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ROOM AIR CLEANER IN CHAMBER TEST FOR TOLUENE REPORT

Manufacturer:	Air Cleaner Manufacturer
Product Name:	In-Room Air Cleaner
RTI Report No.	R04191601

**Test Laboratory:
RTI
3040 Cornwallis Road
Research Triangle Park, NC 27709
919-541-6941
mko@rti.org**

Air Cleaner Performance Report Summary

This report applies to the tested device only.

Laboratory Data

RTI Report No.	<u>R04191601</u>	Date	<u>19-Apr-16</u>
Test Laboratory	<u>RTI International</u>		
Operator	<u>Pope</u>	Supervisor	<u>Owen</u>
Analyzer	Brand <u>RAE Systems</u>	Model	<u>miniRAE</u>

Device Manufacturer's Data

Manufacturer	<u>Air Cleaner Manufacturer</u>
Product Name	<u>In-Room Air Cleaner</u>
Product Model	<u></u>
Test requested by	<u>Air Cleaner Manufacturer</u>
Sample obtained from	<u>Air Cleaner Manufacturer</u>
Specified test conditions:	Airflow <u>200</u>

Device Description

Nominal Dimensions (in.):	<u>24 x 12 x 12</u>	(height x width x depth)	
Generic name	<u>In-room</u>	Color	<u>white</u>

Test Conditions

Airflow (cfm)	<u>200</u>	Temperature (F)	<u>75</u>	RH (%)	<u>45</u>
Contaminant:	<u>Toluene</u>	Amount injected	<u>1.9</u>	mL	
Initial Conc. (ppm)	<u>15.0</u>				

Test Description Toluene was vaporized into chamber, the chamber fan mixed the air for 5 minutes, then the concentration was monitored for at least 30 minutes.

Comparison between the Air Cleaner On and Off tests are used to calculate the change due to the air cleaner. Chamber Volume is 640 cubic ft.

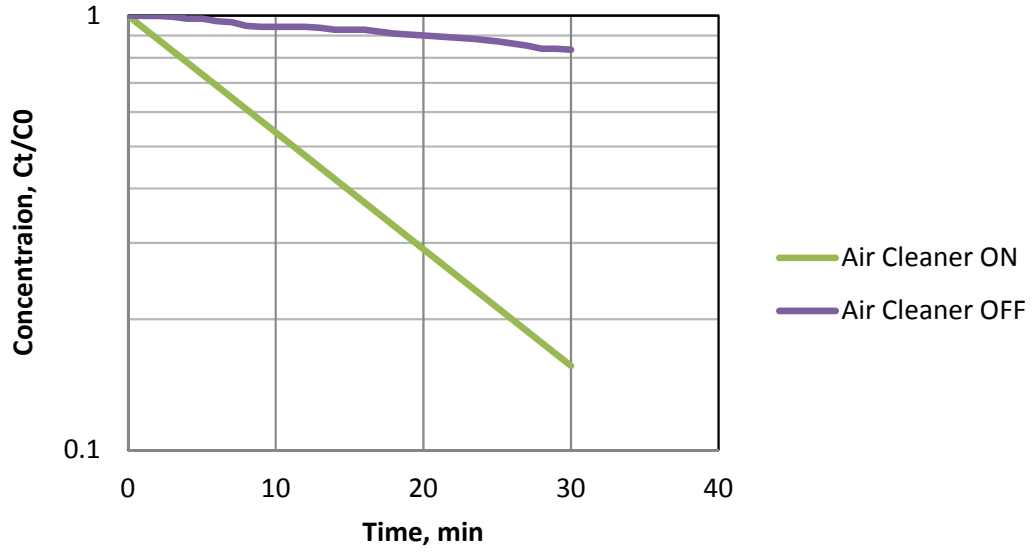
Test Results

Concentration at 30 minutes	<u>2.3</u>	ppm	Air cleaner ON
Concentration at 30 minutes	<u>12.5</u>	ppm	Air cleaner OFF
Clean Air Rate for Toluene*	<u>36</u>	cfm	

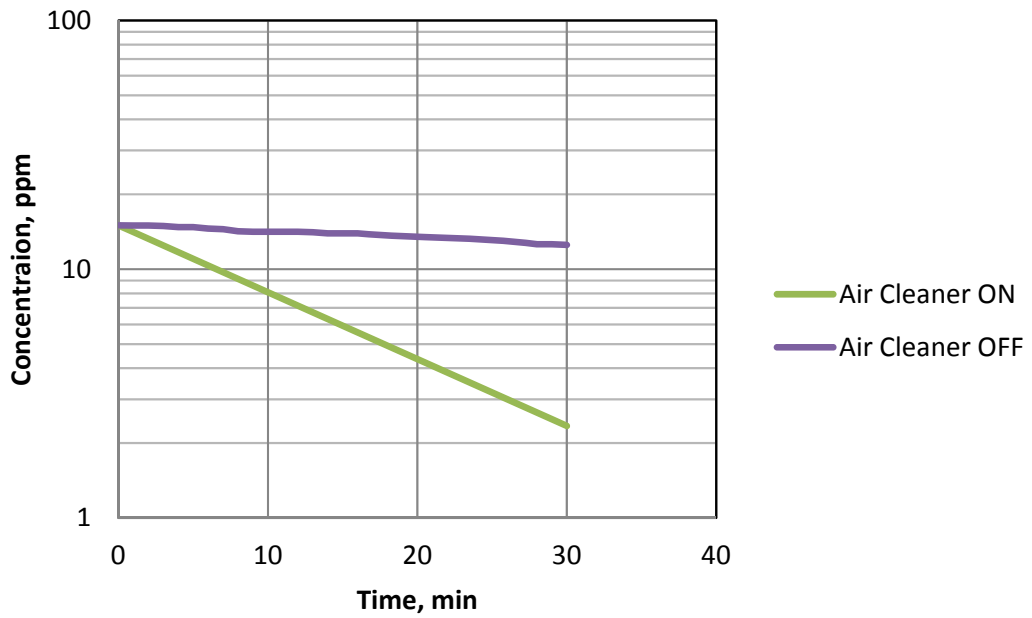
*using calculations based on the CADR calculation procedure, actual room size, and gas-phase testing.

RTI Test Report : R04191601

Comparison of Concentration Decay Rates



Actual Concentration Profile



Data Summary

RTI Report No.	R04191601	
Manufacturer	Air Cleaner Manufacturer	
Product Name	In-Room Air Cleaner	
Nominal Dimensions (in.):	24 x 12 x 12	(height x width x depth)
	k	Clean Air Rate for Toluene* = Vol * (koff - kon) (cfm)
Natural Decay (OFF)	-0.006	
Air Cleaner ON Decay	-0.062	36

Data Table

Time (min) from completion of mixing step	Concentration (ppm) Air Cleaner Off (Natural Decay)	Concentration (ppm) Air Cleaner ON
0	15.0	15.0
1	15.0	14.1
2	15.0	13.3
3	14.9	12.5
4	14.8	11.7
5	14.8	11.0
6	14.6	10.3
7	14.5	9.7
8	14.2	9.1
9	14.1	8.6
10	14.1	8.1
11	14.1	7.6
12	14.1	7.1
13	14.1	6.7
14	13.9	6.3
15	13.9	5.9
16	13.9	5.6
17	13.8	5.2
18	13.6	4.9
19	13.6	4.6
20	13.5	4.4
21	13.4	4.1
22	13.4	3.8
23	13.3	3.6
24	13.2	3.4
25	13.1	3.2
26	12.9	3.0
27	12.8	2.8
28	12.6	2.7
29	12.6	2.5
30	12.5	2.3

*based on calculations used for the AHAM CADR with adjustment for actual room size.
This is not a CADR; it is a gas-phase test result using similar methodology.