



Compressor	HP	20				30				40				50			
		208-230 V		460 V		208-230 V		460 V		208-230 V		460 V		208-230 V		460 V	
Voltage V/3/60Hz		410A	134a	410A	134a	410A	134a	410A	134a	410A	134a	410A	134a	410A	134a	410A	134a
Refrigerant		410A	134a	410A	134a	410A	134a	410A	134a	410A	134a	410A	134a	410A	134a	410A	134a
RLA	Amps	47.9	33.2	20.7	14.9	55.7	43.5	26.0	22.3	75	60.0	36.4	27.8	94.3	71.5	46.4	39.6
LRA	Amps	267	265	130	120	320	420	160	175	485	460	215	215	560	560	260	220
MCA	Amps	107.8	74.7	46.6	33.5	125.3	97.9	58.5	50.2	168.8	135.0	81.9	62.6	212.2	160.9	104.4	89.1
MOCP	Amps	119.8	83.0	51.8	37.3	139.3	108.8	65.0	55.8	187.5	150.0	91.0	69.5	235.8	178.8	116.0	99.0
Dry Weight	lbs	1170				1320				1690				1820			

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Customer:
Project:
Sales Rep:
Date: AUGUST 2008 Brochure No 801
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H H Systems, INC

SERIES: DS 20/30/40/50

Water-to-Water Heat Pumps

Source Water Entering Temp = 90°F	HEATING MODE										COOLING MODE				
	Units	R-410A					R-134a					R-410A	R-134a	Units	
	Building Water Entering Temp	°F					100	110	120	130	140	55	55	°F	Building Water Entering Temp
Building Water Leaving Temp	°F					110	120	130	140	150	45	45	°F	Building Water Leaving Temp	
Heating Capacity	MBTUH					1025.7	978.9	653.5	632.5	612.4	624.8	401.0	MBTUH	Cooling Capacity	
Condenser Water Flow	GPM					205.1	195.8	130.7	126.5	122.5	125.0	80.2	GPM	Evaporator Water Flow	
Evaporator Load	MBTUH					849.5	782.6	509.3	472.7	435.4	782.0	502.6	MBTUH	Condenser Load	
Evaporator Water Flow	GPM					169.9	156.5	101.9	94.5	87.1	156.4	100.5	GPM	Condenser Water Flow	
Power Input	kW					51.6	57.5	42.2	46.8	51.9	46.1	29.8	kW	Power Input	
COP	-					5.82	4.99	4.53	3.96	3.46	13.56	13.47	-	EER	
Source Water Leaving Temp	°F					80	80	80	80	80	100	100	°F	Source Water Leaving Temp	

Source Water Entering Temp = 80°F	HEATING MODE										COOLING MODE				
	Units	R-410A					R-134a					R-410A	R-134a	Units	
	Building Water Entering Temp	°F					90	100	110	120	130	140	55	55	°F
Building Water Leaving Temp	°F					100	110	120	130	140	150	45	45	°F	Building Water Leaving Temp
Heating Capacity	MBTUH					1070.6	1025.7	978.9	653.5	632.5	612.4	666.7	424.6	MBTUH	Cooling Capacity
Condenser Water Flow	GPM					214.1	205.1	195.8	130.7	126.5	122.5	133.3	84.9	GPM	Evaporator Water Flow
Evaporator Load	MBTUH					911.9	849.5	782.6	509.3	472.7	435.4	808.0	515.7	MBTUH	Condenser Load
Evaporator Water Flow	GPM					182.4	169.9	156.5	101.9	94.5	87.1	161.6	103.1	GPM	Condenser Water Flow
Power Input	kW					46.5	51.6	57.5	42.2	46.8	51.9	41.4	26.7	kW	Power Input
COP	-					6.74	5.82	4.99	4.53	3.96	3.46	16.10	15.92	-	EER
Source Water Leaving Temp	°F					70	70	70	70	70	70	90	90	°F	Source Water Leaving Temp

Source Water Entering Temp = 70°F	HEATING MODE										COOLING MODE					
	Units	R-410A					R-134a					R-410A	R-134a	Units		
	Building Water Entering Temp	°F					80	90	100	110	120	130	140	55	55	°F
Building Water Leaving Temp	°F					90	100	110	120	130	140	150	45	45	°F	Building Water Leaving Temp
Heating Capacity	MBTUH					1028.5	990.5	950.5	908.9	600.7	582.6	565.4	705.2	445.4	MBTUH	Cooling Capacity
Condenser Water Flow	GPM					205.7	198.1	190.1	181.8	120.1	116.5	113.1	141.0	89.1	GPM	Evaporator Water Flow
Evaporator Load	MBTUH					885.7	832.3	774.6	712.6	457.6	424.0	389.9	832.4	527.7	MBTUH	Condenser Load
Evaporator Water Flow	GPM					177.1	166.5	154.9	142.5	91.5	84.8	78.0	166.5	105.5	GPM	Condenser Water Flow
Power Input	kW					41.8	46.4	51.6	57.5	41.9	46.5	51.4	37.3	24.1	kW	Power Input
COP	-					7.20	6.26	5.40	4.63	4.20	3.67	3.22	18.92	18.48	-	EER
Source Water Leaving Temp	°F					60	60	60	60	60	60	60	80	80	°F	Source Water Leaving Temp

Source Water Entering Temp = 60°F	HEATING MODE										COOLING MODE						
	Units	R-410A					R-134a					R-410A	R-134a	Units			
	Building Water Entering Temp	°F					70	80	90	100	110	120	130	140			°F
Building Water Leaving Temp	°F					80	90	100	110	120	130	140	150			°F	Building Water Leaving Temp
Heating Capacity	MBTUH					904.0	876.2	846.5	815.4	783.2	507.3	494.5	482.7			MBTUH	Cooling Capacity
Condenser Water Flow	GPM					180.8	175.2	169.3	163.1	156.6	101.5	98.9	96.5			GPM	Evaporator Water Flow
Evaporator Load	MBTUH					776.3	734.5	689.0	639.8	587.0	366.7	338.7	310.3			MBTUH	Condenser Load
Evaporator Water Flow	GPM					155.3	146.9	137.8	128.0	117.4	73.3	67.7	62.1			GPM	Condenser Water Flow
Power Input	kW					37.4	41.5	46.2	51.4	57.5	41.2	45.7	50.5			kW	Power Input
COP	-					7.08	6.18	5.37	4.64	3.99	3.61	3.17	2.80			-	EER
Source Water Leaving Temp	°F					50	50	50	50	50	50	50	50			°F	Source Water Leaving Temp

Source Water Entering Temp = 50°F	HEATING MODE										COOLING MODE							
	Units	R-410A					R-134a					R-410A	R-134a	Units				
	Building Water Entering Temp	°F					60	70	80	90	100	110	120	130	140			°F
Building Water Leaving Temp	°F					70	80	90	100	110	120	130	140	150			°F	Building Water Leaving Temp
Heating Capacity	MBTUH					785.2	765.9	744.7	722.2	698.8	675.1	428.8	420.5	413.4			MBTUH	Cooling Capacity
Condenser Water Flow	GPM					157.0	153.2	148.9	144.4	139.8	135.0	85.8	84.1	82.7			GPM	Evaporator Water Flow
Evaporator Load	MBTUH					671.4	639.1	603.7	565.2	523.7	479.2	291.0	268.0	244.7			MBTUH	Condenser Load
Evaporator Water Flow	GPM					134.3	127.8	120.7	113.0	104.7	95.8	58.2	53.6	48.9			GPM	Condenser Water Flow
Power Input	kW					33.4	37.1	41.3	46.0	51.3	57.4	40.4	44.7	49.4			kW	Power Input
COP	-					6.90	6.04	5.28	4.60	3.99	3.45	3.11	2.76	2.45			-	EER
Source Water Leaving Temp	°F					40	40	40	40	40	40	40	40	40			°F	Source Water Leaving Temp

Source Water Entering Temp = 40°F	HEATING MODE										COOLING MODE							
	Units	R-410A					R-134a					R-410A	R-134a	Units				
	Building Water Entering Temp	°F					60	70	80	90	100	110	120	130	140			°F
Building Water Leaving Temp	°F					70	80	90	100	110	120	130	140			°F	Building Water Leaving Temp	
Heating Capacity	MBTUH					661.5	647.2	631.7	615.4	599.3	581.3	362.8	358.5			MBTUH	Cooling Capacity	
Condenser Water Flow	GPM					132.3	129.4	126.3	123.1	119.9	116.3	72.6	71.7			GPM	Evaporator Water Flow	
Evaporator Load	MBTUH					548.5	521.2	491.3	458.9	424.1	386.9	228.4	209.8			MBTUH	Condenser Load	
Evaporator Water Flow	GPM					109.7	104.2	98.3	91.8	84.8	77.4	45.7	42.0			GPM	Condenser Water Flow	
Power Input	kW					33.1	36.9	41.1	45.8	51.3	56.9	39.4	43.6			kW	Power Input	
COP	-					5.85	5.13	4.50	3.93	3.42	2.99	2.70	2.41			-	EER	
Source Water Leaving Temp	°F					30	30	30	30	30	30	30	30			°F	Source Water Leaving Temp	

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DS 50 Data Sheet