Vertical Air Handling Unit type

Engineering Databook

MMD-AP0120VHG2UL
MMD-AP0180VHG2UL
MMD-AP0240VHG2UL
MMD-AP0300VHG2UL
MMD-AP0360VHG2UL
MMD-AP0420VHG2UL
MMD-AP0480VHG2UL
MMD-AP0600VHG2UL



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1. Specifications



Vertical Air Handling Unit Type

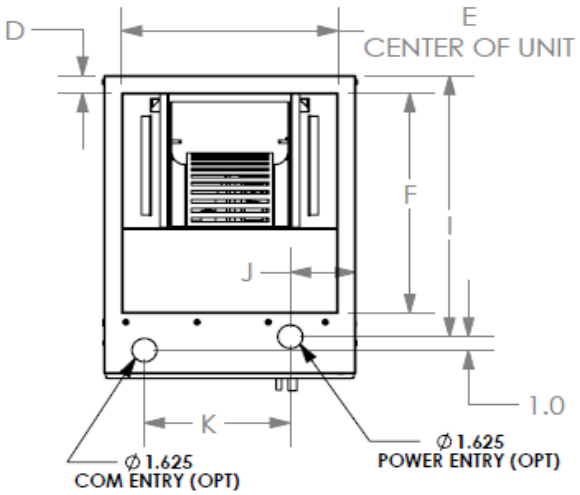
Tonnage				1	1.5	2	2.5	3	3.5	4	5
Model name			**MMD-AP**	**0120VHG2UL**	**0180VHG2UL**	**0240VHG2UL**	**0300VHG2UL**	**0360VHG2UL**	**0420VHG2UL**	**0480VHG2UL**	**0600VHG2UL**
Cooling capacity			Btu/h	12,000	18,000	24,000	30,000	36,000	42,000	48,000	60,000
Heating capacity			Btu/h	13,500	20,000	27,000	34,000	40,000	45,000	54,000	67,000
			kW	4.0	5.9	7.9	10.0	11.7	13.2	15.8	19.6
Electrical characteristics	Power supply			208/230V 1ph 60Hz							
	Power consumption (*1)		kW	0.12	0.174	0.178	0.296	0.41	0.386	0.496	0.938
	MCA		A	1.9	2.8	2.8	4.5	4.5	6.1	7.5	9.5
	MOCP		A	15							
Dimension	Unit	Height	in	46.9			51.9		55.9		57.9
		Width	in	17.7			20.2		22.2		24.2
		Depth	in	22.3			25.3		27.3		31.3
	Packing	Height	in	53.5	53.5		58.5		62.5		64.5
		Width	in	24	24		24		24		28
		Depth	in	30	30		30		30		33
Total weight	Unit		lbs	130	164		170		200		253
	Packed unit		lbs	157	191		216		257		336
Heat Exchanger	Type			Finned tube							
	Shape			Slab							
	Row x Length (inch)			2 X 17	3 X 17		3 X 20		3 X 22		3 X 26
Fan unit	Type			Sirocco fan							
	Nominal air volume		cfm	480	670	760	1,000	1,160	1,400	1,600	2,000
	Air Volume (at standard static pressure)	High	cfm	480	670	760	1,000	1,200	1,400	1,600	2,000
		Mid	cfm	440	640	660	990	1,150	1,340	1,510	1,830
		Low	cfm	340	600	600	950	1,050	1,260	1,420	1,640
	Fan motor		Type	Direct drive (EC motor)							
			HP	1/3HP			1/2HP		3/4HP		1HP
	External static pressure (*2)	Standard.	in W.G.	0.3			0.5				
		Max.	in W.G.	0.5			0.8				
Connnecting Pipe	Liquid side		in	"1/4 (Brazed)		"3/8 (Brazed)					
	Gas side		in	"3/8 (Brazed)	"1/2(Brazed)	"5/8 (Brazed)					
	Drain port (Nominal dia.)		in	3/4" FPT							
Orientation				Vertical / Horizontal Right							
Color				Gray							
Filter (Standard)				MERV 3 (1inch)							
Filter Box (Option) / MERV8 (2inch)				TCB-FB2F241VDGUL			TCB-FB2F361VDGUL		TCB-FB2F481VDGUL		TCB-FB2F601VDGUL
Plenum (option)				TCB-PL2S241VDGUL			TCB-PL2S361VDGUL		TCB-PL2S481VDGUL		TCB-PL2S601VDGUL
Electrical Heater (Option) (240V/208V)	1.0kW/0.8kW	TCB-HT101VDGUL		✓	✓	✓	✓	✓	✓	✓	✓
	3.0kW/2.3kW	TCB-HT301VDGUL		✓	✓	✓	✓	✓	✓	✓	✓
	5.0kW/3.8kW	TCB-HT501VDGUL		✓	✓	✓	✓	✓	✓	✓	✓
	6.0kW/4.5kW	TCB-HT601VDGUL			✓	✓	✓	✓	✓	✓	✓
	8.0kW/6.0kW	TCB-HT801VDGUL					✓	✓	✓	✓	✓
	9.5kW/7.1kW	TCB-HT951VDGUL					✓	✓	✓	✓	✓
Remote control				RBM-AMT54E-UL / RBM-AMT32UL / RBC-AS41UL / TCB-TC41LUL(Remote sensor) / TCB-AX32UL(Wireless kit)							
Central control				BMS-CM1281TLUL / BMS-SM1280HTLUL (Web browser)							
Open protocol interface				BMS-IFBN640TLUL / TCB-IFLN642TLUL / OPN-MTCC							
Connector				TCB-KBCN32VEE / TCB-KBCN60OPE / TCB-KBCN70OAE / TCB-KBCN73DEE / TCB-KBCN80EXE							
Secondary Heating	Secondary heating auxiliary			Available							
	Secondary heating flip			Available							
	Secondary heating active by TO			Available							
	Constant fan (Heating fan control)			Available							

[Note]

(*1) The value is based on the standard external static pressure with high tap fan mode.

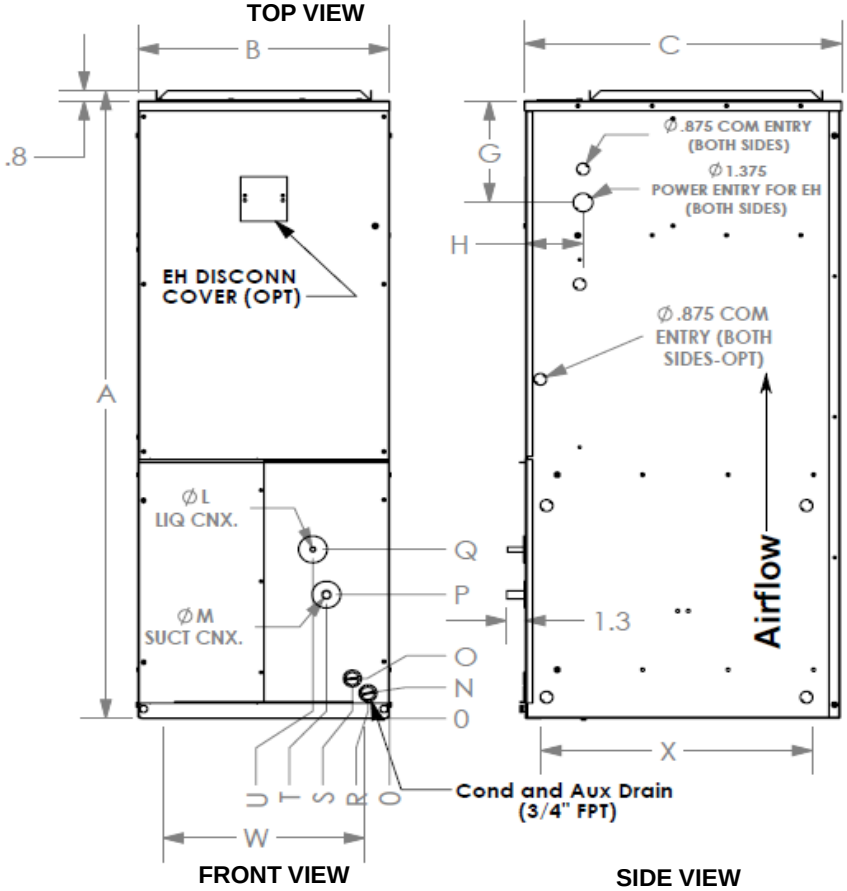
(*2) With standard MERV 3 filter attached.

2. Dimensions (RH Drain Connection, Bottom Return)



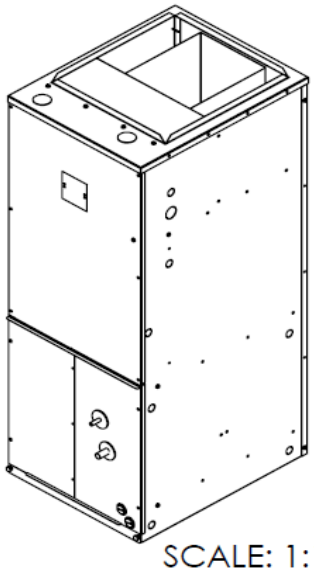
TOP VIEW

Coil Connection						
Model	012	018	024	030/036	042/048	060
L	0.250	0.250	0.375	0.375	0.375	0.375
M	0.375	0.5	0.625	0.625	0.625	0.625
N	1.9	1.9	1.9	1.9	1.9	1.9
O	3.0	3.0	3.0	3.0	3.0	3.0
P	9.3	9.3	9.3	11.4	12.5	13.1
Q	12.6	12.6	12.6	15.7	17.1	18.8
R	1.5	1.5	1.5	2.1	1.7	1.7
S	2.6	2.6	2.6	3.2	2.8	2.8
T	4.4	4.4	4.4	6.5	7.0	7.6
U	5.4	5.4	5.4	8.1	8.8	10.3



FRONT VIEW

SIDE VIEW

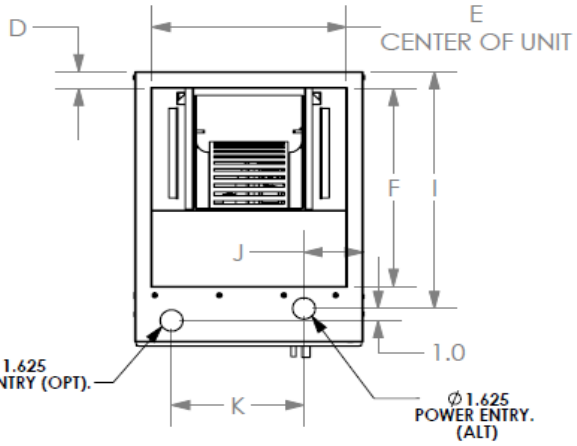


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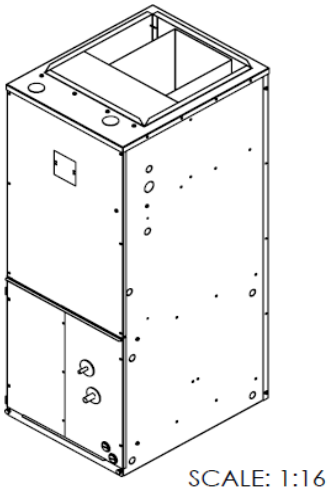
	Height	Width	Depth	Discharge duct			Electrical connection					Return opening	
Model	A	B	C	D	E	F	G	H	I	J	K	W	X
012/018/024	46.9	17.7	22.3	1.3	15.2	16.4	7.6	4.0	19.5	4.6	10.2	14.1	19.0
030/036	51.9	20.2	25.3	1.6	17.2	19.1	7.6	4.0	22.5	4.9	11.5	16.6	22.2
042/048	55.9	22.2	27.3	1.6	19.2	21.2	7.6	4.0	24.4	5.8	12.7	18.0	23.7
060	57.9	24.2	31.3	1.6	21.2	25.2	7.6	4.0	28.3	5.8	15.6	18.0	27.0

2. Dimensions (RH Drain Connection, LH Return)

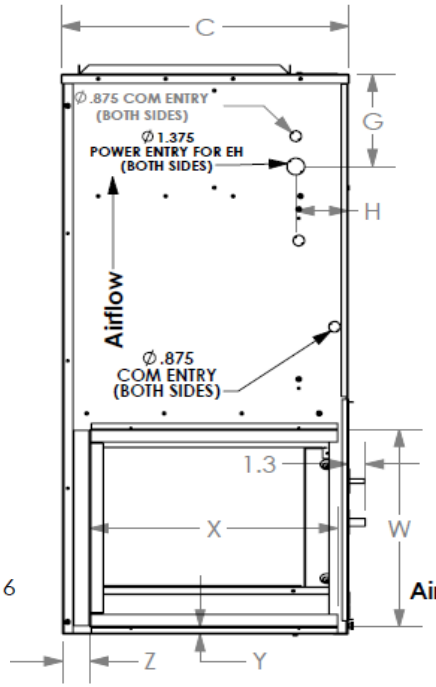
Coil Connection						
Model	012	018	024	030/036	042/048	060
L	0.250	0.250	0.375	0.375	0.375	0.375
M	0.375	0.5	0.625	0.625	0.625	0.625
N	1.9	1.9	1.9	1.9	1.9	1.9
O	3.0	3.0	3.0	3.0	3.0	3.0
P	9.3	9.3	9.3	11.4	12.5	13.1
Q	12.6	12.6	12.6	15.7	17.1	18.8
R	1.5	1.5	1.5	2.1	1.7	1.7
S	2.6	2.6	2.6	3.2	2.8	2.8
T	4.4	4.4	4.4	6.5	7.0	7.6
U	5.4	5.4	5.4	8.1	8.8	10.3



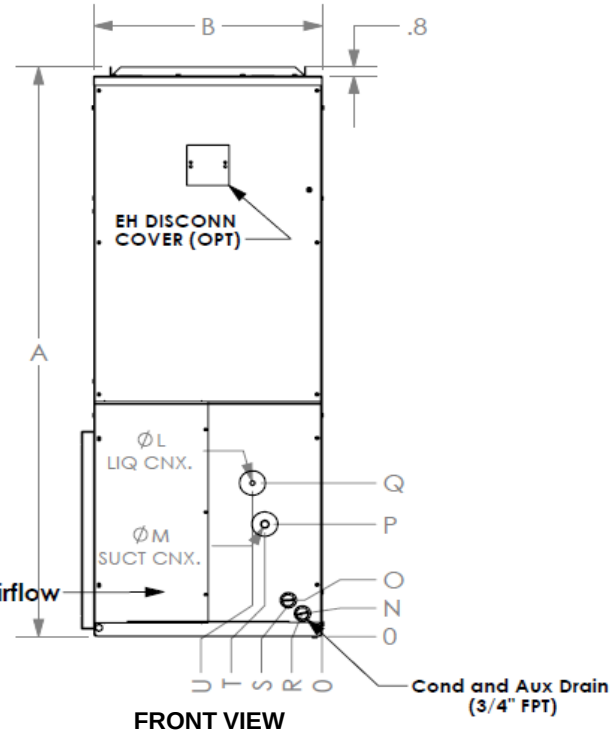
TOP VIEW



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SIDE VIEW

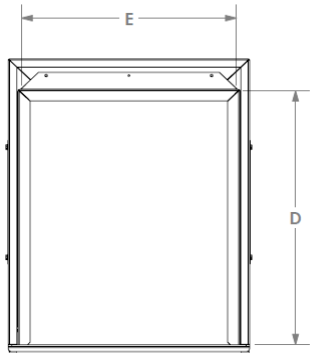


FRONT VIEW

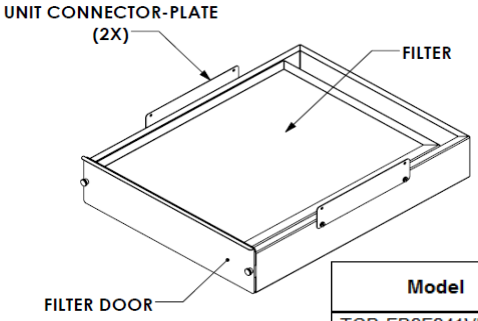
	Height	Width	Depth	Discharge duct			Electrical connection					Return duct			
Model	A	B	C	D	E	F	G	H	I	J	K	W	X	Y	Z
012/018/024	46.9	17.7	22.3	1.3	15.2	16.4	7.6	4.0	19.5	4.6	10.2	16.3	19.2	0.6	1.3
030/036	51.9	20.2	25.3	1.6	17.2	19.1	7.6	4.0	22.5	4.9	11.5	18.2	23.3	2.8	0.4
042/048	55.9	22.2	27.3	1.6	19.2	21.2	7.6	4.0	24.4	5.8	12.7	21.0	24.2	0.9	0.9
060	57.9	24.2	31.3	1.6	21.2	25.2	7.6	4.0	28.3	5.8	15.6	21.0	28.8	2.0	0.4

2. Dimensions

Filter Box

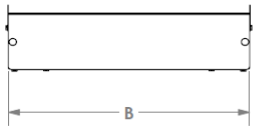


TOP VIEW

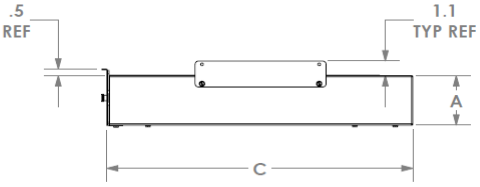


Model	Height	Width	Depth	Filter	
	A	B	C	D	E
TCB-FB2F241VDGUL	3.8	17.5	22.2	20.0	16.0
TCB-FB2F361VDGUL	3.8	20.0	25.2	24.0	18.0
TCB-FB2F481VDGUL	3.8	22.0	27.2	25.0	20.0
TCB-FB2F601VDGUL	3.8	24.0	31.2	30.0	20.0

Unit : Inch

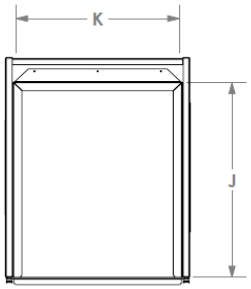


FRONT VIEW

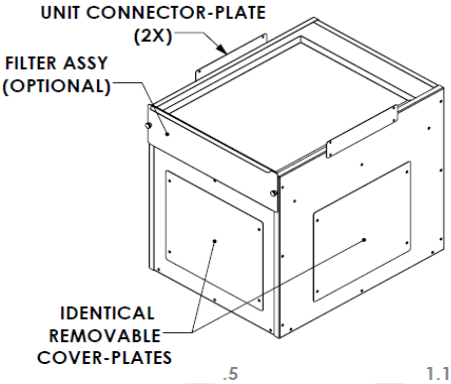


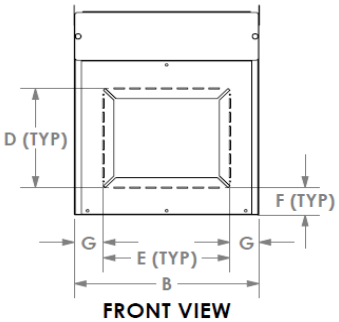
SIDE VIEW

Plenum

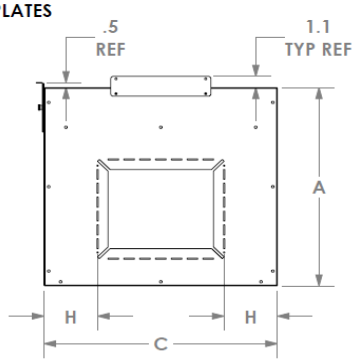


TOP VIEW





FRONT VIEW



RIGHT VIEW

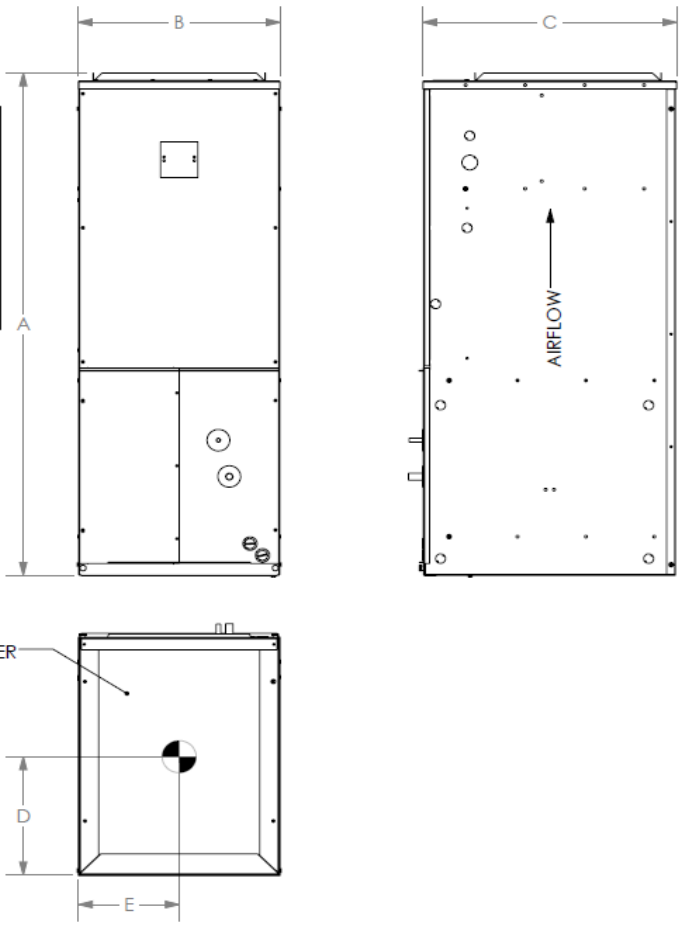
Model	Height	Width	Depth	Return - Opening					Filter	
	A	B	C	D	E	F	G	H	J	K
TCB-PL2S241VDGUL	20.0	17.5	22.1	10.0	12.0	2.8	2.6	5.1	20.0	16.0
TCB-PL2S361VDGUL	20.0	20.0	25.1	12.0	15.0	1.8	2.3	5.1	24.0	18.0
TCB-PL2S481VDGUL	24.0	22.0	27.1	15.0	16.0	2.3	2.8	5.6	25.0	20.0
TCB-PL2S601VDGUL	24.0	24.0	31.1	16.0	18.0	1.8	2.8	5.6	30.0	20.0

Unit : Inch

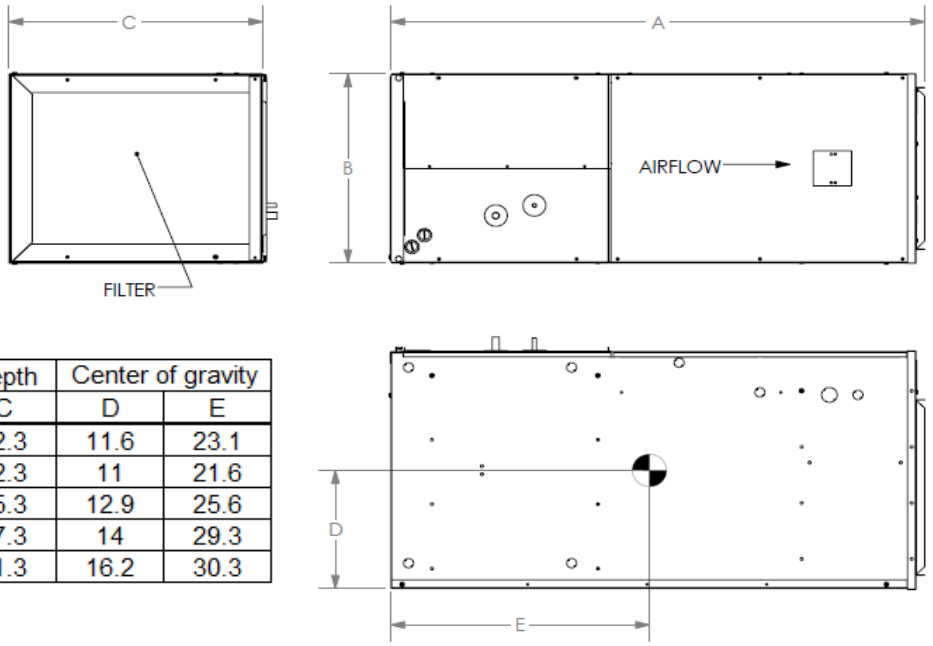
3. Center of gravity

3-1. Vertical orientation

Model	Height	Width	Depth	Center of gravity	
	A	B	C	D	E
012	46.9	17.7	22.3	11.1	9.1
018/024	46.9	17.7	22.3	10.4	9.5
030/036	51.9	20.2	25.3	12.8	10.2
042/048	55.9	20.2	27.3	13.5	11.1
060	57.9	24.2	31.3	15.3	12.2

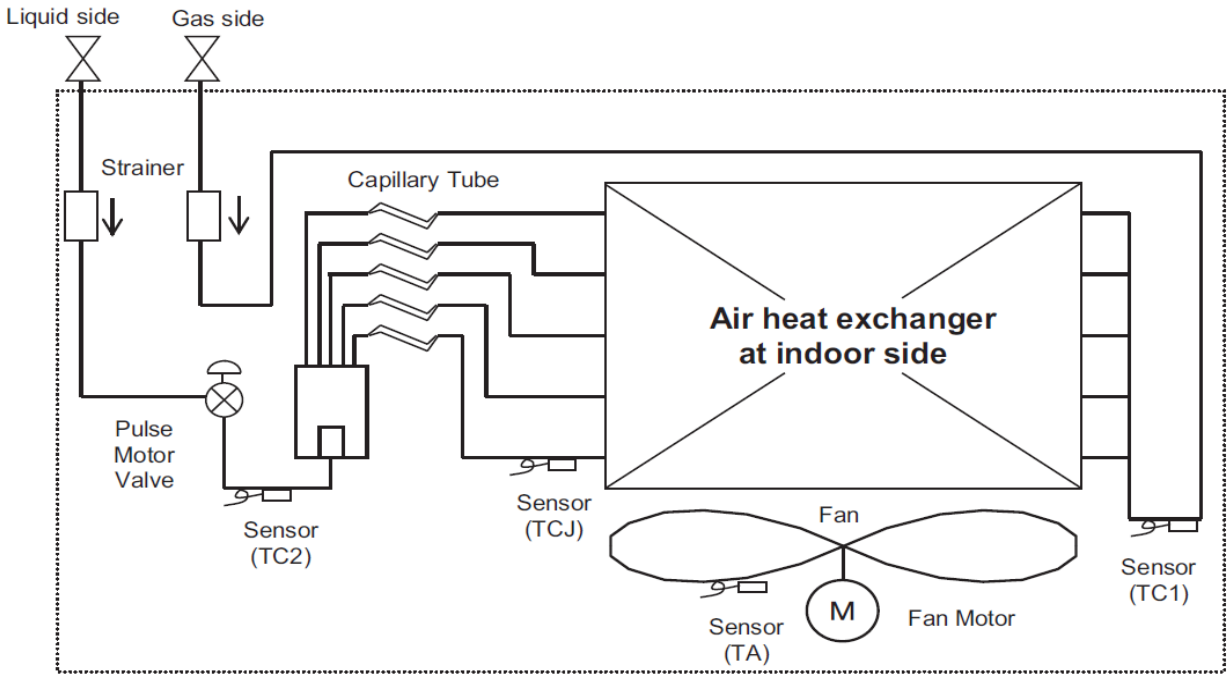


3-2. Horizontal orientation



Model	Height	Width	Depth	Center of gravity	
	A	B	C	D	E
012	46.9	17.7	22.3	11.6	23.1
018/024	46.9	17.7	22.3	11	21.6
030/036	51.9	20.2	25.3	12.9	25.6
042/048	55.9	20.2	27.3	14	29.3
060	57.9	24.2	31.3	16.2	30.3

4. Piping diagram

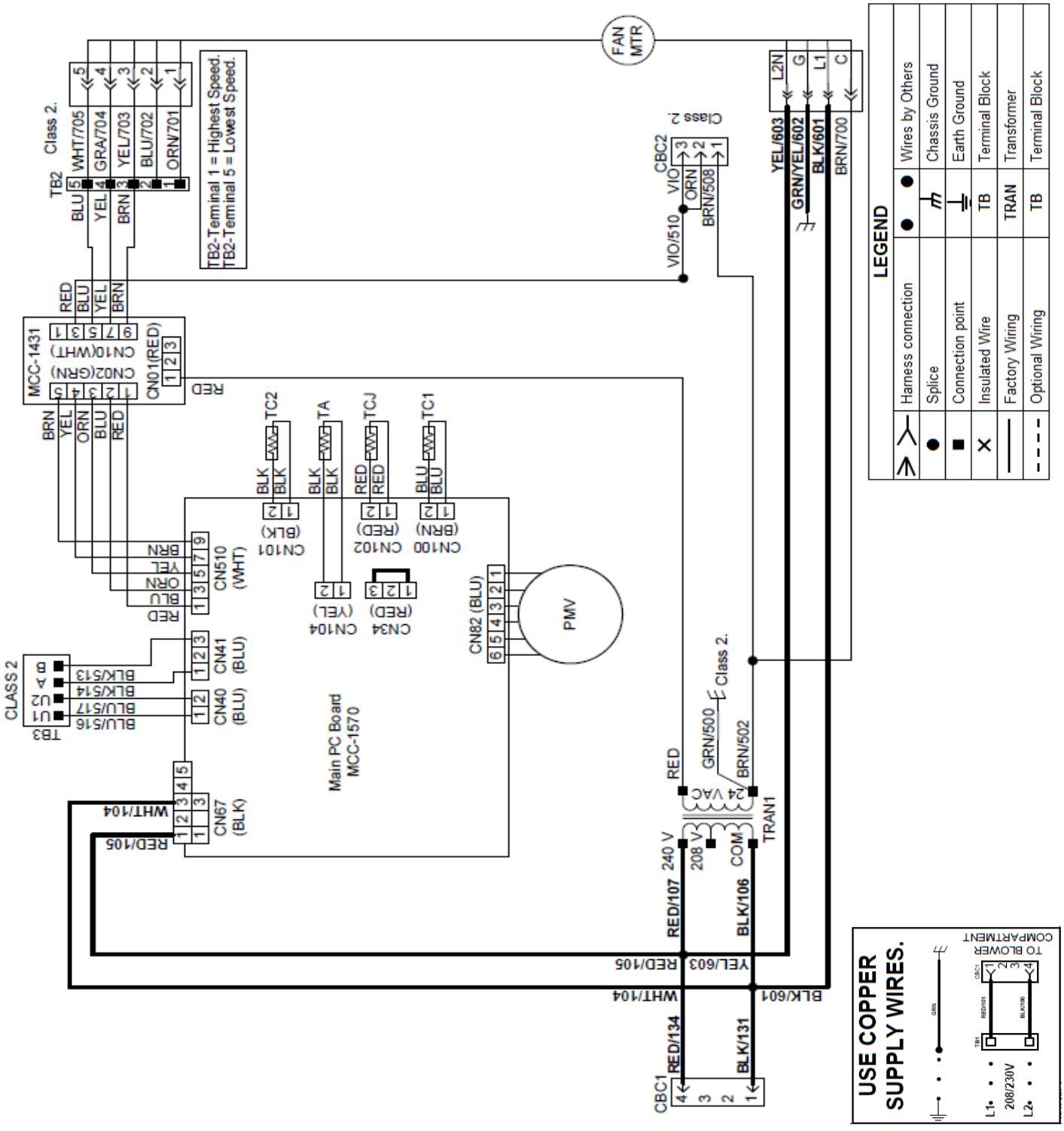


Explanation of functional parts in indoor unit

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

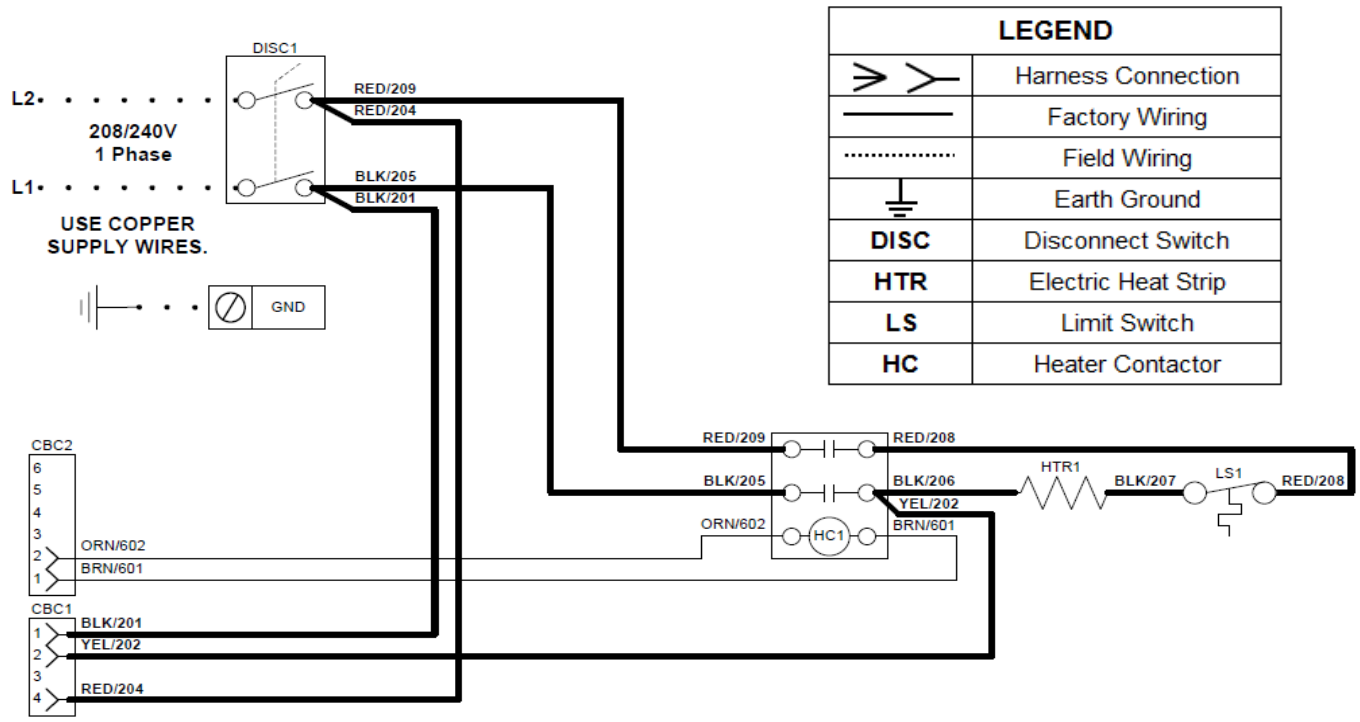
5. Wiring diagram

MMD-AP0120VHG2UL, AP0180VHG2UL, AP0240VHG2UL, AP0300VHG2UL,
MMD-AP0360VHG2UL, AP0420VHG2UL, AP0480VHG2UL, AP0600VHG2UL

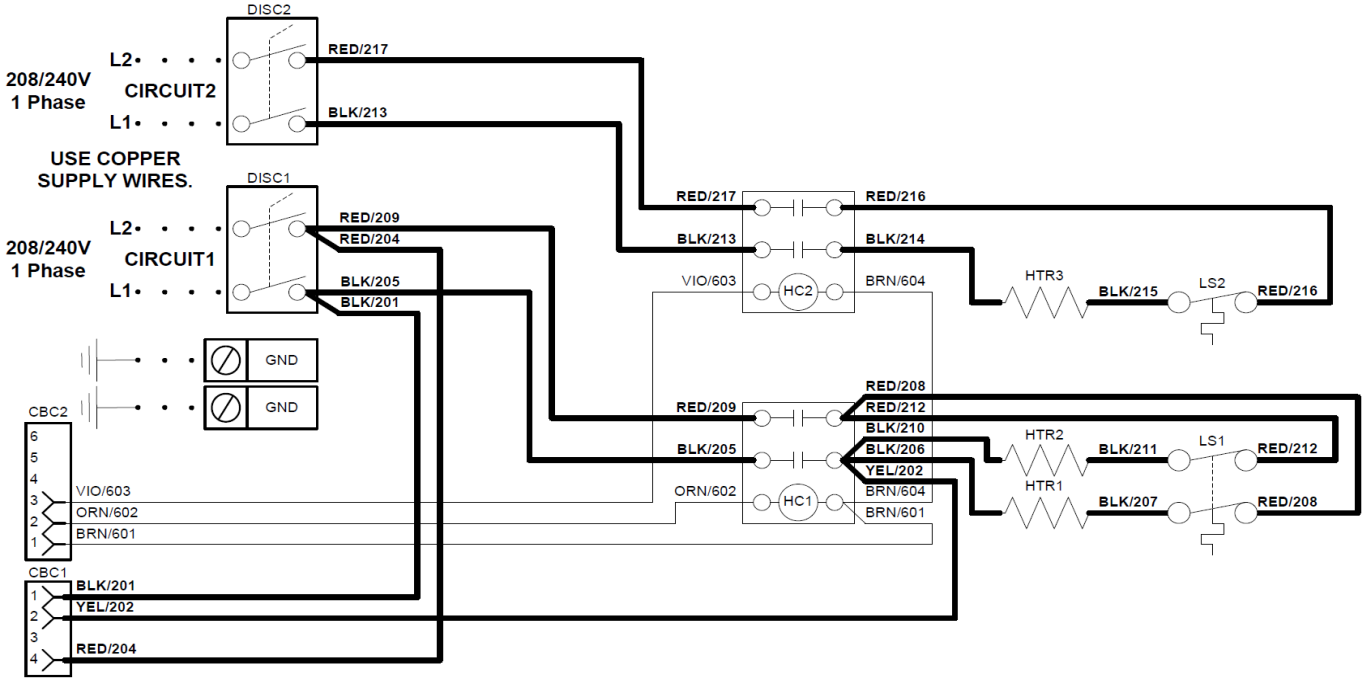


5. Wiring diagram

Electrical heater (3kW,5kW,6kW)



Electrical heater (8kW, 9.5kW)



6. Electrical data

Size	Motor HP	Motor FLA 240-208V	TOTAL ELECTRIC HEAT (KW)		ELECTRIC HEAT AMPS CIRCUIT 1		UNIT FLA CIRCUIT 1		MINIMUM CIRCUIT AMPACITY (MCA) (A) CIRCUIT 1		Maximum Overcurrent Protective Device (MOPD) (A) CIRCUIT 1		MIN WIRE SIZE AWG*
			240	208	240	208	240	208	240	208	240	208	
012	1/3	1.3	NONE		NONE		1.5	1.5	1.9	1.9	15	15	14
			1.0	0.8	4.2	3.6	5.5	4.9	6.8	6.1	15	15	14
			3.0	2.3	12.5	10.8	13.8	12.1	17.3	15.2	15	15	14
			5.0	3.8	20.8	18.1	22.1	19.4	27.7	24.2	30	25	10/12
018 024	1/3	2.2	NONE		NONE		2.2	2.2	2.8	2.8	15	15	14
			1.0	0.8	4.2	3.6	6.4	5.8	8.0	7.3	15	15	14
			3.0	2.3	12.5	10.8	14.7	13.0	18.4	16.3	15	15	14
			5.0	3.8	20.8	18.1	23.0	20.3	28.8	25.3	30	25	10/12
			6.0	4.5	25.0	21.7	27.2	23.9	34.0	29.8	35	30	8/10
030 036	1/2	3.6	NONE		NONE		3.6	3.6	4.5	4.5	15	15	14
			1.0	0.8	4.2	3.6	7.8	7.2	9.7	9.0	15	15	14
			3.0	2.3	12.5	10.8	16.1	14.4	20.1	18.0	25	20	10
			5.0	3.8	20.8	18.1	24.4	21.7	30.5	27.1	35	30	8
			6.0	4.5	25.0	21.7	28.6	25.3	35.8	31.6	40	35	8
			8.0	6.0	33.3	28.9	36.9	32.5	46.2	40.6	50	45	8
			9.5	7.1	39.6	34.3	43.2	37.9	54.0	47.4	60	50	6
042	3/4	4.9	NONE		NONE		4.9	4.9	6.1	6.1	15	15	14
			1.0	0.8	4.2	3.6	9.1	8.5	11.3	10.6	15	15	14
			3.0	2.3	12.5	10.8	17.4	15.7	21.8	19.7	25	20	10
			5.0	3.8	20.8	18.1	25.7	23.0	32.2	28.7	35	30	10
			6.0	4.5	25.0	21.7	29.9	26.6	37.4	33.2	40	35	8
			8.0	6.0	33.3	28.9	38.2	33.8	47.8	42.2	50	45	8
			9.5	7.1	39.6	34.3	44.5	39.2	55.6	49.0	60	50	6
048	3/4	6.0	NONE		NONE		6.0	6.0	7.5	7.5	15	15	14
			1.0	0.8	4.2	3.6	10.2	9.6	12.7	12.0	15	15	14
			3.0	2.3	12.5	10.8	18.5	16.8	23.1	21.0	25	25	10
			5.0	3.8	20.8	18.1	26.8	24.1	33.5	30.1	35	35	10
			6.0	4.5	25.0	21.7	31.0	27.7	38.8	34.6	40	35	8
			8.0	6.0	33.3	28.9	39.3	34.9	49.2	43.6	50	45	8
			9.5	7.1	39.6	34.3	45.6	40.3	57.0	50.4	60	60	6
060	1	7.6	NONE		NONE		7.6	7.6	9.5	9.5	15	15	14
			1.0	0.8	4.2	3.6	11.8	11.2	14.7	14.0	15	15	14
			3.0	2.3	12.5	10.8	20.1	18.4	25.1	23.0	30	25	10
			5.0	3.8	20.8	18.1	28.4	25.7	35.5	32.1	40	35	8
			6.0	4.5	25.0	21.7	32.6	29.3	40.8	36.6	45	40	8
			8.0	6.0	33.3	28.9	40.9	36.5	51.2	45.6	60	50	6
			9.5	7.1	39.6	34.3	47.2	41.9	59.0	52.4	60	60	6

Notes:

*1. Minimum Wire Gauge is based upon Circuit 1 ampacity and the use of 75C wire at the unit.

MCA : Minimum Circuit Amps

MOPD : Maximum Overcurrent Protection Device (Amps)

FLA : Full Load Amps

AWG : American Wiring Guage

7.Sensible Capacity Tables (MMD-AP***0VHG2UL)

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

Unit size	Outdoor air temp. ˚FDB	Indoor air temp. 59 ˚F WB / 71 ˚F DB		61 ˚F WB / 73 ˚F DB		64 ˚F WB / 77 ˚F DB		67 ˚F WB / 80 ˚F DB		68 ˚F WB / 82 ˚F DB		72 ˚F WB / 86 ˚F DB		75 ˚F WB / 90 ˚F DB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
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
018	50	15,320	12,400	16,030	12,740	17,040	13,260	18,000	13,680	18,310	13,720	19,470	13,550	20,270	13,040
	54	15,320	12,400	16,030	12,740	17,040	13,260	18,000	13,680	18,310	13,720	19,470	13,550	20,270	13,040
	57	15,320	12,400	16,030	12,740	17,040	13,260	18,000	13,680	18,310	13,720	19,470	13,550	20,270	13,040
	61	15,320	12,400	16,030	12,740	17,040	13,260	18,000	13,680	18,310	13,720	19,470	13,550	20,270	13,040
	64	15,320	12,400	16,030	12,740	17,040	13,260	18,000	13,680	18,310	13,720	19,470	13,550	20,270	13,040
	68	15,320	12,400	16,030	12,740	17,040	13,260	18,000	13,680	18,310	13,720	19,470	13,550	20,270	13,040
	70	15,320	12,400	16,030	12,740	17,040	13,260	18,000	13,680	18,310	13,720	19,470	13,550	20,270	13,040
	73	15,320	12,400	16,030	12,740	17,040	13,260	18,000	13,680	18,310	13,720	19,470	13,550	20,270	13,040
	77	15,320	12,400	16,030	12,740	17,040	13,260	18,000	13,680	18,310	13,720	19,470	13,550	20,270	13,040
	81	15,320	12,400	16,030	12,740	17,040	13,260	18,000	13,680	18,310	13,720	19,470	13,550	20,270	13,040
	84	15,320	12,400	16,030	12,740	17,040	13,260	18,000	13,680	18,310	13,720	19,470	13,550	20,270	13,040
	88	15,320	12,400	16,030	12,740	17,040	13,260	18,000	13,680	18,310	13,720	19,470	13,550	20,270	13,040
	91	15,320	12,400	16,030	12,740	17,040	13,260	18,000	13,680	18,310	13,720	19,470	13,550	20,270	13,040
	95	15,320	12,400	16,030	12,740	17,040	13,260	18,000	13,680	18,310	13,720	19,470	13,550	20,270	13,040
	99	14,880	12,040	15,570	12,370	16,550	12,880	17,480	13,280	17,780	13,320	18,910	13,160	19,680	12,660
	102	14,520	11,760	15,200	12,080	16,150	12,570	17,060	12,970	17,360	13,010	18,460	12,850	19,220	12,360
024	50	20,430	16,100	21,370	16,540	22,730	17,220	24,000	17,760	24,410	17,810	25,960	17,590	27,020	16,920
	54	20,430	16,100	21,370	16,540	22,730	17,220	24,000	17,760	24,410	17,810	25,960	17,590	27,020	16,920
	57	20,430	16,100	21,370	16,540	22,730	17,220	24,000	17,760	24,410	17,810	25,960	17,590	27,020	16,920
	61	20,430	16,100	21,370	16,540	22,730	17,220	24,000	17,760	24,410	17,810	25,960	17,590	27,020	16,920
	64	20,430	16,100	21,370	16,540	22,730	17,220	24,000	17,760	24,410	17,810	25,960	17,590	27,020	16,920
	68	20,430	16,100	21,370	16,540	22,730	17,220	24,000	17,760	24,410	17,810	25,960	17,590	27,020	16,920
	70	20,430	16,100	21,370	16,540	22,730	17,220	24,000	17,760	24,410	17,810	25,960	17,590	27,020	16,920
	73	20,430	16,100	21,370	16,540	22,730	17,220	24,000	17,760	24,410	17,810	25,960	17,590	27,020	16,920
	77	20,430	16,100	21,370	16,540	22,730	17,220	24,000	17,760	24,410	17,810	25,960	17,590	27,020	16,920
	81	20,430	16,100	21,370	16,540	22,730	17,220	24,000	17,760	24,410	17,810	25,960	17,590	27,020	16,920
	84	20,430	16,100	21,370	16,540	22,730	17,220	24,000	17,760	24,410	17,810	25,960	17,590	27,020	16,920
	88	20,430	16,100	21,370	16,540	22,730	17,220	24,000	17,760	24,410	17,810	25,960	17,590	27,020	16,920
	91	20,430	16,100	21,370	16,540	22,730	17,220	24,000	17,760	24,410	17,810	25,960	17,590	27,020	16,920
	95	20,430	16,100	21,370	16,540	22,730	17,220	24,000	17,760	24,410	17,810	25,960	17,590	27,020	16,920
	99	19,840	15,630	20,750	16,060	22,070	16,720	23,300	17,240	23,700	17,290	25,210	17,080	26,240	16,430
	102	19,370	15,260	20,260	15,680	21,550	16,320	22,750	16,840	23,140	16,880	24,610	16,680	25,610	16,040
030	50	25,530	20,670	26,720	21,240	28,410	22,110	30,000	22,800	30,510	22,860	32,450	22,580	33,780	21,730
	54	25,530	20,670	26,720	21,240	28,410	22,110	30,000	22,800	30,510	22,860	32,450	22,580	33,780	21,730
	57	25,530	20,670	26,720	21,240	28,410	22,110	30,000	22,800	30,510	22,860	32,450	22,580	33,780	21,730
	61	25,530	20,670	26,720	21,240	28,410	22,110	30,000	22,800	30,510	22,860	32,450	22,580	33,780	21,730
	64	25,530	20,670	26,720	21,240	28,410	22,110	30,000	22,800	30,510	22,860	32,450	22,580	33,780	21,730
	68	25,530	20,670	26,720	21,240	28,410	22,110	30,000	22,800	30,510	22,860	32,450	22,580	33,780	21,730
	70	25,530	20,670	26,720	21,240	28,410	22,110	30,000	22,800	30,510	22,860	32,450	22,580	33,780	21,730
	73	25,530	20,670	26,720	21,240	28,410	22,110	30,000	22,800	30,510	22,860	32,450	22,580	33,780	21,730
	77	25,530	20,670	26,720	21,240	28,410	22,110	30,000	22,800	30,510	22,860	32,450	22,580	33,780	21,730
	81	25,530	20,670	26,720	21,240	28,410	22,110	30,000	22,800	30,510	22,860	32,450	22,580	33,780	21,730
	84	25,530	20,670	26,720	21,240	28,410	22,110	30,000	22,800	30,510	22,860	32,450	22,580	33,780	21,730
	88	25,530	20,670	26,720	21,240	28,410	22,110	30,000	22,800	30,510	22,860	32,450	22,580	33,780	21,730
	91	25,530	20,670	26,720	21,240	28,410	22,110	30,000	22,800	30,510	22,860	32,450	22,580	33,780	21,730
	95	25,530	20,670	26,720	21,240	28,410	22,110	30,000	22,800	30,510	22,860	32,450	22,580	33,780	21,730
	99	24,790	20,070	25,950	20,620	27,590	21,470	29,130	22,140	29,630	22,200	31,510	21,930	32,800	21,100
	102	24,200	19,600	25,330	20,140	26,930	20,960	28,440	21,610	28,920	21,670	30,760	21,410	32,020	20,600

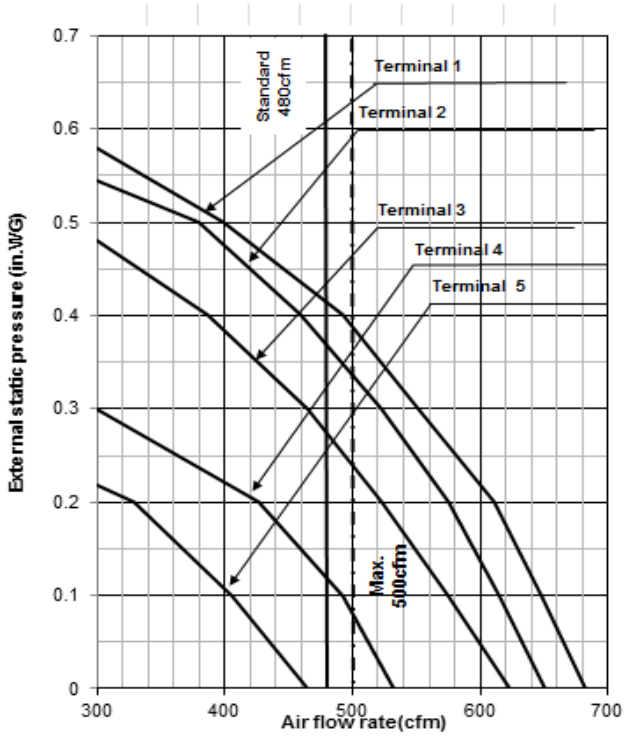
7.Sensible Capacity Tables (MMD-AP***0VHG2UL)

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

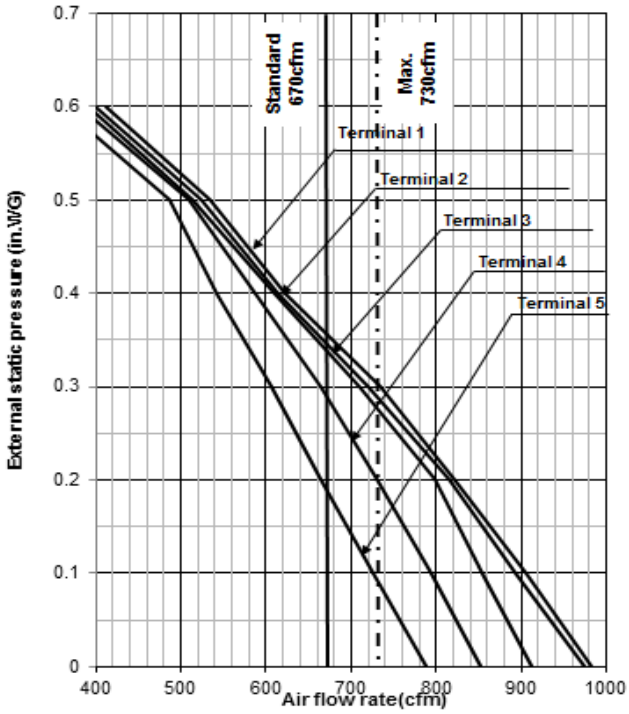
unit size	outdoor air temp. °FDB	Indoor air temp. 59 °F WB / 71 °F DB		61 °F WB / 73 °F DB		64 °F WB / 77 °F DB		67 °F WB / 80 °F DB		68 °F WB / 82 °F DB		72 °F WB / 86 °F DB		75 °F WB / 90 °F DB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
036	50	30,640	24,150	32,060	24,820	34,090	25,830	36,000	26,640	36,620	26,720	38,930	26,370	40,540	25,390
	54	30,640	24,150	32,060	24,820	34,090	25,830	36,000	26,640	36,620	26,720	38,930	26,370	40,540	25,390
	57	30,640	24,150	32,060	24,820	34,090	25,830	36,000	26,640	36,620	26,720	38,930	26,370	40,540	25,390
	61	30,640	24,150	32,060	24,820	34,090	25,830	36,000	26,640	36,620	26,720	38,930	26,370	40,540	25,390
	64	30,640	24,150	32,060	24,820	34,090	25,830	36,000	26,640	36,620	26,720	38,930	26,370	40,540	25,390
	68	30,640	24,150	32,060	24,820	34,090	25,830	36,000	26,640	36,620	26,720	38,930	26,370	40,540	25,390
	70	30,640	24,150	32,060	24,820	34,090	25,830	36,000	26,640	36,620	26,720	38,930	26,370	40,540	25,390
	73	30,640	24,150	32,060	24,820	34,090	25,830	36,000	26,640	36,620	26,720	38,930	26,370	40,540	25,390
	77	30,640	24,150	32,060	24,820	34,090	25,830	36,000	26,640	36,620	26,720	38,930	26,370	40,540	25,390
	81	30,640	24,150	32,060	24,820	34,090	25,830	36,000	26,640	36,620	26,720	38,930	26,370	40,540	25,390
	84	30,640	24,150	32,060	24,820	34,090	25,830	36,000	26,640	36,620	26,720	38,930	26,370	40,540	25,390
	88	30,640	24,150	32,060	24,820	34,090	25,830	36,000	26,640	36,620	26,720	38,930	26,370	40,540	25,390
	91	30,640	24,150	32,060	24,820	34,090	25,830	36,000	26,640	36,620	26,720	38,930	26,370	40,540	25,390
	95	30,640	24,150	32,060	24,820	34,090	25,830	36,000	26,640	36,620	26,720	38,930	26,370	40,540	25,390
	99	29,750	23,450	31,130	24,100	33,100	25,080	34,960	25,870	35,560	25,950	37,800	25,610	39,360	24,650
	102	29,050	22,890	30,390	23,530	32,320	24,490	34,130	25,250	34,720	25,330	36,910	25,000	38,430	24,070
042	50	35,750	28,940	37,400	29,730	39,770	30,950	42,000	31,920	42,720	32,010	45,420	31,600	47,290	30,420
	54	35,750	28,940	37,400	29,730	39,770	30,950	42,000	31,920	42,720	32,010	45,420	31,600	47,290	30,420
	57	35,750	28,940	37,400	29,730	39,770	30,950	42,000	31,920	42,720	32,010	45,420	31,600	47,290	30,420
	61	35,750	28,940	37,400	29,730	39,770	30,950	42,000	31,920	42,720	32,010	45,420	31,600	47,290	30,420
	64	35,750	28,940	37,400	29,730	39,770	30,950	42,000	31,920	42,720	32,010	45,420	31,600	47,290	30,420
	68	35,750	28,940	37,400	29,730	39,770	30,950	42,000	31,920	42,720	32,010	45,420	31,600	47,290	30,420
	70	35,750	28,940	37,400	29,730	39,770	30,950	42,000	31,920	42,720	32,010	45,420	31,600	47,290	30,420
	73	35,750	28,940	37,400	29,730	39,770	30,950	42,000	31,920	42,720	32,010	45,420	31,600	47,290	30,420
	77	35,750	28,940	37,400	29,730	39,770	30,950	42,000	31,920	42,720	32,010	45,420	31,600	47,290	30,420
	81	35,750	28,940	37,400	29,730	39,770	30,950	42,000	31,920	42,720	32,010	45,420	31,600	47,290	30,420
	84	35,750	28,940	37,400	29,730	39,770	30,950	42,000	31,920	42,720	32,010	45,420	31,600	47,290	30,420
	88	35,750	28,940	37,400	29,730	39,770	30,950	42,000	31,920	42,720	32,010	45,420	31,600	47,290	30,420
	91	35,750	28,940	37,400	29,730	39,770	30,950	42,000	31,920	42,720	32,010	45,420	31,600	47,290	30,420
	95	35,750	28,940	37,400	29,730	39,770	30,950	42,000	31,920	42,720	32,010	45,420	31,600	47,290	30,420
	99	34,710	28,100	36,320	28,870	38,620	30,050	40,780	30,990	41,480	31,080	44,100	30,680	45,920	29,540
	102	33,890	27,440	35,460	28,180	37,700	29,340	39,820	30,260	40,500	30,350	43,060	29,960	44,830	28,840
048	50	40,850	32,200	42,740	33,080	45,450	34,440	48,000	35,520	48,820	35,620	51,910	35,160	54,050	33,850
	54	40,850	32,200	42,740	33,080	45,450	34,440	48,000	35,520	48,820	35,620	51,910	35,160	54,050	33,850
	57	40,850	32,200	42,740	33,080	45,450	34,440	48,000	35,520	48,820	35,620	51,910	35,160	54,050	33,850
	61	40,850	32,200	42,740	33,080	45,450	34,440	48,000	35,520	48,820	35,620	51,910	35,160	54,050	33,850
	64	40,850	32,200	42,740	33,080	45,450	34,440	48,000	35,520	48,820	35,620	51,910	35,160	54,050	33,850
	68	40,850	32,200	42,740	33,080	45,450	34,440	48,000	35,520	48,820	35,620	51,910	35,160	54,050	33,850
	70	40,850	32,200	42,740	33,080	45,450	34,440	48,000	35,520	48,820	35,620	51,910	35,160	54,050	33,850
	73	40,850	32,200	42,740	33,080	45,450	34,440	48,000	35,520	48,820	35,620	51,910	35,160	54,050	33,850
	77	40,850	32,200	42,740	33,080	45,450	34,440	48,000	35,520	48,820	35,620	51,910	35,160	54,050	33,850
	81	40,850	32,200	42,740	33,080	45,450	34,440	48,000	35,520	48,820	35,620	51,910	35,160	54,050	33,850
	84	40,850	32,200	42,740	33,080	45,450	34,440	48,000	35,520	48,820	35,620	51,910	35,160	54,050	33,850
	88	40,850	32,200	42,740	33,080	45,450	34,440	48,000	35,520	48,820	35,620	51,910	35,160	54,050	33,850
	91	40,850	32,200	42,740	33,080	45,450	34,440	48,000	35,520	48,820	35,620	51,910	35,160	54,050	33,850
	95	40,850	32,200	42,740	33,080	45,450	34,440	48,000	35,520	48,820	35,620	51,910	35,160	54,050	33,850
	99	39,670	31,270	41,500	32,120	44,130	33,440	46,610	34,490	47,400	34,590	50,400	34,140	52,480	32,870
	102	38,730	30,530	40,520	31,360	43,090	32,650	45,500	33,670	46,280	33,770	49,210	33,330	51,240	32,090
060	50	51,070	40,260	53,430	41,360	56,810	43,040	60,000	44,400	61,030	44,530	64,890	43,960	67,560	42,310
	54	51,070	40,260	53,430	41,360	56,810	43,040	60,000	44,400	61,030	44,530	64,890	43,960	67,560	42,310
	57	51,070	40,260	53,430	41,360	56,810	43,040	60,000	44,400	61,030	44,530	64,890	43,960	67,560	42,310
	61	51,070	40,260	53,430	41,360	56,810	43,040	60,000	44,400	61,030	44,530	64,890	43,960	67,560	42,310
	64	51,070	40,260	53,430	41,360	56,810	43,040	60,000	44,400	61,030	44,530	64,890	43,960	67,560	42,310
	68	51,070	40,260	53,430	41,360	56,810	43,040	60,000	44,400	61,030	44,530	64,890	43,960	67,560	42,310
	70	51,070	40,260	53,430	41,360	56,810	43,040	60,000	44,400	61,030	44,530	64,890	43,960	67,560	42,310
	73	51,070	40,260	53,430	41,360	56,810	43,040	60,000	44,400	61,030	44,530	64,890	43,960	67,560	42,310
	77	51,070	40,260	53,430	41,360	56,810	43,040	60,000	44,400	61,030	44,530	64,890	43,960	67,560	42,310
	81	51,070	40,260	53,430	41,360	56,810	43,040	60,000	44,400	61,030	44,530	64,890	43,960	67,560	42,310
	84	51,070	40,260	53,430	41,360	56,810	43,040	60,000	44,400	61,030	44,530	64,890	43,960	67,560	42,310
	88	51,070	40,260	53,430	41,360	56,810	43,040	60,000	44,400	61,030	44,530	64,890	43,960	67,560	42,310
	91	51,070	40,260	53,430	41,360	56,810	43,040	60,000	44,400	61,030	44,530	64,890	43,960	67,560	42,310
	95	51,070	40,260	53,430	41,360	56,810	43,040	60,000	44,400	61,030	44,530	64,890	43,960	67,560	42,310
	99	49,590	39,090	51,880	40,160	55,160	41,790	58,260	43,110	59,260	43,240	63,010	42,690	65,600	41,080
	102	48,410	38,170	50,650	39,210	53,860	40,800	56,880	42,090	57,860	42,210	61,520	41,670	64,050	40,110

8. Fan characteristics

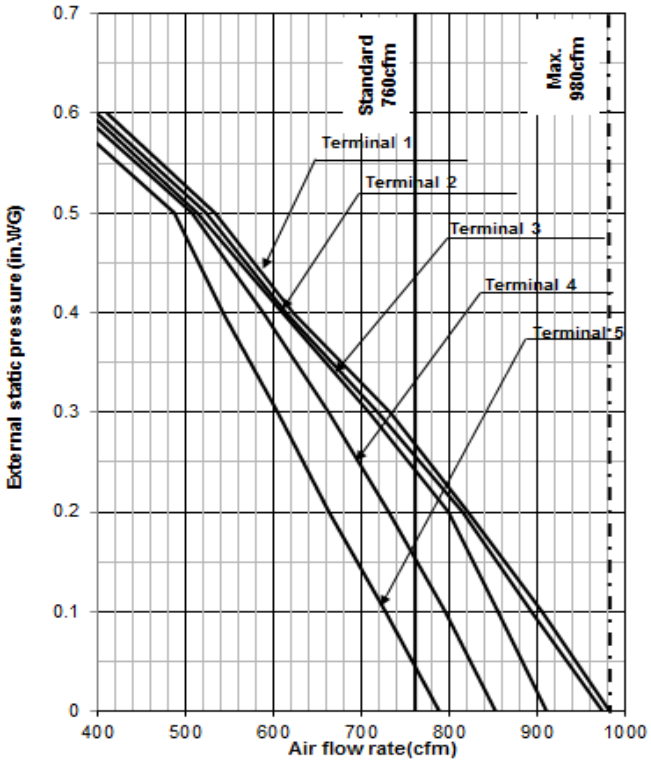
MMD-AP00120VHG2UL



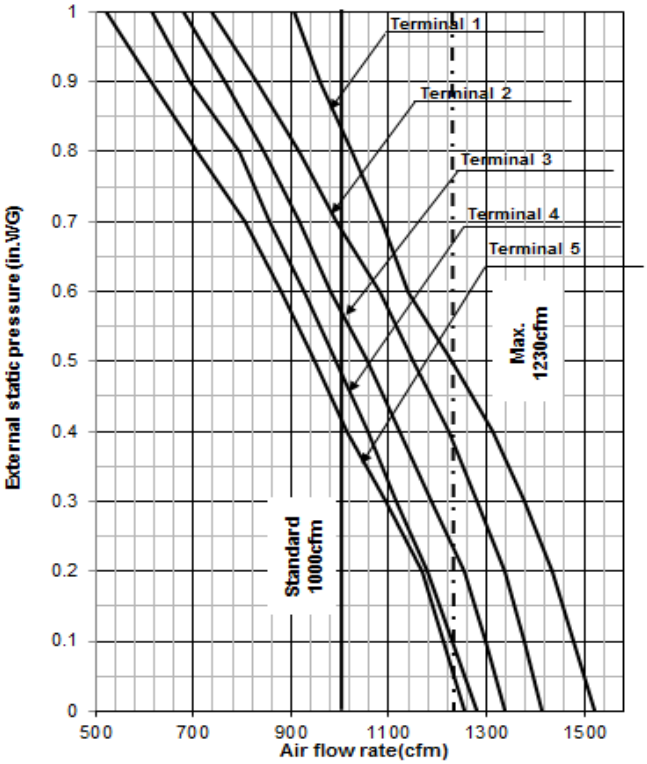
MMD-AP0180VHG2UL



MMD-AP0240VHG2UL

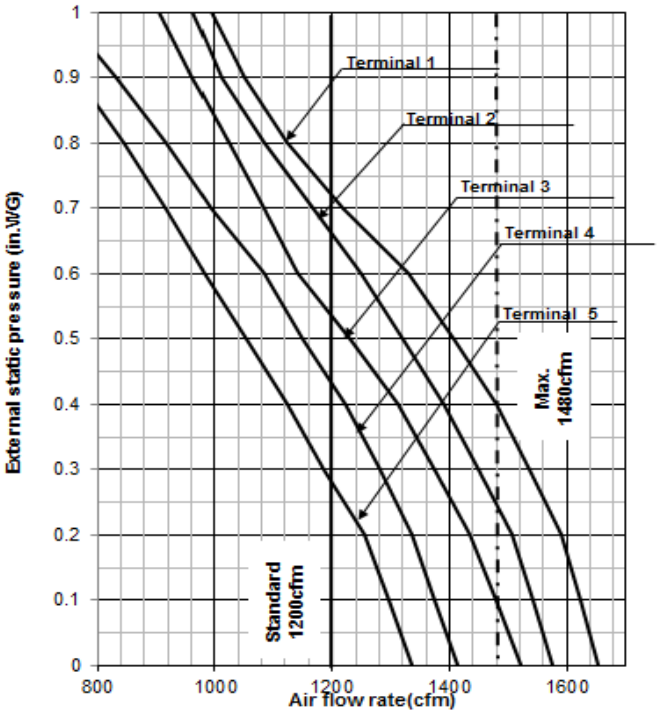


MMD-AP0300VHG2UL

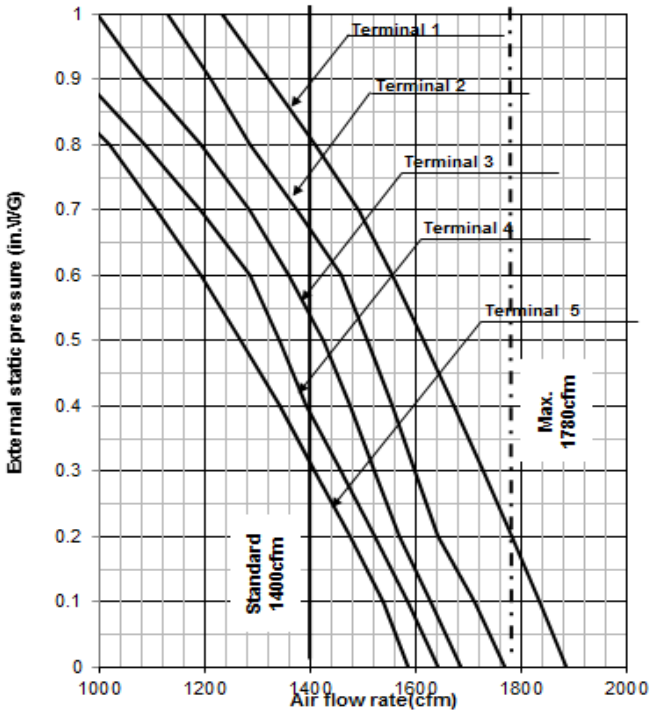


8. Fan characteristics

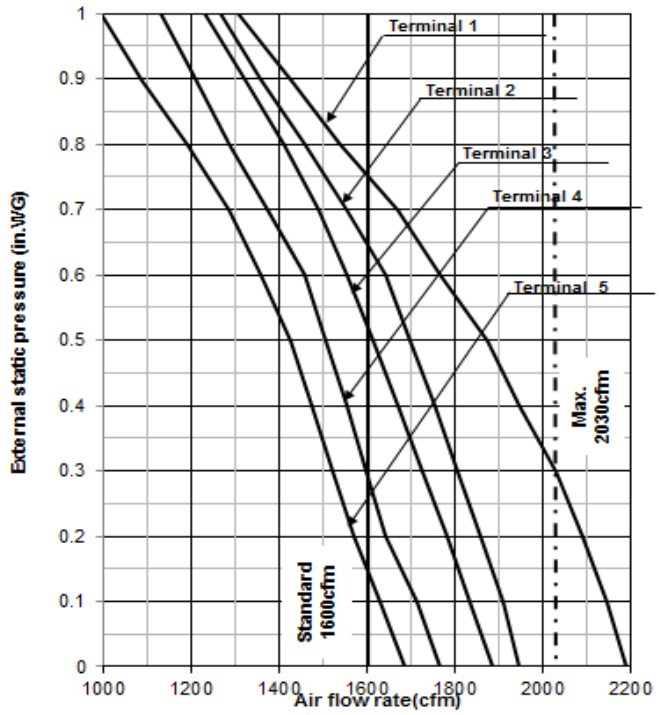
MMD-AP0360VHG2UL



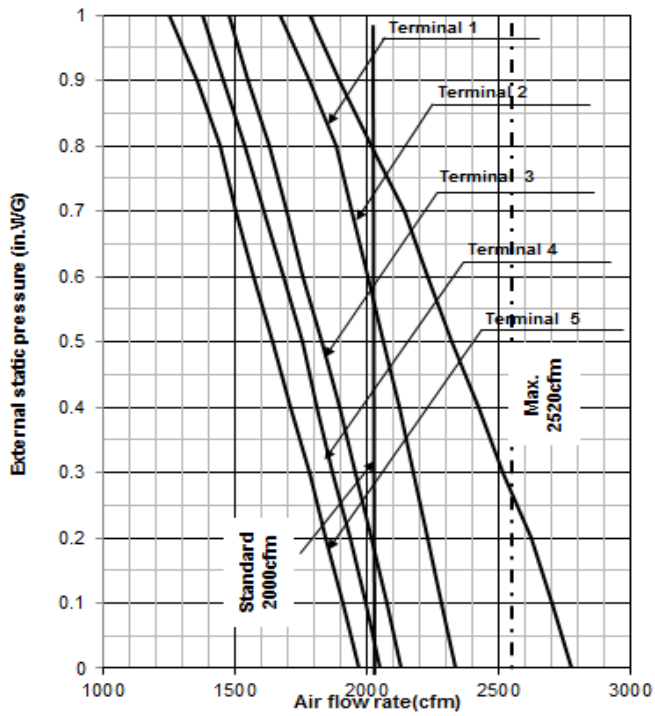
MMD-AP0420VHG2UL



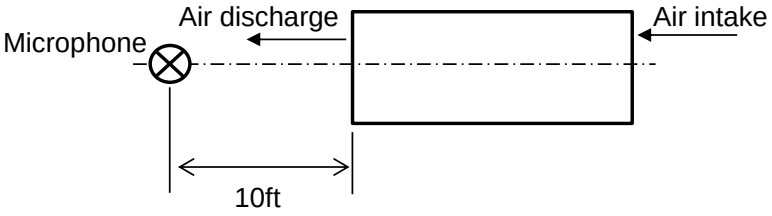
MMD-AP0480VHG2UL



MMD-AP0600VHG2UL

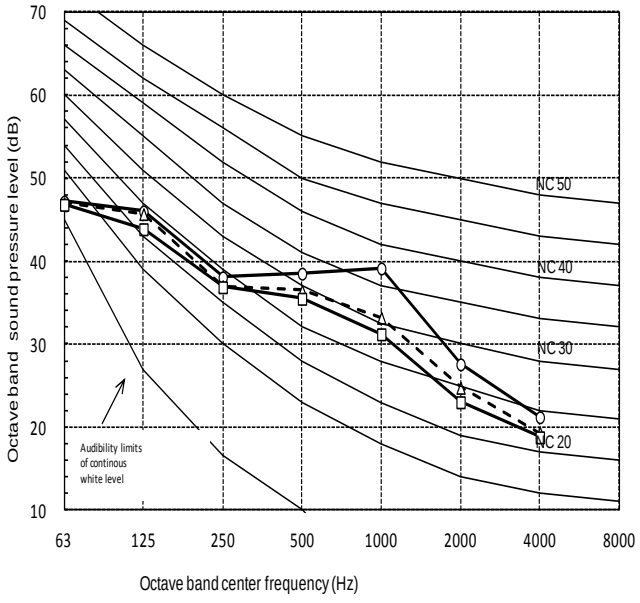


9. Sound data



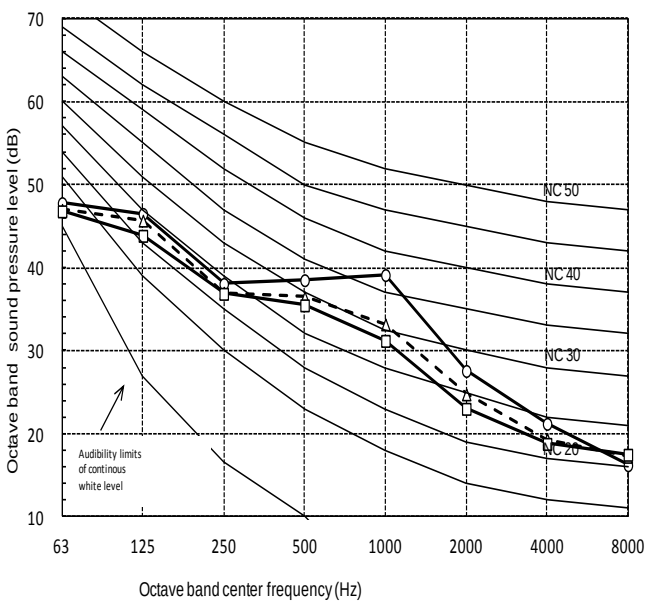
MMD-AP00120VHG2UL

Fan tap	H	M	L
External static Pressure	0.3	0.3	0.3
Sound pressure level dB(A)	41	38	37



MMD-AP0180VHG2UL

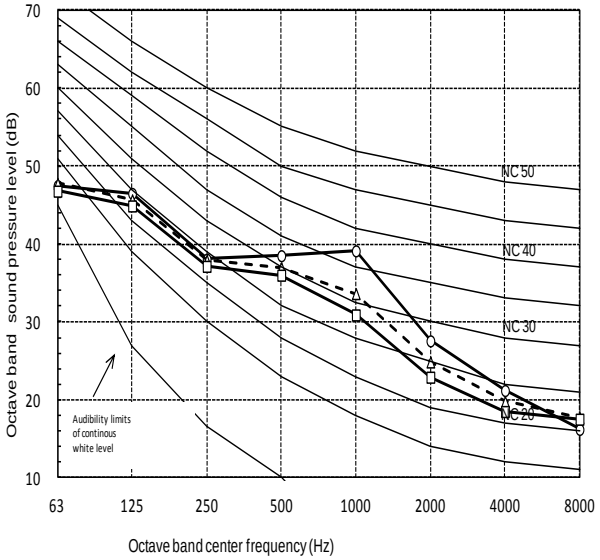
Fan tap	H	M	L
External static Pressure	0.5	0.5	0.5
Sound pressure level dB(A)	41	39	38



9. Sound data

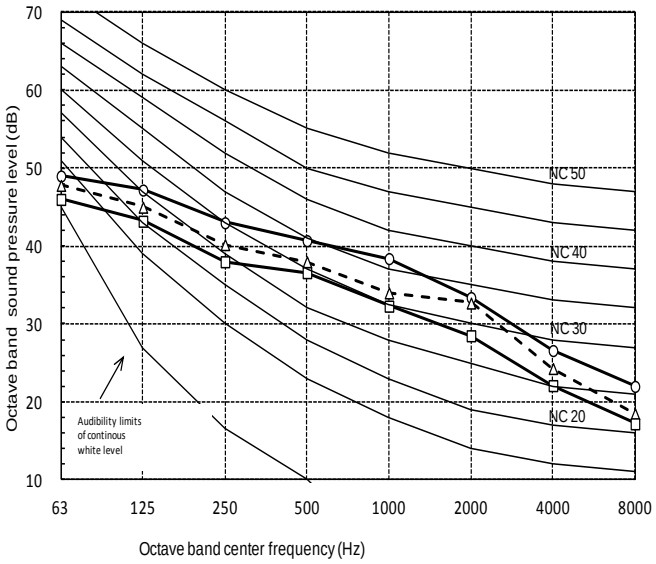
MMD-AP0240VHG2UL

Fan tap	H	M	L
External static Pressure	0.3	0.3	0.3
Sound pressure level dB(A)	41	39	38



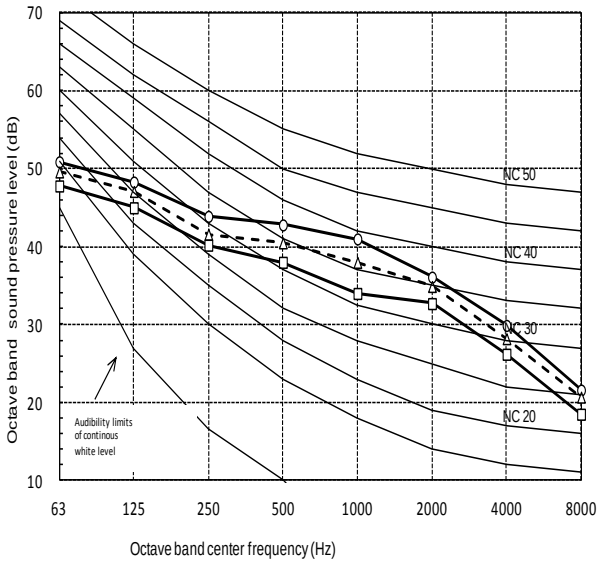
MMD-AP0300VHG2UL

Fan tap	H	M	L
External static Pressure	0.5	0.5	0.5
Sound pressure level dB(A)	43	42	40



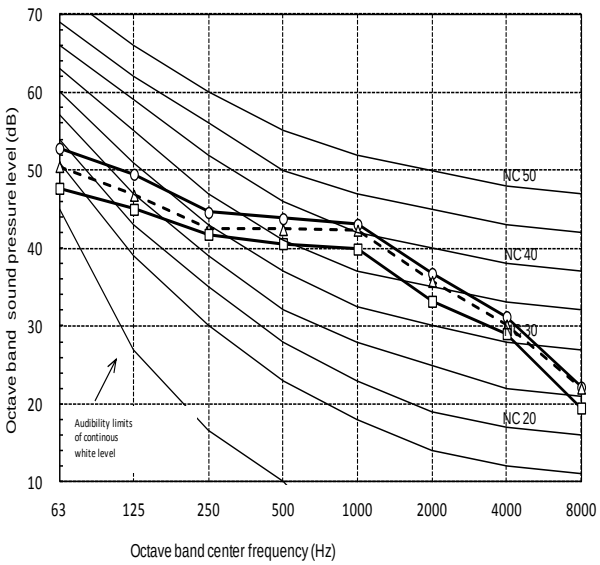
MMD-AP0360VHG2UL

Fan tap	H	M	L
External static Pressure	0.5	0.5	0.5
Sound pressure level dB(A)	45	44	42



MMD-AP0420VHG2UL

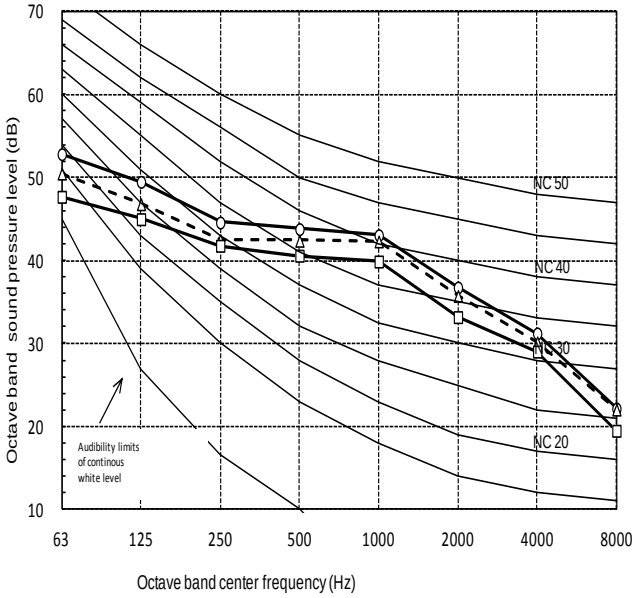
Fan tap	H	M	L
External static Pressure	0.5	0.5	0.5
Sound pressure level dB(A)	46	45	43



9. Sound data

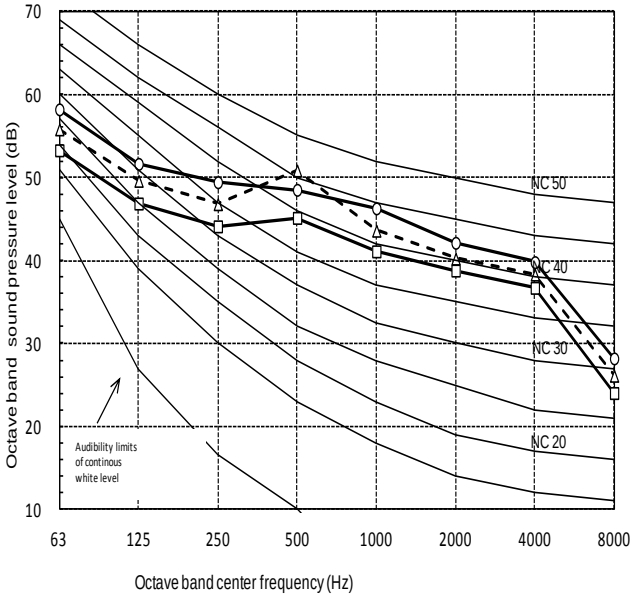
MMD-AP0480VHG2UL

Fan tap	H	M	L
External static Pressure	0.5	0.5	0.5
Sound pressure level dB(A)	48	47	45



MMD-AP0600VHG2UL

Fan tap	H	M	L
External static Pressure	0.5	0.5	0.5
Sound pressure level dB(A)	52	51	47

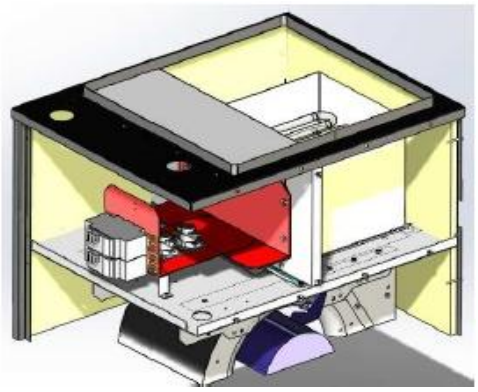


10. Acccesories

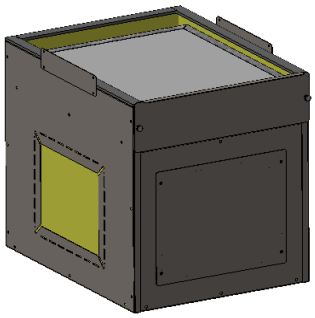
Product name		Model name	Description
Electric heater (240/208V)	1.0kW/0.8kW	TCB-HT101VDGUL	For 012 to 060 type
	3.0kW/2.3kW	TCB-HT301VDGUL	For 012 to 060 type
	5.0kW/3.8kW	TCB-HT501VDGUL	For 012 to 060 type
	6.0kW/4.5kW	TCB-HT601VDGUL	For 018 to 060 type
	8.0kW/6.0kW	TCB-HT801VDGUL	For 024 to 060 type
	9.5kW/7.1kW	TCB-HT951VDGUL	For 030 to 060 type
Plenum, with 2" MERV8 filter		TCB-PL2S241VDGUL	For 012, 018, 024 type
		TCB-PL2S361VDGUL	For 030, 036 type
		TCB-PL2S481VDGUL	For 042, 048 type
		TCB-PL2S601VDGUL	For 060 type
Filter box, 2" MERV8 filter		TCB-FB2F241VDGUL	For 012, 018, 024 type
		TCB-FB2F361VDGUL	For 030, 036 type
		TCB-FB2F481VDGUL	For 042, 048 type
		TCB-FB2F601VDGUL	For 060 type

[Notes]

1. Plenum has 1/2" fiberglass insulation.
2. 2" filter box has filter rails that can be removed to allow use with 4" filter.
3. Return air grille(s) and duct colloars are field-provided and field-installed.
4. Plenum has return air duct opening on fornt and right side as standard. Field-changable to front and left side duct opening. Additional opening will require the field cut and modifications.



Electric heater



Plenum



Filter box

Vertical Air Handling Unit type Engineering Data Book

Model name :
MMD-AP___0VHG2UL

March, 2018

TOSHIBA CARRIER NORTH AMERICA, Inc.