ATTESTATION REPORT

Date: 2024-08-02
No.: H03066-1

Applicant	:	MassPhoton Limited ROOM 605, 6/F FA YUEN, COMMERCIAL BUILDING 75-77, FA YUEN STREET MONG KOK, HONG KONG
Description of Sample(s)	:	Product name: 紫外綫空氣消毒器 Model no.: Q6060 Brand name: MASSPHOTON
Sample(s) Received Date	:	2024-03-20
Test Completed Date	:	2024-04-17
Investigation Requested	:	1. Ozone leakage 2. Simulated field test of air disinfection 3. Air disinfection field test 4. UV leakage 5. Circulating air volume
Conclusions	:	Refer to test summary
Remark(s)	:	Report content referring to Test Report No: B240320-02, date 2024-04-17, tested by Zhejiang Fries Testing Technology Co., Ltd.

Kevin

THE HONG KONG CERTIFICATION CENTRE LIMITED 香港認証中心有限公司

Cheung Kwan Leuk, Kevin
For and on behalf of
The Hong Kong Certification Centre Ltd

In the event of any discrepancy between the English and Chinese versions of the text mentioned in this report, the Chinese version shall prevail to the extent of such discrepancy only.

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Test Summary

1. Ozone leakage

1.1 Equipment:

(1) Test sample: UV air sterilizer.
(2) Instrument and equipment name and model: Ozone tester (106-L), number: CO02-005.
(3) Environmental test chamber: 30m^3.

1.2 Methods:

(1) Inspection basis: GB 28235-2020 “Ultraviolet sterilizer hygiene requirements” 8.1.5.2.
(2) Testing procedure: Turn on the power supply, turn on the prototype, and test the ozone concentration for 1h in the 30m^3 environment test chamber with the sample gas pipe 1.5m above the ground.
(3) Laboratory environment: temperature 22ºC – 26ºC, relative humidity 45%-60%.

1.3 Results:

Test Frequency	Time (min)	Concentration (mg/m^3)	Mean Concentration (mg/m^3)	GB 28235-2020 Standard Requirement
1	0	0.000	0.000	≤0.1 mg/m^3
2	5	0.000		
3	10	0.000		
4	15	0.000		
5	20	0.000		
6	25	0.000		
7	30	0.000		
8	35	0.000		
9	40	0.000		
10	45	0.000		
11	50	0.000		
12	55	0.000		
13	60	0.000		

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2. Simulated field test of air disinfection

2.1 Equipment:

(1) Test strain: Staphylococcus albus 8032.
(2) Test sample: UV air sterilizer.
(3) Nutrient AGAR medium.
(4) Air microorganism sampling device.
(5) Environmental test chamber: 20m^3.
(6) Temperature and humidity meter, etc

2.2 Methods:

(1) Test Basis: GB 28235-2020 “Ultraviolet health requirements” Appendix C.
(2) The ambient temperature of the test chamber is 20°C – 25°C, and the relative humidity is (50 – 70) %RH.
(3) Brief description of test:
   (a) Aerosol spray staining: In the test chamber of the control group and the experimental group, spray staining and spray staining were carried out, and fan stirred at the same time. After spraying the bacteria, continue to stir for 5 min and rest for 5 min.
   (b) Sampling before disinfection: after the completion of spraying bacteria and resting for 5 minutes, samples before disinfection were taken respectively in the test chamber of the control group and the experimental group, which were used as positive controls before the start of the control group and before the disinfection treatment of the experimental group.
   (c) The sample “UV air sterilizer” is sterilized in a closed 20 m^3 environmental test chamber. The sample is turned on with power supply, run for 2h, and sampled after sterilizing.
   (d) Simultaneously do negative control
   (e) The test was repeated three times.

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2.3 Results:

Effect Time	Test Strain	Control Group		Natural Death Rate N_t (%)	Experimental Group		Kill Ratio K_t (%)	Average Kill Rate (%)
		Bacteria in the air before the test V_0 (CFU/m^3)	Bacterial content of air after test V_1 (CFU/m^3)		Bacteria in the air before the test V_1 (CFU/m^3)	Bacteria in the air before the test V_2 (CFU/m^3)		
2h	Staphylococcus albus 8032	$9.0x10^4$	$7.2x10^4$	22.58	$1.0x10^5$	49	99.94	99.93
		$1.4x10^5$	$1.1x10^5$	21.43	$1.6x10^5$	92	99.93	
		$7.1x10^4$	$5.5x10^4$	22.54	$7.9x10^4$	42	99.93	

Note: No bacterial growth was observed in the negative control group.

3. Field test of air disinfection

3.1 Equipment:

(1) Test strain: Staphylococcus albus 8032.
(2) Test sample: UV air sterilizer.
(3) Nutrient AGAR medium.
(4) Air microorganism sampling device.
(5) Environmental test chamber: 20m^3.
(6) Temperature and humidity meter, etc

3.2 Methods:

(1) Test Basis: GB 28235-2020 “Ultraviolet health requirements” Appendix C.
(2) The ambient temperature of the test chamber is 20°C – 25°C, and the relative humidity is (50 – 70) %RH.
(3) Detection steps:
   (a) Sampling before disinfection: After the air in the selected closed test site is still for 5 minutes, the natural bacteria in the air are sampled with a six-level sieve air impact sampler, which is used as the sample before disinfection (positive control).
   (b) The sample "UV air sterilizer" is sterilized in a 30m^3 environmental test chamber. With the power on, the prototype is turned on and run for 2h. Natural airborne bacteria are sampled as post-sterilized samples (test samples).
   (c) Do negative control at the same time.

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(d) The test was repeated three times.

3.3 Result:

Effect Time	Test Strain	Control Group (CFU/m^3)	Experimental Group (CFU/m^3)	Extinction Rate (%)	Average Extinction Rate
2h	Native bacteria	$5.6x10^3$	7	99.88	99.73
		$2.4x10^3$	7	99.71	
		$1.7x10^3$	7	99.59	

Note: No bacterial growth was observed in the negative control group.

4. UV leakage

4.1 Equipment:

(1) Test sample: UV air sterilizer.
(2) instrument and equipment name and model: ultraviolet irradiance meter (HP-350UVPS) number: OB01-010.

4.2 Methods:

(1) Inspection basis: GB 28235-2020 "Ultraviolet sterilizer hygiene requirements" 8.1.5.1.
(2) Test procedure: The prototype "UV air sterilizer" is preheated for 5 min, and the UV intensity at 30cm around the sample is measured with an ultraviolet irradiance meter.
(3) Laboratory environment: temperature 22ºC-26ºC, relative humidity 45%-60%.

4.3 Results:

Test Item	Irradiation Intensity (μW/cm^2)			GB 28235-2020 Standard Requirement
	1	2	3	
UV leakage	0.000	0.000	0.000	≤5 μW/cm^2

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5. Circulating air volume

5.1 Equipment:

(1) Test sample: UV air sterilizer.
(2) Instrument and equipment name and model: standard pitot tube (LL03-002 L type), intelligent digital micropressure gauge (FP01-004 DP2000).

5.2 Methods:

(1) Test basis: GB 28235-2020 "ultraviolet sterilizer hygiene requirements".
(2) Measure the cross-sectional area of the outlet of the prototype, set 30 points, turn on the prototype and adjust the wind speed to the highest gear, and repeat the test for 3 times.
(3) Laboratory environment: temperature 22ºC-26ºC, relative humidity 45%-60%.

5.3 Results:

Sample Number	Area of Section S (m^2)	Mean Wind Speed V (m/s)	Circulating Air Volume L (m^3/h)	Average Circulating Air Volume L (m^3/h)
B240320-02-01	0.026	4.90	459	458
		4.89	458	
		4.88	457	
Calculation formula: L = Vx S x 3600				

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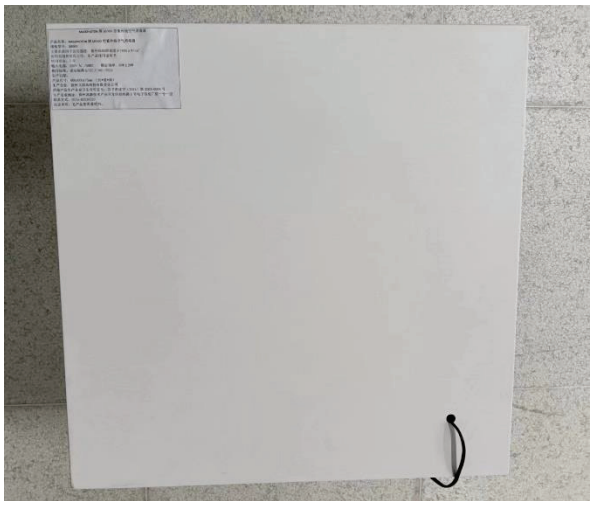
Product Photo





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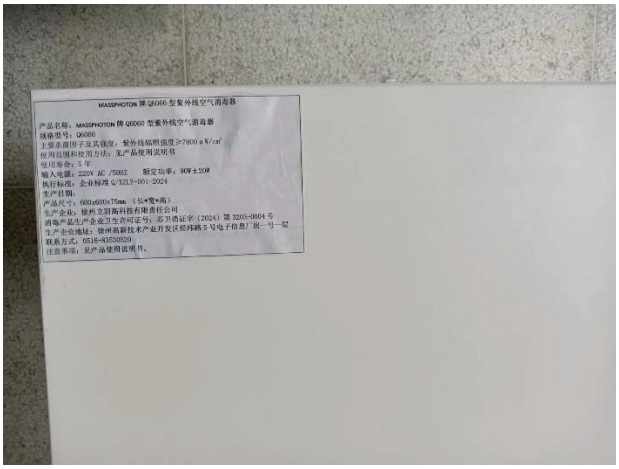

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