



# Biological Safety Cabinets

## GBS-B2 Class II Type B2



### Operator, Product and Environmental Protection

The Class II, Type B2 Biological Safety Cabinet provides operator, product and environmental protection against Biosafety Levels 1, 2 and 3. This cabinet can be used for handling Biosafety Level 4, provided that the operator wears positive pressure suit.

### Main Features

Unique Dynamic Chamber™ plenum.

Negative pressure plenum surrounds contaminated positive pressure plenum; no fabric bags are used.

Dual, long-life ULPA filters for supply and exhaust (per IEST-RP-CC001.3) with 99.999% efficiency for particle size between 0.1 to 0.3 microns.

Angled supply filter matches cabinet profile to achieve best downflow uniformity.

Sentinel™ microprocessor.

Frameless, shatterproof sash is easier to clean.

Ergonomically angled front improves reach and comfort.

Actual work access height is 45 mm (1.8") higher than tested sash opening.

Removable one-piece work surface simplifies cleaning.

Raised airflow grille maintains safety by preventing blockage.

Optional UV lamp is located behind control panel away from line of sight. (Does not apply to 1.8 m / 6' models.)

Isocide antimicrobial coating on all painted surfaces minimizes contamination.

Enhanced side-capture zones optimize containment.

Work area on 0.9 meter (3') cabinet is equivalent to work area offered on larger 1.2 meter (4') conventional cabinet.

General Specs		GBS-3B-TIIB2	GBS-4B-TIIB2	GBS-5B-TIIB2	GBS-6B-TIIB2
Ext. Dimensions		44" x 33.5" x 63.3"	56"w x 33.5"d x 63.3"h	68" x 33.5" x 63.3"	80" x 33.5" x 63.3"
Int. Dimensions		38.2" x 24.5" x 28.1"	50"w x 24.5"d x 28.1"h	61.8" x 24.5" x 28.1"	73.6" x 24.5" x 28.1"
Usable Work Area		4.8 ft. <sup>2</sup> (0.41 m <sup>2</sup> )	6.4 ft. <sup>2</sup> (0.59 m <sup>3</sup> )	8.0 ft. <sup>2</sup> (0.74 m <sup>2</sup> )	9.6 ft. <sup>2</sup> (0.89 m <sup>2</sup> )
Working Opening		9.8" (274 mm)	9.8" (274 mm)	9.8" (274 mm)	9.8" (248 mm)
Average Air-flow Velocity	Inflow	.53 m/s (105 fpm)			
	Downflow	.35 m/s (70 fpm)			
Airflow Volume	Inflow Minimum exhaust static pressure for clean exhaust filter**	376 m <sup>3</sup> /h (223 cfm)	492 m <sup>3</sup> /h (290cfm)	608 m <sup>3</sup> / h (358 cfm)	724 m <sup>3</sup> / h (429 cfm)
	Downflow	628 m <sup>3</sup> /h (363 cfm)	822 m <sup>3</sup> /h (476 cfm)	1016 m <sup>3</sup> /h (588 cfm)	1210 m <sup>3</sup> /h (700 cfm)
	Certification Exhaust (Inflow + Downflow)	1127 m <sup>3</sup> /h (658 cfm)	1420 m <sup>3</sup> /h (847 cfm)	1853 m <sup>3</sup> /h (1091 cfm)	2173 m <sup>3</sup> /h (1269 cfm)
Sound Emission	NSF/ANSI 49	57 dBA	58 dBA	59 dBA	60 dBA
	EN 12469	54dBA	55 dBA	56 dBA	57 dBA

# Biological Safety Cabinet

## Class II, Type B2

### Containment and Protection

Total exhaust design of the LB2 makes the cabinet suitable for microbiological work involving trace amounts of toxic chemicals.

### Integrated Filtration System

A combination of a supply ULPA filter and an exhaust ULPA filter give the cabinet a fully integrated performance envelope for product, operator and environmental protection.

ULPA filters (per IEST-RP-CC001.3), are tested to a typical efficiency of >99.999% for 0.1 to 0.3 micron particles; these provide better filtration capability than conventional HEPA filters that have a typical efficiency of >99.99% for 0.3 micron particles.

### Blower Efficiency

The blower system is designed for high performance operation, maximum energy efficiency and minimal maintenance.

### Front Sash Assembly

The sash is counterbalanced for smooth, lightweight operation.

The counterbalance locking mechanism is inherently safe; it locks the counterbalance in place if either of the 2 cables is detached. The sash cable and cable clip have rated strength of more than 6 times the weight of the sash window of the largest Class II cabinet (1.8 meter / 6 ft. model).

The safety glass maintains containment if the sash is accidentally broken during cabinet operation.

### Control, Alarm, Monitoring System

The Sentinel™ microprocessor-based control system supervises operation of all cabinet functions.

The control panel is located on the center of the

cabinet, and angled down for easy access by the operator

Continuous monitoring of cabinet airflow is displayed on a bright, easy to read LCD panel.

All electronic parts are contained inside a plug-and-play module that permits easy exchange if required.

Microprocessor software updates are available from Geneva Scientific for download via the Internet. Sentinel functions are factory set to default to ON or OFF, depending on worldwide destination and local preferences. Default settings can be user activated through the touchpad data entry access.

Automatic start-up sequence will prepare the cabinet for normal operation and advise when safe conditions are established.

An administrator controlled PIN (Personal Identification Number) can be set to restrict access to main menu.

The airflow alarm can be activated or deactivated depending on user preference and nature of the work.

### Cabinet Construction

Robust construction and enhanced safety features qualify the cabinet for the most demanding laboratory applications. The cabinet is fully assembled and ready to install and operate when shipped.

The telescoping Dynamic Chamber™ plenum minimizes physical lifting and accelerates filter change when required.

Work area containment is maintained even when removable components are lifted out for cleaning.

The one piece stainless steel work tray edges are radiused and easy to clean without crevices or joints.

The lower drain trough is a single-piece fabrication with wide open angles and a channel to direct spills to the drain.

The closed sidewall contains no perforations, air return slots or other hidden areas where contaminants can accumulate.

### Comfortable Ergonomic Design

The cabinet is engineered for comfort, utility value and safety.

The 10° angled viewing window and narrow profile front grille improves reach into the work area.

The instant-start 5000k fluorescent lamp operates on an electronic ballast to reduce heat, improve comfort and conserve energy.

The lamp delivers uniform lighting to the work surface for greater comfort, reduced glare and improved productivity; see Technical Specifications.

The front armrest is raised above the workzone to improve comfort and to ensure that the operator's arms do not block the forward airflow perforations.

The optional adjustable support stand provides work surface height control.

The frameless sash eliminates operator's line of sight blockage

A generous sash opening allows for easier access into the work zone, provides ample room for transferring of small equipment.

The sliding window can be fully opened to insert and remove larger instrumentation and equipment.

### Electrical Requirements

Contact Geneva Scientific for Electrical Requirements.

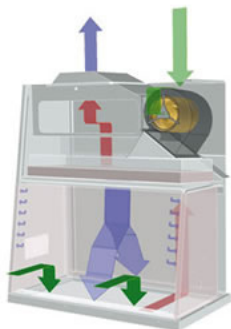
### Accessories and Options

Geneva Scientific offers a variety of options and accessories to meet local applications. Example of options include; Support stand, outlets and fixtures, UV Lamp, PVC armrest, IV bar, Microscope viewing device. Contact Geneva Scientific for ordering information and addition options available.

### Warranty

The cabinet is warranted for 5 years excluding consumable parts and accessories.

### Cabinet Airflow System



Ambient air is pulled through the front grille to prevent contamination of the work surface and work product. The inflow does not mix with the clean air within the cabinet work zone. Inflow air travels through a return path toward the common air plenum (blower plenum) at the top of the cabinet.

Ambient air is taken in through a prefilter at the top of the cabinet, and passes through the downflow ULPA filter, entering the work zone as laminar flow.

The uniform, non-turbulent air stream protects against cross contamination within and throughout the work area.

Near the work surface, the downflow air stream splits with a portion moving toward the front air grille, and the remainder moving to the rear air grille. A small portion of the ULPA filtered downflow enters the intake perforations at the side capture zones at a higher velocity (small blue arrows).

A combination of inflow and downflow air streams forms an air barrier that prevents contaminated room air from entering the work zone, and prevents work surface emissions from escaping the work zone. The downflow combined with the inflow air enters the common air plenum.

All air in the common plenum is HEPA filtered and exhausted via a dedicated ducting system to the external environment.

**\*\*Please Contact Geneva Scientific for complete specifications.**



**GENEVA SCIENTIFIC**

LAB EQUIPMENT SOLUTIONS

PO Box 408 262-245-1500

Fontana, WI 53125 Fax 262-245-6678

***Sales@Geneva-Scientific.com***