



VIBRANT
BUILDING TECHNOLOGIES

Germicidal Air Purifier Specifications

Disclaimer: Specifications, performance claims, and product details contained herein are preliminary. Information is based on early testing and may be revised following third-party evaluation and certification processes. Vibrant Building Technologies reserves the right to update all information without notice.



Product Description

The Vibrant Air Smart Filter Box is a next-generation purification module designed for installation in the return duct of any forced-air system. It combines Nano-Fiber MERV 16 filtration, UVC germicidal LEDs, and activated carbon pre-filtration to remove fine particulates, pathogens, ozone, VOCs, odors and more. Integrated velocity, ΔP, and IAQ sensors provide remote airflow visibility, smart filter-life prediction, and real-time system performance diagnostics.

Service Part List

1. Control Board
2. Multi-color LED indicator on housing shows system status, fault codes, and connectivity state
3. 5V Power Supply
4. 24V Power Supply
5. UVC LED Germicidal Purification Strips X2
6. VOC IAQ Sensor
7. Flow Sensor
8. Differential Pressure Sensor (for filter health)
9. 4" MERV 16 Filter
10. 1" MERV-8 powder-bonded carbon pre-filter
11. Pogo Pin Contact Set

Technical Specifications

Airflow Capacity: 800-2000 CFM (depending on size)
Filtration Efficiency: Nano Fiber MERV 13 or MERV 16
Very low: 0.03–0.26 in wg @ 1,000–2,000 CFM
Technology Type: High performance UVC LED
Germicidal Function: Ozone-free UVC purification
Power Requirements: 5VDC, for sensors and diagnostics, 24 VDC, 4.2A, 100W (during LED on cycle)
Sizes: 20" x 20", 16" x 25", 16" x 20", 25" x 25"
Weight (without filter): 23.9 to 26.2 Lbs (depending on size)
Operating Temp Range: 40°F to 125°F
Cabinet Color: Black powder coat or galvanized steel
Cabinet Material: Galvanized steel
Connectivity: Thread + BLE 5.0 + Wi-Fi 2.4 GHz for mobile and cloud connection
Firmware Updates: Over-the-air (OTA)
Vibrant Mobile App: Purification control and remote diagnostics dashboard

Features and Benefits

Nano-Fiber MERV 16 Filtration: Captures particles down to 0.3 microns with minimal static pressure for unrestricted airflow.
UVC LED Purification: Destroys airborne pathogens at 265 nm without producing ozone or by-products.
Activated Carbon Pre-Filter: Removes odors, VOCs, and residual ozone for fresher indoor air.
Air Quality Monitoring: Senses for VOCs, NOx, smoke, fumes, gas stove pollution, and chemicals.
Smart Diagnostics: Onboard velocity + pressure sensors show airflow health in real time – diagnose issues before you even roll a truck.
Installation & Durability: 16-gauge steel housing mounts in any orientation (upflow/downflow/horizontal) and resists corrosion.
UVC Control: Adjust and monitor germ-killing UVC power remotely.

System Maintenance

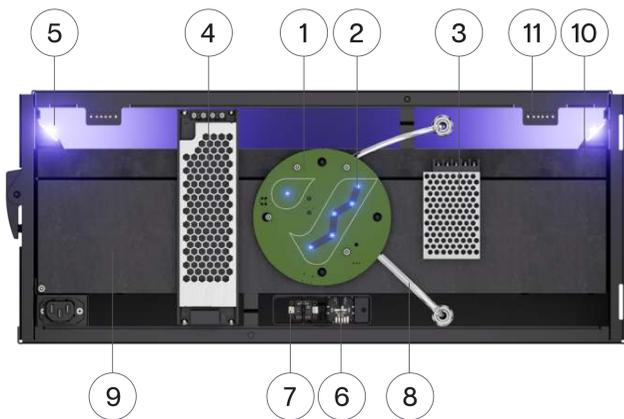
Smart Alerts: App notifications for filter changes, airflow faults, and service reminders.
Tool-Free Access: Quick-latch door for easy filter and component replacement.
Self-Monitoring: Sensors detect clogging, reduced airflow, or abnormal pressure.
Long-Life UVC LEDs: Rated for 10,000 hours
Filters: Replace filters quarterly, or as indicated by onboard diagnostics when full.

Safety and Compliance

Safety & Compliance: Designed and tested to meet UL 1812, CSA C22.2 No. 113, UL 94 V-0, and UL 2998 Zero Ozone. Ozone-free by design, with a UVC safety interlock that physically prevents the UVC LEDs from ever powering on when the access door is open.

Warranty

5-Year Limited Warranty on cabinet, electronics, and power supply.
 1-Year Limited Warranty on UVC LEDs
 Extended 10-Year coverage available with Vibrant Smart Monitoring and subscription enrollment.

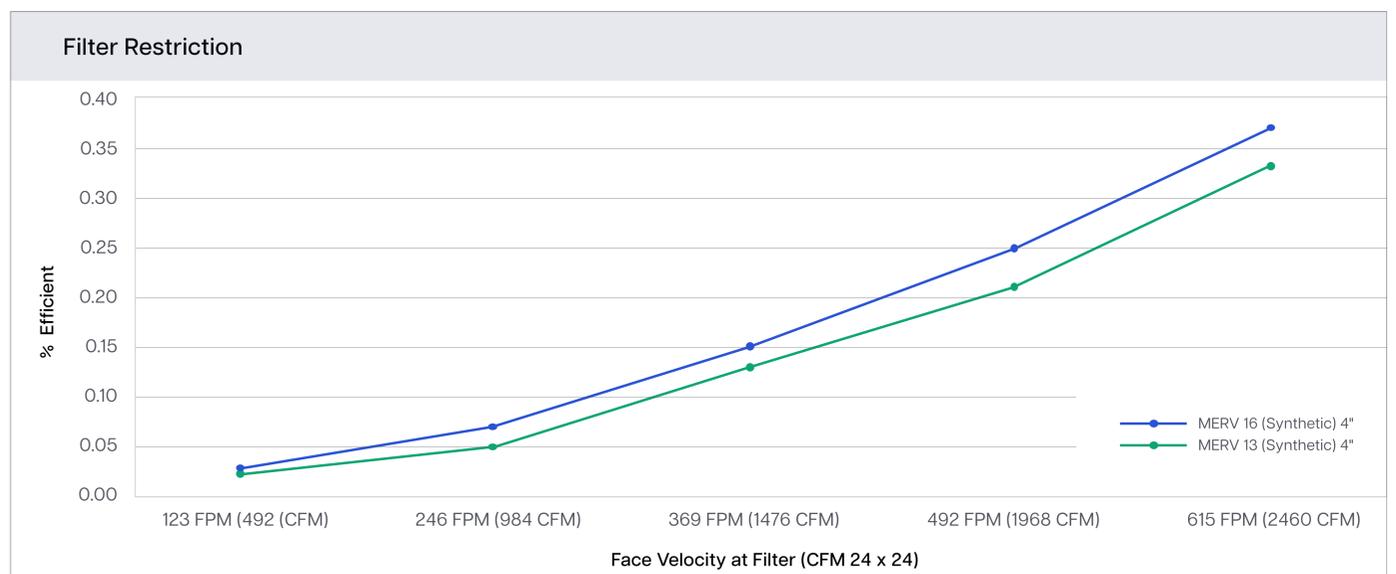


UVC

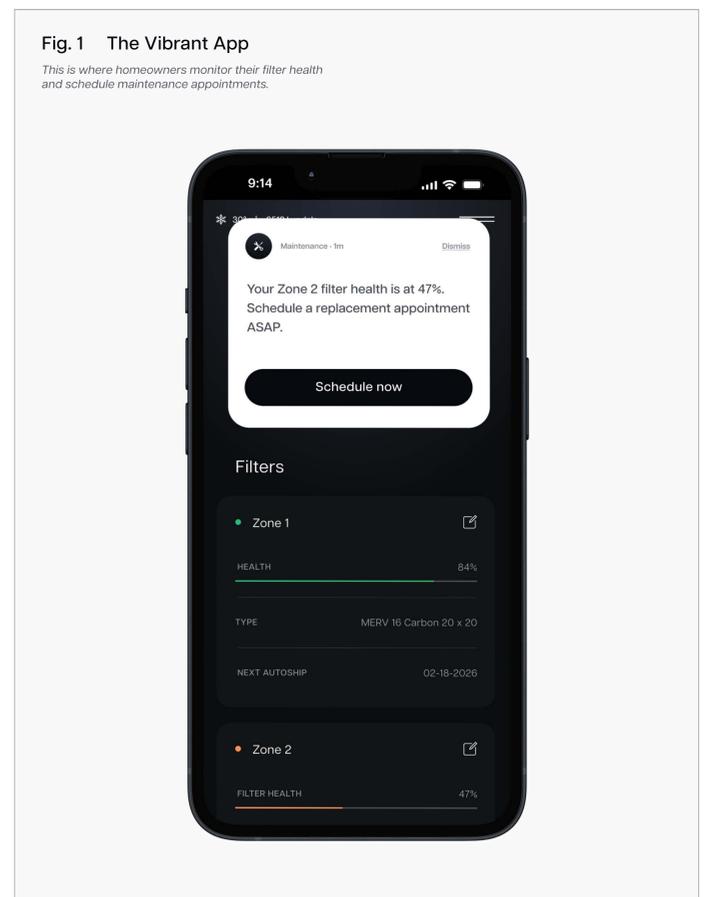
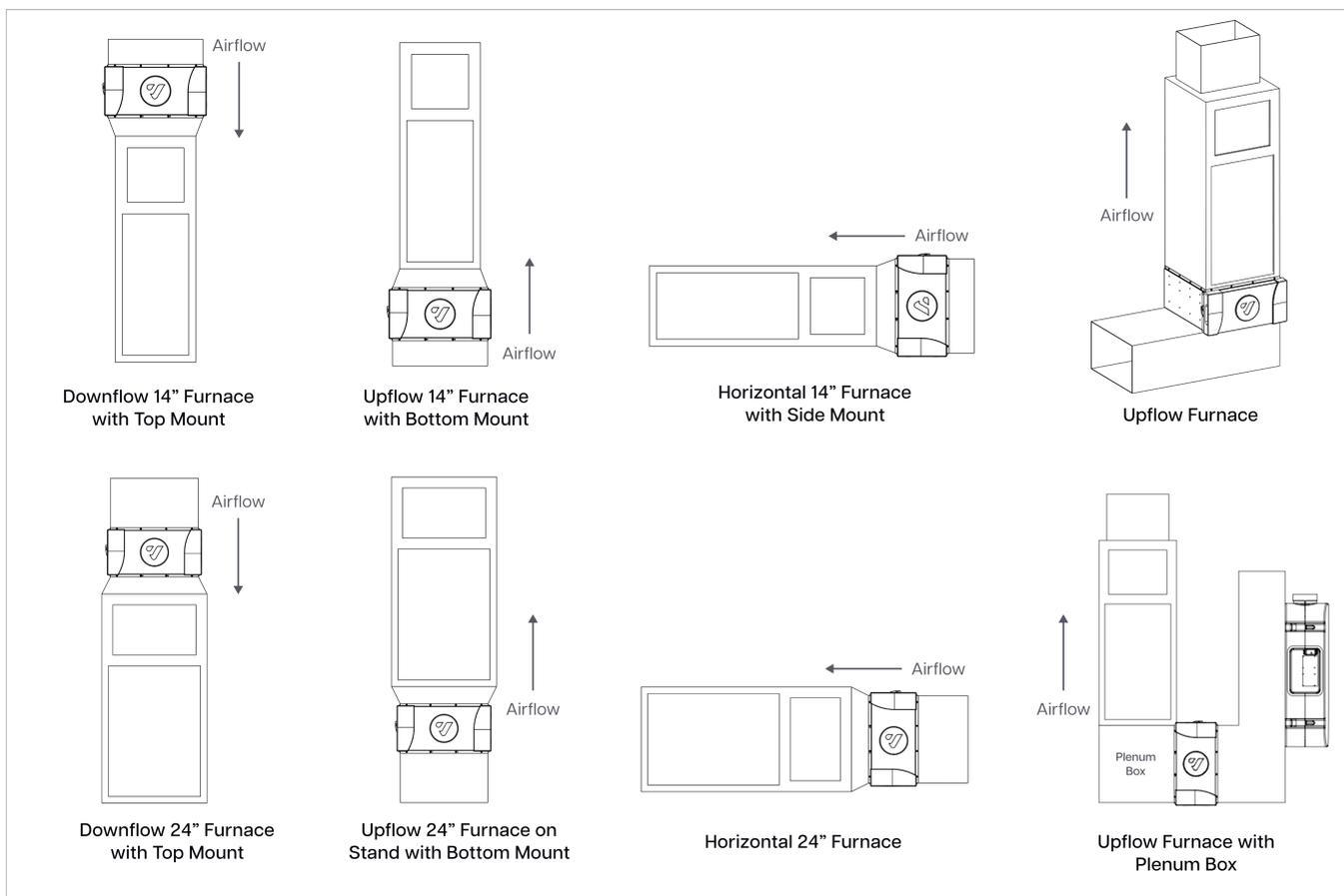
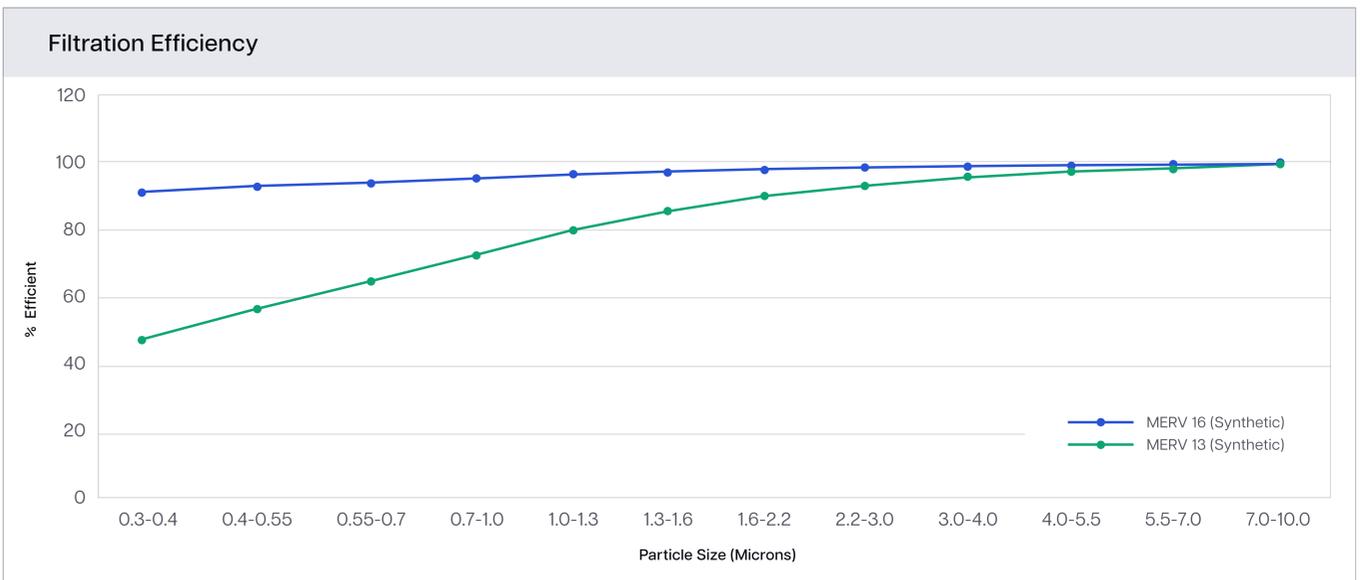
Illumination	Intensity	15-17 mW/cm2 average across 20" duct	
Effectiveness	Kill rate	73% / 21%	After 1st pass (bacteria/viruses)
		99.5% / 62%	After 4th pass (bacteria/viruses)
	Disinfection time (98%)	20 Air exchanges to get to 99% for a virus	
60 mins			(Bacteria)
	90 mins		(Viruses)
Power	During 'on cycle'	24 VDC, 4.2A, 100W	

Vibrant Nanofiber Filters

Face Velocity FPM (CFM 24" x 24" filter)	MERV 16 (Synthetic 4")	MERV 13 (Synthetic 4")
123 FPM (492 CFM)	0.03	0.02
246 FPM (984 CFM)	0.07	0.05
369 FPM (1476 CFM)	0.15	0.13
492 FPM (1968 CFM)	0.26	0.21
615 FPM (2460 CFM)	0.37	0.33



Filter Performance		
Size Range (μm)	MERV 16 (Synthetic)	MERV 13 (Synthetic)
0.3-0.4	92.6	48.1
0.4-0.55	94.8	57.6
0.55-0.7	95.9	65.1
0.7-1.0	96.6	72.9
1.0-1.3	97	80.7
1.3-1.6	97.4	84.7
1.6-2.2	97.8	88
2.2-3.0	98.1	92.2
3.0-4.0	98.5	95.3
4.0-5.5	98.9	96.9
5.5-7.0	99	97.4
7.0-10.0	99.2	98.1



System Dimensions

Unit	16" x 20"	16" x 25"	20" x 20"	20" x 25"
A	17 9/16"	17 9/16"	21 1/2"	21 1/2"
B	22 5/16"	27 5/16"	22 5/16"	27 5/16"
C	16 3/8"	16 3/8"	20 5/16"	20 5/16"
D	9"	9"	9"	9"

