

Vertical Air Handling Unit type

Engineering Databook_R454B

MMD-UB0091VHN-UL
MMD-UB0121VHN-UL
MMD-UB0181VHN-UL
MMD-UB0241VHN-UL
MMD-UB0301VHN-UL
MMD-UB0361VHN-UL
MMD-UB0421VHN-UL
MMD-UB0481VHN-UL
MMD-UB0601VHN-UL



Contents

1. Specifications
2. Dimensions
3. Center of gravity
4. Piping diagram
5. Wiring diagram
6. Electrical characteristics
7. Sensible capacity table
8. Fan characteristics
9. Sound data
10. Accessories
11. PC Board Optional Switch/Connector Specifications

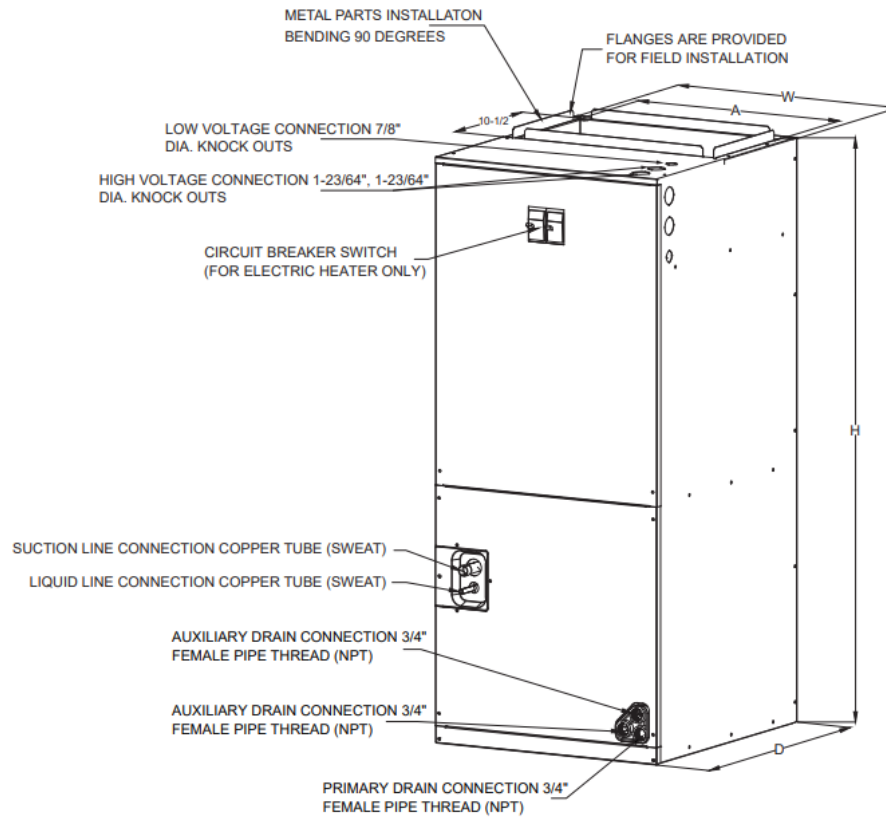
1.Specifications

Model name			MMD-UB0091VHN-UL	MMD-UB0121VHN-UL	MMD-UB0181VHN-UL	MMD-UB0241VHN-UL	MMD-UB0301VHN-UL
Power supply		V/Ph/Hz	208~230V/1N/60Hz	208~230V/1N/60Hz	208~230V/1N/60Hz	208~230V/1N/60Hz	208~230V/1N/60Hz
Running current		A	0.55	0.62	0.91	1.16	1.86
Power consumption		W	65	73	112	145	241
Indoor external static pressure		in.W/G	0.4	0.4	0.4	0.4	0.6
Throttle type			electronic expansion valve				
Cooling capacity	Btu/h		9000	12000	18,000	24,000	30,000
	kW		2.6	3.5	5.3	7.0	8.8
Heating capacity	Btu/h		10000	13500	20000	27000	34000
	kW		2.9	4	5.9	7.9	10.0
MCA		A	4	4	4	4	5
MOP		A	6	6	6	6	6
Air Filter			Self-prepared				
Indoor air flow	CFM		278/327/347	340/395/424	468/568/668	462/667/752	632/760/923
	m3/h		473/555/590	578/672/721	796/966/1135	785/1134/1279	1074/1292/1569
Indoor noise level		dB(A)	42/43/44	43/44/45	42/45/46	41/45/46	46/49/51
Indoor dimension	Unit (WxHxD)	in	19-5/8×45-3/4×22	19-5/8×45-3/4×22	19-5/8×45-3/4×22	19-5/8×45-3/4×22	19-5/8×45-3/4×22
		mm	500×1162×560	500×1162×560	500×1162×560	500×1162×560	500×1162×560
	Packing (WxHxD)	in	23-15/64×50-25/32×25-19/32	23-15/64×50-25/32×25-19/32	23-15/64×50-25/32×25-19/32	23-15/64×50-25/32×25-19/32	23-15/64×50-25/32×25-19/32
		mm	590×1290×650	590×1290×650	590×1290×650	590×1290×650	590×1290×650
	Net / Gross weight	kg	54/67	54/67	55.5/68.5	59/72	60/73
		lbs	119/148	119/148	122.5/151	130/159	132.5/161
Connecting pipe	Liquid side	mm	9.52	9.52	9.52	9.52	9.52
	Gas side	mm	19.05	19.05	19.05	19.05	19.05
	Drain port (Nominal dia.)	mm	19.05	19.05	19.05	19.05	19.05
Compatible refrigerant			R454B	R454B	R454B	R454B	R454B
Operating pressure		MPa	3.79	3.79	3.79	3.79	3.79
Electric heater	Standard/Optional/None		Optional	Optional	Optional	Optional	Optional
	Type (sheath type, etc.)		None	None	None	None	None
	Model name		3.75kW/5kW	3.75kW/5kW	3.75kW/5kW/7.5kW	3.75kW/5kW/7.5kW	3.75kW/5kW/7.5kW
	Capacity	kW	3.75/5	3.75/5	3.75/5/7.5	3.75/5/7.5	3.75/5/7.5
	Rated current	A	14.8/20	14.8/20	14.8/20/30	14.8/20/30	14.8/20/30
	Rated voltage	V	230	230	230	230	230
	Power Fuse	A	\	\	\	\	\
	Power Switch Capacity	A	60	60	60	60	60
	Thermal Fuse	°C	98	98	98	98	98
	Heat Prevention Thermo	°F	140	140	140	140	140

Model name			MMD-UB0091VHN-UL	MMD-UB0121VHN-UL	MMD-UB0181VHN-UL	MMD-UB0241VHN-UL	MMD-UB0301VHN-UL
	Weight	kg	1.6/1.6	1.6/1.6	1.6/1.6/2.3	1.6/1.6/2.3	1.6/1.6/2.3
	length x height x width		580*155*255	580*155*255	580*155*255	580*155*255	580*155*255
Other optional items			\	\	\	\	\

Model name			MMD-UB0361VHN-UL	MMD-UB0421VHN-UL	MMD-UB0481VHN-UL	MMD-UB0601VHN-UL
Power supply		V/Ph/Hz	208~230V/1N/60Hz	208~230V/1N/60Hz	208~230V/1N/60Hz	208~230V/1N/60Hz
Running current		A	1.86	3.17	3.14	4.06
Power consumption		W	241	434	430	569
Indoor external static pressure		in.WG	0.6	0.6	0.6	0.6
Throttle type			electronic expansion valve			
Cooling capacity		Btu/h	36,000	42,000	48,000	60,000
		kW	10.5	12.3	14.1	17.6
Heating capacity		Btu/h	40000	45000	54000	67000
		kW	11.7	13.2	15.8	19.6
MCA		A	5	7	7	7
MOP		A	6	10	10	10
Air Filter			Self-prepared			
Indoor air flow		CFM	632/760/923	1045/1225/1383	1185/1395/1574	1324/1505/1798
		m3/h	1074/1292/1569	1776/2083/2351	2015/2371/2676	2251/2559/3056
Indoor noise level		dB(A)	46/49/51	49/52/54	49/51/53	53/55/58
Indoor dimension	Unit (WxHxD)	in	19-5/8×45-3/4×22	19-5/8×45-3/4×22	22×53-1/8×24-1/2	22×53-1/8×24-1/2
		mm	500×1162×560	500×1162×560	560×1350×623	560×1350×623
	Packing (WxHxD)	in	23-15/64×50-25/32×25-19/32	23-15/64×50-25/32×25-19/32	25-25/64×58-17/64×28	25-25/64×58-17/64×28
		mm	590×1290×650	590×1290×650	645×1480×710	645×1480×710
	Net / Gross weight	kg	60/73	61/74	74.5/90	78.5/94
		lbs	132.5/161	134.5/163	164/198.5	173/207
Connecting pipe	Liquid side	mm	9.52	9.52	9.52	9.52
	Gas side	mm	19.05	19.05	22.00	22.00
	Drain port (Nominal dia.)	mm	19.05	19.05	19.05	19.05
Compatible refrigerant			R454B	R454B	R454B	R454B
Operating pressure		MPa	3.79	3.79	3.79	3.79
Electric heater	Standard/Optional/ None		Optional	Optional	Optional	Optional
	Type (sheath type, etc.)		None	None	None	None
	Model name		3.75kW/5kW/7.5kW	3.75kW/5kW/7.5kW/10kW	3.75kW/5kW/7.5kW/10kW	3.75kW/5kW/7.5kW/10kW
	Capacity	kW	3.75/5/7.5	3.75/5/7.5/10	3.75/5/7.5/10	3.75/5/7.5/10
	Rated current	A	14.8/20/30	14.8/20/30/40	14.8/20/30/40	14.8/20/30/40
	Rated voltage	V	230	230	230	230
	Power Fuse	A	\	\	\	\
	Power Switch Capacity	A	60	60	60	60
	Thermal Fuse	°C	98	98	98	98
	Heat Prevention Thermo	°F	140	140	140	140
	Weight	kg	1.6/1.6/2.3	1.6/1.6/2.3/2.4	1.6/1.6/2.3/2.4	1.6/1.6/2.3/2.4
	length x height x width		580*155*255	580*155*255	580*155*255	580*155*255
Other optional items			\	\	\	\

2.Dimensions

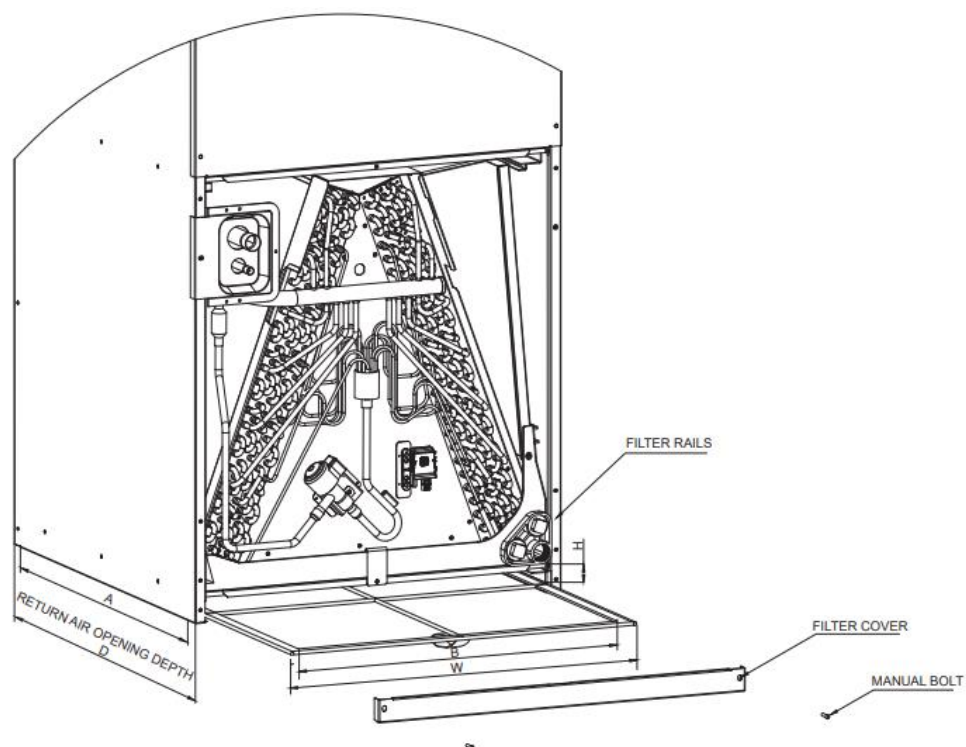


*Note: The above picture only shows the upward airflow, The unit can be positioned for top air return in downward airflow position, left and right air return in the horizontal position, or bottom air return in the upward airflow position.

Model	Dimension Inches [mm]				
	Height "H"	Width "W"	Dimension "D"	Air outlet "A"	Liquid Line / Suction Line
9K/12K/18K/24K /30K/36K/42K	45-3/4 [1162]	19-5/8 [500]	22 [560]	17-7/8 [454]	3/8 / 3/4 [9.5]/[19]
48K/60K	53-1/8 [1350]	22 [560]	24 -1/2[623]	19-1/2 [496]	3/8 / 7/8 [9.5]/[22]

2.Dimensions

Filter

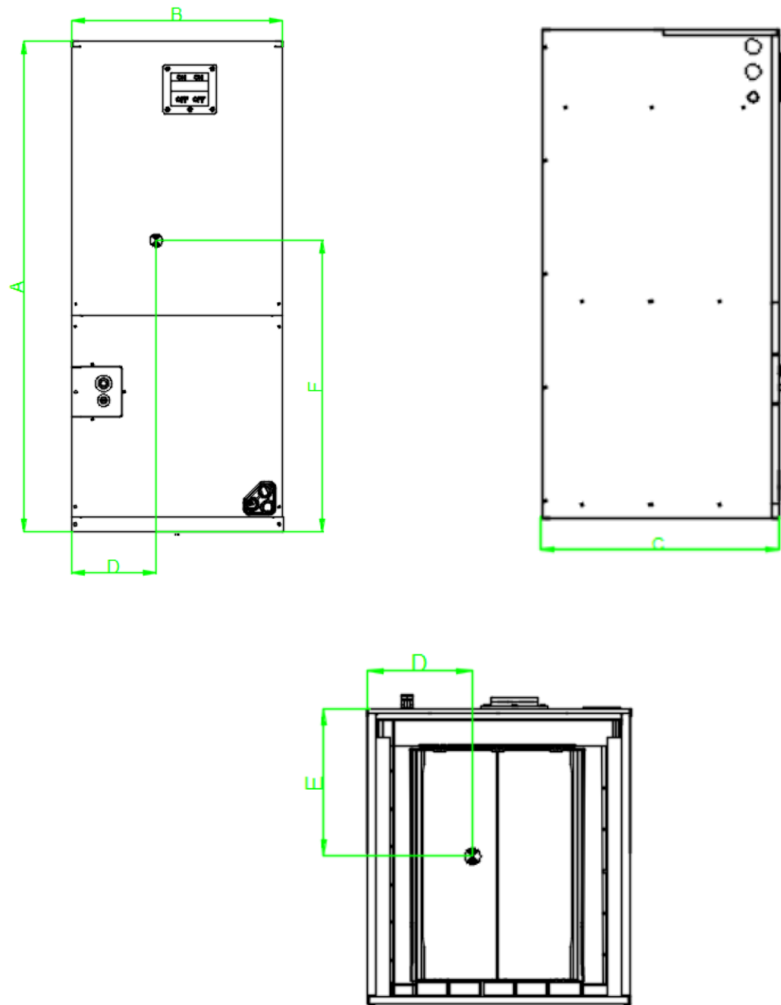


- *Note:1. The filter is included in the device and must be provided on site;
 2. When installing the indoor unit, regardless of the installation method, make sure that the filter is installed as shown.

Model	Filter size inches [mm]	"W" Inch [mm]	"D" Inch [mm]	"H" Inch [mm]	Return Width "A" inch [mm]	Return Length "B" inch [mm]
9K/12K/18K/24K/ 30K/36K/42K	18.1×21.4[460×544]	18.3 [466]	21.6 [548]	1 [25.4]	20.8 [528]	16.3 [414]
48K/60K	20.5×23.8[521×605]	20.7 [526]	23.9 [608]	1 [25.4]	23 [584]	18.8 [478]

3.Center of gravity

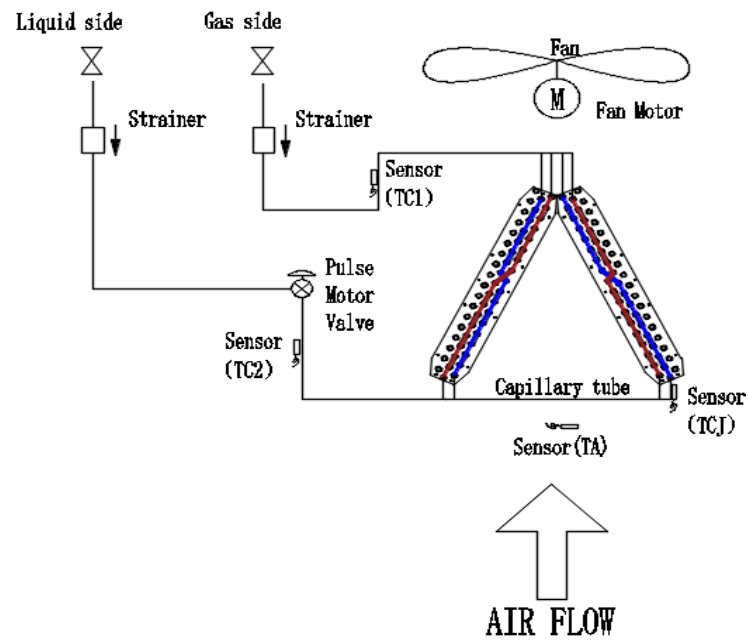
Vertical orientation



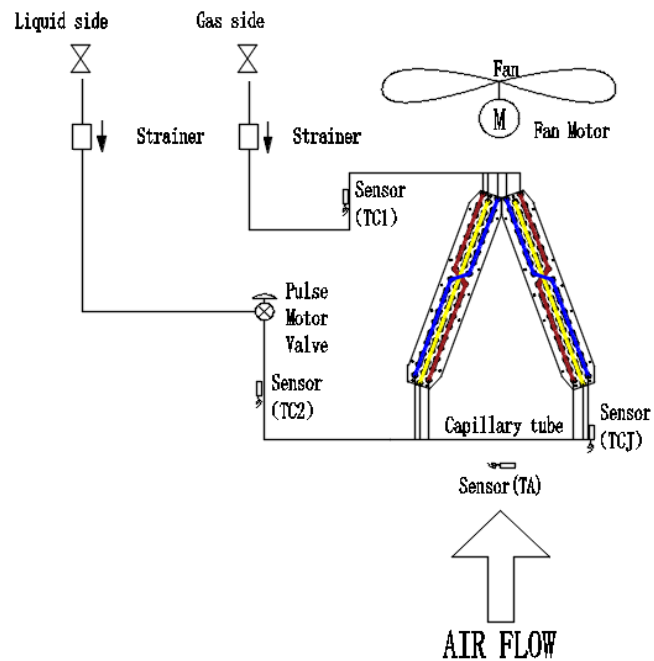
Model	Height	Width	Depth	Center of gravity		
	A	B	C	D	E	F
9K/12K/18K/24K/ 30K/36K/42K	1162	500	560	200	280	690
48K/60K	1350	560	623	230	312	800

4.Piping diagram

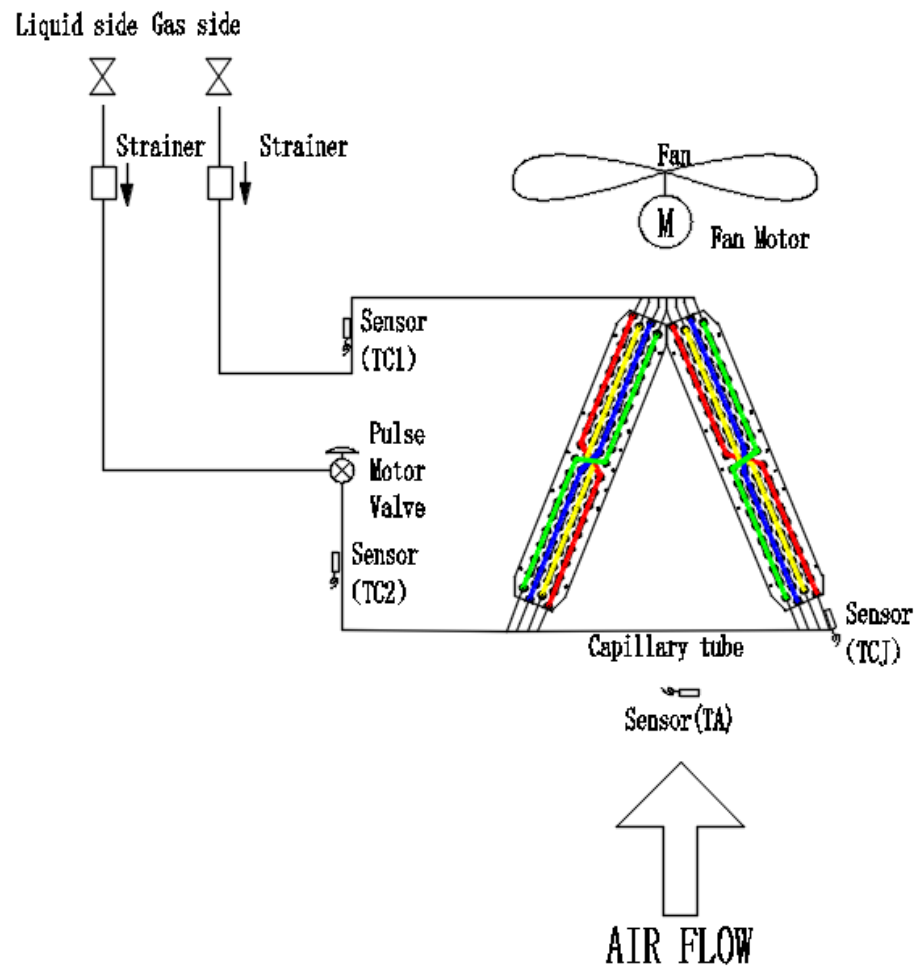
9-12K (two rows)



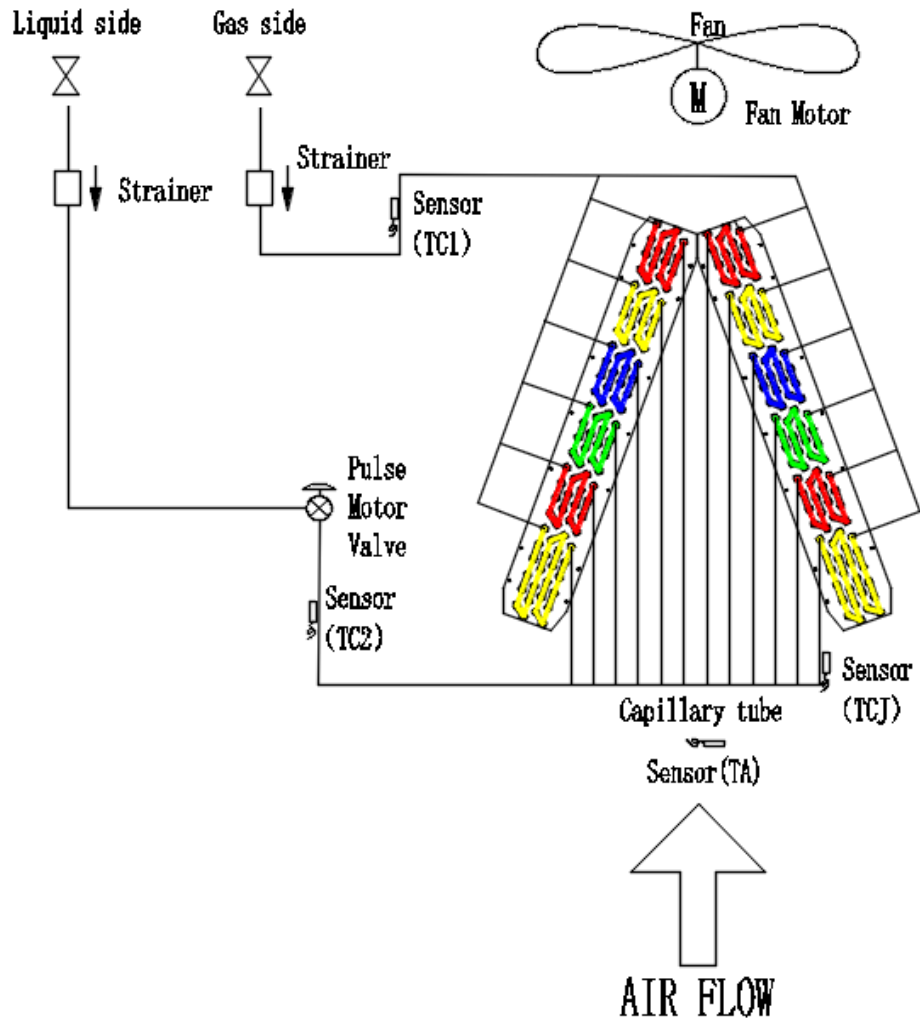
18K (three rows)



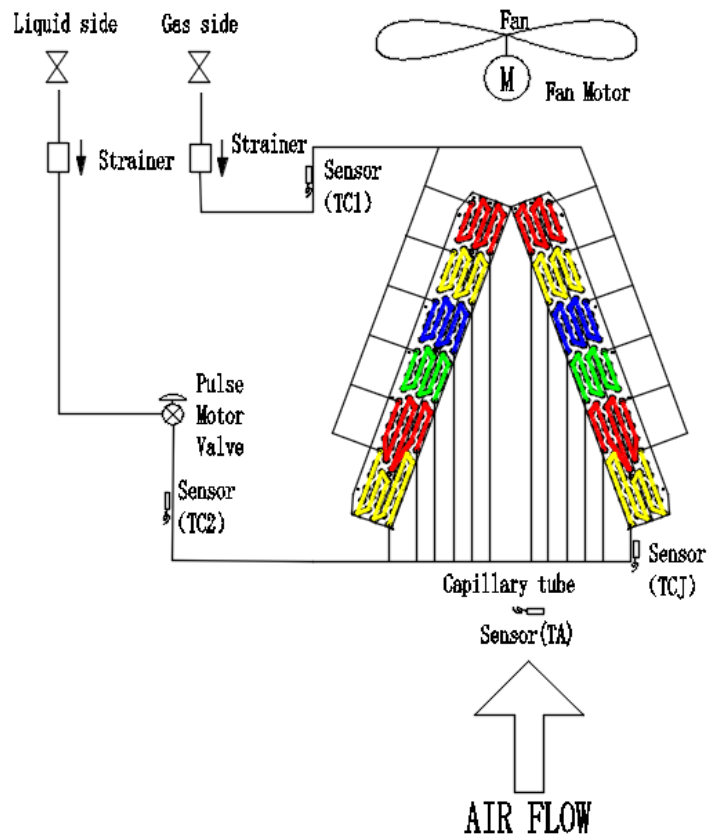
24-42K (four rows)



48K (four rows)



60K (five rows)

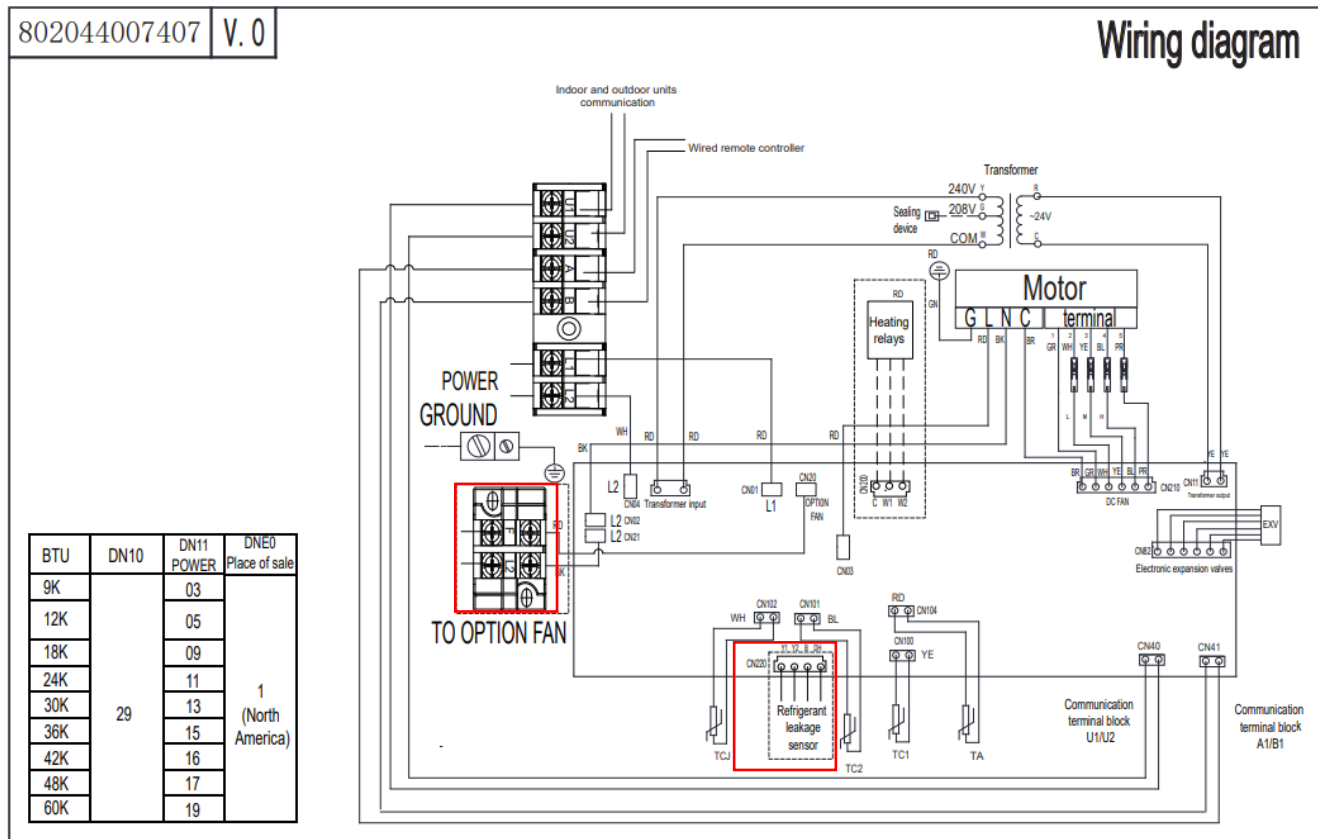


Explanation of functional parts in indoor unit

Functional part name		Function outline
Pulse Motor Valve	PMV	1) Controls superheat in cooling operation
		2) Controls subcooling in heating operation
		3) Recovers refrigerant oil in cooling operation
		4) Recovers refrigerant oil in heating operation
Temperature sensor	TA	1) Detects indoor suction temperature
	TC1	1) Controls PMV super heat in cooling operation
	TC2	1) Controls PMV sub cool in heating operation
	TCJ	1) Controls PMV super heat in cooling operation

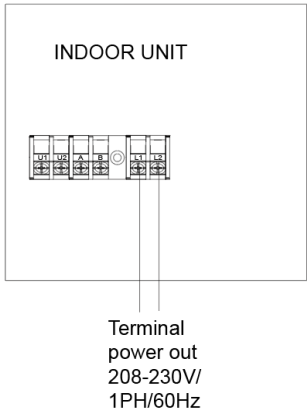
5.Wiring diagram

MMD-UB0091VHN-UL, MMD-UB0121VHN-UL, MMD-UB0181VHN-UL, MMD-UB0241VHN-UL, MMD-UB0301VHN-UL, MMD-UB0361VHN-UL, MMD-UB0421VHN-UL, MMD-UB0481VHN-UL, MMD-UB0601VHN-UL



Note: The wiring of refrigerant R454B needs to be connected to port CN220, but R410A does not need to be connected.

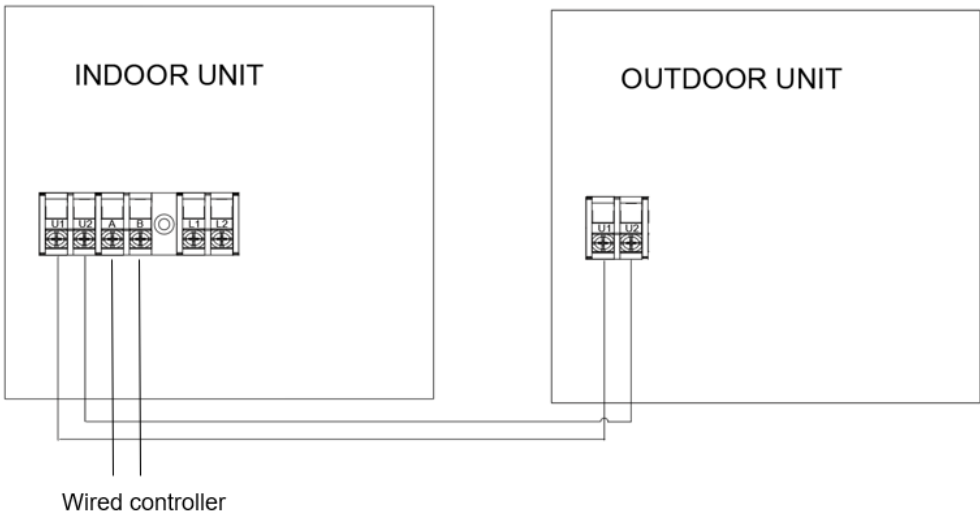
Power supply wiring diagram



Type (Btu/ hour)			9K	12K	18K	24K	30K	36K	42K	48K	60K
Power		Phase	Single								
		Voltage/frequency	208/230VAC,60 Hz								
Wire gauge	Indoor unit power cord	Line quantity	3								
		Wire diameter (AWG)	16								

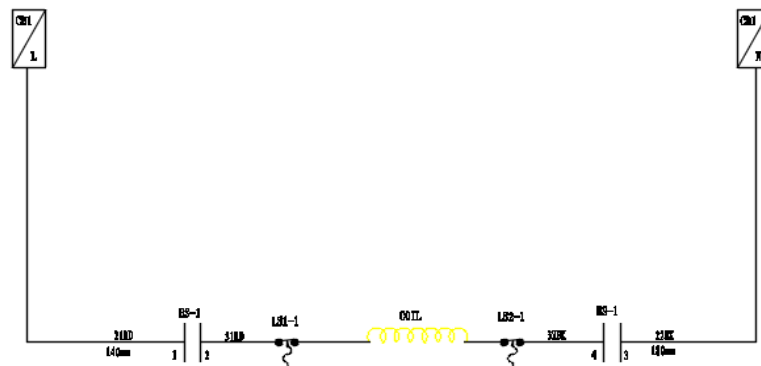
Communication wiring diagram

Scenes less than 100 feet in length should use 18 AWG colored communication wires. 16 AWG wire should be used for scenes with a length of more than 100 feet.

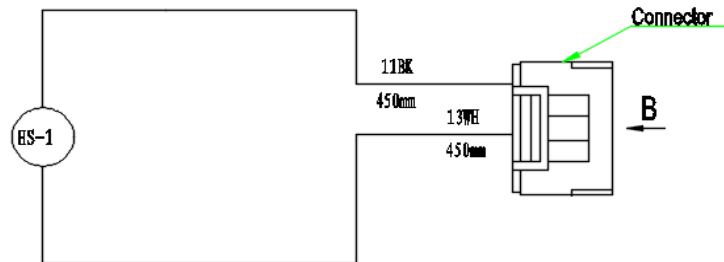


5.Wiring diagram

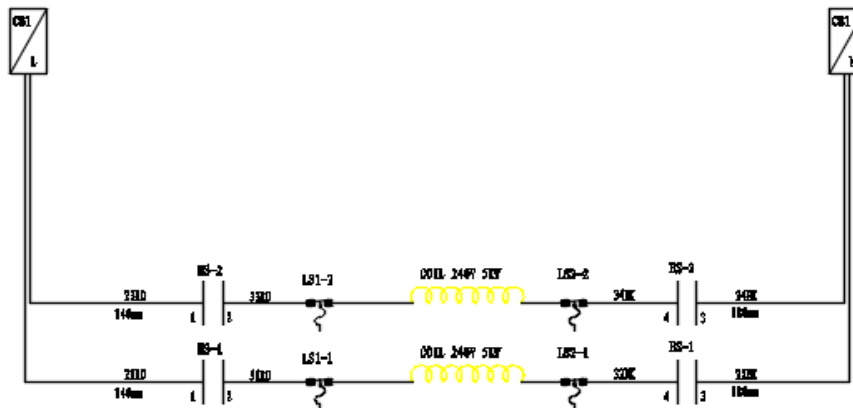
Electrical heater (3.75kW,5kW)



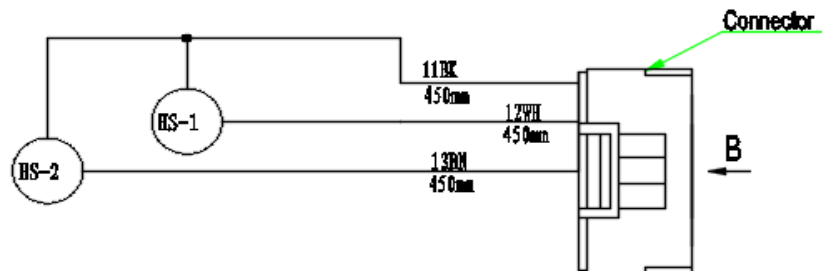
 **HEAT KIT**
 LS1: THERMOSTAT
 LS2: FUSE
 HS: RELAY
 CB: CIRCUIT BREAKER



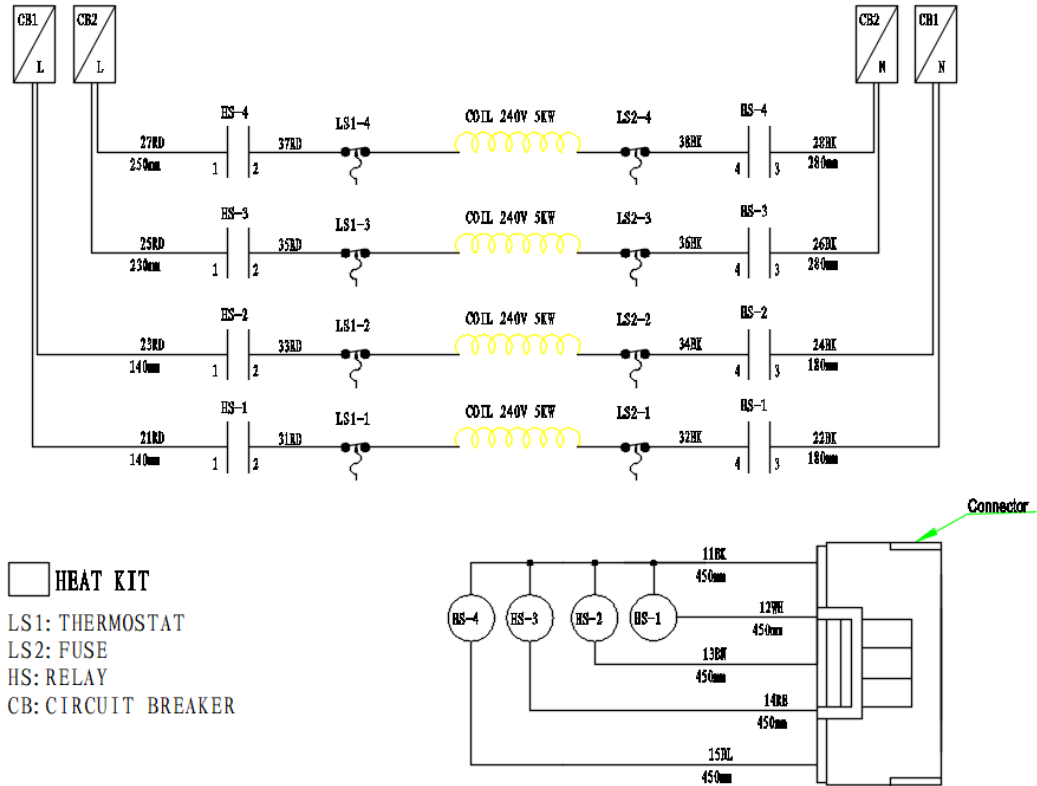
Electrical heater (7.5kW)



 **HEAT KIT**
 LS1: THERMOSTAT
 LS2: FUSE
 HS: RELAY
 CB: CIRCUIT BREAKER



Electrical heater (10kW)



6.Electrical data

Electrical Data (Without electric heater)

Model	Voltage (V)	Hertz (Hz)	HP	Fan speed	MOC (A)	MCA (A)	MOP (A)
9K	208/230	60	0.33	4	2.6	4	6
12K	208/230	60	0.33	4	2.6	4	6
18K	208/230	60	0.33	4	2.6	4	6
24K	208/230	60	0.33	4	2.6	4	6
30K	208/230	60	0.5	4	3.8	5	6
36K	208/230	60	0.5	4	3.8	5	6
42K	208/230	60	0.75	4	5.4	7	10
48K	208/230	60	0.75	4	5.4	7	10
60K	208/230	60	0.75	4	5.4	7	10

Note: MOC :Maximum operation current
MCA : Minimum Circuit Amps
MOP: Maximum Overcurrent Protection

Electrical Data (with electric heater)

Heat kit model	AHU model	electric heat(kW) 208/230VAC	Current (A) 208/230VAC	MCA (A) 208/230VAC	MAX.Fuse or Breaker (HACR) Ampacity		Fan speed			
					208 VAC	230 VAC	2	3	4	5
21-4444-06	9K	2.8/3.4	13.46/14.8	17/19	20	30	●	●	●	●
21-4444-01		3.8/4.6	18.27/20	23/25	30	40	●	●	●	●
21-4444-06	12K	2.8/3.4	13.46/14.8	17/19	20	30	●	●	●	●
21-4444-01		3.8/4.6	18.27/20	23/25	30	40	●	●	●	●
21-4444-06	18K	2.8/3.4	13.46/14.8	17/19	20	30	●	●	●	●
21-4444-01		3.8/4.6	18.27/20	23/25	30	40	●	●	●	●
21-4444-02		5.6/6.9	26.92/30	34/38	40	50	●	●	●	●
21-4444-06	24K	2.8/3.4	13.46/14.8	17/19	20	30	●	●	●	●
21-4444-01		3.8/4.6	18.27/20	23/25	30	40	●	●	●	●
21-4444-02		5.6/6.9	26.92/30	34/38	40	50	●	●	●	●
21-4444-06	30K	2.8/3.4	13.46/14.8	17/19	20	30	●	●	●	●
21-4444-01		3.8/4.6	18.27/20	23/25	30	40	●	●	●	●
21-4444-02		5.6/6.9	26.92/30	34/38	40	50	●	●	●	●
21-4444-06	36K	2.8/3.4	13.46/14.8	17/19	20	30	●	●	●	●
21-4444-01		3.8/4.6	18.27/20	23/25	30	40	●	●	●	●
21-4444-02		5.6/6.9	26.92/30	34/38	40	50	●	●	●	●

Heat kit model	AHU model	electric heat(kW) 208/230VAC	Current (A) 208/230VAC	MCA (A) 208/230VAC	MAX.Fuse or Breaker (HACR) Ampacity		Fan speed			
					208 VAC	230 VAC	2	3	4	5
21-4444-06	42K	2.8/3.4	13.46/14.8	17/19	20	30	•	•	•	•
21-4444-01		3.8/4.6	18.27/20	23/25	30	40	•	•	•	•
21-4444-02		5.6/6.9	26.92/30	34/38	40	50	•	•	•	•
21-4444-03		7.5/9.2	36.1/40	46/50	50	60	•	•	•	•
21-4444-06	48K	2.8/3.4	13.46/14.8	17/19	20	30	•	•	•	•
21-4444-01		3.8/4.6	18.27/20	23/25	30	40	•	•	•	•
21-4444-02		5.6/6.9	26.92/30	34/38	40	50	•	•	•	•
21-4444-03		7.5/9.2	36.1/40	46/50	50	60	•	•	•	•
21-4444-06	60K	2.8/3.4	13.46/14.8	17/19	20	30	•	•	•	•
21-4444-01		3.8/4.6	18.27/20	23/25	30	40	•	•	•	•
21-4444-02		5.6/6.9	26.92/30	34/38	40	50	•	•	•	•
21-4444-03		7.5/9.2	36.1/40	46/50	50	60	•	•	•	•

7.Sensible Capacity Tables (MMD-UB***1VHN-UL)

TC : Total capacity [Btu/h] SHC : Sensible capacity [Btu/h]

Unit size	Outdoor air temp. °F DB	Indoor air temp.													
		59 °F WB		61 °F WB		64 °F WB		67 °F WB		68 °F WB		72 °F WB		75 °F WB	
		71 °F DB		73 °F DB		77 °F DB		80 °F DB		82 °F DB		86 °F DB		90 °F DB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
009	50	7660	6200	8020	6370	8520	6630	9000	6840	9160	6860	9740	6780	10130	6510
	54	7660	6200	8020	6370	8520	6630	9000	6840	9160	6860	9740	6780	10130	6510
	57	7660	6200	8020	6370	8520	6630	9000	6840	9160	6860	9740	6780	10130	6510
	61	7660	6200	8020	6370	8520	6630	9000	6840	9160	6860	9740	6780	10130	6510
	64	7660	6200	8020	6370	8520	6630	9000	6840	9160	6860	9740	6780	10130	6510
	68	7660	6200	8020	6370	8520	6630	9000	6840	9160	6860	9740	6780	10130	6510
	70	7660	6200	8020	6370	8520	6630	9000	6840	9160	6860	9740	6780	10130	6510
	73	7660	6200	8020	6370	8520	6630	9000	6840	9160	6860	9740	6780	10130	6510
	77	7660	6200	8020	6370	8520	6630	9000	6840	9160	6860	9740	6780	10130	6510
	81	7660	6200	8020	6370	8520	6630	9000	6840	9160	6860	9740	6780	10130	6510
	84	7660	6200	8020	6370	8520	6630	9000	6840	9160	6860	9740	6780	10130	6510
	88	7660	6200	8020	6370	8520	6630	9000	6840	9160	6860	9740	6780	10130	6510
	91	7660	6200	8020	6370	8520	6630	9000	6840	9160	6860	9740	6780	10130	6510
	95	7660	6200	8020	6370	8520	6630	9000	6840	9160	6860	9740	6780	10130	6510
	99	7430	6020	7790	6190	8270	6430	8740	6650	8900	6660	9450	6580	9840	6330
	102	7260	5880	7600	6040	8080	6280	8540	6490	8690	6510	9240	6420	9610	6180
012	50	10,210	8,270	10,690	8,500	11,360	8,840	12,000	9,120	12,210	9,150	12,980	9,030	13,510	8,690
	54	10,210	8,270	10,690	8,500	11,360	8,840	12,000	9,120	12,210	9,150	12,980	9,030	13,510	8,690
	57	10,210	8,270	10,690	8,500	11,360	8,840	12,000	9,120	12,210	9,150	12,980	9,030	13,510	8,690
	61	10,210	8,270	10,690	8,500	11,360	8,840	12,000	9,120	12,210	9,150	12,980	9,030	13,510	8,690
	64	10,210	8,270	10,690	8,500	11,360	8,840	12,000	9,120	12,210	9,150	12,980	9,030	13,510	8,690
	68	10,210	8,270	10,690	8,500	11,360	8,840	12,000	9,120	12,210	9,150	12,980	9,030	13,510	8,690
	70	10,210	8,270	10,690	8,500	11,360	8,840	12,000	9,120	12,210	9,150	12,980	9,030	13,510	8,690
	73	10,210	8,270	10,690	8,500	11,360	8,840	12,000	9,120	12,210	9,150	12,980	9,030	13,510	8,690
	77	10,210	8,270	10,690	8,500	11,360	8,840	12,000	9,120	12,210	9,150	12,980	9,030	13,510	8,690
	81	10,210	8,270	10,690	8,500	11,360	8,840	12,000	9,120	12,210	9,150	12,980	9,030	13,510	8,690
	84	10,210	8,270	10,690	8,500	11,360	8,840	12,000	9,120	12,210	9,150	12,980	9,030	13,510	8,690
	88	10,210	8,270	10,690	8,500	11,360	8,840	12,000	9,120	12,210	9,150	12,980	9,030	13,510	8,690
	91	10,210	8,270	10,690	8,500	11,360	8,840	12,000	9,120	12,210	9,150	12,980	9,030	13,510	8,690
	95	10,210	8,270	10,690	8,500	11,360	8,840	12,000	9,120	12,210	9,150	12,980	9,030	13,510	8,690
	99	9,910	8,030	10,380	8,250	11,030	8,580	11,650	8,860	11,860	8,880	12,600	8,770	13,120	8,440
	102	9,680	7,840	10,130	8,060	10,770	8,380	11,380	8,650	11,580	8,670	12,310	8,560	12,810	8,240

Unit size	Outdoor air temp. °F DB	Indoor air temp.													
		59 °F WB		61 °F WB		64 °F WB		67 °F WB		68 °F WB		72 °F WB		75 °F WB	
		71 °F DB		73 °F DB		77 °F DB		80 °F DB		82 °F DB		86 °F DB		90 °F DB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
018	50	15,32 0	12,40 0	16,03 0	12,74 0	17,04 0	13,26 0	18,00 0	13,68 0	18,31 0	13,72 0	19,47 0	13,55 0	20,27 0	13,04 0
	54	15,32 0	12,40 0	16,03 0	12,74 0	17,04 0	13,26 0	18,00 0	13,68 0	18,31 0	13,72 0	19,47 0	13,55 0	20,27 0	13,04 0
	57	15,32 0	12,40 0	16,03 0	12,74 0	17,04 0	13,26 0	18,00 0	13,68 0	18,31 0	13,72 0	19,47 0	13,55 0	20,27 0	13,04 0
	61	15,32 0	12,40 0	16,03 0	12,74 0	17,04 0	13,26 0	18,00 0	13,68 0	18,31 0	13,72 0	19,47 0	13,55 0	20,27 0	13,04 0
	64	15,32 0	12,40 0	16,03 0	12,74 0	17,04 0	13,26 0	18,00 0	13,68 0	18,31 0	13,72 0	19,47 0	13,55 0	20,27 0	13,04 0
	68	15,32 0	12,40 0	16,03 0	12,74 0	17,04 0	13,26 0	18,00 0	13,68 0	18,31 0	13,72 0	19,47 0	13,55 0	20,27 0	13,04 0
	70	15,32 0	12,40 0	16,03 0	12,74 0	17,04 0	13,26 0	18,00 0	13,68 0	18,31 0	13,72 0	19,47 0	13,55 0	20,27 0	13,04 0
	73	15,32 0	12,40 0	16,03 0	12,74 0	17,04 0	13,26 0	18,00 0	13,68 0	18,31 0	13,72 0	19,47 0	13,55 0	20,27 0	13,04 0
	77	15,32 0	12,40 0	16,03 0	12,74 0	17,04 0	13,26 0	18,00 0	13,68 0	18,31 0	13,72 0	19,47 0	13,55 0	20,27 0	13,04 0
	81	15,32 0	12,40 0	16,03 0	12,74 0	17,04 0	13,26 0	18,00 0	13,68 0	18,31 0	13,72 0	19,47 0	13,55 0	20,27 0	13,04 0
	84	15,32 0	12,40 0	16,03 0	12,74 0	17,04 0	13,26 0	18,00 0	13,68 0	18,31 0	13,72 0	19,47 0	13,55 0	20,27 0	13,04 0
	88	15,32 0	12,40 0	16,03 0	12,74 0	17,04 0	13,26 0	18,00 0	13,68 0	18,31 0	13,72 0	19,47 0	13,55 0	20,27 0	13,04 0
	91	15,32 0	12,40 0	16,03 0	12,74 0	17,04 0	13,26 0	18,00 0	13,68 0	18,31 0	13,72 0	19,47 0	13,55 0	20,27 0	13,04 0
	95	15,32 0	12,40 0	16,03 0	12,74 0	17,04 0	13,26 0	18,00 0	13,68 0	18,31 0	13,72 0	19,47 0	13,55 0	20,27 0	13,04 0
	99	14,88 0	12,04 0	15,57 0	12,37 0	16,55 0	12,88 0	17,48 0	13,28 0	17,78 0	13,32 0	18,91 0	13,16 0	19,68 0	12,66 0
	102	14,52 0	11,76 0	15,20 0	12,08 0	16,15 0	12,57 0	17,06 0	12,97 0	17,36 0	13,01 0	18,46 0	12,85 0	19,22 0	12,36 0
024	50	20,43 0	16,10 0	21,37 0	16,54 0	22,73 0	17,22 0	24,00 0	17,76 0	24,41 0	17,81 0	25,96 0	17,59 0	27,02 0	16,92 0
	54	20,43 0	16,10 0	21,37 0	16,54 0	22,73 0	17,22 0	24,00 0	17,76 0	24,41 0	17,81 0	25,96 0	17,59 0	27,02 0	16,92 0
	57	20,43 0	16,10 0	21,37 0	16,54 0	22,73 0	17,22 0	24,00 0	17,76 0	24,41 0	17,81 0	25,96 0	17,59 0	27,02 0	16,92 0
	61	20,43 0	16,10 0	21,37 0	16,54 0	22,73 0	17,22 0	24,00 0	17,76 0	24,41 0	17,81 0	25,96 0	17,59 0	27,02 0	16,92 0
	64	20,43 0	16,10 0	21,37 0	16,54 0	22,73 0	17,22 0	24,00 0	17,76 0	24,41 0	17,81 0	25,96 0	17,59 0	27,02 0	16,92 0
	68	20,43 0	16,10 0	21,37 0	16,54 0	22,73 0	17,22 0	24,00 0	17,76 0	24,41 0	17,81 0	25,96 0	17,59 0	27,02 0	16,92 0
	70	20,43 0	16,10 0	21,37 0	16,54 0	22,73 0	17,22 0	24,00 0	17,76 0	24,41 0	17,81 0	25,96 0	17,59 0	27,02 0	16,92 0
	73	20,43 0	16,10 0	21,37 0	16,54 0	22,73 0	17,22 0	24,00 0	17,76 0	24,41 0	17,81 0	25,96 0	17,59 0	27,02 0	16,92 0
	77	20,43 0	16,10 0	21,37 0	16,54 0	22,73 0	17,22 0	24,00 0	17,76 0	24,41 0	17,81 0	25,96 0	17,59 0	27,02 0	16,92 0
	81	20,43 0	16,10 0	21,37 0	16,54 0	22,73 0	17,22 0	24,00 0	17,76 0	24,41 0	17,81 0	25,96 0	17,59 0	27,02 0	16,92 0
	84	20,43 0	16,10 0	21,37 0	16,54 0	22,73 0	17,22 0	24,00 0	17,76 0	24,41 0	17,81 0	25,96 0	17,59 0	27,02 0	16,92 0
	88	20,43 0	16,10 0	21,37 0	16,54 0	22,73 0	17,22 0	24,00 0	17,76 0	24,41 0	17,81 0	25,96 0	17,59 0	27,02 0	16,92 0
	91	20,43 0	16,10 0	21,37 0	16,54 0	22,73 0	17,22 0	24,00 0	17,76 0	24,41 0	17,81 0	25,96 0	17,59 0	27,02 0	16,92 0
	95	20,43 0	16,10 0	21,37 0	16,54 0	22,73 0	17,22 0	24,00 0	17,76 0	24,41 0	17,81 0	25,96 0	17,59 0	27,02 0	16,92 0
	99	19,84 0	15,63 0	20,75 0	16,06 0	22,07 0	16,72 0	23,30 0	17,24 0	23,70 0	17,29 0	25,21 0	17,08 0	26,24 0	16,43 0
	102	19,37 0	15,26 0	20,26 0	15,68 0	21,55 0	16,32 0	22,75 0	16,84 0	23,14 0	16,88 0	24,61 0	16,68 0	25,61 0	16,04 0
030	50	25,53 0	20,67 0	26,72 0	21,24 0	28,41 0	22,11 0	30,00 0	22,80 0	30,51 0	22,86 0	32,45 0	22,58 0	33,78 0	21,73 0

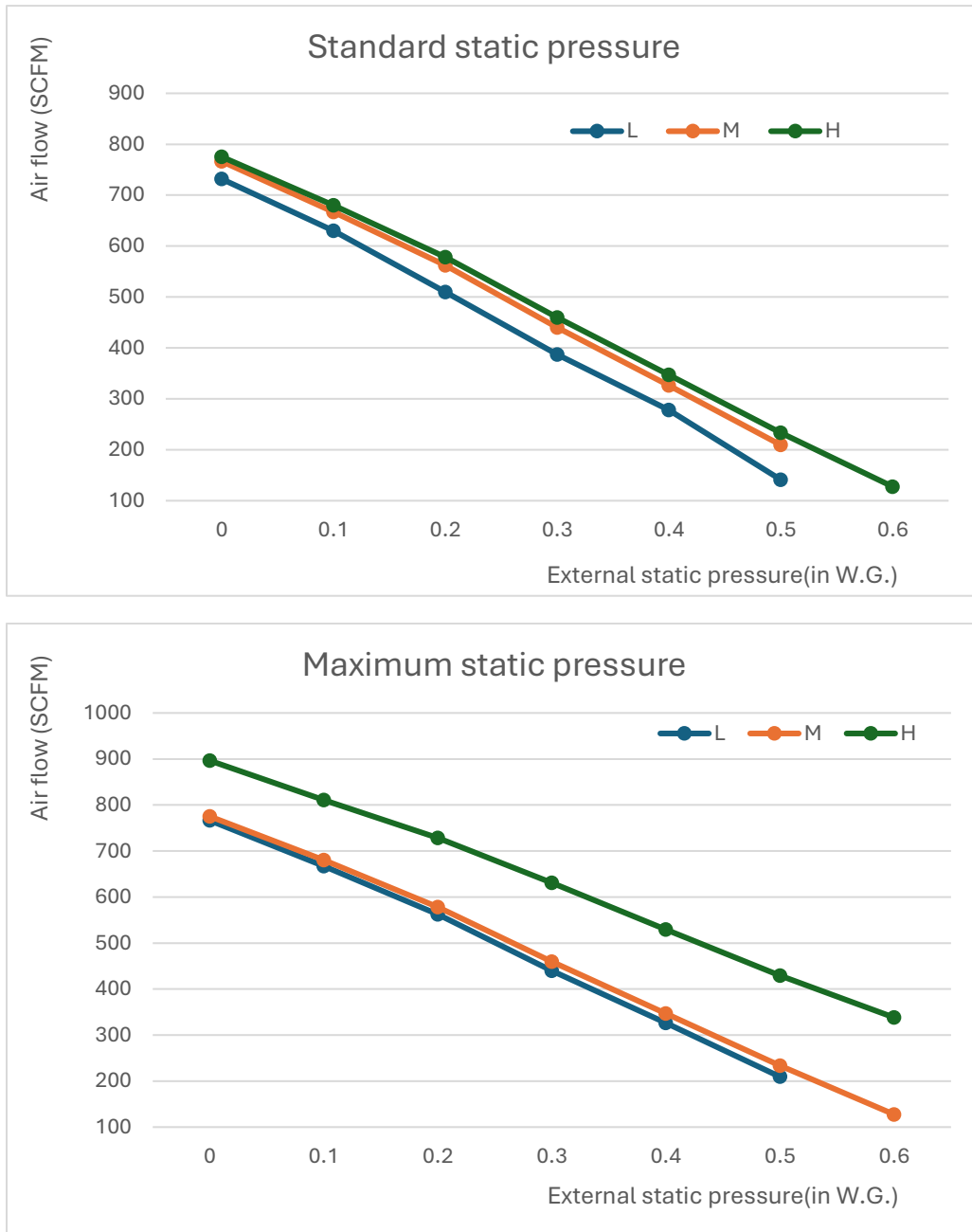
Unit size	Outdoor air temp. °F DB	Indoor air temp.													
		59 °F WB		61 °F WB		64 °F WB		67 °F WB		68 °F WB		72 °F WB		75 °F WB	
		71 °F DB		73 °F DB		77 °F DB		80 °F DB		82 °F DB		86 °F DB		90 °F DB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
036	54	25,53 0	20,67 0	26,72 0	21,24 0	28,41 0	22,11 0	30,00 0	22,80 0	30,51 0	22,86 0	32,45 0	22,58 0	33,78 0	21,73 0
	57	25,53 0	20,67 0	26,72 0	21,24 0	28,41 0	22,11 0	30,00 0	22,80 0	30,51 0	22,86 0	32,45 0	22,58 0	33,78 0	21,73 0
	61	25,53 0	20,67 0	26,72 0	21,24 0	28,41 0	22,11 0	30,00 0	22,80 0	30,51 0	22,86 0	32,45 0	22,58 0	33,78 0	21,73 0
	64	25,53 0	20,67 0	26,72 0	21,24 0	28,41 0	22,11 0	30,00 0	22,80 0	30,51 0	22,86 0	32,45 0	22,58 0	33,78 0	21,73 0
	68	25,53 0	20,67 0	26,72 0	21,24 0	28,41 0	22,11 0	30,00 0	22,80 0	30,51 0	22,86 0	32,45 0	22,58 0	33,78 0	21,73 0
	70	25,53 0	20,67 0	26,72 0	21,24 0	28,41 0	22,11 0	30,00 0	22,80 0	30,51 0	22,86 0	32,45 0	22,58 0	33,78 0	21,73 0
	73	25,53 0	20,67 0	26,72 0	21,24 0	28,41 0	22,11 0	30,00 0	22,80 0	30,51 0	22,86 0	32,45 0	22,58 0	33,78 0	21,73 0
	77	25,53 0	20,67 0	26,72 0	21,24 0	28,41 0	22,11 0	30,00 0	22,80 0	30,51 0	22,86 0	32,45 0	22,58 0	33,78 0	21,73 0
	81	25,53 0	20,67 0	26,72 0	21,24 0	28,41 0	22,11 0	30,00 0	22,80 0	30,51 0	22,86 0	32,45 0	22,58 0	33,78 0	21,73 0
	84	25,53 0	20,67 0	26,72 0	21,24 0	28,41 0	22,11 0	30,00 0	22,80 0	30,51 0	22,86 0	32,45 0	22,58 0	33,78 0	21,73 0
	88	25,53 0	20,67 0	26,72 0	21,24 0	28,41 0	22,11 0	30,00 0	22,80 0	30,51 0	22,86 0	32,45 0	22,58 0	33,78 0	21,73 0
	91	25,53 0	20,67 0	26,72 0	21,24 0	28,41 0	22,11 0	30,00 0	22,80 0	30,51 0	22,86 0	32,45 0	22,58 0	33,78 0	21,73 0
	95	25,53 0	20,67 0	26,72 0	21,24 0	28,41 0	22,11 0	30,00 0	22,80 0	30,51 0	22,86 0	32,45 0	22,58 0	33,78 0	21,73 0
	99	24,79 0	20,07 0	25,95 0	20,62 0	27,59 0	21,47 0	29,13 0	22,14 0	29,63 0	22,20 0	31,51 0	21,93 0	32,80 0	21,10 0
036	102	24,20 0	19,60 0	25,33 0	20,14 0	26,93 0	20,96 0	28,44 0	21,61 0	28,92 0	21,67 0	30,76 0	21,41 0	32,02 0	20,60 0
	50	30,64 0	24,15 0	32,06 0	24,82 0	34,09 0	25,83 0	36,00 0	26,64 0	36,62 0	26,72 0	38,93 0	26,37 0	40,54 0	25,39 0
	54	30,64 0	24,15 0	32,06 0	24,82 0	34,09 0	25,83 0	36,00 0	26,64 0	36,62 0	26,72 0	38,93 0	26,37 0	40,54 0	25,39 0
	57	30,64 0	24,15 0	32,06 0	24,82 0	34,09 0	25,83 0	36,00 0	26,64 0	36,62 0	26,72 0	38,93 0	26,37 0	40,54 0	25,39 0
	61	30,64 0	24,15 0	32,06 0	24,82 0	34,09 0	25,83 0	36,00 0	26,64 0	36,62 0	26,72 0	38,93 0	26,37 0	40,54 0	25,39 0
	64	30,64 0	24,15 0	32,06 0	24,82 0	34,09 0	25,83 0	36,00 0	26,64 0	36,62 0	26,72 0	38,93 0	26,37 0	40,54 0	25,39 0
	68	30,64 0	24,15 0	32,06 0	24,82 0	34,09 0	25,83 0	36,00 0	26,64 0	36,62 0	26,72 0	38,93 0	26,37 0	40,54 0	25,39 0
	70	30,64 0	24,15 0	32,06 0	24,82 0	34,09 0	25,83 0	36,00 0	26,64 0	36,62 0	26,72 0	38,93 0	26,37 0	40,54 0	25,39 0
	73	30,64 0	24,15 0	32,06 0	24,82 0	34,09 0	25,83 0	36,00 0	26,64 0	36,62 0	26,72 0	38,93 0	26,37 0	40,54 0	25,39 0
	77	30,64 0	24,15 0	32,06 0	24,82 0	34,09 0	25,83 0	36,00 0	26,64 0	36,62 0	26,72 0	38,93 0	26,37 0	40,54 0	25,39 0
	81	30,64 0	24,15 0	32,06 0	24,82 0	34,09 0	25,83 0	36,00 0	26,64 0	36,62 0	26,72 0	38,93 0	26,37 0	40,54 0	25,39 0
	84	30,64 0	24,15 0	32,06 0	24,82 0	34,09 0	25,83 0	36,00 0	26,64 0	36,62 0	26,72 0	38,93 0	26,37 0	40,54 0	25,39 0
	88	30,64 0	24,15 0	32,06 0	24,82 0	34,09 0	25,83 0	36,00 0	26,64 0	36,62 0	26,72 0	38,93 0	26,37 0	40,54 0	25,39 0
	91	30,64 0	24,15 0	32,06 0	24,82 0	34,09 0	25,83 0	36,00 0	26,64 0	36,62 0	26,72 0	38,93 0	26,37 0	40,54 0	25,39 0
	95	30,64 0	24,15 0	32,06 0	24,82 0	34,09 0	25,83 0	36,00 0	26,64 0	36,62 0	26,72 0	38,93 0	26,37 0	40,54 0	25,39 0
042	99	29,75 0	23,45 0	31,13 0	24,10 0	33,10 0	25,08 0	34,96 0	25,87 0	35,56 0	25,95 0	37,80 0	25,61 0	39,36 0	24,65 0
	102	29,05 0	22,89 0	30,39 0	23,53 0	32,32 0	24,49 0	34,13 0	25,25 0	34,72 0	25,33 0	36,91 0	25,00 0	38,43 0	24,07 0
042	50	35,75 0	28,94 0	37,40 0	29,73 0	39,77 0	30,95 0	42,00 0	31,92 0	42,72 0	32,01 0	45,42 0	31,60 0	47,29 0	30,42 0
	54	35,75 0	28,94 0	37,40 0	29,73 0	39,77 0	30,95 0	42,00 0	31,92 0	42,72 0	32,01 0	45,42 0	31,60 0	47,29 0	30,42 0

Unit size	Outdoor air temp. °F DB	Indoor air temp.													
		59 °F WB		61 °F WB		64 °F WB		67 °F WB		68 °F WB		72 °F WB		75 °F WB	
		71 °F DB		73 °F DB		77 °F DB		80 °F DB		82 °F DB		86 °F DB		90 °F DB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
048	57	35,75 0	28,94 0	37,40 0	29,73 0	39,77 0	30,95 0	42,00 0	31,92 0	42,72 0	32,01 0	45,42 0	31,60 0	47,29 0	30,42 0
	61	35,75 0	28,94 0	37,40 0	29,73 0	39,77 0	30,95 0	42,00 0	31,92 0	42,72 0	32,01 0	45,42 0	31,60 0	47,29 0	30,42 0
	64	35,75 0	28,94 0	37,40 0	29,73 0	39,77 0	30,95 0	42,00 0	31,92 0	42,72 0	32,01 0	45,42 0	31,60 0	47,29 0	30,42 0
	68	35,75 0	28,94 0	37,40 0	29,73 0	39,77 0	30,95 0	42,00 0	31,92 0	42,72 0	32,01 0	45,42 0	31,60 0	47,29 0	30,42 0
	70	35,75 0	28,94 0	37,40 0	29,73 0	39,77 0	30,95 0	42,00 0	31,92 0	42,72 0	32,01 0	45,42 0	31,60 0	47,29 0	30,42 0
	73	35,75 0	28,94 0	37,40 0	29,73 0	39,77 0	30,95 0	42,00 0	31,92 0	42,72 0	32,01 0	45,42 0	31,60 0	47,29 0	30,42 0
	77	35,75 0	28,94 0	37,40 0	29,73 0	39,77 0	30,95 0	42,00 0	31,92 0	42,72 0	32,01 0	45,42 0	31,60 0	47,29 0	30,42 0
	81	35,75 0	28,94 0	37,40 0	29,73 0	39,77 0	30,95 0	42,00 0	31,92 0	42,72 0	32,01 0	45,42 0	31,60 0	47,29 0	30,42 0
	84	35,75 0	28,94 0	37,40 0	29,73 0	39,77 0	30,95 0	42,00 0	31,92 0	42,72 0	32,01 0	45,42 0	31,60 0	47,29 0	30,42 0
	88	35,75 0	28,94 0	37,40 0	29,73 0	39,77 0	30,95 0	42,00 0	31,92 0	42,72 0	32,01 0	45,42 0	31,60 0	47,29 0	30,42 0
	91	35,75 0	28,94 0	37,40 0	29,73 0	39,77 0	30,95 0	42,00 0	31,92 0	42,72 0	32,01 0	45,42 0	31,60 0	47,29 0	30,42 0
	95	35,75 0	28,94 0	37,40 0	29,73 0	39,77 0	30,95 0	42,00 0	31,92 0	42,72 0	32,01 0	45,42 0	31,60 0	47,29 0	30,42 0
	99	34,71 0	28,10 0	36,32 0	28,87 0	38,62 0	30,05 0	40,78 0	30,99 0	41,48 0	31,08 0	44,10 0	30,68 0	45,92 0	29,54 0
	102	33,89 0	27,44 0	35,46 0	28,18 0	37,70 0	29,34 0	39,82 0	30,26 0	40,50 0	30,35 0	43,06 0	29,96 0	44,83 0	28,84 0
048	50	40,85 0	32,20 0	42,74 0	33,08 0	45,45 0	34,44 0	48,00 0	35,52 0	48,82 0	35,62 0	51,91 0	35,16 0	54,05 0	33,85 0
	54	40,85 0	32,20 0	42,74 0	33,08 0	45,45 0	34,44 0	48,00 0	35,52 0	48,82 0	35,62 0	51,91 0	35,16 0	54,05 0	33,85 0
	57	40,85 0	32,20 0	42,74 0	33,08 0	45,45 0	34,44 0	48,00 0	35,52 0	48,82 0	35,62 0	51,91 0	35,16 0	54,05 0	33,85 0
	61	40,85 0	32,20 0	42,74 0	33,08 0	45,45 0	34,44 0	48,00 0	35,52 0	48,82 0	35,62 0	51,91 0	35,16 0	54,05 0	33,85 0
	64	40,85 0	32,20 0	42,74 0	33,08 0	45,45 0	34,44 0	48,00 0	35,52 0	48,82 0	35,62 0	51,91 0	35,16 0	54,05 0	33,85 0
	68	40,85 0	32,20 0	42,74 0	33,08 0	45,45 0	34,44 0	48,00 0	35,52 0	48,82 0	35,62 0	51,91 0	35,16 0	54,05 0	33,85 0
	70	40,85 0	32,20 0	42,74 0	33,08 0	45,45 0	34,44 0	48,00 0	35,52 0	48,82 0	35,62 0	51,91 0	35,16 0	54,05 0	33,85 0
	73	40,85 0	32,20 0	42,74 0	33,08 0	45,45 0	34,44 0	48,00 0	35,52 0	48,82 0	35,62 0	51,91 0	35,16 0	54,05 0	33,85 0
	77	40,85 0	32,20 0	42,74 0	33,08 0	45,45 0	34,44 0	48,00 0	35,52 0	48,82 0	35,62 0	51,91 0	35,16 0	54,05 0	33,85 0
	81	40,85 0	32,20 0	42,74 0	33,08 0	45,45 0	34,44 0	48,00 0	35,52 0	48,82 0	35,62 0	51,91 0	35,16 0	54,05 0	33,85 0
	84	40,85 0	32,20 0	42,74 0	33,08 0	45,45 0	34,44 0	48,00 0	35,52 0	48,82 0	35,62 0	51,91 0	35,16 0	54,05 0	33,85 0
	88	40,85 0	32,20 0	42,74 0	33,08 0	45,45 0	34,44 0	48,00 0	35,52 0	48,82 0	35,62 0	51,91 0	35,16 0	54,05 0	33,85 0
	91	40,85 0	32,20 0	42,74 0	33,08 0	45,45 0	34,44 0	48,00 0	35,52 0	48,82 0	35,62 0	51,91 0	35,16 0	54,05 0	33,85 0
	95	40,85 0	32,20 0	42,74 0	33,08 0	45,45 0	34,44 0	48,00 0	35,52 0	48,82 0	35,62 0	51,91 0	35,16 0	54,05 0	33,85 0
060	99	39,67 0	31,27 0	41,50 0	32,12 0	44,13 0	33,44 0	46,61 0	34,49 0	47,40 0	34,59 0	50,40 0	34,14 0	52,48 0	32,87 0
	102	38,73 0	30,53 0	40,52 0	31,36 0	43,09 0	32,65 0	45,50 0	33,67 0	46,28 0	33,77 0	49,21 0	33,33 0	51,24 0	32,09 0
	50	51,07 0	40,26 0	53,43 0	41,36 0	56,81 0	43,04 0	60,00 0	44,40 0	61,03 0	44,53 0	64,89 0	43,96 0	67,56 0	42,31 0
	54	51,07 0	40,26 0	53,43 0	41,36 0	56,81 0	43,04 0	60,00 0	44,40 0	61,03 0	44,53 0	64,89 0	43,96 0	67,56 0	42,31 0
060	57	51,07 0	40,26 0	53,43 0	41,36 0	56,81 0	43,04 0	60,00 0	44,40 0	61,03 0	44,53 0	64,89 0	43,96 0	67,56 0	42,31 0

Unit size	Outdoor air temp. °F DB	Indoor air temp.													
		59 °F WB		61 °F WB		64 °F WB		67 °F WB		68 °F WB		72 °F WB		75 °F WB	
		71 °F DB		73 °F DB		77 °F DB		80 °F DB		82 °F DB		86 °F DB		90 °F DB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
61	51,07 0	40,26 0	53,43 0	41,36 0	56,81 0	43,04 0	60,00 0	44,40 0	61,03 0	44,53 0	64,89 0	43,96 0	67,56 0	42,31 0	
64	51,07 0	40,26 0	53,43 0	41,36 0	56,81 0	43,04 0	60,00 0	44,40 0	61,03 0	44,53 0	64,89 0	43,96 0	67,56 0	42,31 0	
68	51,07 0	40,26 0	53,43 0	41,36 0	56,81 0	43,04 0	60,00 0	44,40 0	61,03 0	44,53 0	64,89 0	43,96 0	67,56 0	42,31 0	
70	51,07 0	40,26 0	53,43 0	41,36 0	56,81 0	43,04 0	60,00 0	44,40 0	61,03 0	44,53 0	64,89 0	43,96 0	67,56 0	42,31 0	
73	51,07 0	40,26 0	53,43 0	41,36 0	56,81 0	43,04 0	60,00 0	44,40 0	61,03 0	44,53 0	64,89 0	43,96 0	67,56 0	42,31 0	
77	51,07 0	40,26 0	53,43 0	41,36 0	56,81 0	43,04 0	60,00 0	44,40 0	61,03 0	44,53 0	64,89 0	43,96 0	67,56 0	42,31 0	
81	51,07 0	40,26 0	53,43 0	41,36 0	56,81 0	43,04 0	60,00 0	44,40 0	61,03 0	44,53 0	64,89 0	43,96 0	67,56 0	42,31 0	
84	51,07 0	40,26 0	53,43 0	41,36 0	56,81 0	43,04 0	60,00 0	44,40 0	61,03 0	44,53 0	64,89 0	43,96 0	67,56 0	42,31 0	
88	51,07 0	40,26 0	53,43 0	41,36 0	56,81 0	43,04 0	60,00 0	44,40 0	61,03 0	44,53 0	64,89 0	43,96 0	67,56 0	42,31 0	
91	51,07 0	40,26 0	53,43 0	41,36 0	56,81 0	43,04 0	60,00 0	44,40 0	61,03 0	44,53 0	64,89 0	43,96 0	67,56 0	42,31 0	
95	51,07 0	40,26 0	53,43 0	41,36 0	56,81 0	43,04 0	60,00 0	44,40 0	61,03 0	44,53 0	64,89 0	43,96 0	67,56 0	42,31 0	
99	49,59 0	39,09 0	51,88 0	40,16 0	55,16 0	41,79 0	58,26 0	43,11 0	59,26 0	43,24 0	63,01 0	42,69 0	65,60 0	41,08 0	
102	48,41 0	38,17 0	50,65 0	39,21 0	53,86 0	40,80 0	56,88 0	42,09 0	57,86 0	42,21 0	61,52 0	41,67 0	64,05 0	40,11 0	

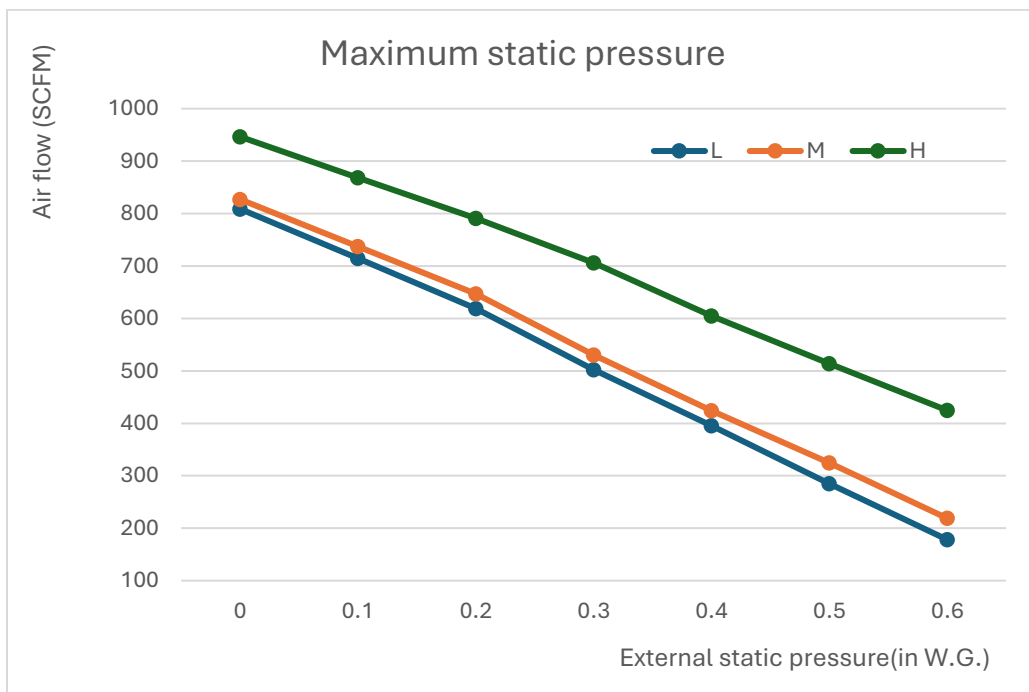
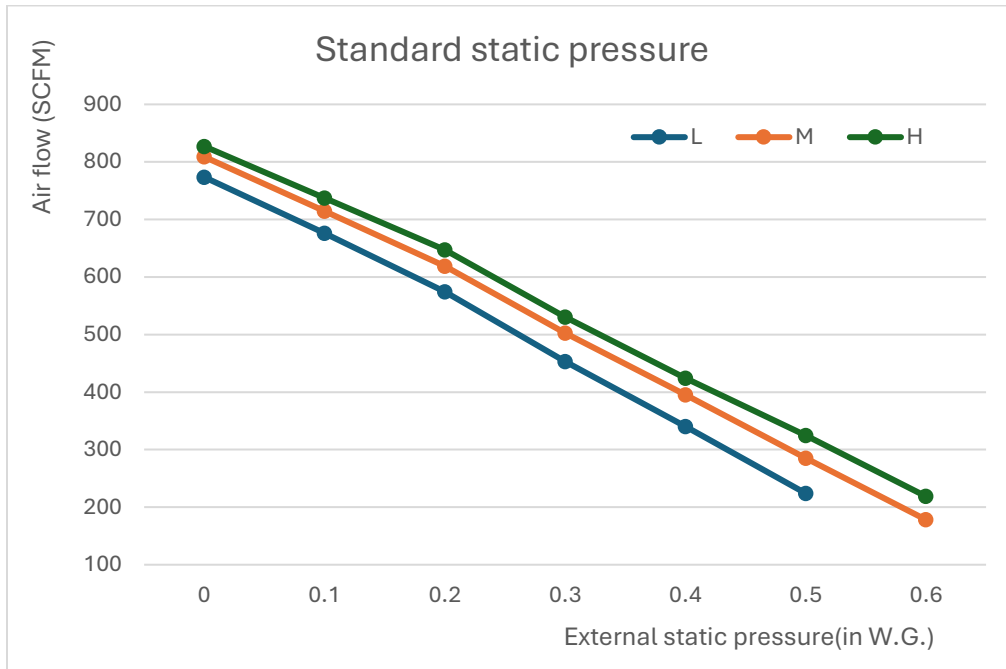
8.Fan characteristics

MMD-UB0091VHN-UL

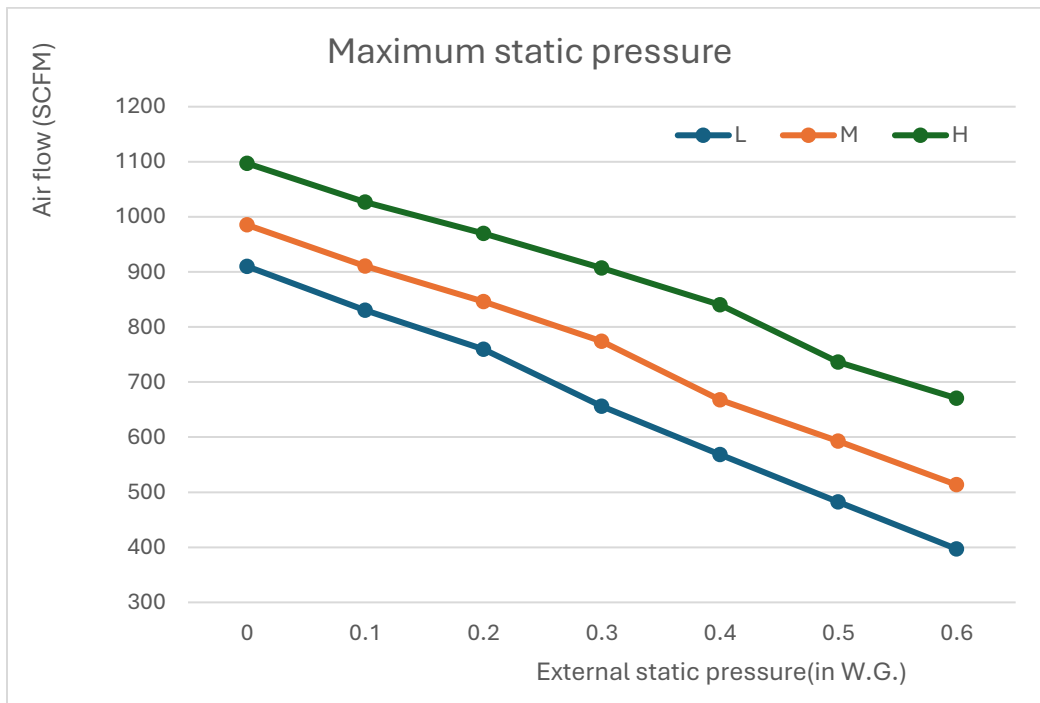
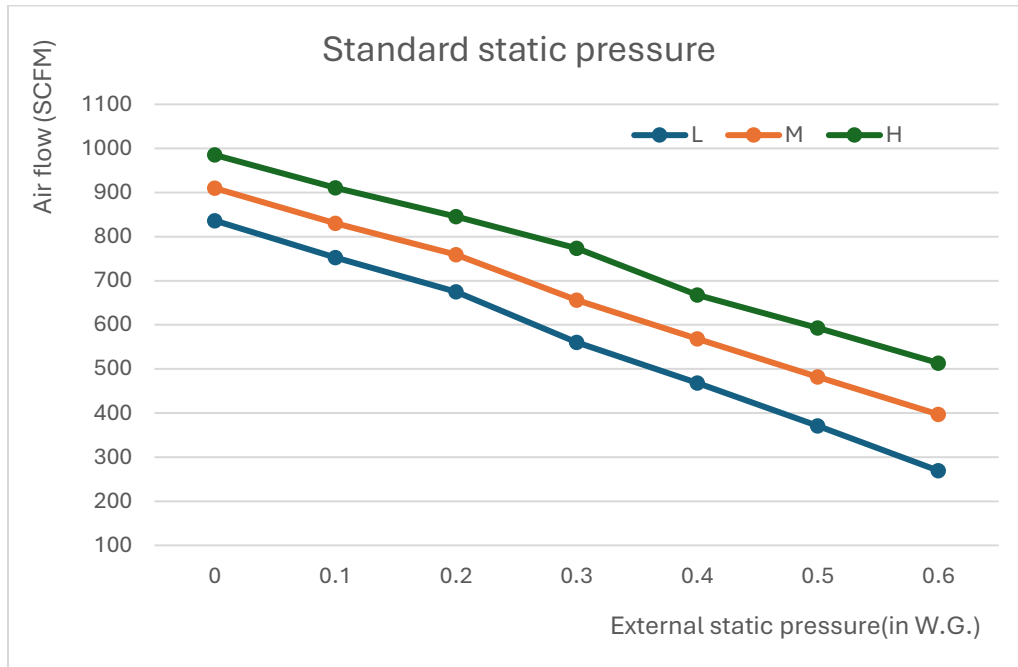


*Note: The factory wiring corresponds to the standard static pressure. If want to adjust the indoor unit to the maximum static pressure, need to change the motor wiring, For specific operations, refer to IOM.

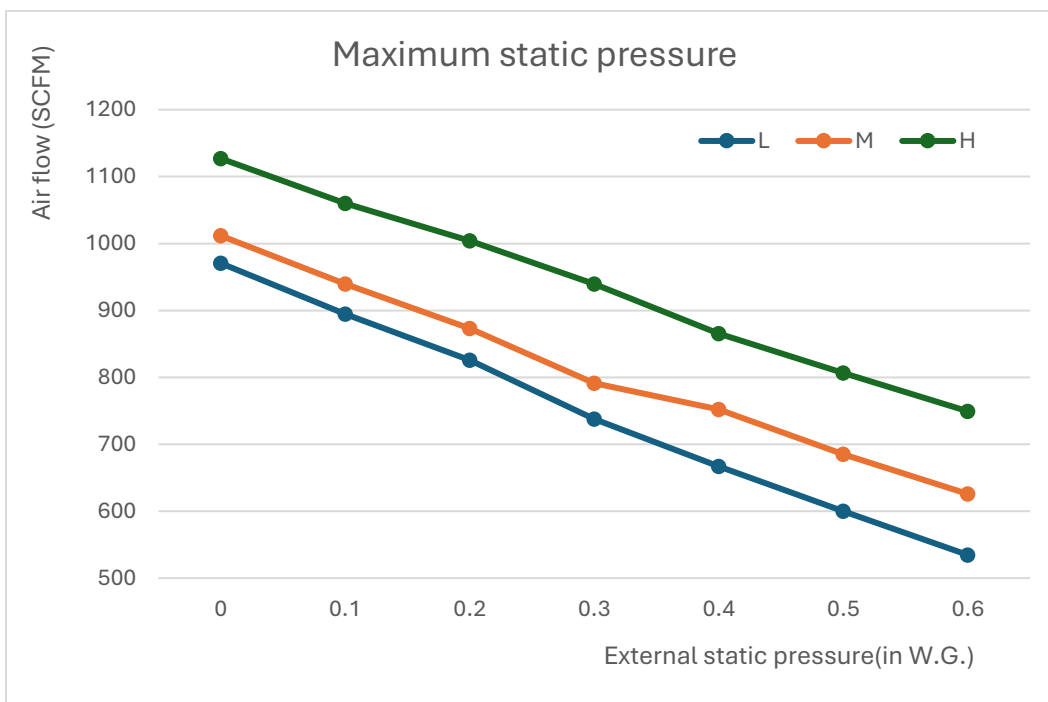
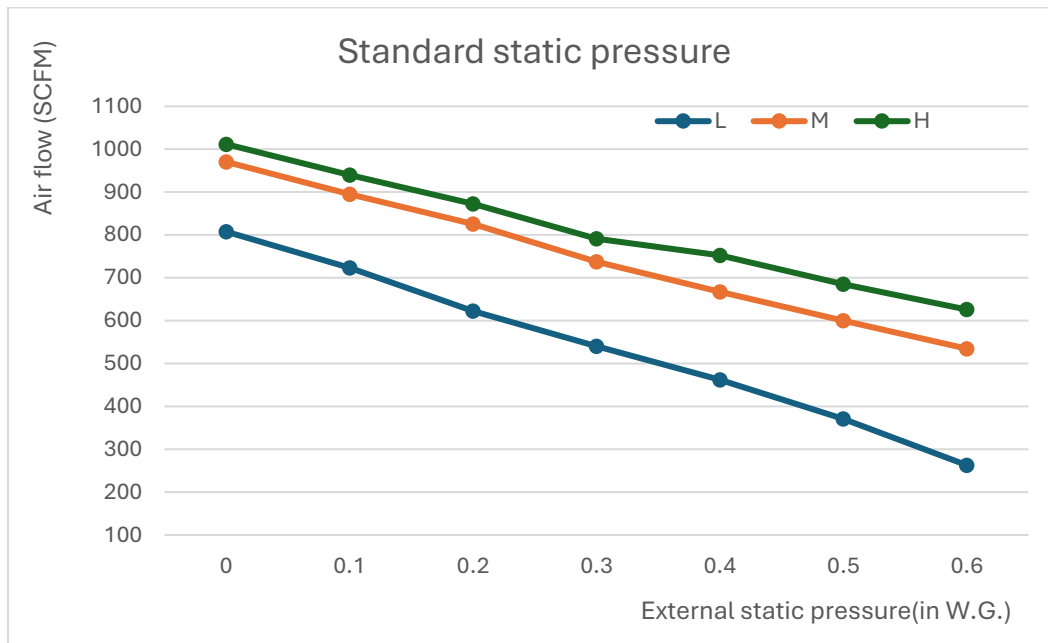
MMD-UB0121VHN-UL



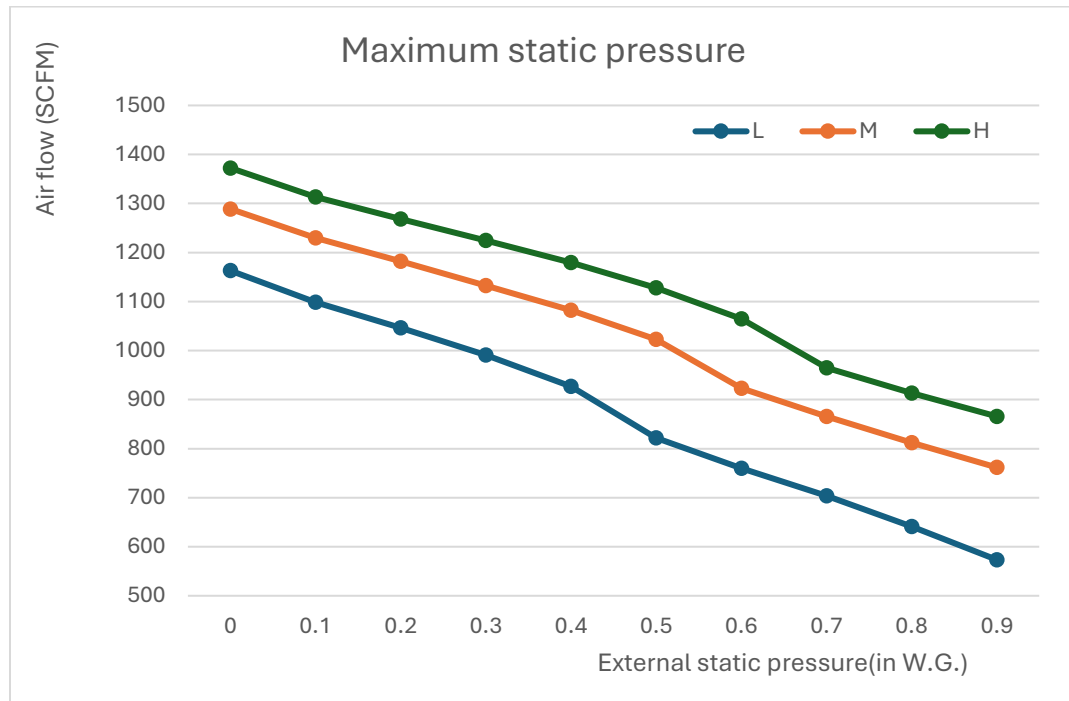
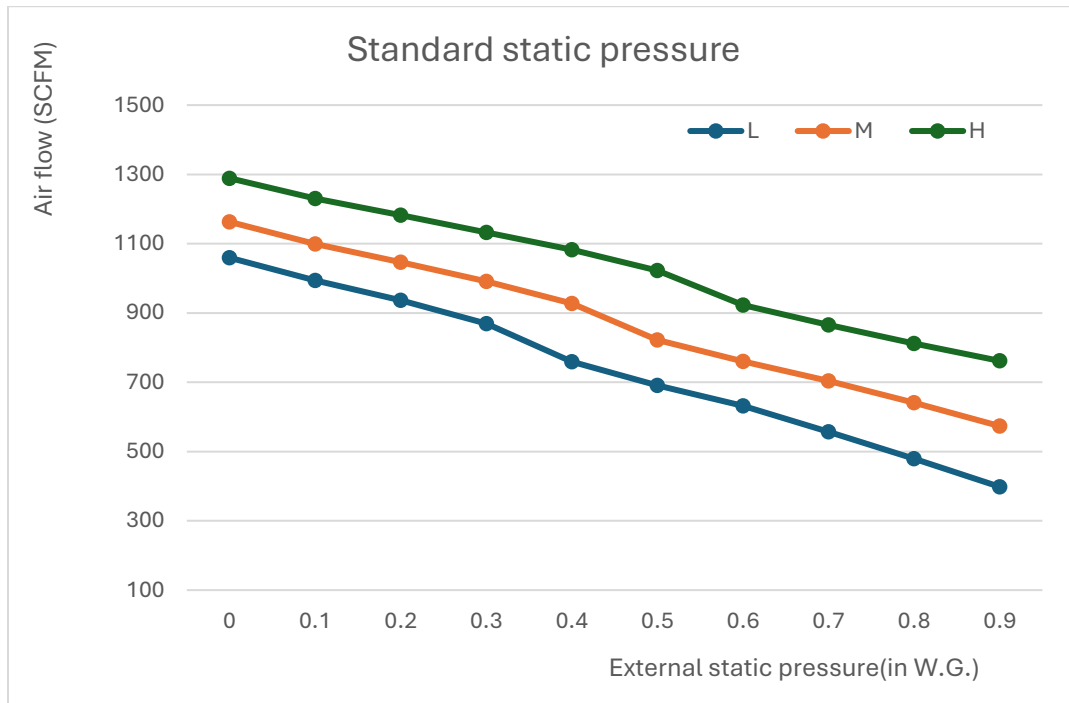
MMD-UB0181VHN-UL



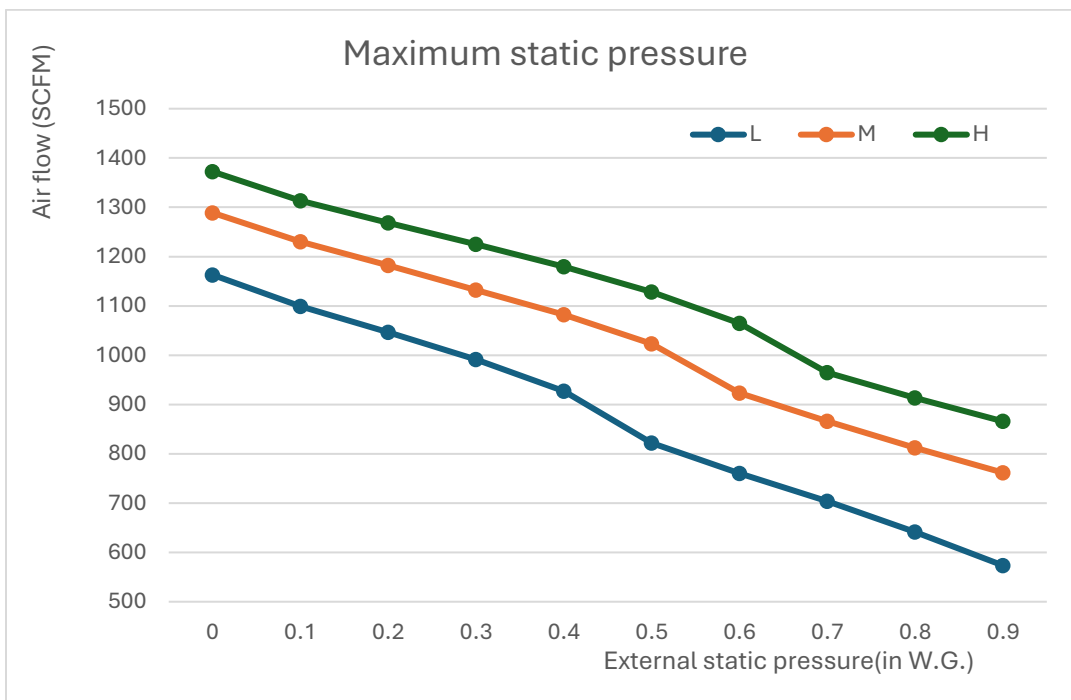
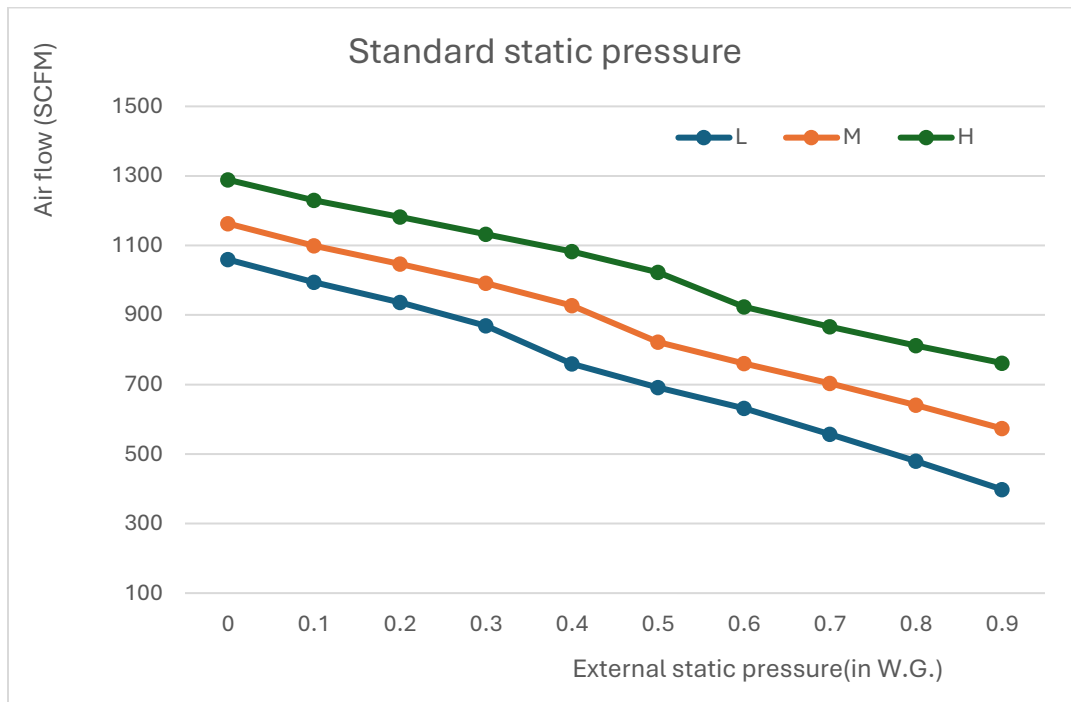
MMD-UB0241VHN-UL



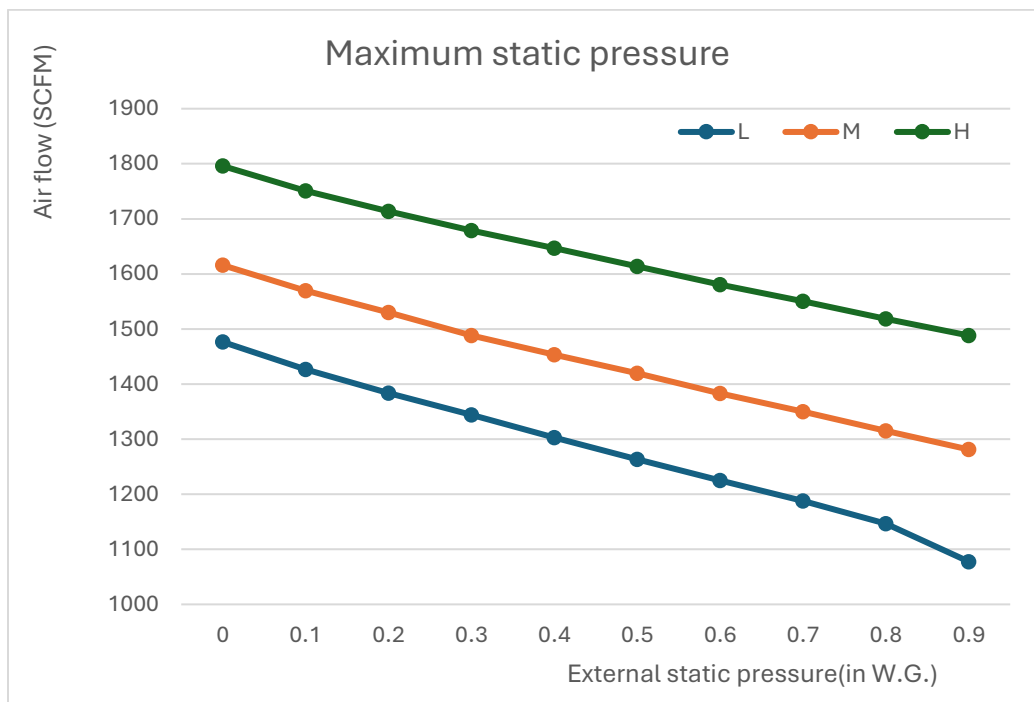
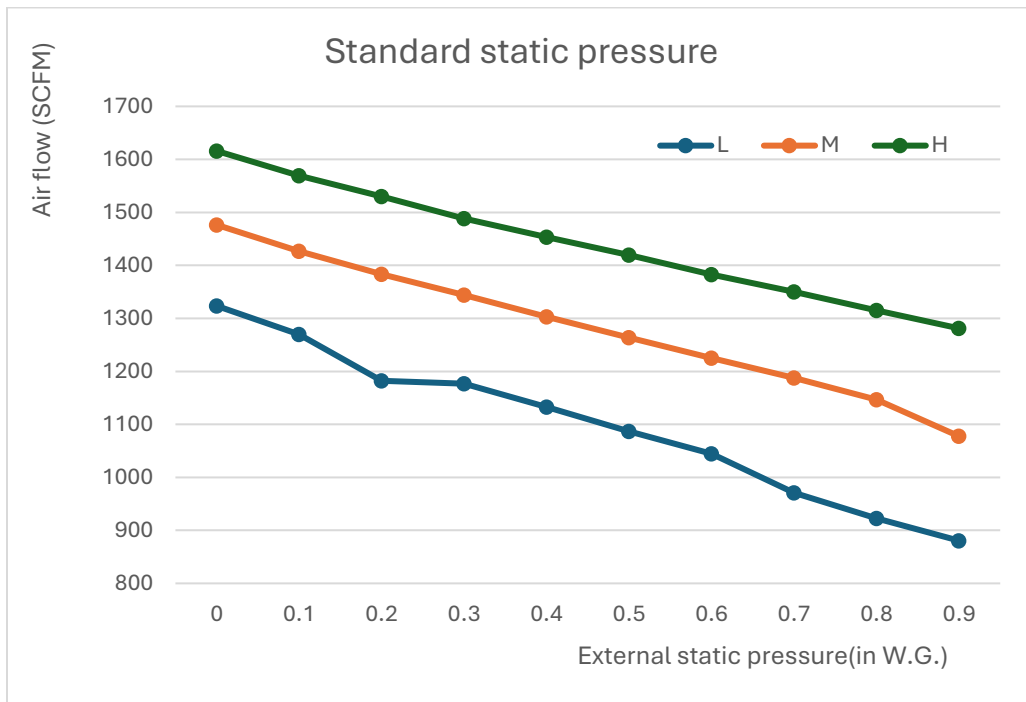
MMD-UB0301VHN-UL



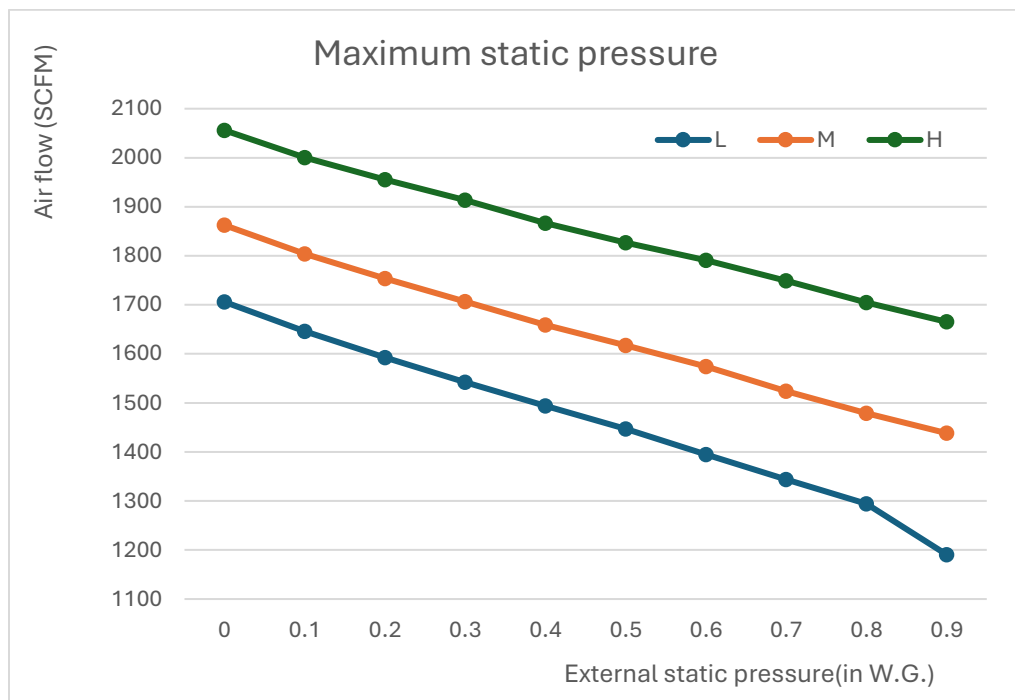
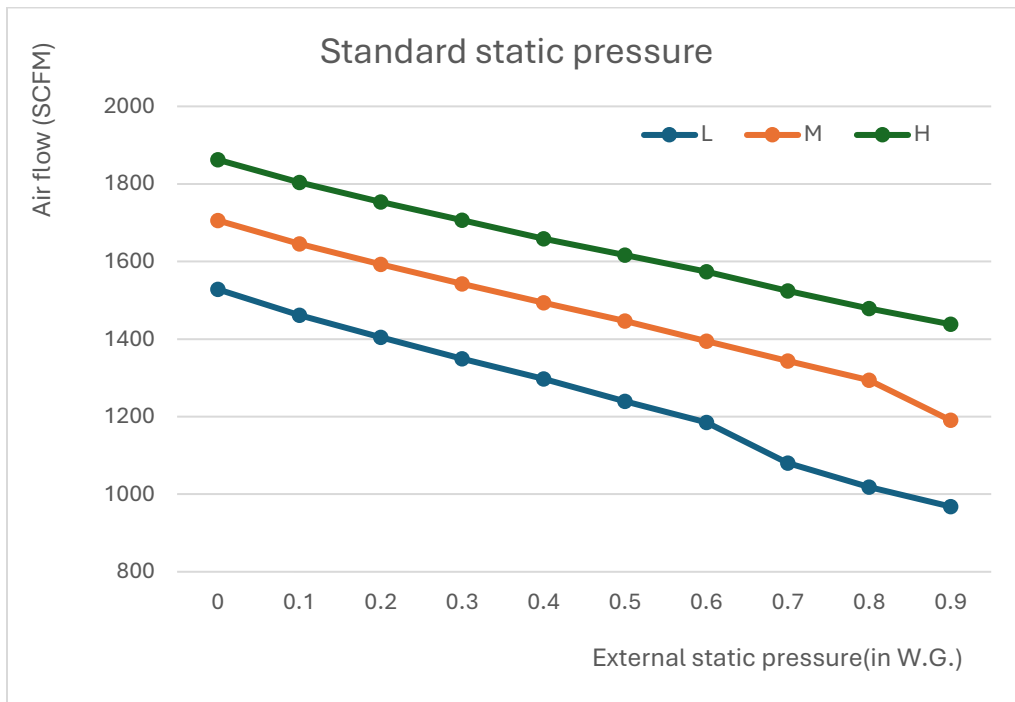
MMD-UB0361VHN-UL



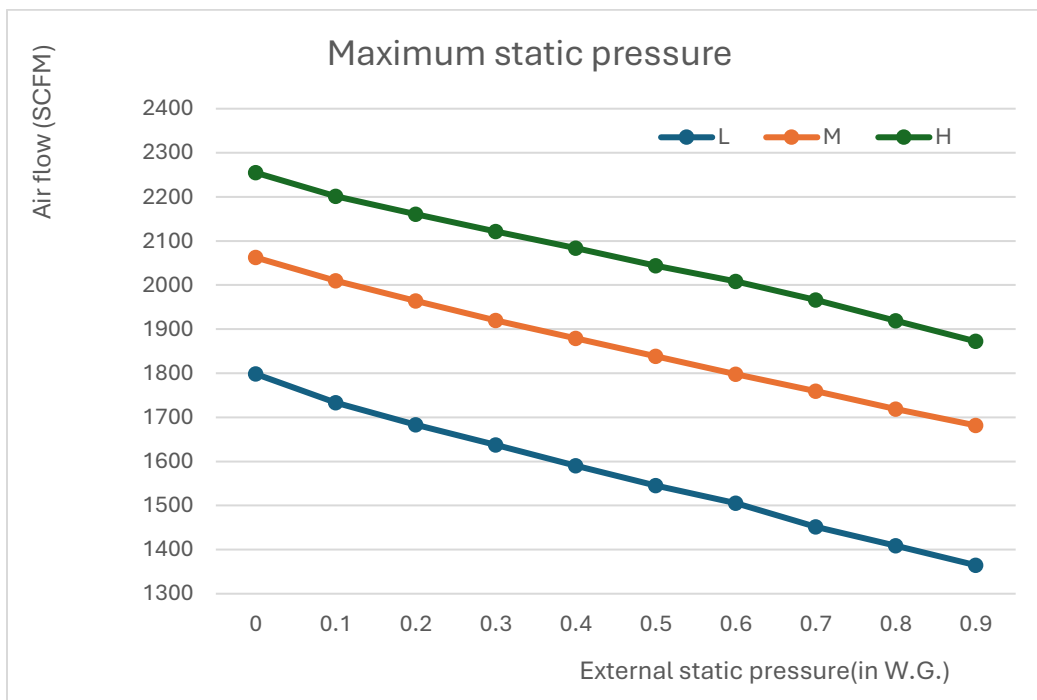
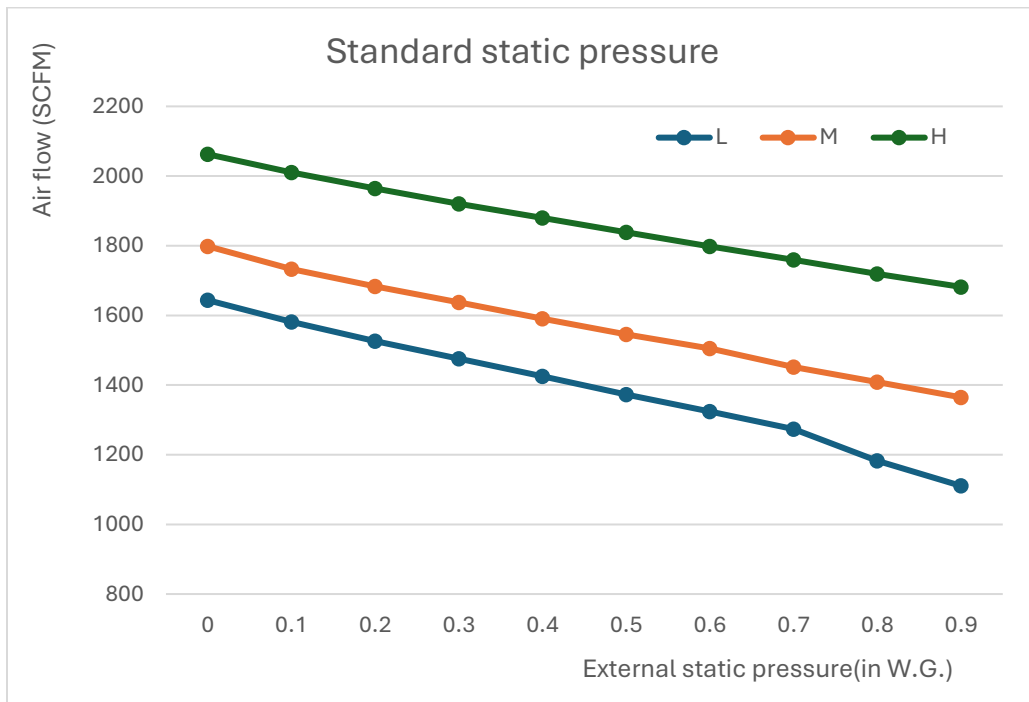
MMD-UB0421VHN-UL



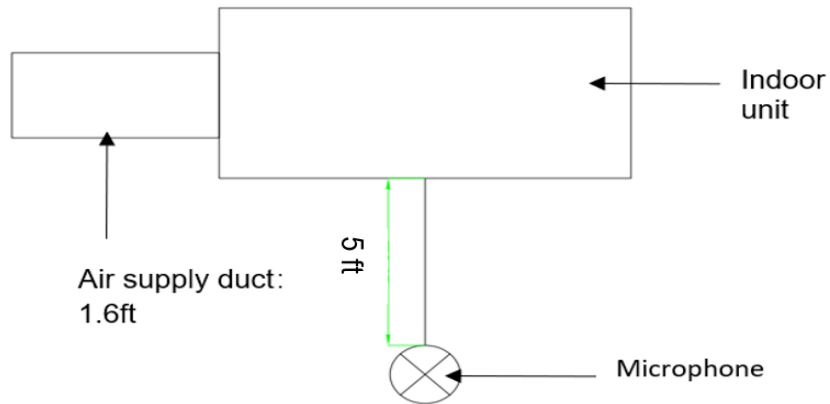
MMD-UB0481VHN-UL



MMD-UB0601VHN-UL



9.Sound data



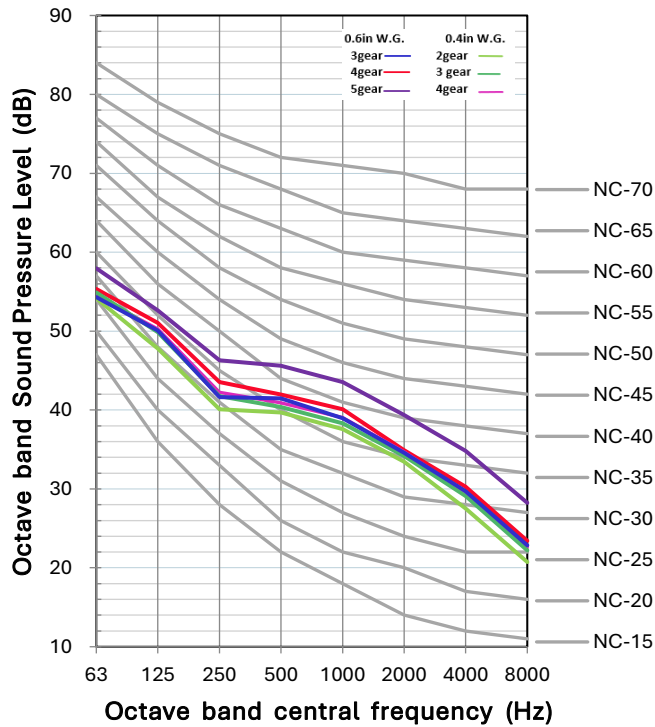
MMD-UB0091VHN-UL

Fan tap	H	M	L
External static Pressure(in.WG)	0.4	0.4	0.4
Sound pressure level dB(A)	44	43	42

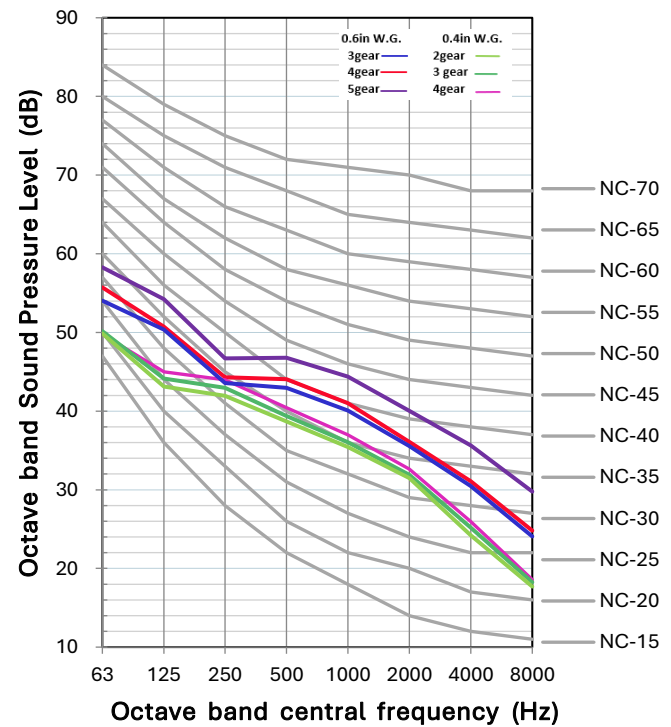
MMD-UB0121VHN-UL

Fan tap	H	M	L
External static Pressure(in.WG)	0.4	0.4	0.4
Sound pressure level dB(A)	45	44	43

Noise Criteria(NC) curves

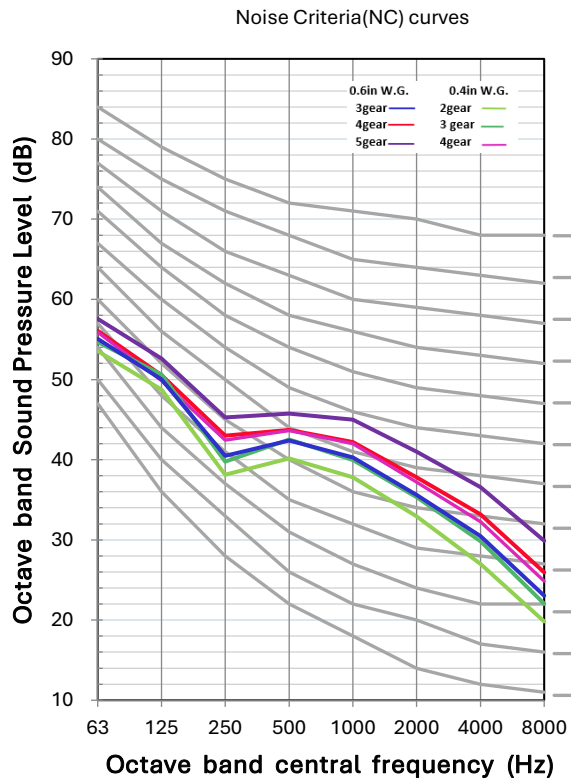


Noise Criteria(NC) curves



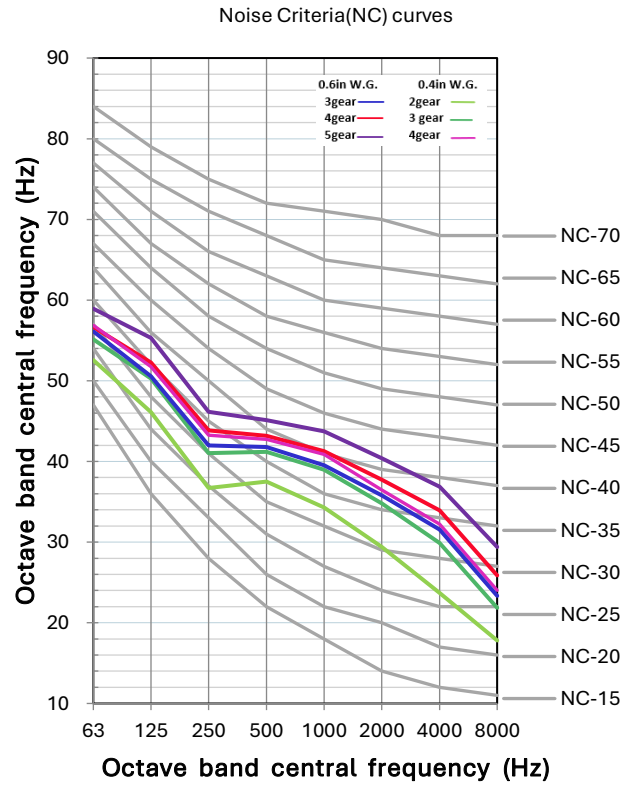
MMD-UB0181VHN-UL

Fan tap	H	M	L
External static Pressure(in.WG)	0.4	0.4	0.4
Sound pressure level dB(A)	46	45	42



MMD-UB0241VHN-UL

Fan tap	H	M	L
External static Pressure(in.WG)	0.4	0.4	0.4
Sound pressure level dB(A)	46	45	41

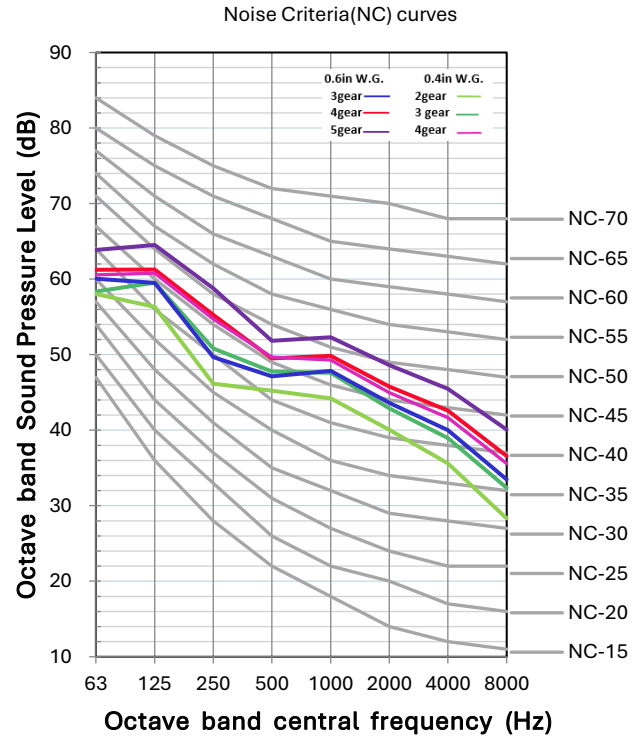
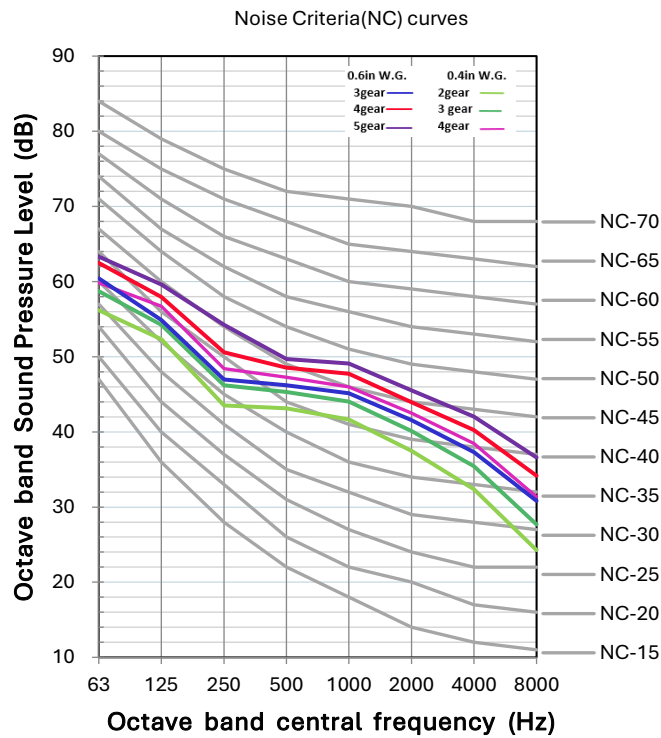


MMD-UB0301VHN-UL/ MMD-UP0361VHN-UL

Fan tap	H	M	L
External static Pressure(in.WG)	0.6	0.6	0.6
Sound pressure level dB(A)	51	49	46

MMD-UB0421VHN-UL

Fan tap	H	M	L
External static Pressure(in.WG)	0.6	0.6	0.6
Sound pressure level dB(A)	54	52	49



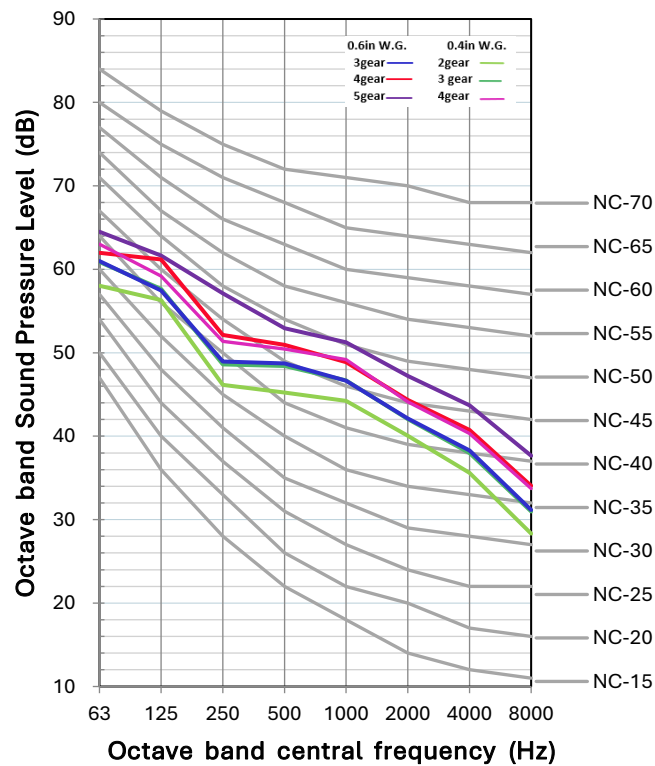
MMD-UB0481VHN-UL

Fan tap	H	M	L
External static Pressure(in.WG)	0.6	0.6	0.6
Sound pressure level dB(A)	53	51	49

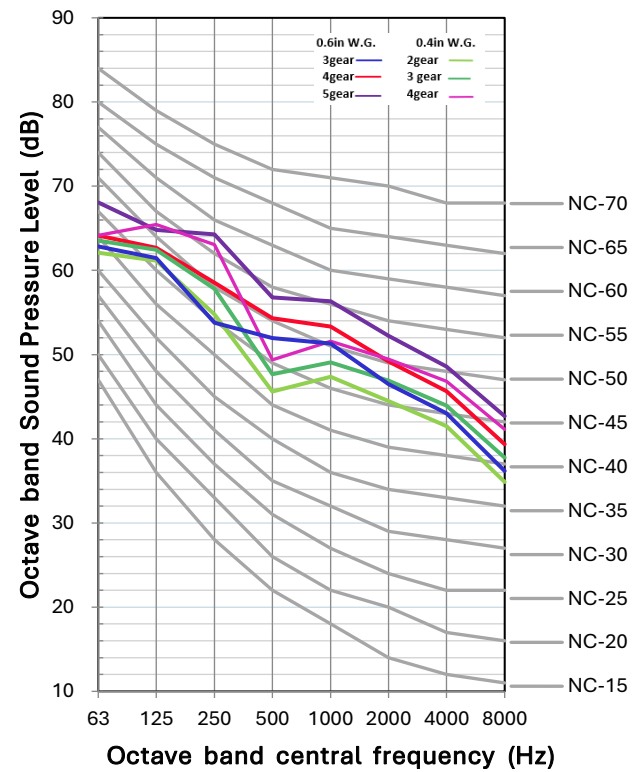
MMD-UB0601VHN-UL

Fan tap	H	M	L
External static Pressure(in.WG)	0.6	0.6	0.6
Sound pressure level dB(A)	58	55	53

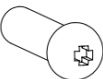
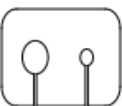
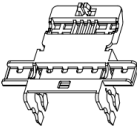
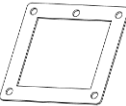
Noise Criteria(NC) curves

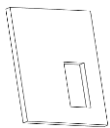
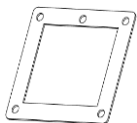


Noise Criteria(NC) curves



10.Accessories

Name of accessories	Quantity	Image	Application
Installation &Operation Manual	2	A manual	One in English and one in French
Tapping screw	1		Remove the paint on the machine to ensure that the whole machine is reliably grounded.
Ribbon	4		Used to bind up the cables and connecting pipes.
Wire grommet	1		Protect communication wires passing through the machine's knockout holes
Wire grommet	1		Protect the power wires through the machine's knockout hole
Seal ring	3		put on the plug or the water outlet to play a sealing role
Sponge	1		After welding the indoor and outdoor unit connecting pipes, stick them on the pipe cover to insulate the copper pipes
Blank bag	1		Used to contain accessories.
Plug	2		Block the drain opening on the unit
Drain joint	1		Connect the drain hose for machine drainage
Temperature sensor fixing card	1		Fixed room temperature sensor
Sponge	1		Seal the circuit breaker in the electric heating assembly through the machine knockout(Paste to the outside, used in conjunction with the fixing buckle and the rubber cover on the front panel of the machine)

Name of accessories	Quantity	Image	Application
Sponge	1		Seal the circuit breaker in the electric heating assembly through the machine knockout(Paste on the inside)
Fixed buckle	1		Seal the circuit breaker in the electric heating assembly through the machine knockout(Paste to the outside)

Heater Kit Accessories(Optional)

Model	Description	9K	12K	18K	24K	30K	36K	42K	48K	60K
21-4444-06	3.75kW heating kit, single-pole circuit breaker	●	●	●	●	●	●	●	●	●
21-4444-01	5kW heating kit, single-pole circuit breaker	●	●	●	●	●	●	●	●	●
21-4444-02	7.5kW heating kit, single-pole circuit breaker	×	×	●	●	●	●	●	●	●
21-4444-03	10kW heating kit, single-pole circuit breaker	×	×	×	×	×	×	●	●	●

Note: ● indicates availability, and × indicates unavailability.

11.PC Board Optional Switch/Connector Specifications (ACD-0006)

Function	Connector	Pin	Function	Remarks
Power supply	CN01	1	AC230V	This is the input of the power supply.
	CN04	1	AC230V	
Fan power supply	CN02	1	AC230V	This is the input of the fan power supply.
	CN03	1	AC230V	
Transformer power input	CN10	1	AC230V	This is the input of the transformer power supply.
		3	AC230V	
Transformer output	CN11	1	AC24V	This is the output of the transformer.
		2	AC24V	
Optional fan output	CN20	1	Optional fan output	When the electric heating is running and fan P01 error occurs, it will be turned on.
	CN21	1	AC230V	-
Fan output	CN32	1	DC12V(COM)	Factory default setting : ON when indoor unit in operation and OFF when indoor unit at rest. *Fan can be operated on its own by pressing FAN button on remote control(DN31)
		2	Fan output	
Main bus communication	CN40	1	Main BUS	This is used for communication between indoor unit and outdoor unit.
		2	Main BUS	
Sub bus communication	CN41	1	Sub BUS	This is used for communication between indoor unit and remote controller.
		2	Sub BUS	
Optional output	CN60	1	DC12V(COM)	-
		2	Defrost output	ON during defrost.
		3	Thermo output	ON while thermo ON.
		4	Cooling output	ON during cooling.
		5	Heating output	ON during heating.
		6	Fan output	ON while fan ON.
HA	CN61	1	ON/OFF input	Can be selected by I.DN[2E] J01:Connect - Pulse(factory default setting)/ Cut - Static input select
		2	0V(COM) for pin1,3	-
		3	Remote control disabling input	Enables/disables start/stop control via remote control.
		4	In-operation output	ON during operation.
		5	DC12V for pin4,6	-
		6	Alarm output	ON while alarm ON.
CHK operation check	CN71	1	Check mode input	Used for indoor operation check (prescribed operational status output, such as indoor fan"H", to be generated without communication with outdoor unit or remote controller).
		2	0V	
DIS display mode	CN72	1	Display mode input	Product display mode - Communication just between indoor unit and remote control becomes available (upon turning on of power). Timer short-circuited out (always).
		2	0V	
FS unit	CN81	1	DC12V(COM)	This is connected to the FS unit. Can be selected by I.DN[FD](Priority of operating mode) and I.DN[FE](System address)

Function	Connector	Pin	Function	Remarks
		2	EP valve	I.DN[FD]=0 Priority heating(Factory default setting) I.DN[FD]=1 Priority cooling I.DN[FD]=2 heating only I.DN[FD]=3 cooling only I.DN[FE]=99 not connected I.DN[FE]System address setting range: 1~64.
		3	Balance valve	
		4	Intake valve	
		5	Discharge valve	
PMV output	CN82	1	PMV output A	This is connected to the PMV coil for controlling PMV opening.
		2	PMV output B	
		3	PMV output /A	
		4	PMV output /B	
		5	DC12V(COM)	
		6	DC12V(COM)	
TC1 input	CN100	1	TC1 temperature sensor input	This is for connecting the TC1 (heat exchanger outlet) temperature sensor.
		2	0V	
TC2 input	CN101	1	TC2 temperature sensor input	This is for connecting the TC2 (middle of the heat exchanger) temperature sensor.
		2	0V	
TCJ input	CN102	1	TCJ temperature sensor input	This is for connecting the TCJ (heat exchanger inlet) temperature sensor.
		2	0V	
TA input	CN104	1	TA temperature sensor input	This is for connecting the TA (ambient) temperature sensor.
		2	0V	
Electric heater output or Secondary heating output	CN200	1	AC24V(COM)	-
		2	Heater 1 output	Can be selected by I.DN := 1)Electrical heater output (I.DN[301]=0)-Factory default setting 2)Secondary heating output* (I.DN[301]=1) *Normal mode or Flip of secondary can be selected by I.DN[C5]
		3	Heater 2 output	
		4	Heater 3 output	
		5	Heater 3 output	
Fan output	CN210	1	-	-
		2	FAN tap "HH" output	Fan speed(High).
		3	FAN tap "H" output	Fan speed(Med).
		4	FAN tap "L" output	Fan speed(Low).
		5	-	-
		6	AC24V(COM)	-
	CN220	1	0V	-

Function	Connector	Pin	Function	Remarks
Refrigerant leak sensor input		2	Life status input	The Pulse Width Modulation (PWM) period is 375 ms. The PWM duty cycles are: 0%, 20%, 60%, 80%, 100% 0% Initial operation Up to 2 seconds, until first measurement is ready. 20% Normal operation 60% ASC warning Measurements are still reliable, but the sensor should be replaced at the next scheduled maintenance. 80% ASC limit measurements may no longer be reliable, and the sensor needs to be replaced (PWM 80%). 100% Power supply OFF
		3	Alarm status input	The Pulse Width Modulation (PWM) period is 375 ms. The PWM duty cycles are: 0%, 20%, 60%, 80%, 100% 0% Initial operation Up to 2 seconds, until first measurement is ready. 20% Normal operation - monitoring 60% Alarm Concentration of refrigerant above 10'000 ppm. The Alarm signal is on while a concentration above 10'000 ppm is detected and stays on for 30seconds after the concentration has returned below 10'000 ppm. 80% Sensor fault Sensor reading may not be accurate. This can be due to a permanent error, due to a temporary condition (e.g., ambient conditions outside operating range), or due to a temporary internal error. 100% Power supply OFF
		4	5V	-

Vertical Air Handling Unit type Engineering Data Book

Model name :

MMD-UB__1VHN-UL

July, 2025 Revision 01 Carrier Corporation