

Air Purifier Test Report

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the Jiangsu Center for Disease Control and Prevention on Aug 10,
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1. Test Summary

Product	: Air Purifier
Brand Name	: RHT
Model(s)	: IA60
No. of Sample Received	: 1
Test Completion Date	: Aug 10, 2021
Test Items	: 1. Ozone emission 2. Virus Removal Efficiency (5th generation COVID-19 virus) 3. Bacteria Removal Efficiency (Naturally occurring airborne bacteria)
Test Standards	: 1. GB/T 18202-2000 2. Technical Specification for Disinfection (消毒技術範規) (2002)
Test Results	: See the attached sheets

2. Sample Description

Product: Air purifier

Brand Name: RHT

Description: A cord connected indoor used only air purifier

Model: IA60

Model Similarity: The model under test is the same as [Model: BM300; Brand: b-MOLA] in terms of theory, function, specification and structure.

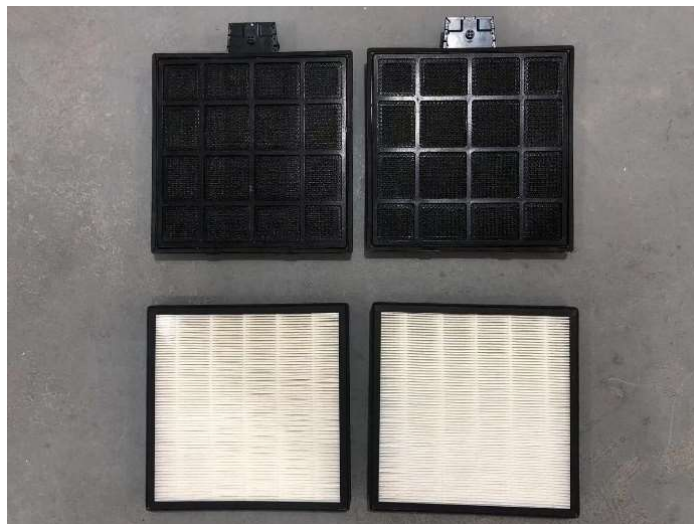
Speed setting during testing: High speed

Sample photos:





RHT / IA60



NCCO Reactor and Normal White HEPA

3. Test Method of Ozone Emission

This test was performed in accordance to Technical Specification for Disinfection (2002), 2.1.5.7.3. It was repeated for 3 times.

1. Test Apparatus and Supporting Materials

20 m³ test chamber

Ozone analyzer (Model 106-L)

Type 504 mechanical stopwatch

2. Test Parameters

Temperature: 21 °C

Relative Humidity: 54 %

Height of Sampling: 1.5 m

Test Duration: 1h (At least 12 data points collected)

4. Results of Ozone Emission Measurement

Test Number	Ozone concentration (mg/m ³)												Average (mg/m ³)	
	5	10	15	20	25	30	35	40	45	50	55	60		
1	0.006	0.006	0.007	0.008	0.008	0.008	0.008	0.008	0.009	0.009	0.009	0.009	0.009	0.008
2	0.014	0.018	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019
3	0.016	0.016	0.017	0.017	0.017	0.018	0.019	0.019	0.020	0.020	0.021	0.021	0.021	0.018

Conclusion:

Over the measurement period of the test, the average ozone concentration is found to be less than 0.1 mg/m³. The sample is concluded to meet the requirements of standards specified in GB/T 18202-2000.

5. Test Method of Virus Removal

This test was performed in accordance to Technical Specification for Disinfection (2002), 2.1.3.4. It was repeated for 3 times.

1. Test Apparatus and Supporting Materials

20 m³ chamber

ZR-1060 sampling system

1 – 10 µm aerosol generator

Incubator (Model 750L)

Agar culture medium

2. Test Parameter

Test virus:	COVID-19 virus, 5th generation
Temperature:	22 – 23 °C
Relative Humidity:	55 – 60 %
Bioaerosol spray pressure:	1.6 kg/cm ²
Bioaerosol spray time:	5 minutes
Sampling flow rate:	28.3 L/min
Height of sampling:	1.0 m
Sampling time:	5 seconds (Control group t ₀ , t ₆₀ ; Experiment group t ₀) 5 minutes (Control group t ₁₂₀ ; Experiment group t ₆₀ , t ₁₂₀)
Operation mode of the device:	SS (set through the mobile control app)

6. Results of Virus Removal test

Disinfection Time (min)	Control Group		Experimental Group	
	Viable Virus Count (cfu/m ³)	Natural Decay Rate (%)	Viable virus Count (cfu/m ³)	Removal Efficiency (%)
0	4.08×10 ⁵	-	4.57×10 ⁵	-
60	2.59×10 ⁵	36.52	49	99.98
120	1.10×10 ⁵	73.04	14	99.99
0	3.21×10 ⁵	-	3.67×10 ⁵	-
60	2.33×10 ⁵	27.41	1.48×10 ²	99.94
120	1.15×10 ⁵	64.17	49	99.96
0	5.59×10 ⁵	-	4.35×10 ⁵	-
60	2.38×10 ⁵	57.42	21	99.99
120	9.69×10 ⁴	82.67	7	99.99

Remarks:

1. No viral growth are observed on all negative controls.

Conclusion:

After continuous operation of the device for 120 mins, the average removal efficiency for the virus is found to be 99.98%. On the other hand, the control group shows only ~70 %. The sample is concluded to meet the requirements of standards specified in Technical Specification for Disinfection (2002).

7. Test Method of Bacteria Removal

This test was performed in accordance to Technical Specification for Disinfection (2002), 2.1.3.5. It was repeated for 3 times.

1. Test Apparatus and Supporting Materials

70 m³ (26 m² area) test chamber

SKC Quick Take 30 microorganism sampler

Air sampling impactor

Incubator (Model 750L)

Standard agar culture medium

2. Test Parameter

Test bacteria: Naturally occurring airborne bacteria

Temperature: 22 – 23 °C

Relative Humidity: 58 – 60 %

Sampling Flow Rate: 28.3 L/min

Height of Sampling: 1.0 m

Sampling time: 5 minutes

Sampling points: 2

Operation mode of the device: SS (set through the mobile control app)

8. Results of Bacteria Removal Test

Sample Number	Initial Bacteria Count (cfu/m ³)	Final Bacteria Count (cfu/m ³)	Removal rate (%)
1	3.01×10 ³	95	96.84
2	5.80×10 ³	18	99.69
3	3.01×10 ³	14	99.53
Average	3.94×10 ³	42	98.93

Remarks:

1. No viral growth are observed on all negative controls.

Conclusion:

Upon continuous operation of the device under test for 120 mins, the average removal rate for the bacteria is found to be ~ 99 %. The device is concluded to meet the requirements of standards specified in Technical Specification for Disinfection (2002).

***** End of Report *****