

Engineering Data Book



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I. High Wall Unit Unit Basic information

1. External Appearance



Figure 1 - 40VMW005/007/009/012---3



Figure 2 - 40VMW015/018---3



Figure 3 - 40VMW024/030---3

2. Specifications

Table 1 – Data Table

Model		40VMW005---3	40VMW007---3	40VMW009---3
Power supply	V/Ph/Hz	208/230-1-60		
Cooling capacity *1	Btu/h	5,000	7,500	9,500
Heating capacity *1	Btu/h	6,000	8,500	10,900
MCA	A	0.29	0.45	
MOCP	A	15		
Filter		Included		
Dimensions (H x W x D)	in.	11-3/8 x 36 x 9		
Net Weight	lbs	28.0		
Heat Exchanger		Inner Groove Copper Tube and Hydrophilic Aluminum fin		
Blower / Motor	Fan Type	Cross Flow		
	Motor Type	DC motor		
	Air Flow Rate (H/M/L)	CFM	245/245/245	320/270/245
	Sound Pressure Level (H/M/L)*2	dBA	31.7/31.7/31.7	34.0/32.2/31.2 34.5/32.6/31.8
	Motor Output	W	9	20
Min. External Static Pressure (Factory setting)	in. WG	0		
Max. External Static Pressure	in. WG	0.04		
Piping connections	Gas (Low) Pressure	in.	1/2	
	Liquid (High) Pressure	in.	1/4	
	Condensate	in.	3/4 NPT	
Refrigerant Control		Electronic Expansion Valve		
Connectable Outdoor Unit		38VMH – Heat Pump 38VMR – Heat Recovery 38VMH-1P – Single Phase Heat Pump		
Wiring	Power Wiring	AWG	Sized per NEC and Local Codes based on Nameplate Electrical Data	
	Control Wiring	AWG	2-core shielded twisted pair cable 16AWG or 18AWG	

NOTES:

*1. Rated per AHRI (Air Conditioning, Heating, and Refrigeration Institute) 1230 Standard

Cooling: Indoor 80°F (27°C) db / 67°F (20°C) wb; Outdoor 95°F (35°C) db

Heating: Indoor 70°F (21°C) db; Outdoor 47°F (8°C) db / 43°F (6°C) wb

*2. These values are measured in anechoic. See page 22 for more details.

Table 2 – Data Table

Model		40VMW012---3	40VMW015---3	40VMW018---3	
Power supply	V/Ph/Hz	208/230-1-60			
Cooling capacity *1	Btu/h	12,000	15,000	18,000	
Heating capacity *1	Btu/h	13,500	17,000	21,000	
MCA	A	0.45			
MOCP	A	15			
Filter		Included			
Dimensions (H x W x D)	in.	11-3/8 x 36 x 9	12-3/8 x 42-1/4 x 9		
Net Weight	lbs	28	32		
Heat Exchanger		Inner Groove Copper Tube and Hydrophilic Aluminum fin			
Blower / Motor	Fan Type	Cross-flow			
	Motor Type	DC motor			
	Standard airflow (H/M/L)	CFM	360/280/250	480/420/380	560/470/440
	Sound Pressure Level (H/M/L)*2	dB(A)	36.4/34.6/32.8	41.7/39.6/38.4	41.8/40.2/38.9
	Motor output	W	20		
Min. External Static Pressure (Factory setting)	in. WG	0			
Max. External Static Pressure	in. WG	0.04			
Piping connections	Gas (Low) Pressure	in.	1/2	5/8	
	Liquid (High) Pressure	in.	1/4	3/8	
	Condensate	in.	3/4 NPT		
Refrigerant Control		Electronic Expansion Valve			
Connectable Outdoor Unit		38VMH – Heat Pump 38VMR – Heat Recovery 38VMH-1P – Single Phase Heat Pump			
Wiring	Power Wiring	AWG	Sized per NEC and Local Codes based on Nameplate Electrical Data		
	Control Wiring	AWG	2-core shielded twisted pair cable 16AWG or 18AWG		

NOTES:

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Heating: Indoor 70°F (21°C) db; Outdoor 47°F (8°C) db / 43°F (6°C) wb
- *2. These values are measured in anechoic chamber. See page 22 for more details.

Table 3 – Data Table

Model		40VMW024---3	40VMW030---3	
Power supply	V/Ph/Hz	208/230-1-60		
Cooling capacity *1	Btu/h	24,000	30,000	
Heating capacity *1	Btu/h	27,000	34,000	
MCA	A	0.86		
MOCP	A	15		
Filter		Included		
Dimensions (H x W x D)	in.	13-1/2 x 47 x 10-1/8		
Net Weight	lbs	38.0		
Heat Exchanger		Inner Groove Copper Tube and Hydrophilic Aluminum fin		
Blower / Motor	Fan Type	Cross-flow		
	Motor Type	DC motor		
	Standard airflow (H/M/L)	CFM	650/530/460	770/600/480
	Sound Pressure Level (H/M/L)*2	dba	43.2/42.0/36.8	48.3/43.6/38.1
	Motor output	W	20	60
Min. External Static Pressure (Factory setting)	in. WG	0		
Max. External Static Pressure	in. WG	0.04		
Piping connections	Gas (Low) Pressure	in.	5/8	
	Liquid (High) Pressure	in.	3/8	
	Condensate	in.	3/4 NPT	
Refrigerant Control		Electronic Expansion Valve		
Connectable Outdoor Units		38VMH – Heat Pump 38VMR – Heat Recovery 38VMH-1P – Single Phase Heat Pump		
Wiring	Power Wiring	AWG	Sized per NEC and Local Codes based on Nameplate Electrical Data	
	Control Wiring	AWG	2-core shielded twisted pair cable 16AWG or 18AWG	


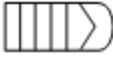





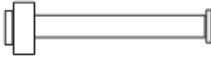


NOTES:

*1. Rated per AHRI (Air Conditioning, Heating, and Refrigeration Institute) 1230 Standard
Cooling: Indoor 80°F (27°C) db / 67°F (20°C) wb; Outdoor 95°F (35°C) db
Heating: Indoor 70°F (21°C) db; Outdoor 47°F (8°C) db / 43°F (6°C) wb

*2. These values are measured in anechoic chamber. See page 22 for more details.

3. Accessories

Table 4 – Table of Accessories

Name of Accessories	Quantity	Outline	Function
Screw ST3.9x25 for installation board	8		Secure the mounting plate
Plastic screw anchor	8		Anchoring screw
Wrapping tape	1		For routing condensate from right to left
Condensate connection	1		For connecting drain
Sleeve cap	1		Exterior wall opening
Piping sleeve	1		Routing refrigerant pipes
Copper Nut	1		Connect piping
Flexible conduit and connectors	1		Routing power lines
PQE Connection Wire	2		To connect outdoor unit, indoor unit, and sub MDC
Connection wire	1		For occupancy sensor

Legend:

MDC – Multiport Distribution Controller

II. Piping Diagram

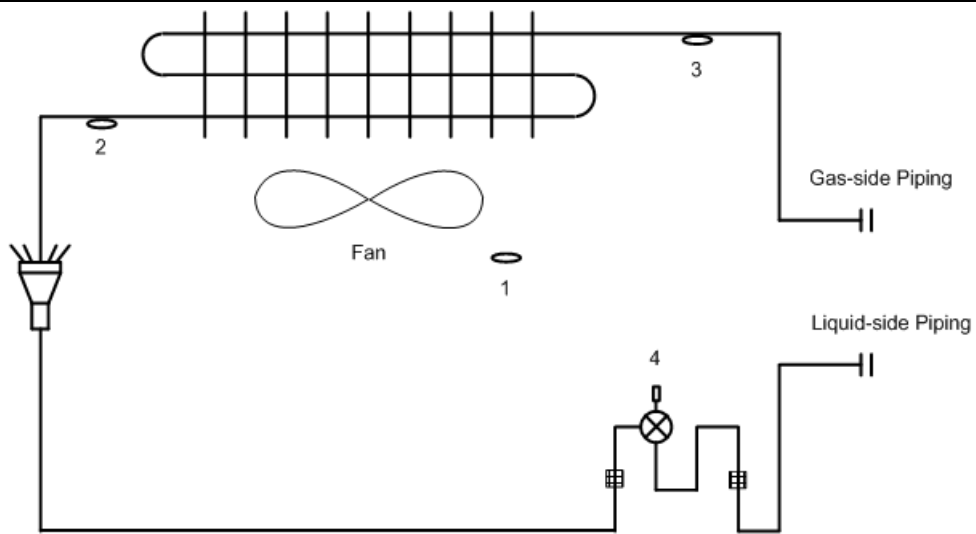


Figure 4 – Piping

Table 5 – Piping

NO.	Symbol	Name
1	T1	Room temperature sensor
2	T2A	Inlet pipe temperature sensor
3	T2B	Outlet pipe temperature sensor
4	EEV	Electronic expansion valve

Table 6 – Gas/Liquid Line Sizes

Model	Gas	Liquid
40VMW005/007/009/012/015---3	1/2	1/4
40VMW018/024/030---3	5/8	3/8

III. Dimensions

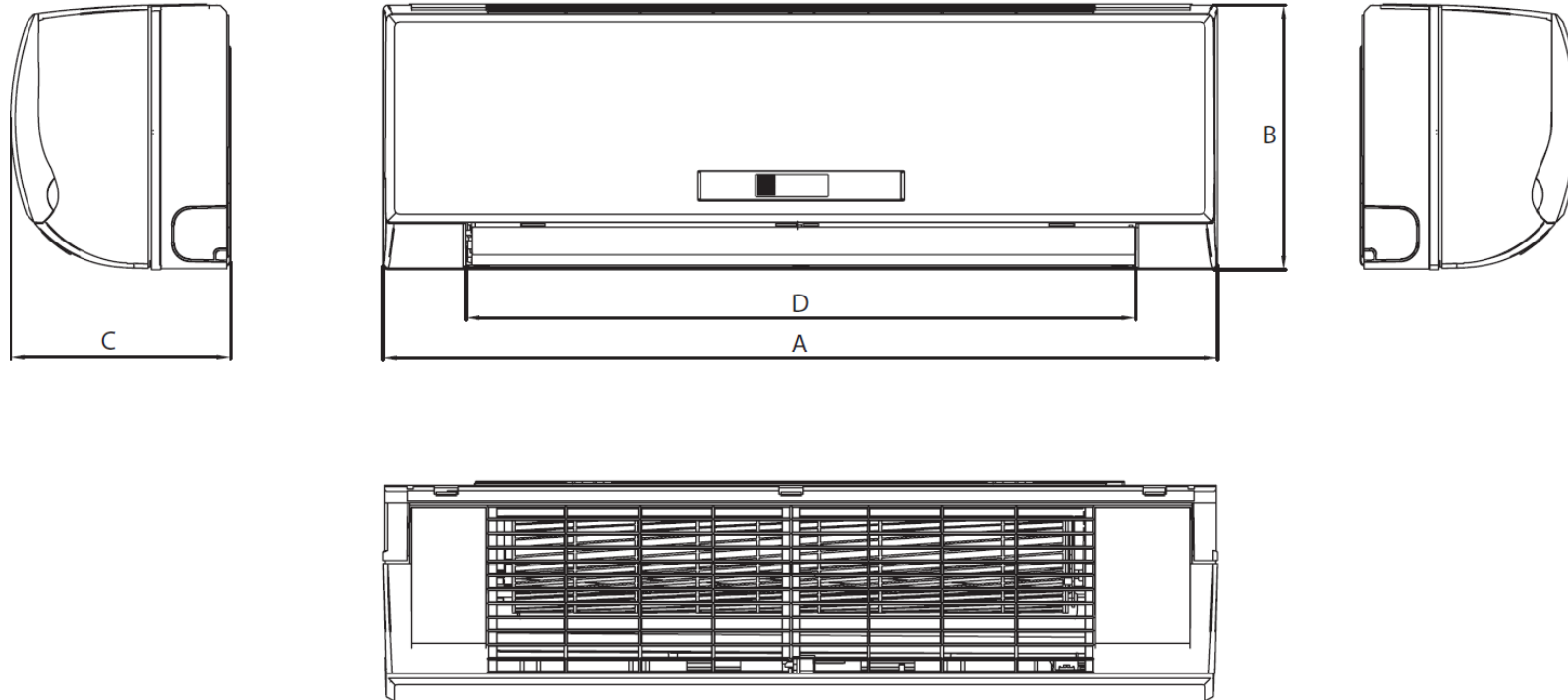


Figure 5 - 40VMW005/007/009/012/015/018---3

Model	A	B	C	D
40VMW005/007/009/012---3	36	11-3/8	9	28-3/4
40VMW015/018---3	42-1/4	12-3/8	9	35-1/8

NOTE: All dimensions are shown in inches.

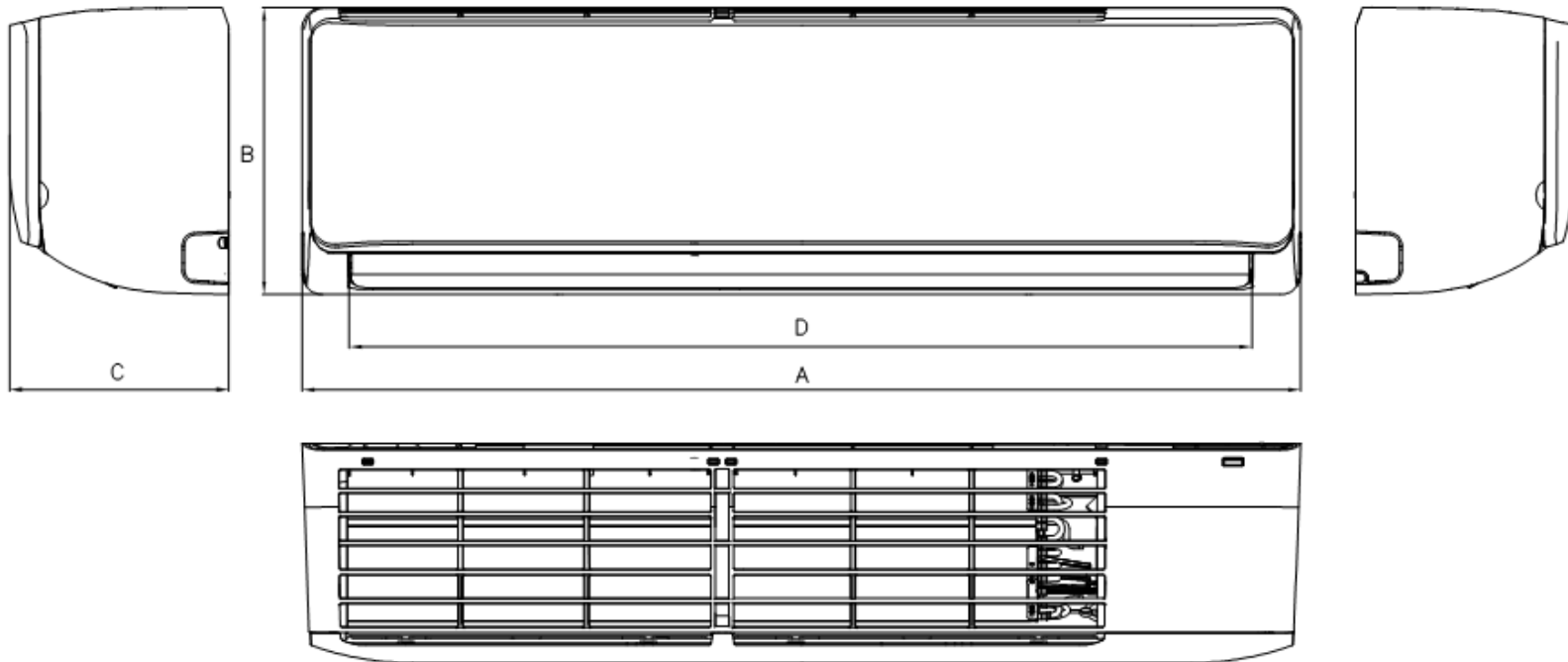


Figure 6 - 40VMW024/030---3

Model	A	B	C	D
40VMW024/030---3	47	13-1/2	10-1/8	42-3/8

NOTE: All dimensions are shown in inches.

IV. Wiring Diagram

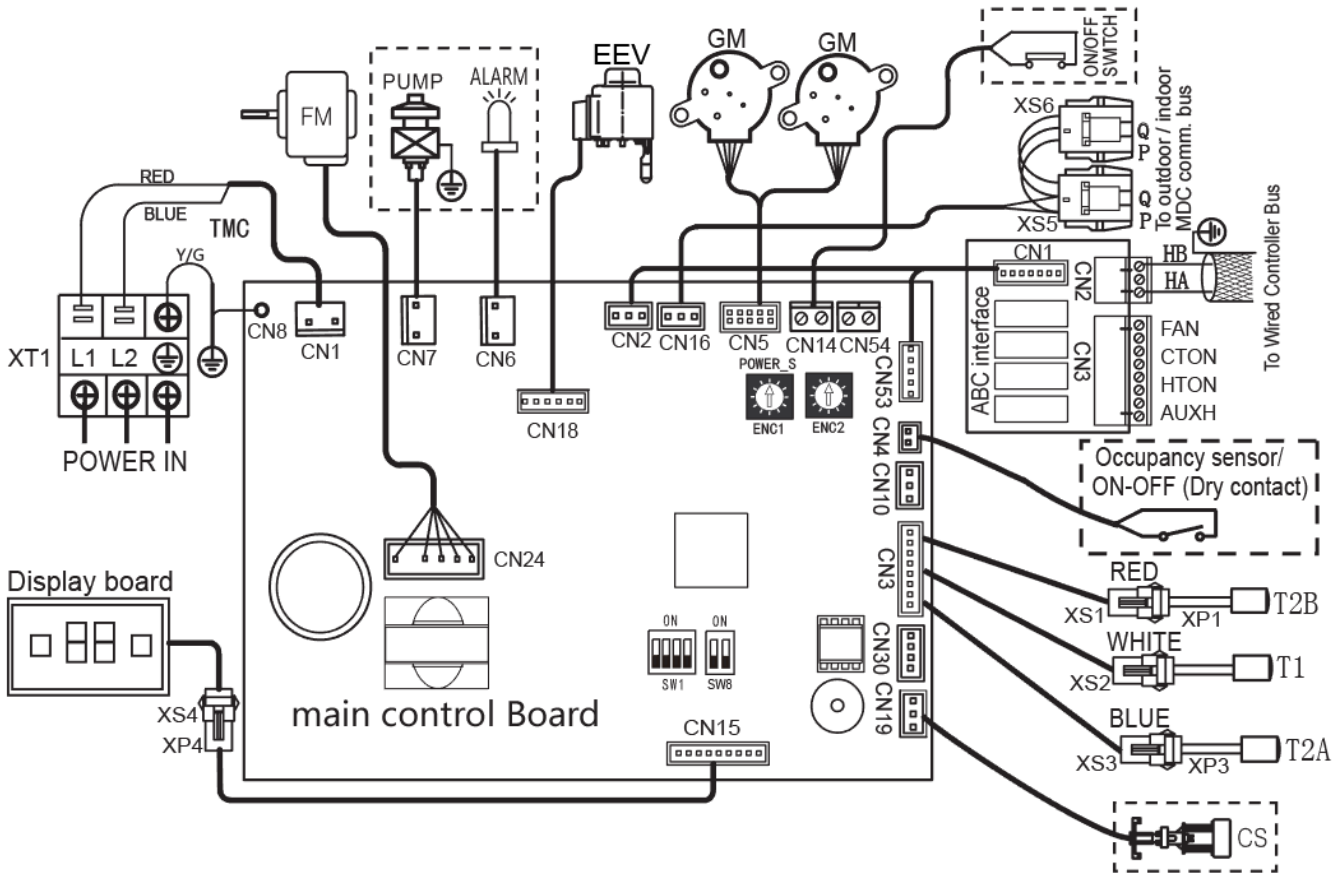


Figure 7 - 40VMW005/007/009/012/015/018/024/030---3

a. Wiring Diagram Definitions and Settings (40VMW005 to 030---3)

Table 7 – Code / Title

Code	Title
FM	Indoor Fan Motor
T1	Room Temperature Sensor
T2A	Inlet Pipe Temperature Sensor
T2B	Outlet Pipe Temperature Sensor
ALARM	Warning Lamp
EEV	Electronic Extension Valve
XP1-6	Connectors
XS1-4	
XT1	Terminal
PUMP	Pump Motor
CS	Condensate Switch
GM	Swing Motor

Table 9 – ENC1 / ENC2



	Reserved		Reserved
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Table 11 – SW8 Definition



	Reserved
	Reserved

Table 8 – SW1 Definition





	0 means auto addressing mode (Default)
	1 means factory test mode
	0 means normal mode (Default)
	1 means factory self-checking mode (Reserved)
	Reserved
	0 means standard indoor unit (Default)
	1 means main indoor unit (must be addressed #63)

Table 10 – J1 Definition



	Without Jumper “J1” for auto restart function
	With Jumper “J1” for manual restart function

Table 12 – 0/1 Definition



	Means 0
	Means 1

Table 13 – Error Code / Content

dd	Heating / Cooling Conflict
E1	Communication Error with Outdoor Unit
E2	Temperature Sensor (T1) Error
E4	Temperature Sensor (T2B) Error
E5	Temperature Sensor (T2A) Error
E6	DC Fan Error
E7	EEPROM Error (Data Storage)
UU	MDC Error in Auto System-Check Mode
E9	Communication Error with Wired Controller
Eb	EEV Error
EC	Indoor Fan Error in Auto System-Check Mode
Ed	Outdoor Unit Error
EE	Condensate Error
FE	No Address when Powered On for the First Time

V. Electrical Characteristics

Table 14 – Electrical Characteristics

Model	Power supply				IFM		
	Hz	Volts	Voltage range	MCA	MOCP	KW	FLA
40VMW005---3	60	208/230V	Max.253V Min.187V	0.29	15	0.009	0.23
40VMW007---3				0.45	15	0.02	0.36
40VMW009---3				0.45	15	0.02	0.36
40VMW012---3				0.45	15	0.02	0.36
40VMW015---3				0.45	15	0.02	0.36
40VMW018---3				0.45	15	0.02	0.36
40VMW024---3				0.86	15	0.06	0.69
40VMW030---3				0.86	15	0.06	0.69

MCA: Minimum Circuit Amps (A)

MOCP: Maximum Overcurrent Protection (A)

Symbols: KW : Fan Motor Rated Output (kW)

FLA : Full Load Amps (A)

IFM : Indoor Fan Motor

VI. Air Throw Charts

1. 40VMW005---3

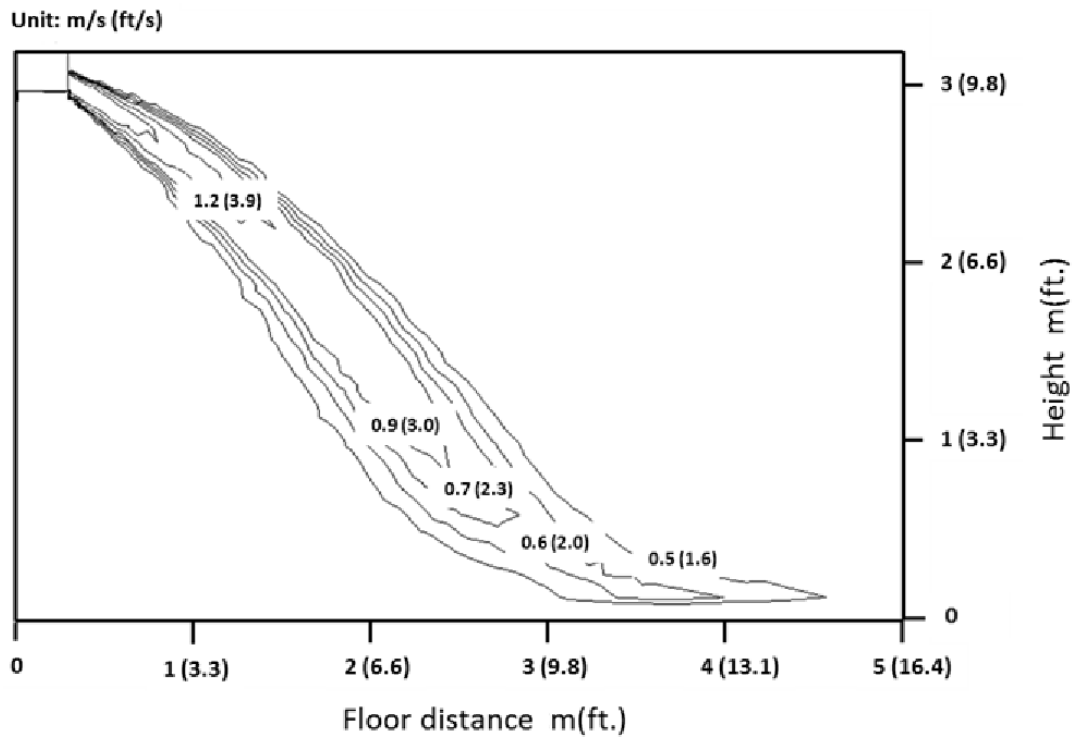


Figure 8 -Cooling mode with 30° swing

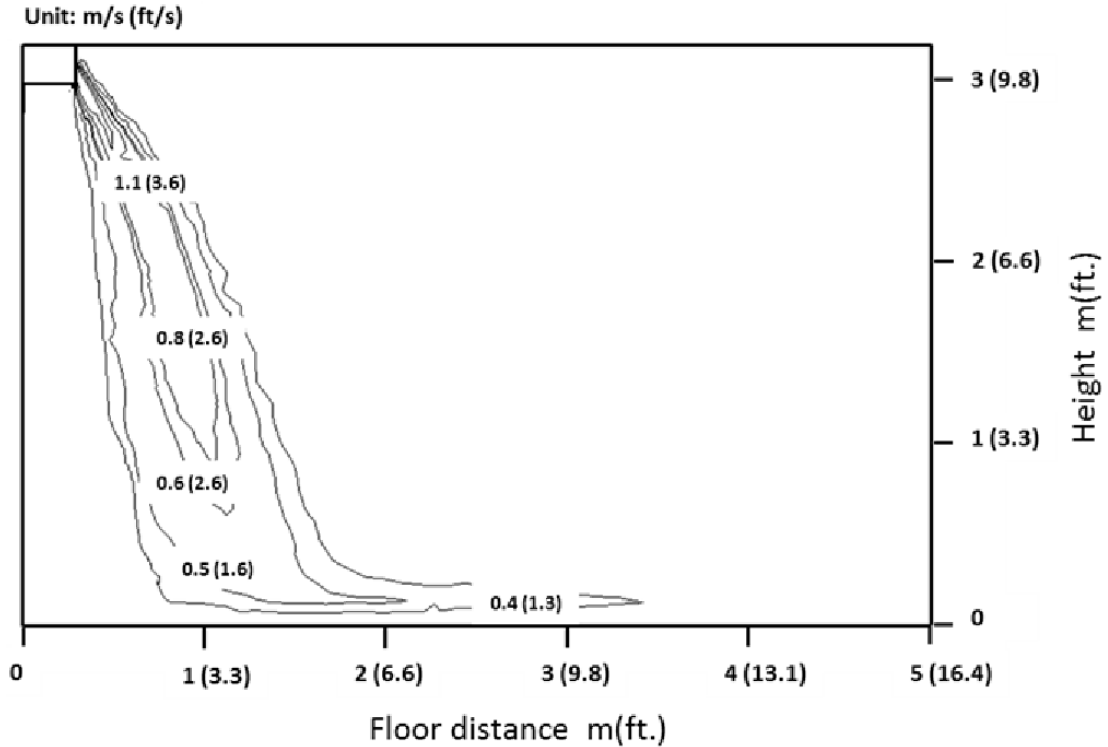


Figure 9 -Heating mode with 60° swing

2. 40VMW007---3

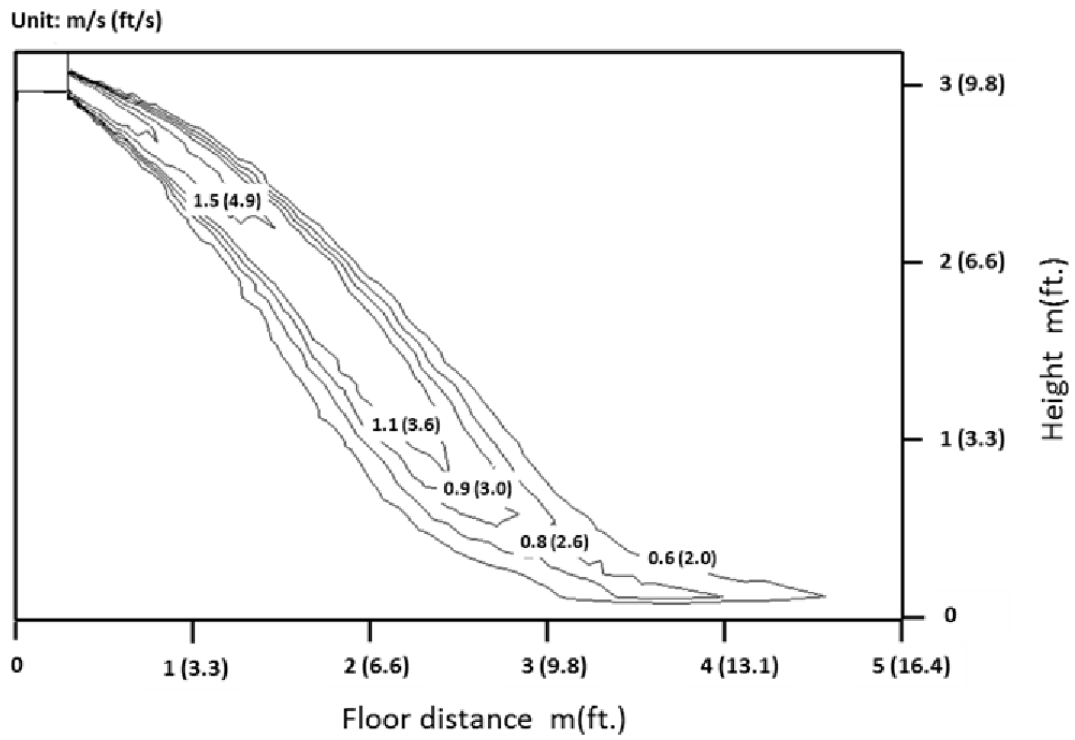


Figure 10 - Cooling mode with 30° swing

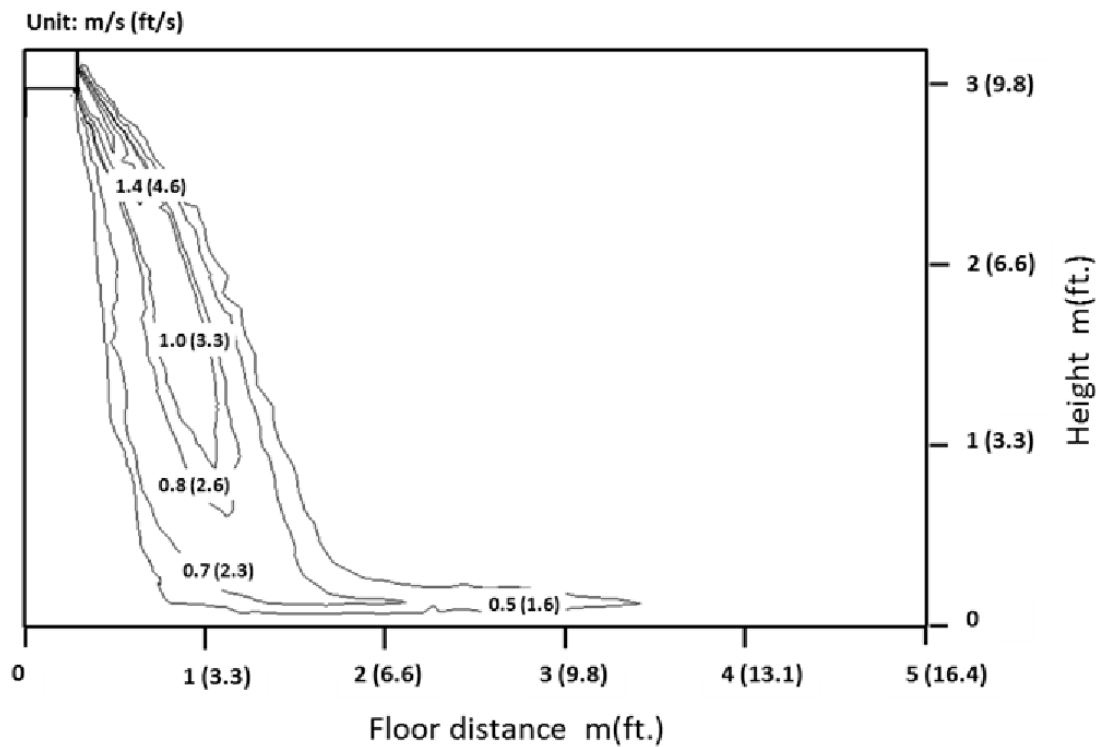


Figure 11 - Heating mode with 60° swing

3. 40VMW009---3

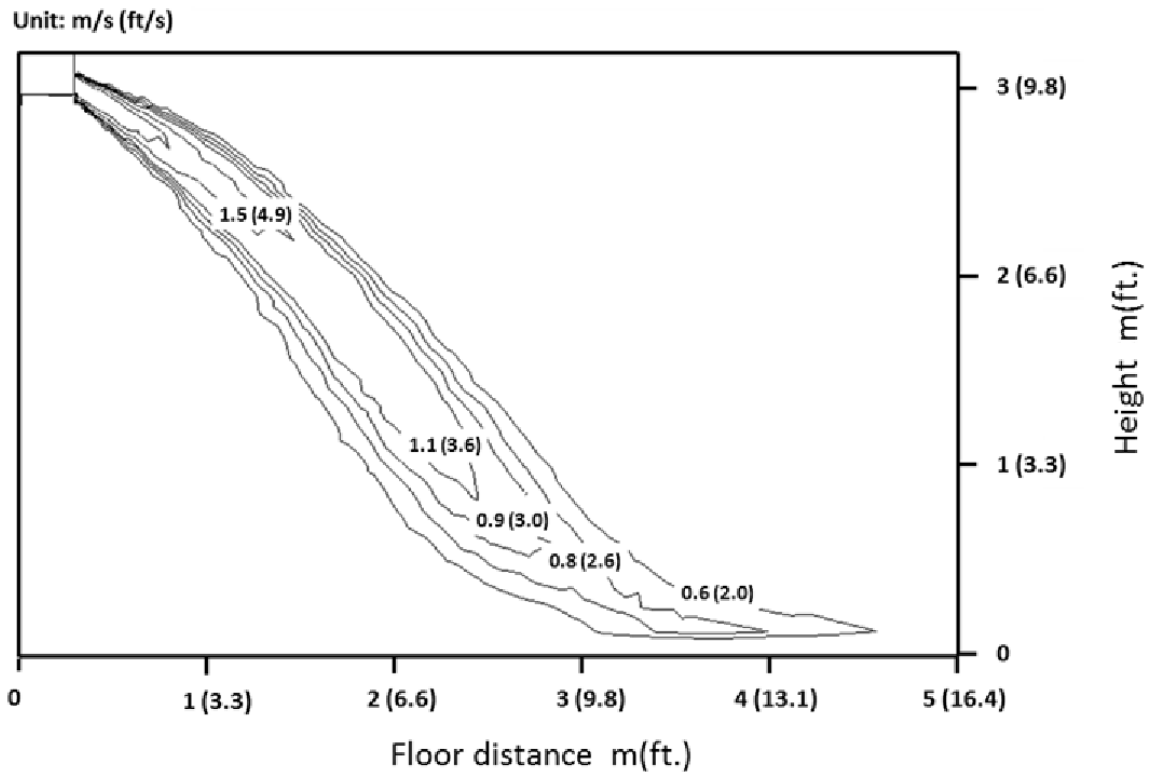


Figure 12 - Cooling mode with 30° swing

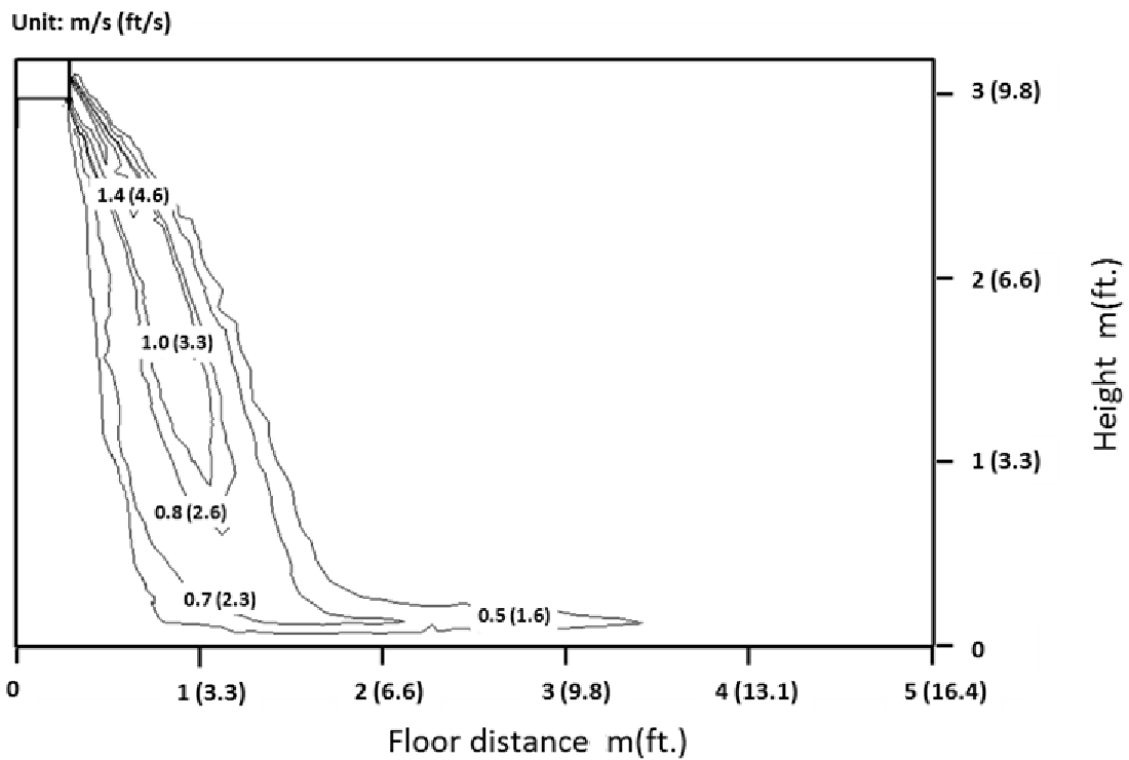


Figure 13 - Heating mode with 60° swing

4. 40VMW012---3

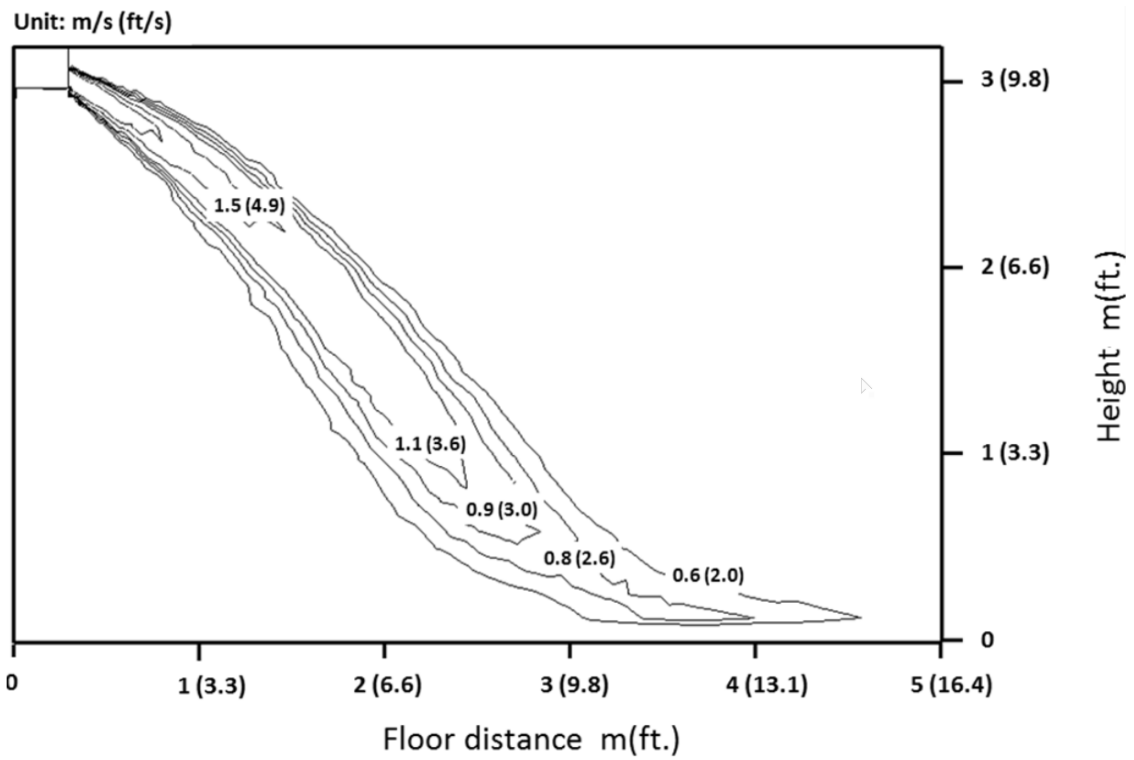


Figure 14 - Cooling mode with 30° swing

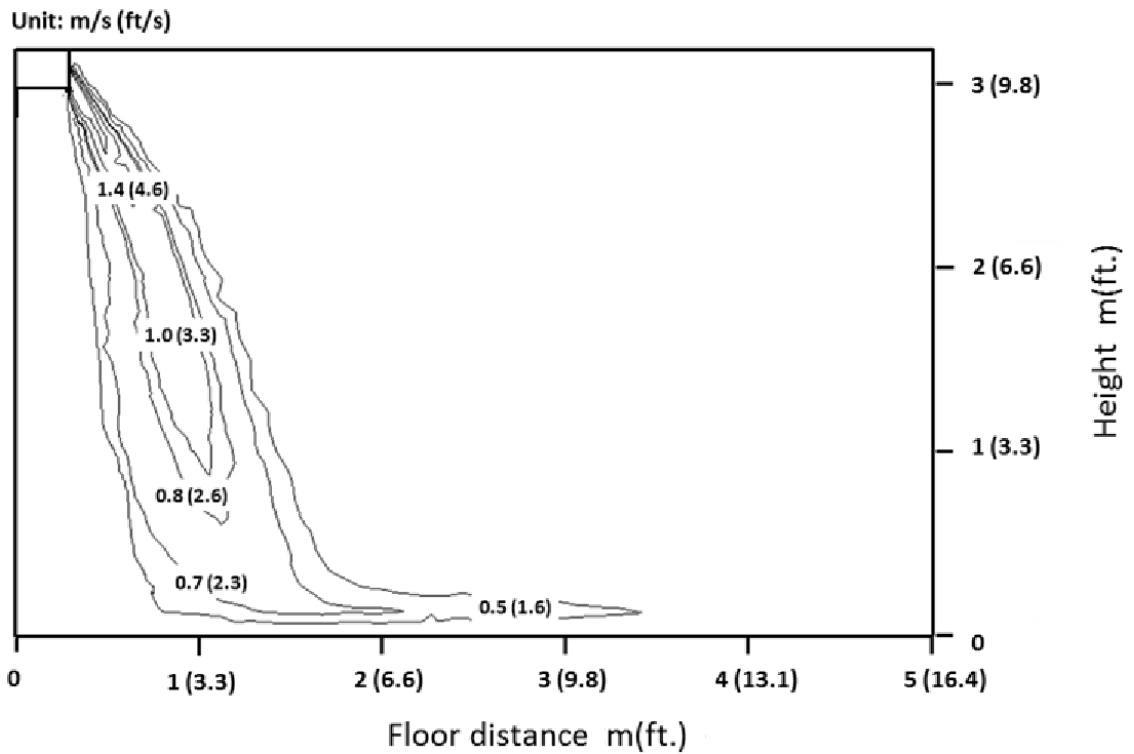


Figure 15 - Heating mode with 60° swing

5. 40VMW015---3

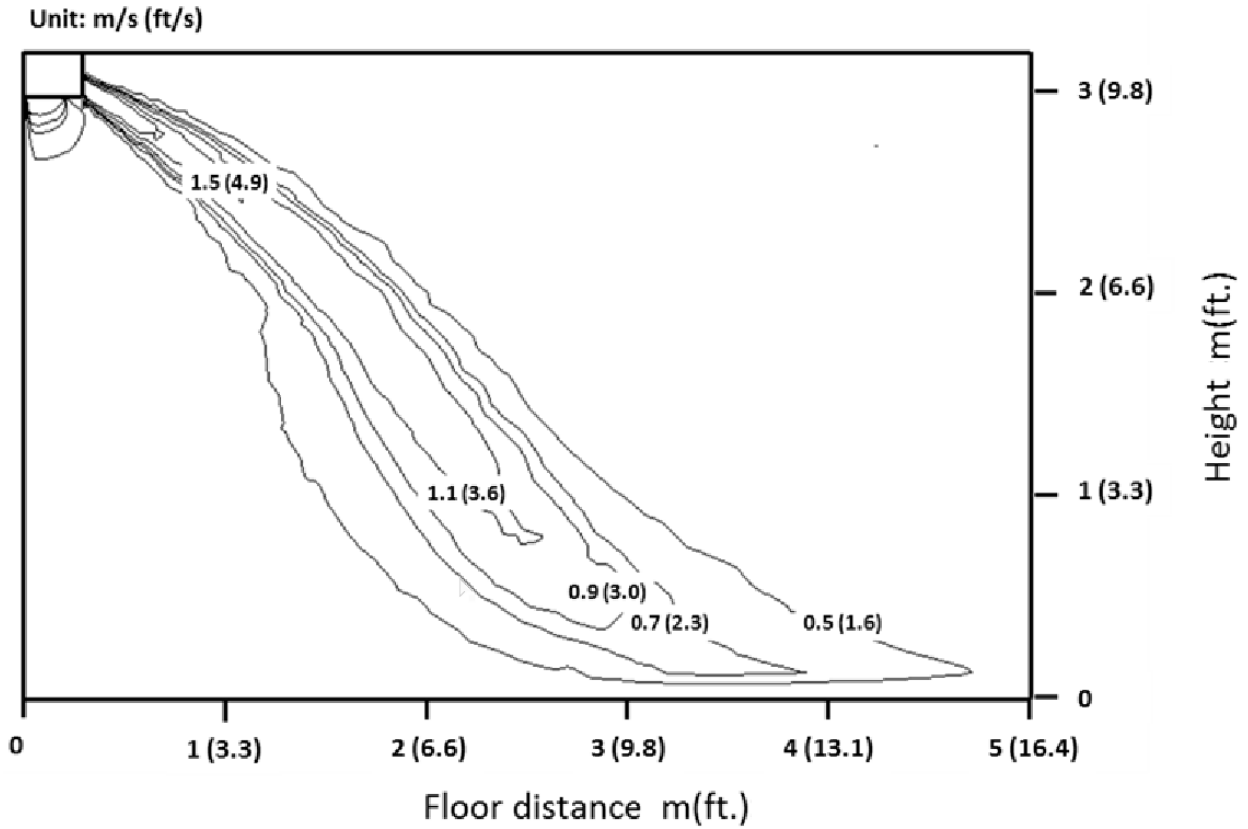


Figure 16 - Cooling mode with 30° swing

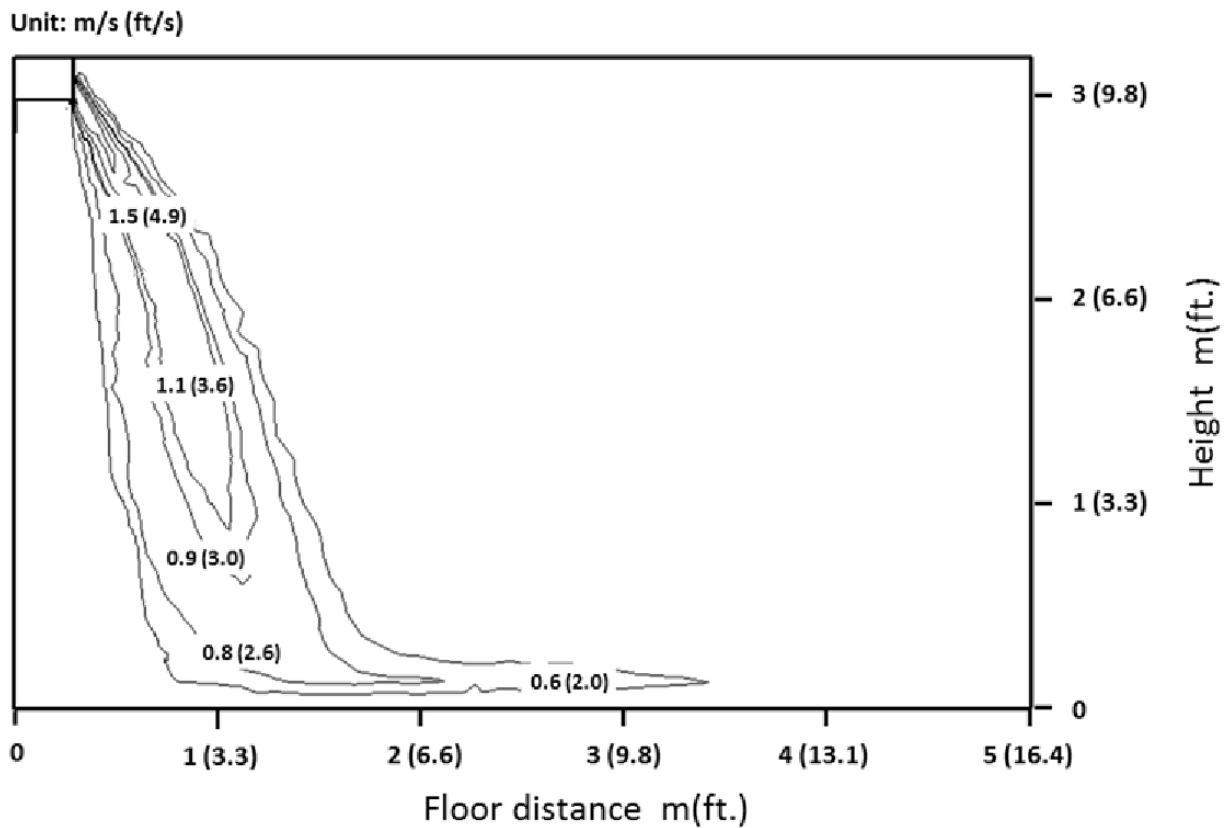


Figure 17 - Heating mode with 60° swing

6. 40VMW018---3

Unit: m/s (ft/s)

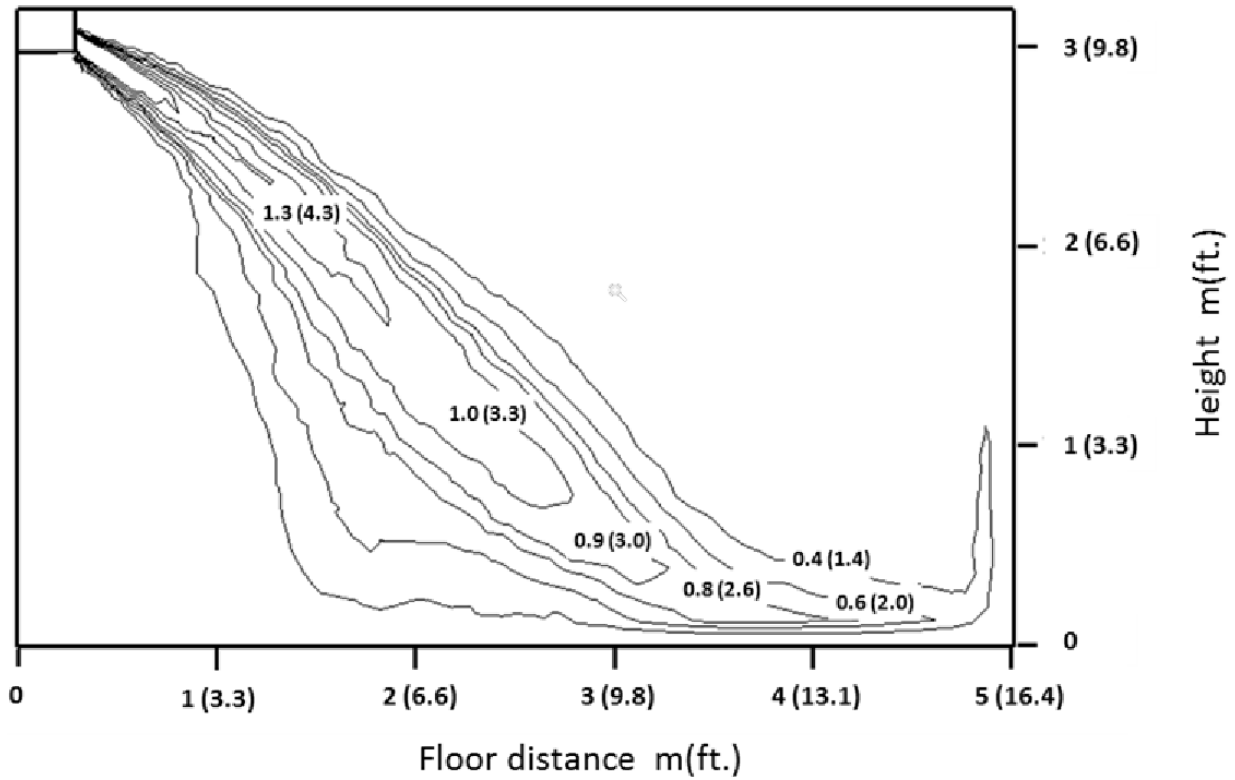


Figure 18 – Cooling mode with 30° swing

Unit: m/s (ft/s)

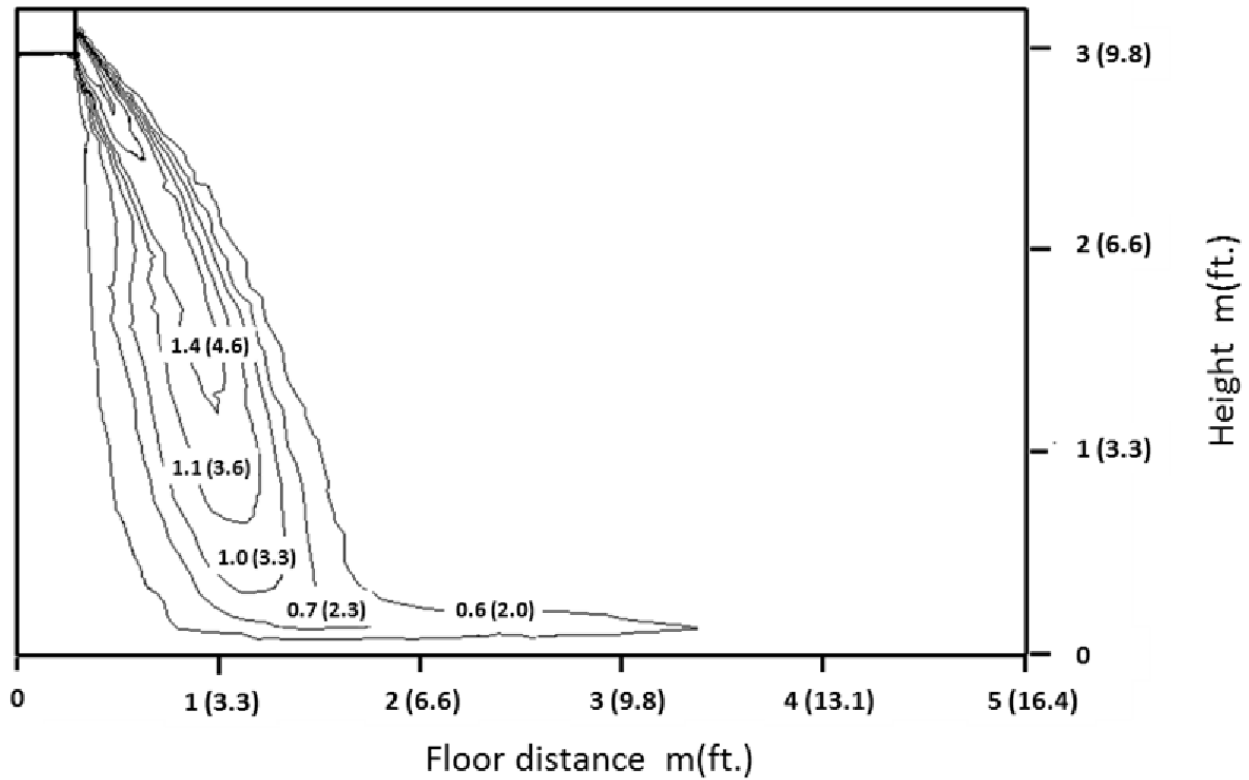


Figure 19 – Heating mode with 60° swing

7. 40VMW024---3

Unit: m/s (ft/s)

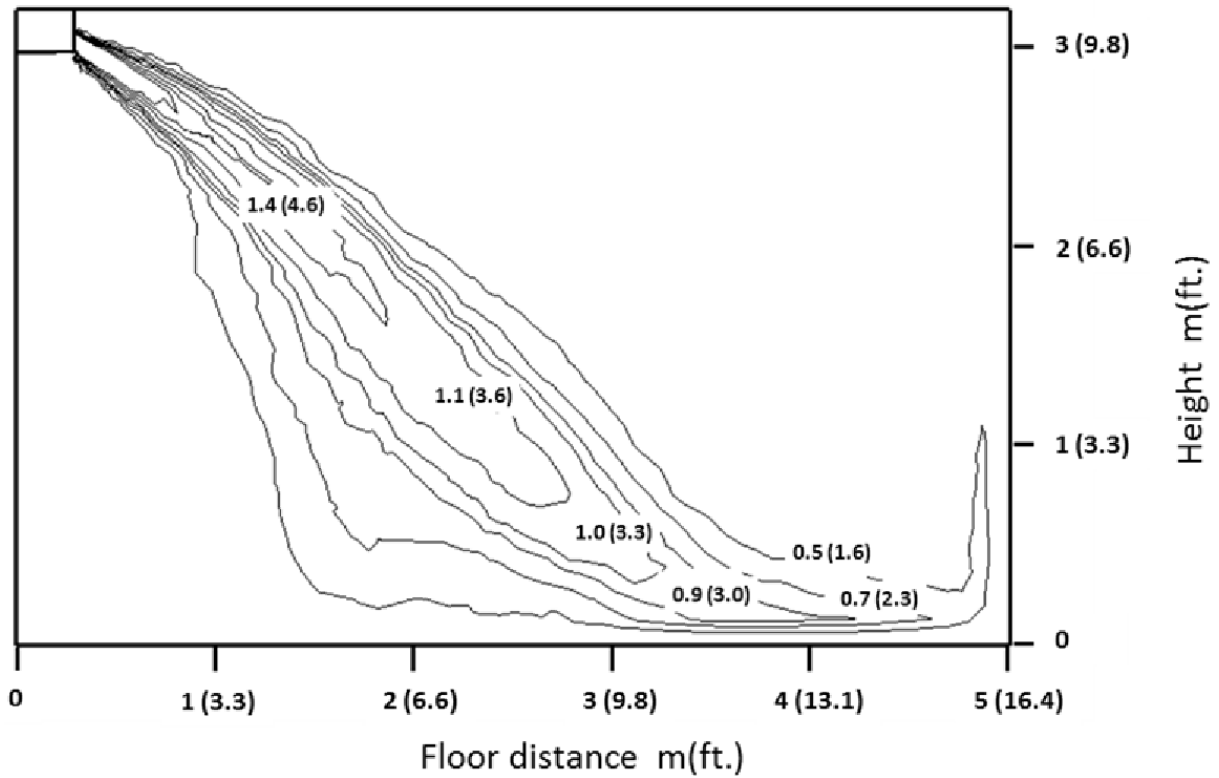


Figure 20 – Cooling mode with 30° swing

Unit: m/s (ft/s)

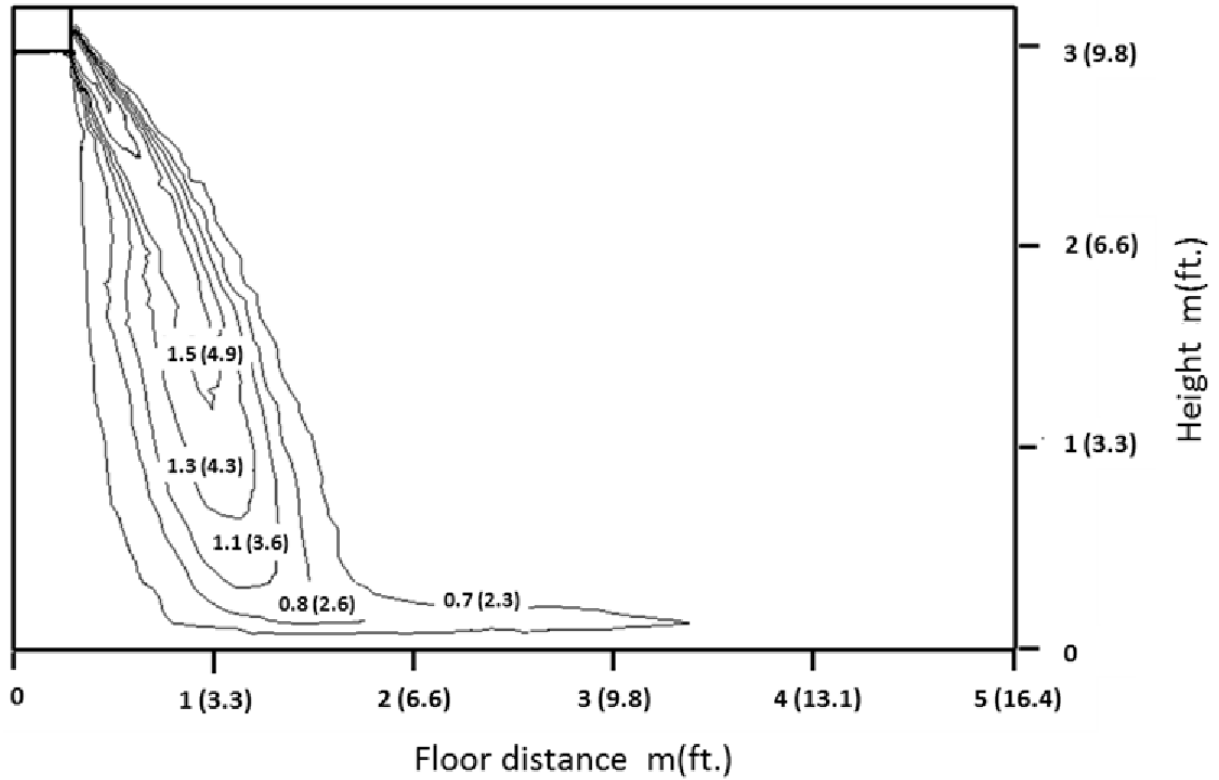


Figure 21 – Heating mode with 60° swing

8. 40VMW030---3

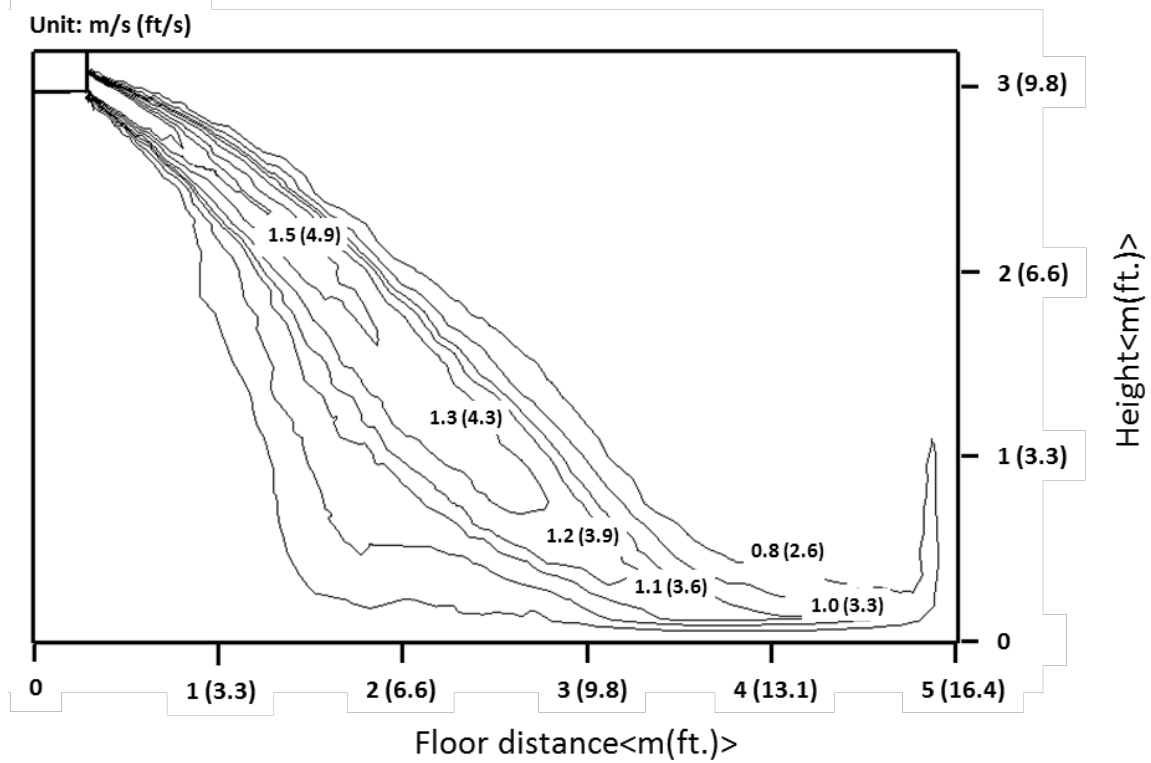


Figure 22 – Cooling mode with 30° swing

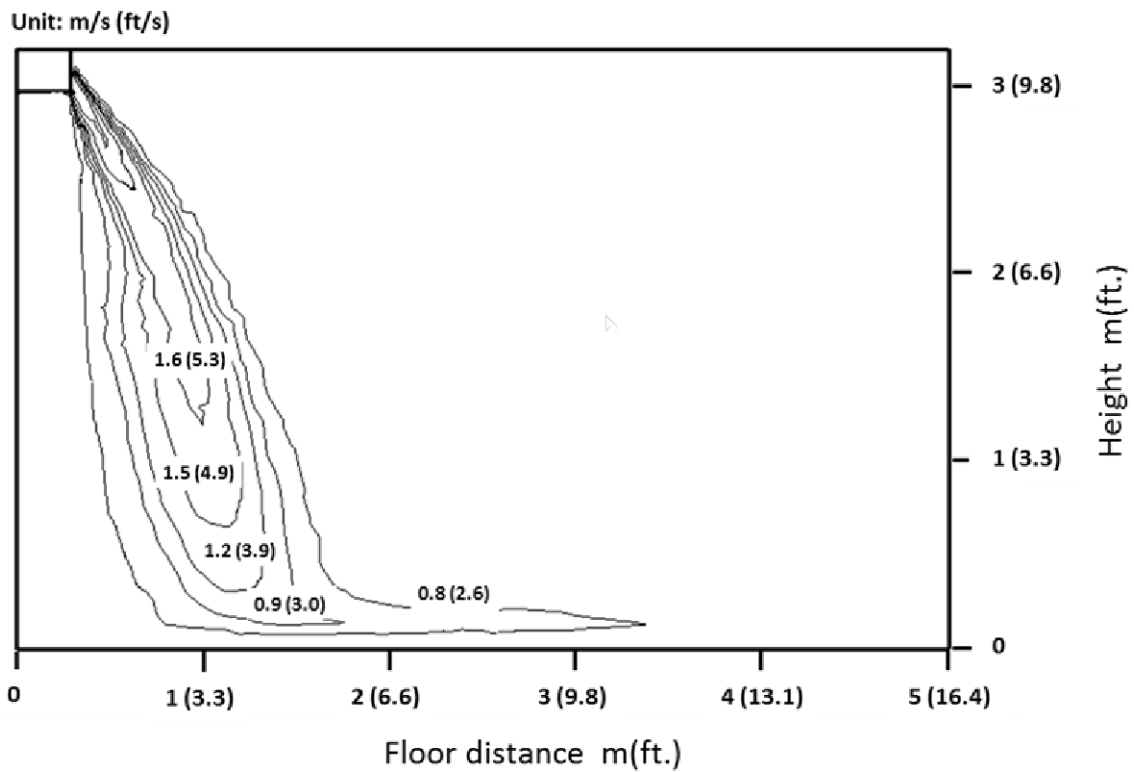


Figure 23 – Heating mode with 60° swing

VII. Sound Data

1. Sound Pressure Levels

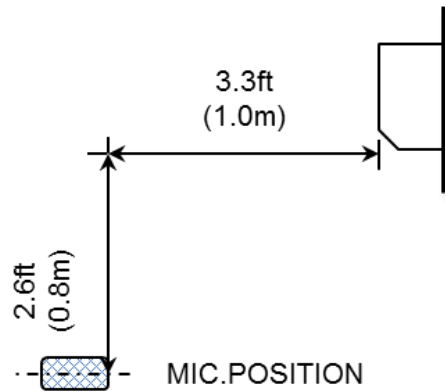


Figure 24 – Overall Sound Levels

Table 15 – Sound Pressure Level

Model	Fan speed		
	H	M	L
40VMW005---3	31.7	31.7	31.7
40VMW007---3	34.0	32.2	31.2
40VMW009---3	34.5	32.6	31.8
40VMW012---3	36.4	34.6	32.8
40VMW015---3	41.7	39.5	38.4
40VMW018---3	41.8	40.2	38.9
40VMW024---3	43.2	42.0	36.8
40VMW030---3	48.3	43.6	38.1

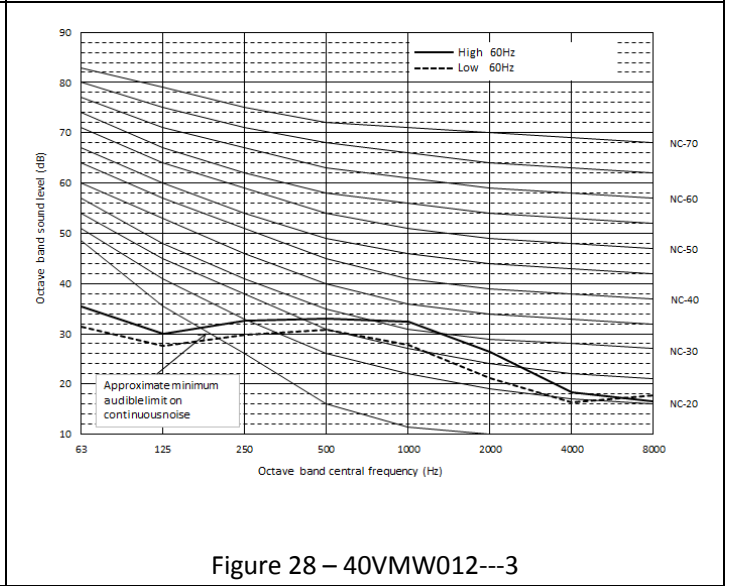
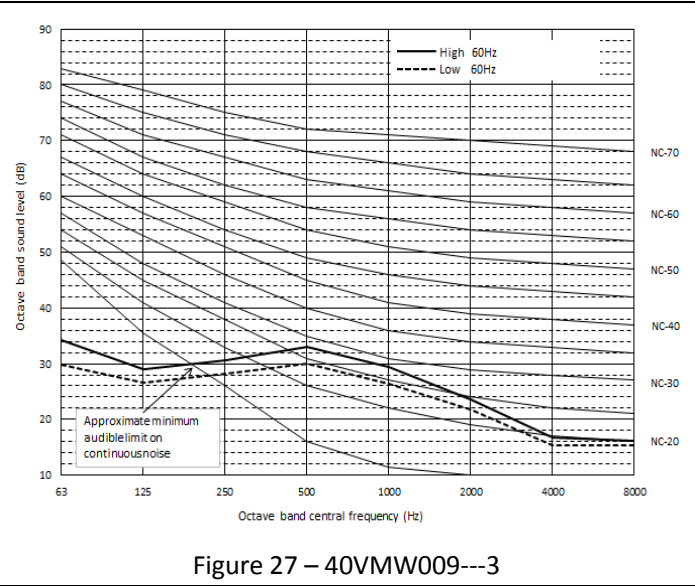
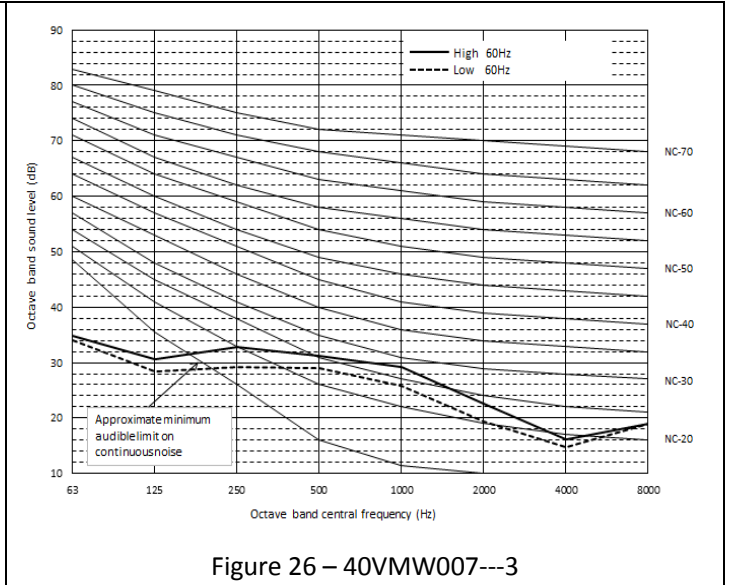
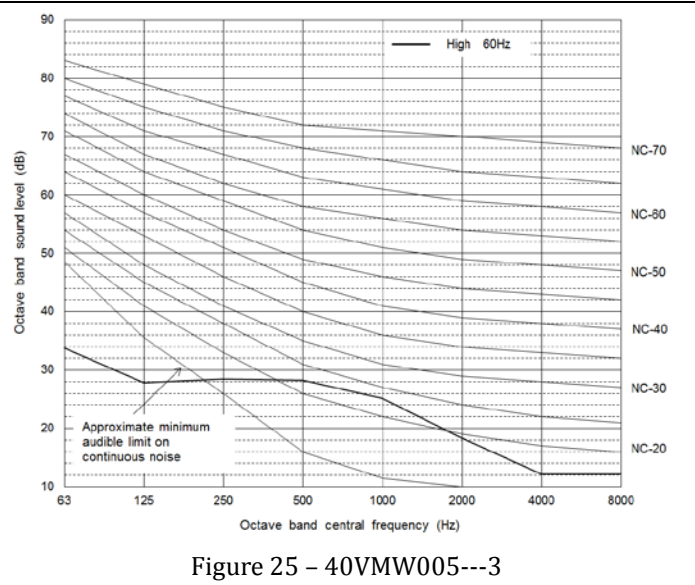
NOTE: Units are dBA.

2. NC Curves

NOTES:

External Static Pressure: 0 in. (0 Pa)

Power source: 208/230V-1Ph-60Hz



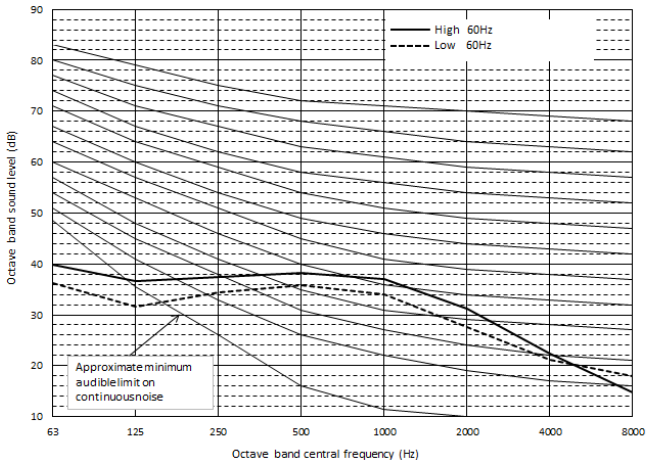


Figure 29 – 40VMW015---3

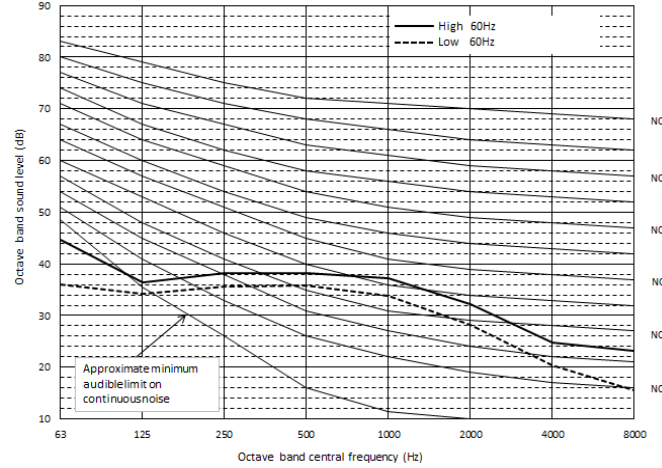


Figure 30 – 40VMW018---3

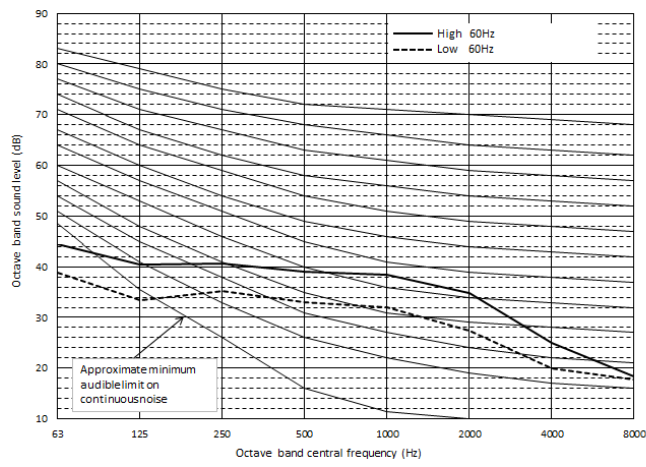


Figure 31 – 40VMW024---3

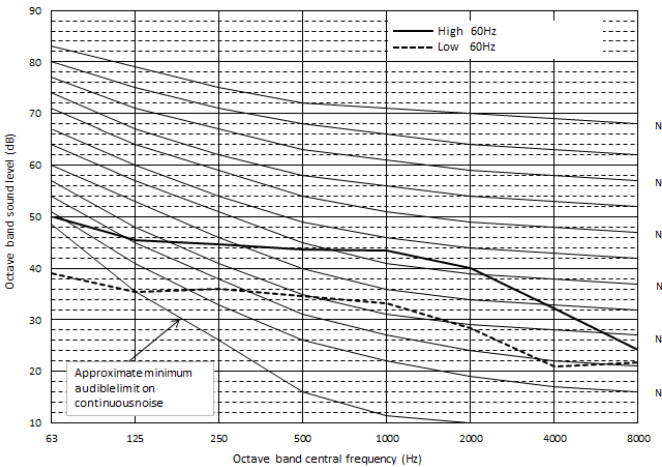


Figure 32 – 40VMW030---3

VIII. Capacity Data Tables

Table 17 – Cooling Capacity

Model	Unit Size	Indoor air temp.											
		68°F DB / 57°F WB		71°F DB / 60 °F WB		75°F DB / 63°F WB		80°F DB / 67 °F WB		85°F DB / 71 °F WB		90°F DB / 75 °F WB	
		TC	SC	TC	SC	TC	SC	TC	SC	TC	SC	TC	SC
40VMW	5	2.93	2.93	3.55	3.55	4.17	4.17	5.00	4.67	5.33	4.85	5.66	5.01
	7	4.40	4.40	5.33	5.33	6.26	5.89	7.50	6.47	8.00	6.70	8.49	6.90
	9	5.57	5.57	6.75	5.98	7.93	6.62	9.50	7.30	10.13	7.52	10.76	7.71
	12	7.04	6.68	8.53	7.16	10.02	7.94	12.00	8.77	12.79	9.00	13.59	9.21
	15	8.80	8.64	10.66	9.23	12.52	10.23	15.00	11.28	15.99	11.60	16.98	11.88
	18	10.56	10.21	12.79	10.92	15.02	12.10	18.00	13.36	19.19	13.73	20.38	14.05
	24	14.08	12.62	17.06	13.61	20.03	15.13	24.00	16.76	25.59	17.17	27.17	17.52
	30	17.60	15.43	21.32	16.68	25.04	18.56	30.00	20.58	31.98	21.05	33.97	21.45

Rated Condition: Evaporation temperature is 42.8°F with high speed airflow.

Table 18 – Heating Capacity

Model	Unit Size	Indoor air temp.					
		61 °FDB	64 °FDB	67 °FDB	70 °FDB	73 °FDB	75 °FDB
		TC	TC	TC	TC	TC	TC
40VMW	5	6.36	6.24	6.12	6.00	5.60	5.33
	7	9.01	8.84	8.67	8.50	7.93	7.55
	9	11.56	11.34	11.12	10.90	10.17	9.68
	12	14.31	14.04	13.77	13.50	12.60	11.99
	15	18.02	17.68	17.34	17.00	15.86	15.10
	18	22.27	21.84	21.42	21.00	19.59	18.66
	24	28.63	28.08	27.54	27.00	25.19	23.99
	30	36.05	35.37	34.68	34.00	31.72	30.21

Rated Condition: Condensation temperature is 114.8°F.

TC = Total capacity; KBTU/h

SC = Sensible capacity; KBTU/h

