

Protector[®] Laboratory Fume Hoods



High performance. Energy savings.



order on
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LABCONCO[®]



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Highest performance.

Labconco has been protecting people since 1925. Take our fume hoods for example. We design every hood to maximize containment to keep hazardous fumes away from you and your lab.

Better containment means less air exhausted from the lab. The added benefit: saving energy.

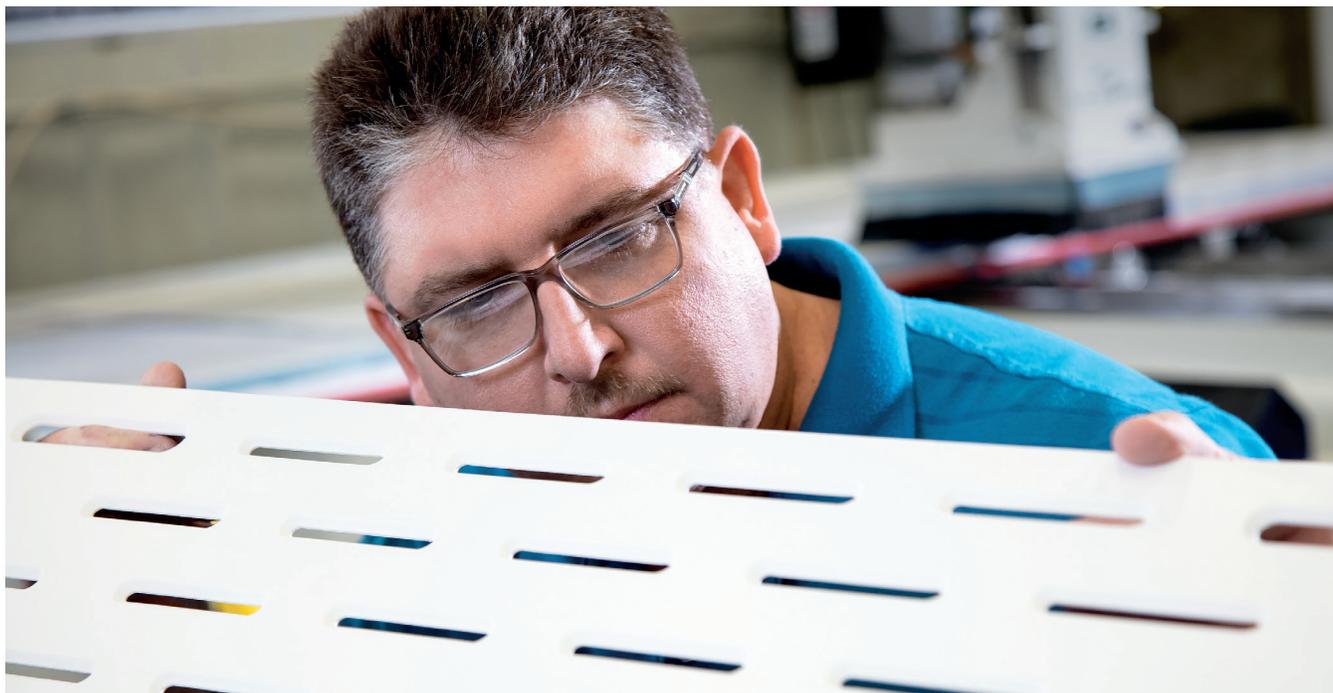
When designing the Protector XStream and Premier Laboratory Hoods, we scrutinized every component and repeatedly tested to help achieve maximum containment at lowest face velocities. The results of our efforts are two fume hood lines that *exceed* the **SEFA 1 definition of a High Performance Fume Hood**:

- 60 fpm or less face velocity
- At maximum sash opening height (25" minimum)
- Tested per ANSI/ASHRAE 110
 - Mannequin 3" from sash plane
 - Detector in the breathing zone
- 4.0 AM 0.05

High performance. Protecting people. Mission accomplished.

Protector[®] Laboratory Fume Hoods

Features & Benefits



Opti-Zone[™] baffle*

Protector XStream Hoods feature chemical- and heat-resistant, fiberglass-reinforced composite panel liners with Opti-Zone baffles. Opti-Zone 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 horizontal air streams that enhance containment.

One-piece molded fiberglass

Protector Premier Hoods have lightweight interior liners molded of specially formulated fiberglass reinforced polyester. It is durable, easy to clean, light reflective and fire resistant.

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



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

Protector® Laboratory Fume Hoods

Features & Benefits

Vertical-rising tempered safety glass sash with anti-racking aircraft cable and pulley operates smoothly and quietly. Sash weight is contained in a pocket to counteract swing.

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

❖ **Cord-Keeper™ slots** keep cords out of the way. Located on the left and right side of the air foil, they allow the sash to close completely when electrical cords from equipment inside are plugged into receptacles located on the corner posts.



Lighting. Protector XStream hoods have energy efficient LED lights rated for 50,000 hours of life that require infrequent replacement. Protector Premier Hoods have high efficiency, instant start, fluorescent lights. Both lighting types are sealed behind ¼" thick safety glass, yielding a hood interior completely void of spark potential. Some Protector Premier Hood models are available with an explosion-proof incandescent light fixture.



❖ **Eco-Foil™ air foil*** reduces energy consumption by 7-10% compared to flat air foils. Aerodynamic curve allows air to sweep the work surface maximizing containment. Clean-Sweep™ openings pull inflow air from under the air foil forcing air into non-turbulent air streams. Curve is comfortable for resting arms.

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. Every hood is factory prepared for up to four fixtures on each side (eight total). Contact Labconco if more than eight fixtures are needed.



Service access plates provide front access to plumbing connections to simplify installation and service.



❖ Labconco exclusive feature

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

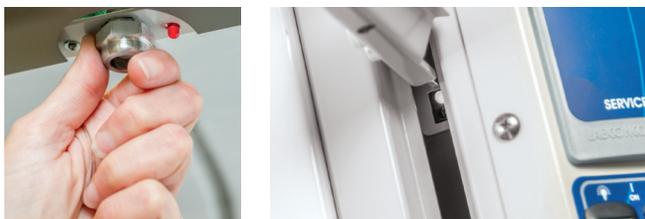
Protector® Laboratory Fume Hoods

Sash System & Air Foil Options

Intelli-Sense™ automatic sash position system

Intelli-Sense automatic sash position system, for hoods 8' wide or smaller, offers maximum safety, increased energy conservation and ADA compliance. The sash automatically opens when motion is detected. After motion is no longer detected, sash automatically closes after a user-set delay time period. When used with a variable air volume (VAV) system, reduced exhaust air demand lowers operation cost. Hands-free operation lets users with limited reach lower the sash.

Two sensors work in concert. An adjustable passive infra-red occupancy sensor detects motion in front of the hood. The “sensed area” may be adjusted up to 48" away. 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. User-set delay time allows the sash to close 1, 3, 6, 10, 30 or 60 minutes after motion is no longer detected. Other setting options include open position, closed position and “down only.”

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 is available as an accessory.

Chain and sprocket sash system

This option offers durability, low maintenance and effortless lifting from any point along the hood's width.

Auto-return sash system

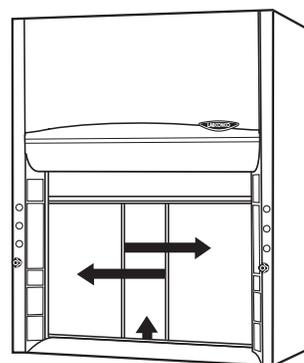
Auto-return promotes the use of the sash as a physical barrier. Using a chain and sprocket suspension, the system automatically returns to 18" working sash opening height anytime the sash is raised above its set position. A defeatable stop holds the sash in its full open position during loading and unloading of oversized apparatus. Auto-return is available on Protector XStream and Premier Hoods 8' wide and smaller.

Split-dual sash system

Available on 8' Protector Premier Hoods, dual vertical-rising sashes use a cord, cable and 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 you use the other side of the hood.

Combination sashes

Combination vertical-rising/horizontal-sliding 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. To maintain safe face velocities, sash stops limit opening the vertical-rising sash beyond 50% except when you release it during loading or unloading. Hoods with this option come standard with chain and sprocket, stationary viewing window above the horizontal-sliding sashes, and a by-pass block.



Pivoting flush air foil

Clean-Sweep openings enhance airflow and promote containment. An integral trough prevents spills on the work surface from leaking out the front of the hood. The trough is even with the supporting work surface (sold separately) so the trough stays hidden from view and flush with the work surface. The air foil pivots up for cleaning. Cord-Keeper slots on both sides allow electrical cords to pass through.



Contact VWR for ordering information on these and other built-in custom options.

Protector® Laboratory Fume Hoods

Build Your Fume Hood System

1. Select fume hood

See pages 6-15.



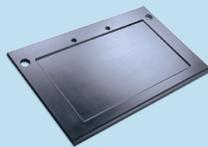
Protector XStream



Protector Premier

2. Select work surface

See pages 16-17.



SpillStopper



Cupsink

3. Select base

Contact VWR.



**Base Cabinet for acid,
solvent or standard storage**



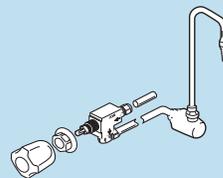
Base Stand

4. Select other accessories

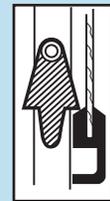
See pages 18-19.



Airflow Monitor



Service Fixture



Sash Stop

5. Select remote blower and ductwork

Contact VWR.



Blower*



Damper



Weathercap

*Some Protector Premier Hoods include built-in blower.

Protector® XStream® Laboratory Fume Hoods

Unsurpassed safety.

No hood is safer than the patented* Protector XStream Laboratory Hood. Testing proves it.

During independent ASHRAE 110 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 lab, the ability of the Protector Hood to contain under these adverse conditions sets a new standard of safety.

Save energy and money.

Energy savings is equally impressive. Although face velocity is a factor, it's the **volumetric rate (CFM)** that determines the

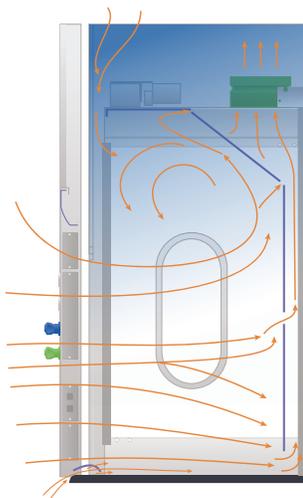
energy consumption of a fume hood. Operating a 6' Protector XStream Hood at 60 fpm face velocity, with the sash in its fully open position, requires only **690 CFM**. Regardless of your desired operating face velocity, the Protector XStream yields the **lowest required CFM**.

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 with sash fully open. For example, a 6' Protector XStream Hood operated at 60 fpm face velocity consumes a mere 690 CFM. Compare that to a traditional by-pass hood operated at 100 fpm that consumes 1250 CFM. You achieve annual dollar savings per year of \$3920.††

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

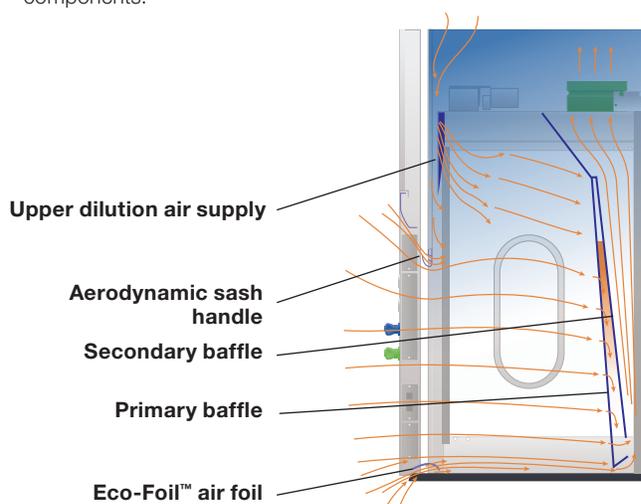
Traditional By-Pass Hood Design

Smoke tests on traditional hoods demonstrate 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 the Protector XStream show contaminants removed in a single pass and a lack of turbulence. Horizontal 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. This airflow pattern is accomplished without additional blower(s) or moving components.



*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 page 20 for a list of regulations, standards and registered trademarks.

††See page 8 for energy savings details.

Protector® XStream® Laboratory Fume Hoods

Specifications



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 removable for cleaning
- * Opti-Zone™ baffle with tapered slots*
- Tempered safety glass vertical-rising sash with cable and pulley
- * Powder-coated aluminum 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
- Pre-wired LED lighting with vapor-proof design and ADA-compliant light and blower switches. Lighting is rated for 50,000 hours
- Sash stop located at 18" (45.7 cm) sash opening position
- Powder-coated stainless steel, 12.8" (32.5 cm) ID exhaust connection(s)

Standards conformance & regulations:

- ADA
- CFR 29, Part 1910**
- SEFA 1**
- NFPA 45**
- ASTM E84-09C**
- ASHRAE 110**
- ANSI Z9.5**

* Labconco exclusive feature

- UL 61010-1**
- CAN/CSA C22.2 No. 61010-1**
- UL 1805
- CE Conformity Marking (230V models)**
- SEFA 8**

△ **WARNING:** Cancer - P65Warnings.ca.gov (California only)

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 lower left side

Required accessories (not included):

- Remote blower. Contact VWR
- Ductwork. Contact VWR
- Work surface. See pages 16-17
- Base cabinet or stand. Contact VWR

Optional accessories for on-site installation include:

- Service Fixture Kits. See page 18
- Electrical Duplex Kits. See page 19
- Guardian Airflow Monitor Kits. See page 19
- Ceiling Enclosure, Rear Finish Panel Kits and Distillation Grid Kits. Contact VWR



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

** See page 20 for list of regulations, standards and registered trademarks.

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

Protector® XStream® Laboratory Fume Hoods

Ordering Information, Airflow Data & Energy Savings

Catalog Number Configurator:

Use this key to configure the nine digit catalog number to order your Protector XStream Laboratory Hood.

1 1 0 1 0 0

Select the **WIDTH** of your fume hood. This 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)

Select the **ELECTRICAL REQUIREMENTS, SERVICE FIXTURES** and **GFCI ELECTRICAL DUPLEX RECEPTACLE** of your fume hood. These are the eighth and ninth digits of your catalog number.

Electrical Requirements	No Service Fixtures	Two Service Fixtures	Two Service Fixtures & GFCI Duplex*
100-115V, 50/60 Hz, 10A	00	—	02
208-230V, 50/60 Hz, 5 A	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)							
	4' Hood		5' Hood		6' Hood		8' Hood	
Sash @ Full Open	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)							
	4' Hood		5' Hood		6' Hood		8' Hood	
Sash @ 62.5% Open	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

Energy Savings Dollars Compared to a Typical Fume Hood

Protector XStream shows significant savings over its lifetime when compared to a typical fume hood. Maximum savings are achieved using the Protector XStream operating at 60 fpm with a VAV

system. Please contact Labconco for ordering information on factory preparing Protector XStream Hoods to a specific VAV controller cutout.

	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 Hood @ 100 fpm, full open sash (28"), constant volume†	1150	\$8,050	\$120,750	\$10,500
6' XStream Hood @ 60 fpm, full open sash (28"), constant volume†	690	\$4,830	\$72,450	\$58,800
6' XStream Hood @ 60 fpm, 62.5% open sash (18"), constant volume†	430	\$3,010	\$45,150	\$86,100
6' XStream Hood @ 60 fpm, variable air volume††	250	\$1,750	\$26,250	\$105,000
6' XStream Hood @ 60 fpm, variable air volume, sash intelligence†††	190	\$1,330	\$19,950	\$111,300

*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.

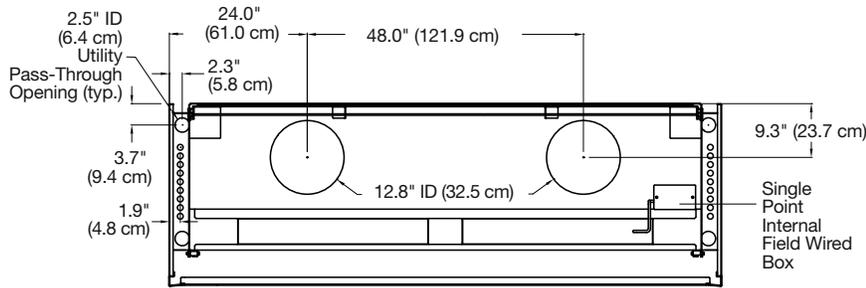
†Based on average annual dollars per CFM of \$7.00, fume hood operating 24 hours a day and 5 days per week (6240 hours per year). Average annual dollar per CFM cost ranges from \$5.00 to \$12.00 depending on geographic location. Lifetime calculations are based on 15 years.

††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 200 Air Changes per hour (ACH), and \$0.0000187/ft³ air.

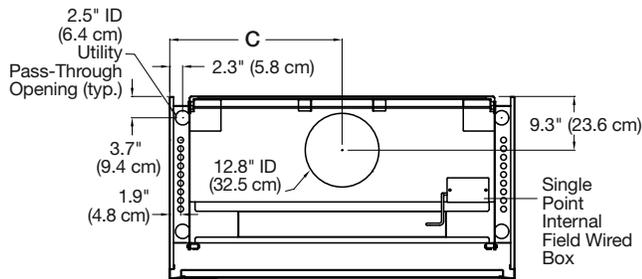
†††Based on 3 hours per day with 18" sash opening and 60 fpm face velocity and remaining time with sash closed. Closed sash air volume is based on ANSI Z9.5 minimum of 200 ACH and \$0.0000187/ft³ air.

Protector® XStream® Laboratory Fume Hoods

Dimensional Data

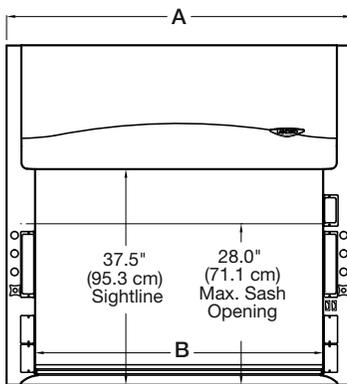


TOP
(8' Hood)

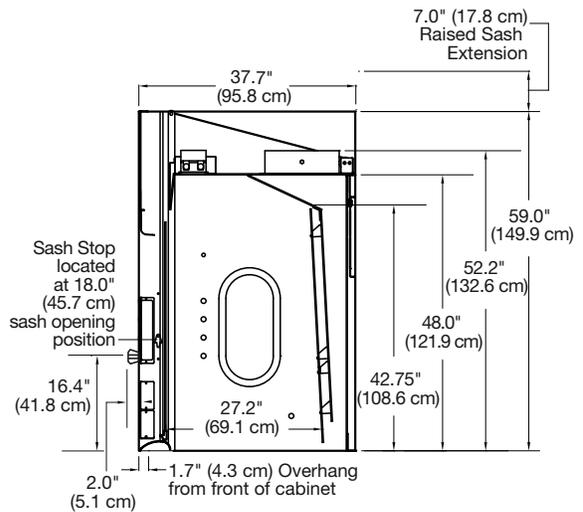


TOP
(4', 5' & 6' Hoods)

	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

BIM Revit® and detailed AutoCAD® drawings available at labconco.com. See page 20 for trademark information.

Protector® Premier® Laboratory Fume Hoods

For Use with Remote Blower Specifications



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 E84**
- Tempered safety glass vertical-rising sash and cable and pulley
- Powder-coated aluminum sash handle with Clean-Sweep™ openings*
- 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 12.8" ID exhaust connection(s)

Standards conformance & regulations:

- ADA
- CFR 29, Part 1910**
- SEFA 1**
- NFPA 45**
- ASTM E84-09C**
- ASHRAE 110**
- ANSI Z9.5**
- UL 61010-1**
- CAN/CSA C22.2 No. 61010-1**
- UL 1805
- CE Conformity Marking (230V models)**
- SEFA 8**

⚠ **WARNING:** Cancer - P65Warnings.ca.gov (California only)

✱ Labconco exclusive feature

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 lower left side

Required accessories (not included):

- Remote blower. Contact VWR
- Ductwork. Contact VWR
- Work surface. See pages 16-17
- Base cabinet or stand. Contact VWR

Optional accessories for on-site installation include:

- Service Fixture Kits. See page 18
- Electrical Duplex Kits. See page 19
- Guardian Airflow Monitor Kits. See page 19
- Sash Stop Kits. See page 19
- Ceiling Enclosure, Rear Finish Panel Kits and Distillation Grid Kits. Contact VWR



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

**See page 20 for list of regulations, standards and registered trademarks

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

Protector® Premier® Laboratory Fume Hoods

For Use with Remote Blower Ordering Information & Airflow Data

Catalog Number Configurator:

Use this key to configure the nine digit catalog number to order your Protector Premier Laboratory Hood.

1 0 0 0 0 0

Select the **WIDTH** of your fume hood. This 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)

Select the **ELECTRICAL REQUIREMENTS, SERVICE FIXTURES** and **GFCI ELECTRICAL DUPLEX RECEPTACLE** of your fume hood. These are the eighth and ninth digits of your catalog number.

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

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

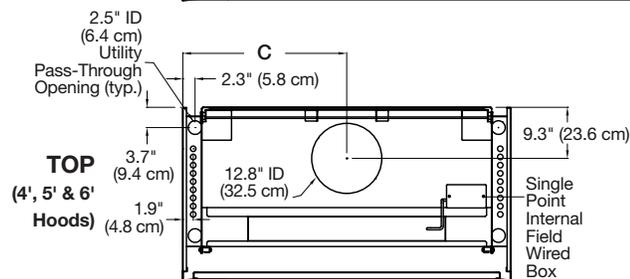
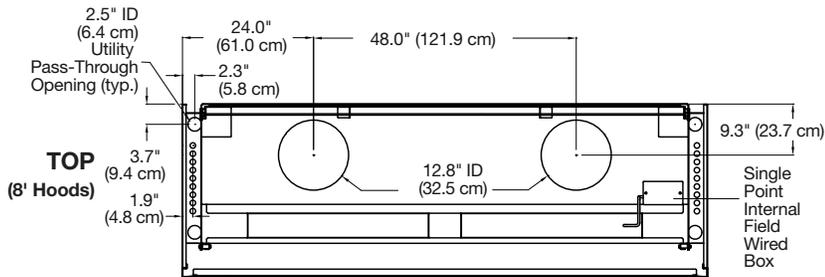
Face Velocity (fpm)	Airflow Volumetric Rate (CFM) @ Static Pressure (inches of water)							
	4' Hood		5' Hood		6' Hood		8' Hood	
Sash @ Full Open	CFM	s.p.	CFM	s.p.	CFM	s.p.	CFM	s.p.
100	725	0.22	955	0.31	1180	0.41	1640	0.28
80	580	0.14	765	0.20	945	0.26	1310	0.18
60	435	0.08	575	0.11	710	0.15	985	0.10

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

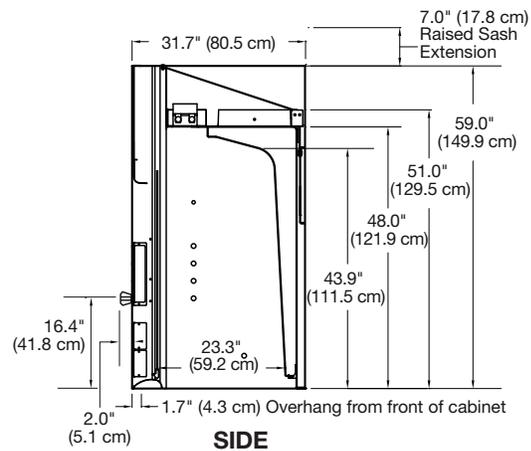
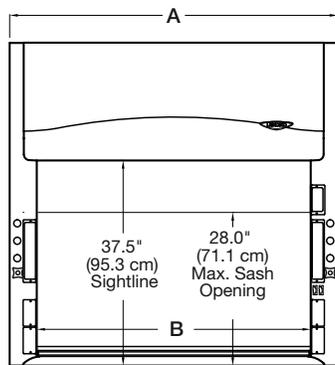
Face Velocity (fpm)	Airflow Volumetric Rate (CFM) @ Static Pressure (inches of water)							
	4' Hood		5' Hood		6' Hood		8' Hood	
Sash @ 62.5% Open	CFM	s.p.	CFM	s.p.	CFM	s.p.	CFM	s.p.
100	450	0.09	595	0.12	735	0.16	1025	0.11
80	365	0.06	480	0.08	590	0.10	820	0.07
60	270	0.03	360	0.04	440	0.06	615	0.04

Protector® Premier® Laboratory Fume Hoods

For Use with Remote Blower Dimensional Data



	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)	—



Protector® Premier® Laboratory Fume Hoods

With Built-In Blower Specifications



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 removable baffle(s) with flame spread less than 25 per ASTM E84**
- Tempered safety glass vertical-rising sash and cable and pulley
- Powder-coated aluminum sash handle with Clean-Sweep™ openings*
- 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

Standards conformance & regulations:

- ADA
- CFR 29, Part 1910**
- SEFA 1**
- NFPA 45**
- ASTM E84-09C**
- ASHRAE 110**
- ANSI Z9.5**
- UL 61010-1**
- CAN/CSA C22.2 No. 61010-1**
- UL 1805
- CE Conformity Marking (230V models)**
- SEFA 8**

⚠ **WARNING:** Cancer - P65Warnings.ca.gov (California only)

❖ Labconco exclusive feature

Standard models feature:

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

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. Contact VWR
- Work surface. See pages 16-17
- Base cabinet or stand. Contact VWR

Optional accessories for on-site installation include:

- Service Fixture Kits. See page 18
- Electrical Duplex Kits. See page 19
- Guardian Airflow Monitor Kits. See page 19
- Sash Stop Kits. See page 19
- Ceiling Enclosure, Rear Finish Panel Kits and Distillation Grid Kits. Contact VWR



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

**See page 20 for list of regulations, standards and registered trademarks

†In feet of straight duct

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

Protector® Premier® Laboratory Fume Hoods

With Built-In Blower Ordering Information & Airflow Data

Catalog Number Configurator:

Use this key to configure the nine digit catalog number to order your Protector Premier Laboratory Hood.

1 0 0 0 0 0

Select the **WIDTH** of your fume hood. This 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), 365 lbs. (166 kg)
- 5** = 5' (152 cm), 450 lbs. (204 kg)
- 6** = 6' (183 cm), 525 lbs. (238 kg)

Select the **ELECTRICAL REQUIREMENTS, SERVICE FIXTURES** and **GFCI ELECTRICAL DUPLEX RECEPTACLE** of your fume hood. These are the eighth and ninth digits of your catalog number.

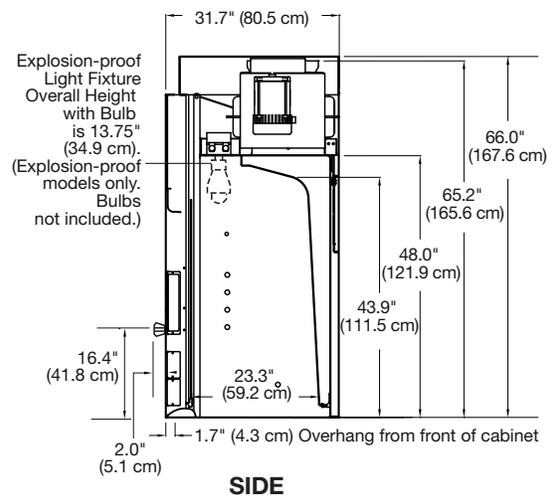
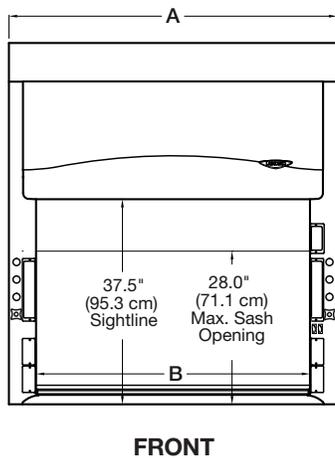
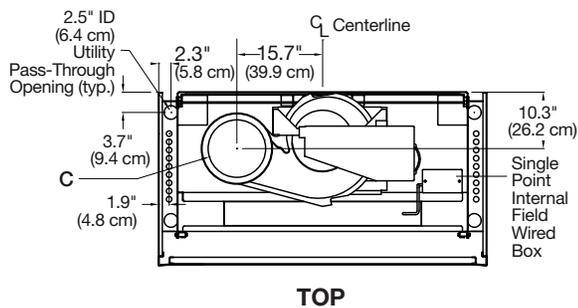
Electrical Requirements	No Service Fixtures	Two Service Fixtures	Two Service Fixtures & GFCI Duplex*
100-115V, 60 Hz, 10A	40	—	42
208-230V, 50 Hz, 5A	50	51	—
208-230V, 60 Hz, 5A	60	61	—
100-115V, 60 Hz, 10A explosion-proof blower**	70	71	—
208-230V, 50 Hz, 5A explosion-proof blower**	80	81	—
208-230V,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

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†	HP
4 Feet	725	0.17"	10"	75	1/3
5 Feet	955	0.12"	12"	75	1/2
6 Feet	1180	0.17"	12"	75	1/2

Protector® Premier® Laboratory Fume Hoods

With Built-In Blower Dimensional Data



	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)

Detailed AutoCAD® drawings available at labconco.com. See page 20 for trademark information.

*Hoods with GFCI electrical duplex are rated at 20 amps.

**Explosion-proof hoods are furnished without switches, electrical receptacles and wiring.

SpillStopper™ Work Surfaces & Cupsink

Specifications & Ordering Information



- Molded from a special formulation of corrosion-resistant epoxy resins
- Dished and contoured to conform to the interior liners of Protector 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 6.0" x 3.0" (15.2 x 7.6 cm) oval cupsink cutout. Cupsink sold separately. See below

Catalog Number Configurator:

Use this key to configure the seven digit catalog number to order your SpillStopper Work Surface.

9 5 0

Select the **MODEL** and **EXTERIOR DEPTH** of your fume hood. This is the fourth digit of your catalog number.

- 0** = Premier with 31.7" depth
- 3** = XStream with 37.7" depth

Select the **NOMINAL WIDTH** of your fume hood. This is the fifth digit of your catalog number.

- 4** = 4'
- 5** = 5'
- 6** = 6'
- 8** = 8'

Select a **LEFT CUPSINK CUTOUT** option (cupsink is sold separately). This is the sixth digit of your catalog number.

- 0** = None
- 1** = Rear
- 2** = Side**

Select a **RIGHT CUPSINK CUTOUT** option (cupsink is sold separately). This is the seventh digit of your catalog number.

- 0** = None
- 1** = Rear
- 2** = Side**

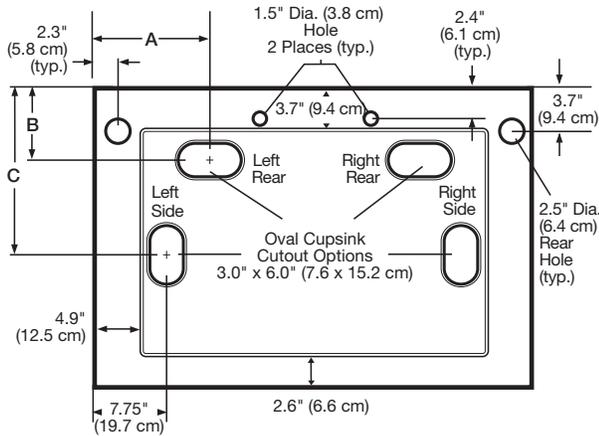


30181-070—Oval Polypropylene Cupsink. Mounts in work surface with cupsink cutout, 3.0" x 6.0" (7.6 x 15.2 cm). 1.5" (5.8 cm) National Pipe Straight Mechanical (NPSM) thread. Shipping weight 4.0 lbs. (1.8 kg)

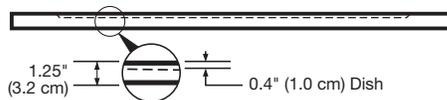
**Not compatible with Protector Solvent Storage Cabinets.

SpillStopper™ Work Surfaces

Dimensional Data



TOP



FRONT



SIDE

Nominal Width	Hood Model	Hood Exterior Depth	Hood & Work Surface Width	Work Surface Shipping Weight
4'	Premier	31.7"	48.0" (121.9 cm)	110 lbs. (50 kg)
	XStream	37.7"		120 lbs. (54 kg)
5'	Premier	31.7"	60.0" (152.4 cm)	150 lbs. (68 kg)
	XStream	37.7"		160 lbs. (73 kg)
6'	Premier	31.7"	72.0" (182.9 cm)	205 lbs. (93 kg)
	XStream	37.7"		220 lbs. (100 kg)
8'	Premier	31.7"	96.0" (243.8 cm)	240 lbs. (109 kg)
	XStream	37.7"		250 lbs. (113 kg)

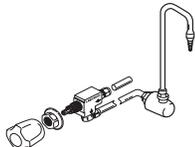
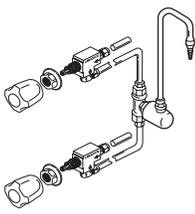
Hood Model/ Depth	Work Surface Depth	A	B	C
Premier, 31.7" deep	30.0" (76.2 cm)	9.5" (24.1 cm)	4.6" (11.7 cm)	18.8" (47.8 cm)
XStream, 37.7" deep	36.0" (91.4 cm)	12.5" (31.8 cm)	10.3" (26.2 cm)	19.0" (48.3 cm)

Contact VWR for information on base cabinets and stands.

Accessories

Service Fixture Kits include one remotely-controlled service fixture with valve, color-coded fixture knob and hose connector.*

Inlet tubing is not included. Except for vacuum, the maximum allowable pressure is 200 psi with a working pressure of 40 psi.

Kit	VWR Cat. No.	Service Type	Tubing Material & Diameter	Valve	Knob Color	Maximum Flow Rate	Working Pressure**	Shipping Weight
	89260-086	Cold Water (CW)	Copper, 0.25"	Brass	Green	3.5 GPM (13.2 LPM)	40 psi	4.0 lbs. (1.8 kg)
	89260-088	Air (AIR)	Copper, 0.25"	Brass	Orange	23.7 CFM	40 psi	4.0 lbs. (1.8 kg)
	89260-090	Vacuum (VAC)	Copper, 0.25"	Brass	Yellow	8.6 CFM	14.7 psi	4.0 lbs. (1.8 kg)
	89260-092	Gas (GAS)	Brass, 0.25"	Brass	Blue	29.0 CFM (441 BTU/sec)	40 psi	4.0 lbs. (1.8 kg)
	89260-094	Argon (ARG)	Copper, 0.25"	Brass	Gray	20.2 CFM	40 psi	4.0 lbs. (1.8 kg)
	89260-096	Hot Water (HW)	Copper, 0.25"	Brass	Red	3.5 GPM (13.2 LPM)	40 psi	4.0 lbs. (1.8 kg)
	89260-098	Deionized (DI)/ Distilled Water (DW)	Stainless Steel, 0.25"	Nickel-Plated & Stainless Steel	White	3.5 GPM (13.2 LPM)	40 psi	4.0 lbs. (1.8 kg)
	89260-100	Steam (STM)	Copper, 0.25"	Brass	Black	0.5 LBM/min	40 psi	4.0 lbs. (1.8 kg)
	89260-102	Nitrogen (NIT)	Copper, 0.25"	Brass	Brown	24.1 CFM	40 psi	4.0 lbs. (1.8 kg)
	89260-104**†	Oxygen (OXY)	Copper, 0.25"	Brass with Oxygen-Compatible Lubricant	Light Green	22.6 CFM	40 psi	4.0 lbs. (1.8 kg)
	89260-106	Cold water (CW) green epoxy-coated brass gooseneck	Copper, 0.375"	Brass	Green	3.5 GPM	40 psi	10 lbs. (5 kg)
	89260-112†	Cold water (CW) gray PVC rigid gooseneck	Copper, 0.375"	Brass	Green	3.5 GPM	40 psi	10 lbs. (5 kg)
	89260-110†	Deionized (DI)/ distilled water (DW) gray PVC rigid gooseneck	Stainless Steel, 0.25"	Stainless Steel	White	3.5 GPM	40 psi	10 lbs. (5 kg)
	89260-108	Hot (HW) & cold water (CW) mixing white epoxy-coated gooseneck	Copper, 0.25"	Brass	Green & Red	3.5 GPM	40 psi	11 lbs. (5 kg)

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

*Contact VWR for ordering information on chrome-plated brass hose connectors for stainless steel hoods.

**Recommended working pressure

†Requires 1.375" dia. drill hole in liner

Accessories



Duplex Electrical Receptacle Kit
89260-116

Electrical Receptacle Kits. For mounting in left or right side of any Protector XStream or Premier Hood. Include electrical receptacle, cover plate, wiring and junction box. **Requires hard wiring and unique circuit.** International GFCI Switch is mountable in one corner post location above or below any single outlet.

VWR Cat. No.	Kit	Outlet Type	Shipping Weight
89260-114	115V, 20A AC, 60 Hz	Duplex, U.S.	4.0 lbs. (1.8 kg)
89260-116	115V, 20A AC, GFCI, 60 Hz	Duplex, U.S.	4.0 lbs. (1.8 kg)
89260-118	230V, 20A AC, 60 Hz	Duplex, U.S.	4.0 lbs. (1.8 kg)
89501-526	230V, 13A AC, 50 Hz	Single, British (UK)	4.0 lbs. (1.8 kg)
89501-528	230V, 16A AC, 50 Hz	Single, Schuko	4.0 lbs. (1.8 kg)
89501-530	230V, 10A AC, 50 Hz	Single, China	4.0 lbs. (1.8 kg)
89501-532	230V, 10A AC, 50 Hz	Single, Australia	4.0 lbs. (1.8 kg)
89501-534	230A, 6-16A AC, 50 Hz	Single, India-South Africa	4.0 lbs. (1.8 kg)
89501-536	International GFCI Switch, 16A	Not applicable	4.0 lbs. (1.8 kg)



115V, 60 Hz, 20A
for North America



230V, 20A, 60 Hz
for North America



230V, 50 Hz
for Great Britain (UK)



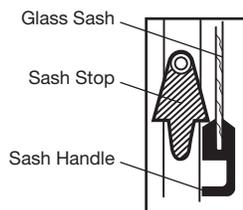
230V, 50 Hz
Schuko



230V, 50 Hz
for China/Australia



230V, 50 Hz
for India/South Africa



89260-786—Sash Stop Kit. Restricts how far a vertical-rising sash may be opened. Easily field installed on the fixture panel of many of our popular hoods. Protector XStream and Premier Hoods have been factory-prepared to accommodate a sash stop at the 60%-62.5% open position (18" to work surface). May also be placed at 50% open position (14" to work surface). Alternate sash positions may be field drilled. Includes components for one sash. Shipping weight 0.5 lb. (0.2 kg)



Guardian™ Airflow Monitors. Sense and alert you to low airflow conditions. From the monitor's face plate, you can easily select and calibrate a set point between 30 and 250 fpm using a velocity meter and a screwdriver. Audible/visual alarm. Include night setback, external alarm and alarm mute functions. Flush-mount design. **Requires field calibration.**

VWR Cat. No.	Electrical Requirements	For use with Hood	Shipping Weight
89260-082	100-115V, 50/60 Hz	XStream, Premier	6.0 lbs. (2.7 kg)
89233-240*	208-230V, 50/60 Hz	XStream, Premier	6.0 lbs. (2.7 kg)



Guardian™ Digital Airflow Monitors. Sense and alert you to low airflow conditions. LCD displays actual airflow in fpm or m/sec. Audible/visual alarm alerts you to sustained low velocity condition. LCD displays calibration instructions. Contact Labconco for optional temperature sensor or optional RS-485 port for Modbus** RTU communication. Flush-mount design. **Requires field calibration.**

VWR Cat. No.	Electrical Requirements	For use with Hood	Shipping Weight
89260-084	100-115V, 50/60 Hz	XStream, Premier	6.0 lbs. (2.7 kg)
89233-244*	208-230V, 50/60 Hz	XStream, Premier	6.0 lbs. (2.7 kg)

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

*International electrical configuration

**Modbus is a registered trademark of Schneider Automation

Standards & Registered Trademarks

Standards

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

ASHRAE 110 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
ashrae.org

ANSI Z9.5 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
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
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
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
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
nih.gov

SEFA 1 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 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
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
ul.com

CAN/CSA Standard C22.2 No. 6010-1 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

55 Metcalfe Street, Suite 600
Ottawa, On
K1P 6L5, Canada
(613) 238-3222
csagroup.org

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

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

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.

Everything you need to succeed.

Ventilated Enclosures & Exhausters

Fume Hoods & Enclosures
Filtered Fume Hoods
Ductless (Carbon-Filtered) Enclosures
Biological Safety Cabinets & Enclosures
Clean Benches
PCR Enclosures
Balance, Bulk Powder & Equipment Enclosures
Nanotechnology Enclosures
Laboratory Animal Research Stations
Non-ventilated Enclosures
Remote Blowers & Exhausters

Sample Preparation Equipment

Freeze Dryers
Nitrogen Blow Down Dry Evaporators
Vacuum Dry Evaporators
Vacuum Concentrators
Cold Traps

Glassware Washers

Water Purification Systems

Glove Boxes & Gas Purifiers

Controlled Atmosphere Glove Boxes
Filtered Glove Boxes
Combination Glove Boxes

Forensic Enclosures

Kjeldahl, Fat & Crude Fiber Apparatus

Other Products

Laboratory Carts, Tables & Benches
Blood Drawing Chairs
Vacuum Desiccator
Base Stands, Base Cabinets & Work Surfaces
Filters & Prefilters
Vacuum Pumps
Freeze Dryer Accessories
Ventilation Product Accessories



**Contact VWR to request information
for all Labconco products.**

LABCONCO CORPORATION

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Kansas City, MO 64132

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5-36-11/28/18



1.800.932.5000 | VWR.COM

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