

# Breithoff Sales, LLC

## EFFICACY TEST REPORT

### SCOPE OF WORK

Non-standardized Test Method: Microbial Reduction Rate Test

**PRODUCT** – Air Purifier

**MODEL** – M2-36W-120V

### REPORT NUMBER

105178531COL-001

### ISSUE DATE

September 6, 2022

### PAGES

7

### DOCUMENT CONTROL NUMBER

GFT-OP-10h (6-July-2017)

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**SECTION 1 EFFICACY STUDY SUMMARY**

<b>Client</b>		<b>Breithoff Sales, LLC 6616 Splashwater Drive Flowery Branch, GA 30542 USA</b>
<b>Project No.</b>		G105178531
<b>Sample</b>	Product	Air Purifier
	Model	M2-36W-120V
<b>Procedural</b>	Engineer	Luke Melaragno
	Reviewer	Nicholas Unger
	Dates Tested	9/2/2022
	Report Date	9/6/2022
<b>Standard</b>	Non-standardized Test Method: Microbial Reduction Rate Test	
<b>Testing Facility</b>	Intertek Microbiological Laboratory 1717 Arlingate Ln. Columbus, OH 43228 United States	

**SECTION 2 TEST PROCEDURE**

A fungal suspension was aspirated into a chamber measuring 10’x10’x10’ (1000 cubic feet) for one hour, after which point the purifier (on the floor in the middle of the chamber) was activated on its high speed. Mixing fans were used throughout the test to circulate air and provide buoyancy for the microbes. Impaction samples were taken from the chamber just before the unit was turned on and then at client-designated intervals for two hours. The procedure was repeated with the unit off to provide natural decay results. All plates were incubated overnight; fungal colonies on the test plates were compared to those on the natural decay controls to arrive at a percent reduction.

Sampling took place using an SKC BioStage Single-stage impactor for 30 seconds at 28.3 L/min.

**SECTION 3 ORGANISMS**

Organism Name	Organism Type	ATCC Number	Source
Aspergillus niger	Fungus	6275	ATCC

**SECTION 4 EQUIPMENT**

Equipment Type	Equipment No.	Calibration Due Date
Micropipette	CE 2226	6/30/2023
Incubator	CE 2988	1/19/2023
Balance	CE 1882	7/12/2023
Autoclave	CE 2376	Verify Before Use
Centrifuge	CE 2382	For Reference Only
Chamber	CE 1149	For Reference Only
Collison Nebulizer	CE 1139	For Reference Only
Pump	CE 1137	For Reference Only
Refrigerator	CE 1157	For Reference Only
Impactor	CE 3077	For Reference Only
Air Sampler	CE 3071	For Reference Only
Stopwatch	CE 2645	3/1/2023
Hygrometer	CE 2956	7/9/2023
Floor Fans	AC Infinity AC-ALS12	For Reference Only

**SECTION 5 MEDIA AND REAGENTS**

Type	Manufacturer	Lot No	Expiration Date
PDA	BD	1201123	6/30/2026
PBS	Fisher	213044	9/01/2024

**SECTION 6 SAMPLE ACQUISITION**


<b>Acquisition method</b>	Shipped to Intertek
<b>Description</b>	Air Purifier
<b>Model Number</b>	M2-36W-120V
<b>Arrival date</b>	August 23, 2022
<b>Condition</b>	New
<b>Sample Identification No.</b>	COL2208231352-001
<b>Development Level</b>	Production

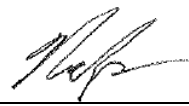


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**SECTION 7 SUMMARY OF RESULTS**

<b>A. niger Testing</b>	
<b>Organism Type</b>	<b>Fungus</b>
<b>Temperature Min/Max</b>	<b>22°C (72°F)</b>
<b>Humidity Min/Max</b>	<b>59-60% RH</b>
<b>Time to Reduction</b>	120 minutes
<b>Percent Reduction</b>	90.9

Completed by: Luke Melaragno  
Title: Microbiology Tech I  
Signature:   
Date: 6-September-2022

Reviewed by: Nicholas Unger  
Title: Staff Engineer  
Signature:   
Date: 6-September-2022

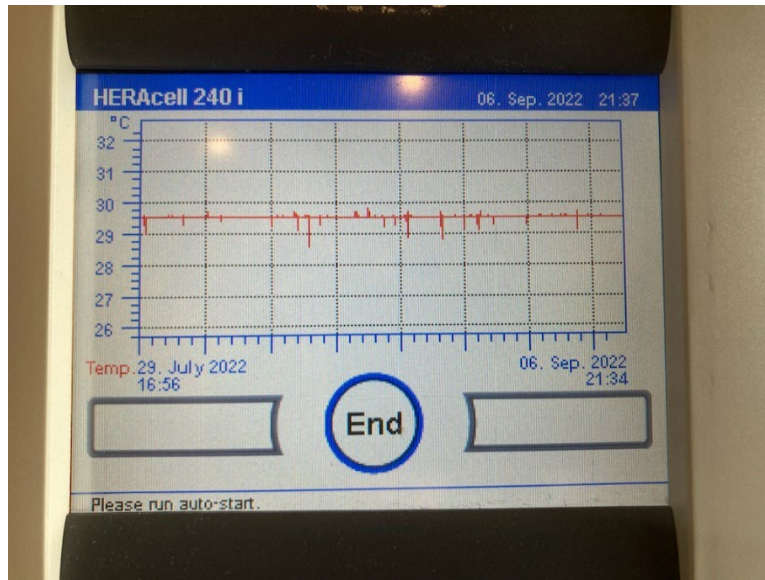
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**Annex A: Test Results**

<b>A. niger Testing</b>				
<b>Test Parameter</b>		<b>Test Result</b>	<b>Natural Decay Result</b>	<b>Units</b>
Organism	Species	<i>Aspergillus niger</i>		---
	ATCC No.	6275		---
	Total Fungus Aerosolized	8.4 x 10 <sup>7</sup>		PFU
Samples	0	TNTC (2628)	TNTC (2628)	PFU
	5	TNTC (2628)	TNTC (2628)	PFU
	10	TNTC (2628)	TNTC (2628)	PFU
	15	TNTC (2628)	TNTC (2628)	PFU
	20	TNTC (2628)	TNTC (2628)	PFU
	30	TNTC (2628)	TNTC (2628)	PFU
	45	TNTC (2628)	TNTC (2628)	PFU
	60	TNTC (2628)	TNTC (2628)	PFU
	120	180 (239)	TNTC (2628)	PFU
Results	120 minutes	90.9%		Reduction
The numbers in parenthesis have been adjusted in a positive-hole correction for the probability of multiple particles being collected through one hole by a 400-hole impactor				

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**Annex B: Incubation Data**



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