



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																	
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					406.0	387.5	258.8	249.8	240.8	245.9	162.5	MBTUH	Cooling Capacity	
Condenser Water Flow	GPM					81.2	77.5	51.8	50.0	48.2	49.2	32.5	GPM	Evaporator Water Flow	
Evaporator Load	MBTUH					334.9	309.1	205.7	190.2	174.0	307.5	200.4	MBTUH	Condenser Load	
Evaporator Water Flow	GPM					67.0	61.8	41.1	38.0	34.8	61.5	40.1	GPM	Condenser Water Flow	
Power Input	kW					20.8	23.0	15.6	17.5	19.6	18.1	11.1	kW	Power Input	
COP	-					5.71	4.94	4.87	4.19	3.60	13.62	14.64	-	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					423.8	406.0	387.5	258.8	249.8	240.8	262.1	171.3	MBTUH	Cooling Capacity
Condenser Water Flow	GPM					84.8	81.2	77.5	51.8	50.0	48.2	52.4	34.3	GPM	Evaporator Water Flow
Evaporator Load	MBTUH					359.1	334.9	309.1	205.7	190.2	174.0	317.9	205.4	MBTUH	Condenser Load
Evaporator Water Flow	GPM					71.8	67.0	61.8	41.1	38.0	34.8	63.6	41.1	GPM	Condenser Water Flow
Power Input	kW					19.0	20.8	23.0	15.6	17.5	19.6	16.3	10.0	kW	Power Input
COP	-					6.55	5.71	4.94	4.87	4.19	3.60	16.04	17.17	-	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					406.8	391.6	375.7	359.3	238.4	230.6	222.9	277.2	178.7	MBTUH	Cooling Capacity
Condenser Water Flow	GPM					81.4	78.3	75.1	71.9	47.7	46.1	44.6	55.4	35.7	GPM	Evaporator Water Flow
Evaporator Load	MBTUH					348.7	327.7	305.4	281.6	185.2	171.0	156.0	327.8	209.7	MBTUH	Condenser Load
Evaporator Water Flow	GPM					69.7	65.5	61.1	56.3	37.0	34.2	31.2	65.6	41.9	GPM	Condenser Water Flow
Power Input	kW					17.0	18.7	20.6	22.8	15.6	17.5	19.6	14.8	9.1	kW	Power Input
COP	-					7.00	6.14	5.35	4.62	4.48	3.87	3.33	18.69	19.66	-	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					356.8	345.4	333.5	321.2	308.6	202.0	196.3	190.9			MBTUH	Cooling Capacity
Condenser Water Flow	GPM					71.4	69.1	66.7	64.2	61.7	40.4	39.3	38.2			GPM	Evaporator Water Flow
Evaporator Load	MBTUH					305.4	288.9	271.3	252.3	232.0	148.8	136.8	124.2			MBTUH	Condenser Load
Evaporator Water Flow	GPM					61.1	57.8	54.3	50.5	46.4	29.8	27.4	24.8			GPM	Condenser Water Flow
Power Input	kW					15.1	16.6	18.2	20.2	22.5	15.6	17.5	19.6			kW	Power Input
COP	-					6.95	6.11	5.36	4.66	4.03	3.80	3.30	2.86			-	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					309.1	301.0	292.4	283.4	274.3	265.0	170.7	167.0	163.7			MBTUH	Cooling Capacity
Evaporator Load	MBTUH					263.9	251.0	237.2	222.4	206.4	189.2	117.8	107.8	97.3			MBTUH	Condenser Load
Evaporator Water Flow	GPM					52.8	50.2	47.4	44.5	41.3	37.8	23.6	21.6	19.5			GPM	Condenser Water Flow
Power Input	kW					13.2	14.6	16.2	17.9	19.9	22.2	15.5	17.4	19.5			kW	Power Input
COP	-					6.84	6.03	5.30	4.64	4.04	3.50	3.23	2.82	2.46			-	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				°F
Building Water Leaving Temp	°F					70	80	90	100	110	120	130	140				°F	Building Water Leaving Temp
Heating Capacity	MBTUH					259.0	253.0	246.8	240.4	233.9	227.5	144.1	142.2				MBTUH	Cooling Capacity
Condenser Water Flow	GPM					51.8	50.6	49.4	48.1	46.8	45.5	28.8	28.4				GPM	Evaporator Water Flow
Evaporator Load	MBTUH					215.0	204.3	192.8	180.3	166.9	152.4	91.7	83.4				MBTUH	Condenser Load
Evaporator Water Flow	GPM					43.0	40.9	38.6	36.1	33.4	30.5	18.3	16.7				GPM	Condenser Water Flow
Power Input	kW					12.9	14.3	15.8	17.6	19.6	22.0	15.4	17.2				kW	Power Input
COP	-					5.89	5.19	4.57	4.01	3.49	3.03	2.75	2.42				-	EER
Source Water Leaving Temp	°F					30	30	30	30	30	30	30	30				°F	Source Water Leaving Temp

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DS 20 Data Sheet