Protector® Laboratory Fume Hoods

High Performance, Energy Savings

Protecting your laboratory environment

LABCONCO®

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Protecting your laboratory environment is the foundation of our product development, and every Labconco fume hood is designed with safety in mind. When Labconco engineers designed the latest generation of Protector XStream, Premier and XL Laboratory Hoods, in addition to safety, they also considered energy savings. Every component was scrutinized and repeatedly tested to help achieve maximum containment at lowest face velocities. The results of their efforts are three fume hood lines that achieve the SEFA 1-2010 definition of a **High Performance Fume Hood**:

- 60 fpm or less face velocity
- At maximum sash opening height (25" minimum)
- Passes ANSI/ASHRAE-110
- Mannequin 3" from sash plane
- Detector in the breathing zone
- AM: 0.05 ppm tracer gas
- AI/AU: 0.1 ppm tracer gas

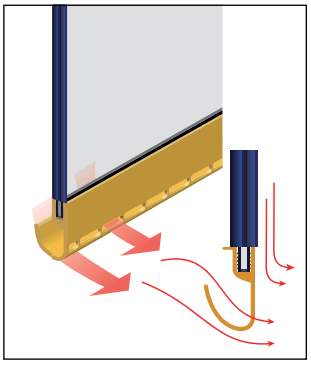
Remarkably, high performance was achieved while the overall exterior depth of the hoods was reduced to match standard cabinetry.

Standard Features

Consistent among Protector Hoods are several defining features that set them apart from the rest.

Clean-Sweep™ Sash Handle and Tracks

The sash handle includes Clean-Sweep openings to bleed air into the hood chamber and direct chemical fume concentrations away from the user's breathing zone. The slim-line radiused sash handle sweeps airflow in the hood with minimal turbulences. Clean-Sweep slots on the sash tracks of the corner posts enhance airflow.



Eco-Foil™ Air Foil

The Eco-Foil reduces energy consumption by 7-10% compared to flat air foils while its aerodynamic curve allows air to sweep the work surface for maximum containment. Clean-Sweep™ openings pull inflow air from under the air foil forcing air into non-turbulent air streams. The curve is comfortable for arms resting on it while encouraging users to keep fume-generating items well within the hood's interior.

Cord-Keeper™ Slots

Cord-Keeper Slots located on the left and right side of the air foil allow the sash to close completely when electrical cords from equipment inside the hood are plugged into receptacles located on the corner posts. Cords are kept out of the way of the operator.

Large Unobstructed Sightline

Visibility into the hood is 37.5" high from work surface to header panel, allowing taller users comfortable viewing while standing.

Vertical-rising Tempered Safety Glass Sash with Cable Pulley Sash System

The aircraft cable and pulley system allows for smooth and quiet, anti-racking sash operation. The cable is attached to a sash weight, which is contained in a pocket to counteract swing. See additional sash system options on pages 4-5.

Service Access Plates

Access plates on the corner posts provide front availability to plumbing connections to simplify installation and service.

Fluorescent Lighting

The high efficiency, instant start, T8 lights are located outside the hood interior for corrosion resistance and easy replacement. Sealed behind 1/4" thick safety glass, this vapor proof assembly yields a hood interior completely void of spark potential. Some Protector Premier Hood models are available with an explosion-proof incandescent light.

Color-coded Service Fixtures

Interior-mounted serrated hose tips for gas, air, water vacuum and other services have remote control knobs on the corner posts for use regardless of sash position. Two service fixtures are factory-installed and pre-plumbed on fixtured models. Every hood is factory prepared for up to eight service fixtures (four on each side). Contact Labconco if more than eight service fixtures are required.

Liner and Baffle Options

One-Piece Molded Fiberglass

Protector Premier Laboratory Hoods feature lightweight interior liners molded of specially formulated fiberglass reinforced polyester. The one-piece, glossy fiberglass liner has been the signature feature of Labconco's leading line of general chemistry fume hoods since its development by Labconco engineers in 1961. Its benefits include durability, cleanability, high light reflectivity, fire resistance and chemical resistance.

Labconco fiberglass withstands exposure to a wide range of laboratory acids, solvents and alkalies. It will not absorb spills and resists staining and discoloration. The smooth one-piece surface with radiused corners has no cracks or crevices for contaminants to collect, so maintenance is minimal.

The chart of chemical resistance for Labconco fiberglass material shown below is based on ASTM Test C-581-00 in which 4" x 5" samples are *immersed in reagents* for one to three months or longer.

Opti-Zone™ Baffle

Protector XStream and XL Laboratory Hoods feature chemical- and heat-resistant, fiberglass-reinforced composite panel liners with Opti-Zone Baffles. The Opti-Zone Baffle decreases the typical face velocity variations found with other baffles and provides horizontal flow. Its unique slot pattern and sizes increase velocities in the middle and at the work surface where it is needed while slowing velocities at the corners. This uniformity lowers the required average face velocity necessary for containment. Tapered entry slots decrease resistance to air entering the baffle and promote laminar flow.

Fiberglass Chemical Resistance

Reagent	Satisfactory For Normal Use	Satisfactory For Occasional Use	Slight Discoloration with Heavy Use
Acetic Acid	•	•	
Acetone (50%)		•	
Ammonium Hydroxide		•	
Benzene		•	
Fatty Acids	•	•	
Formaldehyde (44%)		•	
Hydrochloric Acid	•	•	
Hydrofluoric Acid		•	•
Naphthalene	•	•	
Nitric Acid (35%)	•	•	•
Peracetic Acid	•	•	
Perchloric Acid	*Use only in Protector Stainless Steel or PVC Perchloric Acid Hood.*		
Petroleum Ether	•	•	
Phosphoric Acid	•	•	
Tannic Acid	•	•	
Sulfuric Acid (50%)	•	•	•

Protector® Laboratory Hoods

Options

Labconco offers a variety of built-in options to customize your Protector Hood. Please contact Labconco for ordering information on these options.

Sash System Options

Protector Hoods come standard with manual-control, vertical-rising, and cable pulley-system sashes. Other sash types and features are offered as factory-installed options.

Intelli-Sense™ Automatic Sash Position System

The Intelli-Sense automatic sash position system, for hoods 8' wide or smaller, offers maximum safety, increased energy conservation and ADA compliance. Sensors allow the sash to automatically open when motion is detected, and when motion is no longer detected, automatically close after a user-set delay time period. When used with a Variable Air Volume (VAV) system, the result is reduced operating cost due to reduced exhaust air demand. Users with limited reach may operate the hood without help to lower the sash.

Two sensors work in concert to ensure safe and intelligent operation. An adjustable passive infra-red occupancy sensor detects motion in front of the hood. The "sensed area" may be

adjusted smaller or larger, or closer or farther from the hood (6"-48"). The sash remains open as long as motion is detected in the sensor area. A second sensor located at the bottom of the sash has horizontal line of sight to detect obstructions. When an obstruction is detected, the closing sash stops its downward travel.

Settings may be customized to the user's preferences. User-set delay time allows the sash to close 1, 3, 6, 10, 30 or 60 minutes after motion is no longer detected. Open and closed positions for automatic operation can be user defined (factory set to 16" open and fully closed). The user can opt for a "down only" setting that requires the operator to manually raise the sash to eliminate nuisance openings. In this setting, the sash still closes automatically. Should electrical power to the hood be interrupted, the user's programmed settings are retained and resume when power is restored.

An override feature allows the sash to be manually opened or closed without the automatic system interfering. Alternatively, a momentary rocker switch on the front of the hood may be used to raise and lower the sash while the override feature is activated. A foot switch option is also available as an accessory.

Chain and Sprocket Sash System

Protector XStream, Premier and XL Hoods may be outfitted with a chain and sprocket sash system. This chain drive offers extended service and low maintenance and eliminates sash binding. With the chain and sprocket system, the sash may be lifted effortlessly from any point along the hood's width. It is durable and long lasting.

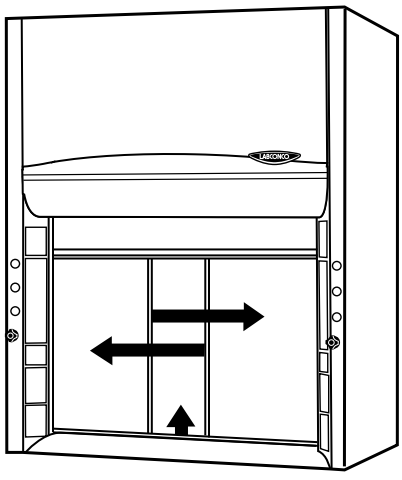
Auto-Return Sash System

For promoting the use of the sash as a physical barrier to the user's breathing zone and potential energy savings, Labconco recommends the auto-return option. Using a unique sprocket cam design with chain and sprocket suspension, the system automatically returns to an 18" (46 cm) or other specified sash opening height anytime the sash is raised above its set working height position. When combined with a variable air volume system and by-pass block*, the hood can operate at lower air volumes, conserving expensive tempered room air. It includes a defeatable stop for holding the sash in its full open position during loading and unloading of oversized apparatus. This option is available on Protector Hoods 8' wide and smaller.

At left: The sprocket cam is revealed when the side panel and protective cover are removed. At right: The defeatable stop holds the sash fully open.

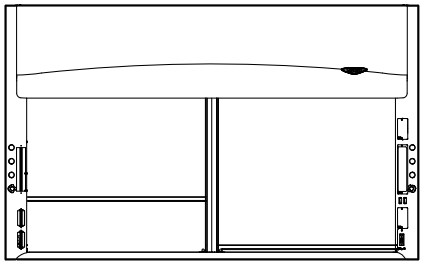
Combination vertical-rising/ horizontal-sliding sashes

Combination sashes offer the advantages of both sash types. For energy conservation, the hood's air volume is based on its smaller horizontal-sliding sash opening (generally 50% of the full open position). To maintain safe face velocities, sash stops limit opening the vertical-rising sash beyond 50% except when deliberately released by the operator during loading or unloading. Hoods with combination sashes come standard with chain and sprocket, stationary viewing window above the horizontal-sliding sashes, and a by-pass block.



Split-Dual Sash System

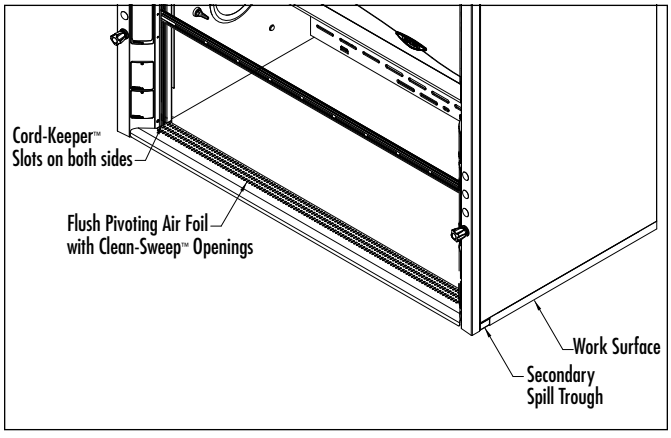
Protector Premier and XL Hoods, 8' wide and larger, are available with dual vertical-rising sashes. These sashes use a cord and cable pulley system that allows one sash to be raised while the other sash remains closed. Keeping one sash closed provides a physical barrier of protection for fume-generating equipment that occupies one side of the hood. While the one sash is closed, the operator may raise the other sash for general lab use. When combined with a variable air volume system and by-pass block*, the dual sash can reduce exhausted air requirements, thus conserving energy.



Air Foil Option

Pivoting Flush Air Foil

For users that prefer a flush sill, Labconco offers a sill that is even with the work surface. Clean-Sweep openings enhance airflow and promote containment. The air foil features an integral spill trough to prevent spills on the work surface from leaking out the front of the hood. The trough is the same depth (1.25") as the supporting work surface (sold separately) so the trough stays hidden from view and flush with the work surface. The air foil pivots up to provide access to the spill trough for cleaning. Cord-Keeper slots on both sides allow electrical cords to pass through without disrupting airflow and keep them away from the operator.



**Labconco offers by-pass blocks for factory installation and by-pass block kits for onsite installation. Protector XStream Laboratory Hoods do not require a by-pass block. Contact Labconco at 800-821-5525 or 816-333-8811 for ordering information.*

Need a custom design not featured on these pages? Contact Labconco at 800-821-5525 or 816-333-8811.

Protector® XStream® Laboratory Hoods

The most energy efficient Labconco fume hood ever

The patented* Protector XStream Laboratory Hood was engineered to be the best containing fume hood possible. Testing shows the Protector XStream easily meets containment per SEFA-1† low velocity hood standards when subjected to the ASHRAE 110† test protocol with results of less than 0.05 ppm leak rate when tested at 4.0 lpm at OSHA-recognized 60 fpm face velocity.

During independent testing**, the Protector XStream Hood was challenged well beyond the SEFA-1† standards. With a face velocity of 40 fpm and sash fully open, the Protector XStream was subjected to 50 fpm cross drafts, NIH† protocol, and tracer gas measurements in the chest of the mannequin. In all scenarios, the Protector XStream allowed **0.00 ppm** average level of tracer gas outside the fume hood. Although your safety officer or industrial hygienist will determine the actual face velocity setting for your laboratory, **the ability of the Protector Hood to contain under these adverse conditions sets a new standard of safety.**

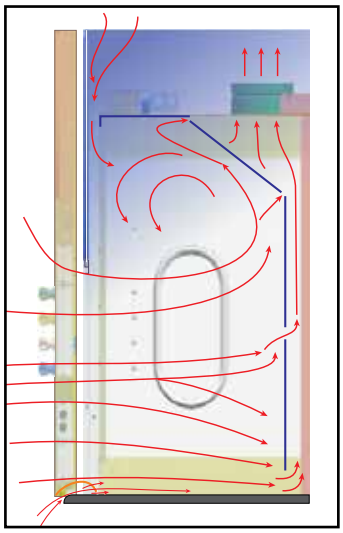
Safety is foremost, but energy savings is equally impressive. Although face velocity is a factor, it's the **volumetric rate (CFM)** that determines the energy consumption of a fume hood. Operating a 6' Protector XStream Hood at 60 fpm face velocity, with the sash in its fully open position, requires only **690 CFM.** Regardless of your desired operating face velocity, the Protector XStream yields the **lowest required CFM**.

Energy savings translates to dollar savings. The Protector XStream Hood provides an excellent economic payback when compared to traditional by-pass hoods operated at 80 or 100 fpm. For example, a 6' Protector XStream Hood with sash fully open when operated at 60 fpm face velocity consumes a mere 690 CFM as previously mentioned. Compared to a traditional by-pass hood operated at 100 fpm (1250 CFM), the Protector XStream Hood offers significant savings, which adds up to annual dollar savings per year of $3920.††

For even greater savings, the Protector XStream may be factory-prepared to accommodate a variable air volume system without the need for by-pass modifications.

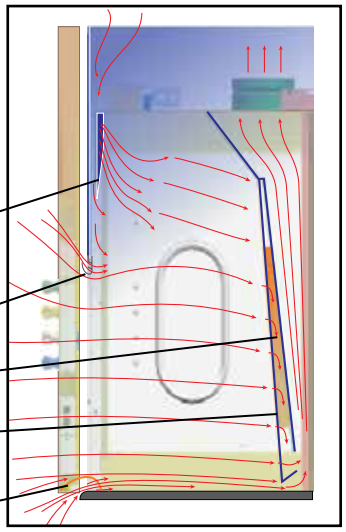
Using the concepts of fluid dynamics, Labconco engineers designed the Protector XStream Laboratory Hood to produce **horizontal airflow, which reduces the tendencies for turbulence**. The innovative and aerodynamic designs of the sash handle, air foil, upper dilution air supply and rear downflow baffle work in concert to produce horizontal airflow patterns that significantly reduce concentrations of chemical contaminants throughout the work area, particularly near the operator's breathing zone and at the work surface. Depending on sash position, tendencies for air turbulence, vortexing and **"the roll" frequently observed during traditional fume hood smoke tests are virtually eliminated.**

Traditional By-Pass Hood Design



Smoke tests on traditional hoods show the tendency for contaminants generated in the interior to roll forward producing high concentrations of contaminants behind the sash in close proximity to the user's breathing zone.

Protector XStream Hood Design



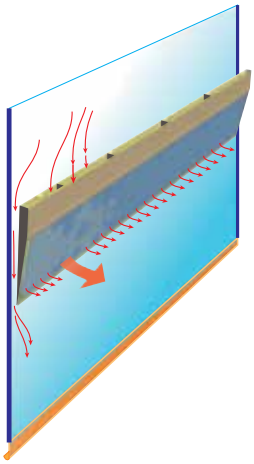
In contrast, smoke tests on Protector XStream Hoods show contaminants removed in a single pass and a remarkable lack of turbulence. Horizontal laminar air flowing toward the baffle forces contaminants to the rear interior, away from the user. The upper dilution air supply sweeps the upper interior to eliminate stagnant pockets of air and to prevent contaminants from concentrating behind the sash.

**U.S. Patent No. 6,461,233 **Independent testing by AccuTec Services, Inc., Lee's Summit, MO, National Environmental Balancing Bureau (NEBB)-Certified, Professional Engineer*
†See back cover for a list of regulations, standards and registered trademarks. ††See page 5 for energy savings details.

Protector® XStream® Laboratory Hoods

Upper Dilution Air Supply

The sash interior is constantly bathed with room air from the dilution supply above the work area to eliminate chemical fumes along the sash plane, near the critical breathing zone. A small percentage (5-10%) of the required air volume is introduced through the dilution air supply to ensure maximum containment. **No additional blowers are required.**



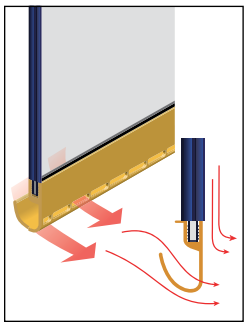
Rear Downflow Dual Baffle System

The slots in the primary baffle direct inflow air in non-turbulent streams from the hood face into the baffle in a single pass. The secondary baffle, located between the primary baffle and the back wall, counteracts the upward air streams that create roll in traditional hoods by forcing the air movement downward before exhausting. **No moving components are used.**

The best containing Labconco fume hood ever

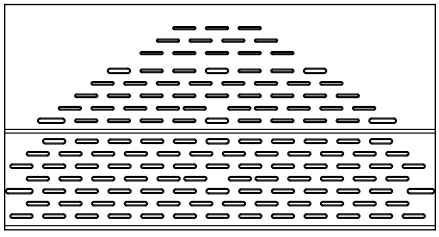
Clean-Sweep™ Sash Handle

The sash handle includes Clean-Sweep openings to bleed air into the hood chamber and direct chemical fume concentrations away from the user's breathing zone. The sash tracks have Clean-Sweep slots to further enhance airflow into the hood.



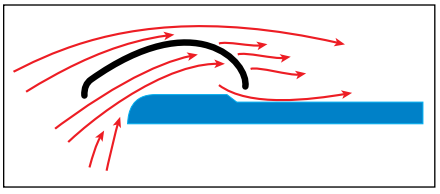
Opti-Zone™ Baffle

The Opti-Zone Baffle's unique slot pattern and sizes promotes airflow speed uniformity, which lowers the required average face velocity necessary for containment.



Eco-Foil™ Air Foil

The Eco-Foil with Clean-Sweep openings reduces energy consumption by 7-10% compared to flat air foils. Its aerodynamic design allows air to sweep the work surface for maximum containment. Clean-Sweep openings pull inflow air from under the air foil forcing air into non-turbulent air streams.



Protector® XStream® Laboratory Hoods

5' Protector XStream Laboratory Hood 110510002 is shown with SpillStopper Work Surface 9503500, Protector Standard Storage Cabinet 9900200 and Protector Acid Storage Cabinet 9901200.

All models feature:

- By-pass airflow design with variable air volume compatibility.
- Eco-Foil Air Foil with aerodynamic Clean-Sweep™ airflow openings.*
- Cord-Keeper™ Slots on left and right side of air foil.
- Upper Dilution Air Supply.*
- Glacier white powder-coated steel exterior.
- Rear Downflow Dual Baffle System.*
- Chemical-resistant, fiberglass-reinforced, composite panel liner and baffles with flame spread index less than 25 per ASTM E84**. Baffles are removable for cleaning.
- Opti-Zone™ Baffle with tapered slots.
- Tempered safety glass vertical-rising sash with cable pulley.
- Powder-coated sash handle with aerodynamic Clean-Sweep™ openings.*
- 37.5" (95.3 cm) high sightline from the work surface to the header panel.
- Removable front and side panels, and front and interior service access panels for access to plumbing and electrical wiring.
- Pre-wired T8 fluorescent lighting with vapor-proof design and ADA-compliant light and blower switches.
- Sash stop located at 18" (45.7 cm) sash opening position.
- Powder-coated stainless steel, 12.81" (32.5 cm) ID exhaust connection(s).

**U.S. Patent No. 6,461,233*

***See back cover for a list of regulations, standards and registered trademarks.*

Heights of switches and electrical receptacle when work surface is set to Americans with Disabilities Act (ADA) height meet requirements of ADA.

All models conform to the following regulations and standards:**

- CFR 29, Part 1910
- SEFA 1-2010
- NFPA 45-2011
- ASTM E84-09C
- ASHRAE 110-1995
- ANSI Z9.5-2011
- UL 61010-1
- CAN/CSA C22.2 No. 61010-1
- UL 1805
- CE Conformity Marking (230 volt models)
- SEFA 8-2010, Cabinet Surface Finish Tests

Fixtured models feature:

- Two pre-plumbed service fixtures with forged brass valves, lower right side with brass tubing for gas and lower left side with copper tubing for cold water. Components for converting either or both fixtures to air and vacuum are provided. Inlet tubing is not provided.
- One pre-wired GFCI electrical duplex receptacle on lower right side and, on 8' models only, one additional pre-wired GFCI electrical duplex receptacle on the lower left side.

Required accessories not included:

- Remote Blower. Contact Labconco.
- Ductwork. Contact Labconco.
- Work Surface.
- Base Cabinet or Stand. Contact Labconco.

Optional accessories for on-site installation include:

- Service Fixture Kits.
- Electrical Duplex Kits.
- Guardian Airflow Monitor Kits.
- Sash Stop Kits.
- Ceiling Enclosure and Rear Finish Panel Kits. Contact Labconco.
- Distillation Grid Kits. Contact Labconco.

See pages 20-23 for ordering information on work surfaces and accessories.

Exclusive Feature

Ordering Information, Airflow Data & Energy Savings

Protector® XStream® Laboratory Hoods

Use this key to configure the **nine digit catalog number** to order your Protector XStream Laboratory Hood. For example, a **110410002** is a 4' Protector XStream Laboratory Hood, with 100-115 volt, 50/60 Hz electrical requirements, two service fixtures and one GFCI electrical duplex receptacle.

1 1 0 1 0 0

STEP 1. Select the **width** of your fume hood. This number is the fourth digit of your catalog number. Shipping weight is also noted. Add 10 lbs. (5 kg) for Fixtured Models.

- **4** = 4' (122 cm) 440 lbs. (200 kg)
- **5** = 5' (152 cm) 525 lbs. (238 kg)
- **6** = 6' (183 cm) 600 lbs. (272 kg)
- **8** = 8' (244 cm) 770 lbs. (349 kg)

STEP 2. Select the **Electrical Requirements, Service Fixtures** and **GFCI Electrical Duplex Receptacle** combination you desire. These two numbers comprise the eighth and ninth digits of your catalog number.

Electrical Requirements	No Service Fixtures	Two Service Fixtures	Two Service Fixtures & GFCI Duplex*
100-115 volts, 50/60 Hz, 10 amps	00	—	02
208-230 volts, 50/60 Hz, 5 amps	20	21	—

Total Exhaust CFM and Static Pressure @ 28" Sash Opening (100% Open)

Face Velocity (fpm)	Airflow Volumetric Rate (CFM) @ Static Pressure (inches of water)							
Sash @ Full Open (28")	4' Hood		5' Hood		6' Hood		8' Hood	
	CFM	s.p.	CFM	s.p.	CFM	s.p.	CFM	s.p.
100	705	0.26	930	0.32	1150	0.41	1600	0.29
80	565	0.17	745	0.20	920	0.26	1280	0.19
60	425	0.09	560	0.12	690	0.15	960	0.10

Total Exhaust CFM and Static Pressure @ 18" Sash Opening (62.5% Open)

Face Velocity (fpm)	Airflow Volumetric Rate (CFM) @ Static Pressure (inches of water)							
Sash @ 62.5% Open (18")	4' Hood		5' Hood		6' Hood		8' Hood	
	CFM	s.p.	CFM	s.p.	CFM	s.p.	CFM	s.p.
100	440	0.10	580	0.12	720	0.16	1000	0.11
80	350	0.06	465	0.08	575	0.10	800	0.07
60	265	0.04	350	0.05	430	0.06	600	0.04

The Protector XStream Laboratory Hood shows significant savings over its lifetime when compared to a typical fume hood. The CFM usage and related energy costs associated with exhausting tempered air from the laboratory to the outside are provided below. Maximum savings are achieved using a Protector XStream Laboratory Hood operating at 60 fpm with a variable air volume system. Protector XStream Laboratory Hoods are compatible for use with variable air volume (VAV) systems. Please Contact Labconco for ordering information on factory preparing Protector XStream Laboratory Hoods to a specific VAV controller cutout.

Energy Savings Dollars Compared to a Typical Fume Hood

	CFM	Dollars/Year	Dollars/Lifetime	Lifetime Dollar Savings Compared to Typical Hood
6' Typical Hood @ 100 fpm, full open sash (28"), constant volume†	1250	$8,750	$131,250	0
6' XStream at 100 fpm, full open sash (28"), constant volume†	1150	$8,050	$120,750	$10,500
6' XStream at 60 fpm, full open sash (28"), constant volume†	690	$4,830	$72,450	$58,800
6' XStream at 60 fpm, 62.5% open sash (18"), constant volume†	430	$3,010	$45,150	$86,100
6' XStream at 60 fpm, variable air volume††	N/A	$1,883	$28,245	$103,005

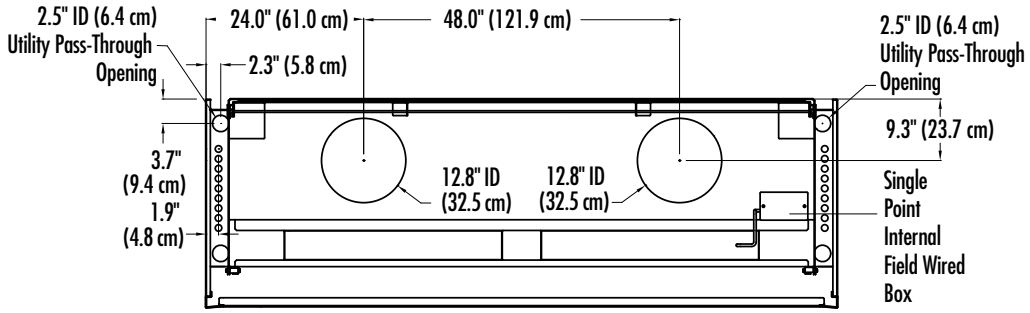
**Hoods with GFCI electrical duplex are rated at 20 amps. 8' hoods have two GFCI electrical duplex receptacles, one mounted on each side, rated at 20 amps each.*

†Based on average annual dollars per CFM of $7.00, fume hood operating 24 hours a day and 5 days per week (6240 hours per year). Average annual dollar per CFM cost ranges from $5.00 to $12.00 depending on geographic location. Lifetime calculations are based on 15 years.

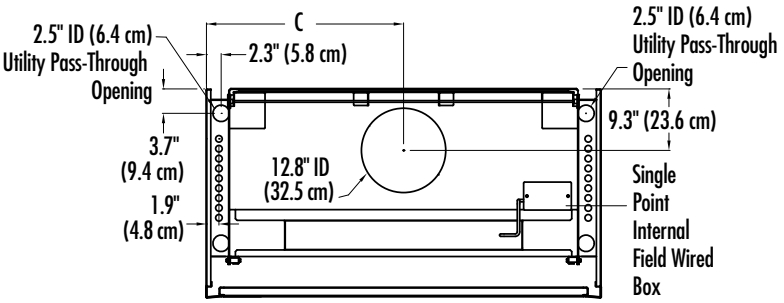
††Based on 8 hours per day with 18" sash opening and 60 fpm face velocity, and remaining time with sash closed. Closed sash air volume is based on ANSI Z9.5 minimum of 150 Air Changes per hour (ACH), and $0.0000187/ft³ air.

Dimensional Data

Protector® XStream® Laboratory Hoods

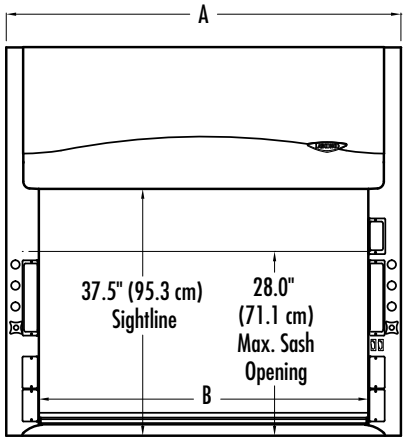


TOP
8' Hoods

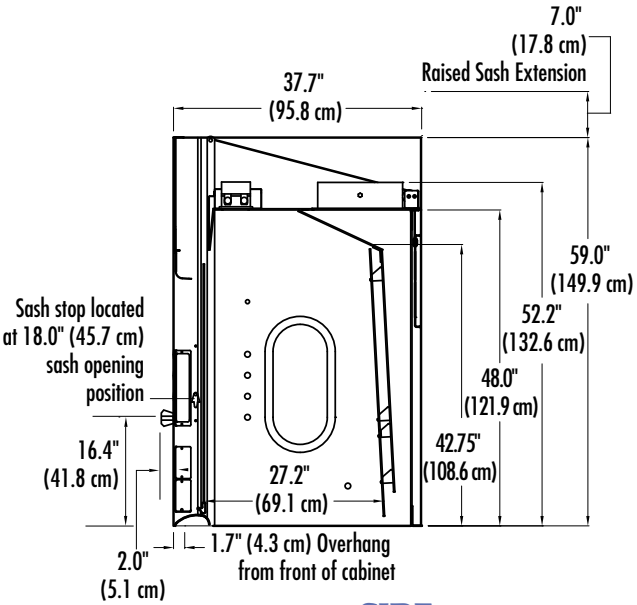


TOP
4', 5' & 6' Hoods

	A	B	C
4' Hood	48.0" (121.9 cm)	38.1" (96.8 cm)	24.0" (61.0 cm)
5' Hood	60.0" (152.4 cm)	50.1" (127.3 cm)	30.0" (76.2 cm)
6' Hood	72.0" (182.9 cm)	62.1" (157.7 cm)	36.0" (91.4 cm)
8' Hood	96.0" (243.8 cm)	86.1" (218.7 cm)	—



FRONT



SIDE

*Contact Labconco at **800-821-5525** or **816-333-8811** or visit **www.labconco.com** for BIM Revit® and detailed AutoCAD® drawings. See back cover for trademark information.*

Protector® Premier® Laboratory Hoods

Protector® Premier® Laboratory Hoods incorporate a sleek interior with a molded one-piece fiberglass liner, the signature feature of Labconco's leading line of fume hoods since 1961. The one-piece liner of specially-formulated, fiberglass-reinforced polyester offers corrosion and fire resistance and easy clean up. Without seams, the interior has fewer points of deterioration for longer life.

Like the Protector XStream Hoods, Protector Premier Hoods incorporate many containment-enhancing features including Clean-Sweep™ technology and the Eco-Foil™ air foil. Testing confirms the Protector Premier Hood meets the SEFA-1* standard of a low velocity, high performance hood and may be operated as low as 60 fpm. These hoods are offered for use with a remotely-located blower or with a built-in blower — the only high performance hood with built-in blower available anywhere.

Features and benefits unique to Protector® Premier® Laboratory Hoods are described below. Additional features are detailed on page 12-15.

One-piece molded fiberglass liner offers superior corrosion and chemical resistance, durability and light reflectivity. Its seamless and smooth, radiused corners make cleaning easy and results in less deterioration for longer life. On models for use with remote blowers, as shown above, the exhaust connections are also seamless, molded fiberglass.

Models with built-in blower are available. Built-in blower is belt-driven with molded thermoplastic housing and coated aluminum impeller that is non-sparking and corrosion-resistant. The blower is available with standard or explosion-proof motor.

**See back cover for a list of regulations, standards and registered trademarks.*

Protector® Premier® Laboratory Hoods

FOR USE WITH REMOTE BLOWER

4' Protector Premier Laboratory Hood 100400002 is shown with SpillStopper Work Surface 9500400 and Protector Standard Storage Cabinet 9900000.

All models feature:

- By-pass airflow design.
- Eco-Foil™ Air Foil with aerodynamic Clean-Sweep™ airflow openings.*
- Cord-Keeper™ Slots on left and right side of air foil.
- Glacier white powder-coated steel exterior.
- One-piece molded fiberglass liner and pre-set baffle(s) with flame spread less than 25 per ASTM E-84.**
- Tempered safety glass vertical-rising sash with cable pulley and powder-coated aluminum sash handle.
- 37.5" (95.3 cm) high sightline from the work surface to header panel.
- Removable front and side panels, and front service access panels for access to plumbing and electrical wiring.
- Pre-wired T8 fluorescent lighting with vapor-proof design and ADA-compliant light and blower switches.
- Molded fiberglass 12.81" ID exhaust connection(s).

All models conform to the following regulations and standards**:

- CFR 29, Part 1910
- NFPA 45-2011
- ASHRAE 110-1995
- UL 61010-1
- UL 1805
- SEFA 1-2010
- ASTM E84-09C
- ANSI Z9.5-2011
- CAN/CSA C22.2 No. 61010-1
- CE Conformity Marking (230 volt models)
- SEFA 8-2010, Cabinet Surface Finish Tests

Fixtured models feature:

- Two pre-plumbed service fixtures with forged brass valves, lower right side with brass tubing for gas and lower left side with copper tubing for cold water. Components for converting either or both fixtures to air and vacuum are provided. Inlet tubing is not provided.
- One pre-wired GFCI electrical duplex receptacle on lower right side and, on 8' and larger models only, one additional pre-wired GFCI electrical duplex receptacle on the lower left side.

Required accessories not included:

- Remote Blower.
- Work Surface.
- Ductwork.
- Base Cabinet or Stand.

Optional accessories for on-site installation include:

- Service Fixture Kits.
- Electrical Duplex Kits.
- Guardian Airflow Monitor Kits.
- Distillation Grid Kits.
- Sash Stop Kits.
- Ceiling Enclosure and Rear Finish Panel Kits.

Total Exhaust CFM and Static Pressure @ 28" Sash Opening (100% Open)

Face Velocity (fpm)	Airflow Volumetric Rate (CFM) @ Static Pressure (inches of water)							
Sash @ Full Open (28")	4' Hood		5' Hood		6' Hood		8' Hood	
	CFM	s.p.	CFM	s.p.	CFM	s.p.	CFM	s.p.
100	725	0.22	955	0.31	1180	0.41	1640	0.28
80	580	0.14	765	0.20	945	0.26	1310	0.18
60	435	0.08	575	0.11	710	0.15	985	0.10

Total Exhaust CFM and Static Pressure @ 18" Sash Opening (62.5% Open)

Face Velocity (fpm)	Airflow Volumetric Rate (CFM) @ Static Pressure (inches of water)							
Sash @ 62.5% Open (18")	4' Hood		5' Hood		6' Hood		8' Hood	
	CFM	s.p.	CFM	s.p.	CFM	s.p.	CFM	s.p.
100	450	0.09	595	0.12	735	0.16	1025	0.11
80	365	0.06	480	0.08	590	0.10	820	0.07
60	270	0.03	360	0.04	440	0.06	615	0.04

See pages 20-23 for ordering information on work surfaces and accessories.

**U.S. Patent No. 6,461,233*

***See back cover for a list of regulations, standards and registered trademarks.*

Heights of switches and electrical receptacle when work surface is set to ADA height meet requirements of ADA.

Exclusive Feature

Ordering Information & Dimensional Data

Protector® Premier® Laboratory Hoods for use with remote blower

Use this key to configure the **nine digit catalog number** to order your Protector Premier Laboratory Hood.
For example, a **100400002** is a 4' Protector Premier Laboratory Hood, with 100-115 volt, 50/60 Hz electrical requirements, two service fixtures and one GFCI electrical duplex receptacle.

1 0 0 0 0 0 0

STEP 1. Select the **width** of your fume hood. This number is the fourth digit of your catalog number. Shipping weight is also noted. Add 10 lbs. (5 kg) for Fixtured Models.

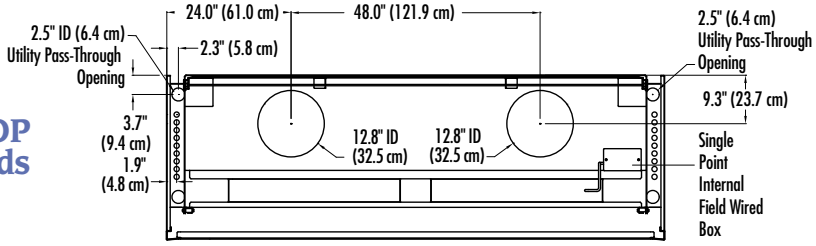
- **4** = 4' (122 cm) 325 lbs. (147 kg)
- **5** = 5' (152 cm) 410 lbs. (186 kg)
- **6** = 6' (183 cm) 485 lbs. (220 kg)
- **8** = 8' (244 cm) 650 lbs. (295 kg)

STEP 2. Select the **Electrical Requirements, Service Fixtures** and **GFCI Electrical Duplex Receptacle** combination you desire. These two numbers comprise the eighth and ninth digits of your catalog number.

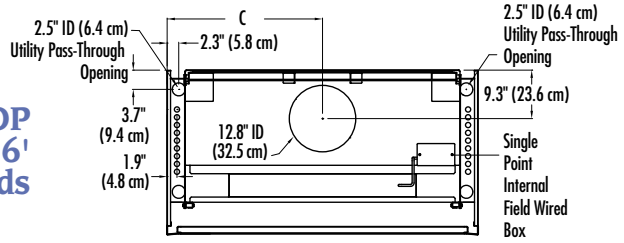
Electrical Requirements	No Service Fixtures	Two Service Fixtures	Two Service Fixtures & GFCI Duplex*
100-115 volts, 50/60 Hz, 10 amps	00	—	02
208-230 volts, 50/60 Hz, 5 amps	20	21	—

**Hoods with GFCI electrical duplex are rated at 20 amps. 8' hoods have two GFCI electrical duplex receptacles, one mounted on each side, rated at 20 amps each.*

TOP 8' Hoods

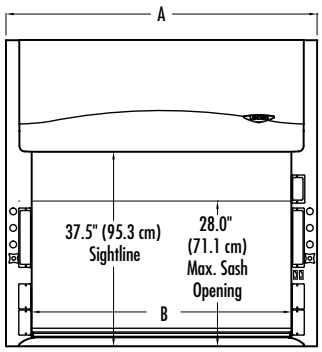


TOP 4', 5' & 6' Hoods

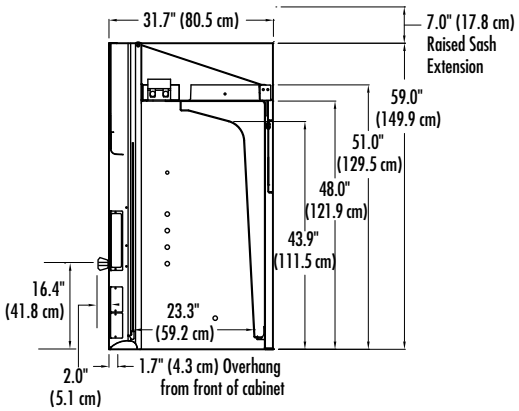


	A	B	C
4' Hood	48.0" (121.9 cm)	38.1" (96.8 cm)	24.0" (61.0 cm)
5' Hood	60.0" (152.4 cm)	50.1" (127.3 cm)	30.0" (76.2 cm)
6' Hood	72.0" (182.9 cm)	62.1" (157.7 cm)	36.0" (91.4 cm)
8' Hood	96.0" (243.8 cm)	86.1" (218.7 cm)	—

FRONT



SIDE



*Contact Labconco at **800-821-5525** or **816-333-8811** or visit **www.labconco.com** for BIM Revit® and detailed AutoCAD® drawings. See back cover for trademark information.*

Protector® Premier® Laboratory Hoods

WITH BUILT-IN BLOWER

5' Protector Premier Laboratory Hood 100500042 is shown with SpillStopper Work Surface 9500500, Protector Standard Storage Cabinet 9900200 and Protector Acid Storage Cabinet 9901200.

All models feature:

- By-pass airflow design.
- Built-in belt-driven, corrosion-resistant exhaust blower with adjustable sheave, molded thermoplastic housing and non-sparking, coated aluminum impeller.
- Eco-Foil™ Air Foil with aerodynamic Clean-Sweep™ airflow openings.*
- Cord-Keeper™ Slots on left and right side of air foil.
- Glacier white powder-coated steel exterior.
- One-piece molded fiberglass liner and pre-set baffle(s) with flame spread less than 25 per ASTM E-84.**
- Tempered safety glass vertical-rising sash with cable pulley and powder-coated aluminum sash handle.
- 37.5" (95.3 cm) high sightline from the work surface and header panel.
- Removable front and side panels, and front service access panels for access to plumbing and electrical wiring.
- 10.8" ID exhaust connection (4' models); 12.8" ID exhaust connection (5' and 6' models).

All models conform to the following regulations and standards**:

- CFR 29, Part 1910
- NFPA 45-2011
- ASHRAE 110-1995
- UL 61010-1
- UL 1805
- SEFA 8-2010, Cabinet Surface Finish Tests
- SEFA 1-2010
- ASTM E84-09C
- CAN/CSA C22.2 No. 61010.1
- CE Conformity Marking (230 volt models)

Standard models feature:

- Pre-wired T8 fluorescent lighting with vapor-proof design, and ADA-compliant light and blower switches.

Explosion-proof models feature:

- Explosion-proof blower and incandescent light fixture (bulb not included).
- Furnished without switches, electrical receptacles and wiring.

Fixtured models feature:

- Two pre-plumbed service fixtures with forged brass valves, lower right side with brass tubing for gas and lower left side with copper tubing for cold water. Components for converting either or both fixtures to air and vacuum are provided. Inlet tubing is not provided.
- One pre-wired GFCI electrical duplex receptacle on lower right side.

Required Accessories not included:

- Ductwork.
- Work Surface.
- Base Cabinet or Stand.

Optional accessories for on-site installation include:

- Service Fixture Kits.
- Electrical Duplex Kits.
- Guardian Airflow Monitor Kits.
- Distillation Grid Kits.
- Sash Stop Kits.
- Ceiling Enclosure and Rear Finish Panel Kits.

Built-in Blower Maximum External Static Pressure @ 100 fpm and with Sash Full Open (28")

Hood Width	CFM	S.P.	Nominal Ductwork Diameter	Equivalent Resistance†
4 Feet	725	0.17"	10"	75
5 Feet	955	0.12"	12"	75
6 Feet	1180	0.17"	12"	70

See pages 20-23 for ordering information on work surfaces and accessories.

**U.S. Patent No. 6,461,233*

***See back cover for a list of regulations, standards and registered trademarks.*

†Equivalent resistance in feet of straight duct.

Heights of switches and electrical receptacle when work surface is set to ADA height meet requirements of ADA.

Exclusive Feature

Ordering Information & Dimensional Data

Protector® Premier® Laboratory Hoods with built-in Blower

Use this key to configure the **nine digit catalog number** to order your Protector Premier Laboratory Hood. For example, a **100600042** is a 6' Protector Premier Laboratory Hood with built-in blower, with 100-115 volt, 60 Hz electrical requirements, two service fixtures and one GFCI electrical duplex receptacle.

1 0 0 _ _ 0 0 0 0

STEP 1. Select the **width** of your fume hood. This number is the fourth digit of your catalog number. Shipping weight is also noted. Add 10 lbs. (5 kg) for Fixtured Models. Add 10 lbs. (5 kg) for Explosion-Proof Models.

4 = 4' (122 cm) 365 lbs. (166 kg)

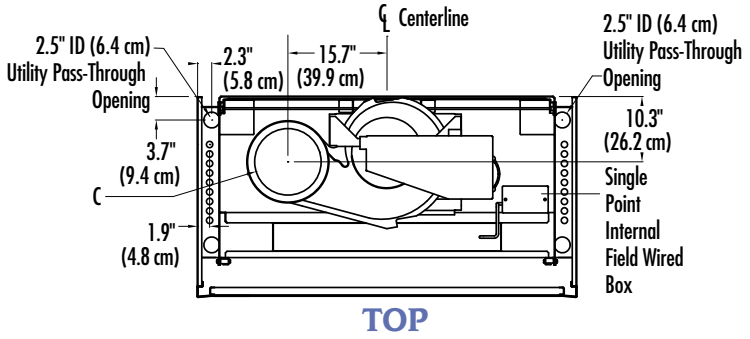
5 = 5' (152 cm) 450 lbs. (204 kg)

6 = 6' (183 cm) 525 lbs. (238 kg)

STEP 2. Select the **Electrical Requirements, Service Fixtures** and **GFCI Electrical Duplex Receptacle** combination you desire. These two numbers comprise the eighth and ninth digits of your catalog number.

Electrical Requirements	No Service Fixtures	Two Service Fixtures	Two Service Fixtures & GFCI Duplex*
100-115 volts, 60 Hz, 10 amps	40	—	42
208-230 volts, 50 Hz, 5 amps	50	51	—
208-230 volts, 60 Hz, 5 amps	60	61	—
100-115 volts, 60 Hz, 10 amps, explosion-proof blower**	70	71	—
208-230 volts, 50 Hz, 5 amps, explosion-proof blower**	80	81	—
208-230 volts, 60 Hz, 5 amps, explosion-proof blower**	90	91	—

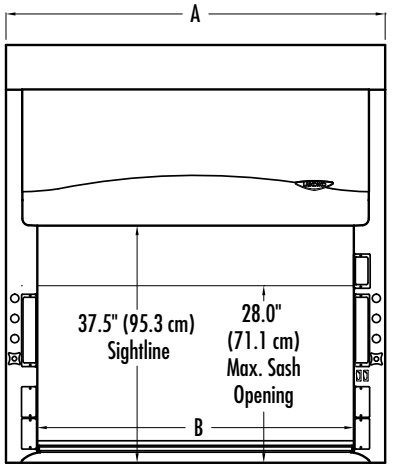
**Hoods with GFCI electrical duplex are rate at 20 amps.* ***Explosion-proof hoods are furnished without switches, electrical receptacles and wiring.*



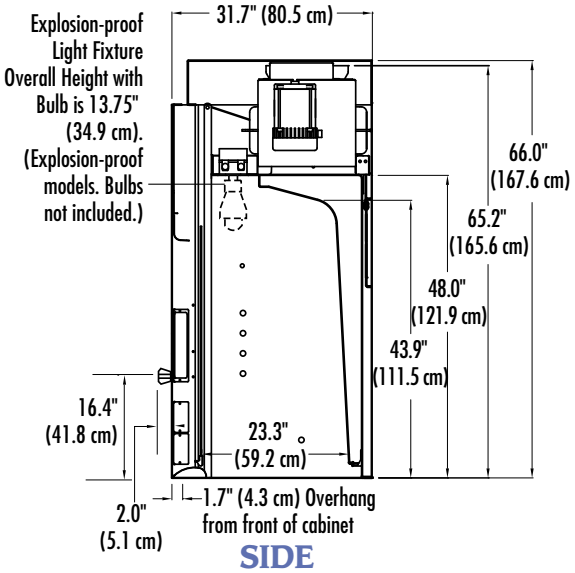
TOP

	A	B	C
4' Hood	48.0" (121.9 cm)	38.1" (96.8 cm)	10.8" ID (27.5 cm)
5' Hood	60.0" (152.4 cm)	50.1" (127.3 cm)	12.8" ID (32.5 cm)
6' Hood	72.0" (182.9 cm)	62.1" (157.7 cm)	12.8" ID (32.5 cm)

*Contact Labconco at **800-821-5525** or **816-333-8811** or visit **www.labconco.com** for detailed AutoCAD® drawings. See back cover for trademark information.*



FRONT



SIDE

Protector® XL™ Laboratory Hoods

Protector XL Benchtop Laboratory Hoods have chemical-resistant panel liners that offer superior design flexibility. They are supplied in widths from 3 to 16 feet and three depths to meet a variety of installation and application requirements.

Like the Protector XStream Hoods, Protector XL Benchtop Hoods incorporate many containment-enhancing features including Clean-Sweep™ technology and Eco-Foil™ air foil. Testing confirms the Protector XL Hood meets the SEFA-1* standard of a low velocity, high performance hood and may be operated as low as 60 fpm.

The Opti-Zone™ Baffle's unique slot pattern and sizes increase velocities in the middle and at the work surface of the hood where it is needed while slowing velocities at the corners. The overall effect is to lower the required average face velocity necessary for containment. Tapered slots decrease resistance to air entering the baffle.

**See back cover for a list of regulations, standards and registered trademarks.*

Protector® XL™ Laboratory Hoods

8' Protector XL Laboratory Hood 111800002 is shown with SpillStopper Work Surface 9500800, Protector Standard Storage Cabinet 9900000 and Protector Solvent Storage Cabinet 9902000.

All models feature:

- By-pass airflow design.
- Eco-Foil Air Foil with aerodynamic Clean-Sweep™ airflow openings.*
- Cord-Keeper™ Slots on left and right side of air foil.
- Glacier white powder-coated steel exterior.
- Chemical-resistant, fiberglass-reinforced, composite panel liner and baffle.
- Opti-Zone™ Baffle* with flame spread index less than 25 per ASTM E84**. Baffle is removable for cleaning.
- Tempered safety glass vertical-rising sash with cable pulley and powder-coated aluminum sash handle.
- 37.5" (95.3 cm) high sightline from the work surface and header panel.
- Removable front and side panels, and front and interior service access panels for access to plumbing and electrical wiring.
- Pre-wired T8 fluorescent lighting with vapor-proof design and ADA-compliant light and blower switches.
- Powder-coated stainless steel, 12.81" (32.5 cm) ID exhaust connection(s).

All models conform to the following regulations and standards**:

- CFR 29, Part 1910
- NFPA 45-2011
- ASHRAE 110-1995
- UL 61010-1
- UL 1805
- SEFA 1-2010
- ASTM E84-09C
- ANSI Z9.5-2011
- CAN/CSA C22.2 No. 61010.1
- SEFA 8-2010, Cabinet Surface Finish Tests

8' models are available with:

- Optional split dual tempered safety glass vertical-rising sashes with cable pulleys and powder-coated sash handles.

10', 12' and 16' models feature:

- By-pass block
- Split dual tempered safety glass vertical-rising sashes with cable pulleys, powder-coated sash handles and 10" (25.4 cm) high static viewing windows to permit the sashes to be fully raised without extending above the hood. Four sashes on 16' models.

Fixtured models feature:

- Two pre-plumbed service fixtures with forged brass valves, lower right side with brass tubing for gas and lower left side with copper tubing for cold water. Components for converting either or both fixtures to air and vacuum are provided. Inlet tubing is not provided.
- One pre-wired GFCI electrical duplex receptacle on lower right side and, on 8' and larger models only, one additional pre-wired GFCI electrical duplex receptacle on the lower left side.

Required accessories not included:

- Remote Blower.
- Work Surface.
- Ductwork.
- Base Cabinet or Stand.

Optional accessories for on-site installation include:

- Service Fixture Kits.
- Distillation Grid Kits.
- Electrical Duplex Kits.
- Sash Stop Kits.
- Guardian Airflow Monitor Kits.
- Ceiling Enclosure and Rear Finish Panel Kits.

See pages 20-23 for ordering information on work surfaces and accessories.

**U.S. Patent No. 6,461,233*

***See back cover for a list of regulations, standards and registered trademarks.*

Heights of switches and electrical receptacle when work surface is set to ADA height meet requirements of ADA.

Exclusive Feature

Ordering Information

Protector® XL™ Laboratory Hoods

Use this key to configure the **nine digit catalog number** to order your Protector XL Laboratory Hood.
For example, a **111800002** is an 8' Protector XL Laboratory Hood, with 31.7" depth, 100-115 volt, 50/60 Hz electrical requirements, two service fixtures and two GFCI electrical duplex receptacles.

1 1 1 0

STEP 1. Select the **width** of your fume hood. This number is the fourth digit of your catalog number. Shipping weight is also noted for 31.7" deep models. Add 10 lbs. (5 kg) for Fixtured Models.

- **3** = 3' (91 cm) 350 lbs. (159 kg)
- **4** = 4' (122 cm) 375 lbs. (170 kg)
- **5** = 5' (152 cm) 450 lbs. (204 kg)
- **6** = 6' (183 cm) 525 lbs. (238 kg)
- **7** = 7' (213 cm) 600 lbs. (272 kg)
- **8** = 8' (244 cm) 675 lbs. (306 kg)
- **0** = 10' (305 cm) 855 lbs. (388 kg)
- **1** = 12' (366 cm) 1045 lbs. (474 kg)
- **2** = 16' (488 cm) 1410 lbs. (640 kg)

STEP 2. Select the **exterior depth** of your fume hood. This number is the fifth digit of your catalog number. To the shipping weight noted above, add 40 lbs. (18 kg) for 37.7" deep models and 85 lbs. (39 kg) for 43.7" deep models.

- **0** = 31.7" (81 cm)
- **1** = 37.7" (96 cm)
- **2** = 43.7" (111 cm)

STEP 3. Select the **sash style** available for your hood width. Note that either sash style may be used on 8' wide hoods. This number comprises the sixth digit of your catalog number.

Sash Style	For hood width: 3', 4', 5', 6', 7', 8'	For hood width: 8', 10', 12', 16'
Single	**0**	—
Dual*	—	**8**

STEP 4. Select the **Electrical Requirements, Service Fixtures** and **GFCI Electrical Duplex Receptacle** combination you desire. These two numbers comprise the eighth and ninth digits of your catalog number.

Electrical Requirements	No Service Fixtures	Two Service Fixtures	Two Service Fixtures & GFCI Duplex**
100-115 volts, 50/60 Hz, 10 amps	**00**	—	**02**
208-230 volts, 50/60 Hz, 5 amps	**20**	**21**	—

**16' hoods have four sashes.*

***Hoods with GFCI electrical duplex are rated at 20 amps. 8', 10', 12' and 16' Hoods have two GFCI electrical duplex receptacles, one mounted on each side, 20 amps each.*

Total Exhaust CFM and Static Pressure @ 28" Sash Opening (100% Open)

Face Velocity (fpm)	Airflow Volumetric Rate (CFM) @ Static Pressure (inches of water)								
Sash @ Full Open	3' Hood CFM s.p.	4' Hood CFM s.p.	5' Hood CFM s.p.	6' Hood CFM s.p.	7' Hood CFM s.p.	8' Hood CFM s.p.	10' Hood CFM s.p.	12' Hood CFM s.p.	16' Hood CFM s.p.
100	495 0.13	725 0.27	955 0.34	1180 0.46	1410 0.23	1640 0.31	2100 0.45	2560 0.62	3500 0.37
80	395 0.08	580 0.17	765 0.22	945 0.29	1125 0.15	1310 0.20	1680 0.28	2050 0.39	2800 0.23
60	295 0.05	435 0.10	575 0.12	710 0.17	845 0.08	985 0.11	1260 0.16	1535 0.22	2100 0.13

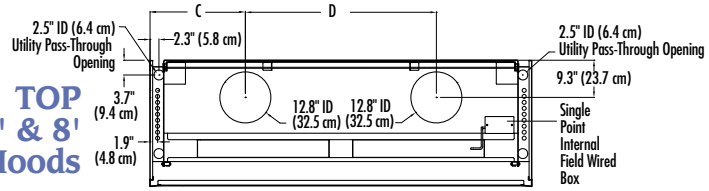
Total Exhaust CFM and Static Pressure @ 18" Sash Opening (62.5% Open)

Face Velocity (fpm)	Airflow Volumetric Rate (CFM) @ Static Pressure (inches of water)								
Sash @ 62.5% Open	3' Hood CFM s.p.	4' Hood CFM s.p.	5' Hood CFM s.p.	6' Hood CFM s.p.	7' Hood CFM s.p.	8' Hood CFM s.p.	10' Hood CFM s.p.	12' Hood CFM s.p.	16' Hood CFM s.p.
100	310 0.05	450 0.11	595 0.13	735 0.18	880 0.09	1025 0.12	1300 0.17	1585 0.24	2170 0.14
80	250 0.03	365 0.07	480 0.09	590 0.11	705 0.06	820 0.08	1050 0.11	1280 0.16	1750 0.09
60	185 0.02	270 0.04	360 0.05	440 0.07	525 0.03	615 0.04	800 0.06	970 0.09	1330 0.05

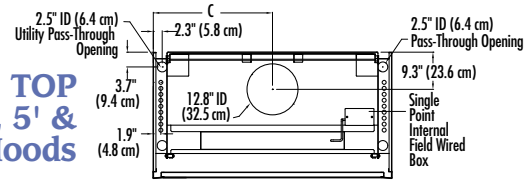
Dimensional Data

Protector® XL™ Laboratory Hoods

TOP 7' & 8' Hoods

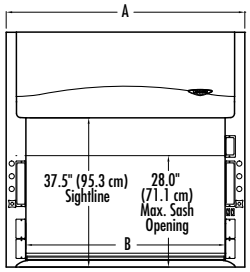


TOP 3', 4', 5' & 6' Hoods

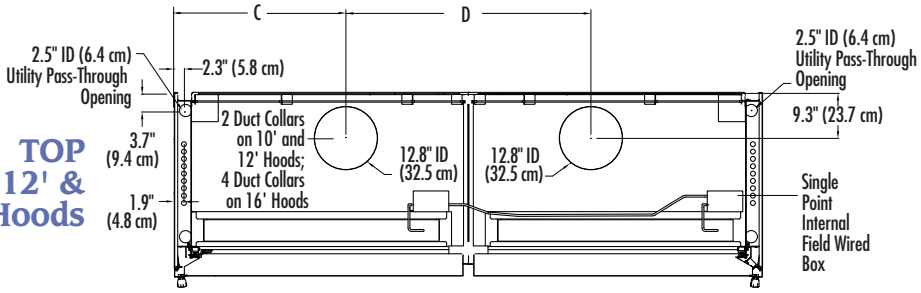


	A	B	C	D
3' Hood	36.0" (91.4 cm)	26.1" (66.3 cm)	18.0" (45.7 cm)	—
4' Hood	48.0" (121.9 cm)	38.1" (96.8 cm)	24.0" (61.0 cm)	—
5' Hood	60.0" (152.4 cm)	50.1" (127.3 cm)	30.0" (76.2 cm)	—
6' Hood	72.0" (182.9 cm)	62.1" (157.7 cm)	36.0" (91.4 cm)	—
7' Hood	84.0" (213.4 cm)	74.1" (188.2 cm)	21.0" (53.3 cm)	42.0" (106.7 cm)
8' Hood	96.0" (243.8 cm)	86.1" (218.7 cm)	24.0" (61.0 cm)	48.0" (121.9 cm)
10' Hood	120.0" (304.8 cm)	110.1" (279.7 cm)	35.0" (88.9 cm)	50.0" (127.0 cm)
12' Hood	144.0" (360.0 cm)	134.1" (340.6 cm)	41.0" (104.1 cm)	62.0" (157.5 cm)
16' Hood	192.0" (487.7 cm)	182.1" (462.5 cm)	24.0" (61.0 cm)	48.0" (121.9 cm)

FRONT 3', 4', 5', 6', 7' & 8' Hoods

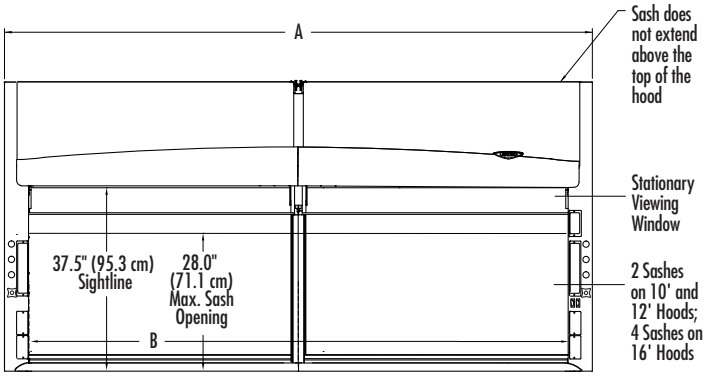


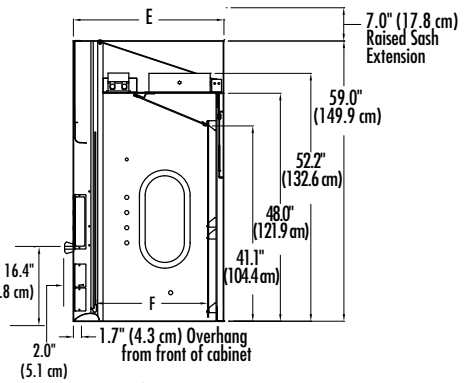
TOP 10', 12' & 16' Hoods



E	F
31.7" (80.5 cm)	23.6" (59.9 cm)
37.7" (95.8 cm)	29.6" (75.2 cm)
43.7" (111.0 cm)	35.6" (90.4 cm)

FRONT 10', 12' & 16' Hoods





SIDE

*Contact Labconco at **800-821-5525** or **816-333-8811** or visit **www.labconco.com** for BIM Revit® and detailed AutoCAD® drawings. See back cover for trademark information.*

SpillStopper™ Work Surfaces

SpillStopper Work Surface 9500400 for use with 4' Protector Premier and XL Laboratory Hoods

Features:

- Molded from a special formulation of corrosion-resistant epoxy resins.
- Dished and contoured to conform to the interior liner of Protector Laboratory Hoods.
- Front edge has a large radius to aerodynamically direct airflow into the hood.
- Pre-drilled 1.5" (5.8 cm) diameter holes for venting and 2.5" (6.4 cm) diameter holes for plumbing pass-through.
- May be ordered with a pre-cut 6" x 3" (15.2 x 7.6 cm) oval cupsink cutout. Cupsink is sold separately. *See page 21.*

Use this key to configure the **seven digit catalog number** to order your SpillStopper Dished Solid Epoxy Work Surface. For example, a **9503610** is a 6' SpillStopper Work Surface, with a left rear cupsink cutout for use with a Protector XStream Hood.

9 5 0

STEP 1. Select the **model and exterior depth** of your fume hood. This number is the fourth digit of your catalog number.

Model & Depth	
0	Premier, XL with 31.7" depth
1	XL with 37.7" depth
2	XL with 43.7" depth
3	XStream, 37.7" depth

STEP 2. Select the **nominal width** of your fume hood. This number is the fifth digit of your catalog number.

3 = 3'*	8 = 8'
4 = 4'	0 = 10'*
5 = 5'	1 = 12'*
6 = 6'	2 = 16'*
7 = 7'*	

STEP 3. Select a **left cupsink cutout** option (cupsink is sold separately). See dimensional drawing. This number is the sixth digit of your catalog number.

Left Cupsink Cutout	
0	None
1	Rear
2	Side**

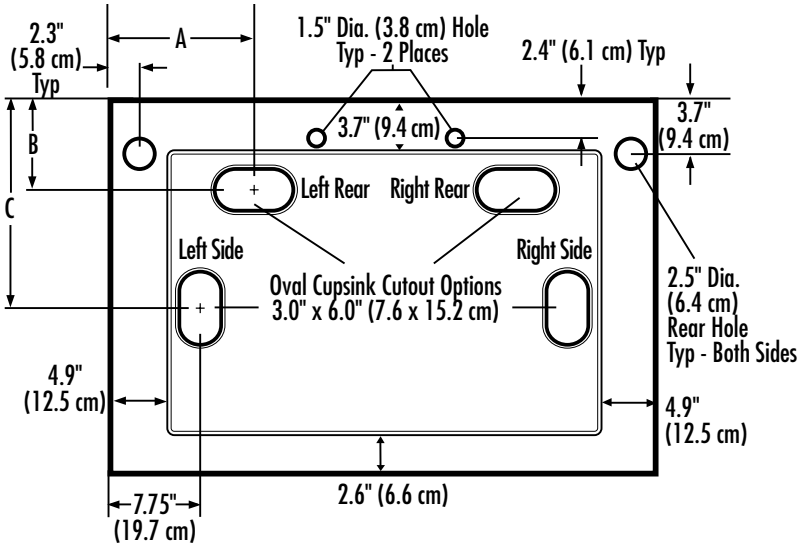
STEP 4. Select a **right cupsink cutout** option (cupsink is sold separately). See dimensional drawing. This number is the seventh digit of your catalog number.

Right Cupsink Cutout	
0	None
1	Rear
2	Side**

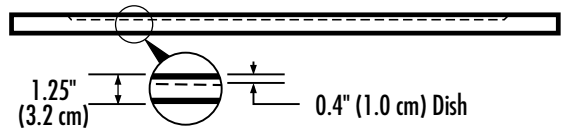
**Protector XL Laboratory Hoods only.* ***Not compatible with Protector Solvent Storage Cabinets.*

Dimensional Data & Accessory

SpillStopper™ Work Surfaces



TOP



FRONT

SIDE

Hood Model/ Work Surface Depth	A	B	C
Premier & XL, 31.7" deep — 30.0" (76.2 cm)	9.5" (24.1 cm)	4.6" (11.7 cm)	18.8" (47.8 cm)
XL, 37.7" deep — 36.0" (91.4 cm)	12.5" (31.8 cm)	7.3" (18.5 cm)	19.0" (48.3 cm)
XL, 43.7" deep — 42.0" (106.7 cm)	12.5" (31.8 cm)	7.3" (18.5 cm)	14.9" (37.8 cm)
XStream, 37.7" deep — 36.0" (91.4 cm)	12.5" (31.8 cm)	10.3" (26.2 cm)	19.0" (48.3 cm)

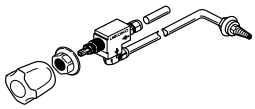
Nominal Width	Hood Model	Hood Exterior Depth	Hood & Work Surface Width	Work Surface Shipping Wt. lbs./kg
3'	XL	31.7"	36.0" (91.4 cm)	85/39
3'	XL	37.7"	36.0" (91.4 cm)	90/41
3'	XL	43.7"	36.0" (91.4 cm)	105/48
4'	Premier, XL	31.7"	48.0" (121.9 cm)	110/50
4'	XL, XStream	37.7"	48.0" (121.9 cm)	120/54
4'	XL	43.7"	48.0" (121.9 cm)	140/64
5'	Premier, XL	31.7"	60.0" (152.4 cm)	150/68
5'	XL, XStream	37.7"	60.0" (152.4 cm)	160/73
5'	XL	43.7"	60.0" (152.4 cm)	180/82
6'	Premier, XL	31.7"	72.0" (182.9 cm)	205/93
6'	XL, XStream	37.7"	72.0" (182.9 cm)	220/100
6'	XL	43.7"	72.0" (182.9 cm)	250/113
7'	XL	31.7"	84.0" (213.4 cm)	210/95
7'	XL	37.7"	84.0" (213.4 cm)	230/104
7'	XL	43.7"	84.0" (213.4 cm)	270/122
8'	Premier, XL	31.7"	96.0" (243.8 cm)	240/109
8'	XL, XStream	37.7"	96.0" (243.8 cm)	250/113
8'	XL	43.7"	96.0" (243.8 cm)	290/132
10'	XL	31.7"	120.0" (304.8 cm)*	290/132
10'	XL	37.7"	120.0" (304.8 cm)*	370/168
10'	XL	43.7"	120.0" (304.8 cm)*	480/218
12'	XL	31.7"	144.0" (365.8 cm)*	320/145
12'	XL	37.7"	144.0" (365.8 cm)*	440/200
12'	XL	43.7"	144.0" (365.8 cm)*	500/227
16'	XL	31.7"	192.0" (487.7 cm)*	350/159
16'	XL	37.7"	192.0" (487.7 cm)*	480/218
16'	XL	43.7"	192.0" (487.7 cm)*	550/249

**Shipped in two equal width sections.*

4005200 Oval Polypropylene Cupsink
Mounts in work surface with cupsink cutout, 3.0" x 6.0" (7.6 x 15.2 cm). 1.5" (5.8 cm) National Pipe Straight Mechanical (NPSM) thread. Shipping weight 4 lbs. (2 kg)

Contact Labconco for information on base cabinets and stands.

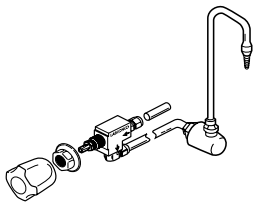
Accessories



Standard Service Fixture Kits

For mounting on the left or right side of a Protector Hood. Each kit includes one remotely-controlled service fixture with valve and 0.25" diameter tubing, color-coded fixture knob and color-coded hose connector. **Inlet tubing is not included.** Shipping weight 4 lbs. (1.8 kg)

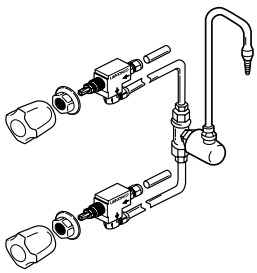
Catalog #	Kit	Tubing	Valve	Knob/Connector Color	Max. Flow Rate	Max. Working Pressure†
9808300	Cold Water (CW)	Copper	Brass	Green	3.5 GPM (13.2 LPM)	40 psi
9808400	Air (AIR)	Copper	Brass	Orange	23.7 CFM	40 psi
9808500	Vacuum (VAC)	Copper	Brass	Yellow	8.6 CFM	14.7 psi
9808700	Gas (GAS)	Brass	Brass	Blue	29.0 CFM (441 BTU/sec)	40 psi
9808800	Argon (ARG)	Copper	Brass	Gray	20.2 CFM	40 psi
9808900	Hot Water (HW)	Copper	Brass	Red	3.5 GPM (13.2 LPM)	40 psi
9809100	Deionized/ Distilled Water (DI)	Stainless Steel	Nickel-Plated & Stainless Steel	White	3.5 GPM (13.2 LPM)	40 psi
9809200	Steam (STM)	Copper	Brass	Black	0.5 LBM/min	40 psi
9809300	Nitrogen (NIT)	Copper	Brass	Brown	24.1 CFM	40 psi
9809700††	Oxygen (OXY)	Copper	Brass with Oxygen-Compatible Lubricant	Light Green	22.6 CFM	40 psi



Cold Water Gooseneck Fixture Kits

For mounting on the left or right side of any Protector Hood with interior depth less than 37.7". Each kit includes one remotely-controlled gooseneck with brass valve and 0.375" diameter copper tubing and green fixture knob. **Inlet tubing is not included.** Contact Labconco for ordering information on Gooseneck Fixture Kits for Protector Hoods with interior depths greater than 37.7". Shipping Weight 10 lbs. (4.5 kg)

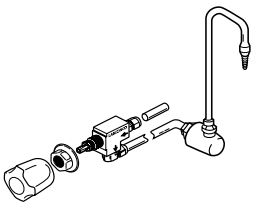
Catalog #	Kit	Description	Max. Flow Rate	Max. Working Pressure††
9827900	Cold Water (CW) Gooseneck	For Hood with Interior Depths less than 37.7". Includes green epoxy-coated brass rigid/swivel gooseneck.	3.5 GPM (13.2 LPM)	40 psi
9857700†††	Cold Water (CW) Gooseneck	For Hoods with Interior Depths less than 37.7". Includes gray PVC rigid gooseneck.	3.5 GPM (13.2 LPM)	40 psi



Hot and Cold Water Mixing Gooseneck Fixture Kit

For any Protector Hood with interior depth less than 37.7". Each kit includes one remotely-controlled, white epoxy-coated, brass rigid/swivel gooseneck with brass valve and 0.25" diameter copper tubing, one green fixture knob and one red fixture knob. **Inlet tubing is not included.** Contact Labconco for ordering information on Gooseneck Fixture Kits for Protector Hoods with interior depths of 43.7" or 55.7". Shipping weight 11 lbs. (5.0 kg)

Catalog #	Kit	Description	Max. Flow Rate	Max. Working Pressure††
9828000†††	Hot (HW) and Cold Water (CW) Mixing Gooseneck	For Hoods with Interior Depths of 24" to 37.7"	3.5 GPM (13.2 LPM)	40 psi



Deionized/Distilled Water Gooseneck Fixture Kit

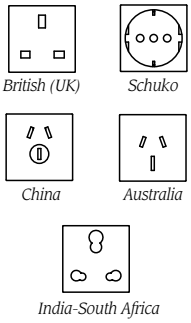
For mounting on the left or right side of any Protector Hood with interior depth less than 31". Each kit includes one remotely-controlled, gray PVC rigid gooseneck with stainless steel valve and 0.25" diameter tubing and white fixture knob. Contact Labconco for ordering information on Gooseneck Fixture Kits for Protector Hoods with interior depths of 43.7" or 55.7". **Inlet tubing is not included.** Shipping weight 10 lbs. (4.5 kg)

Catalog #	Kit	Description	Max. Flow Rate	Max. Working Pressure††
9853400†††	Deionized/Distilled Water (DW) Gooseneck	For Hoods with Interior Depths less than 37.7"	3.5 GPM (13.2 LPM)	40 psi

GPM = gallons per minute LPM = liters per minute CFM = cubic feet per minute BTU/sec = British thermal unit per second LBM/min = pounds mass per minute
† Maximum allowable pressure is 200 psi with a working pressure of 40 psi. †† WaterSaver is a registered trademark of WaterSaver Company. ††† Requires 1.375" dia. drill hole in liner.

Accessories

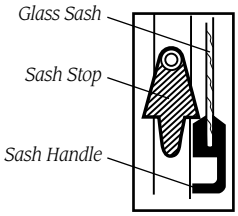
9851500 Duplex Electrical Receptacle Kit, 115 volts, 20 amps AC, GFCI, 60 Hz



Electrical Receptacle Kits

For mounting in left or right side of any 3', 4', 5', 6', 7' or 8' Protector Hood. Each Receptacle kit includes an electrical receptacle, wiring, junction box and receptacle cover plate. The International GFCI Switch is mountable in one corner post location above or below any international single outlet. Contact Labconco for ordering information on Kits for Protector Hoods with widths of 10', 12' or 16'.

Catalog #	Kits	Outlet Type	Shipping Wt. lbs./kg
9851100	115 volts, 20 amps AC, 60 Hz	Duplex, U.S.	4/1.8
9851500	115 volts, 20 amps AC, GFCI, 60 Hz	Duplex, U.S.	4/1.8
9854200	230 volts, 20 amps AC, 60 Hz	Duplex, U.S.	4/1.8
9412500	230 volts, 13 amps AC, 50 Hz	Single, British (UK)	4/1.8
9412700	230 volts, 16 amps AC, 50 Hz	Single, Schuko	4/1.8
9412900	230 volts, 10 amps AC, 50 Hz	Single, China	4/1.8
9413100	230 volts, 10 amps AC, 50 Hz	Single, Australia	4/1.8
9413900	230 volts, 6-16 amps AC, 50 Hz	Single, India-South Africa	4/1.8
9414100	International GFCI Switch, 16 amps	Not Applicable	4/1.8



9410300 Sash Stop Kit

A Sash Stop restricts how far a vertical-rising sash may be opened. This small plastic device may be easily field installed on the fixture panel of many of our popular hoods. Protector XStream Hoods, Premier Hoods and 3' to 12' XL Hoods have been factory-prepared to accommodate a sash stop at the 60%-62.5% open position (18" to work surface). Sash Stop may also be placed at 50% open position (14" to work surface). Alternate sash positions may be field drilled. Each Sash Stop Kit includes components for one sash. Two kits are required for 10' and 12' XL Hoods. Not for use on 16' XL Hoods. Shipping weight 0.5 lb. (0.2 kg)

Guardian™ Airflow Monitors

Sense and alert the operator to low airflow conditions. From the monitor's face plate, the user can easily select and calibrate a set point between 30 and 250 fpm using a velocity meter and a screwdriver. Audible/visual alarm. Includes night setback, external alarm and alarm mute functions. Flush-mount design on Protector Premier, XStream and XL Hoods.

Catalog #	Ranges	For use with Hood:	Shipping Wt. lbs./kg
9413300	100-115 volts, 50/60 Hz	Premier, XStream, XL	6/2.7
9413301*	208-230 volts, 50/60 Hz	Premier, XStream, XL	6/2.7

Guardian™ Digital Airflow Monitors

Guardian™ Digital Airflow Monitor senses and alerts the operator to low airflow conditions. LCD displays actual airflow in fpm or m/sec. Audible/visual alarm alerts the user to sustained low velocity condition. Calibration instructions displayed on LCD. Each monitor also includes a temperature-compensated sensor, external alarm, night setback and alarm mute functions. Flush-mount design on Protector Premier, XStream and XL Hoods. Contact Labconco for optional temperature sensor and optional RS-485 port for Modbus** RTU communication.

Catalog #	Ranges	For use with Hood:	Shipping Wt. lbs./kg
9413400	100-115 volts, 50/60 Hz	Premier, XStream, XL	6/2.7
9413401*	208-230 volts, 50/60 Hz	Premier, XStream, XL	6/2.7

**International electrical configuration* ***Modbus is a registered trademark of Schneider Automation*

Contact Labconco for information on other accessories including ceiling enclosures, distillation grids and fire extinguishers.

Standards & Registered Trademarks

Standards

Key aspects of standards and codes as they relate to laboratory ventilation are summarized below.

ASHRAE 110-1995 Method of Testing Performance of Laboratory Fume Hoods (ANSI Approved)

Evaluates fume hood's containment characteristics.

- Three part test: Smoke generation, face velocity profile, tracer gas release @ 4 liters per minute.
- Rated As Manufactured (AM), As Installed (AI) and As Used (AU).

American Society of Heating, Refrigerating and Air-Conditioning Engineers
1791 Tullie Circle NE
Atlanta, GA 30329
(404) 636-8400
www.ashrae.org

ANSI Z9.5-2011 Standard—Laboratory Ventilation

Covers entire laboratory ventilation system.

- Vertical stack discharge @ 2000-3000 fpm.
- New and remodeled hoods shall have a monitoring device.
- Ductless hoods should only be used with non-hazardous materials.

American Industrial Hygiene Association
2700 Prosperity Avenue, Suite 250
Fairfax, VA 22031
(703) 849-8888
www.aiha.org

Federal Register 29 CFR Part 1910

Occupational exposure to hazardous chemicals in laboratories

National Research Council Recommendations Concerning Chemical Hygiene in Laboratories (Non-mandatory) from "Prudent Practices."

- Fume hoods should have a continuous monitoring device.
- Face velocities should be between 60-100 linear feet per minute (lfpm).
- Average 2.5 linear feet of hood space per person.

Occupational Safety & Health Administration U.S. Department of Labor
200 Constitution Avenue, NW
Washington, DC 20210
(800) 321-6742
www.osha.gov

ASTM E84-09C Standard Test Method for Surface Burning Characteristics of Building Materials

Determines the relative burning behavior of the material by observing the flame spread along the specimen.

- Measures the flame spread and smoke development.
- Material is exposed to flaming fire for 10 minutes and the results measured and recorded.
- Results are compared to the indexes of mineral fiber cement board (flame spread and smoke development of zero) and red oak flooring (smoke development of 100).

ASTM International
100 Barr Harbor Drive
P.O. Box C700
West Conshohocken, PA 19428-2959
(610) 832-9585
www.astm.org

NFPA 45: Standard on Fire Protection for Laboratories Using Chemicals, 2011 edition

- Laboratory hoods should not be relied on for explosion protection.
- Fume hood exhaust air should not be recirculated.
- Services should be external to the hood.
- Materials of construction should have flame spread of 25 or less.

National Fire Protection Association
1 Batterymarch Park
Quincy, MA 02169-7471
(800) 344-3555 or (617) 770-3000
www.nfpa.org

NIH - Section 15991 Onsite Testing for Constant Volume Hoods - June 2006

- Follows ASHRAE test methods except for the following:
  1. 6 L tracer gas release rate instead of 4 L.
  2. Hood is loaded with boxes and cans.
  3. Rapid walk-by test.

National Institutes of Health
9000 Rockville Pike
Bethesda, MD 20892
(301) 496-4000
www.nih.gov

SEFA 1-2010 Laboratory Fume Hoods Recommended Practices

- High performance fume hood definition: hood with sash fully open and operating at 60 fpm contains at 4.0 AM 0.05
- Covers design, installation, testing, maintenance and safe use of laboratory fume hoods

SEFA 8-2010 Recommended Practices For Metal Laboratory Grade Furniture, Casework, Shelving and Tables, 8.0 Cabinet Surface Finish Tests

Defines test methods for evaluating the finish of laboratory furniture.

- Laboratory grade paint finishes shall withstand chemical exposure, hot water, and impact from a one-pound ball dropped from 12".
- Paint coating shall sufficiently adhere to the substrate.
- Paint shall be resistant to scratches.

Scientific Equipment & Furniture Association
1205 Franklin Avenue, Suite 320
Garden City, NY 11530
(516) 294-5424
www.sefalabs.com

UL 61010-1 Electrical Equipment for Laboratory Use

Specifies the general safety requirements for electrical equipment.

- Based on International Electrotechnical Commission (IEC) Publication 61010-1 with differences noted for U.S. use.
- Tests for protection against electrical shock, mechanical hazards, spread of fire, radiation, liberated gases, explosion and implosion.
- Tests for resistance to shock, vibration, impact, heat, moisture and liquids.

Underwriters Laboratories Inc.
333 Pfingsten Road
Northbrook, IL 60062-2096
(847) 272-8800
www.ul.com

CAN/CSA Standard C22.2 No. 1010.1 Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory Use

Specifies general safety requirements for electrical equipment.

- Design and methods of construction should provide adequate protection to the operator and the surrounding area against shock or burn, mechanical hazards, excessive temperature, spread of fire from the equipment, gas liberation, explosion or implosion.

Canadian Standards Association
5060 Spectrum Way, Suite 100
Mississauga, Ontario
L4W 5N6, CANADA
(800) 463-6727 or (416) 747-4044
www.csa.ca

ETL listing

ETL Testing Laboratories is a Nationally Recognized Testing Laboratory (NRTL). The ETL mark signifies that a product conforms to the following:

- UL Standard 61010-1 in the U.S.
- CAN/CSA Standard C22.2 No. 61010.1 in Canada.
- Products that bear the ETL mark are subjected to a comprehensive safety program that includes testing, listing, labeling and quarterly follow-up inspections.

Intertek Group
www.intertek.com

CE Marking

Indicates an electrical apparatus conformity to all safety and other directives/specifications presently required by the Council of European Communities.

- Electrical safety.
- Electromagnetic emissions testing—interference signals being output by the product.
- Electromagnetic immunity testing—the product does not respond to outside electromagnetic interference signals.

European Union
www.europa.eu

Registered Trademarks

AutoCAD® is a registered trademark of AutoDesk.

ANSI® is a registered trademark of American National Standards Institute.

Revit® is a registered trademark of AutoDesk.

SEFA® is a registered trademark of Scientific Equipment and Furniture Association.

UL® is a registered trademark of UL, LLC.

Protecting your laboratory environment
LABCONCO®

Labconco Corporation
8811 Prospect Avenue, Kansas City, MO 64132-2696
800-821-5525 or 816-333-8811
FAX 816-363-0130, www.labconco.com

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2-94-5/27/14-GC-2M-R2
Update 4/8/16