

Mainstream Engineering Corp.

OZONE TEST REPORT

SCOPE OF WORK

Ozone Emissions Testing of Household Electrostatic Air Cleaners for Model: Qwikpure Tripleguard

REPORT NUMBER

104496780CRT-001

ISSUE DATE

3/31/2021

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TEST REPORT FOR MAINSTREAM ENGINEERING CORP.

Report No.: 104496780CRT-001

Date: March 31, 2021

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SECTION 1

SUMMARY


The representative sample(s) have been tested, investigated, and found to comply with the requirements of the following Standard(s):


Electrostatic Air Cleaners, UL 867, Section 40, Fifth Edition, August 4, 2011 revision: August 7, 2018

The equipment identified in this report has been found to meet the criteria for emittance of ozone not exceeding a concentration of 0.050 ppm. Furthermore, a second sample was not required to be tested, according to UL 867, as the first sample's maximum emissions were less than 0.030 ppm, which satisfies the exception in the Section 40.1.1.

This report completes our evaluation covered by Intertek Project Number G104496780 which has been authorized by Intertek quote number: Qu-01121367-1. 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.

OZONE EMISSIONS SUMMARY			
Unit Power	FILTER(S)	O3/VOLTAGE SETTING	C(t) _{max} [ppm]
ON	NA	-	0.002

Completed by: Joseph Hartley
Title: Technician I
Signature: 
Date: 3/30/2021

Reviewed by: Jacob Langenbacher
Title: Engineer
Signature: 
Date: 3/31/2021

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SECTION 2

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CHAMBER EQUIPMENT INFORMATION

TEST EQUIPMENT LIST

Instrument	Model	Intertek Ctrl #	Cal Due Date
Teledyne – Advanced Pollution Instrumentation Ozone Calibrator	703E	O200	07-24-2021
Teledyne – Advanced Pollution Instrumentation Ozone Monitor	400E	O202	*
Vaisala – Temperature & Humidity Transducer	HMD-70Y	T1307	06-03-2021
Fluid Components International- Flow meter	ST75V	F463	10-12-2021

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

SECTION 3

UNIT UNDER TEST INFORMATION

MODEL INFORMATION			
Manufacturer:	Mainstream Engineering Corp.	Pre-Filter:	No
Model Number:	Qwikpure Tripleguard	HEPA Filter:	No
Production/Prototype/Design	Prototype	ESP Filter:	No
Fan Speeds:	NA	Carbon Filter:	No
O3/Voltage Settings:	-	UV Light:	Yes
O3 Monitor:	-	Ionizer:	No
Model Notes:	Unit has no fans or filter.		

RUN-IN TEST			
FIRST SAMPLE			
Run-in Start:	3/18/2021 2:15 PM	Run-in End:	3/20/2021 3:35 PM
Run-in Temperature:	77 +/-4	Tracking Number:	CRT2011120911-002
Serial Number:	L202032A00003	Manufacture Date:	NA
Sample Notes:			
SECOND SAMPLE			
Run-in Start:	NA	Run-in End:	NA
Run-in Temperature:	NA	Tracking Number:	CRT2011120911-001
Serial Number:	NA	Manufacture Date:	NA
Sample Notes:	Per the exception listed under clause 40.1.1 of UL 867, the second sample was not required to be tested.		

SECTION 4

PEAK OZONE TEST

GRILL AND AIR PERIPHERY DIMENSIONS			
		Date of Test:	3/20/2021
Grill Height:	See Notes	Air Periphery Height:	See Notes
Grill Width:	See Notes	Air Periphery Width:	See Notes
Estimated Grill Area:	160.1	Est. Air Periphery Area:	160.1
Notes:	Unit has 3 different facings with different dimensions. The side with points 1-4 is 7.75 x 9.00. The Side with Point 5-6 is 8.5 x 9.00. The side with point 7, there is a smaller are tested with the point in the center between the bulbs. Those dimensions are 5.75 x 2.75. Total are of all tested sides is 160.1 Sq. In.		

PEAK LOCATION			
	Loc.	X	Y
	-	[inches]	[inches]
	1	3.63	0.00
	2	2.13	0.00
	3	-2.13	0.00
	4	-3.63	0.00
	5	1.75	0.00
	6	-1.75	0.00
7	0.00	0.00	
* Location measurements are coordinates in reference to the center point.			

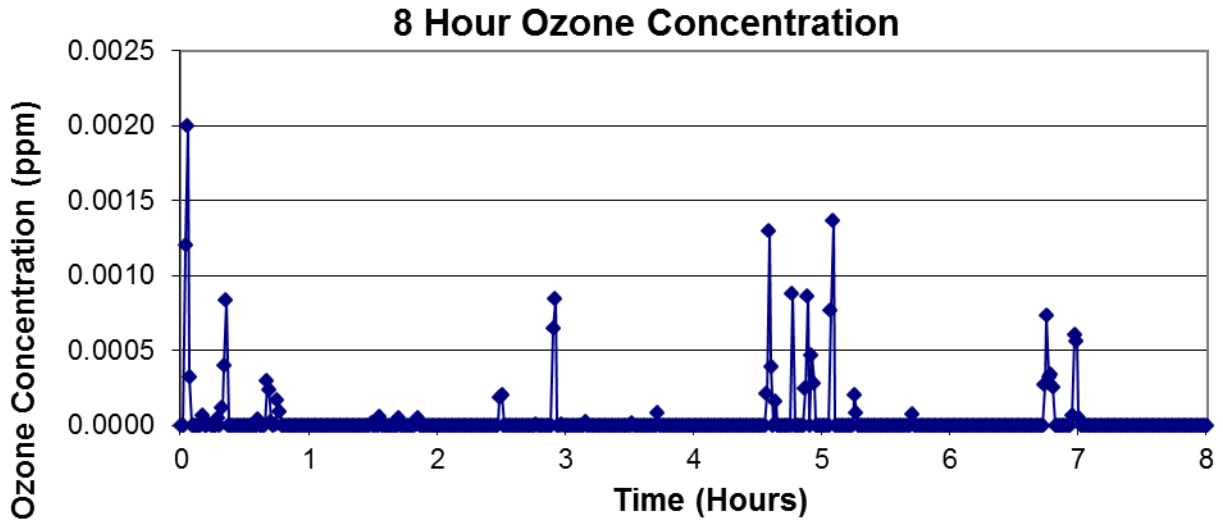
PEAK OZONE CONCENTRATIONS (ppm)				
Location	<i>Without Filter(s)</i>			
	<i>ON</i>			
1	0.0009			
2	0.0010			
3	0.0009			
4	0.0013			
5	0.0002			
6	0.0003			
7	0.0000			

Note: Peak Ozone Test concentrations are shown with background subtracted.

SECTION 5

MAX OZONE TEST

START DATE OF TEST: 3/20/2021
 SAMPLE: First Sample
 FAN SPEED: NA
 FILTER(S): UV Lights ON



MAXIMUM OZONE TEST RESULTS							
	UL Ref.	Pass/Fail	Mean	Min	Max	Delta	Units
Background C(t) O3:	40.4.3	PASS	0.002	0.001	0.002	0.002	[ppm]
Test 1min C(t) O3:	40.1.2	PASS	0.000	0.000	0.002	0.002	[ppm]
Test 5min C(t) O3:	40.1.2	PASS	0.000	0.000	0.001	0.001	[ppm]
Chamber Temperature:	40.4.2	PASS	77	77	78	1	[degF]
Chamber Humidity:	40.4.2	PASS	50	49	52	3	[%RH]
Chamber Static Pressure:	-	PASS	0.02	0.02	0.09	0.08	["H2O]
Chamber Supply Air Flow:	-	-	20	19	20	1	[SCFM]
Required to Test 2nd Sample:	40.1.1	NO					
Test Duration:	*40.4.6	8 hours					

NOTES: Peak Test Location 4

SECTION 6

APPENDIX

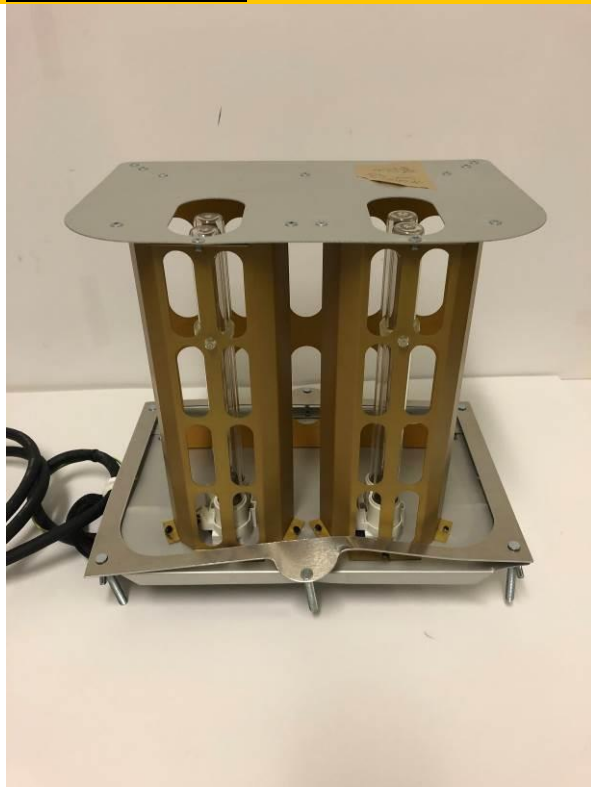
DATA FILES

TEST NAME	RAW DATA FILE
Model Half Life	4451 Halflife ozonelog.csv
Max Ozone: ON w/o Filter	4452 ONWOF ozonelog.csv

ATTACHMENT DOCUMENTS

DOCUMENT	SOFT-COPY FILE NAME
ARB Application	NA
Chain of Custody: Sample 1	COC_CRT2011120911-002.pdf

UUT PHOTOGRAPHS



UUT



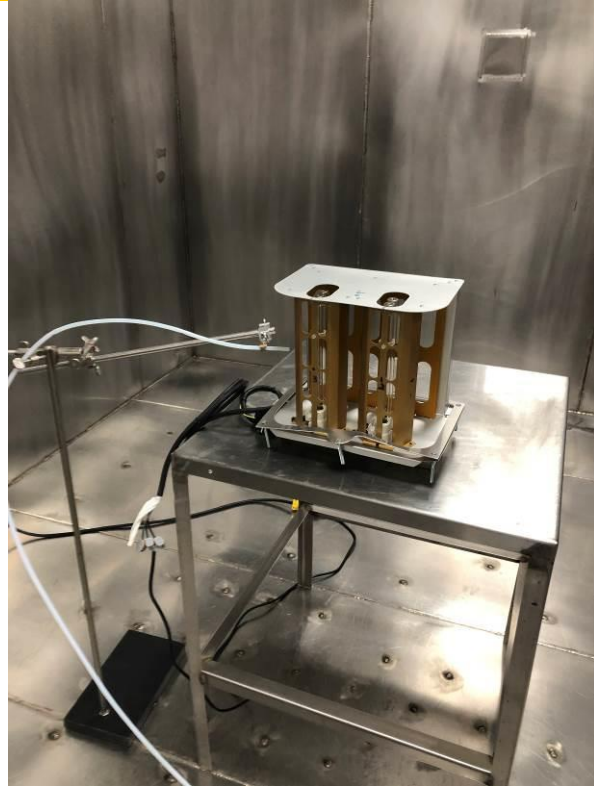
Nameplate

UUT PHOTOGRAPHS: PEAK TEST

UUT PHOTOGRAPHS: MAX TEST



Location 4
ON



Location 4
ON

7.0 REVISION SUMMARY			
Date/Proj # Site ID	Project Handler/ Reviewer	Section	Description of Change
			None