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Order No. G103013014

Issued: 27 APR 2017
Revised: None

Report Number: 103013014CRT-001
Model Number: NV800
ARB Number: NA

RENDERED TO:

Mr. Felipe Soberon
Novaerus US, Inc.
4700 Falls of Neuse Road Suite 355
Raleigh, NC 27609 USA
Phone: +1 (813) 304-2468
E-mail: felipe@novaerus.com

<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 # Qu-00771472, dated 03/15/2017.
<u>Standard Used:</u>	UL Standard for Safety for Electrostatic Air Cleaners, UL 867, Section 40, Ozone Test, Fifth Edition, August 4, 2011 with revisions to and including August 23, 2013.
<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 7. Revision Summary



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1. Unit Under Test Information

MODEL

Manufacturer:	Novaerus US, Inc.	Pre-Filter:	Yes
Model Number:	NV800	HEPA Filter:	No
Production/Prototype/ Design	Production	ESP Filter:	No
Fan Speeds:	2	Carbon Filter:	No
O3/Voltage Settings:	--	UV Light:	No
O3 Monitor:	--	Ionizer:	Yes
Model Notes:	Unit tested at 230V 50Hz		

FIRST SAMPLE

Control Number:	CRT1704121652-001	Run-in Start:	4/13/2017 04:30
Serial Number:	NA	Run-in End:	4/18/2017 08:30
Manufacture Date:	March 2017	Run-in Temperature:	77 ± 4 degF
Receive Date:	4/12/17		
Received Status:	OK		
Sample Notes:	Sample runs at 230V 50Hz.		

SECOND SAMPLE

Control Number:	NA	Run-in Start:	NA
Serial Number:	NA	Run-in End:	NA
Manufacture Date:	NA	Run-in Temperature:	77 ± 4 degF
Receive Date:	NA		
Received Status:	NA		
Sample Notes:			



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PEAK OZONE CONCENTRATIONS

Location	With Filter(s)		Without Filter(s)					
	Highest	Lowest	Highest	Lowest	Highest	Lowest	Highest	Lowest
1	0.0029	0.0040		0.0028				
2	0.0010	0.0013		0.0014				
3	0.0047	0.0036		0.0040				
4	0.0056	0.0061		0.0035				
5	0.0043	0.0043		0.0025				
6	0.0027	0.0036		0.0028				
7	0.0015	0.0006		0.0009				
8	0.0037	0.0046		0.0066				
9	0.0061	0.0062		0.0061				
10	0.0024	0.0025		0.0019				
11								
12								
13								
14								
15								

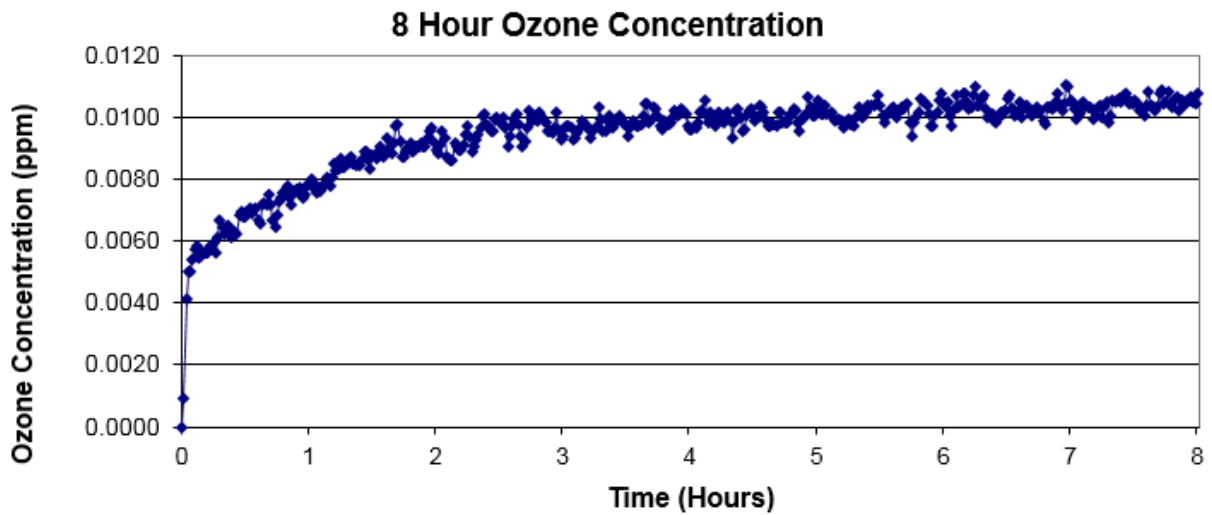
Notes: - Ozone Concentrations less background level; in units of PPM.
- Peak concentration for each iteration is in **BOLD**.



Report No. 103013014CRT-001
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3. Max Ozone Test Results

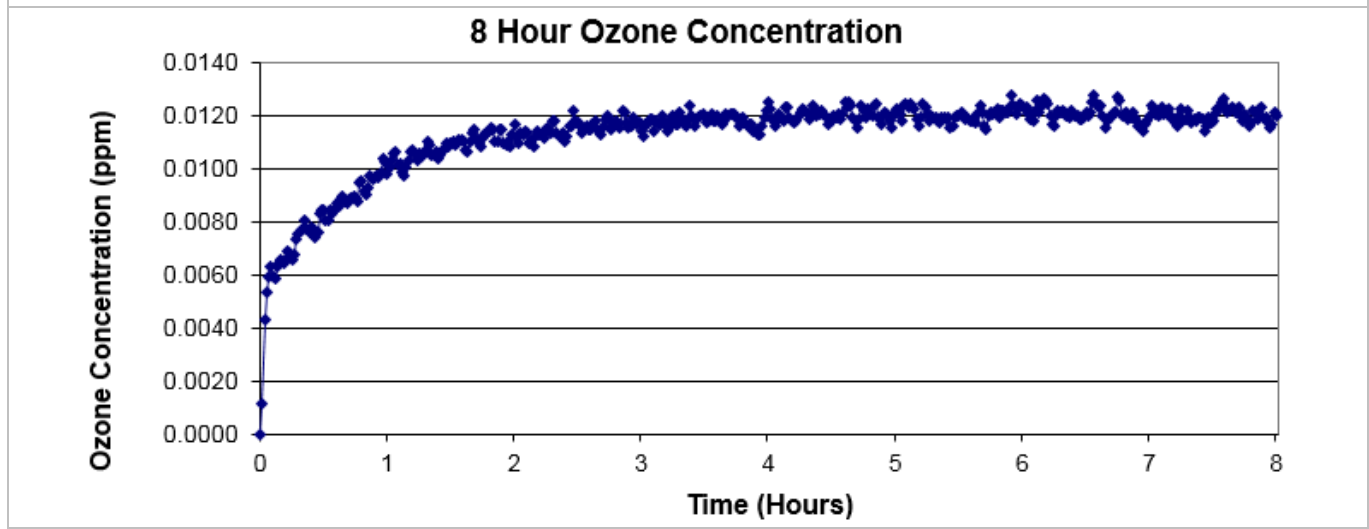
Start Date of Test:	4/19/17
Sample:	001
Fan Speed:	II
Filter(s):	Pre-filter Installed



MAXIMUM OZONE TEST RESULTS							
	UL Ref.	Pass/Fail	Mean	Min	Max	Delta	Units
Background C(t) O3:	40.4.3	PASS	0.001	0.001	0.002	0.001	[ppm]
Test 1min C(t) O3:	40.1.2	PASS	0.009	0.000	0.011	0.011	[ppm]
Test 5min C(t) O3:	40.1.2	PASS	0.009	0.001	0.011	0.010	[ppm]
Chamber Temperature:	40.4.2	PASS	79	78	79	1	[degF]
Chamber Humidity:	40.4.2	PASS	50	49	51	2	[%RH]
Chamber Static Pressure:	-	PASS	0.02	0.01	0.03	0.02	["H2O]
Chamber Supply Air Flow:	-	-	20	19	20	0	[SCFM]
Required to Test 2nd Sample:	40.1.1	NO					
Test Duration:	*40.4.6	8 hours					

Notes:	Location 9 Unit tested at 230V 50Hz
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Start Date of Test:	4/20/2017
Sample:	001
Fan Speed:	I
Filter(s):	Pre-filter Installed



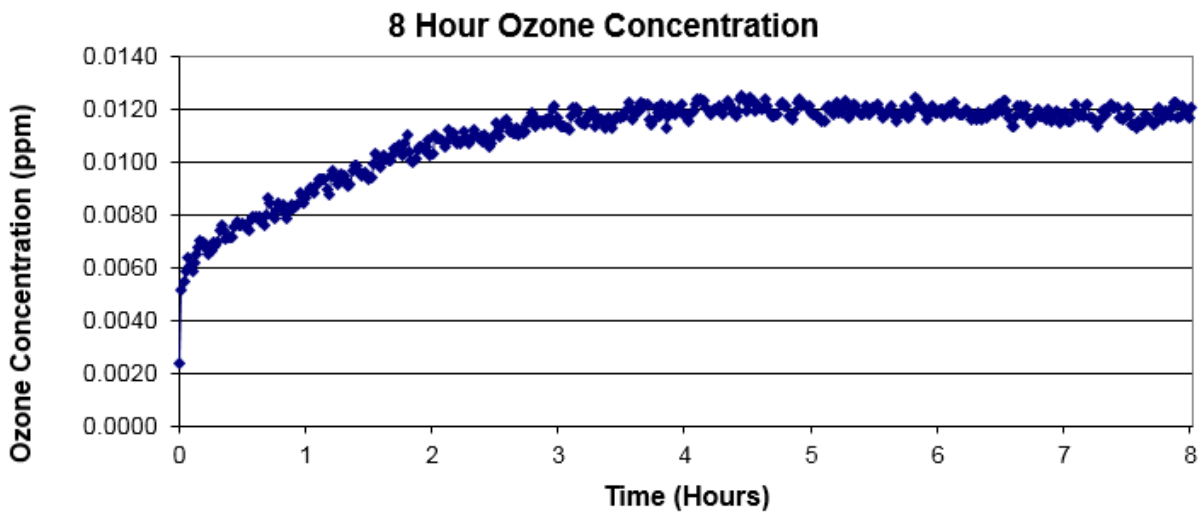
MAXIMUM OZONE TEST RESULTS							
	UL Ref.	Pass/Fail	Mean	Min	Max	Delta	Units
Background C(t) O3:	40.4.3	PASS	0.001	0.001	0.002	0.001	[ppm]
Test 1min C(t) O3:	40.1.2	PASS	0.011	0.000	0.013	0.013	[ppm]
Test 5min C(t) O3:	40.1.2	PASS	0.011	0.001	0.012	0.012	[ppm]
Chamber Temperature:	40.4.2	PASS	79	79	80	1	[degF]
Chamber Humidity:	40.4.2	PASS	50	50	50	0	[%RH]
Chamber Static Pressure:	-	PASS	0.02	0.00	0.03	0.03	["H2O]
Chamber Supply Air Flow:	-	-	20	20	20	0	[SCFM]
Required to Test 2nd Sample:	40.1.1	NO					
Test Duration:	*40.4.6	8 hours					

Notes:	Location 9 Unit tested at 230V 50Hz
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Report No. 103013014CRT-001
 Issued: 27 APR 2017
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Start Date of Test:	4/21/2017
Sample:	001
Fan Speed:	I
Filter(s):	No Filters



MAXIMUM OZONE TEST RESULTS							
	UL Ref.	Pass/Fail	Mean	Min	Max	Delta	Units
Background C(t) O3:	40.4.3	PASS	0.001	0.001	0.003	0.003	[ppm]
Test 1min C(t) O3:	40.1.2	PASS	0.011	0.000	0.012	0.012	[ppm]
Test 5min C(t) O3:	40.1.2	PASS	0.011	0.001	0.012	0.012	[ppm]
Chamber Temperature:	40.4.2	PASS	79	79	79	1	[degF]
Chamber Humidity:	40.4.2	PASS	50	50	51	2	[%RH]
Chamber Static Pressure:	-	PASS	0.02	0.01	0.04	0.03	["H2O]
Chamber Supply Air Flow:	-	-	20	20	20	0	[SCFM]
Required to Test 2nd Sample:	40.1.1	NO					
Test Duration:	*40.4.6	8 hours					

Notes:	Location 8 Unit tested at 230V 50Hz
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Report No. 103013014CRT-001
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4. Chamber Equipment Information

Test Equipment List

Instrument	Model	Intertek Ctrl #	Cal Due Date
Teledyne – Advanced Pollution Instrumentation Ozone Calibrator (only used for tests conducted before 4/21/2017)	703E	O200	04-21-2017
Teledyne – Advanced Pollution Instrumentation Ozone Calibrator (used for tests on/after 4/21/2017)	703E	O204	04-02-2018
Teledyne – Advanced Pollution Instrumentation Ozone Monitor	400E	O201	*
Vaisala – Temperature & Humidity Transducer	HMD-70Y	T1307	06-22-17
APT – Linear AC Power Source	LS1000	4120092	**
Yokogawa – Digital Power Meter	WT210	D703	12-17-2017

* The 400E Ozone Monitor is calibrated using the 703E calibrator.
** The LS1000 Linear AC Power Source is verified using the Yokogawa Digital Power Meter



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5. Summary/Signatures

The test sample(s) documented in this report were tested in accordance to the standard(s) 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 40, 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 40.1.1.

This report completes our evaluation covered by Intertek Project No. G103013014. 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.

OZONE EMISSIONS SUMMARY			
Fan Speed	Filter(s)	O3/Voltage Setting	C(t) _{max} [ppm]
High	YES	-	0.011
Low	YES	-	0.013
Low	NO	-	0.012

Completed by: Title:	Jacob Langenbacher Engineer	Reviewed by: Title:	Michael Hudon Project Engineer
Signature:		Signature	
Date	4/25/2017	Date:	4/27/2017

Completed by: Title:	Joseph Hartley Technician III
Signature:	
Date	4/25/2017

6. Appendix

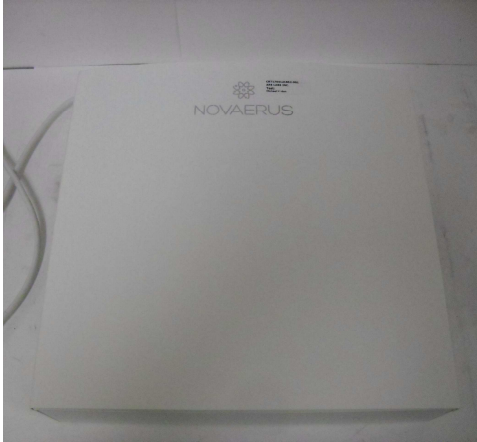
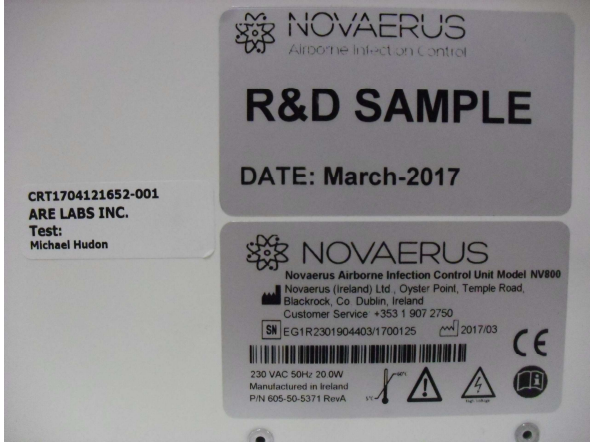
DATA FILES

Test Name	Raw Data File
Model Half Life	2286_halflife_ozonelog.csv
Max Ozone: High Speed w/ Filter	2287_MAX_NV800_HIWF.csv
Max Ozone: Low Speed w/ Filter	2289_MAX_TEST_NV800_LOWF.csv
Max Ozone: Low Speed w/o Filter	2290_NV800_Max_Test_Lowof.csv

ATTACHMENT DOCUMENTS

Document	Soft-copy File Name
ARB Application	NA
Chain of Custody: Sample 1	COC_CRT1704121652-001.pdf

UUT PHOTOGRAPHS

 <p>UUT</p>	 <p>Nameplate</p>
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UUT PHOTOGRAPHS: PEAK TEST



Location 9

High Speed w/ Filter



Location 9

Low Speed w/ Filter



Location 8

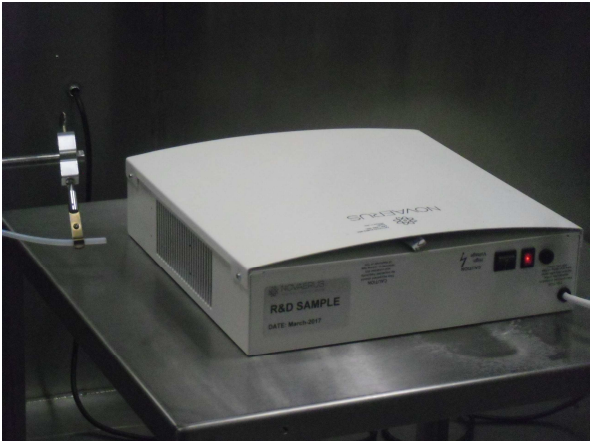
Low Speed w/o Filter

UUT PHOTOGRAPHS: MAX OZONE TEST



Location 9

High Speed w/ Filter



Location 9

Low Speed w/ Filter



Location 8

Low Speed w/o Filter



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7.0 Revision Summary			
Date/ Proj # Site ID	Project Handler/ Reviewer	Section	Description of Change
4/27/2017	J Langenbacher <i>JCL</i>	1	Corrected Run-in Start from "6/1/2016 09:25" to "4/13/2017 04:30". Corrected Run-in End from "6/3/2016 09:25" to "4/18/2017 08:30".
G103013014CRT	M Hudon <i>MH</i>		