

# Appendix - D

## Heat Pump Performance Data

# Specification Data - AT060

<b>PERFORMANCE DATA-FORCED AIR</b>											
<b>WATER LOOP</b>				<b>GROUND WATER</b>				<b>GROUND LOOP</b>			
FORCED AIR COOLING		FORCED AIR HEATING		FORCED AIR COOLING		FORCED AIR HEATING		FORCED AIR COOLING		FORCED AIR HEATING	
CAPACITY	EER	CAPACITY	COP	CAPACITY	EER	CAPACITY	COP	CAPACITY	EER	CAPACITY	COP
54,200	14.1	69,700	4.5	62,400	19.1	65,500	4.8	57,800	14.8	49,500	3.3

<b>PERFORMANCE DATA-HYDRONIC</b>					
<b>WATER LOOP</b>		<b>GROUND WATER</b>		<b>GROUND LOOP</b>	
HEATING		HEATING		HEATING	
CAPACITY	COP	CAPACITY	COP	CAPACITY	COP
72,000	4.6	68,200	4.9	52,200	3.4

<b>BLOWER PERFORMANCE</b>							
<b>AVAILABLE STATIC PRESSURE (WITH WET EVAPORATOR)</b>							
BLOWER SPEED	0.05	0.1	0.15	0.2	0.25	0.3	0.35
HIGH	2,400	2,350	2,320	2,300	2,280	2,200	2,165
MEDIUM	-	-	2,100	2,050	2,000	1,950	1,900
LOW	-	-	-	-	-	-	-

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## ELECTRICAL SPECIFICATIONS

MODEL		COMPRESSOR			BLOWER		LOOP PUMP		DHW PUMP	LOOP PUMP	MIN AMPS	MAX FUSE
		MCC	RLA	LRA	FLA	HP	FLA	HP				
AT060	208-230/60/1	38	23	145	5.4	3/4	1.75	1/6	0.4	2	34	60
	208-230/60/3	38	19.6	123	5.4	3/4	1.75	1/6	0.4	2	34	50

## HYDRONIC PRESSURE DROP

SIZE	FLOW (GPM)	-1°C/30°F	10°C/50°F	21°C/70°F	32°C/90°F
AT060	8	3.0	2.8	2.6	2.4
	11	4.6	4.3	4.0	3.7
	15	6.9	6.4	6.0	5.5
	18	8.8	8.2	7.6	7.1

## MECHANICAL SPECIFICATIONS

EVAPORATOR			
SQ. IN.	ROWS DEEP	TUBE SIZE	FINS PER/IN
660	3	5/16	14
BLOWER SIZE	WEIGHT		REFRIGERANT
	NET	SHIP	
9x7	135 Kg	147 Kg	R-410A
	300 lbs	324 lbs	

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<b>FORCED AIR COOLING</b>							
<b>SOURCE TEMP</b>	<b>ENTER AIR</b>	<b>TOTAL CAPACITY BTUH</b>	<b>SENSIBLE CAPACITY</b>			<b>INPUT WATTS</b>	<b>EER</b>
			<b>HUMIDITY</b>				
			<b>50%</b>	<b>60%</b>	<b>70%</b>		
10C/50F	25C/77F	63,000	53,550	47,250	40,950	3,280	14.8
	30C/86F	75,400	64,090	56,550	49,010	3,240	17.9
	35C/95F	83,000	70,550	62,250	53,950	3,230	19.8
15C/59F	25C/77F	62,000	52,700	46,500	40,300	3,550	13.7
	30C/86F	74,000	62,900	55,500	48,100	3,510	16.5
	35C/95F	81,500	69,275	61,125	52,975	3,500	18.2
20C/68F	25C/77F	61,500	52,275	46,152	39,975	3,830	12.8
	30C/86F	73,000	62,050	54,750	47,450	3,790	15.3
	35C/95F	79,000	67,150	59,250	51,350	3,780	16.6
25C/77F	25C/77F	60,500	51,425	45,375	39,325	4,130	11.9
	30C/86F	71,500	60,775	53,625	46,475	4,090	14.1
	35C/95F	76,000	64,600	57,000	49,400	4,080	15.0

<b>FORCED AIR HEATING</b>					
<b>BASED ON 230 VOLT</b>			<b>INCLUDING FAN &amp; FLOW CENTER</b>		
<b>SOURCE TEMP</b>	<b>ENTER AIR</b>	<b>HEAT OF ABSORPTION</b>	<b>TOTAL CAPACITY BTUH</b>	<b>INPUT WATTS</b>	<b>COP</b>
15C/59F	15C/59F	65,500	72,946	3,630	4.6
	18C/64F	63,500	71,479	3,890	4.3
	21C/70F	61,000	69,574	4,180	3.9
10C/50F	15C/59F	57,500	64,721	3,520	4.2
	18C/64F	56,000	63,733	3,770	3.9
	21C/70F	54,000	62,287	4,040	3.6
5C/41F	15C/59F	50,500	57,474	3,400	3.8
	18C/64F	49,000	56,487	3,650	3.6
	21C/70F	47,300	55,341	3,920	3.3
0C/32F	15C/59F	43,900	50,669	3,300	3.5
	18C/64F	42,500	49,762	3,540	3.2
	21C/70F	41,100	4,895	3,800	3.0

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<b>HYDRONIC HEATING</b>					
<b>SOURCE TEMP</b>	<b>ENTER HYDRONIC</b>	<b>HEAT OF ABSORPTION</b>	<b>TOTAL CAPACITY BTUH</b>	<b>INPUT WATTS</b>	<b>COP</b>
15C/59F	25C/77F	70,000	77,712.8	3,760	4.8
	30C/86F	65,500	74,217.9	4,250	4.2
	35C/95F	61,500	71,284.6	4,770	3.6
	40C/104F	57,000	67,974.4	5,350	3.1
10C/50F	25C/77F	60,000	67,466.7	3,640	4.3
	30C/86F	56,500	64,889.7	4,090	3.8
	35C/95F	53,000	62,415.4	4,590	3.3
	40C/104F	49,400	59,964.1	5,150	2.9
5C/41F	25C/77F	51,500	58,700	3,510	3.8
	30C/86F	48,500	56,582.1	3,940	3.4
	35C/95F	45,500	54,566.7	4,420	3.0
	40C/104F	42,400	52,574.4	4,960	2.6
0C/32F	25C/77F	43,500	50,433.3	3,380	3.4
	30C/86F	41,400	49,194.9	3,800	3.0
	35C/95F	38,500	47,217.9	4,250	2.6
	40C/104F	35,900	45,684.6	4,770	2.3