

广州市微生物研究所集团股份有限公司

Guangzhou Institute of Microbiology Group 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

KJ202302617

Name of Sample

AirQuality Micro Electrostatic (MESP) Air  
Purifier/Cleaner & AAF Bag Filter

Applicant

AirQuality Technology (Shanghai) Co., Ltd.

## GUANGZHOU INSTITUTE OF MICROBIOLOGY GROUP CO., LTD.

NATIONAL CENTER OF QUALITY INSPECTION AND TESTING  
ON AIR PURIFICATION PRODUCTS

## TEST REPORT

Date Received: Nov. 15, 2023

Date Analyzed: Nov. 20, 2023

|                        |                                                                                                                                                                   |                    |                                                                                       |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------------------------------------------------------------------------------------|
| Name of Sample         | AirQuality Micro Electrostatic (MESP) Air Purifier/Cleaner & AAF Bag Filter                                                                                       | Source of Sample   | Delivery                                                                              |
| Applicant              | AirQuality Technology (Shanghai) Co., Ltd.                                                                                                                        | Client             | Qi Zhengge                                                                            |
| Manufacturer           | ——                                                                                                                                                                | Brand              | ——                                                                                    |
| Type Specification and | FAH&F8                                                                                                                                                            | Quantity of Sample | 2 set                                                                                 |
| Date of Production     | ——                                                                                                                                                                | State of Sample    | Machine                                                                               |
| Batch Number           | ——                                                                                                                                                                | Packing of Sample  | In box                                                                                |
| Sample Picture         |                                                                                 |                    |   |
|                        | KJ202302555-1(AAF Bag Filter)                                                                                                                                     |                    |                                                                                       |
|                        |                                                                                |                    |  |
|                        | KJ202302556-1[AirQuality Micro Electrostatic (MESP) Air Purifier/Cleaner]                                                                                         |                    |                                                                                       |
| Standard and Methods   | 1. GB/T 34012-2017 Air cleaner for ventilation system<br>2. GB/T 21087-2020 Energy recovery ventilators for outdoor air handing<br>3. GB/T 14295-2019 Air filter  |                    |                                                                                       |
| Items of Analysis      | 1. Cleaning Efficiency(PM <sub>2.5</sub> )<br>2. Rated Power<br>3. Resistance                                                                                     |                    |                                                                                       |
| Remarks                | 1. External dimension(mm):900×655×500 , Fan model:PMDWF84L50-470N-400PA<br>2. The data in this report are provided by report numbers KJ202302555 and KJ202302556. |                    |                                                                                       |

\*\*\*To be continued\*\*\*

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## Test Report Summary Page

| Serial number | Test item                                                  | Unit | Test sample                      |  |                                                                              |                                       |
|---------------|------------------------------------------------------------|------|----------------------------------|--|------------------------------------------------------------------------------|---------------------------------------|
|               |                                                            |      | KJ202302555<br>AAF Bag Filter    |  | KJ202302556<br>AirQuality Micro Electrostatic<br>(MESP) Air Purifier/Cleaner |                                       |
| 1             | Cleaning Efficiency ( PM2.5)<br>(Test wind speed:2.5m/s)   | %    | 97.3                             |  | >99.9                                                                        |                                       |
| 2             | Rated Power<br>(Test wind speed:2.5m/s)                    | W    | 234.7                            |  | 72.5                                                                         |                                       |
| 3             | Resistance<br>(Test with the machine's<br>internal filter) | Pa   | 50 % of the Rated<br>wind speed  |  | 64.8                                                                         | 50 % of the Rated<br>wind speed 11.4  |
|               |                                                            |      | 75 % of the Rated<br>wind speed  |  | 102.4                                                                        | 75 % of the Rated<br>wind speed 22.7  |
|               |                                                            |      | 100 % of the Rated<br>wind speed |  | 142.5                                                                        | 100 % of the Rated<br>wind speed 33.8 |
|               |                                                            |      | 125 % of the Rated<br>wind speed |  | 179.8                                                                        | 125 % of the Rated<br>wind speed 46.4 |

**Test conclusion:**

Based on the test data reported by KJ202302555 and KJ202302556, under a face wind speed of 2.5m/s, two Air Handling Units (AHU) with the same shape structure, the AHU installed with AirQuality Micro Electrostatic (MESP) Air Purifier/Cleaner compared with the AHU installed with AAF F8 Bag Filter:

- 1) The PM<sub>2.5</sub> cleaning efficiency has increased by >2.6%;
- 2) The pressure drop of internal filter section has decreased by 76.3%(At 100% rated wind speed);
- 3) The power consumption has decreased by 69.1%.

\*\*\*To be continued\*\*\*

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**Test for Cleaning Efficiency (PM<sub>2.5</sub>)**

- Test aerosol  
KCl
- Test Conditions
  - Environment Temperature: 24.3 °C
  - Environment Humidity: 45%RH
  - Test wind speed: 2.5 m/s
- Test Equipment  
Aerodynamic Test Platform, Laser Dust Monitor
- Operational Conditions of the Machine  
During the test process, the machine is powered on and the wind speed of the machine is adjusted to 2.5 m/s.
- Test Procedure
  - Turn on the fan of aerodynamic test platform and prototype which adjust to working status.
  - Generate the test aerosol in upstream of prototype and the concentration must be satisfied with the requirement of standard.
  - The concentrations of upstream and downstream are measured simultaneously when the test aerosol is stabilized. Select the mean of date which test at least 6 times as the concentrations of upstream and downstream.
- Computational Formula

$$E_{PM_{2.5}} = \left( 1 - \frac{C_{PM_{2.5},2}}{C_{PM_{2.5},1}} \right) \times 100\%$$

**Test Results**

| Number of Sample | Pollutant | Concentration of upstream<br>$C_{PM_{2.5},1}$<br>( $\mu\text{g}/\text{m}^3$ ) | Concentration of downstream<br>$C_{PM_{2.5},2}$<br>( $\mu\text{g}/\text{m}^3$ ) | Cleaning Efficiency for PM <sub>2.5</sub><br>$E_{PM_{2.5}}$<br>(%) |
|------------------|-----------|-------------------------------------------------------------------------------|---------------------------------------------------------------------------------|--------------------------------------------------------------------|
| KJ202302555-1    | KCl       | 732                                                                           | 20                                                                              | 97.3                                                               |
| KJ202302556-1    |           | 730                                                                           | <1                                                                              | >99.9                                                              |

\*\*\*To be continued\*\*\*

**GUANGZHOU INSTITUTE OF MICROBIOLOGY GROUP CO., LTD.****NATIONAL CENTER OF QUALITY INSPECTION AND TESTING  
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Date Received: Nov. 15, 2023

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**Test for Rated Power:**

1. Test Conditions
  - 1) Environment Temperature: 24.3 °C
  - 2) Environment Humidity: 45%RH
2. Test Equipment  
Full heat exchange detection system
3. Working Condition:  
During the test process, the machine is powered on and the wind speed of the machine is adjusted to 2.5 m/s.
4. Test Procedure
  - 1) Open the full heat exchange detection system and adjust the temperature and humidity to meet the test requirements;
  - 2) After the test condition is stable, start the test device fan, monitor the full heat exchange detection system, and adjust the prototype frequency converter to make the prototype head-on wind speed reach 2.5m/s;
  - 3) Measure and record the current input power of the machine.

**Test Results**

| Number of Sample | Rated Power<br>(W) |
|------------------|--------------------|
| KJ202302555-1    | 234.7              |
| KJ202302556-1    | 72.5               |

\*\*\*To be continued\*\*\*

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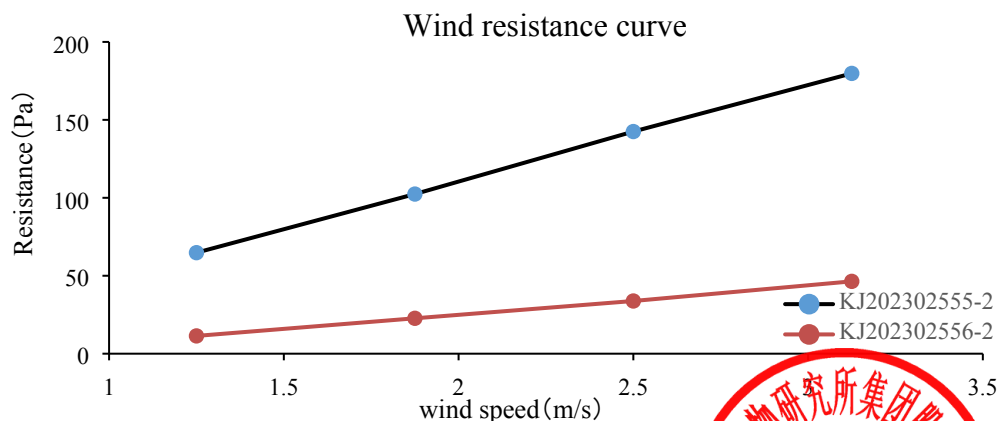
Date Analyzed: Nov. 20, 2023

**Test for Measurement of Resistance:**

1. Test Conditions
  - 1) Environment Temperature: 24.3 °C
  - 2) Environment Humidity: 45%RH
  - 3) Test wind speed: 2.5 m/s
2. Test Equipment  
Aerodynamic Test Platform
3. Sample Status  
The test sample is the internal filter of the machine.
4. Test Procedure
  - 1) Ensure that the filter's installation frame does not leak.
  - 2) Start the fan, measure the resistance at 50 %, 75 %, 100 % and 125 % of the rated wind speed, and draw the wind resistance curve.

**Test Results**

| Number of Sample | Resistance (Pa)              |                              |                               |                               |
|------------------|------------------------------|------------------------------|-------------------------------|-------------------------------|
|                  | 50 % of the Rated wind speed | 75 % of the Rated wind speed | 100 % of the Rated wind speed | 125 % of the Rated wind speed |
| KJ202302555-2    | 64.8                         | 102.4                        | 142.5                         | 179.8                         |
| KJ202302556-2    | 11.4                         | 22.7                         | 33.8                          | 46.4                          |



\*\*\*End of report\*\*\*

Editor

谢永鑫

Checker

徐国洋

Issuer

王昭华

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

*Test Address: (only fill in when it's different from the contact address)*

*Postal Code: 510663*

*Tel. (020)31606167*

*(020)62800791*

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