



VARIABLE REFRIGERANT FLOW SYSTEMS

VRF VVCA

Upflow/Horizontal Air Handler Models - 60HZ

Bulletin No. 210709

June 2015

PRODUCT SPECIFICATIONS

The Upflow/Horizontal Right-Hand Air Handler has accessible electrical controls, hook-up ports and internally mounted expansion valve kit. It is low-sound and has a multi-speed centrifugal fan and variable speed blower motor.



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Warranty

Components - Limited one year.

Features

- **Pre-Heat Function** - Delays the operation of the blower until the indoor coil has reached a pre-determined temperature which prevents the discharge of cold air while the system is operating in the “heating” mode.
- **LED Readout/Infrared Receiver Panel** - Mounted on unit (may be remotely located). LEDs display unit operation status, and codes for maintenance and servicing. Infrared receiver for use with a wireless remote control (not furnished).
- **Auto Addressing (Heat Pump Systems Only)** - Eliminates the need to manually address individual controllers in the field. Allows pre-addressed units before installation.

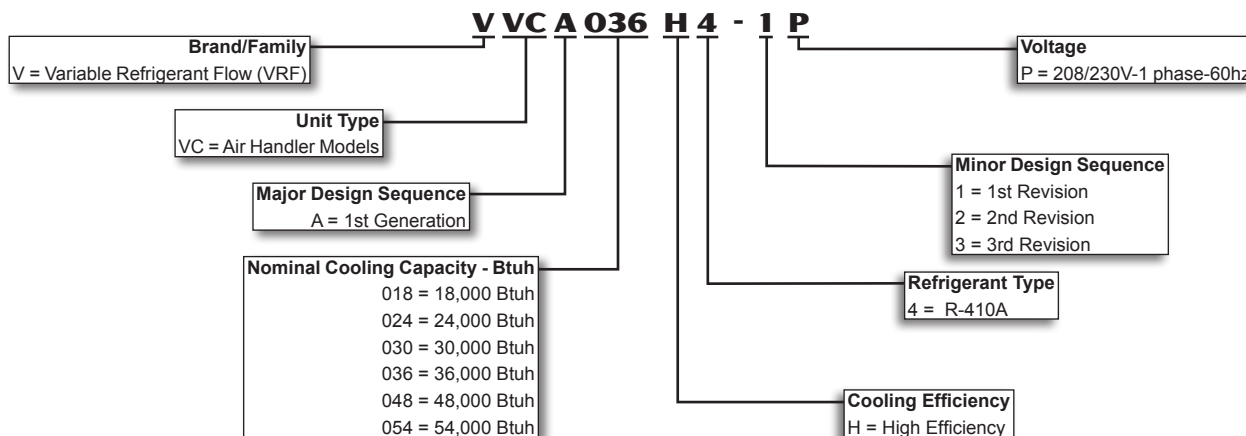


- **Auto Restart** - Automatically restores the previous function setting if power is interrupted.
- **Expansion Valve** - Assures optimal performance throughout the application range.
- **Sweat Connections** - Vapor and liquid lines have sweat connections that extended outside of the cabinet for ease of connection. See dimension drawing for locations.
- **Blower** - Direct drive, variable-speed ECM motor. maintains specified air volumes up to a maximum of 0.8 in. w.g. total external static.
- **Cabinet** - Painted, galvanized steel cabinet, fully insulated. Upflow and horizontal-right hand air discharge installations only. Flanges on cabinet allow easy supply air duct connection. Filter access door for easy filter replacement. Electrical inlets provided in sides and top of cabinet. See dimension drawing for locations.

Optional Accessories

- **Electric Heat** - Field installs internal to unit cabinet. Available in several kW sizes. See Electric Heat tables. Electric heat low voltage controls plug-in to air handler.

MODEL NUMBER IDENTIFICATION



SPECIFICATIONS

018 - 030

General Data		Nominal kBtuh	018	024	030
		Model Number	VVCA018H4	VVCA024H4	VVCA030H4
¹ Cooling Performance	Net Cooling Capacity - Btuh		18,000	24,000	30,000
	Total Unit Power Input (W)		220	290	390
	Rated current (A)		1.2.	2.1	2.8
¹ Heating Performance	Net Heating Capacity - Btuh		21,000	27,000	34,000
	Total Unit Power Input (W)		220	290	390
	Rated current (A)		1.2.	2.1	2.8
Refrigerant	Type		R-410A	R-410A	R-410A
Indoor Fan Motor	Motor Output - hp		1/2	1/2	1/2
Indoor Coil	Number of rows		4	4	4
	Fin spacing - in.		1/16	1/16	1/16
	Coil length x width - in.		17.5 x 16.5	17.5 x 16.5	17.5 x 16.5
	Number of circuits		8	8	8
	Tube outside diameter and type - in.		9/32 - Rifled Copper Tubing		
	Fin type		Hydrophilic Coated Aluminum		
	Expansion device type		Electronic Expansion Valve		
	Design Pressure (high / low)- psig		650	650	650
Indoor Coil Connections	Liquid pipe o.d. - in. (sweat)		3/8	3/8	3/8
	Vapor pipe o.d. - in. (sweat)		5/8	5/8	5/8
	Drain connection o.d. - in.		3/4	3/4	3/4
Indoor Blower	Airflow (high / medium / low) - cfm		650 / 550 / 460	800 / 730 / 600	1000 / 870 / 750
	Sound data (high / medium / low) dBA		48 / 45 / 43	49 / 47 / 43	52 / 49 / 47
Filter Size (not furnished) - in.			18 x 20 x 1	18 x 20 x 1	18 x 20 x 1
Weight Data	Unit weight (net / shipping) - lbs.		123/147	123/147	123/147
ELECTRICAL DATA					
	Line voltage data - 60 hz - 1ph		208/230V	208/230V	208/230V
	² Maximum overcurrent protection (amps)		15	15	15
	³ Minimum circuit ampacity		3.8	3.8	3.8
	Indoor Blower Motor - Full load amps		3	3	3

¹ Nominal capacities are based on the following conditions (with 25 ft. of connecting refrigerant lines);

- Cooling Ratings - 95°F outdoor air temperature and 80°F db/67°F wb entering indoor coil air.
- Heating Ratings - 47°F db/43°F wb outdoor air temperature and 70°F db entering indoor coil air.

² HACR type circuit breaker or fuse.

³ Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.

SPECIFICATIONS
036 - 054

General Data		Nominal kBtuh	036	048	054
		Model Number	VVCA036H4	VVCA048H4	VVCA054H4
¹ Cooling Performance	Net Cooling Capacity - Btuh		36,000	48,000	54,000
	Total Unit Power Input (W)		350	590	700
	Rated current (A)		2.5	3.95	4.6
¹ Heating Performance	Net Heating Capacity - Btuh		40,000	54,000	60,000
	Total Unit Power Input (W)		350	590	700
	Rated current (A)		2.5	3.95	4.6
Refrigerant	Type		R-410A	R-410A	R-410A
Indoor Fan Motor	Motor Output - hp		3/4	3/4	3/4
Indoor Coil	Number of rows		4	4	4
	Fin spacing - in.		1/16	1/16	1/16
	Coil length x width - in.		20 x 21.5	20 x 21.5	20 x 21.5
	Number of circuits		12	12	12
	Tube outside diameter and type - in.		9/32 - Rifled Copper Tubing		
	Fin type		Hydrophilic Coated Aluminum		
	Expansion device type		Electronic Expansion Valve		
Indoor Coil Connections	Design Pressure - psig		650	650	650
	Liquid pipe o.d. - in. (sweat)		3/8	3/8	3/8
	Vapor pipe o.d. - in. (sweat)		5/8	5/8	5/8
	Drain connection o.d. - in.		3/4	3/4	3/4
Indoor Blower	Airflow (high / medium / low) - cfm		1200 / 1050 / 900	1600 / 1360 / 1120	1800 / 1530 / 1260
	Sound data (high / medium / low) dBA		53 / 50 / 47	57 / 54 / 52	58 / 57 / 55
Filter Size (not furnished) - in.			20 x 22 x 1	20 x 22 x 1	20 x 22 x 1
Weight Data	Unit weight (net / shipping) - lbs.		163/190	163/190	163/190
ELECTRICAL DATA					
	Line voltage data - 60 hz - 1ph		208/230V	208/230V	208/230V
	² Maximum overcurrent protection (amps)		15	15	15
	³ Minimum circuit ampacity		5.3	5.3	5.3
	Indoor Blower Motor - Full load amps		4.2	4.2	4.2

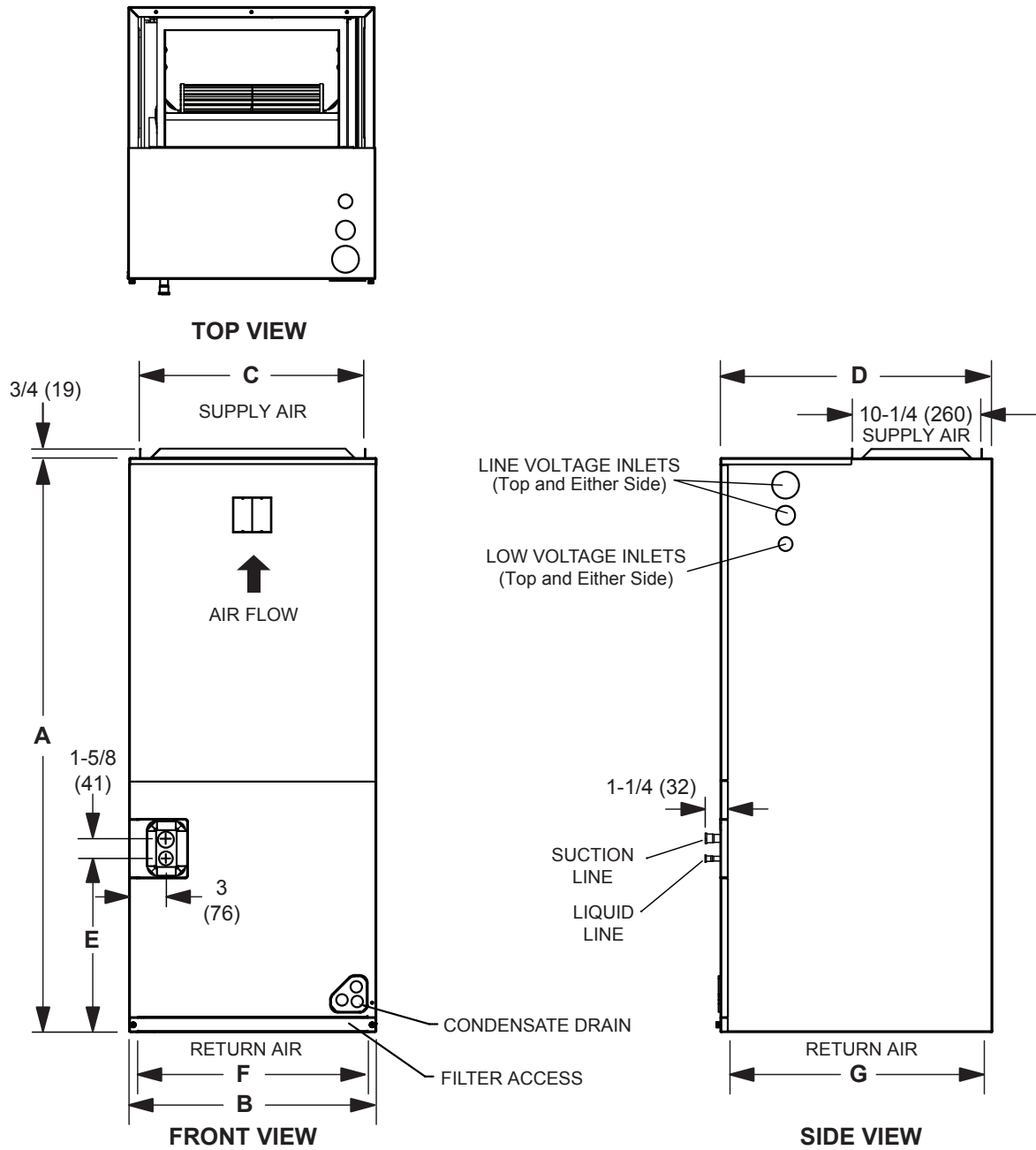
¹ Nominal capacities are based on the following conditions (with 25 ft. of connecting refrigerant lines);

- Cooling Ratings - 95°F outdoor air temperature and 80°F db/67°F wb entering indoor coil air.
- Heating Ratings - 47°F db/43°F wb outdoor air temperature and 70°F db entering indoor coil air.

² HACR type circuit breaker or fuse.

³ Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.

DIMENSIONS - INCHES (MM) - UPFLOW POSITION SHOWN



Dimension	018-030		036-054	
	in.	mm	in.	mm
A	45-3/4	1162	53-3/4	1365
B	19-3/4	502	22	560
C	17-7/8	454	19-1/2	495
D	21-5/8	549	24	610
E	13-3/4	349	19-1/2	495
F	18-1/2	470	20-3/8	518
G	20-3/4	527	22-3/4	578

INSTALLATION CLEARANCES WITH ELECTRIC HEAT

Model No.	018, 024, 030, 036	048, 054
Cabinet	0 inch (0 mm)	0 inch (0 mm)
To Plenum	0 inch (0 mm)	0 inch (0 mm)
To Outlet Duct within 3 feet (914 mm)	0 inch (0 mm)	0 inch (0 mm)
Service / Maintenance	See Note #1	

¹ Front service access - 24 inches (610 mm) minimum.

BLOWER DATA

Size			External Static Pressure - in. w.g.								
			0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8
018	High	cfm	650	650	650	650	650	650	650	650	650
		Watts	40.4	60.2	80.2	98.4	118.4	143.0	164.5	187.0	214.8
	Medium	cfm	550	550	550	550	550	550	550	550	550
		Watts	26.5	45.3	62.6	82.5	99.0	122.2	143.3	161.5	184.3
	Low	cfm	460	460	460	460	460	460	460	460	460
		Watts	13.4	33.2	50.3	66.6	86.7	105.3	121.2	136.3	156.4
024	High	cfm	800	800	800	800	800	800	800	800	800
		Watts	75.4	100.7	125.1	148.6	172.4	196.3	228.4	253.7	283.4
	Medium	cfm	730	730	730	730	730	730	730	730	730
		Watts	54.0	77.0	100.0	120.0	143.0	164.0	190.0	216.0	238.0
	Low	cfm	600	600	600	600	600	600	600	600	600
		Watts	36.3	55.8	76.6	96.0	116.6	135.8	157.3	182.4	204.2
030	High	cfm	1000	1000	1000	1000	1000	1000	1000	1000	1000
		Watts	129.9	157.3	184.6	216.0	248.5	278.7	318.1	349.3	387.8
	Medium	cfm	870	870	870	870	870	870	870	870	870
		Watts	93.1	115.5	141.3	167.5	192.7	222.7	251.4	275.8	311.9
	Low	cfm	750	750	750	750	750	750	750	750	750
		Watts	61.4	81.8	104.5	125.2	149.6	173.4	194.0	220.7	250.5
036	High	cfm	1200	1200	1200	1200	1200	1200	1200	1200	1200
		Watts	100.6	129.7	157.8	190.9	222.8	252.3	284.2	309.9	345.4
	Medium	cfm	1050	1050	1050	1050	1050	1050	1050	1050	1050
		Watts	73.9	99.9	125.2	159.1	186.4	208.4	238.7	269.0	301.0
	Low	cfm	900	900	900	900	900	900	900	900	900
		Watts	48.5	71.0	94.1	119.9	144.0	165.0	214.8	239.3	269.7
048	High	cfm	1600	1600	1600	1600	1600	1600	1600	1600	1600
		Watts	225.5	265.4	307.7	343.4	394.2	428.7	473.0	528.7	584.3
	Medium	cfm	1360	1360	1360	1360	1360	1360	1360	1360	1360
		Watts	144.0	171.5	208.7	237.5	272.2	305.3	343.1	386.5	423.7
	Low	cfm	1120	1120	1120	1120	1120	1120	1120	1120	1120
		Watts	92.0	117.3	146.9	176.3	204.2	233.2	262.5	290.0	328.6
054	High	cfm	1800	1800	1800	1800	1800	1800	1800	1800	1800
		Watts	331.8	368.1	422.0	466.7	522.1	573.9	619.4	684.2	700.0
	Medium	cfm	1530	1530	1530	1530	1530	1530	1530	1530	1530
		Watts	195.2	237.6	270.4	305.7	346.1	385.8	432.5	467.1	513.3
	Low	cfm	1260	1260	1260	1260	1260	1260	1260	1260	1260
		Watts	113.2	140.4	171.2	205.1	237.9	268.2	297.6	335.6	366.6

ELECTRIC HEAT DATA

018-036

VVCA018H4

Description	Input			Blower Motor Full Load Amps	² Minimum Circuit Ampacity	³ Maximum Overcurrent Protection	Blower Speed		
	Volt	kW	¹ Btuh				Low	Medium	High
5 kW V8EH0050P-1P (13P59)	208	3.8	12,800	3.0	26.8	30	•	•	•
	220	4.2	14,300	3.0	27.8	30	•	•	•
	230	4.6	15,700	3.0	28.8	30	•	•	•
	240	5.0	17,100	3.0	29.8	30	•	•	•
7.5 kW V8EH0080P-1P (13P63)	208	5.6	19,200	3.0	37.8	40	---	•	•
	220	6.3	21,500	3.0	39.8	30	---	•	•
	230	6.9	23,500	3.0	41.8	45	---	•	•
	240	7.5	25,600	3.0	42.8	45	---	•	•

VVCA024H4

Description	Input			Blower Motor Full Load Amps	² Minimum Circuit Ampacity	³ Maximum Overcurrent Protection	Blower Speed		
	Volt	kW	¹ Btuh				Low	Medium	High
5 kW V8EH0050P-1P (13P59)	208	3.8	12,800	3.0	26.8	30	•	•	•
	220	4.2	14,300	3.0	27.8	30	•	•	•
	230	4.6	15,700	3.0	28.8	30	•	•	•
	240	5.0	17,100	3.0	29.8	30	•	•	•
7.5 kW V8EH0080P-1P (13P63)	208	5.6	19,200	3.0	37.8	40	•	•	•
	220	6.3	21,500	3.0	39.8	40	•	•	•
	230	6.9	23,500	3.0	41.8	45	•	•	•
	240	7.5	25,600	3.0	42.8	45	•	•	•
10 kW V8EH0100P-1P (13P64)	208	7.5	25,600	3.0	48.8	50	---	•	•
	220	8.4	28,700	3.0	51.8	55	---	•	•
	230	9.2	31,400	3.0	53.8	55	---	•	•
	240	10.0	34,100	3.0	55.8	60	---	•	•

VVCA030H4

Description	Input			Blower Motor Full Load Amps	² Minimum Circuit Ampacity	³ Maximum Overcurrent Protection	Blower Speed		
	Volt	kW	¹ Btuh				Low	Medium	High
5 kW V8EH0050P-1P (13P59)	208	3.8	12,800	3.0	26.8	30	•	•	•
	220	4.2	14,300	3.0	27.8	30	•	•	•
	230	4.6	15,700	3.0	28.8	30	•	•	•
	240	5.0	17,100	3.0	29.8	30	•	•	•
7.5 kW V8EH0080P-1P (13P63)	208	5.6	19,200	3.0	37.8	40	•	•	•
	220	6.3	21,500	3.0	39.8	45	•	•	•
	230	6.9	23,500	3.0	41.8	45	•	•	•
	240	7.5	25,600	3.0	42.8	45	•	•	•
10 kW V8EH0100P-1P (13P64)	208	7.5	25,600	3.0	48.8	50	•	•	•
	220	8.4	28,700	3.0	51.8	55	•	•	•
	230	9.2	31,400	3.0	53.8	55	•	•	•
	240	10.0	34,100	3.0	55.8	60	•	•	•

NOTE - Circuit 1 Minimum Circuit Ampacity includes the Blower Motor Full Load Amps.

¹ Electric heater capacity only - does not include additional blower motor heat capacity.

² Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements. Use wires suitable for at least 167°F.

³ HACR type breaker or fuse.

VVCA036H4

Description	Input			Blower Motor Full Load Amps	² Minimum Circuit Ampacity	³ Maximum Overcurrent Protection	Blower Speed		
	Volt	kW	¹ Btuh				Low	Medium	High
5 kW V8EH0050P-1P (13P59)	208	3.8	12,800	4.2	28.3	30	•	•	•
	220	4.2	14,300	4.2	29.3	30	•	•	•
	230	4.6	15,700	4.2	30.3	35	•	•	•
	240	5.0	17,100	4.2	31.3	35	•	•	•
7.5 kW V8EH0080P-1P (13P63)	208	5.6	19,200	4.2	39.3	40	•	•	•
	220	6.3	21,500	4.2	41.3	45	•	•	•
	230	6.9	23,500	4.2	42.3	45	•	•	•
	240	7.5	25,600	4.2	44.3	45	•	•	•
10 kW V8EH0100P-1P (13P64)	208	7.5	25,600	4.2	50.3	55	•	•	•
	220	8.4	28,700	4.2	53.3	55	•	•	•
	230	9.2	31,400	4.2	55.3	55	•	•	•
	240	10.0	34,100	4.2	57.3	60	•	•	•

VVCA048H4, VVCA054H4

Description	Input			Blower Motor Full Load Amps	² Minimum Circuit Ampacity	³ Maximum Overcurrent Protection	Blower Speed		
	Volt	kW	¹ Btuh				Low	Medium	High
5 kW V8EH0050P-1P (13P59)	208	3.8	12,800	4.2	28.3	30	•	•	•
	220	4.2	14,300	4.2	29.3	30	•	•	•
	230	4.6	15,700	4.2	30.3	35	•	•	•
	240	5.0	17,100	4.2	31.3	35	•	•	•
7.5 kW V8EH0080P-1P (13P63)	208	5.6	19,200	4.2	39.3	40	•	•	•
	220	6.3	21,500	4.2	41.3	45	•	•	•
	230	6.9	23,500	4.2	42.3	45	•	•	•
	240	7.5	25,600	4.2	44.3	45	•	•	•
10 kW V8EH0100P-1P (13P64)	208	7.5	25,600	4.2	50.3	55	•	•	•
	220	8.4	28,700	4.2	53.3	55	•	•	•
	230	9.2	31,400	4.2	55.3	55	•	•	•
	240	10.0	34,100	4.2	57.3	60	•	•	•
15 kW V8EH0150P-1P (13P75)	208	11.3	38,400	4.2	73.3	80	---	•	•
	220	12.6	43,000	4.2	77.3	80	---	•	•
	230	13.8	47,000	4.2	80.3	90	---	•	•
	240	15.0	51,000	4.2	83.3	90	---	•	•
20 kW V8EH0200P-1P (13P76)	208	15.0	51,200	4.2	95.3	100	---	•	•
	220	16.8	57,300	4.2	101.3	105	---	•	•
	230	18.4	62,700	4.2	105.3	110	---	•	•
	240	20.0	68,200	4.2	109.3	110	---	•	•

NOTE - Circuit 1 Minimum Circuit Ampacity includes the Blower Motor Full Load Amps.

¹ Electric heater capacity only - does not include additional blower motor heat capacity.

² Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements. Use wires suitable for at least 167°F.

³ HACR type breaker or fuse.

COOLING CAPACITY

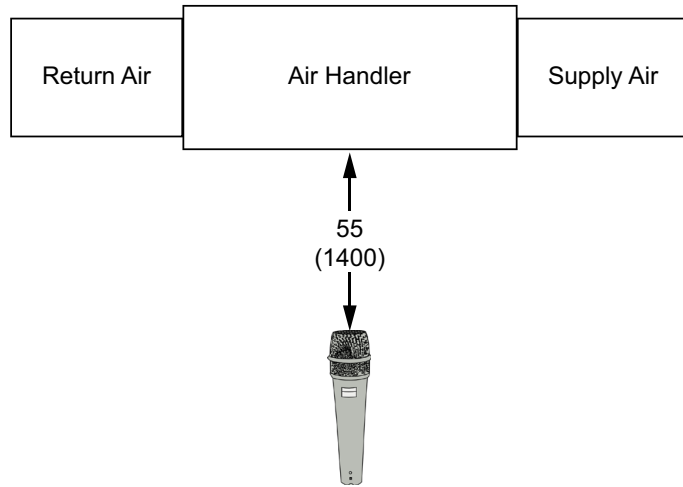
Size	Outdoor Temperature °F (Dry Bulb)	Indoor Temperature - °F (Dry Bulb / Wet Bulb)											
		67 / 57		71 / 60		75 / 63		80 / 67		85 / 71		90 / 75	
		Total	Sensible	Total	Sensible	Total	Sensible	Total	Sensible	Total	Sensible	Total	Sensible
		MBH	MBH	MBH	MBH	MBH	MBH	MBH	MBH	MBH	MBH	MBH	MBH
018	50	10.56	8.40	12.79	10.17	15.02	11.94	18.00	14.31	20.98	16.68	21.45	17.06
	55	10.56	8.40	12.79	10.17	15.02	11.94	18.00	14.31	20.94	16.64	21.11	16.78
	60	10.56	8.40	12.79	10.17	15.02	11.94	18.00	14.31	20.59	16.37	20.76	16.51
	65	10.56	8.40	12.79	10.17	15.02	11.94	18.00	14.31	20.25	16.09	20.42	16.23
	70	10.56	8.40	12.79	10.17	15.02	11.94	18.00	14.31	19.90	15.82	20.07	15.96
	75	10.56	8.40	12.79	10.17	15.02	11.94	18.00	14.31	19.55	15.55	19.73	15.68
	80	10.56	8.40	12.79	10.17	15.02	11.94	18.00	14.31	19.21	15.27	19.38	15.41
	85	10.56	8.40	12.79	10.17	15.02	11.94	18.00	14.31	18.86	15.00	19.04	15.13
	90	10.56	8.40	12.79	10.17	15.02	11.94	18.00	14.31	18.52	14.72	18.69	14.86
	95	10.56	8.40	12.79	10.17	15.02	11.94	18.00	14.31	18.17	14.45	18.35	14.59
	100	10.56	8.40	12.79	10.17	15.02	11.94	17.65	14.04	17.83	14.17	17.99	14.30
	105	10.56	8.40	12.79	10.17	15.02	11.94	17.31	13.76	17.43	13.85	17.45	13.87
110	10.56	8.40	12.79	10.17	15.02	11.94	16.27	12.94	16.67	13.26	16.91	13.44	
115	10.56	8.40	12.24	9.73	12.54	9.97	12.94	10.29	13.34	10.61	13.74	10.92	
024	50	14.08	10.98	17.06	13.31	20.03	15.63	24.00	18.72	27.97	21.81	28.61	22.31
	55	14.08	10.98	17.06	13.31	20.03	15.63	24.00	18.72	27.91	21.77	28.15	21.95
	60	14.08	10.98	17.06	13.31	20.03	15.63	24.00	18.72	27.45	21.41	27.68	21.59
	65	14.08	10.98	17.06	13.31	20.03	15.63	24.00	18.72	26.99	21.05	27.22	21.23
	70	14.08	10.98	17.06	13.31	20.03	15.63	24.00	18.72	26.53	20.70	26.76	20.88
	75	14.08	10.98	17.06	13.31	20.03	15.63	24.00	18.72	26.07	20.34	26.30	20.52
	80	14.08	10.98	17.06	13.31	20.03	15.63	24.00	18.72	25.61	19.98	25.84	20.16
	85	14.08	10.98	17.06	13.31	20.03	15.63	24.00	18.72	25.15	19.62	25.38	19.80
	90	14.08	10.98	17.06	13.31	20.03	15.63	24.00	18.72	24.69	19.26	24.92	19.44
	95	14.08	10.98	17.06	13.31	20.03	15.63	24.00	18.72	24.23	18.90	24.46	19.08
	100	14.08	10.98	17.06	13.31	20.03	15.63	23.54	18.36	23.77	18.54	23.99	18.71
	105	14.08	10.98	17.06	13.31	20.03	15.63	23.08	18.00	23.23	18.12	23.27	18.15
110	14.08	10.98	17.06	13.31	20.03	15.63	21.70	16.93	22.23	17.34	22.55	17.59	
115	14.08	10.98	16.32	12.73	16.72	13.04	17.25	13.46	17.79	13.87	18.32	14.29	
030	50	17.60	13.84	21.32	16.76	25.04	19.68	30.00	23.58	34.96	27.48	35.76	28.11
	55	17.60	13.84	21.32	16.76	25.04	19.68	30.00	23.58	34.89	27.43	35.18	27.65
	60	17.60	13.84	21.32	16.76	25.04	19.68	30.00	23.58	34.32	26.97	34.61	27.20
	65	17.60	13.84	21.32	16.76	25.04	19.68	30.00	23.58	33.74	26.52	34.03	26.75
	70	17.60	13.84	21.32	16.76	25.04	19.68	30.00	23.58	33.17	26.07	33.45	26.30
	75	17.60	13.84	21.32	16.76	25.04	19.68	30.00	23.58	32.59	25.62	32.88	25.84
	80	17.60	13.84	21.32	16.76	25.04	19.68	30.00	23.58	32.02	25.16	32.30	25.39
	85	17.60	13.84	21.32	16.76	25.04	19.68	30.00	23.58	31.44	24.71	31.73	24.94
	90	17.60	13.84	21.32	16.76	25.04	19.68	30.00	23.58	30.86	24.26	31.15	24.49
	95	17.60	13.84	21.32	16.76	25.04	19.68	30.00	23.58	30.29	23.81	30.58	24.03
	100	17.60	13.84	21.32	16.76	25.04	19.68	29.42	23.13	29.71	23.35	29.98	23.57
	105	17.60	13.84	21.32	16.76	25.04	19.68	28.85	22.68	29.04	22.83	29.08	22.86
110	17.60	13.84	21.32	16.76	25.04	19.68	27.12	21.32	27.79	21.84	28.18	22.15	
115	17.60	13.84	20.40	16.04	20.90	16.43	21.57	16.95	22.23	17.48	22.90	18.00	
036	50	21.12	16.50	25.59	19.98	30.05	23.47	36.00	28.12	41.95	32.76	42.91	33.51
	55	21.12	16.50	25.59	19.98	30.05	23.47	36.00	28.12	41.87	32.70	42.22	32.97
	60	21.12	16.50	25.59	19.98	30.05	23.47	36.00	28.12	41.18	32.16	41.53	32.43
	65	21.12	16.50	25.59	19.98	30.05	23.47	36.00	28.12	40.49	31.62	40.84	31.89
	70	21.12	16.50	25.59	19.98	30.05	23.47	36.00	28.12	39.80	31.08	40.15	31.35
	75	21.12	16.50	25.59	19.98	30.05	23.47	36.00	28.12	39.11	30.54	39.46	30.81
	80	21.12	16.50	25.59	19.98	30.05	23.47	36.00	28.12	38.42	30.00	38.76	30.28
	85	21.12	16.50	25.59	19.98	30.05	23.47	36.00	28.12	37.73	29.47	38.07	29.74
	90	21.12	16.50	25.59	19.98	30.05	23.47	36.00	28.12	37.04	28.93	37.38	29.20
	95	21.12	16.50	25.59	19.98	30.05	23.47	36.00	28.12	36.35	28.39	36.69	28.66
	100	21.12	16.50	25.59	19.98	30.05	23.47	35.31	27.58	35.66	27.85	35.98	28.10
	105	21.12	16.50	25.59	19.98	30.05	23.47	34.62	27.04	34.85	27.22	34.90	27.26
110	21.12	16.50	25.59	19.98	30.05	23.47	32.55	25.42	33.35	26.04	33.82	26.41	
115	21.12	16.50	24.48	19.12	25.08	19.59	25.88	20.21	26.68	20.84	27.48	21.46	

NOTE - MBH = 1000 BTUs per hour.

SOUND DATA

SOUND LEVELS

Model No.	Sound Rating Number (dBA)		
	Low	Medium	High
VVCA018H4	43	45	48
VVCA024H4	43	47	49
VVCA030H4	47	49	52
VVCA036H4	47	50	53
VVCA048H4	52	54	57
VVCA054H4	55	57	58



NOTES:

- During actual operation, these values may be higher as a result of ambient conditions.
- Semi-anechoic chamber conversion value is measured at a point 55 inches (1400 mm) under the unit.

COOLING CAPACITY

Size	Outdoor Temperature °F (Dry Bulb)	Indoor Temperature - °F (Dry Bulb / Wet Bulb)											
		67 / 57		71 / 60		75 / 63		80 / 67		85 / 71		90 / 75	
		Total	Sensible	Total	Sensible	Total	Sensible	Total	Sensible	Total	Sensible	Total	Sensible
		MBH	MBH	MBH	MBH	MBH	MBH	MBH	MBH	MBH	MBH	MBH	MBH
048	50	28.17	22.56	34.12	27.33	40.07	32.09	48.00	38.45	55.93	44.80	57.21	45.83
	55	28.17	22.56	34.12	27.33	40.07	32.09	48.00	38.45	55.83	44.72	56.29	45.09
	60	28.17	22.56	34.12	27.33	40.07	32.09	48.00	38.45	54.91	43.98	55.37	44.35
	65	28.17	22.56	34.12	27.33	40.07	32.09	48.00	38.45	53.99	43.24	54.45	43.61
	70	28.17	22.56	34.12	27.33	40.07	32.09	48.00	38.45	53.07	42.51	53.53	42.88
	75	28.17	22.56	34.12	27.33	40.07	32.09	48.00	38.45	52.15	41.77	52.61	42.14
	80	28.17	22.56	34.12	27.33	40.07	32.09	48.00	38.45	51.22	41.03	51.69	41.40
	85	28.17	22.56	34.12	27.33	40.07	32.09	48.00	38.45	50.30	40.29	50.77	40.66
	90	28.17	22.56	34.12	27.33	40.07	32.09	48.00	38.45	49.38	39.56	49.84	39.93
	95	28.17	22.56	34.12	27.33	40.07	32.09	48.00	38.45	48.46	38.82	48.92	39.19
	100	28.17	22.56	34.12	27.33	40.07	32.09	47.08	37.71	47.54	38.08	47.97	38.42
	105	28.17	22.56	34.12	27.33	40.07	32.09	46.16	36.97	46.47	37.22	46.53	37.27
	110	28.17	22.56	34.12	27.33	40.07	32.09	43.40	34.76	44.46	35.62	45.09	36.12
115	28.17	22.56	32.64	26.15	33.44	26.79	34.51	27.64	35.58	28.50	36.64	29.35	
054	50	31.69	25.10	38.38	30.40	45.07	35.70	54.00	42.77	62.93	49.84	64.36	50.98
	55	31.69	25.10	38.38	30.40	45.07	35.70	54.00	42.77	62.81	49.74	63.33	50.15
	60	31.69	25.10	38.38	30.40	45.07	35.70	54.00	42.77	61.77	48.92	62.29	49.33
	65	31.69	25.10	38.38	30.40	45.07	35.70	54.00	42.77	60.74	48.10	61.25	48.51
	70	31.69	25.10	38.38	30.40	45.07	35.70	54.00	42.77	59.70	47.28	60.22	47.69
	75	31.69	25.10	38.38	30.40	45.07	35.70	54.00	42.77	58.66	46.46	59.18	46.87
	80	31.69	25.10	38.38	30.40	45.07	35.70	54.00	42.77	57.63	45.64	58.15	46.05
	85	31.69	25.10	38.38	30.40	45.07	35.70	54.00	42.77	56.59	44.82	57.11	45.23
	90	31.69	25.10	38.38	30.40	45.07	35.70	54.00	42.77	55.56	44.00	56.07	44.41
	95	31.69	25.10	38.38	30.40	45.07	35.70	54.00	42.77	54.52	43.18	55.04	43.59
	100	31.69	25.10	38.38	30.40	45.07	35.70	52.96	41.95	53.48	42.36	53.97	42.74
	105	31.69	25.10	38.38	30.40	45.07	35.70	51.93	41.13	52.28	41.40	52.35	41.46
	110	31.69	25.10	38.38	30.40	45.07	35.70	48.82	38.67	50.02	39.62	50.73	40.18
115	31.69	25.10	36.72	29.08	37.62	29.80	38.82	30.75	40.02	31.70	41.22	32.65	

NOTE - MBH = 1000 BTUs per hour.

HEATING CAPACITY

Size	Outdoor Temperature (°F)		Indoor Temperature - °F (Dry Bulb)					
			61	64	67	70	73	75
	Dry Bulb	Wet Bulb	Total Capacity					
		MBH	MBH	MBH	MBH	MBH	MBH	
018	-3	-4	11.73	11.30	10.88	10.45	10.02	9.74
	2	1	12.85	12.43	12.00	11.57	11.14	10.86
	7	6	13.98	13.55	13.12	12.70	12.27	11.98
	12	10	14.88	14.45	14.02	13.59	13.17	12.88
	17	15	16.00	15.57	15.14	14.72	14.29	14.00
	22	20	17.12	16.69	16.27	15.84	15.41	15.13
	27	24	18.02	17.59	17.16	16.74	16.31	16.03
	32	29	19.14	18.72	18.29	17.86	17.43	17.15
	37	34	20.27	19.84	19.41	18.98	18.56	18.27
	42	38	21.16	20.74	20.31	19.88	19.45	18.56
	47	43	22.29	21.86	21.43	21.00	19.53	18.56
	52	47	23.18	22.76	22.33	21.00	19.53	18.56
57	52	24.31	23.88	22.47	21.00	19.53	18.56	
024	-3	-4	15.54	14.99	14.44	13.89	13.34	12.98
	2	1	16.87	16.32	15.77	15.22	14.67	14.30
	7	6	18.21	17.66	17.11	16.56	16.01	15.65
	12	10	19.30	18.75	18.20	17.65	17.10	16.73
	17	15	20.67	20.12	19.57	19.02	18.47	18.11
	22	20	22.06	21.51	20.97	20.42	19.87	19.50
	27	24	23.19	22.64	22.09	21.54	20.99	20.63
	32	29	24.61	24.07	23.52	22.97	22.42	22.05
	37	34	26.06	25.51	24.96	24.41	23.86	23.49
	42	38	27.22	26.67	26.12	25.57	25.03	23.86
	47	43	28.70	28.15	27.60	27.00	25.12	23.86
	52	47	29.89	29.34	28.79	27.00	25.12	23.86
57	52	31.39	30.77	28.88	27.00	25.12	23.86	
030	-3	-4	17.72	17.03	16.34	15.65	14.95	14.49
	2	1	19.68	18.98	18.29	17.60	16.91	16.45
	7	6	21.63	20.94	20.25	19.55	18.86	18.40
	12	10	23.19	22.50	21.81	21.12	20.42	19.96
	17	15	25.14	24.45	23.76	23.07	22.38	21.92
	22	20	27.10	26.41	25.71	25.02	24.33	23.87
	27	24	28.66	27.97	27.28	26.59	25.89	25.43
	32	29	30.61	29.92	29.23	28.54	27.85	27.39
	37	34	32.57	31.88	31.18	30.49	29.80	29.34
	42	38	34.13	33.44	32.75	32.05	31.36	30.05
	47	43	36.08	35.39	34.70	34.00	31.63	30.05
	52	47	37.65	36.95	36.26	34.00	31.63	30.05
57	52	39.60	38.74	36.37	34.00	31.63	30.05	
036	-3	-4	20.41	19.59	18.78	17.96	17.15	16.61
	2	1	22.75	21.94	21.12	20.31	19.50	18.95
	7	6	25.10	24.28	23.47	22.65	21.84	21.30
	12	10	26.97	26.16	25.34	24.53	23.72	23.17
	17	15	29.32	28.50	27.69	26.88	26.06	25.52
	22	20	31.66	30.85	30.04	29.22	28.41	27.86
	27	24	33.54	32.73	31.91	31.10	30.28	29.74
	32	29	35.88	35.07	34.26	33.44	32.63	32.09
	37	34	38.23	37.42	36.60	35.79	34.97	34.43
	42	38	40.11	39.29	38.48	37.66	36.85	35.35
	47	43	42.45	41.64	40.82	40.00	37.21	35.35
	52	47	44.33	43.51	42.70	40.00	37.21	35.35
57	52	46.67	45.58	42.79	40.00	37.21	35.35	

NOTE - MBH = 1000 BTUs per hour.

HEATING CAPACITY

Size	Outdoor Temperature (°F)		Indoor Temperature - °F (Dry Bulb)					
			61	64	67	70	73	75
	Dry Bulb	Wet Bulb	Total Capacity					
			MBH	MBH	MBH	MBH	MBH	MBH
048	-3	-4	30.34	29.24	28.15	27.05	25.95	25.21
	2	1	33.21	32.11	31.01	29.92	28.82	28.08
	7	6	36.08	34.98	33.88	32.78	31.68	30.95
	12	10	38.38	37.28	36.18	35.08	33.98	33.25
	17	15	41.24	40.15	39.05	37.95	36.85	36.12
	22	20	44.11	43.01	41.91	40.82	39.72	38.98
	27	24	46.41	45.31	44.21	43.11	42.01	41.28
	32	29	49.28	48.18	47.08	45.98	44.88	44.15
	37	34	52.14	51.05	49.95	48.85	47.75	47.02
	42	38	54.44	53.34	52.24	51.14	50.04	47.72
	47	43	57.31	56.21	55.11	54.00	50.23	47.72
	52	47	59.60	58.50	57.41	54.00	50.23	47.72
57	52	62.47	61.37	57.77	54.00	50.23	47.72	
054	-3	-4	32.05	30.83	29.61	28.39	27.17	26.35
	2	1	35.42	34.19	32.97	31.75	30.53	29.72
	7	6	38.78	37.56	36.34	35.12	33.90	33.08
	12	10	41.47	40.25	39.03	37.81	36.59	35.77
	17	15	44.84	43.61	42.39	41.17	39.95	39.14
	22	20	48.20	46.98	45.76	44.54	43.32	42.50
	27	24	50.89	49.67	48.45	47.23	46.01	45.19
	32	29	54.26	53.04	51.81	50.59	49.37	48.56
	37	34	57.62	56.40	55.18	53.96	52.74	51.92
	42	38	60.31	59.09	57.87	56.65	55.43	53.02
	47	43	63.68	62.46	61.23	60.00	55.81	53.02
	52	47	66.37	65.15	63.93	60.00	55.81	53.02
57	52	69.73	68.37	64.19	60.00	55.81	53.02	

NOTE - MBH = 1000 BTUs per hour.



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