BioVanguard

Operator, product and *environmental protection*

Baker

BioVanguard Biosafety Cabinets ensure the highest level of protection

Baker designs and produces high-quality microbiological safety workbenches and laminar flow systems for numerous markets and segments. Our workbenches are mainly used in the pharmaceutical industry, (academic) hospitals, research laboratories, plant breeding and the food industry, but also in various technical applications.

BIOVANGUARD

Class II Biological Safety Cabinet

Baker BioVanguard Series, our newest range of high quality Class II Biological Safety Cabinets ensures the highest level of protection for operator, product and environment, minimizing hazards inherent to working with agents, assigned to biosafety levels 1, 2, 3 and 4.

This series has been designed according to the highest standards of quality, biological safety, reliability, ergonomics and usability and meets the latest customer requirements such as low energy consumption and low sound level.

Product types

You can find us wherever the protection/safety of people, products and the environment against micro-organisms, viruses and dust particles is necessary.
All our products are created in close collaboration with you.

RESEARCH APPLICATIONS

- Pharmaceutical industry
- (Academic) hospitals
- Research laboratories
- Food industry
- Cell and Gene Therapy Development
- Other technical applications

PERSONAL PROTECTION

In some laboratories work lab technician must be protected against the substances in the cabinet.

PRODUCT PROTECTION

In certain laboratories, the product or research must be performed or processed in a sterile environment.

PERSONAL & PRODUCT PROTECTION

There are various activities that are performed in a cabinet where both the person and the product must be protected.

SPECIALS & PROJECTS

If a standard cabinet does not meet your wishes & requirements; we have all disciplines in-house to adjust the cabinet to your needs.

Basic Principles

BioVanguard

APPLICATIONS

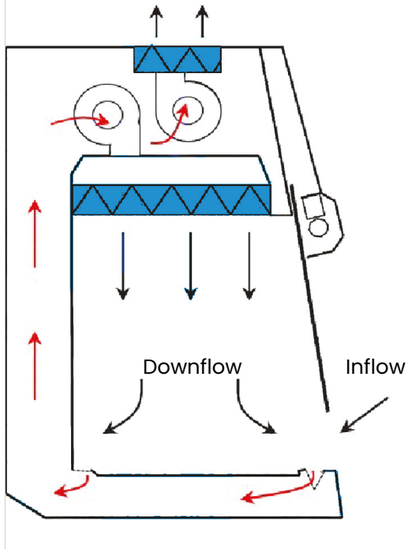
BioVanguard is designed for microbiological research with biological agents (e.g. bacteria, viruses, etc) and allergens.

AVAILABLE SIZES

BioVanguard is available in 3, 4, 5 and 6ft (90, 120, 150 and 180cm) width.

INTERNATIONAL SAFETY STANDARDS

The BioVanguard is designed and manufactured according to international biosafety standards EN12469 NSF49, and PIC/S. BioVanguard B is designed and manufactured to DIN12980.



LAMINAR FLOW

BioVanguard provides operator protection by inflow, product protection by HEPA-filtered laminar downflow in the working area (30% exhaust; 70% recirculation) and environmental protection by HEPA-filtered exhaust air.

FEATURES

- Pre-filter and stainless steel driptray preventing particles from gathering in the interior of the cabinet, and increases the lifetime of HEPA filters.
- Advanced sliding/hinged window can be lifted completely, opening the entire work area for easy cleaning and provides for quick loading of large items into the cabinet.
- Innovative ergonomic design features, such as integrated footrest, designed “aerofoil” armrest and V-shaped air intake prevents contamination, user-friendly LCD control panel work together to provide a comfortable user experience and increase productivity.
- Airflow design provides ISO Class 5 conditions (per ISO 14644-1, regarding particle count) and GMP Annex 1 Class A conditions inside the workspace.
- Advanced design and the use of energy-efficient EC fans ensure reduced energy consumption and may contribute to lower sound levels.

Basic Principles

Biovanguard B

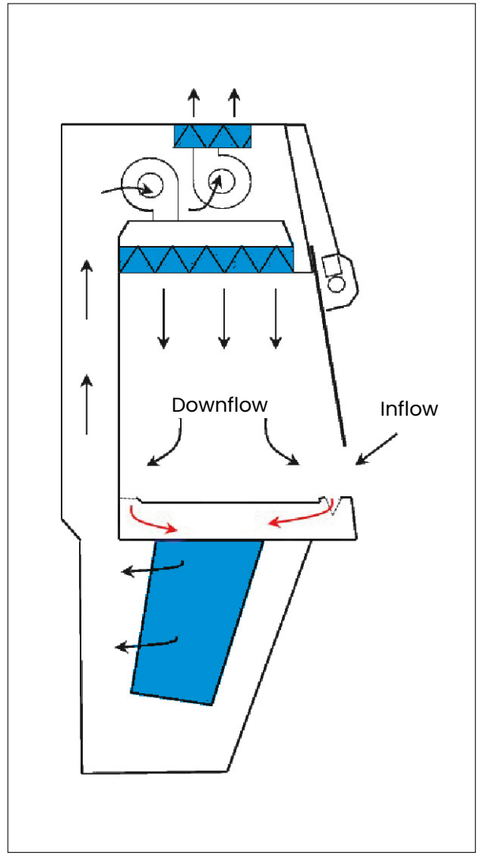
BioVanguard B is equipped with additional V-shaped HEPA filters underneath the work surface, which filters the inflow air and keep the internal construction of the cabinet free of contamination and therefore ensures the topmost safety for high risk applications.

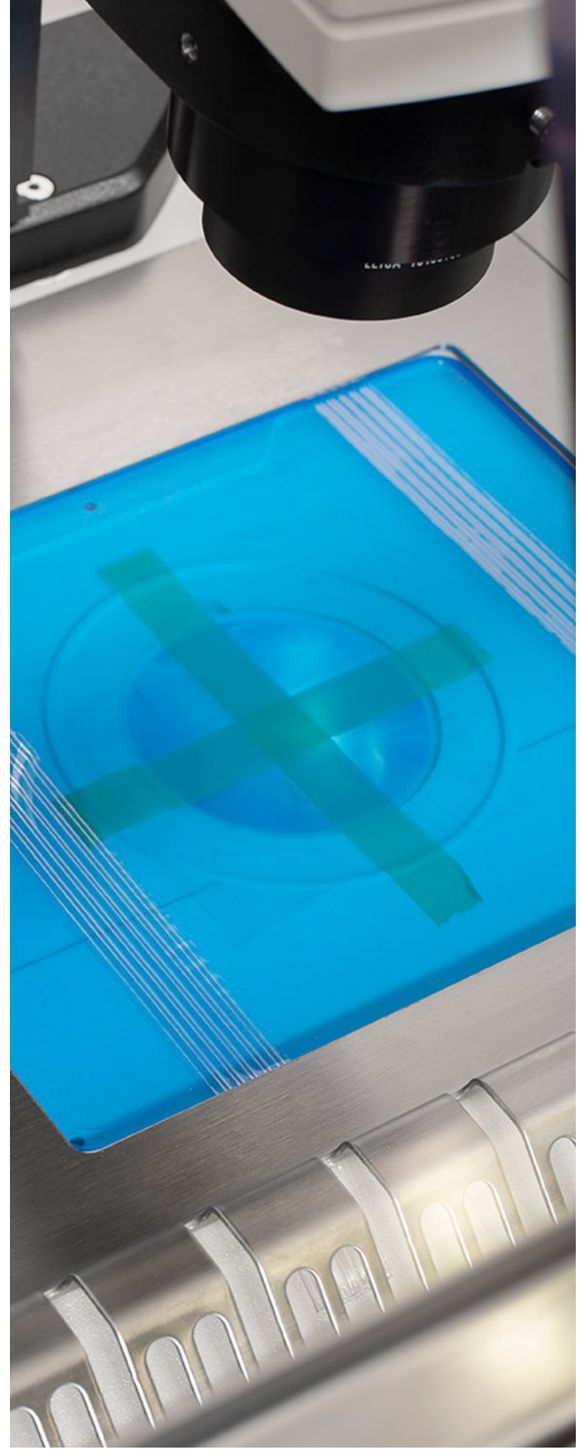
APPLICATIONS

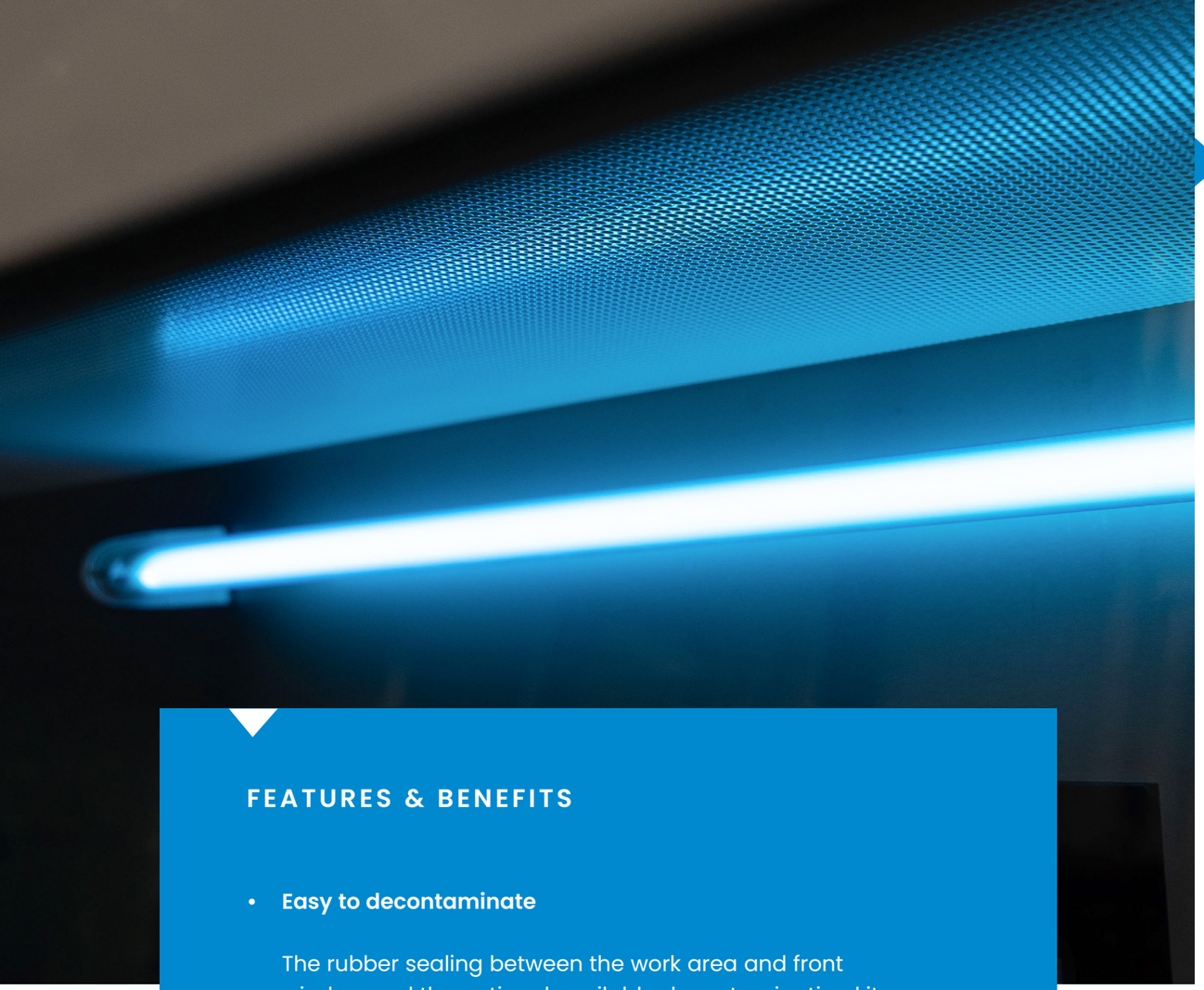
BioVanguard B is designed for high risk microbiological and high toxic applications, such as the production of cytotoxic medicines.

AVAILABLE SIZES

BioVanguard B is standard available in 4 and 6ft (120 and 180cm) width.







FEATURES & BENEFITS

- **Easy to decontaminate**

  The rubber sealing between the work area and front window and the optional available decontamination kit assures that the cabinet is gas and airtight for gaseous decontamination. Optional available connections can be installed on the cabinet for easy decontamination.

- **Customized colors**

  BioVanguard Series is standard equipped with a white front hood. Does your laboratory already contain cabinets with coloured front hoods? Or does your laboratory definitely need some colour? No problem. You can order customized coloured front hoods at surcharge.

EASY TO CLEAN

- Advanced sliding/hinged window: The front window can be lifted completely, opening the entire work area for easy cleaning and/or (un) loading large items.
- The drip tray underneath the worktop collects spilled liquids up to 1,5 Litres (according to EN 12469), preventing these liquids from entering parts of the cabinet that are difficult to clean.
- Standard equipped with seamless one piece Stainless Steel worktop. Easy to clean and able to collect another 2-3 Litres of spilled liquids.
- Standard equipped with one piece Stainless Steel work area with rounded corners, allowing easy cleaning.
- Window grips are glued on the outside of the front window, creating a smooth inner surface which is easy to clean.

ERGONOMIC DESIGN

- 7° sloped front window for ergonomic work position of the operator. With predefined working, open and close position.
- Ergonomic lighting is positioned outside the work area. This does not disturb the downflow, nor create inconvenient shades, nor create obstructions during cleaning.
- Ergonomic foot rest is integrated in the optional available support frame.
- User-friendly LCD control panel, positioned at an angle, showing the operator all relevant functions and alarms at a glance.

GMP & PIC'S COMPLIANT

Downflow velocity can be set according to GMP Annex 1 and PIC's regulations (0,45m/s).

Two analogue 4–20mA connections are available for particle count sensor, pressure sensor, temperature and relative humidity sensor. Also limits/ alarms (high/low) can be set. Data from these sensors is visible on the display.

GMP compliant support frame optional available.

SUPERIOR QUALITY & HIGH PERFORMANCE

BioVanguard Series is a range of Class II Biological Safety Cabinets of superior quality and high performance, designed and manufactured for demanding customers worldwide. The cabinet consists of high quality materials and components, ensuring a reliable performance and long lifetime.

LOW ENERGY CONSUMPTION & SOUND LEVEL

BioVanguard Series is designed and manufactured according to the latest customer requirements. Low energy consumption of the BioVanguard Series is ensured by using efficient and energy saving EC fans. Low sound level is the result of the smart design and construction of the cabinet.

MICROPROCESSOR SAFETY FEATURES

- Separate alarms for downflow (high/low) and inflow (high/low); action can be taken accordingly.**
- Automatic filter clogging compensation: The microprocessor will automatically increase the fan speed to compensate filter clogging etc, ensuring flow at set point, providing maximum level of product and operator protection.
- Gas valve safety control: Gas can only be switched on when the cabinet indicates safe work mode. If the cabinet is switched off or shows an alarm, the gas will automatically be switched off.
- UV light safety control: FL light will be switched off when UV light is switched on.
- Two redundant microprocessors (fail-safe synchronization).

**Example: A downflow alarm means that the product is not protected, but the operator still is. In this case, the operator can safely start his procedure to stop working, clean the working area, switch off the cabinet and start investigate the cause of the downflow alarm.

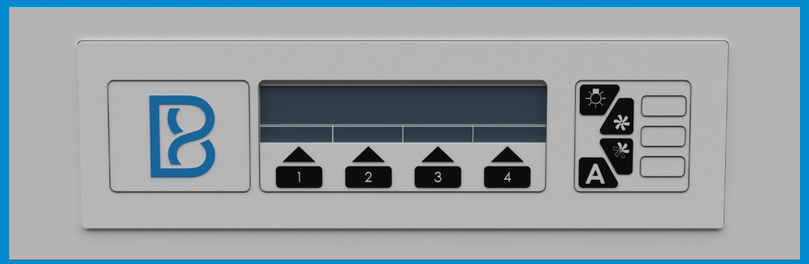
ADVANCED SAFETY FEATURES

- Exceeds EN12469 standard; because of the multi-shell construction all contaminated areas are under or surrounded by negative pressure.
- Work top with V-shaped air slits provides superior safety by preventing blocking the inflow and contamination from the operator's sleeves.
- Pre-filter prevents dust, dirt and particles to gather in the interior of the cabinet, it increases the life time of the HEPA-filters and it ensures maximum effect of decontamination.*
- Laminated safety glass front window (8mm, 2 layers).
- Arm rest operates like an aerofoil, improving air inflow and thus operator protection.

*Without pre-filter, dust within the cabinet will create a layer and become a barrier between the disinfectants and the microbiological contamination, influencing the effect of decontamination negatively. This causes a risk of contamination for the service technician and the laboratory.

CONTROL PANEL WITH ALARMS & PARAMETERS

- Green light indicates safe work mode
- Red light indicates alarm (visual and audible) for:
  - Downflow (high/low)
  - Inflow (high/low)
- Window (out of working position)
- Switch for work mode (on/off)*
- Switch for stand-by mode (on/off)
- Switch for UV light (on/off)*
- Switch for FL light (on/off)
- Switch for power socket (on/off)*
- Switch for gas valve (on/off)
- English, Spanish, French, German and Dutch language
- Real-time clock
- Total running hours for fan, FL, UV
- Pin code to prevent unauthorised usage
- RS 232 and RS 485 connection
- Volt free contact for forwarding alarms to building management systems
- Volt free contact(s) which can be used to switch on/off an external system such as additional exhaust system/fan



*Also controllable by programmable clock (on/off) or timer (off).

LOW MAINTENANCE, EASY INSTALLATION

- Accurate and independent control for inflow and downflow velocity; fast and easy adjustable to on site conditions (building, HVAC, laboratory).
- Pre-filter prevents dust, dirt and particles entering the HEPA filters, tremendously increasing HEPA filter lifetime.
- Innovative, unique and patented 4F System (fast, friendly and efficient) to replace the downflow filter: the filter is easily accessible from the front of the cabinet using a unique fast tightening/untightening device, reducing the time required to replace the filter within five minutes.
- All technical parts are easy accessible from the front of the cabinet.
- Easy to connect to a duct: For all sizes of cabinets, the exhaust filter is standard positioned at the centre of the cabinet.
- Smart positioned, easy replaceable air velocity sensors.

STANDARD CONFIGURATION

BioVanguard Series is standard equipped with:

- Epoxy coated exterior
- Stainless Steel interior
- Stainless Steel one piece worktop
- Pre-filter & drip tray
- 2 x electrical socket

QUICK RESPONSE CONFIGURATION

The Quick Response (QR) configuration also includes:

BIOVANGUARD

- UV
- Prepared for Gas and Vacuum
- Shorter lead

BIOVANGUARD B

- Exhaust transition
- Potential Free Contact
- Prepared for Gas and Vacuum

ELECTRICAL OR MANUAL WINDOW

BioVanguard Series is available with manual or electrical front window.

Options & Accessories

The available options and accessories make this cabinet adaptable to many applications. Together with the flexibility and expertise of our engineering department, this series is suitable to customize to customer specific requirements.

Decontamination connection

OPTIONS

- Electrical window
- Electrical sockets*
- Taps (natural gas, vacuum, O_2, N2, etc)
- UV light**
- Decontamination connection
- Exhaust transition
- Double exhaust HEPA filter
- Data connection box (USB, etc)
- Flush mounted monitor
- FAT / SAT / IQ / OQ

ACCESSORIES

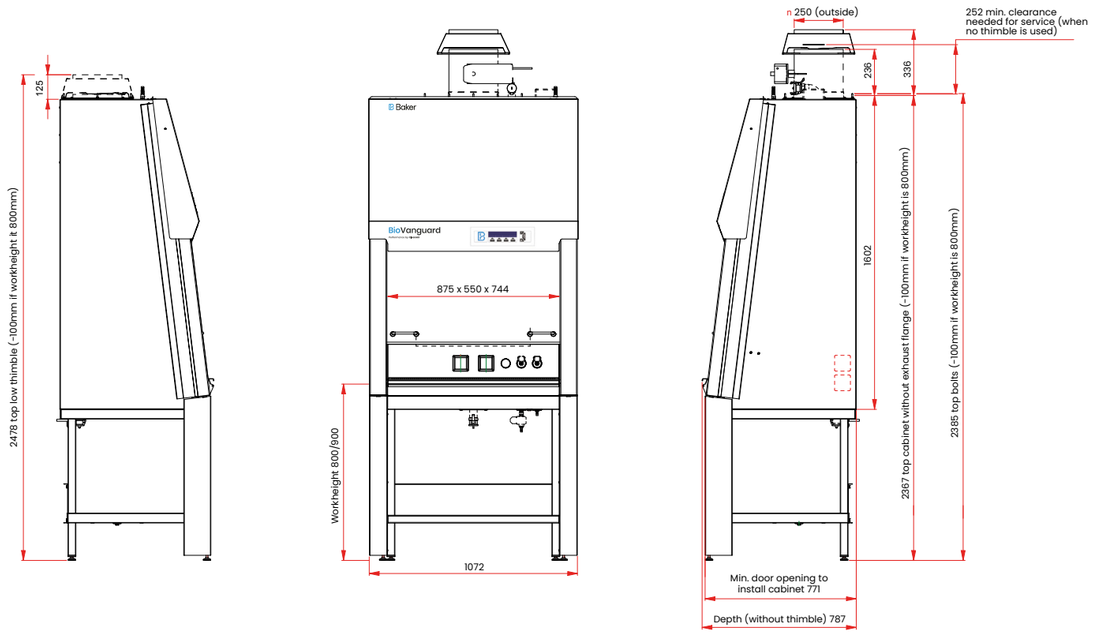
- Support frame (fixed / electrical adjustable / GMP compliant)
- Segmented worktop
- Decontamination kit
- Thimble
- Anti-blowback valve

*2 x electrical socket included in Standard and Quick Response configuration. **Included in Quick Response.

Technical Specifications – BioVanguard

TYPE	BioVanguard 3	BioVanguard 4	BioVanguard 5	BioVanguard 6
Part Numbers				
Manual window / Quick response	-	1560105	-	1560109
Electrical window / Quick response	-	1560106	-	1560110
Manual window / Standard	H301001	NH401001	NH501001	NH601001
Electrical window / Standard	-	NH401003	NH501003	NH601003
Dimensions (mm)				
Exterior dimensions (W x D x H)	1072 x 787 x 1602	1375 x 787 x 1602	1679 x 787 x 1602	1985 x 787 x 1602
Interior dimensions (W x D x H) [1]	875 x 550 x 744	1180 x 550 x 744	1485 x 550 x 744	1790 x 550 x 744
Height with support frame [2]	2267 / 2367	2267 / 2367	2267 / 2367	2267 / 2367
Working aperture (W X H) [3]	875 x 175 / 330	1180 x 175 / 330	1485 x 175 / 330	1790 x 175 / 330
Weight (kg)	200	220	275	300
Exhaust connection Ø (optional)	250	250	250	250
Performances				
Downflow velocity (m/s) [4]	0,36	0,36	0,36	0,36
Power consumption (w) [5]	135	156	199	271
Light intensity (lux)	850	1000	850	1150
Electrics				
Electrical connection (V)/(Hz)	230 / 50	230 / 50	230 / 50	230 / 50
Filters				
Pre-filter (EN 779)	Coarsefilter	Coarsefilter	Coarsefilter	Coarsefilter
Downflow HEPA filter (EN 1822)	H14	H14	H14	H14
Exhaust HEPA filter (EN 1822)	H14	H14	H14	H14

[1] Depth at bottom of work area = 550mm. Depth at top of work area = 470mm [2] Support frame with fixed working height 800mm / 900mm [3] Work mode / maximum mode [4] Optional: velocity can be set to 0,45 m/s according to GMP and PIC's [5] Measured according EN 12469 (Cabinet on, light on, downflow 0,28 m/s) [6] Height including 1st HEPA filter section (660mm)



Technical Specifications – BioVanguard B

TYPE	BioVanguard B4	BioVanguard B6
Part Numbers		
Manual window / Quick response	1560107	1560111
Electrical window / Quick response	1560108	1560112
Manual window / Standard	NH411001	NH611001
Electrical window / Standard	NH411003	NH611003
Dimensions (mm)		
Exterior dimensions (W x D x H) [6]	1375 x 787 x 2262	1985 x 787 x 2262
Interior dimensions (W x D x H) [1]	1180 x 550 x 744	1790 x 550 x 744
Height with support frame [2]	2267 / 2367	2267 / 2367
Working aperture (W X H) [3]	1180 x 175 / 330	1790 x 175 / 330
Weight (kg)	270	400
Exhaust connection Ø	250	250
Performances		
Downflow velocity (m/s) [4]	0,36	0,36
Power consumption (w) [5]	196	340
Light intensity (lux)	1150	1350
Electrics		
Electrical connection (V)/(Hz)	230 / 50	230 / 50
Filters		
Pre-filter (EN 779)	G3	G3
Downflow HEPA filter (EN 1822)	H14	H14
1st HEPA filter (EN 1822)	H14	H14

Take a look at the full suite of resources about the BioVanguard

Scan the QR code to access all the BioVanguard specifications

93
Sales Professionals

675
Service Technicians

74
B2B Partners

3
Locations

No Minimum Anything

Our global headquarters houses our core operations: manufacturing, engineering and design, research, testing, quality control, technical support, and customer service.

No Shortcuts

The construction of Baker laboratory equipment is marked by a focus on function, user comfort, durability – and always safety. Testing is rigorous, setting us apart in the industry.

We take it Personally

Our employees, from our engineers to our customer service representatives, are motivated by the trust our customers have placed in us to protect life — your life, the life of your research, and ultimately the lives you save through discovery and healing.

Make the World a Better Place

In research and clinical care, you are dedicated to making the world a better place. We not only share your passion for your work, but the wider mission of dedication to principles of sustainability and responsibility.

A Passion for Real value

Baker products have earned a reputation for maximum return on investment through lower life cycle costs and more years of trouble-free operation than those of any other manufacturer.

Baker

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