



RH SERIES AIR COOLED HEAT PUMP UNITS

SPECIFICATIONS Rated in Accordance with ARI Standard 210/240		RH304F			
PERFORMANCE		Rated with Optional Air Handler Model			VCH/HCH304
		Rated CFM			10,000
	COOLING	Total BTUH			284,600
		Sensible BTUH			214,100
		EER			9.1
	HEATING	Total BTUH			279,300
COP			3.2		
ELECTRICAL	SERVICE	Voltage-Phase-Hz	208/230-3-60	460-3-60	380/415-3-50
	COMPRESSOR	Nom. Tons — Type (Qty)	24 Ton — Semi-Hermetic (1)		
		RLA	86	43	43
		LRA	428	214	214
		IPLV	11.2		
	Standard Capacity Reduction % Full load — (Optional)		NA — (100-50-0)		
	CONDENSER FAN MOTOR(S)	Horse Power — (Qty)	1 — (3)		
		FLA (ea)	6.2	3.1	2.2
		Total CFM	18,000		
	UNIT	RLA	104.6	52.3	49.6
Unit Minimum Circuit Ampacity		127	64	61	
Max. Time Delay Fuse or HACR Breaker		200	100	100	
PHYSICAL DATA	CONDENSER COIL Alum. Fins on Copper Tubes	Face Area (sq.ft.)	33.4		
		Rows Deep — Fins per Inch	3 — 12		
		Suction Line OD In.	2 1/8		
		Liquid Line OD In.	5/8		
	WEIGHTS	Unit (lbs)	1,415		
		Shipping Weight (lbs)	1,545		

Cooling Rating 95°F Air on Outdoor Coil

Rated With Air Handler Model	CFM		Entering Air to Indoor 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
VCH304 or HCH304	8000	TOTAL BTUH	267,000	284,500	302,000	271,400	285,600	304,200	285,100	289,400	304,900
		SENS BTUH	197,900	162,000	126,800	238,500	205,200	169,700	271,600	246,900	212,500
		WATTS INPUT	26,720	27,400	28,070	26,890	27,450	28,110	27,430	27,610	28,200
		LVG DB/WB	52.5/51.5	56.6/55.8	60.6/60.1	52.9/51.3	56.7/55.8	60.7/60.0	54.1/50.6	56.9/55.6	60.9/60.0
	9000	TOTAL BTUH	272,400	289,600	307,000	279,100	291,200	309,200	295,600	296,900	310,700
		SENS BTUH	209,600	170,700	131,600	256,800	217,900	178,500	281,500	267,500	226,200
		WATTS INPUT	26,930	27,540	28,200	27,190	27,700	28,300	27,790	27,890	28,420
		LVG DB/WB	53.8/52.7	57.8/57.0	61.7/61.3	54.1/52.4	58.0/56.9	62.0/61.2	56.6/51.7	58.0/56.7	62.2/61.2
	10000	TOTAL BTUH	276,900	293,600	310,600	287,800	295,900	313,200	304,600	304,800	315,400
		SENS BTUH	221,000	178,400	134,400	274,100	230,300	187,100	290,100	272,800	239,500
		WATTS INPUT	27,110	27,700	28,410	27,520	27,850	28,450	28,130	28,150	28,610
		LVG DB/WB	54.9/53.7	58.8/58.0	62.8/62.3	55.1/53.3	59.1/57.9	63.0/62.2	58.6/52.6	60.2/57.6	63.2/62.1

Note: Above performance data gives gross evaporator capacity with 25' refrigerant lines and full condenser operation at 60 HZ.

Correction Factor Multiplier for Other Ambients					
Temperature	95°F	100°F	105°F	110°F	115°F
Total Capacity	1.00	.98	.95	.91	.87
Sensible Capacity	1.00	.99	.97	.95	.93
Watts	1.00	1.03	1.05	1.08	1.11
Gross EER	1.00	.95	.90	.84	.78

50 HZ Application and Performance Multipliers		
Capacity	At 60 HZ Evaporator CFM	At 50HZ Evaporator CFM
Total	0.91	0.88
Sensible	0.95	.086
Watts	0.85	.083

Notes: 50HZ evaporator CFM is 0.83 times full rated CFM shown above.

Applied Research Laboratories, Inc.



Listed

Heating Ratings 70°F Air on Coil of Indoor Air Handler Model VCH304 or HCH304

CFM	Capacity	Ambient Air on Outdoor Coil °F							
		10	17	20	30	40	47	50	60
10,000	BTUH	144,700	163,500	172,300	203,900	238,700	264,700	276,200	305,600
	Watts	16,510	17,740	18,230	19,780	21,240	22,240	22,670	23,710

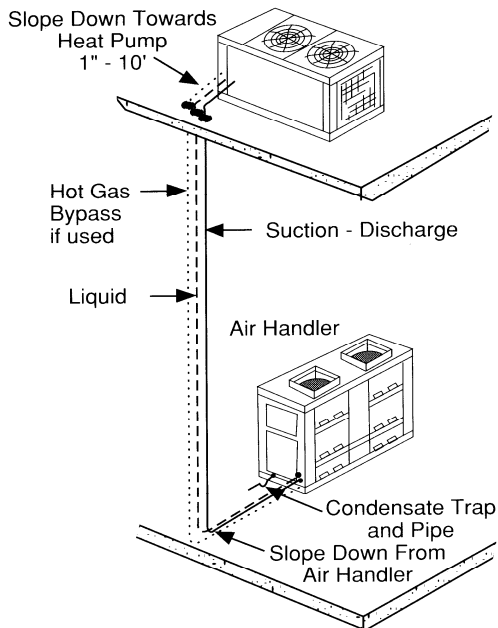
Note: Heating capacities are gross capacities. For net capacities, multiply blower BHP required times 2545 BTU per BHP and add to BTUH in table. Add blower BHP times 746 Watts per BHP to Watts for total power consumption. Refer to Air Handler specification for blower BHP.

Heating Capacity Correction Multiplier To be applied to rated heating capacity to determine capacity at other than rated CFM.	CFM	Multiplier
	- 10%	0.985
	Rated	1.00
	+ 10%	1.015

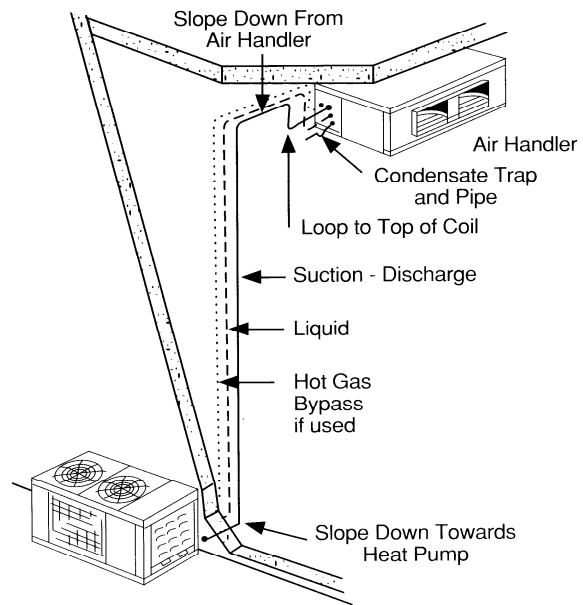
Recommended Refrigerant Line Sizes — Inches O.D.						
Equivalent Line Length — Feet						
0 to 25			26 to 50		51 to 75	
Suction	Liquid	Hot Gas Bypass	Suction	Liquid	Suction	Liquid
2 1/8	5/8	NA	2 1/8	3/4	2 1/8	3/4

- Notes:
- Line lengths are equivalent, including all fittings. Use long radius ells only.
 - Line sizes are for both vertical and horizontal runs.
 - Over 75 equivalent feet, **consult factory** for sizing recommendations.
 - Liquid line sizes are designed to minimize system refrigerant charge.
 - Hot gas bypass is typically used with the welded hermetic compressor only with an equivalent line length of 25 feet or less.

Heat Pump Above Air Handler



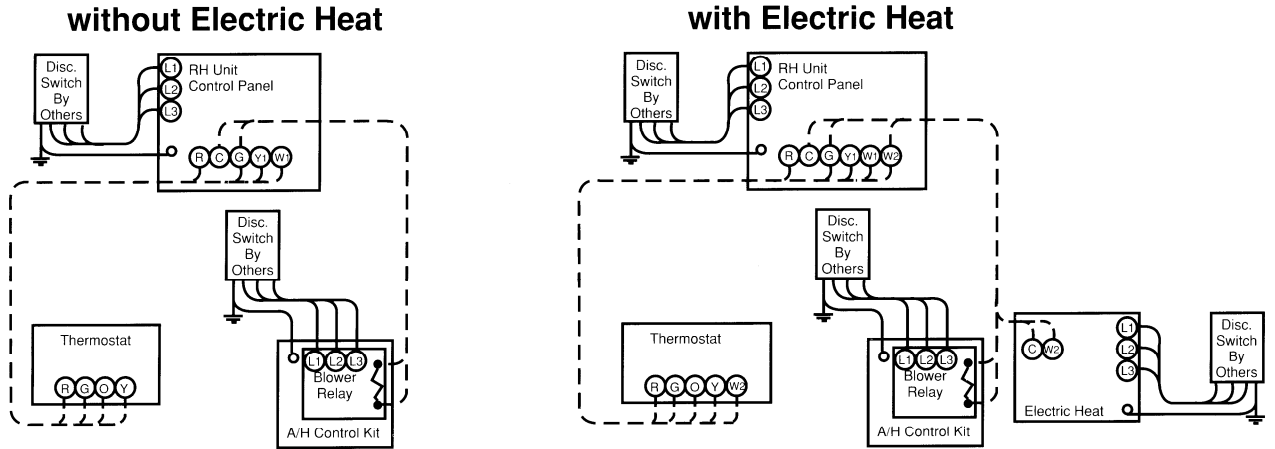
Heat Pump Below Air Handler



Field Piping: One of the most critical considerations in the installation of a split system heat pump is the proper sizing of piping so that oil will freely circulate with the refrigerant and not be trapped. In order to assure oil being carried upward in a vertical riser along with the refrigerant vapor, a velocity of 1,000 FPM must be maintained. Proper sizing is particularly important in a heat pump system because the discharge pipe on the heating cycle becomes the suction pipe in cooling and line velocities will be different in each cycle. Experience indicated 75 **equivalent** feet of pipe as the maximum practical length on heat pump installations. Pump down solenoids can not be used with heat pumps. When the air handler is installed above the compressor the vertical line must be properly sized to carry oil. The above tabulation indicates proper sizing.

Each refrigerant line run underground in a chase should be insulated with 3/4" minimum thickness closed cell foamed plastic insulation. Each line must be insulated separately.

Typical Field Wiring



Notes:

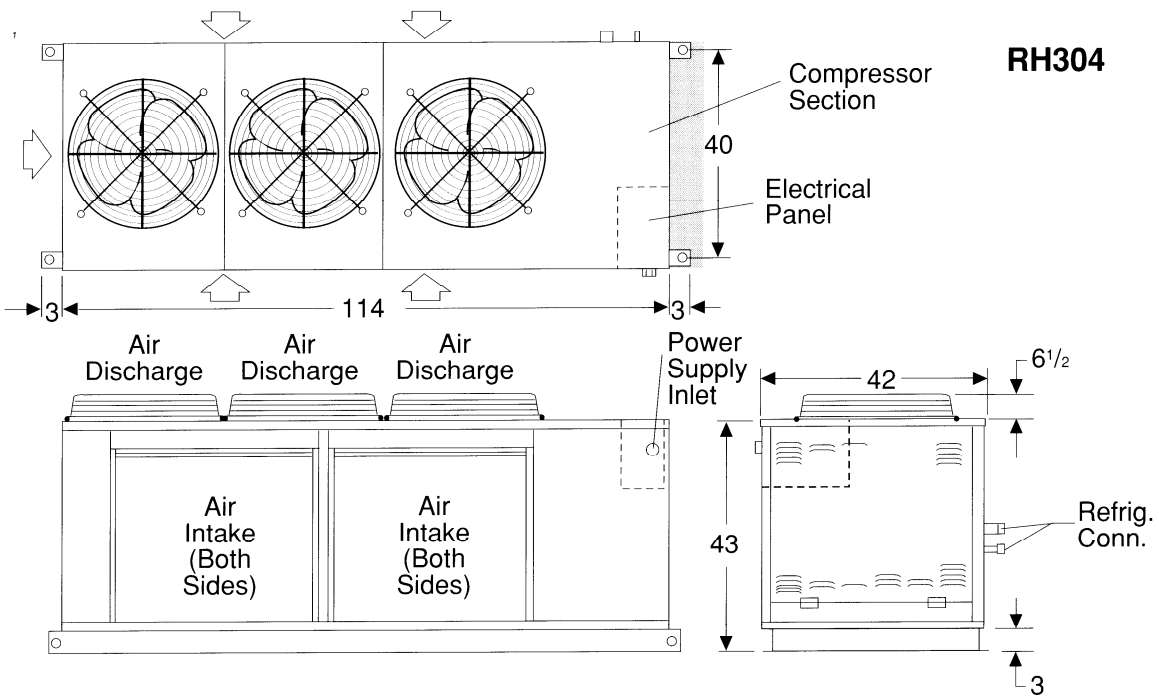
All field wiring shall conform to N.E.C. and local codes

Line voltage power source _____

24 volt control circuit - - - - -

Field Wiring
 The power distribution system should be sized based on the minimum circuit ampacities in this specification sheet. The heat pumps and air handlers should be fused in accordance with the maximum fuse sizes.
 Disconnects may be optionally mounted by the factory or may be furnished and installed by the contractor. Time delay fuses should be used.
 All field installed control wiring must be adequate to assure 24 volts to all controls.

Dimensions



↔ Indicates air inlet to condenser (leave minimum 2' free clearance).

■ Shaded area indicates 3' clearance must be left for access to compressor and electrical panel.

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.



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