

Class II, Type B2 Biosafety Cabinet (Meets UL 1805 Classification, Fume Hoods)



## THE BAKER COMPANY







### BioChemGARD® e3 Class II Type B2 Biological Safety Cabinet



**BCG401** 



BCG601

### Make the World a Better Place

- · Industry's most durable and reliable cabinet means lower life-cycle costs and years of trouble-free operation.
- · Most energy-efficient operation available. A 70% reduction in electrical power compared to traditional B2 cabinets.
- · Increased motor blower reserve extends filter life for less downtime.
- · Continuously safe work environment with self-adjusting motor technology enhances productivity.
- · ExchangeSAFE™ Sealed Access Filter Exchange System minimizes exposure to contaminants and allows faster, simpler maintenance.
- Quieter operation and ergonomic design with slanted viewscreen, cool-white lights for easier viewing and reduced heat generation.
- · Optional fume hood package for versatile lab design.

# Biochem GARD ENERGY EFFICIENT ENGINEERED

# The BioChemGARD® e3 offers superior performance, versatility, energy savings, and simpler maintenance.



Based on six decades of research and innovation, the BioChemGARD® e3 is the most advanced biological safety cabinet engineered specifically for laboratories that need containment and removal of vapors, mists, and particulates.

With the optimum balance of performance and energy efficiency, the BioChemGARD® e3 protects personnel, product, and the environment, all while increasing lab productivity and user comfort. Each cabinet is precisely engineered to deliver a lower life cycle cost, the latest ergonomic design, and a revolutionary airflow management system.

### Class II, Type B2 Applications

A Class II Type B2 biosafety cabinet provides personnel, product, and environmental protection. It is suitable for research and clinical diagnostic work involving tissue culturing of possibly infectious samples, IV drug preparations and other pharmaceuticals that could have adverse health effects on operators as well as other techniques requiring a contamination-free atmosphere.

### Not sure which biosafety cabinet is right for you?

Scan code to the right or visit http://hub.am/ZxbDic to download our free guide to Class II Biosafety Cabinets.



# Precision Engineering and Exclusive Technologies Provide the Optimum Balance of Energy Efficiency and High Performance.

The BioChemGARD® e3 is the only total exhaust biosafety cabinet that offers your lab this level of high performance, user convenience and comfort, with such significant operational savings. Our exclusive technologies – StediFLOW™, ReadySAFE™, UniPressure™ Preflow Plenum, and an innovative motor/blower system – work seamlessly together to deliver unparalleled safety performance, less cabinet downtime for cleaning and maintenance, and increased productivity, all while reducing your equipment operating and conditioned air removal costs.

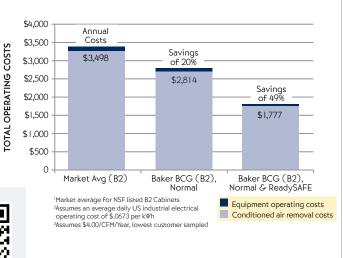
### Reduce your annual operating costs by 49%!

The BioChemGARD® e3 is engineered to operate with reduced exhaust airflow and resistance. This minimizes noise, cuts the electrical power and static pressure requirements, while significantly reducing the volume of conditioned air exhausted from the laboratory. Operating at only 664 CFM, the 4-foot BioChemGARD® e3 offers a 23% reduction in exhausted conditioned air compared to traditional B2 cabinets. Together, Baker's exclusive technologies deliver an average reduction of 49% in a lab's annual operating costs.



Scan the code to the right or visit http://hub.am/I5BFIBr to download the BioChemGARD® e3 energy efficiency white paper!





### StediFLOW<sup>TM</sup> VFD Motor Controller Automatically Achieves Optimum Performance

Baker's StediFLOW™ variable frequency drive (VFD) motor controller uses less energy, reduces heat output, and operates more quietly. VFD is state-of-the art technology in HVAC systems for performance and energy savings. The BioChemGARD® e3 cabinet was shown to automatically handle an increase in pressure drop of more than 420% across the filter without reducing total air delivery more than 10%.\*

- Maintains precise airflow and motor draws only 0.6 Amps – a 90% reduction in the draw of traditional B2 cabinets.
- Automatically compensates for normal power line variations, air disruptions, and filter loading no manual speed control required.
- Provides constant air volume reduces risk of performance degradation, which can compromise personnel and product protection.
- Extends filter life minimizes filter replacement and decontamination costs.
- · Operates more quietly with less vibration.
- · Uses less energy without sacrificing performance.

# StediFLOW extends filter life Baker StediFLOW Filter Life Baker StediVOLT Filter Life Traditional Motor Controller Filter Life 50 100 150 200 250 420 Filter Pressure Drop Increase (%)

\*Performance testing performed on a BCG40I (115 V unit) in the Baker laboratory. Data available on request.

### ReadySAFE™ - A Versatile Low Flow Mode to Make Your Job Easier



 $ReadySAFE^{\text{\tiny{TM}}}\ mode-Unique\ bypass\ armrest\ allows\ cabinet\ to\ continue\ operation\ with\ closed\ viewscreen$ 

Utilizing the exclusive ReadySAFE<sup>TM</sup> low-flow mode in the BioChemGARD® e3 significantly reduces energy consumption. ReadySAFE<sup>TM</sup> is automatically engaged when the user closes the sash of the biosafety cabinet – the motor switches to a reduced flow mode and the light in the cabinet turns off. Upon opening the sash the motor switches to its normal operating speed and the cabinet light turns back on. Product protection and containment are maintained. This mode can be used during meetings, work breaks and overnight.

- · Provides a 50% reduction in the electricity draw and a 55% reduction in exhaust airflow.
- · Reduces laboratory air-conditioning requirements with less heat generation.
- Increases productivity by allowing user to have instantly safe working conditions upon opening the viewscreen and ongoing work can be left in the cabinet without fear of contamination.
- · Reduces cabinet noise levels in laboratory environment; measured at 43 decibels (excluding exhaust system).

### Innovative UniPressure™ Preflow Plenum

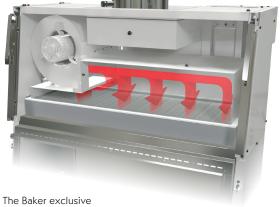
The BioChemGARD® e3 biological safety cabinet incorporates Baker's exclusive UniPressure™ Preflow Plenum high-performance airflow system that saves energy and extends filter life by loading evenly.

- Apportions and distributes air across, then through, the HEPA supply filter, improving downflow uniformity, reducing noise, and increasing reserve blower/motor capacity.
- · Filter mount provides direct seal of HEPA filters to plenum, and simplifies filter replacement.

### Motor/Blower System Extends Filter Life

Baker's optimum blower/motor design ensures performance and extends filter life at least an additional **50%** over our previous cabinets – the longest life in the industry – with a range of over 10 years. (Note: high levels of background particulates may shorten HEPA filter life).

- · Provides consistent volume of air despite increases in resistance due to filter loading.
- Extended filter life minimizes filter replacement and decontamination costs, reduces use of toxic fumigants, and produces less waste in the environment.
- · Requires no manual adjustment over filter's life. All filter reserve is automatic.



UniPressure™ Preflow Plenum provides quieter, more efficient operation.

# Craftsmanship and Innovative, Versatile Design Ensures Quality Performance.

Baker cabinet designs represent many years of experience in fabrication and craftsmanship. The BioChemGARD® e3 includes design features to improve safety, productivity, performance, and serviceability.

# Exclusive ExchangeSAFE™ Sealed Access Filter Exchange System Decreases Downtime and Increases Safety

Many traditional bag-in/bag-out (BIBO) filter systems are typically located overhead the cabinet's work surface, and have complex and time-consuming procedures that can result in a higher risk of exposure to contaminants.

Our patent-pending ExchangeSAFE™ Sealed Access Filter Exchange System permits filter bagging and exchanges within the work surface, providing improved access, a simpler process, and an overall reduction in maintenance time while still minimizing exposure to contaminants by running the exhaust during the filter change.

# Innovative Fume Hood Option Offers Greater Versatility in the Lab

With our optional Fume Hood Package, the BioChemGARD® e3 meets the UL requirements for Electrical/Mechanical Safety (UL 61010-1) and the UL requirements for Material Flammability and Effectiveness of Airflow Characteristics (UL 1805). The cabinet has been tested in accordance with ANSI/ASHRAE 110-1995. Usage should be determined by a professional industrial hygienist or safety officer.

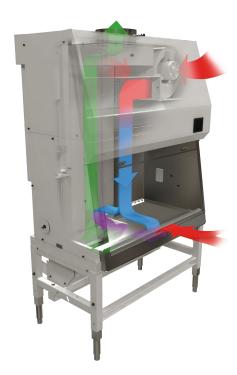


Cable ports allow cables/tubing to exit side walls rather than the front work area

## Negative-Pressure Double-Wall Plenums with Cable Ports Enhance Safety

The unique all metal, double-wall design of the BioChemGARD® e3 cabinet creates base, side, and back wall plenums that capture and contain contaminated air under negative pressure. This prevents contaminated air from escaping into the laboratory environment in the event of damage to the cabinet walls.

Our NSF-approved, patent-pending cable ports are an industry exclusive. They can be located in the side walls of the cabinet (one cable port on the right side is standard), and provide a safe and ergonomic way of introducing cables or siphoning tubes into the work area without interfering with the viewscreen opening.



### Unique Airflow Design Reduces Energy Requirements

The BioChemGARD® e3 exhausts all inflow and downflow air through an external building exhaust system directly connected to the top of the cabinet.

Room air enters the front access opening of the cabinet at a minimum of 100 FPM then enters the front work surface perforation. The cabinet supply blower draws room air in at the top rear of the cabinet and pushes it into the supply plenum through the supply filter.

The filtered downflow air in the work area splits at the work surface. Some of the air enters the rear work area perforation while most of the air enters the front work surface perforation. The air is pulled into the drain pan area, through the exhaust filters, then up the rear exhaust plenums, and exits the cabinet to the facility exhaust system through an exhaust collar at the top of the cabinet.

The BioChemGARD® e3 operates with a reduced exhaust airflow and resistance. This reduces the volume of conditioned air exhausted from the lab, and contributes to reducing the overall annual cost of operation by 49%.



### See the BioChemGARD® e3 in action!

Scan the code to the right or go to http://hub.am/YGldw5 to watch the BioChemGARD® animation!

### Momentum Air Curtain and High-Velocity Return Air Slots Increase Protection

The BioChemGARD® e3 cabinet employs a unique momentum air curtain that offers an added measure of containment and protection exclusive to the Baker design.

- · Creates strong air barrier, or momentum air curtain, at front of cabinet, increasing protective capabilities for both products and personnel.
- · Strategic position of a stainless steel diffuser creates faster airflow at front of work area. Airflow over center of work surface is gentle.
- · Resulting air curtain combines with high-velocity return air slots, aerodynamically contoured front-opening surfaces, and optimum air intake velocity to minimize turbulence and prevent migration of airborne contaminants into or out of work area.

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### Supply and Exhaust Filters Perform Optimally

Because filters remove microorganisms and airborne particulates (e.g., aerosols) from the air, the quality, performance, and useful life of downflow and exhaust HEPA/ULPA filters are critical biosafety considerations.

- Leak-free performance is verified through scan tests conducted at the factory prior to shipping - should be confirmed at the cabinet's initial certification.
- · Closed-cell neoprene gasket provides an airtight seal between the filter assembly and the metal plenum.
- · An audible/visual airflow alarm and automatic shut-off system called the Airflow Monitor (AFM) warns when the exhaust airflow decreases.



High-velocity return air slots maximize protection.

# An Industry-Leading Approach to Ergonomics Ensures a New Level of Productivity and User Comfort.

The BioChemGARD® e3 includes design features to improve safety, productivity, user-comfort, and performance throughout a range of tasks performed on a daily basis. Our cabinets are designed with the user in mind so that routine tasks can be done comfortably, efficiently, and with less fatigue.

### **Reduced Noise Levels**

The unique airflow design inside the cabinet, combined with the lower exhaust requirements, result in quieter operating noise levels. In standard operating mode, the BioChemGARD® e3 emits an average of 50 dB\*, a 30% decrease in noise compared to our previous Class II Type B2 cabinet. This drops to 43 dB when the cabinet is in ReadySAFE™ mode.

		Rustle of Leaves	Library	Average Office	BioChemGARD°	Normal e3Conversation	Traditional B2 Cabinet	Power Mower
Decibels	10	20	30	40	50	60	70	80
Relative loudness	1/32	1/16	1/8	1/4	1/2	1	2	4

<sup>\*</sup>Average tested noise level. Noise level of cabinet is influenced by the building exhaust system.

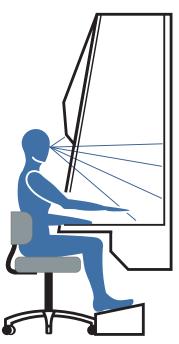
### **Efficient Lighting**

The work area is illuminated by one external fluorescent lamp with an electronic ballast. The cool-white lights use less energy, produce less heat, and provide better color fidelity.

### Slanted Viewscreen

The slanted sliding viewscreen minimizes glare and makes the cabinet easier and more comfortable to use. A counterbalancing feature allows the user to open and close the laminated safety glass viewscreen effortlessly, which can also be fully closed for ReadySAFE<sup>TM</sup> mode, system shutdown, or UV light operation.

- Maximum opening of up to 20" simplifies equipment and instrument loading and unloading and allows for placement of large items more easily.
- Allows operator more comfortable head and elbow position, reducing fatigue.
- Provides safe, highly visible, and easily accessible work area for a wide range of procedures.
- Laminated safety glass with a stainless steel edge protector increases durability and safety.



### A Highly Productive Work Environment

Design considerations such as wide radius corners, aerodynamically shaped surfaces, and glare-reducing satin finish interiors combine to improve comfort, simplify cleaning, and maintain proper containment.

- Large unobstructed, usable work area can accommodate more lab equipment because of the rear grille being parallel to the straight back wall.
- A reduced front grille depth moves the work surface area closer to front of the cabinet for better arm position and less back strain.
- Consolidated electrical controls on panel behind hinged light canopy offer unique access outside containment area.
- The fluorescent lights, UV light, and the electrical outlets can all be programmed in 15-minute or hour-long intervals to delay the time they power down.
- Petcocks, valves, and plumbing connections are strategically placed for convenience and proper air management.
- Work surface and walls are one-piece, corrosionresistant, stainless steel with smooth radius corners for easy cleaning. White powder-coated finish protects coldrolled steel cabinet exterior.



### Options and accessories

Most options, accessories, and modifications are factory-installed and should be specified when ordering. Common options are listed below.

- · Low exhaust static pressure kit
- · Fume Hood UL 1805
- · Stainless steel IV bar
- · UV germicidal lamp
- · Floor/wall seismic restraints
- · Additional cable ports

- · Under drain pan bins
- · 5" casters with brakes
- · ULPA filters
- · Ergonomic adjustable footrest
- · Black iron plumbing

- · Air tight damper
- · Digital Display Package (DDP)
- 220 V, 50 Hz electrical NSF/ANSI
   49 & UL listed
- · 100 V, 50/60 Hz electrical

### **More Resources**

If you are interested in learning more about the SterilGARD® e3, a variety of resources are available at www.bakerco.com including:

- · Purchasing, technical and master specifications
- · Revit® files and standard details
- · Videos, white papers and more!

### Learn More!

Scan the code to the right or visit www.bakerco.com/biochemgard to access all the BioChemGARD® e3 resources!



MODEL NUMBER	BCG401	BCG601
Size	4'	6'
Interior Dimensions ( $w \times d \times h$ )	$46" \times 22^{7}/8" \times 27^{5}/8"$	$70" \times 22^{7}/_{8}" \times 27^{5}/_{8}"$
Usable Workspace ( $w \times d \times h$ )	$44^{5}/8" \times 18" \times 27^{5}/8"$	$68^{5}/8" \times 17^{5}/8" \times 27^{5}/8"$
Exterior Dimensions ( $w \times d \times h$ [min to max])	$53^{7}/8^{11} \times 33^{5}/8^{11} \times [86^{11} \text{ to } 94^{11}/2^{11}]$	$77^{7}/_{8}$ " $\times 33^{5}/_{8}$ " $\times [86$ " to $94^{1}/_{2}$ "]
Cabinet Weight	720 lbs.	850 lbs.
Shipping Weight	850 lbs.	1020 lbs.
Working Access Opening Height	8"	8"
Opening Max.	20"	20"
Operating Amperage		
Normal Operating Mode	I.O Amps	1.4 Amps
ReadySAFE™ Mode	0.3 Amps	0.3 Amps
Power Consumption		
Normal Operating Mode	I I 5 Watts	161 Watts
ReadySAFE™ Mode	35 Watts	35 Watts
Heat Generation (note: 100% exhausted)		
Normal Operating Mode	392 BTU/hr	549 BTU/hr
ReadySAFE™ Mode	I I 8 BTU/hr	I 18 BTU/hr
Electrical Service Requirements	115V AC, 20 A, 60 Hz	115V AC, 20 A, 60 Hz
Noise, exhaust & cabinet, NSF International	59 dBA	60 dBA
Noise, cabinet	< 50 dBa	< 50 dBA
		00 00.1
XHAUST AND STATIC PRESSURE REQUIREMENTS  Concurrent Balance Value  Normal Operating Mode		
Concurrent Balance Value  Normal Operating Mode	664 CFM	993 CFM
Concurrent Balance Value  Normal Operating Mode  ReadySAFE™ Mode		
Concurrent Balance Value  Normal Operating Mode  ReadySAFE™ Mode  Exhaust and Static Pressure Requirements - Standard	664 CFM	993 CFM 300 CFM
Concurrent Balance Value  Normal Operating Mode  ReadySAFE™ Mode	664 CFM 300 CFM	993 CFM
Concurrent Balance Value  Normal Operating Mode  ReadySAFE™ Mode  Exhaust and Static Pressure Requirements - Standard  8" Exhaust Duct Diameter - Normal Operating Mode  8" Exhaust Duct Diameter - ReadySAFE™ Mode	664 CFM 300 CFM -1.9" W.G. -0.35" W.G.	993 CFM 300 CFM -2.3" W.G. -0.18" W.G.
Concurrent Balance Value  Normal Operating Mode  ReadySAFE™ Mode  Exhaust and Static Pressure Requirements - Standard  8" Exhaust Duct Diameter - Normal Operating Mode	664 CFM 300 CFM -1.9" W.G. -0.35" W.G.	993 CFM 300 CFM -2.3" W.G.
Concurrent Balance Value  Normal Operating Mode  ReadySAFE™ Mode  Exhaust and Static Pressure Requirements - Standard  8" Exhaust Duct Diameter - Normal Operating Mode  8" Exhaust Duct Diameter - ReadySAFE™ Mode  10" Exhaust Duct Diameter - Normal Operating Mode	664 CFM 300 CFM -1.9" W.G. -0.35" W.G. e -1.7" W.G. -0.30" W.G.	993 CFM 300 CFM -2.3" W.G. -0.18" W.G. -1.8" W.G.
Concurrent Balance Value  Normal Operating Mode  ReadySAFE™ Mode  Exhaust and Static Pressure Requirements - Standard  8" Exhaust Duct Diameter - Normal Operating Mode  8" Exhaust Duct Diameter - ReadySAFE™ Mode  10" Exhaust Duct Diameter - Normal Operating Mode  10" Exhaust Duct Diameter - ReadySAFE™ Mode	664 CFM 300 CFM -1.9" W.G. -0.35" W.G. e -1.7" W.G. -0.30" W.G.	993 CFM 300 CFM -2.3" W.G. -0.18" W.G. -1.8" W.G. -0.16" W.G.
Concurrent Balance Value  Normal Operating Mode  ReadySAFE™ Mode  Exhaust and Static Pressure Requirements - Standard  8" Exhaust Duct Diameter - Normal Operating Mode  8" Exhaust Duct Diameter - ReadySAFE™ Mode  10" Exhaust Duct Diameter - Normal Operating Mode  10" Exhaust Duct Diameter - ReadySAFE™ Mode  12" Exhaust Duct Diameter - ReadySAFE™ Mode	664 CFM 300 CFM  -1.9" W.G0.35" W.G. e -1.7" W.G0.30" W.G. e -1.6" W.G.	993 CFM 300 CFM -2.3" W.G. -0.18" W.G. -1.8" W.G. -0.16" W.G. -1.7" W.G.
Concurrent Balance Value  Normal Operating Mode  ReadySAFE™ Mode  Exhaust and Static Pressure Requirements - Standard  8" Exhaust Duct Diameter - Normal Operating Mode  8" Exhaust Duct Diameter - ReadySAFE™ Mode  10" Exhaust Duct Diameter - Normal Operating Mode  10" Exhaust Duct Diameter - ReadySAFE™ Mode  10" Exhaust Duct Diameter - ReadySAFE™ Mode  12" Exhaust Duct Diameter - ReadySAFE™ Mode	664 CFM 300 CFM  -1.9" W.G0.35" W.G. e -1.7" W.G0.30" W.G. e -1.6" W.G0.29" W.G.	993 CFM 300 CFM  -2.3" W.G0.18" W.G1.8" W.G0.16" W.G1.7" W.G.
Concurrent Balance Value  Normal Operating Mode  ReadySAFE™ Mode  Exhaust and Static Pressure Requirements - Standard  8" Exhaust Duct Diameter - Normal Operating Mode  8" Exhaust Duct Diameter - ReadySAFE™ Mode  10" Exhaust Duct Diameter - Normal Operating Mode  10" Exhaust Duct Diameter - ReadySAFE™ Mode  12" Exhaust Duct Diameter - ReadySAFE™ Mode  12" Exhaust Duct Diameter - ReadySAFE™ Mode  Exhaust Duct Diameter - ReadySAFE™ Mode  Exhaust and Static Pressure Requirements - Low Static	664 CFM 300 CFM  -1.9" W.G0.35" W.G. e -1.7" W.G0.30" W.G. e -1.6" W.G0.29" W.G.	993 CFM 300 CFM  -2.3" W.G0.18" W.G1.8" W.G0.16" W.G1.7" W.G0.16" W.G.
Normal Operating Mode  ReadySAFE™ Mode  Exhaust and Static Pressure Requirements - Standard  8" Exhaust Duct Diameter - Normal Operating Mode  8" Exhaust Duct Diameter - ReadySAFE™ Mode  10" Exhaust Duct Diameter - Normal Operating Mode  10" Exhaust Duct Diameter - ReadySAFE™ Mode  10" Exhaust Duct Diameter - ReadySAFE™ Mode  12" Exhaust Duct Diameter - Normal Operating Mode  12" Exhaust Duct Diameter - ReadySAFE™ Mode  Exhaust and Static Pressure Requirements - Low Static © 8" Exhaust Duct Diameter - Normal Operating Mode  8" Exhaust Duct Diameter - ReadySAFE™ Mode	664 CFM 300 CFM  -1.9" W.G0.35" W.G. e -1.7" W.G0.30" W.G. e -1.6" W.G0.29" W.G.  Option -1.7" W.G.	993 CFM 300 CFM  -2.3" W.G0.18" W.G1.8" W.G1.7" W.G0.16" W.G0.16" W.G.
Concurrent Balance Value  Normal Operating Mode  ReadySAFE™ Mode  Exhaust and Static Pressure Requirements - Standard  8" Exhaust Duct Diameter - Normal Operating Mode  8" Exhaust Duct Diameter - ReadySAFE™ Mode  10" Exhaust Duct Diameter - Normal Operating Mode  10" Exhaust Duct Diameter - ReadySAFE™ Mode  10" Exhaust Duct Diameter - ReadySAFE™ Mode  12" Exhaust Duct Diameter - Normal Operating Mode  12" Exhaust Duct Diameter - ReadySAFE™ Mode  Exhaust and Static Pressure Requirements - Low Static 8" Exhaust Duct Diameter - Normal Operating Mode	664 CFM 300 CFM  -1.9" W.G0.35" W.G. e -1.7" W.G0.30" W.G. e -1.6" W.G0.29" W.G.  Option -1.7" W.G.	993 CFM 300 CFM  -2.3" W.G0.18" W.G1.8" W.G1.7" W.G0.16" W.G0.16" W.G.
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### BioChemGARD® e3, Class II, Type B2 Biological Safety Cabinet, Vertical Flow

### **APPROVALS**

- I. The cabinet shall have the following approvals, listings, and/or certifications:
- UL 61010-1, Second Edition: Electrical Equipment for Measurement, Control, and Laboratory Use For Electrical, Fire, and Personal Safety
- NSF/ANSI 49, Biosafety Cabinetry: Design, Construction, Performance, and Field Certification
- UL 1805, First Edition: Standard for Laboratory Hoods and Cabinets For Material Flammability and Effectiveness of Airflow Characteristics
- 5. ANSI/ASHRAE 110-1995: Method of Testing Performance of Laboratory Fumehoods

### PERFORMANCE

- The cabinet shall provide intake velocity through the front access opening of the cabinet at a minimum of 100 FPM.
- The cabinet shall incorporate higher-velocity airflow behind the viewscreen (momentum air curtain) for added personnel and product protection.
- The cabinet shall contain high-velocity return air slots in the sidewalls and top adjacent to the front access opening for enhanced containment and reduction of air turbulence at the sash opening.
- The cabinet shall incorporate a highperformance airflow system (UniPressure™ Preflow Plenum). This system apportions and distributes air across and then through the HEPA supply filter.
- The bottom of the cabinet access opening shall be aerodynamically designed to direct airflow into the front grille to optimize containment.
- 6. The cabinet shall have a low flow mode (ReadySAFE™), which is active when the viewscreen is closed. This mode of operation shall reduce energy consumption by at least 50% and still meet the product and personnel protection testing requirements of NSF/ANSI 49. Particle testing while the cabinet is in this mode shall exceed the requirements for ISO Class 5 conditions for 0.3 micron particles. A connection shall be provided for indicating the ReadySAFE™ status to the facility building management system.
- 7. The cabinet shall use a variable frequency drive (VFD) and three-phase motor/blower system (StediFLOW™) that is capable of maintaining a constant air volume as filter resistance increases and automatically compensate for normal power-line variations, air disruptions, and supply filter loading
- The manufacturer can provide a representative copy of the personnel, product, and cross-contamination biological tests upon request. These tests are equivalent to, or more demanding than, the tests specified in NSF/ANSI 49. Detailed biological test reports can be provided at additional cost.

### CONSTRUCTION

- The cabinet's exterior construction is of seal panels and dress panels of 16-gauge coldrolled steel, powder-coated finish, PermaWhite<sup>TM</sup>.
- Cabinet shall have permanent metal doublewall construction with negative-pressure airflow between the walls, from drain pan to top of the work area, surrounding all biologically contaminated areas.
- The cabinet shall contain a vertical sliding viewscreen slanted at an angle of 10° for user comfort.
- The cabinet shall have an adjustable stand. The available work surface elevations are 2958" to 321/8" and 3558" to 381/8".
- The cabinet interior work area will be constructed as one piece. The material shall be 16-gauge, Type-304 stainless steel. The interior shall have smooth coved-corners to facilitate cleaning.
- The cabinet shall feature a straight back wall to maximize work area and more easily accommodate laboratory equipment.
- 7. The cabinet shall have a cable port to allow passage of tubes and/or cables through the negative-pressure double-wall plenum sidewalls of the cabinet. Design shall meet Class 100 (ISO Class 5) air cleanliness immediately inside the opening in the work area. The cabinet feature must be approved per NSF/ANSI 49.
- The unit shall have standard HEPA filters for a protection effectiveness of 99.99% on 0.3 micron size particles. The cabinet supply filter, exhaust filter, and test ports shall be accessible from the front of the cabinet.
- The viewscreen shall be constructed of 1/4" laminated safety plate glass, with a maximum opening of 20" to optimize access to the interior of the cabinet.
- The cabinet shall feature a counterweighted pulley system to reduce the effort of opening and closing the viewscreen.
- 11. The cabinet shall be equipped with a stainless steel supply-air diffuser and exhaust-filter protector.
- 12. The cabinet contains exhaust filters located directly below the work surface. This location facilitates particle capture close to the site of generation. Exhaust filters shall be designed for safe bagging and removal in the work area and shall be sized to fit in a standard Department of Transportation (DOT) container for removal in a manner appropriate to their level of contamination. (ExchangeSAFETM)
- 13. A plenum assembly shall be provided to allow the supply filters to be directly clamped to the plenum against a closed-cell neoprene gasket. The plenum applies even force, rather than point force, to the full perimeter of the supply filters.

- 14. The cabinet shall have a unitized drain pan with smooth coved-corners and a fully removable work surface and work-surface supports to facilitate cleaning and prevent microbial growth.
- 15. The cabinet shall have a bypass armrest for user comfort and to allow intake airflow when the cabinet is in ReadySAFE™ mode.
- 16. The standard cabinet shall contain one petcock and one plugged penetration on the right side wall. The left sidewall shall be prepunched for optional/additional plumbing connections.
- 17. The cabinet shall be equipped with a stainless steel ball drain valve to allow for safe and effective removal of spills.
- 18. The supply motor blower shall be located in a clean zone of the cabinet that does not require any decontamination should maintenance or replacement be required.

#### **ELECTRICAL**

- The cabinet shall have a microprocessorbased control system with an easy-to-clean membrane control panel mounted on the front of the cabinet.
- The cabinet shall have adjustable timers for fluorescent lights, outlets, and optional UV lights. Timers shall be able to be set in 15-minute and one-hour increments.
- The work area of the cabinet shall be provided with two GFCI-protected duplex outlets with drip-proof covers and shall be protected by a self-resetting circuit breaker.
- A single 14' power cord with NEMA 5-20 plug shall be provided for electrical power connection.
- If equipped with optional UV light, includes a shutoff safety feature when the viewscreen is raised.
- The cabinet shall have electronic ballasts to provide more efficient operation for fluorescent lighting and optional UV lighting.
- The cabinet shall have an externally mounted fluorescent light fixture capable of providing an average of more than 100 footcandles of illumination at work surface.
- 8. The cabinet shall be provided with a low-exhaust-flow alarm. This alarm shall have audible and visual indicators of the alarm condition and be interlocked to shut down the cabinet supply blower, which minimizes pressurization of the work zone in the event of a low-exhaust-flow condition. An audible alarm mute function shall be provided. The alarm shall automatically reactivate after five minutes if the alarm condition persists.
- 9. The cabinet shall have an audible and visual alarm indicating that the sliding viewscreen is in an unsafe position. An alarm mute function shall be provided to allow the operator full access to the work area. The alarm shall automatically reactivate after five minutes if the viewscreen remains in an unsafe position.

### Caution

A Class II, Type B2, 100% total exhaust biological safety cabinet is suitable for work with low to moderate risk (Biosafety Levels 2 and 3) biological agents. It may also be used with biological agents treated with volatile toxic chemicals and radionuclides required as an adjunct to microbiological studies (as stated by NSF International Standard, NSF/ANSI Standard #49).

Note: The adequacy of this containment cabinet for the user's personal safety, as with any containment cabinet, should be determined by an industrial hygienist or safety officer. Site preparation information, architectural drawings, detailed dimensions, and purchase specifications are available.

### 72 Month Warranty

The Baker Company, Inc., expressly represents and warrants all goods (a) to be as specified (and described) in The Baker Company catalogs and literature, and (b) to be free under normal use, service, and testing (all as described in The Baker Company catalogs and literature) from defects in material and workmanship for a period of seventy-two months from the invoice date.

The exclusive remedy for any breach or violation of this warranty is as follows: The Baker Company, Inc., will F.O.B. Sanford, Maine, furnish without charge repairs to or replacement of the parts or equipment that proved defective in material or workmanship. No claim may be made for any incidental or consequential damages.

THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE UNLESS OTHERWISE AGREED IN WRITING SIGNED BY THE BAKER COMPANY. (THE BAKER COMPANY SHALL NOT BE RESPONSIBLE FOR ANY IMPROPER USE, INSTALLATION, SERVICE, OR TESTING OF THE GOODS.)



### THE BAKER COMPANY

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