



Protector XStream Laboratory Hood 9840600 is shown with SpillStopper Work Surface 9849800, Protector Acid Storage Cabinet 9901100 and Protector Standard Storage Cabinet 9900100.



Protector® XStream™ Laboratory Hoods

Patented* Features & Benefits

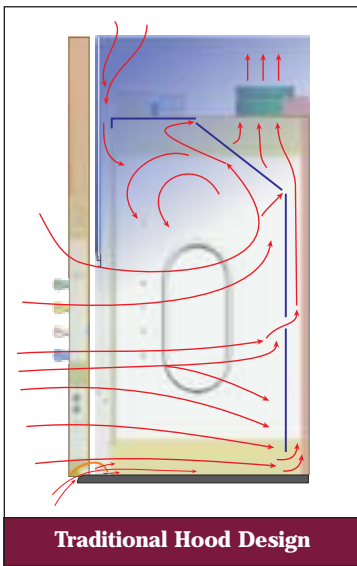
With its energy savings potential and unsurpassed containment, the patented Protector XStream is truly a high performance hood. Features, such as an upper dilution air supply, containment-enhancing sash handle, rear downflow dual baffle system and air foil, work together to decrease turbulence and enhance airflow.

When operated at OSHA-approved 60 fpm face velocity, Protector XStream Laboratory Hoods provide an excellent economic payback when compared to traditional hoods running at 80 or 100 fpm.

These panel-lined hoods are available in 4', 5', 6' and 8' widths. They are designed to be used with a remotely-located blower.

Using the concepts of fluid dynamics, Labconco researchers engineered the Protector XStream Laboratory Hood with horizontal laminar airflow to overcome 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

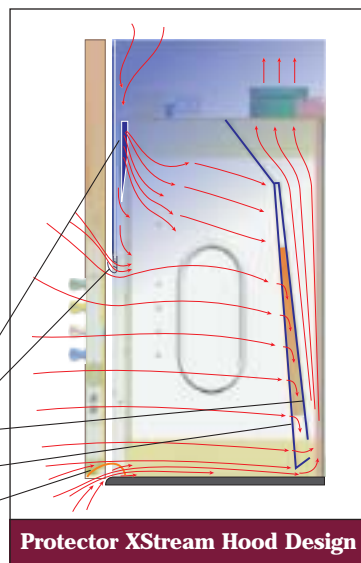
to produce horizontal airflow patterns that significantly reduce concentrations of chemical contaminants throughout the work area, particularly near the face of the hood, the operator's breathing zone and at the work surface. Depending on sash position, tendencies for air turbulence, vortexing and "the roll" frequently observed during traditional fume hood smoke tests are virtually eliminated.



Traditional 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.

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 in the area behind the sash.

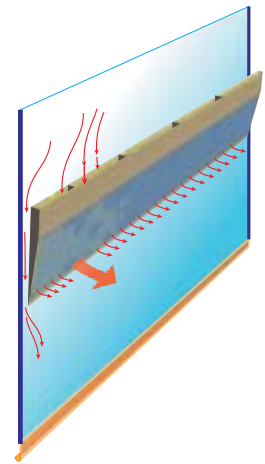


- Upper Dilution Air Supply
- Containment-Enhancing Sash Handle
- Secondary Baffle
- Primary Baffle
- Ergonomic Air Foil with Clean-Sweep Openings

Protector XStream Hood Design

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. Five to ten percent of the required air volume is introduced through the dilution air supply to ensure maximum containment and greatest worker protection. **No additional blowers are required.**



Rear Downflow Dual Baffle System

When the sash is open to the 18" working height or 28" loading height, 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 mechanical components are used.**



Smoke released inside the hood moves in a horizontal stream to the primary baffle slots.

Containment-Enhancing Sash Handle

The revolutionary sash handle design includes a perforated air passage directly atop the handle to bleed air into the hood chamber and direct chemical fume concentrations away from the Baffle user's breathing zone. The large radiused sash handle sweeps airflow into the hood with minimal turbulence. Its ergonomic design is comfortable to the touch and easy to grasp to raise and lower the sash.



At left: Arrows show how air enters under the sash handle and through slots directly atop the handle.

Exclusive Feature

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



Protector® XStream™ Laboratory Hoods

Additional Features & Benefits

Front and side panels may be easily removed for lamp replacement and access to electrical supply connections.

Fluorescent lighting illuminates the interior. The high efficiency, instant start, T8 fluorescent lights are located outside the hood interior for corrosion-resistance and easy replacement. Contact Labconco for ordering information on explosion-proof lighting.

Durable and attractive exterior is glacier white, dry powder epoxy-coated steel.

Large 28" sash opening offers superior viewing. When fully open, the sash does not extend above the hood.

Vertical-rising tempered safety glass sash is anti-racking for smooth operation.

Chemical-resistant, fiberglass-reinforced composite panel liner surpasses all national codes for flame spread and has a bright white surface for excellent light reflectivity.

Service access panels allow accessibility to plumbing from the front and inside of the hood.

Color-coded service fixtures for gas, air, water, vacuum and other services have remote controls for use regardless of the sash position. Two service fixtures are pre-plumbed on fixtured models. Each hood is factory prepared for up to eight service fixtures (four on each side).


Modified by-pass airflow design ensures stable face velocities that meet or exceed established standards.

ETL-listed. Hoods carry the ETL mark signifying that they are certified to UL 3101-1/61010-1, UL 1805 and CAN/CSA C22.2 No. 1010.1.

Performance tested to ASHRAE 110-1995.

CE mark†. All 230 volt, 50 Hz models conform to the CE (European Community) requirements for electrical safety and electromagnetic compatibility.

Pre-wired electrical components. Fluorescent lights and switches are factory-wired to the hood's single point junction box. One electrical duplex receptacle is factory-wired on 115 volt, 60 Hz fixtured models. Each hood is factory-prepared for up to four electrical duplexes and an airflow monitor.

 **Ergonomic air foil** allows air to sweep the work surface for maximum containment. Clean-Sweep* airflow openings pull inflow air from under the air foil so that clean air continually flows over the air foil creating a constant barrier of protection from contaminants.

Sash stop located at 18" working height maximizes energy conservation by preventing the sash from being raised further unless manually released.



*U.S. Patent No. 6,461,233
† pending



Protector® XStream™ Laboratory Hoods



Protector XStream Laboratory Hood 9840600 is shown with SpillStopper Work Surface 9849800, Protector Acid Storage Cabinet 9901100 and Protector Standard Storage Cabinet 9900100. Blower, ductwork, work surface and base cabinets must be ordered separately.

All models conform to the following regulations and standards:

- SEFA 1-2002
- NFPA 45-2000
- ASTM E84-01
- ASHRAE 110-95
- ANSI Z9.5-1993
- UL 3101-1/61010-1
- CAN/CSA C22.2 No. 1010.1
- UL 1805
- CE Conformity Marking (230 volt 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 115 volt, 20 amp electrical duplex receptacle on lower right side.



All models require (not included):

- **Remote Blower.** See back pocket.
- **Ductwork.** See back pocket.
- **Work Surface.** See pages 92-95.
- **Base Cabinet or Stand.** See pages 96-106.

Optional accessories for on-site installation include:

- **Service Fixture Kits.** See page 107.
- **Electrical Duplex Kits.** See page 108.
- **Guardian Jr. and Digital Airflow Monitor Kits.** See page 108.
- **Distillation Grid Kits.** See page 110.
- **Sash Stop Kits.** See page 108.
- **Snuffer Fire Extinguishers.** See page 110.
- **Ceiling Enclosure and Rear Finish Panel Kits.** See page 109.


All models feature:

- Modified by-pass airflow design.
- Ergonomic air foil with aerodynamic Clean-Sweep* airflow openings.
- Upper Dilution Air Supply.*
 - Glacier white, dry powder epoxy-coated steel exterior.
- Chemical-resistant, fiberglass-reinforced, composite panel liner and pre-set Rear Downflow Dual Baffle System* with flame spread less than 25 per ASTM E-84.
- 3/16" thick tempered safety glass vertical-rising sash with epoxy-coated aluminum sash handle with large radius and perforations.*
- Removable front and side panels and front and interior service access panels for access to plumbing and electrical wiring.
- Pre-wired T8 fluorescent lighting, ADA-compliant light and blower switches for 115 volt, 60 Hz operation.
- Sash stop located at 18" sash opening position.
- Epoxy-coated stainless steel, 12.81" ID exhaust connection(s).

Contact Labconco at **800-821-5525** or **816-333-8811** for ordering information on explosion-proof lighting and other sash configurations and for blower sizing assistance.

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

† pending

 Heights of switches, electrical receptacle and service fixtures meet requirements of ADA.

 Exclusive Feature



Ordering Information

Protector® XStream™ Laboratory Hoods

ASHRAE 110-95 tests show less than 0.05 ppm leak rate when tested at 4.0 lpm; at OSHA-approved 60, 80, and 100 fpm face velocity and sash positions of 18" and 28". To ensure performance at 60 fpm, Labconco engineers challenged the Protector XStream Hood at less

than ideal conditions such as 30 fpm cross drafts, modified ASHRAE test procedures and average face velocities lower than 60 fpm. Contact Labconco for a technical paper with complete ASHRAE test data.

Total Exhaust CFM and Static Pressure @ 18" Sash Opening (60% open)

Nominal Width	100 fpm	s.p.	80 fpm	s.p.	60 fpm	s.p.	CFM Savings at 60 fpm vs. 100 fpm	Total Average Annual Dollar Savings at 60 fpm vs. 100 fpm*
4 feet	470	0.11"	380	0.07"	280	0.04"	190	\$760
5 feet	610	0.13"	490	0.08"	370	0.05"	240	\$960
6 feet	750	0.15"	600	0.10"	450	0.06"	300	\$1200
8 feet	1060	0.12"	850	0.08"	640	0.04"	420	\$1680

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

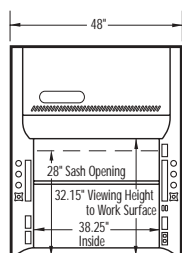
Nominal Width	100 fpm	s.p.	80 fpm	s.p.	60 fpm	s.p.	CFM Savings at 60 fpm vs. 100 fpm	Total Average Annual Dollar Savings at 60 fpm vs. 100 fpm*
4 feet	730	0.25"	590	0.13"	440	0.08"	290	\$1160
5 feet	960	0.30"	770	0.19"	580	0.11"	380	\$1520
6 feet	1180	0.36"	940	0.23"	710	0.13"	470	\$1880
8 feet	1660	0.28"	1330	0.18"	1000	0.10"	660	\$2640

*Based on average annual dollars per CFM usage of \$4.00; fume hood operating 24 hours a day and 5 days per week (6240 hours per year).

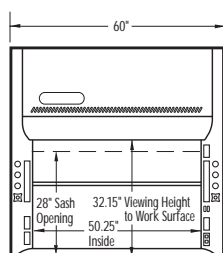
Catalog Number	Nominal Width	Electrical Requirements	Exterior Depth	Interior Working Depth	Fluorescent Lamps	Service Fixtures	Electrical Duplex	Exhaust Collar(s)	Shipping Wt. lbs./kg
9840400	4 feet	115 volts, 60 Hz	39.20"	27.3"	(2) 25 watt	None	None	12.81" ID	400/181
9840401	4 feet	115 volts, 60 Hz	39.20"	27.3"	(2) 25 watt	2	1	12.81" ID	400/181
9840402**	4 feet	230 volts, 50 Hz	39.20"	27.3"	(2) 25 watt	None	None	12.81" ID	400/181
9840403**	4 feet	230 volts, 50 Hz	39.20"	27.3"	(2) 25 watt	2	None	12.81" ID	400/181
9840500	5 feet	115 volts, 60 Hz	39.20"	27.3"	(2) 32 watt	None	None	12.81" ID	460/209
9840501	5 feet	115 volts, 60 Hz	39.20"	27.3"	(2) 32 watt	2	1	12.81" ID	460/209
9840502**	5 feet	230 volts, 50 Hz	39.20"	27.3"	(2) 32 watt	None	None	12.81" ID	460/209
9840503**	5 feet	230 volts, 50 Hz	39.20"	27.3"	(2) 32 watt	2	None	12.81" ID	460/209
9840600	6 feet	115 volts, 60 Hz	39.20"	27.3"	(2) 32 watt	None	None	12.81" ID	520/236
9840601	6 feet	115 volts, 60 Hz	39.20"	27.3"	(2) 32 watt	2	1	12.81" ID	520/236
9840602**	6 feet	230 volts, 50 Hz	39.20"	27.3"	(2) 32 watt	None	None	12.81" ID	520/236
9840603**	6 feet	230 volts, 50 Hz	39.20"	27.3"	(2) 32 watt	2	None	12.81" ID	520/236
9840800	8 feet	115 volts, 60 Hz	39.20"	27.3"	(4) 25 watt	None	None	(2) 12.81" ID	700/318
9840801	8 feet	115 volts, 60 Hz	39.20"	27.3"	(4) 25 watt	2	1	(2) 12.81" ID	700/318
9840802**	8 feet	230 volts, 50 Hz	39.20"	27.3"	(4) 25 watt	None	None	(2) 12.81" ID	700/318
9840803**	8 feet	230 volts, 50 Hz	39.20"	27.3"	(4) 25 watt	2	None	(2) 12.81" ID	700/318

**International electrical configuration

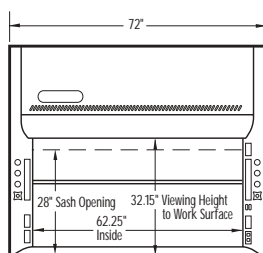
4 Feet
98404 Series



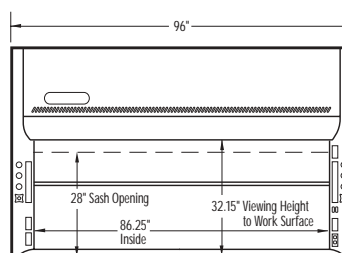
5 Feet
98405 Series



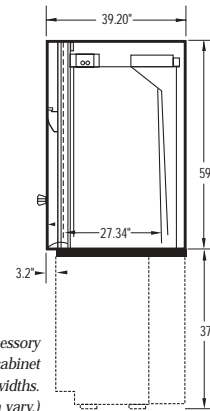
6 Feet
98406 Series



8 Feet
98408 Series



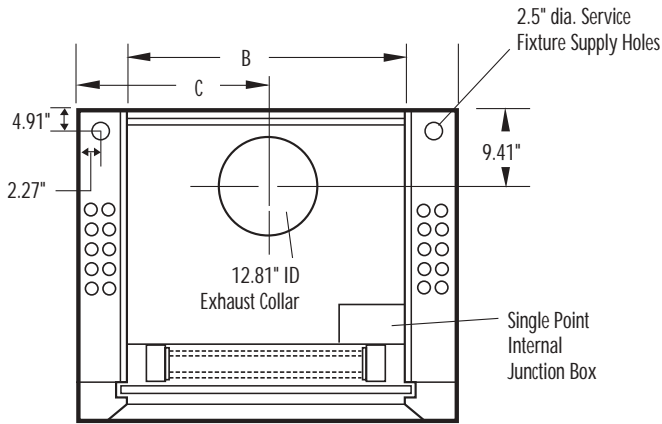
Side View /
All Models





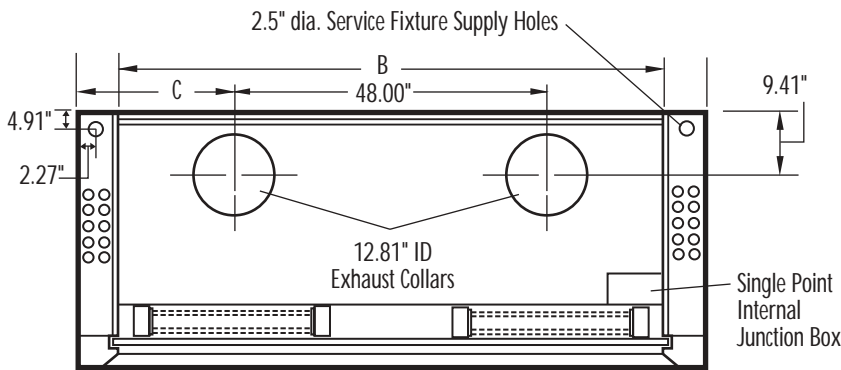
Dimensional Data

Protector® XStream™ Laboratory Hoods

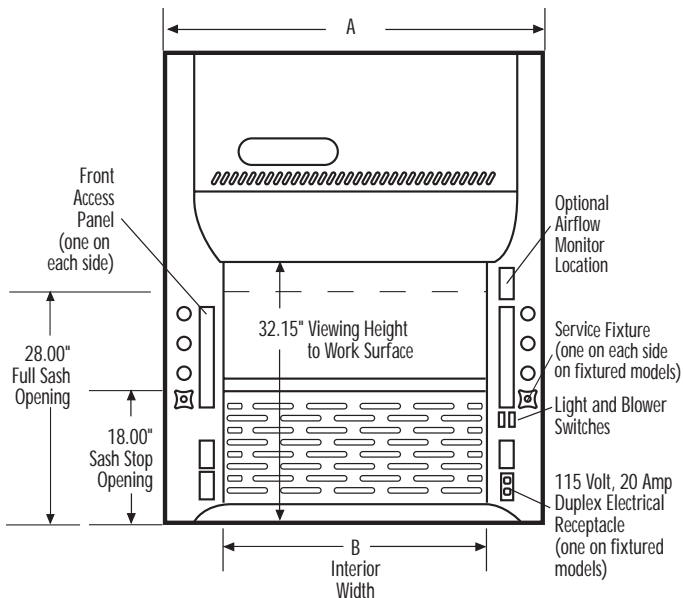


TOP 4', 5', 6'

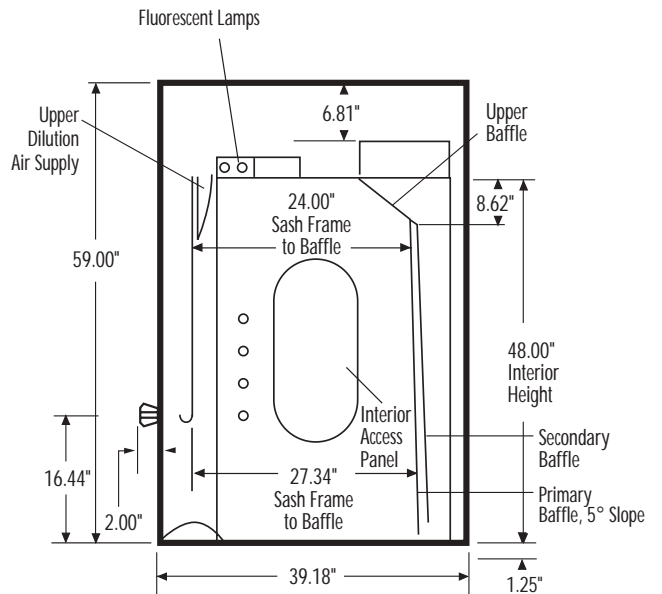
	A	B	C
4' Hood	48.00"	38.25"	24.00"
5' Hood	60.00"	50.25"	30.00"
6' Hood	72.00"	62.25"	36.00"
8' Hood	96.00"	86.25"	24.00"



TOP 8'



FRONT



SIDE