



201819000873

TEST REPORT

Applicant : Guangdong Yifei Purification Technology Co., Ltd.
Address : 5th Floor, Jingye science park, NO 288 Lanyuan Road, zengtian, Xin'an Community,
Chang'an Town, Dongguan city

The following merchandise was (were) submitted and identified by the client as:

Name of Sample : Ultraviolet air sterilizer YFJB-Y-1000
Test Type : Commission
Sample Quantity : 1
Model : YFJB-Y-1000
Batch No. : /
Brand : 伊斐净宝
Manufacturer: /
Sample Received : 2020/03/11
Test Period : 2020/03/11- 2020/03/23
Test Items : Please refer to next page(s).
Test Method : Please refer to next page(s).
Test Result : Please refer to next page(s).
Sample Description : Machine
Note: /

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Approved by: [Signature]

Checked by: 叶智坚

Official Seal: [Red Seal: 检验检测专用章]

TEST RESULTS (1):

Test Conclusions:

Ultraviolet air sterilizer YFJB-Y-1000 was produced by Guangdong Yifei Purification Technology Co., Ltd.

The tested results suggested as the following shown:

1. UV radiation illuminance:

The illuminance value of the Ultraviolet air sterilizer YFJB-Y-1000 was $18 \mu\text{W}/\text{cm}^2$ and the tested point was 1 m away from the vertical center below the UV lamp.

2. UV leakage:

The illuminance value of the Ultraviolet air sterilizer YFJB-Y-1000 was $<1 \mu\text{W}/\text{cm}^2$ and the tested point (left, middle and right) was 30 cm away from the diagonal of the machine, which was accorded with the "Safety and sanitary standard for ultraviolet appliance of air disinfection" (GB 28235-2011), and the leakage rate of illuminance should be $\leq 5 \mu\text{W}/\text{cm}^2$.

3. Ozone leakage:

The Ultraviolet air sterilizer YFJB-Y-1000 activated and disinfected for 60 minutes under the conditions of "Maximum Wind Speed", "Sterilize" and the average ozone concentration in the indoor air environment was $0.005 \text{ mg}/\text{m}^3$, which was accorded with the requirements of the "Hygienic standard for ozone in indoor air" (GB/T 18202-2000).

4. Simulated field test:

The Ultraviolet air sterilizer YFJB-Y-1000 activated and disinfected for 120 minutes under the conditions of "Maximum Wind Speed", "Sterilize" and the average bactericidal rate of *Staphylococcus albus* in 3 tests was $\geq 99.90\%$, which was qualified for disinfection and accorded with the requirements of the "Technical Standard for Disinfection" (2002).

5. Field test:

The Ultraviolet air sterilizer YFJB-Y-1000 activated and disinfected for 120 minutes under the conditions of "Maximum Wind Speed", "Sterilize" and the test place is an empty room about 30 m^3 . The average rate of natural bacteria in 3 tests was $\geq 90.00\%$, which was qualified for disinfection and accorded with the requirements of "Technical Standard for Disinfection" (2002).

***** TO BE CONTINUED *****

TEST RESULTS (2):

1. Test item

UV radiation illuminance

2. Instrument

- (1) ST-512 ultraviolet radiation illuminometer (sensitivity: $1\mu\text{W}/\text{cm}^2$);
- (2) Disinfection equipment: UV lamp for Ultraviolet air sterilizer YFJB-Y-1000

3. Test method

- (1) Test basis: "Technical Standard for Disinfection" (2002) 2.1.5.4
- (2) Test condition: Environment temperature: 24.8°C ; Environment humidity: 57 %RH
- (3) Test method: Set the UV lamp to be tested on the measuring frame, adjust the distance so that the lamp was placed 1 m away from the vertical center of the lamp, connect the voltage regulator (220V), turn on the UV lamp for 5 min, and measure the irradiance value with the illuminometer. The test was repeated 3 times.

4. Result

After three repeated tests, the illuminating value of 1 m at the vertical center below the UV lamp was $18\mu\text{W}/\text{cm}^2$. (Table 1)

Table 1 Experimental data of UV radiation illuminance

Test item	Test result		
	Unit	Test number	Radiant value
UV radiation illuminance	$\mu\text{W}/\text{cm}^2$	1	18
		2	18
		3	17
		Average value	18

5. Conclusion

The illuminance value of the Ultraviolet air sterilizer YFJB-Y-1000 with an illuminating value of 1 m at the vertical center below the UV lamp was $18\mu\text{W}/\text{cm}^2$.

***** TO BE CONTINUED *****

TEST RESULTS (3):

1. Test item

UV leakage

2. Instrument

- (1) ST-512 ultraviolet radiation illuminometer (sensitivity: $1\mu\text{W}/\text{cm}^2$);
- (2) Disinfection equipment: Ultraviolet air sterilizer YFJB-Y-1000

3. Test method

- (1) Test basis: "Safety and sanitary standard for ultraviolet appliance of air disinfection" (GB 28235-2011)
- (2) Test condition: Environment temperature: 24.3°C ; Environment humidity: 55 %RH
- (3) Operation condition of the machine: "Maximum Wind Speed", "Sterilize".
- (4) Test method: When the machine was turned on to the rated mode, and set the tested point (left, middle and right) 30 cm away from the diagonal of the machine. The irradiance value of the ultraviolet ray was measured by an irradiance illuminometer. The test was repeated for 3 times.

4. Result

After three repeated tests, the illuminance value of the Ultraviolet air sterilizer YFJB-Y-1000 was $<1\mu\text{W}/\text{cm}^2$, the tested point (left, middle and right) was 30 cm away from the diagonal of the machine (Table 2).

Table 2 Experimental data of UV leakage

Test item	Test result			
	Test location	Unit	Test number	Radiant value
UV leakage	left	$\mu\text{W}/\text{cm}^2$	1	<1
			2	<1
			3	<1
			Average value	<1
	middle	$\mu\text{W}/\text{cm}^2$	1	<1
			2	<1
			3	<1
			Average value	<1
	right	$\mu\text{W}/\text{cm}^2$	1	<1
			2	<1
			3	<1
			Average value	<1

***** TO BE CONTINUED *****

5. Conclusion

The illuminance value of the Ultraviolet air sterilizer YFJB-Y-1000 was $<1 \mu\text{W}/\text{cm}^2$ and the tested point (left, middle and right) was 30 cm away from the diagonal of the machine, which was accorded with the "Safety and sanitary standard for ultraviolet appliance of air disinfection" (GB 28235-2011), and the leakage rate of illuminance should be $\leq 5 \mu\text{W}/\text{cm}^2$.

***** TO BE CONTINUED *****

TEST RESULTS (4):

1. Test item

Ozone leakage

2. Instrument

- (1) Test chamber (30 m³), Ozone analyzer (106-MH)
- (2) Disinfection equipment: Ultraviolet air sterilizer YFJB-Y-1000

3. Test method

- (1) Test condition: Environment temperature: 25.9°C; Environment humidity: 66 %RH
- (2) Operation condition of the machine: "Maximum Wind Speed", "Sterilize".
- (3) Test basis: "Hygienic standard for ozone in indoor air" (GB/T 18202-2000)
- (4) Test method: Place the Ultraviolet air sterilizer YFJB-Y-1000 in the 30 m³ test chamber according to the requirements of use. A sampling point was set at the center of the test chamber 1.5m away from the ground, and turned on the machine at rated mode. The test time was 1 h. During this time, 12 data to be read at a certain interval for averaging. The ozone concentration measured in the test was subtracted from the ozone concentration in the air before the test as the ozone leakage amount of the Air Disinfection Machine.

4. Result

The Ultraviolet air sterilizer YFJB-Y-1000 activated and disinfected for 60 minutes under the conditions of "Maximum Wind Speed", "Sterilize" and the average ozone concentration in the indoor environment was 0.005 mg/m³ (Table 3).

Table 3 Experimental data of Ozone leakage

Time (min)	Ozone leakage (mg/m ³)	Average value (mg/m ³)
5	<0.003	
10	<0.003	
15	0.005	
20	0.006	
25	<0.003	
30	<0.003	0.005
35	0.010	
40	0.014	
45	0.008	
50	0.008	
55	0.006	
60	0.010	

***** TO BE CONTINUED *****



5. Conclusion

The Ultraviolet air sterilizer YFJB-Y-1000 activated and disinfected for 60 minutes under the conditions of "Maximum Wind Speed", "Sterilize" and the average ozone concentration in the indoor air environment was 0.005 mg/m³, which was accorded with the requirements of the "Hygienic standard for ozone in indoor air" (GB/T 18202-2000).

***** TO BE CONTINUED *****

TEST RESULTS (5):

1. Test item

 Simulated field test (*Staphylococcus albus*)

2. Instrument

- (1) Test chamber: 20 m³;
- (2) Test microorganism: *Staphylococcus albus* 8032, Medium: nutrient agar medium with neutralizer, Sampler: six-stage sieve sampler;
- (3) Disinfection equipment: Ultraviolet air sterilizer YFJB-Y-1000

3. Test method

- (1) Test basis: "Technical Standard for Disinfection" (2002) 2.1.3
- (2) Test condition: Environment temperature:(20~25) °C; Environment humidity: (50~70) %RH
- (3) Operation status of the machine "Maximum Wind Speed", "Sterilize".
- (4) Disinfection method: During the test, the machine to be tested was placed in the test chamber. Open the prototype to the rated position and sampling after 120 minutes. The test was repeated 3 times.
- (5) Sampling method: A sampling point was set at the center of the test chamber 1.0m away from the ground, sampling by a six-stage sieve sampler with the sampling flow of 28.3 L/min. Sample was collected at the beginning and after 120 minutes working. The sampling time of the comparison group was 20 s and 20 s, and the sampling time of the test group was 20 s and 6 min.

4. Result

The test temperature was (20~25)°C and the relative humidity was(50~70)%RH.The Ultraviolet air sterilizer YFJB-Y-1000 activated and disinfected for 120 minutes, and the 3 test results for the bactericidal rate of *Staphylococcus albus* were 99.92%, 99.96%, 99.95% respectively(Table 4).

Table 4 Experimental data of air sterilization effect identification test

Test bacteria	Test time (min)	Test number	Comparison group			Test group		Killing rate (%)
			Original bacteria quantity (cfu/m ³)	Bacteria quantity after test (cfu/m ³)	Natural decay rate (%)	Original bacteria quantity (cfu/m ³)	Bacteria quantity after test (cfu/m ³)	
<i>Staphylococcus albus</i>	120	1	8.87×10 ⁴	5.47×10 ⁴	38.33	9.62×10 ⁴	47	99.92
		2	1.15×10 ⁵	7.19×10 ⁴	37.48	1.03×10 ⁵	24	99.96
		3	9.86×10 ⁴	6.39×10 ⁴	35.19	9.24×10 ⁴	29	99.95

***** TO BE CONTINUED *****

5. Conclusion

The Ultraviolet air sterilizer YFJB-Y-1000 activated and disinfected for 120 minutes under the conditions of "Maximum Wind Speed", "Sterilize" and the average bactericidal rate of *Staphylococcus albus* in 3 tests was $\geq 99.90\%$, which was qualified for disinfection and accorded with the requirements of the "Technical Standard for Disinfection" (2002).

***** TO BE CONTINUED *****

TEST RESULT (6):

1. Test item

Identification test for air disinfection effect (Field test)

2. Instrument

- (1) Test chamber: About 30 m³ empty airtight room;
- (2) Medium: Nutrient Agar (NA), Sampler: six-stage sieve sampler;
Disinfection equipment: Ultraviolet air sterilizer YFJB-Y-1000

3. Test method

- (1) Test basis: " Technical Standard for Disinfection " (2002) 2.1.3
- (2) Test condition: Environment temperature: (23~25) °C; Environment humidity: (55~65) %RH
- (3) Operation status of the machine: "Maximum Wind Speed", "Sterilize".
- (4) Disinfection method: During the test, the machine to be tested was placed in an empty airtight room of about 30 m³, and the sample was collected after 120 minutes working. The test was repeated 3 times.
- (5) Sampling method: A sampling point was set 1.0 m away from the ground in the empty airtight room, sampling by a six-stage sieve sampler with the sampling flow of 28.3 L/min.
- (6) Sampling time: 5 minutes before disinfection, 10 minutes after disinfection.

4. Result

The test room was an empty airtight room. The test temperature was (23~25) °C, the relative humidity was (55~65) % RH, the Ultraviolet air sterilizer YFJB-Y-1000 activated and disinfected for 120 minutes, and the 3 test results for the bactericidal rate of natural airborne bacteria were 93.21%, 91.38%, 94.59% respectively (Table 5).

Table 5 Experimental data of air sterilization effect identification test (natural airborne bacteria)

Test bacteria	Test time (min)	Test number	Original bacteria quantity (cfu/m ³)	Bacteria quantity after test (cfu/m ³)	Killing rate (%)
Natural airborne bacteria	120	1	2.55×10 ³	1.73×10 ²	93.21
		2	1.68×10 ³	1.45×10 ²	91.38
		3	1.96×10 ³	1.06×10 ²	94.59

5. Conclusion

The Ultraviolet air sterilizer YFJB-Y-1000 activated and disinfected for 120 minutes under the conditions of "Maximum Wind Speed", "Sterilize" and the extinction of air natural bacteria in the air was tested in an unenclosed room with a volume of about 30 m³. The rate of 3 test results was ≥90.00%, which was qualified for disinfection and accorded with the requirements of Technical Standard for Disinfection" (2002).

***** TO BE CONTINUED *****

SAMPLE PHOTO



***** END OF REPORT *****

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