ATTESTATION REPORT

Date: 2024-08-21
No.: H03074-1

Applicant	:	MASSPHOTON LIMITED Unit 542, 5F, Building 5W, Phase One, Hong Kong Science Park, New Territories, Hong Kong.
Description of Sample(s)	:	Product name: 紫外綫空氣消毒器 Model no.: Q6060-A Brand name: MASSPHOTON
Sample(s) Received Date	:	2024-06-13
Test Completed Date	:	2024-08-07
Investigation Requested	:	1. Ozone leakage 2. Simulated field test of air disinfection effect 3. Air disinfection field test 4. UV leakage 5. UV intensity
Conclusions	:	Refer to test summary
Remark(s)	:	Report content referring to Test Report No: FB240613-14-C (XG1) dated 2024-07-17, FB240613-14-D (XG1) dated 2024-07-17 and FB240712-43 (XG2) dated 2024-08-07, tested by Zhejiang Fries Testing Technology Co., Ltd.

Tse Chee Hin, Kobo
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: MASSPHOTON Q6060-A 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 “Hygienic Requirements for Ultraviolet Appliance of Disinfection" 8.1.5.2.
(2) Testing steps: Turn on the power supply, turn on the sample, set the sterilization mode, and test the ozone concentration for 1h in the 30m^3 environmental test chamber with the sample gas.
(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 effect

2.1 Equipment:

(1) Test strain: Staphylococcus albus 8032.
(2) Test sample: MASSPHOTON Q6060-A 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 “Hygienic Requirements for Ultraviolet Appliance of Disinfection" Appendix C.
(2) The ambient temperature of the test chamber is 20°C – 25°C, and the relative humidity is (50 – 70) %.
(3) Brief description of test:
   (a) Aerosol spray staining: Put the comparison group and the experimental group in the test chambers, and spray aerosol, and use fans to stir at the same time. After spraying the aerosol, continue to stir for 5min and rest for 5min.
   (b) Sampling before disinfection: After the completion of spraying aerosol and resting for 5 minutes, samples were taken respectively from the test chambers of the comparison group and the experimental group before disinfection, and were used as positive comparison before the start of the comparison group and before the disinfection treatment of the experimental group.
   (c) The sample "MASSPHOTON Q6060-A Air Sterilizer" is put in a closed 20m^3 environmental test chamber and powered on, the sterilization mode is set, the running time is 2h, and the sample is taken after disinfection.
   (d) Negative comparison is conducted simultaneously;
   (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 content of air after the test V_2 (CFU/m^3)		
2h	Staphylococcus albus 8032	9.9×10^4	7.5×10^4	24.24	1.1×10^5	71	99.91	99.92
		7.1×10^4	5.4×10^4	23.94	7.8×10^4	49	99.92	
		5.6×10^4	4.2×10^4	25.00	6.3×10^4	35	99.93	

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

3. Air disinfection field test

3.1 Equipment:

(1) Test strain: natural strain.
(2) Test sample: MASSPHOTON Q6060-A Air Sterilizer.
(3) Nutrient AGAR medium.
(4) Air microorganism sampling device.
(5) Test room: 100m^3.
(6) Temperature and humidity meter, etc.

3.2 Methods:

(1) Test Basis: GB 28235-2020 "Hygienic Requirements for Ultraviolet Appliance of Disinfection" Appendix D.
(2) The ambient temperature of the test chamber is 20°C – 25°C, and the relative humidity is (50 – 70) %.
(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, and used as the sample before disinfection (positive control).
   (b) The sample "MASSPHOTON Q6060-A Air Sterilizer" was put in a 100m^3 room and powered on, the sterilization mode was set, and it ran for 2h, and sample the natural bacteria in the air as the post-disinfection sample (test sample).

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(c) Negative comparison is conducted simultaneously.
(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	2.3x10^3	7	99.70	99.60
		3.0x10^3	14	99.53	
		1.6x10^3	7	99.56	

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

4. UV leakage

4.1 Equipment:

(1) Test sample: MASSPHOTON Q6060-A 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 "Hygienic Requirements for Ultraviolet Appliance of Disinfection" 8.1.5.1.
(2) Detection steps: The sample "MASSPHOTON Q6060-A Air Sterilizer" was preheated for 5min, and the ultraviolet irradiance meter was used to measure the ultraviolet intensity at 30cm around the sample.
(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. UV intensity

5.1 Equipment:

(1) Test sample: MASSPHOTON Q6060-A Air Sterilizer.
(2) Instrument and equipment name and model: ultraviolet irradiance meter (HP-350UVPS), number: OB01-010.

5.2 Methods:

(1) Test basis: GB 28235-2020 "Hygienic Requirements for Ultraviolet Appliance of Disinfection" Appendix A.
(2) Detection steps: Turn on the power supply and the ultraviolet lamp beads (provided separately) in the "MASSPHOTON Q6060-A Air Sterilizer", preheat 5min, use the ultraviolet irradiance meter probe to test the ultraviolet intensity at 1.0m from the vertical center of the ultraviolet lamp beads.
(3) Laboratory environment: temperature 22°C-26°C, relative humidity 45%-60%.

5.3 Results:

Sample Number	Test distance	Result（μW/cm²）			Mean value（μW/cm²）
		1	2	3	
B240712-43-01	1.0m	402.68	409.34	406.71	406.24

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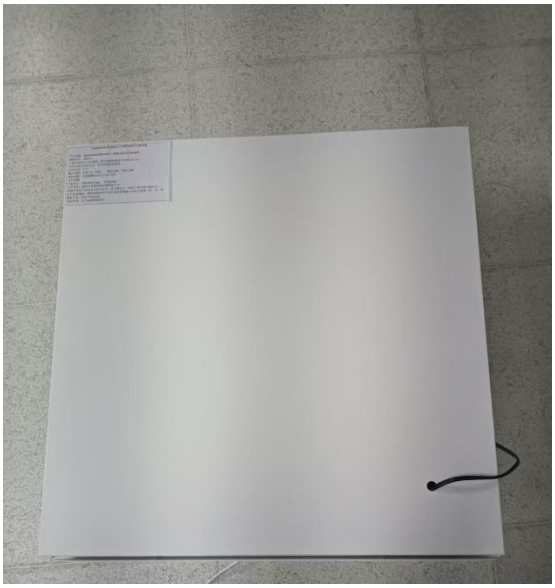
Product Photo





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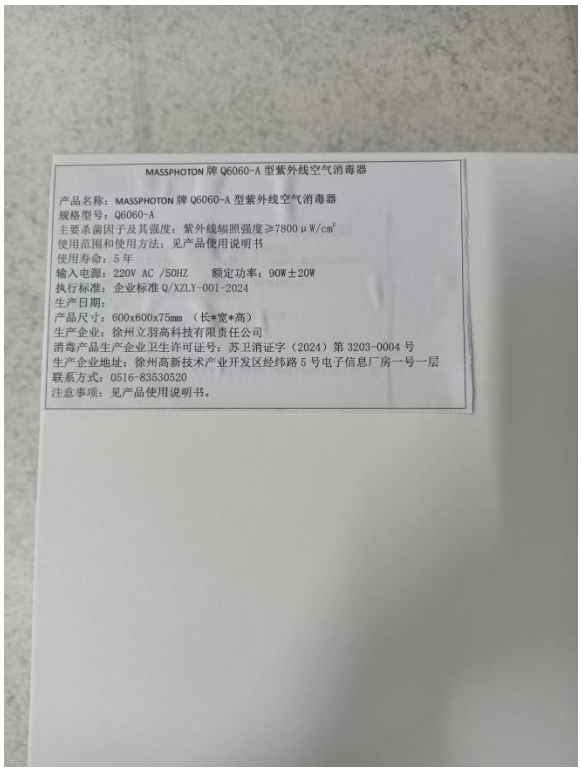

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