

Intertek Testing Services, Coil Test Facility
Test: 8K Water Heating Sensible Coils

Project # 3151799/001
Test of

=CONDENSING UNIT=

Manufacturer: HERMANT KALE
Model: B103489 SN:

=EVAPORATOR UNIT=

Manufacturer:
Model: SN:

Started: 6/3/2008 1:46 AM
By: D. AYERS

95DB
1600ACFM
135EWT
3GPM

Test Data for the past 30 minutes:

Barometer	:	28.762 min	28.767 max	28.764 avg	inHg
8K Supply DB	:	94.860 min	95.251 max	95.069 avg	degF
8K Supply WB	:	66.861 min	67.002 max	66.943 avg	degF
8K Discharge DB:		114.06 min	114.24 max	114.18 avg	degF
8K Discharge WB:		72.740 min	72.833 max	72.797 avg	degF
8K Liquid IN	:	134.72 min	135.07 max	134.84 avg	degF
8K Suction OUT	:	113.81 min	114.04 max	113.95 avg	degF
Ambiant Air Tem:		79.384 min	80.681 max	80.010 avg	degF
8K UUT Delta Pr:		.065223 min	.068435 max	.066962 avg	"H2O
8K Static Pres :		.14011 min	.15211 max	.14889 avg	"H2O
8K Static Pres@:		-.92050 min	-.90482 max	-.91014 avg	"H2O
8K Pres Drop Ac:		.95777 min	.97625 max	.96737 avg	"H2O
8K Water Delta :		.023709 min	.029040 max	.026211 avg	"Hg

Last 7 samples taken every 5 minutes:

Barometer	:	28.764	28.765	28.765	28.764	28.764	28.764	28.764
8K Supply DB	:	94.903	94.891	94.880	95.105	95.235	95.239	95.205
8K Supply WB	:	66.895	66.873	66.873	66.965	66.997	66.990	66.981
8K Discharge DB:		114.18	114.12	114.07	114.20	114.24	114.22	114.19
8K Discharge WB:		72.783	72.760	72.749	72.810	72.821	72.814	72.814
8K Liquid IN	:	135.07	134.95	134.85	134.79	134.77	134.74	134.79
8K Suction OUT	:	113.94	113.86	113.84	113.99	114.04	114.00	113.97
Ambiant Air Tem:		79.681	80.058	80.228	80.338	80.123	80.571	79.921
8K UUT Delta Pr:		.067132	.066888	.066429	.067717	.067002	.066083	.066426
8K Static Pres :		.14875	.14752	.15094	.14897	.15008	.14981	.14856
8K Static Pres@:		-.91119	-.90948	-.90948	-.91181	-.91009	-.90825	-.91181
8K Pres Drop Ac:		.96277	.96560	.97093	.96744	.96777	.96843	.96935
8K Tot H2O Flow:		4996.7	5011.7	5026.6	5041.6	5056.5	5071.5	5086.5
8K Water Delta :		.028690	.027357	.027708	.026024	.026024	.023709	.023709

1) Barometric Pressure	=	28.764	"Hg
2) Pressure drop Through Coil	=	.066963	"H2O
3) Static Pressure at coil inlet	=	.14889	"H2O
4) Average absolute static pressure	=	28.773	"Hg
5) Dry Bulb Temp. at Inlet of Coil	=	95.066	Deg. F
6) Wet Bulb Temp. at Inlet of Coil	=	66.942	Deg. F
7) Saturated vapor pressure at Inlet of Coil	=	.66591	"Hg
8) Specific humidity at Inlet of Coil	=	.0082453	lb/lb
9) Enthalpy at Inlet of Coil	=	31.912	Btu/lb
10) Dry Bulb Temp. at Outlet of Coil	=	114.18	Deg. F
11) Wet Bulb Temp. at Outlet of Coil	=	72.797	Deg. F
12) Saturated vapor pressure at Outlet of Coil	=	.81324	"Hg
13) Specific humidity at Outlet of Coil	=	.0085059	lb/lb
14) Enthalpy at Outlet of Coil	=	36.859	BTU/lb
15) Average Humidity Ratio	=	.0083756	lb/lb
16) Average Specific gravity	=	.99497	
17) Difference in humidity ratio	=	-.000260	lb/lb
18) Average absolute temperature	=	564.62	Deg. F
19) Average Density	=	.067299	lb/cu.ft
20) Air Pressure drop Corrected	=	.060088	"H2O
21) Dry Bulb Temp at Nozzle	=	114.18	Deg. F
22) Specific Humidity at Nozzle	=	.0081799	lb/lb
23) Specific Volume at Nozzle	=	14.662	cu.fy/lb
24) Static Pressure at Nozzle	=	-.91013	"H2O
25) Pressure drop across nozzle	=	.96739	"H2O
26) Total area of nozzles	=	.39177	sq.ft
27) Face area of test coil	=	4.0000	sq.ft
28) Dry Air Flow	=	106.51	lb/min
29) Standard Air Flow	=	355.05	ft/min
30) Ambient air temp	=	80.008	Deg. F
31) Outlet duct heat leakage constant	=	7.1186	Btu/hr-F
32) Inlet duct heat leakage constant	=	3.0651	Btu/hr-F
33) Enthalpy entering test coil Corrected	=	31.905	Btu/lb
34) Air Temp entering test coil Corrected	=	95.036	Deg. F
35) Enthalpy leaving test coil Corrected	=	36.897	Btu/lb
36) Air Temp leaving test coil Corrected	=	114.33	Deg. F
37) Sensible Air-Side Capacity	=	29730.	Btu/hr
39) Water Enter Coil Temp	=	134.84	Deg. F
40) Water Leaving Coil Temp	=	113.95	Deg. F
41) Actual Water flow rate	=	2.9910	GPM
42) Water flow rate	=	1473.6	lb/hr
43) Total Water-Side Capacity	=	30788.	Btu/hr
44) Average Total Capacity	=	30259.	Btu/hr
45) Average Sensible Capacity	=	30259.	Btu/hr
46) Heat Balance	=	-3.4994	%
47) Average water temp	=	124.40	Deg. F
48) Temp Correction Factor	=	.82021	
49) Water pressure drop	=	38.471	"Hg
50) Water pressure drop Uncorrected	=	43.584	"H2O
51) Water Pressure drop Corrected	=	53.137	"H2O
52) Rated Air Pressure Drop	=	.0	"H2O
53) % of Rated Air Pressure Drop	=	Inf.	%
54) Rated Capacity	=	.0	Btu/hr
55) % of Rated Capacity	=	Inf.	%
56) Rated Water Pressure Drop	=	.0	"H2O
57) % of Rated Water Pressure Drop	=	Inf.	%
58) Airflow	=	1420.2	SCFM
52) Airflow	=	1602.6	ACFM

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Test of

=CONDENSING UNIT=

Manufacturer: HERMANT KALE
Model: B103489 SN:

=EVAPORATOR UNIT=

Manufacturer:
Model: SN:

Started: 6/2/2008 7:24 PM
By: H OCONNOR

95DB
2000ACFM
135EWT
3GPM

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Test Data for the past 30 minutes:

Barometer	:	28.778 min	28.785 max	28.781 avg	inHg
8K Supply DB	:	94.414 min	94.566 max	94.469 avg	degF
8K Supply WB	:	66.678 min	66.873 max	66.760 avg	degF
8K Discharge DB:		111.48 min	111.65 max	111.56 avg	degF
8K Discharge WB:		71.842 min	71.962 max	71.912 avg	degF
8K Liquid IN	:	134.34 min	134.89 max	134.65 avg	degF
8K Suction OUT	:	110.84 min	111.12 max	110.97 avg	degF
Ambiant Air Tem:		74.489 min	76.656 max	75.576 avg	degF
8K UUT Delta Pr:		.10170 min	.10675 max	.10406 avg	"H2O
8K Static Pres :		.21785 min	.22655 max	.22317 avg	"H2O
8K Static Pres@:		-1.4477 min	-1.4309 max	-1.4401 avg	"H2O
8K Pres Drop Ac:		1.5191 min	1.5413 max	1.5325 avg	"H2O
8K Water Delta :		.021044 min	.026094 max	.023259 avg	"Hg

Last 7 samples taken every 5 minutes:

Barometer	:	28.780	28.782	28.782	28.784	28.782	28.780	28.780
8K Supply DB	:	94.566	94.468	94.457	94.468	94.434	94.434	94.446
8K Supply WB	:	66.873	66.818	66.775	66.753	66.721	66.689	66.678
8K Discharge DB:		111.52	111.51	111.62	111.63	111.56	111.51	111.49
8K Discharge WB:		71.950	71.930	71.939	71.919	71.885	71.864	71.842
8K Liquid IN	:	134.35	134.66	134.84	134.74	134.62	134.57	134.49
8K Suction OUT	:	110.93	110.92	111.04	110.99	110.96	110.88	110.87
Ambiant Air Tem:		74.489	75.787	75.756	75.590	75.937	76.133	76.304
8K UUT Delta Pr:		.10465	.10369	.10492	.10460	.10410	.10344	.10509
8K Static Pres :		.22091	.22175	.22289	.22470	.22094	.22225	.22105
8K Static Pres@:		-1.4426	-1.4367	-1.4385	-1.4407	-1.4403	-1.4403	-1.4407
8K Pres Drop Ac:		1.5360	1.5328	1.5285	1.5222	1.5334	1.5338	1.5309
8K Tot H2O Flow:		4329.7	4344.7	4359.6	4374.6	4389.5	4404.4	4419.3
8K Water Delta :		.021395	.021465	.023148	.022377	.024341	.024762	.024762

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1) Barometric Pressure	=	28.781	"Hg
2) Pressure drop Through Coil	=	.10405	"H2O
3) Static Pressure at coil inlet	=	.22317	"H2O
4) Average absolute static pressure	=	28.794	"Hg
5) Dry Bulb Temp. at Inlet of Coil	=	94.470	Deg. F
6) Wet Bulb Temp. at Inlet of Coil	=	66.761	Deg. F
7) Saturated vapor pressure at Inlet of Coil	=	.66176	"Hg
8) Specific humidity at Inlet of Coil	=	.0082368	lb/lb
9) Enthalpy at Inlet of Coil	=	31.757	Btu/lb
10) Dry Bulb Temp. at Outlet of Coil	=	111.56	Deg. F
11) Wet Bulb Temp. at Outlet of Coil	=	71.912	Deg. F
12) Saturated vapor pressure at Outlet of Coil	=	.78931	"Hg
13) Specific humidity at Outlet of Coil	=	.0083532	lb/lb
14) Enthalpy at Outlet of Coil	=	36.052	BTU/lb
15) Average Humidity Ratio	=	.0082950	lb/lb
16) Average Specific gravity	=	.99502	
17) Difference in humidity ratio	=	-.000116	lb/lb
18) Average absolute temperature	=	563.01	Deg. F
19) Average Density	=	.067544	lb/cu.ft
20) Air Pressure drop Corrected	=	.093706	"H2O
21) Dry Bulb Temp at Nozzle	=	111.56	Deg. F
22) Specific Humidity at Nozzle	=	.0080390	lb/lb
23) Specific Volume at Nozzle	=	14.592	cu.fy/lb
24) Static Pressure at Nozzle	=	-1.4401	"H2O
25) Pressure drop across nozzle	=	1.5326	"H2O
26) Total area of nozzles	=	.39177	sq.ft
27) Face area of test coil	=	4.0000	sq.ft
28) Dry Air Flow	=	134.35	lb/min
29) Standard Air Flow	=	447.83	ft/min
30) Ambient air temp	=	75.559	Deg. F
31) Outlet duct heat leakage constant	=	7.1186	Btu/hr-F
32) Inlet duct heat leakage constant	=	3.0651	Btu/hr-F
33) Enthalpy entering test coil Corrected	=	31.750	Btu/lb
34) Air Temp entering test coil Corrected	=	94.440	Deg. F
35) Enthalpy leaving test coil Corrected	=	36.084	Btu/lb
36) Air Temp leaving test coil Corrected	=	111.69	Deg. F
37) Sensible Air-Side Capacity	=	33524.	Btu/hr
39) Water Enter Coil Temp	=	134.64	Deg. F
40) Water Leaving Coil Temp	=	110.97	Deg. F
41) Actual Water flow rate	=	2.9873	GPM
42) Water flow rate	=	1471.9	lb/hr
43) Total Water-Side Capacity	=	34847.	Btu/hr
44) Average Total Capacity	=	34186.	Btu/hr
45) Average Sensible Capacity	=	34186.	Btu/hr
46) Heat Balance	=	-3.8699	%
47) Average water temp	=	122.81	Deg. F
48) Temp Correction Factor	=	.82347	
49) Water pressure drop	=	38.575	"Hg
50) Water pressure drop Uncorrected	=	43.702	"H2O
51) Water Pressure drop Corrected	=	53.070	"H2O
52) Rated Air Pressure Drop	=	.0	"H2O
53) % of Rated Air Pressure Drop	=	Inf.	%
54) Rated Capacity	=	.0	Btu/hr
55) % of Rated Capacity	=	Inf.	%
56) Rated Water Pressure Drop	=	.0	"H2O
57) % of Rated Water Pressure Drop	=	Inf.	%
58) Airflow	=	1791.3	SCFM
52) Airflow	=	2009.2	ACFM

