

Synopsis
of
Underwriters Laboratories
Ozone Output Test
Odorox Boss

3/13/2013 & 3/14/2013

The attached ozone output test was performed by Underwriters Laboratories (UL) Verification Services, Inc. on an Odorox Boss.

The Boss was tested to Underwriters Laboratories Standard UL 867 – Section 37 / Ozone Test for Air Purifiers. This is the standard specified by California Air Resources Board (CARB) for safety certification of air purifiers for use in occupied areas.

The allowable output in parts per million (PPM) of ozone for this standard is .05 PPM.

The Odorox Boss meets the definition of an ozone generator as set forth by CARB's
Evaluation of Ozone Emissions From Portable Indoor Air Cleaners
dated February 2008 - glossary page #32 –

Ozone Generator - An appliance that intentionally emits ozone but is advertised as an “air cleaner” or “air purifier”.

Per this test the Odorox Boss emitted 23.2 times the allowable amount of ozone permitted for an air cleaner to be considered safe in an occupied area.

Per UL 867 and CARB's requirements and California's statutes the Odorox Boss is unsafe to use in occupied areas and does not meet the criteria to be sold in California for use in occupied areas.

Link to UL 867 – Section 37 – Ozone Test
<http://bbs.dianyuan.com/bbs/u/29/1117095142.pdf>

Link to updated UL 867 – Section 37 to include the term “UV Lamps”
<http://www.arb.ca.gov/research/indoor/aircleaners/ul867crds-testconditions.pdf>

Link to CARB Glossary – Ozone Generator Definition – Page #32
http://www.arb.ca.gov/research/indoor/esp_report.pdf

IMPORTANT NOTE #1: Not one hydroxyl was measured/read/detected in this test. It was all ozone.

Odorox & Boss are both trademarks of HGI Industries Boynton Beach Florida

This cover letter was written by International Ozone Technologies Group, Inc. and represents its opinions from the attached report by UL and discussions with California Air Resources Board about the ozone output and safety of use in occupied areas of the Odorox Boss.



INTERNATIONAL OZONE TECHNOLOGIES GROUP INC
860-6 N 8TH ST
LANTANA , FL 33462

E-mail: russm@internationalozone.com

Reference: File: TC9472 Project : 13CA11621

Product: Odorox Boss Air Cleaner S/N ODHG000474/ Lamp ID # HGI Industries Inc 561-735-3702/M1-3U-3702 Hg 8100-LV63

Dear Mr. McCubbin,

Per your request, project 13CA11621 was opened, in accordance with your requested test protocol for the evaluation of the Odorox Boss Air Cleaner. Your requested test protocol for this project was to determine compliance with the superseded UL 867 Ozone test method/requirements. A copy of the test data has been included as an appendix to this report.

UL Verification Services did not select the samples, determine whether the samples were representative of production samples, witness the production of the test samples, nor were we provided with information relative to the formulation or identification of component materials used in the test samples. The test results apply only to the actual samples tested.

The issuance of this report in no way implies Listing, Classification or Recognition by UL LLC and does not authorize the use of UL Listing, Classification or Recognition Marks or any other reference to UL LLC. on the product or system. UL Verification Services authorizes the above named company to reproduce this Report provided it is reproduced in its entirety. The name, Brand or Marks of UL LLC cannot be used in any packaging, advertising, promotion or marketing relating to the data in this Report, without UL's prior written permission.

UL Verification Services, its employees and agents shall not be responsible to anyone for the use or nonuse of the information contained in this Report, and shall not incur any obligation or liability for damages, including consequential damages, arising out of or in connection with the use of, or inability to use, the information contained in this Report.

This letter will serve to report that all tests on the subject product have been completed. This concludes all work associated with this Project and we are therefore closing this project.

Thank you for the opportunity to provide your company with these services. Please do not hesitate to contact us if you should have any questions or comments.

Very truly yours,

Richard Odell

Staff Engineer
Department: 3016ISCL
Tel: 408-754-6699
E-mail: Richard.a.odell@ul.com

Sincerely yours:

Denise Dougherty

Staff Engineer
Global Commercial Testing Coord.
UL Verification Services
E-mail: denise.l.dougherty@ul.com

APPENDIX

2013-03-13, 2013-03-14
OZONE TEST UL 867, Section 37

METHOD

The appliance was placed in a room having a volume of 950-1100 cubic feet (26.9-31.1 m³) with a minimum side dimension of 8 feet (2.4 m) and a maximum height dimension of 10 feet (3.0 m) without openings. The test room walls and ceiling were covered with sheet polyethylene or aluminum. The floor was of a nonporous material such as vinyl tile or aluminum.

During the test, the test room was maintained at a temperature of 25 ± 2 °C (77 ± 4 °F) and a relative humidity of 50 ± 5 percent. Prior to the start of and immediately after this test, the ozone background level was measured with the product off. The background level average was calculated and subtracted from the maximum measurement during the test.

The appliance was located in the center of the test room floor and about 30 inches (762 mm) above the floor for a table-mounted product.

The ozone monitor sampling tube was located 2 inches (50 mm) from the air outlet (discharge port) of the product and was pointed directly into the air stream.

The test was repeated while measuring AMBIENT OZONE MEASUREMENT AWAY FROM EQUIPMENT.

The emission of ozone was monitored for 24 hours to determine the concentration.

The test was conducted with the fan in Low Speed and the Processor setting on high.

2013-03-13, 2013-03-14

OZONE TEST (Continued) UL 867, Section 37

RESULTS (AT DISCHARGE PORT)

O3t = Maximum ozone concentration measured: ____^{***}____ parts per million (PPM) by volume.

Ozone background level:

O3prior = prior to the start of the test: ____0____ PPM.

O3after = after the test: ____^{***}____ PPM.

The maximum measured ozone level = $O3t - (O3prior + O3after)/2 =$ ____^{***}____ PPM.

^{***}= Please note that the sample put out a high level of ozone. The ozone output was greater than 1.0 PPM, and still rising causing the readings to exceed the ozone analyzers test range. Per project engineers instructions the test was stopped at 3.5 hours. Ref: Highest ozone value 1.16 PPM.

RESULTS (AMBIENT OZONE MEASUREMENT AWAY FROM EQUIPMENT)

O3t = Maximum ozone concentration measured: ____^{####}____ parts per million (PPM) by volume.

Ozone background level:

O3prior = prior to the start of the test: ____0____ PPM.

O3after = after the test: ____^{####}____ PPM.

The maximum measured ozone level = $O3t - (O3prior + O3after)/2 =$ ____^{####}____ PPM.

^{####}= Please note that the sample put out a high level of ozone. The ozone output was greater than 1.0 PPM, and still rising causing the readings to exceed the ozone analyzers test range. Please note that the sample readings were taken in the corner of the test room away from the unit. Per project engineers instructions the test was stopped at 3.0 hours. Ref: Highest ozone value 1.08 PPM.

NOTE TO LABORATORY TECHNICIAN: The maximum allowable ozone concentration is 0.05 ppm.

Date	Time	Test Instance	Ambient Temperature, C	Relative Humidity, %	Barometric Pressure, mBar
2013-03-13	Start 9:15 A.M.	At Discharge Port	23C	54%	-
2013-03-14	Start 1:00 P.M.	Ozone Measured Away From Equipment	23C	55%	-

END OF DATASHEET PACKAGE. THIS PAGE INTENTIONALLY LEFT BLANK