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Order No. G100222377

28 January 2011
Revised 11 November 2011

Report Number: G100222377CRT-001A
Model Number: Ionflow 50 Surface
ARB Number: 1334

RENDERED TO:

Mr. Ragne Svadil
LightAir Holding AB
Box 6049,171 06
Solna, SE Sweden
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<u>Report Scope:</u>	Ozone Emissions Testing of Household Electrostatic Air Cleaners.
<u>Limitation Statement:</u>	The test data and results contained in this report are provided for client information and evaluation. No conclusions are drawn by Intertek.
<u>Authorization:</u>	The tests were authorized by signed quote # 500250616, dated 8/6/2010.
<u>Standard Used:</u>	<p>UL Standard for Safety for Electrostatic Air Cleaners, UL 867, Section 37 Fourth Edition, December 21, 2007.</p> <ul style="list-style-type: none"> - Std. 867 Certification Requirement Decision, Section/Paragraph 37.2.2 a) 2), Ozone Test – Chamber Air tightness - Std. 867 Certification Requirement Decision, Section/Paragraph 37.4.8 & 37A.5, Ozone Test – Test Conditions. - Std. 867 Certification Requirement Decision, Section/Paragraph 37A.1, Peak Ozone Determination Test – Room Dimensions. - Std. 867 Certification Requirement Decision, Section/Paragraph 37.4.6, Definition of Steady-State Hours 7-8. - Std. 867 Certification Requirement Decision, Section/Paragraph 37.2.3, Chamber Setup. - Std. 867 Certification Requirement Decision, Section/Paragraph 3.3A, 3.9A, 3.11A , 37.4.6A, 37.4.7, 37.4.8, 37A.5, 37A.4, 37.5A, 37A.5, 37A.5B, 37.4.1. Filter Test Iterations.
<u>Report Content:</u>	<ol style="list-style-type: none"> 1. Unit Under Test 2. Peak Ozone Test Results 3. Max Ozone Test Results 4. Chamber Equipment 5. Summary/Signatures 6. Appendix



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1. Unit Under Test Information

MODEL

Manufacturer:	LightAir Holding AB	Pre-Filter:	No
Model Number:	Ionflow 50 Surface	HEPA Filter:	No
		Charged Particle Collector:	REM
Settings:	1	Carbon Filter:	No
O3/Voltage Settings:	-	UV Light:	No
O3 Monitor:	-	Ionizer:	Yes
Model Notes:	New PCB Device has only 1 setting on/off LED lit when device is ON		

FIRST SAMPLE

Control Number:	212285.01	Run-in Start:	16:30 8/6/2010
Serial Number:	N/A	Run-in End:	9.00 8/9/2010
Manufacture Date:	N/A	Run-in Temperature:	77 ± 4 degF
Receive Date:	8/5/2010		
Received Status:	OK		
Sample Notes:			

SECOND SAMPLE

Control Number:	212285.02	Run-in Start:	N/A
Serial Number:	N/A	Run-in End:	N/A
Manufacture Date:	N/A	Run-in Temperature:	N/A
Receive Date:	8/5/2010		
Received Status:	OK		
Sample Notes:			



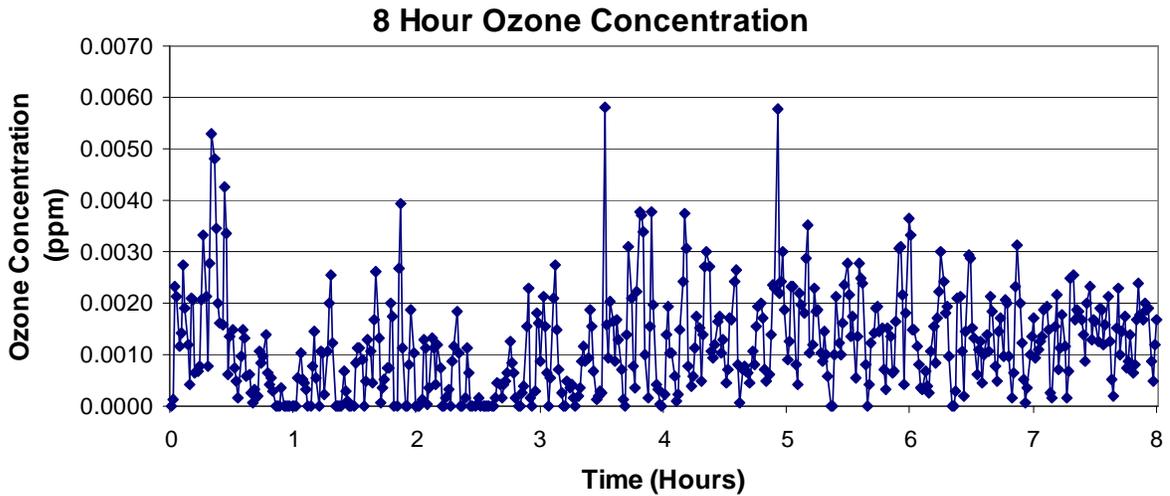
PEAK OZONE CONCENTRATIONS

Location	With Filter(s)	Without Filter(s)				
	ON	ON	High	Low	High	Low
1	0.0008	0.0029				
2	0.0011	0.0074				
3	0.0027	0.0071				
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						

Notes: - Ozone Concentrations less background level; in units of PPM.
- Peak concentration for each iteration is in **BOLD**.

3. Max Ozone Test Results

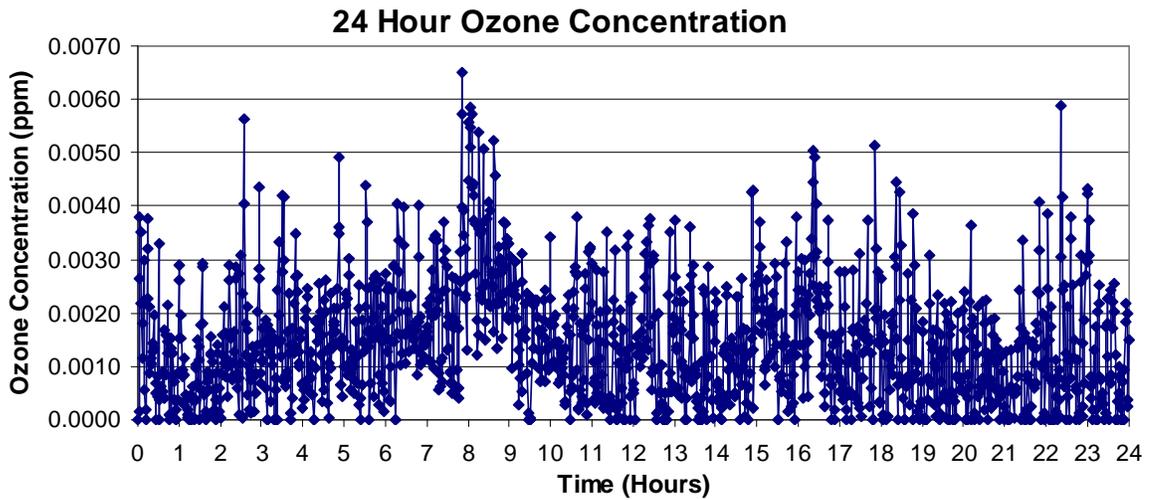
Date of Test:	11/10/2010
Sample:	1 of 2
Setting:	ON
Filter(s):	Charged particle collector removed, ionizer on



MAXIMUM OZONE TEST RESULTS							
	UL Ref.	Pass/Fail	Mean	Min	Max	Delta	Units
Background C(t) O3:	37.4.3	PASS	0.000	0.000	0.000	0.000	[ppm]
Test 1min C(t) O3:	37.1.2	PASS	0.001	0.000	0.006	0.006	[ppm]
Test 5min C(t) O3:	37.1.2	PASS	0.001	0.000	0.004	0.004	[ppm]
Chamber Temperature:	37.4.2	PASS	77	77	77	1	[degF]
Chamber Humidity:	37.4.2	PASS	50	49	51	1	[%RH]
Chamber Static Pressure:	-	PASS	0.02	0.02	0.02	0.01	["H2O]
Chamber Supply Air Flow:	-	-	20	20	20	0	[SCFM]
Required to Test 2nd Sample:	37.1.1	NO					
Test Duration:	*37.4.6	8 hours					

Notes:	
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<u>Date of Test:</u>	11/11/2010
<u>Sample:</u>	1 of 2
<u>Setting:</u>	ON
<u>Filter(s):</u>	Charged particle collector installed, ionizer on



MAXIMUM OZONE TEST RESULTS							
	UL Ref.	Pass/Fail	Mean	Min	Max	Delta	Units
Background C(t) O3:	37.4.3	PASS	0.000	0.000	0.000	0.000	[ppm]
Test 1min C(t) O3:	37.1.2	PASS	0.001	0.000	0.007	0.007	[ppm]
Test 5min C(t) O3:	37.1.2	PASS	0.001	0.000	0.006	0.006	[ppm]
Chamber Temperature:	37.4.2	PASS	77	76	78	1	[degF]
Chamber Humidity:	37.4.2	PASS	50	49	51	1	[%RH]
Chamber Static Pressure:	-	PASS	0.02	0.01	0.03	0.01	["H2O]
Chamber Supply Air Flow:	-	-	20	20	20	0	[SCFM]
Required to Test 2nd Sample:	37.1.1	NO					
Test Duration:	*37.4.6	24 hours					

Notes:	
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4. Chamber Equipment Information

Test Equipment List

Instrument	Model	Intertek Ctrl #	Cal Due Date
Teledyne – Advanced Pollution Instrumentation Ozone Calibrator	703E	O200	1-5-2011
Teledyne – Advanced Pollution Instrumentation Ozone Monitor	400E	O201	*
Teledyne – Advanced Pollution Instrumentation Ozone Monitor	400E	O202	*
Vaisala – Temperature & Humidity Transducer	HMD-70Y	T1307	04-09-11
Dwyer Airflow – Anemometer	471	Y202	07-21-11

* The 400E Ozone Monitor is calibrated using the 703E calibrator.



5. Summary/Signatures

The test sample(s) documented in this report were tested in accordance to the standard(s) and Certification Requirement Decision(s) (CRDs) referenced in the first page of this report.

The representative sample(s) have been tested, investigated, and found to comply with the requirements of the UL Standard 867 Section 37.1.2 criteria of emitting a maximum ozone concentration of less than 0.050 ppm. Furthermore a second sample was not required to be tested as the first sample's maximum emissions were less than 0.030 ppm to satisfy the exception in the Section 37.1.1.

This testing was conducted as part of the California Air Resources Board Certification program and is referenced with ARB Application No. 1334

This report completes our evaluation covered by Intertek Project No. G100222377CRT-001A. If there are any questions regarding the results contained in this report, or any of the other services offered by Intertek, please do not hesitate to contact the undersigned.

Please note; this Report does not represent authorization for the use of any Intertek certification marks.

<u>OZONE EMISSIONS SUMMARY</u>			
Setting	Filter(s)	O3/Voltage Setting	C(t) _{max} [ppm]
ON	NO	-	0.006
ON	YES	-	0.007

Completed by: Title:	Phil Armstrong Associate Engineer	Reviewed by: Title:	Eric Dunay Engineer
Signature:		Signature	
Date	11 November 2011	Date:	11 November 2011

6. Appendix

DATA FILES

Test Name	Raw Data File
Model Half Life	745_HalfLife_ozonelog.csv
Max Ozone: ON w/o Filter	746_ONNF_ozonelog.csv
Max Ozone: ON w/ Filter	747_ONWF_ozonelog.csv

ATTACHMENT DOCUMENTS

Document	Soft-copy File Name
ARB Application	1334
Chain of Custody: Sample 1	COC_212285.01.pdf
Chain of Custody: Sample 2	COC_212285.02.pdf

UUT PHOTOGRAPHS



UUT

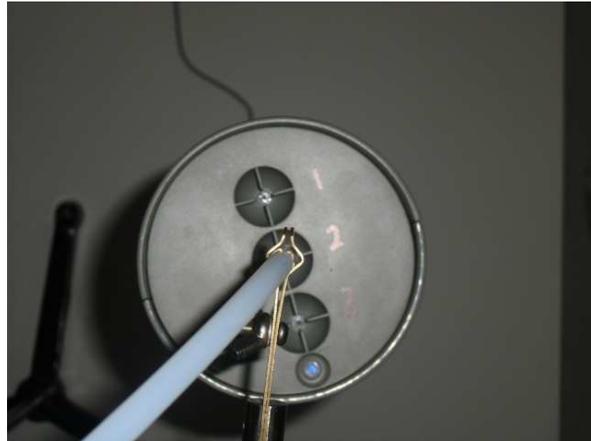
No Nameplate

Nameplate

UUT PHOTOGRAPHS: PEAK TEST



ON w/ charged particle collector installed

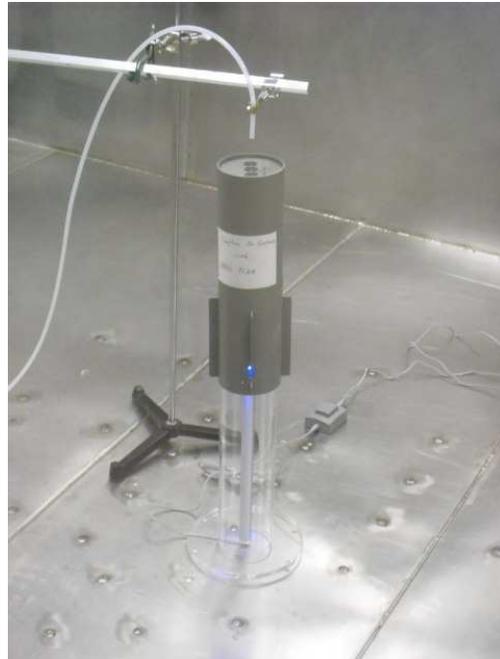


ON w/ charged particle collector removed

UUT PHOTOGRAPHS: MAX OZONE TEST



ON w/ charged particle collector installed



ON w/ charged particle collector removed