

检 验 报 告

TEST REPORT

NCSA-2019A-0077

产品名称 空气净化器
Name of Product air purifier

委托单位 新加坡商维碁有限公司
Client Vicky's Import and Export Pte LTd

生产单位 苏州贝昂科技有限公司
Manufacturer Beiang Air Tech Ltd.

检验类别 委托检验
Test Category Entrusted Test

国家空调设备质量监督检验中心

National Center of Quality Supervision and Inspection and

Testing for Air Conditioning Equipment



国家空调设备质量监督检验中心

National Center of Quality Supervision and Inspection and Testing for Air Conditioning Equipment

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样品编号 Sample No.	2019A-0077		
产品名称 Name of Product	空气净化器 air purifier	规格型号 Specification Model	SGT350SE
		商 标 Trademark	POIEMA
委托单位 Client	新加坡商维基有限公司 Vicky's Import and Export Pte LTd	出厂编号 Production No.	/
		生产日期 Date of Manufacture	/
生产单位 Manufacturer	苏州贝昂科技有限公司 Beiang Air Tech Ltd.	送样数量 Sample Quantity	1 台 One
		送样日期 Submission Date	2019-11-25
检验类别 Test Category	委托检验 Entrusted Test	检验日期 Test Date	2019-12-2
委托单位地址 Client Address	7 Tuas Bay Walk Singapore 637756		
检验依据 Test Standard	检测方案 BEET-FA-46 Test Scheme BEET-FA-46		
判定依据 Criterion	/		
检验地点 Tested Address	北京市通州区葛渠富壁路 Fubi Road, Gequ, Tongzhou District, Beijing, China		
检验用 仪器、装置 Test Instruments and Devices	T-H70 钢卷尺; T-H61 激光粒子计数器; T-IAQ01 30m ³ 环境测试舱; T-H44 静电分级器; H24 凝结核粒子计数器; T-H70 Steel Tape; T-H61 OPC; T-IAQ01 30 m ³ Environmental Test Chamber; T-H44 Electrostatic Classifiers; H24 CPC		
检验项目 Tested Item	颗粒物净化效率 Particulate Matter Fractional Efficiency		
检验结论 Conclusion	检验结果见第 5~7 页。 Refer to page 5~7 for the detailed test results.		



批准:
Approval

[Handwritten Signature]

审核:
Verification

[Handwritten Signature]

主 检:
Chief tester

[Handwritten Signature]

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1、检测依据

Test Standard

参照 GB/T 18801-2015 《空气净化器》

Refer To GB/T 18801-2015<Air Cleaner>

2、颗粒物净化效率检测方案

Test Scheme for Fractional Efficiency of Particulate Matter

2.1 自衰减率测试

Natural decay efficiency test

1) 将待检样品放置于 30m³环境测试舱内, 把样品调节至额定工作状态, 检验运转正常后, 关闭样品;

Place the sample in the 30m³ environmental test chamber. Adjust the sample to the rated working state, and then switch off the sample when it works normally;

2) 开启空调净化系统, 净化测试舱内空气, 使粒径在 0.3μm 以上的颗粒物背景浓度小于 1000 个/L, 同时启动温湿度控制装置, 使舱内温度达到 (25±2) °C, 相对湿度达到 (50±10) %;

Turn on the air conditioning and purification systems. Purify the air in the 30m³ environmental test chamber until the background concentration of particles with particle size above 0.3μm is less than 1000P/L. Meanwhile, make sure that the temperature remains (25±2) °C, and the relative humidity remains (50±10)%;

3) 待颗粒物背景浓度降低到合适的水平, 记录颗粒物背景浓度, 关闭空调净化系统, 启动搅拌风扇和循环风扇。利用香烟发生器发生标准香烟烟雾, 待总浓度 (粒径范围为 14.6nm~615.3nm) 达到 (2×10⁷~2×10⁸) 个/L 时, 关闭香烟发生器, 搅拌风扇再搅拌 10min, 颗粒物混合均匀后关闭搅拌风扇, 试验过程中, 循环风扇一直保持开启状态;

When the background concentration of particles drops to a proper level, record the background concentration of the particles, and turn off the air conditioning and purification systems, and then turn on the stirring fan and the circulating fan. Generate standard cigarette smoke via a cigarette smoke generator. When the total concentration of particles (particle size ranges from 14.6 nm to 615.3 nm) reaches (2×10⁷ to 2×10⁸) P/L, shut down the cigarette smoke generator. Stirring fan operates for another 10 minutes to make sure the particulate matter mixes evenly. During the test, the circulating fan is always on;

4) 待搅拌风扇停止运动后, 用凝结核粒子计数器测定颗粒物粒径 (14.6nm、51.4nm 和 101.8nm) 的初始浓度 c₀;

Test the initial concentration (c₀) of the particle size (14.6nm, 51.4nm and 101.8nm) by CPC after the stirring fan stops.

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5) 试验舱内的初始浓度测定后,每 2min 测定并记录一次 14.6nm、51.4nm 和 101.8nm 粒径下的颗粒物浓度,连续测定 120min;

Recorded concentration of particle size (14.6nm, 51.4nm and 101.8nm) every 2 minutes for 120 minutes;

6) 记录试验时试验舱内的温度和相对湿度;

Record the temperature and relative humidity in the environmental test chamber;

7) 依据测试结果,求得颗粒物(14.6nm、51.4nm 和 101.8nm) 自衰减率;

According to the test results, calculate the natural decay efficiency of particulate matter (14.6nm, 51.4nm and 101.8nm);

8) 自衰减率计算公式:

Calculation formula of natural decay efficiency:

$$\eta = \frac{c_0 - c_t}{c_0}$$

式中,

In the formula,

η —— 颗粒物自衰减率, %;

Natural attenuation efficiency of particulate matter, %;

c_0 —— $t=0$ 时,室内未开启样品时,颗粒物初始浓度,个/L;

The initial concentration of required particle size at the very beginning, P/L;

c_t —— 在时间为 t ,室内未开启样品时,颗粒物浓度,个/L。

The concentration of required particle size at time t , P/L.

2.2 颗粒物净化效率测试

Particulate matter fractional efficiency

1) 按照 1.1 中 1) -3) 步骤进行;

Follow steps 1) -3) in section 1.1;

2) 待浓度稳定后,用凝结核粒子计数器测定颗粒物粒径(14.6nm、51.4nm 和 101.8nm) 的初始浓度 c'_0 ,开启样品至额定状态,并记录该样机的输入功率 P ;

Test the initial concentration (c'_0) of the particle size (14.6nm, 51.4nm and 101.8nm) by CPC when the concentration of particles is stable. Adjust the sample to the rated working state and record the input power P ;

3) 试验舱内的初始浓度测定后,每 2min 测定并记录一次 14.6nm、51.4nm 和 101.8nm 粒径下的颗粒物浓度,连续测定 120min;

Recorded concentration of particle size (14.6nm, 51.4nm and 101.8nm) every 2 minutes for 120 minutes;

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4) 关闭样品, 并记录试验时试验舱内的温度和相对湿度;

Switch off the sample. Record the temperature and relative humidity in the environmental test chamber;

5) 依据测试结果, 求得样品去除颗粒物 (14.6nm、51.4nm 和 101.8nm) 的净化效率;

According to the test results, calculate the fractional efficiency of particulate matter (14.6nm, 51.4nm and 101.8nm) for the sample;

6) 颗粒物净化效率计算公式:

Calculation formula for fractional efficiency of particulate matter:

$$\eta' = \frac{c'_0 - c'_t}{c'_0}$$

式中,

In the formula,

η' ——样品颗粒物净化效率, %;

Fractional efficiency of particulate matter for the sample, %;

c'_0 —— $t=0$ 时, 室内未开启样品时, 颗粒物初始浓度, 个/L;

The initial concentration of required particle size at the very beginning, P/L;

c'_t ——在时间为 t , 室内开启样品时, 颗粒物浓度, 个/L。

The concentration of required particle size when the sample operates for t minutes.

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样品编号 Sample No.		检 验 结 果 Test Results						
序号 No.	检验项目 Tested Items	时间点 (min) Time	粒子浓度 (P/L) Particle Concentration			自然衰减率(%) Natural Decay Efficiency		
			14.6nm	51.4nm	101.8nm	14.6nm	51.4nm	101.8nm
1	自然衰减率 Natural Decay Efficiency	0	111358	26927	802764	/	/	/
		2	108366	25339	723550	2.7	5.9	9.9
		4	106596	22951	702024	4.3	14.8	12.5
		6	96484	22488	696734	13.4	16.5	13.2
		8	93039	22322	668822	16.5	17.1	16.7
		10	92775	21911	655225	16.7	18.6	18.4
		12	92191	20705	652222	17.2	23.1	18.8
		14	91269	19551	650795	18.0	27.4	18.9
		16	90479	18836	635569	18.7	30.0	20.8
		18	90084	18071	633928	19.1	32.9	21.0
		20	89594	17688	627339	19.5	34.3	21.9
		22	88783	16780	613875	20.3	37.7	23.5
		24	88483	16426	607535	20.5	39.0	24.3
		26	87408	16043	603505	21.5	40.4	24.8
		28	86449	15357	576687	22.4	43.0	28.2
		30	86260	14780	574347	22.5	45.1	28.5
		32	86260	14203	562631	22.5	47.3	29.9
		34	84000	13849	553042	24.6	48.6	31.1
		36	82004	13575	547609	26.4	49.6	31.8
		38	81514	13078	545694	26.8	51.4	32.0
		40	80819	12067	538623	27.4	55.2	32.9
		42	80366	12067	535459	27.8	55.2	33.3
		44	79860	11952	532346	28.3	55.6	33.7
		46	79518	11735	529181	28.6	56.4	34.1
48	78107	11381	513822	29.9	57.7	36.0		
50	76263	11049	512173	31.5	59.0	36.2		
52	76110	10941	492883	31.7	59.4	38.6		
54	76073	10558	491797	31.7	60.8	38.7		
56	74999	10529	490900	32.7	60.9	38.8		
58	71817	10421	489650	35.5	61.3	39.0		
60	71817	10284	486227	35.5	61.8	39.4		

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样品编号 Sample No.		2019A-0077						
检 验 结 果 Test Results								
序号 No.	检验项目 Tested Items	时间点 (min) Time	粒子浓度 (P/L) Particle Concentration			净化效率(%) Fractional Efficiency		
			14.6nm	51.4nm	101.8nm	14.6nm	51.4nm	101.8nm
1	颗粒物净化效率 Particulate Matter Fractional Efficiency	0	129308	767502	1199780	/	/	/
		2	73012	644927	1045295	43.0	15.2	12.1
		4	56228	433551	797611	56.1	43.0	32.9
		6	29921	274414	537833	76.6	63.9	54.7
		8	28742	216605	319522	77.6	71.5	73.1
		10	26347	135232	261117	79.4	82.2	78.0
		12	22735	90737	194455	82.3	88.1	83.6
		14	14371	75429	119257	88.8	90.1	90.0
		16	11937	45021	92875	90.7	94.1	92.2
		18	7186	43683	75843	94.4	94.3	93.6
		20	7186	20494	44817	94.4	97.3	96.2
		22	4790	19561	27107	96.3	97.4	97.7
		24	2396	14650	20920	98.1	98.1	98.2
		26	2396	9999	19883	98.1	98.7	98.3
		28	2396	9326	11748	98.1	98.8	99.0
		30	未检出 Not detected	5929	10049	>99.9	99.2	99.2
		32	未检出 Not detected	5814	5129	>99.9	99.2	99.6
		34	未检出 Not detected	2907	4662	>99.9	99.6	99.6
		36	未检出 Not detected	2616	4079	>99.9	99.7	99.7
		38	未检出 Not detected	2180	4079	>99.9	99.7	99.7
		40	未检出 Not detected	1453	3042	>99.9	99.8	99.7
42	未检出 Not detected	1453	3042	>99.9	99.8	99.7		
44	未检出 Not detected	1453	2856	>99.9	99.8	99.8		
46	未检出 Not detected	727	2331	>99.9	99.9	99.8		
48	未检出 Not detected	727	1748	>99.9	99.9	99.9		
50	未检出 Not detected	727	1561	>99.9	99.9	99.9		

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样品编号 Sample No.	2019A-0077
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检 验 结 果

Test Results

序号 No.	检验项目 Tested Items	时间点 (min) Time	粒子浓度 (P/L) Particle Concentration			净化效率 (%) Fractional Efficiency		
			14.6nm	51.4nm	101.8nm	14.6nm	51.4nm	101.8nm
1	颗粒物净化效率 Particulate Matter Fractional Efficiency	52	未检出 Not detected	727	1294	>99.9	99.9	99.9
		54	未检出 Not detected	727	1165	>99.9	99.9	99.9
		56	未检出 Not detected	727	978	>99.9	99.9	99.9
		58	未检出 Not detected	727	129	>99.9	99.9	>99.9
		60	未检出 Not detected	436	未检出 Not detected	>99.9	99.9	>99.9

检验说明:

Test instructions :

1. 环境测试舱环境条件:

The air in the environmental test chamber comply with the following requirements:

温度: 23°C-27°C; 相对湿度: 40%-60%。

Temperature: 23°C-27°C; Relative humidity: 40%-60%.

2. 测试样品工作状态: 最高档。

Working state of the sample: high grade.

3. 输入功率: 24.8W。

Input power: 24.8W.

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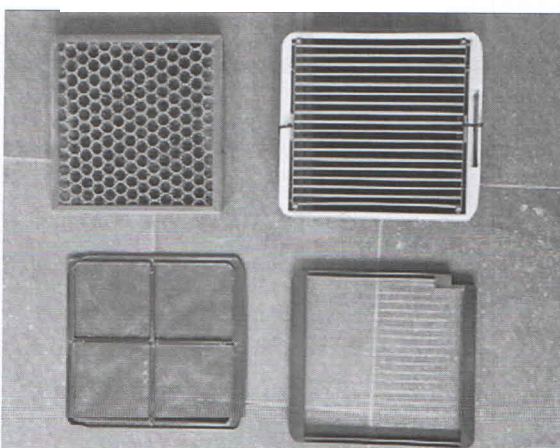
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样品编号 Sample No.	2019A-0076
样品描述 Sample Description	
样品名称 Name of Sample	空气净化器 air purifier
规格型号 Specification Mode	Air-001-XXX
生产单位 Manufacturer	苏州贝昂科技有限公司 Beiang Air Tech Ltd.
外形尺寸 (mm) Dimension	520×260×260
输入电压 (V/Hz) Input Voltage	/
输入功率 (W) Input Power	/
额定风量 (m ³ /h) Rated Air Flow	/
出厂编号 Production No.	/
生产日期 Date of Manufacture	/

备注：以下为样品照片。
Note: The photos of the sample are shown below.



样品
Sample



内部配件
The internal parts

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