

Intertek Job No.: 3133465-414
Report No. 3133465-CRT-001

Date: November 25, 2007

RENDERED TO
OXYCOM FRESH AIR BV
PERFORMANCE TESTS OF A OXYCELL® BASED HYBRID
ENERGY EFFICIENT HVAC CONFIGURATION (HEEHC)

General

This report gives the results of Performance Tests of an Oxycell® based hybrid energy efficient HVAC configuration (HEEHC) demonstration unit, manufactured and supplied by Oxycom Fresh Air BV, Kaagstraat 13, 8102GZ Raalte, The Netherlands.

The client supplied the sample, which Intertek received on October 12, 2007. The sample appeared to be in new condition. Testing was conducted at Intertek, 3933 U.S. Route 11, Cortland NY, 13045.

Quote No. 500048919, dated September 6, 2007, authorized the tests. Mr. Anton Bonte, representing the client, coordinated the work and witnessed the testing in part.

Performance tests 1 and 2 were conducted in part in accordance with the following standard:

- ARI Standard 210/240-2006, "Standard for Unitary Air-Conditioning and Air-Source Heat Pump Equipment," published by the Air-Conditioning and Refrigeration Institute.

Performance test number 3 was conducted in part in accordance with the following standard:

- ARI Standard 340/360-2004, "Standard for Commercial and Industrial Air-Conditioning and Heat Pump Equipment," published by the Air-Conditioning and Refrigeration Institute.

All performance tests were conducted in accordance with the following standard:

- ASHRAE Standard ANSI/ASHRAE 37-2005, "Methods of Testing for Rating Unitary Air Conditioning and Heat Pump Equipment," published by the American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc.

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- Notes: (1) The results contained in the report are for technical evaluation only and are applicable only to the specific test specimen referenced within the report.
- (2) The tests reported have not been performed at the request of the Air-Conditioning and Refrigeration Institute, and use of these findings by "Oxycom Fresh Air BV." in any advertising or other literature shall state that the test is not part of the ARI Certification Program

Test Setup

The test chamber used for testing consisted of a split room environmental chamber. One room simulated indoor temperature and humidity conditions while the other room simulated outdoor temperature and humidity conditions. The Oxycom hybrid demonstration unit was placed entirely into the outdoor room of the environmental chamber. Electrical supply to the test unit was single phase 230 volts ac (60Hz). Water was supplied to the test unit. Temperature and flow rate of the water was not recorded. Flexible ducting was connected to both the evaporator and condenser outlets in order to monitor and record temperatures and air flow rates. All testing was performed at a 100% ventilation ratio and with zero static pressure at the outlets of the evaporator and condenser.

COOLING TESTS

Results

Test Number	1	2	3	4	5
Evaporator Inlet Air DB, °F	95.17	81.86	80.00	96.94	89.51
Evaporator Inlet Air WB, °F	75.09	64.61	66.89	74.58	71.74
Evaporator Outlet Air DB, °F	64.01	60.13	59.92	63.72	62.04
Evaporator Outlet Air WB, °F	62.65	57.73	58.72	62.29	60.68
Condenser Inlet Air DB, °F	80.11	79.91	79.96	88.33	84.34
Condenser Inlet Air WB, °F	67.06	67.04	67.08	70.00	68.56
Condenser Outlet Air Db, °F	105.13	82.07	91.17	106.88	101.8
Condenser Outlet Air WB, °F	--	--	--	--	--
ID Airflow, SCFM	500.5	509.0	509.6	503.2	502.2
OD Airflow, SCFM	405.3	439.1	437.5	406.6	393.4
ID Cooling Capacity, BTU's	23,572	11,060	13,745	23,135	19,835
Compressor 1, Watts	523.2	229.0	313.0	511.0	485.0
Compressor 2, Watts	517.2	--	312.0	511.0	493.0
Test Unit, Volts	230	230	230	230	230
Total Test Unit, Watts	1329.4	514.5	939.4	1321.0	1283.7
EER, BTU/Watt	17.73	21.49	14.63	17.51	15.45

COOLING TESTS
Results (cont)

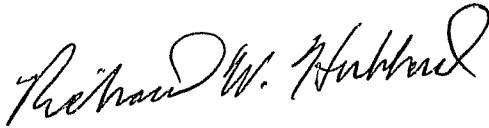
Test Number	6	7	8	9	10	11
Evaporator Inlet Air DB, °F	83.85	74.97	66.16	88.37	74.02	68.34
Evaporator Inlet Air WB, °F	69.81	66.12	61.45	68.87	59.06	52.69
Evaporator Outlet Air DB, °F	61.54	60.26	60.16	60.42	61.20	59.46
Evaporator Outlet Air WB, °F	60.03	58.37	57.90	59.16	59.10	52.42
Condenser Inlet Air DB, °F	81.13	76.44	70.23	77.27	72.39	72.41
Condenser Inlet Air WB, °F	67.70	66.37	64.42	64.26	65.08	65.12
Condenser Outlet Air Db, °F	98.61	92.39	80.77	87.84	73.22	72.29
Condenser Outlet Air WB, °F	--	--	--	--	--	--
ID Airflow, SCFM	504.6	508.2	513.8	504.5	505.0	516.1
OD Airflow, SCFM	419.7	436.1	476.0	421.9	470.8	473.5
ID Cooling Capacity, BTU's	17,171	12,944	5,667	15,549	7,122	5,014
Compressor 1, Watts	476.1	443.1	248.6	--	--	--
Compressor 2, Watts	482.8	451.5	133.0	392.5	--	--
Test Unit, Volts	230	231	229	230	230	230
Total Test Unit, Watts	1268.3	1223.7	667.5	702.6	323.3	316.3
EER, BTU/Watt	13.53	10.57	8.49	22.2	22.0	15.85

Remarks

The customer requested the evaluation to obtain actual performance data in support of customer's simulation program for the Oxycell® based hybrid energy efficient HVAC configuration (HEEHC).

Dates of Tests: October 15 - 18, 2007

Test Performed by:



Richard Hubbard
Technician

Report Approved by:



Kevin Peck
Sr. Project Engineer

