



**NEW!** Thermo Scientific 1300 Series B2  
Class II, Type B2 Biological Safety Cabinet



**Simplifying Your Safety Decisions**

*Now it's easy to select the best biological safety cabinet for your work with gases and volatile chemicals*

# 1300

## SERIES B2

### **Thermo Scientific 1300 Series B2** **Total Exhaust Biological Safety Cabinet**

**Introducing the 1300 Series B2 – the NSF recommended biological safety cabinet for microbiological applications that use more than minute amounts of volatile chemicals.**

The new 1300 Series B2 biological safety cabinet features an ergonomic design, advanced DC motor technology, and innovative airflow system that maximizes operator safety.

Our experts are available to understand your applications and offer support to select the best model to meet your laboratory requirements. The 1300 Series portfolio of products meets the highest quality and safety standards, and is fully-compliant with NSF/ANSI 49 for Class II biological safety cabinets. The efficiency of the state-of-the-art DC motor results in significantly reduced energy consumption and cost savings.

Thermo Scientific products simplify your decision-making process, saving you time and effort in selecting the most effective biological safety cabinet for your specific application.





**Choose the best model  
for your laboratory.**

### **The Thermo Scientific 1300 Series A2 and B2 –**

The Thermo Scientific 1300 Series family of products address every common use of the Class II biological safety cabinet. By selecting the 1300 Series A2, the 1300 Series A2 with a thimble exhaust, or the 1300 Series B2 biological safety cabinet, your lab will meet all applicable recommendations from NSF/ANSI 49 for volatile toxic chemicals and radionuclides, and the National Institute for Occupational Safety and Health (NIOSH) Alert on Hazardous Drug Preparation for Class II biological safety cabinets.

### **Biological Safety Cabinet Selection Guide**

*Exhaust technology recommendation for specific work applications.*

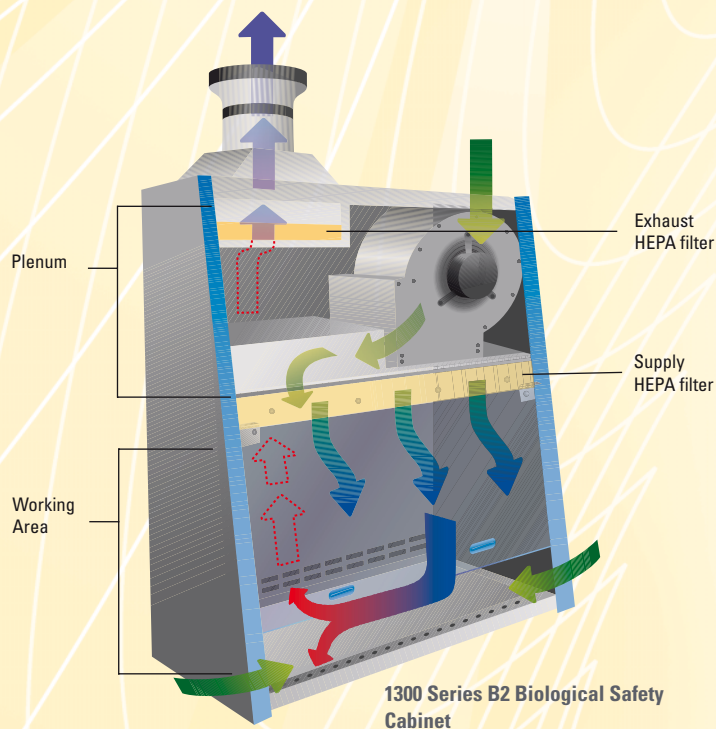
	<b>Work Application Using:</b>	<b>1300 Series A2 vented to the room</b>	<b>1300 Series A2 with thimble exhaust</b>	<b>1300 Series B2 with direct duct "total exhaust"</b>
1	Particulate contamination and hazards including biological agents (viruses and bacteria) at Biosafety Levels 1, 2, 3, or in BSL4 suit laboratories	Recommended	Exceeds Requirement	Exceeds Requirement
2	Agents in row 1 and/or <b>minute</b> quantities of volatile toxic chemicals and tracer amounts of radionuclides required as an adjunct to microbiological studies	No	Recommended	Exceeds Requirement
3	Agents in rows 1 and/or <b>more than minute</b> quantities of volatile toxic chemicals and tracer amounts of radionuclides, required as an adjunct to microbiological studies	No	No	Recommended
4	Agents in row 1 and/or in <b>hazardous</b> drug preparation	No	No	Recommended
	Vulnerability of system to exhaust variation	None	Minimal	Significant
	Additional annual cost of required exhaust	None	\$1,900 to \$2,900 annually*	\$3,000 to \$4,500 annually*

*\*Cost estimates are based on the required exhaust volume for the cabinet type, and assume a cost of \$4.50 per cfm per year for replacement air.  
E. Mills, D. Sartor / Energy 30 (2005) 1859-1864*

## Innovative airflow design

Your choice of Thermo Scientific  
1300 Series models based on:

- 1) air recirculation inside the work chamber
- 2) the external exhaust method



### Air Recirculation Factors

The **1300 Series A2** features recirculation of air inside the work chamber. Contaminated air from the external environment or from the sample work area mixes with HEPA-filtered air inside the plenum. Some of the mixed air is filtered and exhausted out of the cabinet, and the remaining air is filtered and recirculated into the work area. This process of recirculation results in rapid dilution of gases that may have been contained inside the sample chamber.

The **1300 Series B2** has NO recirculation inside the work chamber. Contaminated air from the external environment is drawn into the blower motor plenum and filtered into the working area. This air is “totally exhausted”, eliminating the risk of sample or user exposure to harmful chemicals. Due to this non recirculated air flow and total exhaust system, the 1300 Series B2 provides a higher level of product and user protection from volatile toxic chemicals and radionuclides.

- Unfiltered air from the room
- HEPA-filtered, particle free air
- Air from the working area (potentially contaminated with biological and chemical materials)
- HEPA-filtered particle free air but still potentially containing volatile chemicals from the work area.

for your specific needs

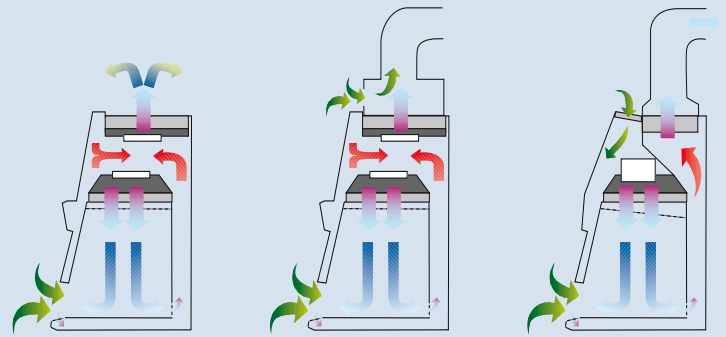
## Exhaust Considerations

The **1300 Series A2** may be safely exhausted back into the lab environment, or to the outside of the building through a thimble (or “canopy”) exhaust connection. If the safety cabinet is only used to contain biological or other particulate hazards, the clean filtered exhaust can be safely vented into the room. The 1300 Series A2 with thimble exhaust should be used if work is performed with minute quantities of volatile toxic chemicals and radionuclides. Gases are not trapped by the HEPA filters, making it necessary to exhaust the cabinet out of the lab through the optional thimble connection.

The **1300 Series B2** must be connected to external exhaust through a direct connection, Class II, Type B2 biological safety cabinets do not have internal exhaust fans and depend on external exhaust to operate.

The 1300 Series B2 exhausts significantly more air than the 1300 Series A2 with thimble connection and costs significantly more to operate.\*

**Deciding on the 1300 Series A2 or B2 is a balance between your work application and the total cost of operation over the cabinet's lifetime.**



	<b>Class II, Type A2 vented to room</b>	<b>Class II, Type A2 with thimble exhaust</b>	<b>Class II, Type B2 with direct duct "total exhaust"</b>
<b>Downflow Air</b>	The downflow air is supplied by a filtered mix of laboratory and sample chamber air.	The downflow air is supplied by a filtered mix of laboratory and sample chamber air.	The downflow air is supplied entirely by filtered air from the laboratory.
<b>Inflow Air</b>	The inflow air is drawn from the laboratory into the front grille and prevented from entering the work area.	The inflow air is drawn from the laboratory into the front grille and prevented from entering the work area.	The inflow air is drawn from the laboratory into the front grille, and prevented from entering the work area.
<b>Exhaust Air</b>	The filtered exhaust air is vented into the laboratory.	The filtered exhaust air is completely exhausted through the thimble connection and exhausted out of the building.	The filtered exhaust air is completely exhausted through the direct duct connection and exhausted out of the building.

*The Thermo Scientific 1300 Series B2 requires an exhaust system capable of drawing 665 cfm for the four foot wide unit and 998 cfm for the six foot wide unit against a negative static pressure of 1.5" w.g. when the exhaust HEPA filter is new, and 2.0" w.g. when loaded prior to replacement. The exhaust flow must be adjustable to allow for variation over the life of the exhaust HEPA filter.*

\*For example, a nominal 4 foot B2 model will draw 282 cfm through the window and 383 cfm through the supply HEPA filter as downflow to exhaust 665 cfm. A nominal 4 foot thimble-connected A2 model will only exhaust 450 cfm.

# 3

## key considerations for effective installation of your 1300 Series B2

### 1. Exhaust

- A dedicated exhaust is recommended for each B2 cabinet to ensure steady exhaust volume.
- Roof blowers should offer a stack that extends straight upward at least 10 feet above the roof surface to avoid building exhaust to be re-captured by intake channels.
- Roof exhaust fans should be energized by direct-connected electric motors to avoid failures caused by fan belt failures.
- The exhaust system can be fitted with a back-draft damper to prevent the reversing of airflow in the system if applicable.
- If hazardous biological agents are used in the research application, an optional gas-tight damper is recommended to assure easy isolation of the cabinet for decontamination.

### 2. Room Pressurization

- Extreme room pressurization differentials can negatively impact the working environment. Using the exhaust of the B2 as the only exhaust from the lab is not recommended.
- The lab's supply and exhaust airflow should be installed separately to ensure that balancing of the systems can be maintained independently without sacrificing performance of the B2 cabinet.

### 3. Managing Filter Life

- The downflow filter on a B2 cabinet is subjected to more than twice the rate of loading as a recirculating A2 cabinet.
- The auto compensation feature in the 1300 Series B2 allows safe use of air pre-filters for additional extension of HEPA filter life.
- If the B2 cabinet is installed in rooms supplied with HEPA-filtered air this will minimize filter loading and increase filter life. The 1300 Series B2 filters will last longer if supply air to the room is HEPA-filtered.

*Improper installation of a Class II, Type B2 biological safety cabinet may result in an unsafe work environment and/or decreased level of product protection. Consult a Thermo Fisher Scientific technical service representative before installing your 1300 Series B2.*

## Enormous promise, significant challenges

As the world leader in serving science, we understand your challenges and share your goal of achieving breakthroughs in cell biology. We are committed to developing and delivering innovative tools that help you overcome obstacles and achieve excellence at every stage of your cell culture process – from growth and passage to culture and experimentation through characterization, analysis and storage. Please visit us at [www.thermo.com/cellculture](http://www.thermo.com/cellculture) to learn more about our comprehensive portfolio of high quality equipment, consumables, and services for your cell culture lab.

# Simplifying Safety Decisions



## **Enhanced User Protection**

*Auto compensation feature allows the safe use of optional downflow air prefilters. Automatic adjustment of downflow velocity during HEPA filter loading provides added product protection*

## **Contamination Control**

*Timed UV light option reduces risk of sample contamination and lowers bulb replacement costs*

## **Operator Comfort**

*10° sloped window for ergonomic posture reduces strain and fatigue associated with long working hours*

## **Safe Operation**

*Convenient display lets you see the cabinet is operating safely while you are working*

## **Ease of Cleaning**

*Single-piece stainless steel work tray minimizes loss of pipette tips and spills into the drain pan*

## **The Thermo Scientific 1300 Series B2 –**

### **Designed for safe and easy work with gases and volatile chemicals**

**The most advanced Class II, Type B2 cabinet available – with advanced ergonomics and airflow design.** All Class II, Type B2 biological safety cabinets are built for applications that require working with greater than minute quantities of volatile toxic chemicals and radionuclides, or the aseptic processing of hazardous drugs.

However, a complete laboratory containment system includes not only the selection of the proper cabinet, but also the correct set up of the exhaust system, building ventilation, and room pressurization. Our experts can provide guidance to ensure your complete lab is set up safely.



## Thermo Scientific 1300 Series Class II, Type B2 Biological Safety Cabinets

Specifications	4 Ft. Cabinets			6 Ft. Cabinets		
<b>Model</b>	<b>1310</b>	<b>1315</b>	<b>1317</b>	<b>1360</b>	<b>1362</b>	<b>1364</b>
<b>With factory installed UV light.</b>	<b>1311</b>	<b>1316</b>	<b>1318</b>	<b>1361</b>	<b>1363</b>	<b>1365</b>
Electrical Requirements	115V, 50/60Hz	230V, 50/60Hz	230V, 50/60Hz	115V, 50/60Hz	230V, 50/60Hz	230V, 50/60Hz
Receptacles	US	China/Australia	US	US	China/Australia	US
Damper	10-inch diameter air-tight damper included					
<b>Dimensions</b>	Exterior Dimensions H x W x D inches (mm)			71.5 x 78 x 31.6 (1816 x 1981 x 803)		
	Interior Dimensions H x W x D inches (mm)			25.7-29.2 x 72.5 x 25.5 (653-742 x 1841 x 648)		
	(Work area is taller in front, shorter in back.)					
	Working Height of Front Window inches (mm)			8 (203)		
	Maximum Opening Height of Front Window inches (mm)			21.75 (552)		
	Work Surface Area square inches (sq m)			1276 (0.82)		
	Shipping Dimensions H x W x D inches (mm)			81 x 86 x 44 (2057 x 2184 x 1118)		
<b>Weight</b>	Net Weight lbs (kg)			720 (327)		
	Shipping Weight lbs (kg)			836 (379)		
<b>Ventilation System</b>	Exhaust/Air Volume CFM (m3/h)			998 (1696)		
<b>Heat Emission</b>	Heat Emission at 25°C ambient kW			0.024		
<b>Filter Specification</b>	Supply/Exhaust Air Filter			99.99% @ .3 Micron		
<b>Performance</b>	Certification			NSF/ANSI 49, ETL, ETL, CE		
	Sound Pressure Level dB (A)			66		
	Lighting Power fc			91		
<b>Electrical Data</b>	Power Consumption, operating set point kW			0.37		
	Current Consumption Amps			2.4      1.2      1.2      3.2      1.6      1.6		
	Receptacles (Rear Wall)			2 duplex, GFI    2 single      2 duplex      2 duplex, GFI    2 single      2 duplex		

\* Clean filters, fans at full speed, interior lighting activated.

ETL tests the products to the following UL and Canadian standards: UL Standard 61010-1, CAN/CSA Standard C22.2 No. 1010.1

CE Mark applies only to 230V models.

## Options and Accessories

Cat. Number	Description	Application
3730402	Adjustable height base stand for 4 foot cabinet	Provides comfortable working height of 30" to 36" adjustable by one inch increments. Adjustable height stand is preassembled and shipped on a skid for easy installation. <i>Must be ordered separately.</i>
3730602	Adjustable height base stand for 6 foot cabinet	
3990001	30" fixed stand for 4 foot cabinet, for seated applications	Provides comfortable working height of 30" to 36". Not pre-assembled. <i>Must be ordered separately.</i>
3990005	36" fixed stand for 4 foot cabinet for standing applications	
3990003	30" fixed stand for 6 foot cabinet for seated applications	
3990007	36" fixed stand for 6 foot cabinet, for standing applications	
3857001	Floor Anchoring Brackets	For use with seismic applications to secure stand to the floor of the lab. <i>Review applicable local guidelines and requirements for the type and location of anchors.</i>
3858611	IV Bag Holder Kit for 4 foot cabinet	Provides bar and hooks to hang IV bags near interior ceiling of the cabinet.
3858613	IV Bag Holder Kit for 6 foot cabinet	
3858800	Backdraft Damper 10-inch diameter	Prevents reversing of airflow in the exhaust system.
3859501	Supply ULPA Filter Option for 4 foot cabinet	Rated at 99.999% efficiency with particles 0.12 microns.
3859503	Supply ULPA Filter Option for 6 foot cabinet	
3859601	Exhaust ULPA Filter Option for 4 foot cabinet	
3859603	Exhaust ULPA Filter Option for 6 foot cabinet	
3747502	Service Valve Kit	Rated for use with air and non-combustible gas applications. <i>Must be ordered separately.</i>
3850500	Prefilter for 4 foot cabinet	Installed on the top of the cabinet to filter out room contaminants. <i>Helps to preserve life of the downflow HEPA or ULPA filters.</i>
3850501	Prefilter for 6 foot cabinet	

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[www.thermo.com/1300B2](http://www.thermo.com/1300B2)