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检测
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CNAS L0823



广州市微生物研究所有限公司

Guang Zhou Institute of Microbiology Co., Ltd.

国家空气净化产品质量检验检测中心

National Center of Quality Inspection and Testing on Air Purification Products

检 测 报 告

TEST REPORT

Report Number	KJ20222169
Name of Sample	MESP Ceiling-mounted Air Sterilizing Purifier
Applicant	AirQuality Technology (Shanghai) Co., Ltd.



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202019005395

Test No. KJ20222169

GUANG ZHOU INSTITUTE OF MICROBIOLOGY CO., LTD.
NATIONAL CENTER OF QUALITY INSPECTION AND TESTING
ON AIR PURIFICATION PRODUCTS

TEST REPORT

Date Received: Oct. 13, 2022

Date Analyzed: Oct. 21, 2022

Name of Sample	MESP Ceiling-mounted Air Sterilizing Purifier	Source of Sample	Delivery
Applicant	AirQuality Technology (Shanghai) Co., Ltd.	Client	Qi Zhengge
Manufacturer	AirQuality Technology (Shanghai) Co., Ltd.	Brand	AirQuality
Type and Specification	FSA550M-A	Quantity of Sample	1PC
Date of Production	——	State of Sample	Machine
Batch Number	——	Packing of Sample	In box
Sample Picture			
Standard and Methods	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		
Items of Analysis	1. CADR (Particulate) 2. CCM (Particulate) 3. Cleaning Energy Efficiency (Particulate) 4. Harmful Substances Release Amount (Ozone) 5. Standby Power, Input Power 6. Noise		
Remarks	——		

To be continued



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Method for Testing Clean Air Delivery Rate of Particulate:

1. Test Condition
 - 1) Environment temperature: $(25 \pm 2) ^\circ\text{C}$
 - 2) Environment humidity: $(50 \pm 10) \% \text{RH}$
2. Test Equipment
Test chamber (30 m^3), Particle Detector
3. Running State of the Sample
Set the switch to position "The highest wind speed".
4. Test Procedure
 - 1) Place the sample into the chamber according to the standard's requirements. Set the sample to the particular running state. Make sure the sample runs normally, and then turn off the sample.
 - 2) Purify the air in the chamber with the HEPA filter. Make sure the background concentration of the pollutants reaches a particular level, and then turn on the temperature and humidity control device. Keep the temperature and humidity control device running until the temperature and the humidity reaches the standard's requirement.
 - 3) A certain amount of cigarette smoke is added into the chamber with the cigarette burner. Turn off the cigarette burner while the particulate concentration reaches the standard's requirement ($2 \times 10^6 \sim 2 \times 10^7$ particles/L).
 - 4) Mix the particulate for 10 min, and then turn off the stirring fan.
 - 5) Test the initial concentration after the fan is stopped.
 - 6) Turn on the Sample. Test the particulate concentration at 2-minute intervals for 20 minutes.
 - 7) According to the step 1) ~ 6), test the natural decay without the sample.
5. Computational Formula
$$\text{CADR } (\text{m}^3/\text{h}) = 60 \times (k_e - k_n) \times V$$

Where: k_e = total decay constant; k_n = natural decay constant; V = volume of the test chamber, m^3

Test Results

Number of Sample	Pollutant	Natural Decay Constant k_n (min^{-1})	Total Decay Constant k_e (min^{-1})	CADR (m^3/h)	Cleaning Energy Efficiency η [$\text{m}^3/(\text{W} \cdot \text{h})$]	Cleaning Energy Efficiency Grade
KJ20222169-1	Particulate	0.0024	0.3015	538.4	8.26	High-efficiency grade

Note. High-efficiency grade: $\eta_{\text{particulate}} \geq 5.00$ Qualified grade: $2.00 \leq \eta_{\text{particulate}} < 5.00$

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Method for Testing Cumulate Clean Mass of Particulate:

1. Test Equipment
Test chamber (3 m³, for the acceleration test; 30 m³, for the CADR test), Dust detector, Particle Detector
2. Running State of the Sample
Set the switch to position "The highest wind speed".
3. Test Procedure
 - 1) Test the initial CADR of the sample according to the appendix B of GB/T 18801-2015.
 - 2) Place the sample into the 3 m³ chamber according to the requirements of standard. Turn on the sample and ceiling mixing fan, and then close the door of chamber.
 - 3) Light the cigarettes and inject the cigarette smoke into the 3 m³ chamber. When the concentration of particulate in the chamber is lower than 0.035 mg/m³, turn off the sample and let it stand for at least 30 minutes before being taken out.
 - 4) Put the sample into a 30 m³ test chamber, test the CADR again.
 - 5) According to the step 2) ~ 4), test the CADR for different numbers of cigarettes.
4. Interval Binning

Interval Grading	$CCM_{\text{particulate}}$ (mg)
P1	$3000 \leq CCM < 5000$
P2	$5000 \leq CCM < 8000$
P3	$8000 \leq CCM < 12000$
P4	$12000 \leq CCM$

Note: The cumulate clean mass (CCM) of air cleaner should not be evaluated when the measured CCM is less than 3000 mg.

Test Results:

Number of Sample	Test Number	Cumulate Clean Mass (mg)	CADR (m ³ /h)	Percentage to the Initial CADR (%)
KJ20222169-1	1	0	538.4	100.00
	2	8040	326.2	60.59
	3	12075	312.1	57.97
	$CCM_{\text{particulate}}$ (mg)		>12000	
	Interval Grading		P4	

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Method for Testing Harmful Substances Release Amount:

1. Test Equipment
Ozone Analyzer.
2. Running State of the Sample
Set the switch to position "The highest wind speed".
3. Test Procedure
 - 1) Put the sample into a clean space.
 - 2) Test the background concentration.
 - 3) Turn on the sample. Test the ozone concentration 5 cm away from the air outlet.

Test Results

Number of Sample	Items	Unit	Results	Standard Request (GB 21551.3-2010)
KJ20222169-1	Ozone (5 cm away from the air outlet)	mg/m ³	<0.003	≤ 0.10

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Method for Testing Power:

1. Test Equipment
Power measuring instrument
2. Running State of the Sample
Set the switch to position "The highest wind speed".
3. Test Procedure
 - 1) Connect the power measuring instrument between the power supply and the sample, and test the standby power after it is stable in standby state for at least 10 minutes.
 - 2) Connect the power measuring instrument between the power supply and the sample, and test the input power after the sample running stably at rated state for at least 30 min.

Test Results

Number of Sample	Standby Power (W)	Input Power (W)
KJ20222169-1	3.0	65.2

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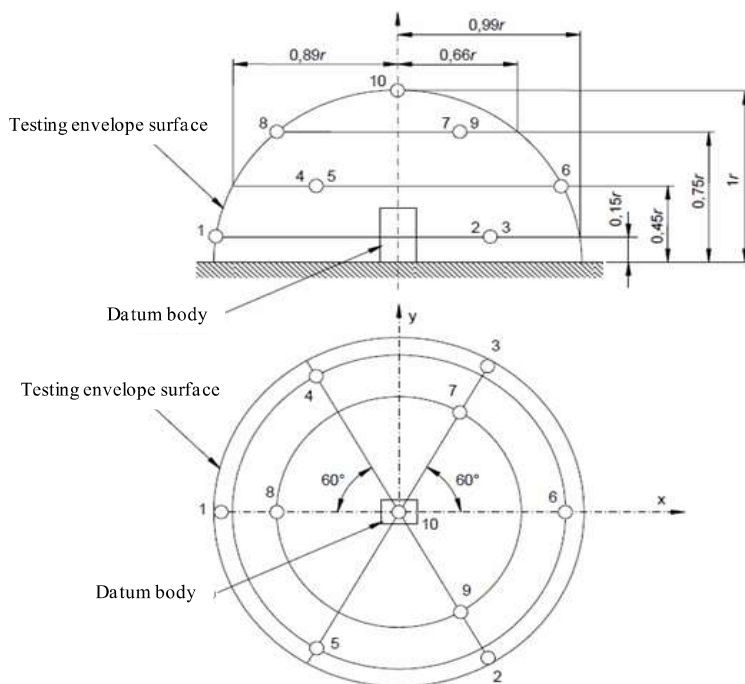
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Measuring of Noise:

1. Test Environment: semi-anechoic chamber; Background Noise: 15.3 dB(A)
2. Running State of the Sample
Power on operation during test.
3. Testing Envelope Surface: hemisphere envelope surface; Testing Radius: $r=1.5$ m. Test schematic diagrams are showed as follows:



Test Results

Number of Sample	Grade	Average Sound Pressure Level dB(A)	Acoustic Power Level dB(A)
KJ20222169	High	38.0	49.5
	Middle	30.1	41.6
	low	≤ 18.8	≤ 30.3

End of report

Editor

陈康河

Checker

黄永良

Issuer

王召华

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Contact Address: NO.1Jiantashan Road, Huangpu District, Guangzhou City, Guangdong Province

Test Address: NO.1Jiantashan Road, Huangpu District, Guangzhou City, Guangdong Province (Noise)

Building 1, Junheng Plaza, 181 Kaitai Avenue, Huangpu District, Guangzhou City,

Guangdong Province (The rest of the project)

Postal Code: 510663

Tel. (020)31606167

(020)62800791

URL: <http://www.ggtest.com.cn>