.9	2.3	3.4	2.5	3.6	2.6	3.7	2.6	3.8	2.5	3.8	2.3
	42.0	2.5	2.1	2.9	2.3	3.4	2.5	3.6	2.6	3.7	2.6	3.8	2.5	3.8	2.3
	44.0	2.5	2.1	2.9	2.3	3.4	2.5	3.6	2.6	3.7	2.6	3.8	2.5	3.8	2.3
	46.0	2.5	2.1	2.9	2.3	3.4	2.5	3.6	2.6	3.7	2.6	3.8	2.5	3.8	2.3
4.5	10.0	3.1	2.6	3.7	2.8	4.2	3.1	4.5	3.2	4.8	3.2	5.3	3.7	5.9	3.3

	12.0	3.1	2.6	3.7	2.8	4.2	3.1	4.5	3.2	4.8	3.2	5.3	3.7	5.9	3.3
	14.0	3.1	2.6	3.7	2.8	4.2	3.1	4.5	3.2	4.8	3.2	5.3	3.7	5.8	3.3
	16.0	3.1	2.6	3.7	2.8	4.2	3.1	4.5	3.2	4.8	3.2	5.3	3.7	5.6	3.2
	18.0	3.1	2.6	3.7	2.8	4.2	3.1	4.5	3.2	4.8	3.2	5.3	3.7	5.7	3.3
	20.0	3.1	2.6	3.7	2.8	4.2	3.1	4.5	3.2	4.8	3.2	5.3	3.7	5.7	3.3
	21.0	3.1	2.6	3.7	2.8	4.2	3.1	4.5	3.2	4.8	3.2	5.3	3.7	5.6	3.3
	23.0	3.1	2.6	3.7	2.8	4.2	3.1	4.5	3.2	4.8	3.2	5.3	3.7	5.5	3.2
	25.0	3.1	2.6	3.7	2.8	4.2	3.1	4.5	3.2	4.8	3.2	5.2	3.3	5.4	3.2
	27.0	3.1	2.6	3.7	2.8	4.2	3.1	4.5	3.2	4.8	3.2	5.1	3.2	5.2	3.0
	29.0	3.1	2.6	3.7	2.8	4.2	3.1	4.5	3.2	4.8	3.2	5.1	3.2	5.2	3.0
	31.0	3.1	2.6	3.7	2.8	4.2	3.1	4.5	3.2	4.8	3.2	5.0	3.1	5.1	2.9
	33.0	3.1	2.6	3.7	2.8	4.2	3.1	4.5	3.2	4.8	3.2	4.9	3.1	5.1	2.9
	35.0	3.1	2.6	3.7	2.8	4.2	3.1	4.5	3.2	4.8	3.2	4.8	3.0	5.0	2.9
	37.0	3.1	2.6	3.7	2.8	4.2	3.1	4.5	3.2	4.8	3.2	4.8	3.1	4.9	2.8
	39.0	3.1	2.6	3.7	2.8	4.2	3.1	4.5	3.2	4.6	3.1	4.7	3.1	4.8	2.8
	42.0	3.1	2.6	3.7	2.8	4.2	3.1	4.5	3.2	4.6	3.1	4.7	3.1	4.8	2.8
	44.0	3.1	2.6	3.7	2.8	4.2	3.1	4.5	3.2	4.6	3.1	4.7	3.1	4.8	2.8
	46.0	3.1	2.6	3.7	2.8	4.2	3.1	4.5	3.2	4.6	3.1	4.7	3.1	4.8	2.8
	10.0	3.9	3.0	4.6	3.3	5.3	3.6	5.6	3.7	5.9	3.8	6.6	3.9	7.3	3.9
	12.0	3.9	3.0	4.6	3.3	5.3	3.6	5.6	3.7	5.9	3.8	6.6	3.9	7.2	3.8
	14.0	3.9	3.0	4.6	3.3	5.3	3.6	5.6	3.7	5.9	3.8	6.6	3.9	7.1	3.8
	16.0	3.9	3.0	4.6	3.3	5.3	3.6	5.6	3.7	5.9	3.8	6.6	3.9	7.0	3.7
	18.0	3.9	3.0	4.6	3.3	5.3	3.6	5.6	3.7	5.9	3.8	6.6	3.9	6.8	3.7
	20.0	3.9	3.0	4.6	3.3	5.3	3.6	5.6	3.7	5.9	3.8	6.6	3.9	6.7	3.6
	21.0	3.9	3.0	4.6	3.3	5.3	3.6	5.6	3.7	5.9	3.8	6.6	3.9	6.6	3.6
	23.0	3.9	3.0	4.6	3.3	5.3	3.6	5.6	3.7	5.9	3.8	6.6	3.9	6.6	3.5
	25.0	3.9	3.0	4.6	3.3	5.3	3.6	5.6	3.7	5.9	3.8	6.6	3.9	6.5	3.5
5.6	27.0	3.9	3.0	4.6	3.3	5.3	3.6	5.6	3.7	5.9	3.8	6.4	3.8	6.4	3.5
	29.0	3.9	3.0	4.6	3.3	5.3	3.6	5.6	3.7	5.9	3.8	6.3	3.8	6.4	3.6
	31.0	3.9	3.0	4.6	3.3	5.3	3.6	5.6	3.7	5.9	3.8	6.2	3.7	6.2	3.4
	33.0	3.9	3.0	4.6	3.3	5.3	3.6	5.6	3.7	5.9	3.8	6.2	3.7	6.2	3.4
	35.0	3.9	3.0	4.6	3.3	5.3	3.6	5.6	3.7	5.9	3.8	6.0	3.6	6.0	3.4
	37.0	3.9	3.0	4.6	3.3	5.3	3.6	5.6	3.7	5.9	3.8	5.9	3.5	6.0	3.4
	39.0	3.9	3.0	4.6	3.3	5.3	3.6	5.6	3.7	5.7	3.7	5.8	3.5	6.0	3.4
	42.0	3.9	3.0	4.6	3.3	5.3	3.6	5.6	3.7	5.7	3.7	5.8	3.5	6.0	3.4
	44.0	3.9	3.0	4.6	3.3	5.3	3.6	5.6	3.7	5.7	3.7	5.8	3.5	6.0	3.4
	46.0	3.9	3.0	4.6	3.3	5.3	3.6	5.6	3.7	5.7	3.7	5.8	3.5	6.0	3.4
	10.0	4.9	3.9	5.8	4.3	6.7	4.7	7.1	4.9	7.5	4.8	8.4	4.9	9.2	5.0
	12.0	4.9	3.9	5.8	4.3	6.7	4.7	7.1	4.9	7.5	4.8	8.4	4.9	9.1	4.9
	14.0	4.9	3.9	5.8	4.3	6.7	4.7	7.1	4.9	7.5	4.8	8.4	4.9	9.0	4.9
	16.0	4.9	3.9	5.8	4.3	6.7	4.7	7.1	4.9	7.5	4.8	8.4	4.9	8.9	4.8
	18.0	4.9	3.9	5.8	4.3	6.7	4.7	7.1	4.9	7.5	4.8	8.4	4.9	8.7	4.7
	20.0	4.9	3.9	5.8	4.3	6.7	4.7	7.1	4.9	7.5	4.8	8.4	4.9	8.5	4.6
	21.0	4.9	3.9	5.8	4.3	6.7	4.7	7.1	4.9	7.5	4.8	8.4	4.9	8.4	4.5
	23.0	4.9	3.9	5.8	4.3	6.7	4.7	7.1	4.9	7.5	4.8	8.4	4.9	8.3	4.5
	25.0	4.9	3.9	5.8	4.3	6.7	4.7	7.1	4.9	7.5	4.8	8.4	4.9	8.2	4.4
7.1	27.0	4.9	3.9	5.8	4.3	6.7	4.7	7.1	4.9	7.5	4.8	8.1	4.7	8.2	4.5
	29.0	4.9	3.9	5.8	4.3	6.7	4.7	7.1	4.9	7.5	4.8	8.0	4.7	8.1	4.5
	31.0	4.9	3.9	5.8	4.3	6.7	4.7	7.1	4.9	7.5	4.8	7.9	4.6	7.8	4.3
	33.0	4.9	3.9	5.8	4.3	6.7	4.7	7.1	4.9	7.5	4.8	7.8	4.6	7.8	4.3
	35.0	4.9	3.9	5.8	4.3	6.7	4.7	7.1	4.9	7.5	4.8	7.6	4.5	7.7	4.2
	37.0	4.9	3.9	5.8	4.3	6.7	4.7	7.1	4.9	7.4	4.8	7.5	4.5	7.6	4.3
	39.0	4.9	3.9	5.8	4.3	6.7	4.7	7.1	4.9	7.2	4.7	7.4	4.4	7.6	4.3
	42.0	4.9	3.9	5.8	4.3	6.7	4.7	7.1	4.9	7.2	4.7	7.4	4.4	7.6	4.3
	44.0	4.9	3.9	5.8	4.3	6.7	4.7	7.1	4.9	7.2	4.7	7.4	4.4	7.6	4.3
	46.0	4.9	3.9	5.8	4.3	6.7	4.7	7.1	4.9	7.2	4.7	7.4	4.4	7.6	4.3
	10.0	5.5	6.4	6.6	5.9	7.5	5.6	8.0	5.5	8.4	5.1	9.4	4.6	10.4	5.6
	12.0	5.5	6.4	6.6	5.9	7.5	5.6	8.0	5.5	8.4	5.1	9.4	4.6	10.2	5.5
	14.0	5.5	6.4	6.6	5.9	7.5	5.6	8.0	5.5	8.4	5.1	9.4	4.6	10.2	5.5
	16.0	5.5	6.4	6.6	5.9	7.5	5.6	8.0	5.5	8.4	5.1	9.4	4.6	10.0	5.4
8.0	18.0	5.5	6.4	6.6	5.9	7.5	5.6	8.0	5.5	8.4	5.1	9.4	4.6	9.8	5.3
	20.0	5.5	6.4	6.6	5.9	7.5	5.6	8.0	5.5	8.4	5.1	9.4	4.6	9.6	5.2
	21.0	5.5	6.4	6.6	5.9	7.5	5.6	8.0	5.5	8.4	5.1	9.4	4.6	9.4	5.1
	23.0	5.5	6.4	6.6	5.9	7.5	5.6	8.0	5.5	8.4	5.1	9.4	4.6	9.4	5.1
	25.0	5.5	6.4	6.6	5.9	7.5	5.6	8.0	5.5	8.4	5.1	9.4	4.6	9.3	5.0

	27.0	5.5	6.4	6.6	5.9	7.5	5.6	8.0	5.5	8.4	5.1	9.1	4.6	9.2	5.1
	29.0	5.5	6.4	6.6	5.9	7.5	5.6	8.0	5.5	8.4	5.2	9.0	4.7	9.1	5.0
	31.0	5.5	6.4	6.6	5.9	7.5	5.6	8.0	5.5	8.4	5.2	8.9	4.7	8.8	4.8
	33.0	5.5	6.4	6.6	5.9	7.5	5.6	8.0	5.5	8.4	5.2	8.8	4.7	8.8	4.8
	35.0	5.5	6.4	6.6	5.9	7.5	5.6	8.0	5.5	8.4	5.2	8.6	4.7	8.6	4.8
	37.0	5.5	6.4	6.6	5.9	7.5	5.6	8.0	5.5	8.3	5.2	8.4	4.8	8.6	4.9
	39.0	5.5	6.4	6.6	5.9	7.5	5.6	8.0	5.5	8.1	5.2	8.3	4.8	8.6	4.9
	42.0	5.5	6.4	6.6	5.9	7.5	5.6	8.0	5.5	8.1	5.2	8.3	4.8	8.6	4.9
	44.0	5.5	6.4	6.6	5.9	7.5	5.6	8.0	5.5	8.1	5.2	8.3	4.8	8.6	4.9
	46.0	5.5	6.4	6.6	5.9	7.5	5.6	8.0	5.5	8.1	5.2	8.3	4.8	8.6	4.9
	10.0	6.2	5.3	7.3	5.8	8.4	6.3	9.0	6.4	9.6	6.5	10.6	6.6	11.7	6.6
	12.0	6.2	5.3	7.3	5.8	8.4	6.3	9.0	6.4	9.6	6.5	10.6	6.6	11.5	6.5
	14.0	6.2	5.3	7.3	5.8	8.4	6.3	9.0	6.4	9.6	6.5	10.6	6.6	11.4	6.4
	16.0	6.2	5.3	7.3	5.8	8.4	6.3	9.0	6.4	9.6	6.5	10.6	6.6	11.3	6.3
	18.0	6.2	5.3	7.3	5.8	8.4	6.3	9.0	6.4	9.6	6.5	10.6	6.6	11.0	6.3
	20.0	6.2	5.3	7.3	5.8	8.4	6.3	9.0	6.4	9.6	6.5	10.6	6.6	10.8	6.2
	21.0	6.2	5.3	7.3	5.8	8.4	6.3	9.0	6.4	9.6	6.5	10.6	6.6	10.6	6.1
	23.0	6.2	5.3	7.3	5.8	8.4	6.3	9.0	6.4	9.6	6.5	10.6	6.6	10.5	6.0
	25.0	6.2	5.3	7.3	5.8	8.4	6.3	9.0	6.4	9.6	6.5	10.6	6.6	10.4	6.0
9.0	27.0	6.2	5.3	7.3	5.8	8.4	6.3	9.0	6.4	9.6	6.5	10.3	6.4	10.4	5.9
	29.0	6.2	5.3	7.3	5.8	8.4	6.3	9.0	6.4	9.6	6.5	10.1	6.2	10.3	5.8
	31.0	6.2	5.3	7.3	5.8	8.4	6.3	9.0	6.4	9.6	6.5	10.0	6.2	9.9	5.7
	33.0	6.2	5.3	7.3	5.8	8.4	6.3	9.0	6.4	9.6	6.5	9.9	6.1	9.9	5.7
	35.0	6.2	5.3	7.3	5.8	8.4	6.3	9.0	6.4	9.5	6.5	9.6	6.0	9.7	5.7
	37.0	6.2	5.3	7.3	5.8	8.4	6.3	9.0	6.4	9.3	6.3	9.5	5.9	9.6	5.8
	39.0	6.2	5.3	7.3	5.8	8.4	6.3	9.0	6.4	9.2	6.2	9.4	5.8	9.6	5.8
	42.0	6.2	5.3	7.3	5.8	8.4	6.3	9.0	6.4	9.2	6.2	9.4	5.8	9.6	5.8
	44.0	6.2	5.3	7.3	5.8	8.4	6.3	9.0	6.4	9.2	6.2	9.4	5.8	9.6	5.8
	46.0	6.2	5.3	7.3	5.8	8.4	6.3	9.0	6.4	9.2	6.2	9.4	5.8	9.6	5.8
	10.0	7.7	6.4	9.1	7.1	10.5	7.7	11.2	7.8	11.9	8.1	13.3	8.3	15.5	9.0
	12.0	7.7	6.4	9.1	7.1	10.5	7.7	11.2	7.8	11.9	8.1	13.3	8.3	14.4	8.4
	14.0	7.7	6.4	9.1	7.1	10.5	7.7	11.2	7.8	11.9	8.1	13.3	8.3	14.2	8.2
	16.0	7.7	6.4	9.1	7.1	10.5	7.7	11.2	7.8	11.9	8.1	13.3	8.3	14.1	8.2
	18.0	7.7	6.4	9.1	7.1	10.5	7.7	11.2	7.8	11.9	8.1	13.3	8.3	14.0	8.1
	20.0	7.7	6.4	9.1	7.1	10.5	7.7	11.2	7.8	11.9	8.1	13.3	8.3	13.9	8.1
	21.0	7.7	6.4	9.1	7.1	10.5	7.7	11.2	7.8	11.9	8.1	13.3	8.3	13.8	8.0
	23.0	7.7	6.4	9.1	7.1	10.5	7.7	11.2	7.8	11.9	8.1	13.1	8.1	13.7	7.9
	25.0	7.7	6.4	9.1	7.1	10.5	7.7	11.2	7.8	11.9	8.1	13.0	8.1	13.6	7.9
11.2	27.0	7.7	6.4	9.1	7.1	10.5	7.7	11.2	7.8	11.9	8.1	12.9	8.0	13.4	7.8
	29.0	7.7	6.4	9.1	7.1	10.5	7.7	11.2	7.8	11.9	8.1	12.8	7.9	13.3	7.9
	31.0	7.7	6.4	9.1	7.1	10.5	7.7	11.2	7.8	11.9	8.1	12.7	7.8	12.8	7.5
	33.0	7.7	6.4	9.1	7.1	10.5	7.7	11.2	7.8	11.9	8.1	12.5	7.8	12.5	7.4
	35.0	7.7	6.4	9.1	7.1	10.5	7.7	11.2	7.8	11.8	8.0	12.4	7.7	12.3	7.3
	37.0	7.7	6.4	9.1	7.1	10.5	7.7	11.2	7.8	11.6	7.9	12.3	7.6	12.1	7.1
	39.0	7.7	6.4	9.1	7.1	10.5	7.7	11.2	7.8	11.4	7.8	12.2	7.6	11.9	7.1
	42.0	7.7	6.6	9.1	7.2	10.4	7.8	11.2	8.0	11.4	7.8	11.6	7.2	12.0	7.2
	44.0	7.7	6.6	9.1	7.2	10.4	7.8	11.2	8.0	11.4	7.8	11.6	7.2	12.0	7.2
	46.0	7.7	6.6	9.1	7.2	10.4	7.8	11.2	8.0	11.4	7.8	11.6	7.2	12.0	7.2
	10.0	9.7	7.8	11.3	8.6	13.2	9.6	14.0	9.8	14.8	9.8	16.7	10.2	18.2	10.2
	12.0	9.7	7.8	11.3	8.6	13.2	9.6	14.0	9.8	14.8	9.8	16.7	10.2	17.9	10.0
	14.0	9.7	7.8	11.3	8.6	13.2	9.6	14.0	9.8	14.8	9.8	16.7	10.2	17.8	10.0
	16.0	9.7	7.8	11.3	8.6	13.2	9.6	14.0	9.8	14.8	9.8	16.7	10.2	17.5	9.8
	18.0	9.7	7.8	11.3	8.6	13.2	9.6	14.0	9.8	14.8	9.8	16.7	10.2	17.1	9.6
	20.0	9.7	7.8	11.3	8.6	13.2	9.6	14.0	9.8	14.8	9.8	16.7	10.2	16.8	9.4
	21.0	9.7	7.8	11.3	8.6	13.2	9.6	14.0	9.8	14.8	9.8	16.7	10.2	16.5	9.3
	23.0	9.7	7.8	11.3	8.6	13.2	9.6	14.0	9.8	14.8	9.8	16.4	10.2	16.4	9.2
14.0	25.0	9.7	7.8	11.3	8.6	13.2	9.6	14.0	9.8	14.8	9.8	16.2	10.1	16.2	9.1
	27.0	9.7	7.8	11.3	8.6	13.2	9.6	14.0	9.8	14.8	9.8	16.1	10.0	16.1	9.2
	29.0	9.7	7.8	11.3	8.6	13.2	9.6	14.0	9.8	14.8	9.8	16.0	9.9	16.0	9.1
	31.0	9.7	7.8	11.3	8.6	13.2	9.6	14.0	9.8	14.8	9.8	15.8	9.8	15.4	8.8
	33.0	9.7	7.8	11.3	8.6	13.2	9.6	14.0	9.8	14.8	9.8	15.7	9.7	15.4	8.8
	35.0	9.7	7.8	11.3	8.6	13.2	9.6	14.0	9.8	14.7	9.7	15.1	9.4	15.1	8.8
	37.0	9.7	7.8	11.3	8.6	13.2	9.6	14.0	9.8	14.6	9.6	15.1	9.4	15.0	8.7
	39.0	9.7	7.8	11.3	8.6	13.2	9.6	14.0	9.8	14.3	9.4	14.6	9.2	15.0	8.8
	42.0	9.7	7.8	11.3	8.6	13.2	9.6	14.0	9.8	14.3	9.4	14.6	9.2	15.0	8.8

	44.0	9.7	7.8	11.3	8.6	13.2	9.6	14.0	9.8	14.3	9.4	14.6	9.2	15.0	8.8
	46.0	9.7	7.8	11.3	8.6	13.2	9.6	14.0	9.8	14.3	9.4	14.6	9.2	15.0	8.8

8.2 Heating

TC: total capacity **WB**: wet-bulb temperature **DB**: dry-bulb temperature

Indoor Unit size (kW)	Outdoor temperature (□)		Indoor temperature (□ DB)					
			16.00	18.00	20.00	21.00	22.00	24.00
			TC	TC	TC	TC	TC	TC
	WB	DB	kW	kW	kW	kW	kW	kW
2.2	-20	-19.8	1.46	1.46	1.46	1.46	1.46	1.46
	-19	-18.8	1.56	1.56	1.56	1.56	1.56	1.56
	-17	-16.7	1.64	1.64	1.64	1.64	1.64	1.64
	-15	-14.7	1.69	1.69	1.69	1.69	1.69	1.69
	-13.00	-12.60	1.79	1.79	1.79	1.79	1.79	1.79
	-11.00	-10.50	1.82	1.85	1.85	1.85	1.85	1.85
	-10.00	-9.50	1.90	1.90	1.90	1.90	1.90	1.90
	-9.10	-8.50	1.95	1.95	1.95	1.95	1.95	1.95
	-7.60	-7.00	1.98	1.98	1.98	1.98	1.98	1.98
	-5.60	-5.00	2.05	2.05	2.05	2.05	2.05	2.05
	-3.70	-3.00	2.16	2.16	2.16	2.16	2.16	2.16
	-0.70	0.00	2.31	2.31	2.31	2.31	2.31	2.18
	2.20	3.00	2.44	2.44	2.44	2.44	2.39	2.18
	4.10	5.00	2.52	2.52	2.52	2.52	2.39	2.18
	6.00	7.00	2.60	2.60	2.60	2.52	2.39	2.18
	7.90	9.00	2.68	2.68	2.60	2.52	2.39	2.18
	9.80	11.00	2.76	2.76	2.60	2.52	2.39	2.18
	11.80	13.00	2.86	2.81	2.60	2.52	2.39	2.18
	13.70	15.00	2.94	2.81	2.60	2.52	2.39	2.18
2.8	-20	-19.8	1.79	1.79	1.79	1.79	1.79	1.79
	-19	-18.8	1.92	1.92	1.92	1.92	1.92	1.92
	-17	-16.7	2.02	2.02	2.02	2.02	2.02	2.02
	-15	-14.7	2.02	2.02	2.02	2.02	2.02	2.02
	-13.00	-12.60	2.14	2.14	2.14	2.14	2.14	2.14
	-11.00	-10.50	2.24	2.24	2.24	2.24	2.24	2.24
	-10.00	-9.50	2.34	2.34	2.34	2.34	2.34	2.34
	-9.10	-8.50	2.4	2.4	2.4	2.4	2.4	2.4
	-7.60	-7.00	2.43	2.43	2.43	2.43	2.43	2.43
	-5.60	-5.00	2.53	2.53	2.53	2.53	2.53	2.53
	-3.70	-3.00	2.66	2.66	2.66	2.66	2.66	2.66
	-0.70	0.00	2.85	2.85	2.85	2.85	2.85	2.69
	2.20	3.00	3.01	3.01	3.01	3.01	2.94	2.69
	4.10	5.00	3.1	3.1	3.1	3.1	2.94	2.69
	6.00	7.00	3.2	3.2	3.2	3.1	2.94	2.69
	7.90	9.00	3.3	3.3	3.2	3.1	2.94	2.69
	9.80	11.00	3.39	3.39	3.2	3.1	2.94	2.69
	11.80	13.00	3.52	3.46	3.2	3.1	2.94	2.69
	13.70	15.00	3.62	3.46	3.2	3.1	2.94	2.69
3.6	-20	-19.8	2.24	2.24	2.24	2.24	2.24	2.24
	-19	-18.8	2.4	2.4	2.4	2.4	2.4	2.4
	-17	-16.7	2.52	2.52	2.52	2.52	2.52	2.52
	-15	-14.7	2.6	2.6	2.6	2.6	2.6	2.6
	-13.00	-12.60	2.68	2.68	2.68	2.68	2.68	2.68
	-11.00	-10.50	2.8	2.8	2.8	2.8	2.8	2.8
	-10.00	-9.50	2.92	2.92	2.92	2.92	2.92	2.92
	-9.10	-8.50	3	3	3	3	3	3
	-7.60	-7.00	3.04	3.04	3.04	3.04	3.04	3.04
	-5.60	-5.00	3.16	3.16	3.16	3.16	3.16	3.16
	-3.70	-3.00	3.32	3.32	3.32	3.32	3.32	3.32
	-0.70	0.00	3.56	3.56	3.56	3.56	3.56	3.36
	2.20	3.00	3.76	3.76	3.76	3.76	3.68	3.36
	4.10	5.00	3.88	3.88	3.88	3.88	3.68	3.36
	6.00	7.00	4	4	4	3.88	3.68	3.36
	7.90	9.00	4.12	4.12	4	3.88	3.68	3.36
	9.80	11.00	4.24	4.24	4	3.88	3.68	3.36
	11.80	13.00	4.4	4.32	4	3.88	3.68	3.36

	13.70	15.00	4.52	4.32	4	3.88	3.68	3.36
4.5	-20	-19.8	2.8	2.8	2.8	2.8	2.8	2.8
	-19	-18.8	3	3	3	3	3	3
	-17	-16.7	3.15	3.15	3.15	3.15	3.15	3.15
	-15	-14.7	3.25	3.25	3.25	3.25	3.25	3.25
	-13.00	-12.60	3.35	3.35	3.35	3.35	3.35	3.35
	-11.00	-10.50	3.5	3.5	3.5	3.5	3.5	3.5
	-10.00	-9.50	3.65	3.65	3.65	3.65	3.65	3.65
	-9.10	-8.50	3.75	3.75	3.75	3.75	3.75	3.75
	-7.60	-7.00	3.8	3.8	3.8	3.8	3.8	3.8
	-5.60	-5.00	3.95	3.95	3.95	3.95	3.95	3.95
	-3.70	-3.00	4.15	4.15	4.15	4.15	4.15	4.15
	-0.70	0.00	4.45	4.45	4.45	4.45	4.45	4.2
	2.20	3.00	4.7	4.7	4.7	4.7	4.6	4.2
	4.10	5.00	4.85	4.85	4.85	4.85	4.6	4.2
	6.00	7.00	5	5	5	4.85	4.6	4.2
	7.90	9.00	5.15	5.15	5	4.85	4.6	4.2
	9.80	11.00	5.3	5.3	5	4.85	4.6	4.2
	11.80	13.00	5.5	5.4	5	4.85	4.6	4.2
	13.70	15.00	5.65	5.4	5	4.85	4.6	4.2
5.6	-20	-19.8	3.53	3.53	3.53	3.53	3.53	3.53
	-19	-18.8	3.78	3.78	3.78	3.78	3.78	3.78
	-17	-16.7	3.97	3.97	3.97	3.97	3.97	3.97
	-15	-14.7	4.1	4.1	4.1	4.1	4.1	4.1
	-13.00	-12.60	4.22	4.22	4.22	4.22	4.22	4.22
	-11.00	-10.50	4.41	4.41	4.41	4.41	4.41	4.41
	-10.00	-9.50	4.6	4.6	4.6	4.6	4.6	4.6
	-9.10	-8.50	4.73	4.73	4.73	4.73	4.73	4.73
	-7.60	-7.00	4.79	4.79	4.79	4.79	4.79	4.79
	-5.60	-5.00	4.98	4.98	4.98	4.98	4.98	4.98
	-3.70	-3.00	5.23	5.23	5.23	5.23	5.23	5.23
	-0.70	0.00	5.61	5.61	5.61	5.61	5.61	5.29
	2.20	3.00	5.92	5.92	5.92	5.92	5.8	5.29
	4.10	5.00	6.11	6.11	6.11	6.11	5.8	5.29
	6.00	7.00	6.3	6.3	6.3	6.11	5.8	5.29
	7.90	9.00	6.49	6.49	6.3	6.11	5.8	5.29
	9.80	11.00	6.68	6.68	6.3	6.11	5.8	5.29
	11.80	13.00	6.93	6.8	6.3	6.11	5.8	5.29
	13.70	15.00	7.12	6.8	6.3	6.11	5.8	5.29
7.1	-20	-19.8	4.48	4.48	4.48	4.48	4.48	4.48
	-19	-18.8	4.8	4.8	4.8	4.8	4.8	4.8
	-17	-16.7	5.04	5.04	5.04	5.04	5.04	5.04
	-15	-14.7	5.2	5.2	5.2	5.2	5.2	5.2
	-13.00	-12.60	5.36	5.36	5.36	5.36	5.36	5.36
	-11.00	-10.50	5.6	5.6	5.6	5.6	5.6	5.6
	-10.00	-9.50	5.84	5.84	5.84	5.84	5.84	5.84
	-9.10	-8.50	6	6	6	6	6	6
	-7.60	-7.00	6.08	6.08	6.08	6.08	6.08	6.08
	-5.60	-5.00	6.32	6.32	6.32	6.32	6.32	6.32
	-3.70	-3.00	6.64	6.64	6.64	6.64	6.64	6.64
	-0.70	0.00	7.12	7.12	7.12	7.12	7.12	6.72
	2.20	3.00	7.52	7.52	7.52	7.52	7.36	6.72
	4.10	5.00	7.76	7.76	7.76	7.76	7.36	6.72
	6.00	7.00	8	8	8	7.76	7.36	6.72
	7.90	9.00	8.24	8.24	8	7.76	7.36	6.72
	9.80	11.00	8.48	8.48	8	7.76	7.36	6.72
	11.80	13.00	8.8	8.64	8	7.76	7.36	6.72
	13.70	15.00	9.04	8.64	8	7.76	7.36	6.72
8.0	-20	-19.8	5.04	5.04	5.04	5.04	5.04	5.04
	-19	-18.8	5.4	5.4	5.4	5.4	5.4	5.4
	-17	-16.7	5.67	5.67	5.67	5.67	5.67	5.67
	-15	-14.7	5.85	5.85	5.85	5.85	5.85	5.85
	-13.00	-12.60	6.03	6.03	6.03	6.03	6.03	6.03
	-11.00	-10.50	6.3	6.3	6.3	6.3	6.3	6.3
	-10.00	-9.50	6.57	6.57	6.57	6.57	6.57	6.57

	-9.10	-8.50	6.75	6.75	6.75	6.75	6.75	6.75
	-7.60	-7.00	6.84	6.84	6.84	6.84	6.84	6.84
	-5.60	-5.00	7.11	7.11	7.11	7.11	7.11	7.11
	-3.70	-3.00	7.47	7.47	7.47	7.47	7.47	7.47
	-0.70	0.00	8.01	8.01	8.01	8.01	8.01	7.56
	2.20	3.00	8.46	8.46	8.46	8.46	8.28	7.56
	4.10	5.00	8.73	8.73	8.73	8.73	8.28	7.56
	6.00	7.00	9	9	9	8.73	8.28	7.56
	7.90	9.00	9.27	9.27	9	8.73	8.28	7.56
	9.80	11.00	9.54	9.54	9	8.73	8.28	7.56
	11.80	13.00	9.9	9.72	9	8.73	8.28	7.56
	13.70	15.00	10.17	9.72	9	8.73	8.28	7.56
9.0	-20	-19.8	5.6	5.04	5.6	5.6	5.6	5.6
	-19	-18.8	6	5.4	6	6	6	6
	-17	-16.7	6.3	6.3	6.3	6.3	6.3	6.3
	-15	-14.7	6.5	6.5	6.5	6.5	6.5	6.5
	-13.00	-12.60	6.7	6.7	6.7	6.7	6.7	6.7
	-11.00	-10.50	7	7	7	7	7	7
	-10.00	-9.50	7.3	7.3	7.3	7.3	7.3	7.3
	-9.10	-8.50	7.5	7.5	7.5	7.5	7.5	7.5
	-7.60	-7.00	7.6	7.6	7.6	7.6	7.6	7.6
	-5.60	-5.00	7.9	7.9	7.9	7.9	7.9	7.9
	-3.70	-3.00	8.3	8.3	8.3	8.3	8.3	8.3
	-0.70	0.00	8.9	8.9	8.9	8.9	8.9	8.4
	2.20	3.00	9.4	9.4	9.4	9.4	9.2	8.4
	4.10	5.00	9.7	9.7	9.7	9.7	9.2	8.4
	6.00	7.00	10	10	10	9.7	9.2	8.4
	7.90	9.00	10.3	10.3	10	9.7	9.2	8.4
	9.80	11.00	10.6	10.6	10	9.7	9.2	8.4
	11.80	13.00	11	10.8	10	9.7	9.2	8.4
	13.70	15.00	11.3	10.8	10	9.7	9.2	8.4
11.2	-20	-19.8	7	7	7	7	7	7
	-19	-18.8	7.5	7.5	7.5	7.5	7.5	7.5
	-17	-16.7	7.88	7.88	7.88	7.88	7.88	7.88
	-15	-14.7	8.13	8.13	8.13	8.13	8.13	8.13
	-13.00	-12.60	8.38	8.38	8.38	8.38	8.38	8.38
	-11.00	-10.50	8.75	8.75	8.75	8.75	8.75	8.75
	-10.00	-9.50	9.13	9.13	9.13	9.13	9.13	9.13
	-9.10	-8.50	9.38	9.38	9.38	9.38	9.38	9.38
	-7.60	-7.00	9.5	9.5	9.5	9.5	9.5	9.5
	-5.60	-5.00	9.88	9.88	9.88	9.88	9.88	9.88
	-3.70	-3.00	10.38	10.38	10.38	10.38	10.38	10.38
	-0.70	0.00	11.13	11.13	11.13	11.13	11.13	10.5
	2.20	3.00	11.75	11.75	11.75	11.75	11.5	10.5
	4.10	5.00	12.13	12.13	12.13	12.13	11.5	10.5
	6.00	7.00	12.5	12.5	12.5	12.13	11.5	10.5
	7.90	9.00	12.88	12.88	12.5	12.13	11.5	10.5
	9.80	11.00	13.25	13.25	12.5	12.13	11.5	10.5
	11.80	13.00	13.75	13.5	12.5	12.13	11.5	10.5
	13.70	15.00	14.13	13.5	12.5	12.13	11.5	10.5
14.0	-20	-19.8	8.68	8.68	8.68	8.68	8.68	8.68
	-19	-18.8	9.3	9.3	9.3	9.3	9.3	9.3
	-17	-16.7	9.77	9.77	9.77	9.77	9.77	9.77
	-15	-14.7	10.08	10.08	10.08	10.08	10.08	10.08
	-13.00	-12.60	10.4	10.4	10.4	10.4	10.4	10.4
	-11.00	-10.50	10.9	10.9	10.9	10.9	10.9	10.9
	-10.00	-9.50	11.3	11.3	11.3	11.3	11.3	11.3
	-9.10	-8.50	11.6	11.6	11.6	11.6	11.6	11.6
	-7.60	-7.00	11.8	11.8	11.8	11.8	11.8	11.8
	-5.60	-5.00	12.3	12.3	12.3	12.3	12.3	12.3
	-3.70	-3.00	12.9	12.9	12.9	12.9	12.9	12.9
	-0.70	0.00	13.8	13.8	13.8	13.8	13.8	13
	2.20	3.00	14.6	14.6	14.6	14.6	14.3	13
	4.10	5.00	15	15	15	15	14.3	13
	6.00	7.00	15.5	15.5	15.5	15	14.3	13

	7.90	9.00	16	16	15.5	15	14.3	13
	9.80	11.00	16.4	16.4	15.5	15	14.3	13
	11.80	13.00	17.1	16.7	15.5	15	14.3	13
	13.70	15.00	17.5	16.7	15.5	15	14.3	13

9. Electric Characteristics

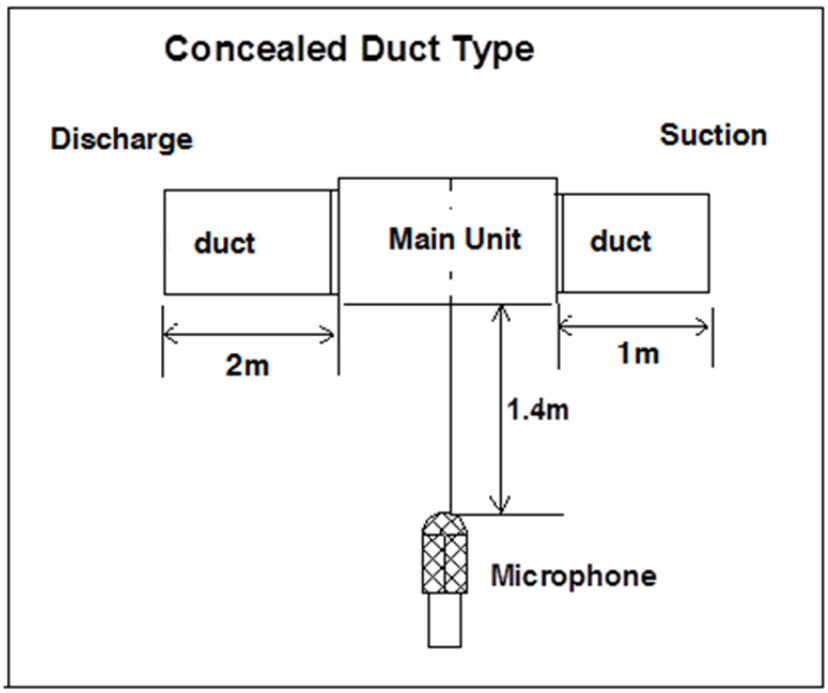
Model	Indoor Unit				Power Supply		IFM	
	Hz	Voltage	Min.	Max.	MCA	MFA	KW	FLA
MVM22A-VA1	50	220-240	198	264	0.28	15	0.027	0.28
MVM28A-VA1	50	220-240	198	264	0.28	15	0.027	0.28
MVM36A-VA1	50	220-240	198	264	0.28	15	0.027	0.28
MVM45A-VA1	50	220-240	198	264	0.6	15	0.107	0.48
MVM56A-VA1	50	220-240	198	264	0.6	15	0.107	0.48
MVM71A-VA1	50	220-240	198	264	0.92	15	0.163	0.73
MVM80A-VA1	50	220-240	198	264	1.25	15	0.227	1
MVM90A-VA1	50	220-240	198	264	1.25	15	0.227	1
MVM112A-VA1	50	220-240	198	264	1.9	15	0.393	1.51
MVM140A-VA1	50	220-240	198	264	2	15	0.355	1.55

Electric Characteristics

Remark:
MCA: Min. Current Amps. (A)
MFA: Max. Fuse Amps. (A)
KW: Fan Motor Rated Output (kW)
FLA: Full Load Amps. (A)
IFM:Indoor Fan Motor

10. Noise Levels

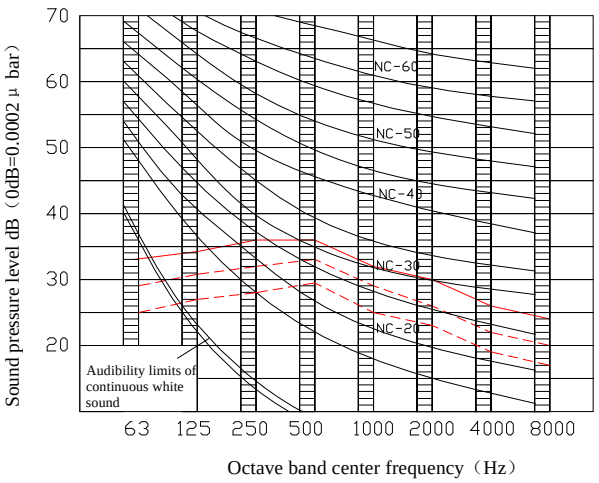
10.1 Test condition



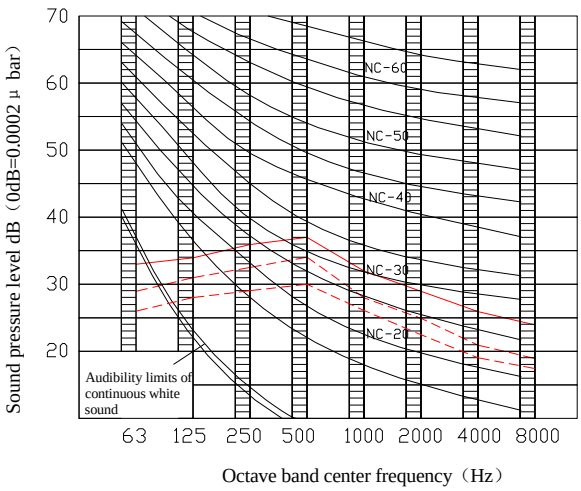
10.2 Test value

Model	Noise test value dB(A)		
	Hi	Mid	Low
MVM22A-VA1	38	35	32
MVM28A-VA1	38	35	32
MVM36A-VA1	40	38	36
MVM45A-VA1	41	38.9	36
MVM56A-VA1	41	38.9	36
MVM71A-VA1	43.4	40	36
MVM80A-VA1	45.4	39.8	37
MVM90A-VA1	45.4	39.8	37
MVM112A-VA1	48.0	41.9	38
MVM140A-VA1	47.7	43.2	39

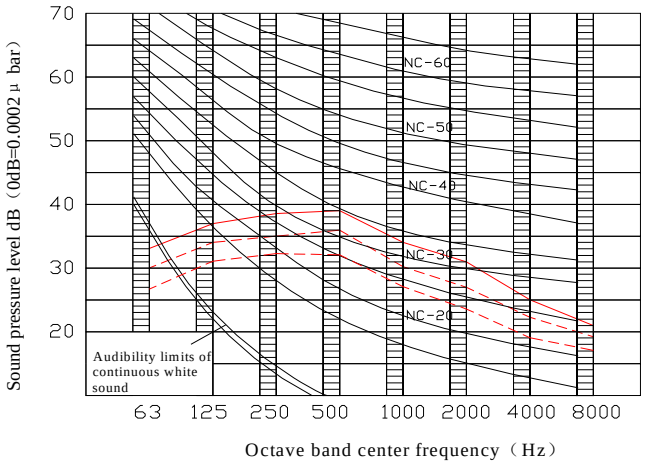
MVM22(28)A-VA1



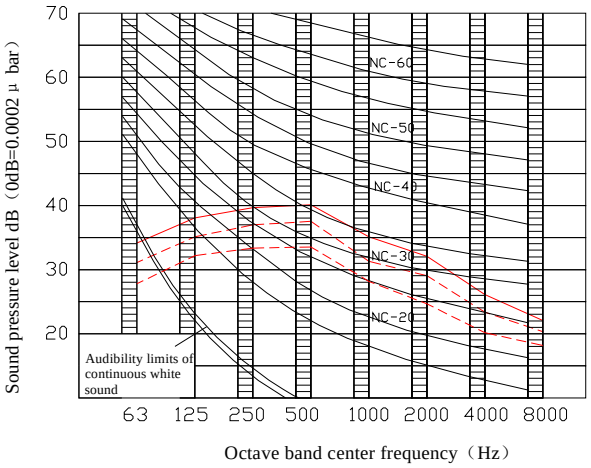
MVM36A-VA1



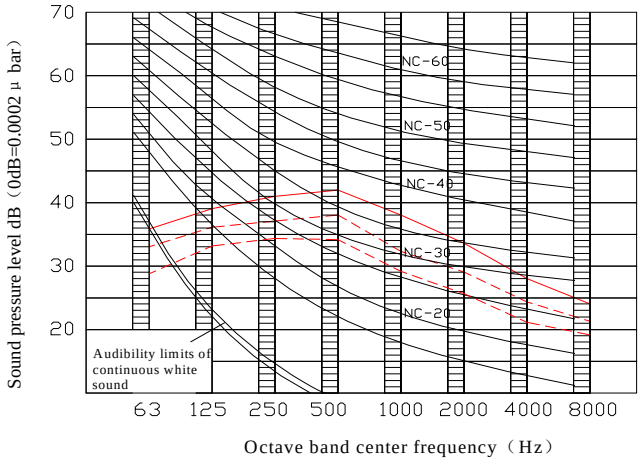
MVM45(56)A-VA1



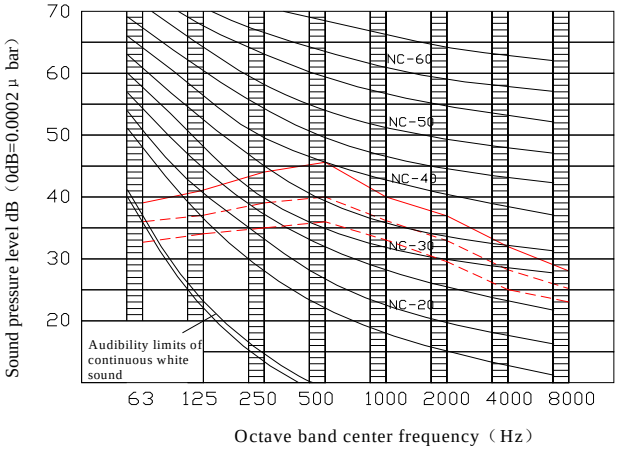
MVM71A-VA1



MVM80(90)A-VA1



MVM112A-VA1



MVM140A-VA1