



**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

**Thermo**  
SCIENTIFIC

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

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. Our experts are available to understand your applications and offer support to select the best model to meet your laboratory requirements.

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.



01

02

03

04





## Choose the best model for your laboratory

### Thermo Scientific 1300 Series A2 and B2 biological safety cabinet

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

Work application using:	1300 Series A2 cabinet vented to the room	1300 Series A2 cabinet with thimble exhaust	1300 Series B2 cabinet with direct duct "total exhaust"
Particulate contamination and hazards including biological agents (viruses and bacteria) at biosafety levels 1, 2, 3, or 4	Recommended	Exceeds Requirement	Exceeds Requirement
Agents in row 1 and/or minute quantities of volatile toxic chemicals and tracer amounts of radionuclides required as an adjunct to microbiological studies	No	Recommended	Exceeds Requirement
Agents in rows 1 and/or more than minute quantities of volatile toxic chemicals and tracer amounts of radionuclides, required as an adjunct to microbiological studies	No	No	Recommended
Agents in row 1 and/or in hazardous 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

# airflow design for your

## Innovative airflow design

Your choice of Thermo Scientific 1300 Series models based on:

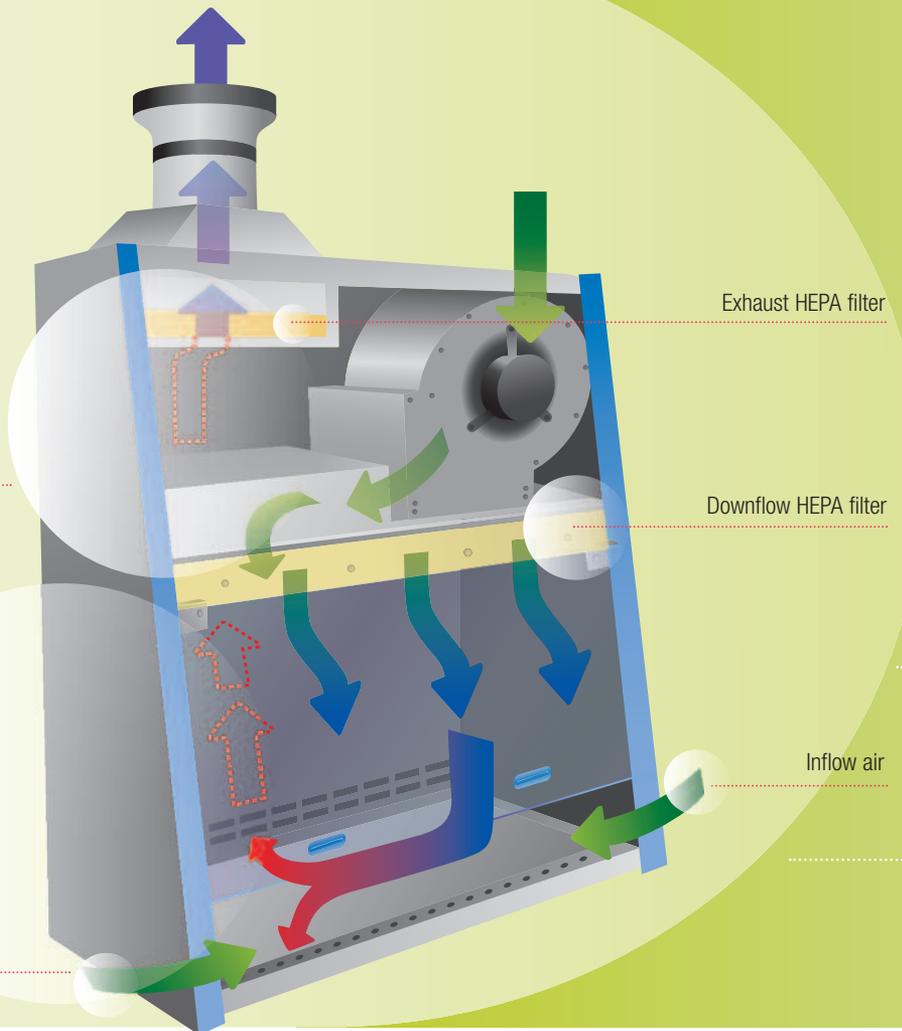
- 1) air recirculation inside the work chamber
- 2) the external exhaust method

- 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

Plenum

Working Area

Inflow air



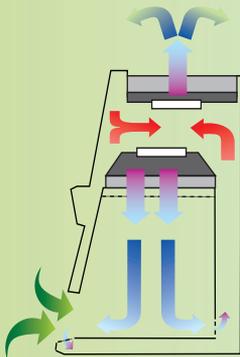
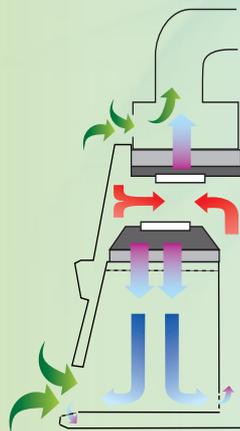
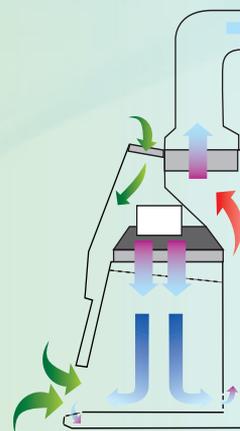
1300 Series B2 Biological Safety Cabinet

### Air Recirculation Factors

The 1300 Series A2 cabinet features recirculation of filtered air inside the work chamber. Air from the external environment and filtered air from the sample work area mix inside the cabinet 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 or volatile chemicals released inside the sample chamber.

The 1300 Series B2 cabinet has NO recirculation inside the work chamber. Air from the external environment is drawn into the blower motor plenum, filtered and then pushed into the work area as downflow air. All of the downflow air and all of the air entering the cabinet through the front opening (inflow) air is "totally exhausted", eliminating the risk of sample or user exposure to harmful chemicals through recirculation. Due to this non-recirculated air flow and total exhaust system, the 1300 Series B2 cabinet provides a higher level of product and user protection from volatile toxic chemicals and radionuclides.

# specific needs

			
	<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 captured by the thimble and exhausted out of the building.	The filtered exhaust air is completely exhausted through the direct duct connection and exhausted out of the building.

**Important Note:** The Thermo Scientific 1300 Series B2 biological safety cabinet 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 1.9" w.g. when the exhaust HEPA filter is new, and up to 2.5" 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.

## Exhaust Considerations

The 1300 Series A2 cabinet may be safely exhausted back into the lab environment or to the outside of the building through a thimble exhaust connection. If the 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 cabinet with thimble exhaust should be used when work is performed with minute quantities of volatile toxic chemicals and radionuclides. Class II, Type A2 cabinets do not trap gases with a HEPA filter making it necessary to exhaust the cabinet out of the lab through an optional thimble connection.

Class II, Type B2 cabinets do not have internal exhaust fans and depend on external exhaust methods to operate. The 1300 Series B2 cabinet exhausts more air than the 1300 Series A2 cabinet with thimble connection and will cost more to operate.\*

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

\*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 360 to 450 cfm (depending on whether the front opening is 8 or 10 inches high).

# 3 key considerations

## for effective installation of your 1300 Series B2 biological safety cabinet



### 1. Exhaust

- A dedicated exhaust is recommended for each 1300 Series 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 1300 Series B2 cabinet as the only exhaust from the lab is not recommended.
- The supply and exhaust airflow of the lab should be installed separately to ensure that system balance can be maintained independently without sacrificing performance of the 1300 Series B2 cabinet.

### 3. Managing Filter Life

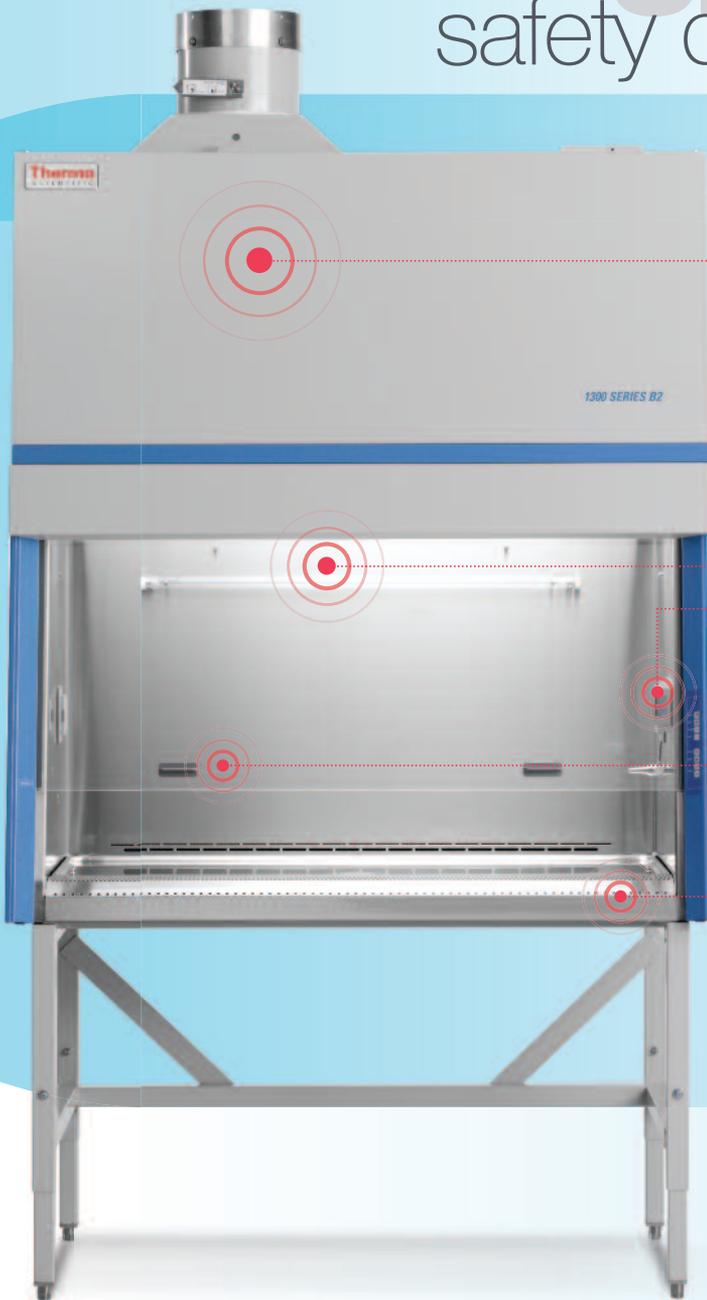
- The downflow filter on a 1300 Series B2 cabinet is subjected to more than twice the rate of loading as a recirculating A2 cabinet.
- The auto compensation feature in the 1300 Series B2 allows for safe use of air pre-filters for additional extension of HEPA filter life.
- If the 1300 Series B2 cabinet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

## 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.thermoscientific.com/cellculture](http://www.thermoscientific.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.

## Safe Operation

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

## Operator Comfort

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

## 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 biological safety cabinet – Designed for safe and easy work with gases and volatile chemicals

### The most advanced Class II, Type B2 cabinet available with superior 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.

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.

# ordering information



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

Specifications	4 Ft. Cabinets				6 Ft. Cabinets				
	Cat. no.	1310	1315	1317	131717770	1360	1362	1364	136417770
<b>With factory installed UV light</b>	<b>1311</b>	<b>1316</b>	<b>1318</b>	<b>131817770</b>	<b>1361</b>	<b>1363</b>	<b>1365</b>	<b>136517770</b>	
Electrical Requirements	115V, 50/60Hz	230V, 50/60Hz	230V, 50/60Hz	230V, 50/60Hz	115V, 50/60Hz	230V, 50/60Hz	230V, 50/60Hz	230V, 50/60Hz	230V, 50/60Hz
Receptacles	US	China/Australia	US	UK	US	China/Australia	US	UK	
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) (Work area is taller in front, shorter in back.)				25.7-29.2 x 48.5 x 25.5 (653-742 x 1232 x 648)				
	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 (m <sup>2</sup> )				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 measured with DIM CFM (m <sup>3</sup> /h)				998 (1696)				
	Exhaust/Air Volume measured with traverse CFM (m <sup>3</sup> /h)				1218 (2070)				
<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				3.2 1.6 1.6 1.6				
	Receptacles (Rear Wall)				2 duplex, GFI 2 single 2 duplex 2 single				

\*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. No.	Description	Application
3730402	Adjustable height base stand for 4 foot cabinet	Provides comfortable working height of 30" to 36" adjustable by one inch increments.
3730602	Adjustable height base stand for 6 foot cabinet	Adjustable height stand is preassembled and shipped on a skid for easy installation. Must be ordered separately.
3990001	30" fixed stand for 4 foot cabinet, for seated applications	
3990005	36" fixed stand for 4 foot cabinet for standing applications	Provides fixed working height of 30" to 36". Not pre-assembled. Must be ordered separately.
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	Used to secure base stand to the floor of the lab.
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	
3859503	Supply ULPA Filter Option for 6 foot cabinet	Rated at 99.999% efficiency with particles 0.12 microns.
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. Must be ordered separately.
3850500	Prefilter for 4 foot cabinet	Installed on the top of the cabinet to filter out room contaminants.
3850501	Prefilter for 6 foot cabinet	Preserves life of the downflow HEPA or ULPA filters.

© 2011 Thermo Fisher Scientific Inc. All rights reserved. All trademarks are the property of Thermo Fisher Scientific Inc. and its subsidiaries. Specifications, terms and pricing are subject to change. Not all products are available in all countries. Please consult your local sales representative for details.

[www.thermoscientific.com/bsc](http://www.thermoscientific.com/bsc)

**North America:** USA/Canada +1 866 984 3766 (866-9-THERMO)

**Europe:** Austria +43 1 801 40 0, Belgium +32 53 73 42 41, France +33 2 2803 2180, Germany national toll free 08001-536 376, Germany international +49 6184 90 6940, Italy +39 02 95059 448, Netherlands +31 76 579 55 55, Nordic/Baltic/CIS countries +358 9 329 10200, Russia +7 812 703 42 15, Spain/Portugal +34 93 223 09 18, Switzerland +41 44 454 12 12, UK/Ireland +44 870 609 9203

**Asia:** Australia +61 39757 4300, China +86 21 6865 4588 or +86 10 8419 3588, India toll free 1800 22 8374, India +91 22 6716 2200, Japan +81 45 453 9220, New Zealand +64 9 980 6700, Other Asian countries +852 2885 4613 **Countries not listed:** +49 6184 90 6940

**Thermo**  
SCIENTIFIC

Part of Thermo Fisher Scientific