

TEST REPORT

Applicant: Whitebox AB
Box 45, 93121 Skelleftea,
Sweden

Number: 21031310HKG-001

Date: 28 May 2021

Sample Description

Product : Air Cleaner
Model No. : Air Cleaner X
Brand Name : Whitebox
Electrical Rating : 120-277V
No. of Submitted Samples : 1 piece

Date Received : 28 Apr 2021

Date Test Conducted : 28 Apr 2021 to 10 May 2021

Test Requested : Performance Test (Eliminating Bacterial Rate (Staphylococcus Aureus (MRSA) ATCC 43300)) according
1. GB/T 18801-2015 Air Cleaner
2. GB 21551.3-2010 Antibacterial and cleaning function for household and similar electrical appliances – Particular requirements of air cleaner

Test Method : See the attached sheets.

Test Result : See the attached sheets. Measurement uncertainty for applicable tests has been established.

Remark : Location of Test Laboratory: Guangzhou Institute Microbiology, No.1, Jiantashan Road, Huangpu District, Guangzhou, Guangdong, China

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Prepared by:

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TEST RESULTS:

1. Test Method for Air Purifier Eliminating Bacterial Performance

1. Test Equipment
 - a) Strain: Staphylococcus aureus (MRSA)
 - b) Microbial aerosol generator: TK-3
 - c) Culture media: NA
 - d) Sampling equipment: six-stage sieve sampler
2. Test Conditions
 - a) The volume of the test chamber: 10 m³
 - b) Environment temperature: (20~25)°C
 - c) Environment humidity: (50~70) %RH
3. Operation Conditions of the Machine
Set the switch to position "wind speed 90m³/h".
4. Test Procedure
 - a) Get a bacteria slant culture (4~5 generation) which is incubated at 37°C for 24 h, wash the culture from this slant with 10 mL NB, filter the liquid culture by aseptic cotton buds, and dilute this inoculum with NB to suitable concentration. Then make atomized bacterial suspension.
 - b) The equipment is placed in the two test chambers, close the door, and turn on the HEPA filter system. Simultaneously operate the environmental control devices until the temperature reaches (20~25)°C, relative humidity reaches (50~70)%. Turn off the chamber environmental control system.
 - c) Release microbial aerosol: turn on the microbial aerosol generator, then turn on the ceiling fan, turn off the fan after 10 min, and let stand for 15 min.
 - d) At the same time, the test group and the control group were sampled with six-stage sieve sampler.
 - e) The test group started the air cleaner and sampled after 120 min of action, and the control group also sampled in the corresponding time period.
 - f) Choose 2 NA plates (the same batch) as the negative control, and culture them on the same condition with the samples.
 - g) Run the test three times and take the mean as the final result.
5. Computational Formula

Natural Decay Rate:
$$Nt(\%) = \frac{V_0 - V_t}{V_0} \times 100\%$$

Where V₀ = original bacteria count of control group; V_t = bacteria count after treatment of control group

Eliminating Bacterial Rate:
$$Kt(\%) = \frac{V_1 \times (1 - Nt) - V_2}{V_1 \times (1 - Nt)} \times 100\%$$

Where V₁ = original bacteria count of control group; V₂ = bacteria count after treatment of control group

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TEST RESULTS:

2. Performance Test Result

Number of sample	Test Strain	Test Time (min)	Test Number	Control Group			Test Group		Eliminating Bacterial Rate Kt (%)
				Original Bacteria Count V_0 (cfu/m ³)	Bacteria Count after Treatment V_t (cfu/m ³)	Natural Decay Rate N_t (%)	Original Bacteria Count V_1 (cfu/m ³)	Bacteria Count after Treatment V_t (cfu/m ³)	
1001	Staphylococcus aureus (MRSA)	120	1	1.24×10 ⁵	8.93×10 ⁴	27.98	1.12×10 ⁵	<7	>99.99
			2	1.17×10 ⁵	8.32×10 ⁴	28.89	1.16×10 ⁵	<7	>99.99
			3	1.19×10 ⁵	8.48×10 ⁴	28.74	1.22×10 ⁵	<7	>99.99
			Mean						>99.99

Note: The negative control group was sterile growth.

Remark:

The testing data and result by this report is just for scientific research, teaching, internal quality control, product research and development etc. on reference only.

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APPENDIX A:

Product Photo:



Model No.: Air Cleaner X

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