



VCH/HCH AIR HANDLER

SPECIFICATIONS – Performance per ARI Std. 210/240					Model 254			
PERFORMANCE	Applied with	EER	COP	CFM	Cooling Sensible BTUH	Cooling Total BTUH	Heating Total BTUH	
	RC254E	9.1	—	8,000	173,800	233,900	—	
	—	—	—	—	—	—	—	
	—	—	—	—	—	—	—	
	—	—	—	—	—	—	—	
	RH254E	9.0	3.3	8,000	170,800	224,300	233,700	
ELECTRICAL DATA	SERVICE		Voltage-Phase-Hz		208/230-1-60	208/230-3-60	460-3-60	380/415-3-50
	3 HP MOTOR		FLA		—	8.0	4.0	4.7
			Unit Minimum Circuit Ampacity		—	10	5	6
			Max. Time Delay Fuse or HACR Breaker		—	15	15	15
	5 HP MOTOR		FLA		—	13.4	6.7	7.8
			Unit Minimum Circuit Ampacity		—	17	9	10
			Max. Time Delay Fuse or HACR Breaker		—	30	15	15
			FLA		—	—	—	—
			Unit Minimum Circuit Ampacity		—	—	—	—
			Max. Time Delay Fuse or HACR Breaker		—	—	—	—
	MECHANICAL DATA	EVAPORATOR BLOWER		DWDI, Dia." x Width" (Qty.)		15 x 15 (2)		
		DX Coil		Face Area – Sq. Ft.		14.6		
Rows Deep — Fins per Inch				4 — 13				
Hot Gas Reheat Coil		Face Area – Sq. Ft.		14.6				
		Rows Deep — Fins per Inch		1 / 10				
Liquid Sub Cooling Coil		Face Area – Sq. Ft.		14.6				
		Rows Deep — Fins per Inch		1 / 10				
Chill Water Coil		Face Area – Sq. Ft.		14.2				
		Rows Deep — Fins per Inch		4/12				
Hydronic Heat Coil		Face Area – Sq. Ft.		14.2				
		Rows Deep — Fins per Inch		1/6				
Steam Coil		Face Area – Sq. Ft.		14.2				
		Rows Deep — Fins per Inch		1/8				
Refrigerant Connections		Suction Line (Number) Size		(2) 1 3/8"				
		Liquid Line (Number) Size		(2) 1/2"				
Condensate Drain		(Number) Size		(2) 1 1/4"				
Filters		(Number) Size		(6) 16 x 25 x 2				
WEIGHTS		Unit (lbs)		815				
		Shipping Weight(lbs)		875				

Blower Performance

External Static Pressure - Inches H ₂ O														
	0.4		0.6		0.8		1.0		1.2		1.4		1.6	
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
6000	730	1.9	790	2.1	850	2.5	910	2.8	970	3.2	1030	3.6	1070	4.0
6500	750	2.2	810	2.4	865	2.8	925	3.2	980	3.6	1040	3.9	1080	4.4
7000	770	2.5	825	2.8	880	3.2	940	3.5	990	3.9	1050	4.3	1090	4.8
7500	790	2.8	840	3.1	900	3.5	950	3.9	1000	4.3	1060	4.7	—	—
8000	810	3.2	860	3.5	920	3.9	965	4.3	1010	4.7	—	—	—	—

- Notes: 1. For units with electric heat, add 0.20 inches External Static Pressure prior to making R.P.M and B.H.P. selection.
 2. For units with discharge plenum, add 0.02 inches to External Static Pressure prior to making R.P.M and B.H.P selection.
 2. Tables can be interpolated but not extrapolated.

Heating Coil Capacities

CFM	Steam Coil		Hot Water Coil			
	Heating Capacity BTUH*	°F Lvg. Air Temp.	Heating Capacity BTUH**	°F Lvg. Air Temp.	GPM	W.P.D. Ft. Head
6000	330,370	120.6	330,370	120.6	169,800	95.9
6500	345,260	118.8	345,260	118.8	177,300	94.9
7000	359,410	117.2	359,410	117.2	184,500	94.1
7500	372,460	115.6	372,460	115.6	191,400	93.3
8000	385,370	114.2	385,370	114.2	198,000	92.6

Note: Leaving air temperatures are based on 70°F entering air.

Applied Research Laboratories, Inc.



Listed

Steam Coil Correction Factors

Steam Pressure		2 PSIG	5 PSIG
Entering Air Temp. °F	40°	1.12	1.25
	50°	1.13	1.18
	60°	1.06	1.11
	70°	1.00	1.05

Hot Water Coil Correction Factors

Entering Water		Entering Air Temp.			
Temp. °F		40°	50°	60°	70°
160°		0.96	0.90	0.82	0.74
180°		1.08	1.02	0.95	0.87
200°		1.23	1.16	1.08	1.00

4 Row Chilled Water Coil Performance with 45° entering water

CFM		Capacity		Entering Air to Coil								
				75° F DB			80° F DB			85° F DB		
				63°F WB	67°F WB	71°F WB	63°F WB	67°F WB	71°F WB	63°F WB	67°F WB	71°F WB
6000	Total	172,700	216,700	280,500	192,500	226,100	284,800	204,300	240,200	289,800		
	Sensible	139,000	126,600	118,600	177,400	161,600	151,800	204,300	198,400	185,300		
	LAT	54.0/53.0	55.9/55.4	57.1/57.0	53.2/51.7	55.6/54.8	57.0/56.7	53.6/50.9	55.0/53.8	57.0/56.3		
	GPM	34.3	43.1	55.7	38.3	44.9	56.7	40.7	47.8	57.5		
	Δ P	19.1	29.0	46.6	23.4	31.3	48.1	26.1	35.1	49.4		
7000	Total	192,300	239,100	308,600	214,100	250,500	314,100	230,200	267,700	320,300		
	Sensible	156,900	141,500	131,000	200,100	181,900	169,300	260,200	224,400	208,000		
	LAT	54.7/53.5	56.7/56.1	58.0/57.9	54.1/52.3	56.4/55.5	58.1/57.6	54.7/51.3	55.9/54.5	58.0/57.2		
	GPM	38.2	47.5	61.3	42.6	49.8	62.5	45.8	53.3	63.6		
	Δ P	23.2	34.7	55.5	28.4	37.8	57.6	32.5	42.9	59.5		
8000	Total	210,800	259,700	334,000	233,100	273,400	340,700	254,700	292,600	348,400		
	Sensible	174,100	155,500	142,400	220,900	201,300	185,700	254,700	248,900	229,500		
	LAT	55.3/53.9	57.4/56.7	58.9/58.7	54.9/52.8	57.2/56.0	58.9/58.3	55.6/51.7	56.8/55.1	59.0/57.9		
	GPM	41.8	51.6	66.3	46.3	54.3	67.8	50.7	58.2	69.2		
	Δ P	27.5	40.5	64.2	33.1	44.4	67.0	39.1	50.6	69.5		

6 Row Chilled Water Coil Performance with 45° entering water

CFM		Capacity		Entering Air to Coil								
				75° F DB			80° F DB			85° F DB		
				63°F WB	67°F WB	71°F WB	63°F WB	67°F WB	71°F WB	63°F WB	67°F WB	71°F WB
6000	Total	156,100	202,700	293,200	189,200	223,500	297,600	210,900	248,100	306,500		
	Sensible	135,000	122,900	124,000	180,400	163,800	158,600	210,900	206,600	195,100		
	LAT	54.6/54.1	56.4/56.2	56.3/56.2	52.7/51.9	55.2/54.9	56.0/55.9	52.6/50.4	53.8/53.3	55.5/55.3		
	GPM	31.0	40.3	58.2	37.6	44.4	59.0	41.9	49.4	61.0		
	Δ P	1.1	1.9	3.6	1.6	2.2	3.7	2.0	2.7	4.0		
7000	Total	179,900	232,000	331,700	216,600	254,900	336,800	242,300	283,200	346,200		
	Sensible	155,900	141,300	140,500	207,500	188,200	180,800	242,300	237,600	222,700		
	LAT	54.8/54.2	56.7/56.5	56.8/56.7	53.1/52.1	55.6/55.2	56.5/56.4	53.1/50.6	54.2/53.7	56.1/55.9		
	GPM	35.7	46.1	65.8	43.1	50.6	66.8	48.2	56.3	68.7		
	Δ P	1.5	2.4	4.6	2.1	2.8	4.7	2.6	3.4	4.9		
8000	Total	203,100	259,500	364,000	242,800	284,700	369,300	272,500	315,800	380,100		
	Sensible	176,300	158,900	154,700	233,900	211,800	200,200	272,500	267,300	247,800		
	LAT	55.0/54.3	57.0/56.7	57.5/57.4	53.5/52.4	56.0/55.5	57.3/57.1	53.6/50.8	54.7/54.0	56.9/56.6		
	GPM	40.4	51.6	72.4	48.2	56.6	73.5	54.2	62.8	75.6		
	Δ P	1.9	2.9	5.4	2.6	3.4	5.6	3.2	4.2	5.9		

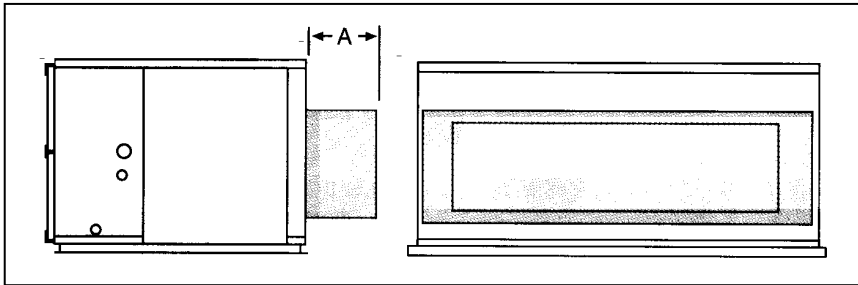
Optional Factory Installed Electric Heat

CFM	KW-->	30	35	40	45	50	55	60	65	70	75	80	85	90
	MBH	102.4	119.5	136.5	153.6	170.7	187.7	204.8	221.8	238.9	256.0	273.0	290.1	307.2
6000	Rise	15.7	18.3	21.0	23.6	26.2	28.8	31.5	34.1	36.7	39.3	41.9	44.6	47.2
6500		14.5	16.9	19.4	21.8	24.2	26.6	29.0	31.5	33.9	36.3	38.7	41.1	43.6
7000		13.5	15.7	18.0	20.2	22.5	24.7	27.0	29.2	31.5	33.7	35.9	38.2	40.4
7500		12.6	14.7	16.8	18.9	21.0	23.1	25.2	27.3	29.4	31.5	33.6	35.7	37.7
8000		11.8	13.8	15.7	17.7	19.7	21.6	23.6	25.6	27.5	29.5	31.5	33.4	35.4
208v 1phase	Amps	144.2	168.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
208v 3 phase		83.3	97.2	111.0	124.9	138.8	152.7	166.5	180.4	NA	NA	NA	NA	NA
240v 1 phase		125.0	145.8	166.7	187.5	NA	NA	NA	NA	NA	NA	NA	NA	NA
240v 3 phase		72.2	84.2	96.2	108.3	120.3	132.3	144.3	156.4	168.4	180.4	NA	NA	NA
480v 3 phase		36.1	42.1	48.1	54.1	60.1	66.2	72.2	78.2	84.2	90.2	96.2	102.2	108.3

Recommended Refrigerant Line Sizes – O.D.

Equivalent Line Length — Feet														
0 to 25					26 to 50					51 to 75				
Suction	Liquid	Hot Gas Bypass	Hot Gas Reheat		Suction	Liquid	Hot Gas Bypass	Hot Gas Reheat		Suction	Liquid	Hot Gas Bypass	Hot Gas Reheat	
			S	R				S	R				S	R
Two 1 3/8	Two 1/2	3/4	5/8	1/2	Two 1 3/8	Two 5/8	3/4	5/8	1/2	Two 1 3/8	Two 5/8	3/4	5/8	1/2

Notes: 1. Line lengths are equivalent, including all fittings. Use long radius ells only. 2. Line sizes are for both vertical and horizontal runs.
 3. Liquid line sizes and hot gas reheat return line sizes are designed to minimize system refrigerant charge.
 4. Over 75 equivalent feet, consult factory for sizing recommendations.
 5. Over 75 total feet, a special hot gas bypass system must be installed in the condensing unit **with an oil separator. Contact factory.**
 6. "S" = Hot gas supply line from RC to VC/HC; "R" = Hot gas return line from VC/HC to RC unit. *Hot gas bypass and hot gas reheat only on lead circuit of dual circuit units. Hot gas bypass and hot gas reheat normally not available for heat pump use.

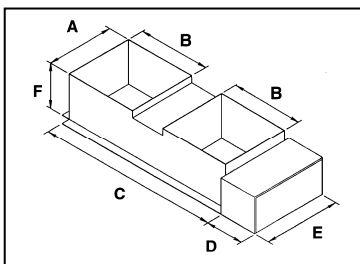
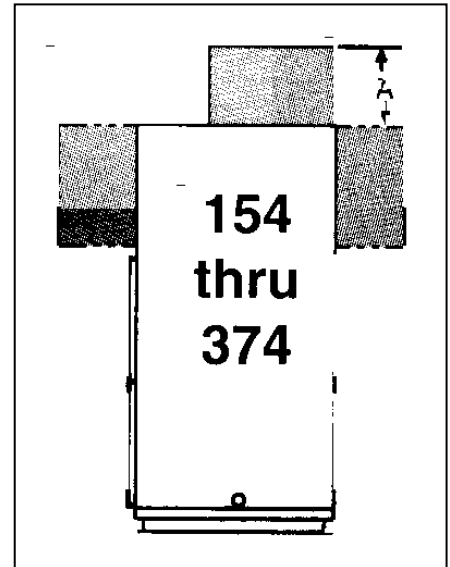


HCH and VCH Discharge electric Heaters
 Standard Depth in Direction of Airflow

KW Range	Dim. A (In.)
1 – 60	12
61 - 120	15

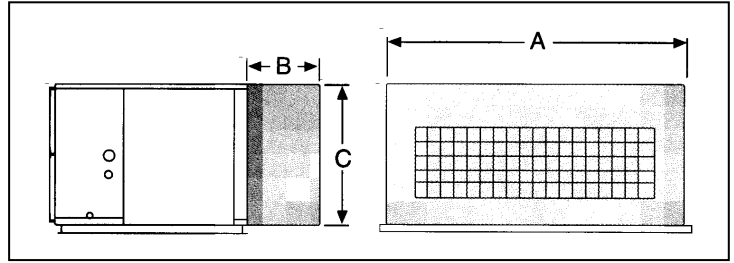
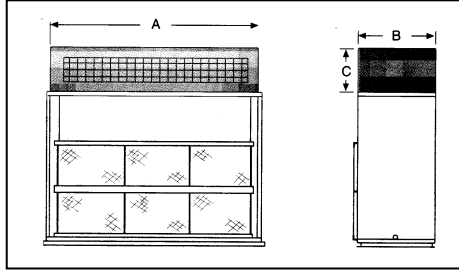
Note: Above values for Dim. A are for standard heaters, with or without air pressure switch, staging relay and non-fused disconnect. Addition of more options may require longer Dim. A. If space considerations are critical, contact factory for exact information.

Note: electric heat sections are designed for mounting directly to air handler cabinet. Electrical box is on the same end as air handler fan motor. Sub-circuit fusing is included when required. Disconnect to be furnished and filed installed by contractor.



	Electric Heaters						
	kW Range	A	B	C*	D*	E	F
VCH	1 – 60	16 1/8	18 7/8	52 5/8	12	18 1/8	12
	61 - 90	16 1/8	18 7/8	52 5/8	18	18 1/8	15
HCH	1 – 60	20 3/8	22	56 5/8	12	22 5/8	12
	61 - 90	20 3/8	22	56 5/8	18	22 5/8	15

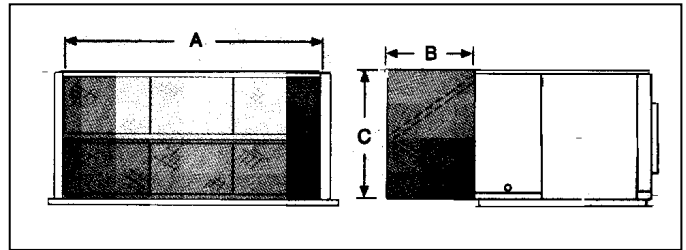
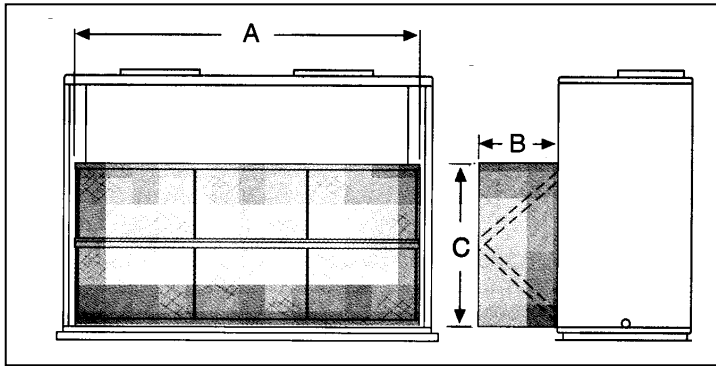
* These dimensions may vary with added heater options. Contact factory if space considerations are critical.



Discharge Plenum with 4 way Adjustable Grill

	A	B	C
HCH Model	78	24	32 3/4
VCH Model	82	30	30

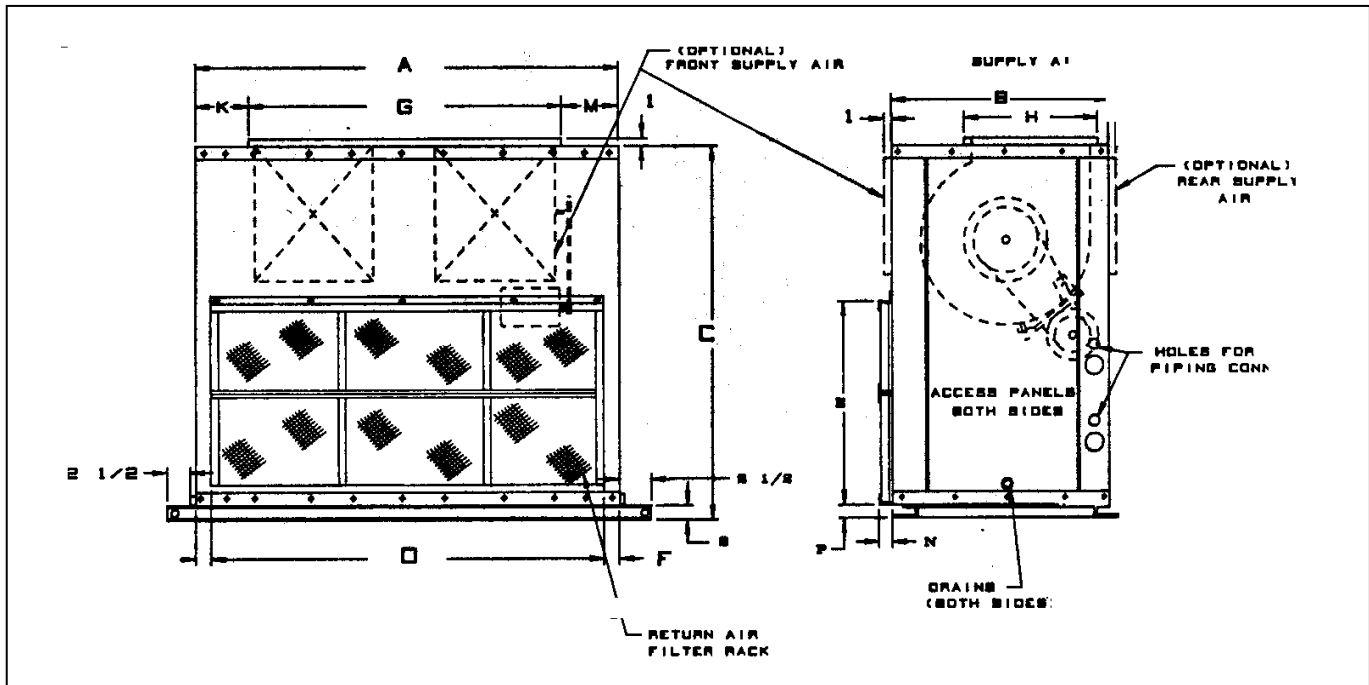
Plenums are fully insulated and shipped separate for field assembly to the air handler and can be installed 180 degrees from the view shown on the drawing.



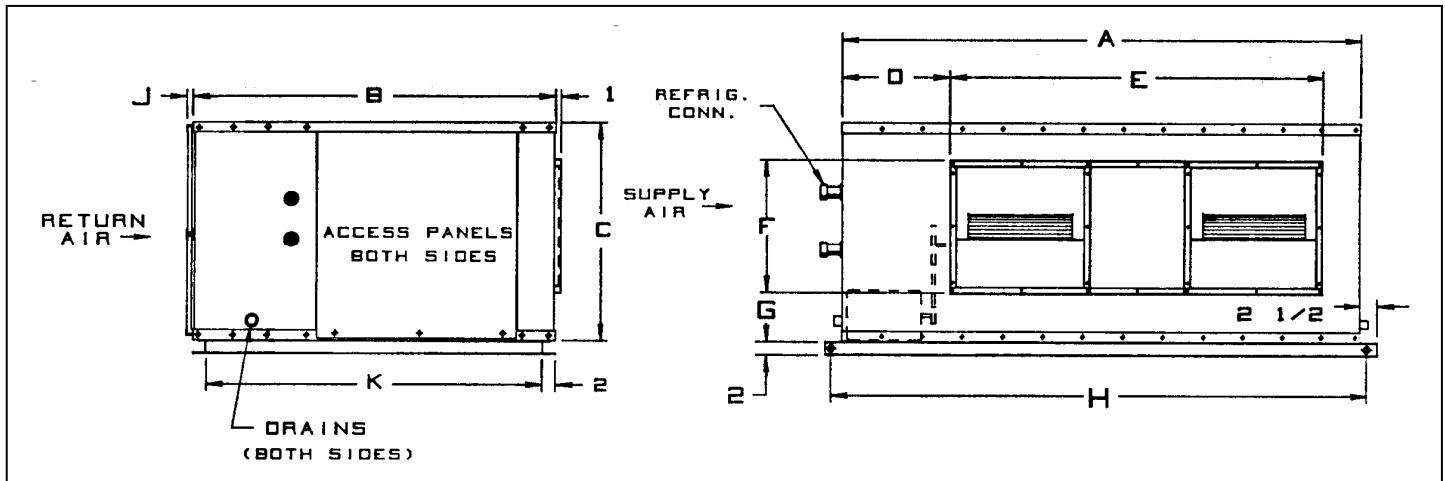
Angle Filter Section

	A	B	C	Filters, Qty. - Size
HCH	73	28	30 1/2	4 - 20 x 25 / 4 - 16 x 25
VCH	73	28	30 1/2	4 - 20 x 25 / 4 - 16 x 25

Filter sections are fully insulated and shipped separate for field assembly to the air handler. 2-inch glass fiber media filters standard.



Dimensions													
Model	A	B	C	D	E	F	G	H	J	K	M	N	P
254	82 1/8	30	62	75	32 1/2	3 1/2	54 1/2	17 7/8	3 1/8	8 1/4	19 3/8	3 3/8	3 3/4



Model	Dimensions											Return Air	
	A	B	C	D	E	F	G	H	J	K	Width	Height	
254	78	54	32 3/4	16	56 1/8	17 7/8	8 1/8	80 1/2	3 3/8	50	75	32 3/4	

Specifications subject to change without notice

Installation Code and Annual Inspections:

All installations and service of ADDISON equipment must be performed by a contractor qualified in the installation and service of equipment sold and supplied by Addison and conform to all requirements set forth in the ADDISON manuals and all applicable governmental authorities pertaining to the installation, service and operation of the equipment. To help facilitate optimum performance and safety, Addison recommends that a qualified contractor annually inspect your ADDISON equipment and perform service where necessary, using only replacement parts sold and supplied by ADDISON.

Further Information: Applications, engineering and detailed guidance on systems design, installation and equipment performance is available through ADDISON representatives. Please contact us for any further information you may require, including the Installation, Operation and Service Manual.

These products are not for residential use.

This document is intended to assist licensed professionals in the exercise of their professional judgment.



**7050 Overland Road
Orlando, FL 32810 USA
Telephone: 407.292.4400
Fax: 407.290.1329
www.addison-hvac.com**