



Compressor	HP	120				150				180			
		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
Refrigerant													
RLA	Amps	75	60.0	36.4	27.8	94.3	71.5	46.4	39.6	107.1	N/A	56.4	44.0
LRA	Amps	485	460	215	215	560	560	260	220	680	N/A	320	320
MCA	Amps	468.8	374.9	227.5	173.8	589.4	447.1	290.0	247.5	669.4	N/A	352.5	275.0
MOCP	Amps	562.5	449.9	273.0	208.5	707.3	536.5	348.0	297.0	803.3	N/A	423.0	330.0
Dry Weight	lbs	4430				4550				5100			

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Customer:
Project:
Sales Rep:
Date: AUGUST 2008 Brochure No 801
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H H Systems, INC  
**SERIES: XS 120/150/180**  
**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					3077.2	2936.8	1960.4	1897.5	1837.1	1874.3	1202.9	MBTUH	Cooling Capacity	
Condenser Water Flow	GPM					615.4	587.4	392.1	379.5	367.4	374.9	240.6	GPM	Evaporator Water Flow	
Evaporator Load	MBTUH					2,548.6	2,347.7	1528.0	1418.1	1306.2	2346.1	1507.7	MBTUH	Condenser Load	
Evaporator Water Flow	GPM					509.7	469.5	305.6	283.6	261.2	469.2	301.5	GPM	Condenser Water Flow	
Power Input	kW					154.9	172.6	126.7	140.5	155.6	138.2	89.3	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 = 60°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					3211.8	3077.2	2936.8	1960.4	1897.5	1837.1	2000.0	1273.9	MBTUH	Cooling Capacity
Condenser Water Flow	GPM					642.4	615.4	587.4	392.1	379.5	367.4	400.0	254.8	GPM	Evaporator Water Flow
Evaporator Load	MBTUH					2,735.6	2,548.6	2,347.7	1528.0	1418.1	1306.2	2,424.0	1,547.1	MBTUH	Condenser Load
Evaporator Water Flow	GPM					547.1	509.7	469.5	305.6	283.6	261.2	484.8	309.4	GPM	Condenser Water Flow
Power Input	kW					139.5	154.9	172.6	126.7	140.5	155.6	124.2	80.0	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					3085.6	2971.6	2851.6	2726.6	1802.0	1747.7	1696.2	2115.5	1336.2	MBTUH	Cooling Capacity
Condenser Water Flow	GPM					617.1	594.3	570.3	545.3	360.4	349.5	339.2	423.1	267.2	GPM	Evaporator Water Flow
Evaporator Load	MBTUH					2657.2	2496.9	2323.8	2137.8	1372.9	1272.1	1169.6	2497.1	1583.0	MBTUH	Condenser Load
Evaporator Water Flow	GPM					531.4	499.4	464.8	427.6	274.6	254.4	233.9	499.4	316.6	GPM	Condenser Water Flow
Power Input	kW					125.5	139.1	154.7	172.5	125.7	139.4	154.3	111.8	72.3	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					2712.1	2628.7	2539.6	2446.1	2349.6	1522.0	1483.6	1448.2			MBTUH	Cooling Capacity
Condenser Water Flow	GPM					542.4	525.7	507.9	489.2	469.9	304.4	296.7	289.6			GPM	Evaporator Water Flow
Evaporator Load	MBTUH					2328.9	2203.4	2066.9	1919.5	1761.1	1100.1	1016.2	931.0			MBTUH	Condenser Load
Evaporator Water Flow	GPM					465.8	440.7	413.4	383.9	352.2	220.0	203.2	186.2			GPM	Condenser Water Flow
Power Input	kW					112.3	124.6	138.5	154.3	172.4	123.6	137.0	151.5			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 Entering Temp
Building Water Leaving Temp	°F	70	80	90	100	110	120	130	140	150			°F	Building Water Leaving Temp	
Heating Capacity	MBTUH	2355.6	2297.6	2234.1	2166.6	2096.5	2025.2	1286.3	1261.6	1240.3			MBTUH	Cooling Capacity	
Condenser Water Flow	GPM	471.1	459.5	446.8	433.3	419.3	405.0	257.3	252.3	248.1			GPM	Evaporator Water Flow	
Evaporator Load	MBTUH	2014.1	1917.3	1811.1	1695.6	1571.1	1437.5	872.9	803.9	734.1			MBTUH	Condenser Load	
Evaporator Water Flow	GPM	402.8	383.5	362.2	339.1	314.2	287.5	174.6	160.8	146.8			GPM	Condenser Water Flow	
Power Input	kW	100.1	111.4	123.9	138.0	154.0	172.2	121.1	134.1	148.3			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				°F	Building Water Entering Temp
Building Water Leaving Temp	°F	70	80	90	100	110	120	130	140				°F	Building Water Leaving Temp	
Heating Capacity	MBTUH	1984.6	1941.7	1895.1	1846.1	1797.9	1743.8	1088.5	1075.4				MBTUH	Cooling Capacity	
Condenser Water Flow	GPM	396.9	388.3	379.0	369.2	359.6	348.8	217.7	215.1				GPM	Evaporator Water Flow	
Evaporator Load	MBTUH	1645.6	1563.6	1473.9	1376.8	1272.4	1160.8	685.2	629.4				MBTUH	Condenser Load	
Evaporator Water Flow	GPM	329.1	312.7	294.8	275.4	254.5	232.2	137.0	125.9				GPM	Condenser Water Flow	
Power Input	kW	99.3	110.8	123.4	137.5	154.0	170.8	118.2	130.7				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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## XS 150 Data Sheet