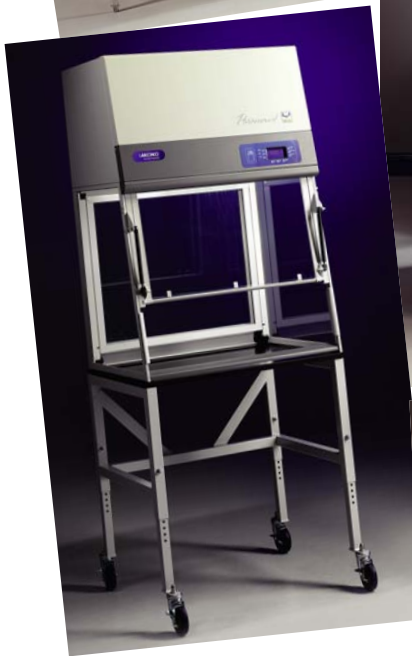


SELECTION GUIDE FOR FUME HOODS AND VENTILATION SYSTEMS FOR SCIENCE EDUCATION



Protecting your
laboratory environment

LABCONCO

THE PURPOSE OF A FUME HOOD:

To capture, contain and remove fumes and contaminants generated by scientific experiments.

VENTILATION REFERENCES AND STANDARDS

Hood Location:

According to the current ANSI Z9.5 recommendations, fume hoods shall not be placed in a location that will adversely affect their performance. Placement with respect to open windows, doorways, personal traffic flow areas and supply air diffusers can influence containment. A good rule of thumb is at least 10 feet from a door or window and at least 5 feet from a supply air diffuser.

ASHRAE 110-1995

American Society of Heating, Refrigerating and Air-Conditioning Engineers

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

Industrial Ventilation-ACGIH

American Conference of Governmental Industrial Hygienists

- Stack discharge height 1.3-2.0 times the building height

NFPA 45

National Fire Protection Association

- Materials of construction should have flame spread of 25 or less
- Fume hood exhaust air should not be recirculated

ASTM E84-01

American Society for Testing and Materials

- Test method to determine flame spread
 - Mineral fiber cement board flame spread 0
 - Red oak flooring flame spread 100

ANSI Z9.5-2003

- All hoods shall be equipped with a flow indicator, flow alarm or face velocity monitor
- Ductless hoods should only be used with non-hazardous material

OSHA 29 CFR Part 1910

Occupational Health and Safety

- 2.5 linear feet of hood space per person

DEMONSTRATION HOODS

Advanced

Protector® ClassMate® Hood



Requires Ductwork
and Blower

Protector ClassMate Laboratory Hood 6970401 shown with SpillStopper Work Surface 6986401 and Protector Acid Storage Cabinet 9901000

- For general chemistry applications in an instructional setting
- Clear tempered safety glass back and sides and taller front viewing window provide enhanced visibility
- Ducts to the outside

All Protector ClassMate models listed will be equipped with 4 service fixtures (gas, air, vacuum and water) and 2 electrical duplex receptacles.

Size (w x d x h)

- ___ 48" x 32.25" x 59" Labconco #6970401
- ___ 60" x 32.25" x 59" Labconco #6970501
- ___ 72" x 32.25" x 59" Labconco #6970601

ACCESSORIES:

SpillStopper™ Work Surface (6" x 3" cupsink cutout left rear)

- ___ 4' Labconco #6986401
- ___ 5' Labconco #6986501
- ___ 6' Labconco #6986601

6" x 3" Cup Sink

- ___ Labconco #4005200

Airflow Monitor, 115VAC

- ___ Guardian Jr. (Analog), Labconco #9743204
- ___ Guardian 1000 (Digital), Labconco #9743203

Blower

- ___ Fiberglass
- ___ Coated Steel

See Blower Selection Guide on page 8. Consult Labconco for help with blower sizing. Ductwork length and configuration are needed to size the blower correctly.

For base cabinet or stand selection, see page 6.

Additional models are available. Contact Labconco for details and ordering information.

DEMONSTRATION HOODS

Intermediate

Protector® XVS Ventilation Station



Requires Ductwork and Blower or FilterMate Portable Exhauster

Protector XVS Ventilation Station 4863010 shown with SpillStopper Work Surface 3908401 and Base Stand 3746711

- For light general chemistry in educational applications
- Clear tempered safety glass sides and top, steel back
- Ducts to the outside. Can recirculate into the room with FilterMate™ Portable Exhauster

Size (w x d x h)

- ___ 24" x 22.81" x 22.75" Labconco #4862010
- ___ 36" x 22.81" x 22.75" Labconco #4863010
- ___ 48" x 22.81" x 22.75" Labconco #4864010

ACCESSORIES:

Solid Epoxy Dished Work Surface

- ___ 2' Labconco #3908400
- ___ 3' Labconco #3908401
- ___ 4' Labconco #3908402

Airflow Monitor, 115VAC

- ___ Guardian Jr. (Analog), Labconco #3908700
- ___ Guardian 1000 (Digital), Labconco #3908800

Fluorescent Light Kit 115VAC

- ___ Labconco #3909200

Blower or Filtered Exhauster

- ___ Remote Coated Steel Blower, Labconco #4863500
- ___ FilterMate Portable Exhauster, Labconco #3970001

Organic Filter for FilterMate Portable Exhauster

- ___ Labconco #3923400

See www.labconco.com/chemical_usage.html to complete a Chemical Assessment form for your application.

Duct Transition Adapters

- ___ Upper to 6" diameter duct, Labconco #3912401
- ___ Lower to 6" diameter duct, Labconco #3912403

For stand or base cabinet selection, see page 6.

Additional models are available. Contact Labconco for details and ordering information.

DEMONSTRATION HOODS

Simple

Protector® Demonstration Hood



Requires Ductwork and Blower or FilterMate Portable Exhauster

Protector Mobile Demonstration Hood 3945000

- For very light chemistry, chemical reactions, classroom observation
- Tempered safety glass sides, top and back
- Ducts to the outside. Can recirculate into room with FilterMate™ Portable Exhauster

Size (w x h x d)

- ___ 36" x 22.75" x 29.1" Labconco #3944300
 - ___ 36" x 32" x 29.1" Labconco #3944301
 - ___ Mobile Demonstration Hood (22.75"h) Labconco #3945000
 - ___ Mobile Demonstration Hood (32"h) Labconco #3945001
- Mobile Demonstration Hood includes Enclosure, Epoxy Work Surface, Cart and FilterMate Portable Exhauster.*

ACCESSORIES:

Solid Epoxy Dished Work Surface

- ___ 3' Labconco #3908401

Airflow Monitor, 115VAC

- ___ Guardian Jr. (Analog), Labconco #3908702
- ___ Guardian 1000 (Digital), Labconco #3908802

Fluorescent Light Kit 115VAC

- ___ Labconco #3909200

Blower or Filtered Exhauster

- ___ Remote Coated Steel Blower, Labconco #4863500
- ___ FilterMate Portable Exhauster, Labconco #3970001

Organic Filter for FilterMate Portable Exhauster

- ___ Labconco #3923400

See www.labconco.com/chemical_usage.html to complete a Chemical Assessment form for your application.

Duct Transition Adapters

- ___ Upper to 6" diameter duct, Labconco #3912401
- ___ Lower to 6" diameter duct, Labconco #3912403

For stand or base cabinet selection, see page 6.

EXPERIMENTAL HOODS

Advanced

Protector® Premier® Hood



Requires Ductwork and Blower

Protector Premier Laboratory Hood 6080400 shown with SpillStopper Work Surface 8746291 and Base Stand 3746703

- For general chemistry applications
- One-piece molded fiberglass liner is corrosion resistant, durable, fire resistant and light reflective

All Protector Premier models listed will be equipped with 2 service fixtures and 1 electrical duplex receptacle

Size (w x d x h)

- ___ 48" x 32.20" x 59" Labconco #4880400
- ___ 60" x 32.20" x 59" Labconco #6080400
- ___ 72" x 32.20" x 59" Labconco #7280400

ACCESSORIES:

SpillStopper™ Work Surface (6" x 3" sink cut out left rear)

- ___ 4' Labconco #9847101
- ___ 5' Labconco #9847201
- ___ 6' Labconco #9847301

6" x 3" Cup Sink

- ___ Labconco #4005200

Cold Water Gooseneck

- ___ Labconco #9827900

Airflow Monitor, 115VAC

- ___ Guardian Jr. (Analog), Labconco #9743202
- ___ Guardian 1000 (Digital), Labconco #9743201

Blower

- ___ Fiberglass
- ___ Coated Steel

See Blower Selection Guide on page 8. Consult Labconco for help with blower sizing. Ductwork length and configuration are needed to size the blower correctly.

For base cabinet or stand selection, see page 6.

Additional models are available. Contact Labconco for details and ordering information.

EXPERIMENTAL HOODS

Intermediate

Fiberglass 30 Hood



Requires Ductwork

Fiberglass 30 Laboratory Hood 3030000 shown with Work Surface 4882806 and Protector Standard Storage Cabinet 9900200

- For light to moderate chemistry applications
- One-piece molded fiberglass liner is corrosion resistant, durable, fire resistant and light reflective

The Fiberglass 30 Hood model listed is equipped with a built-in exhaust blower. Electrical receptacles and service fixtures are sold as accessories.

Size (w x d x h)

- ___ 30" x 30.16" x 48" Labconco #3030000

ACCESSORIES:

Solid Epoxy Flat Work Surface (no sink cut out)

- ___ 30" Labconco #4882806

Electrical Duplex Kit, 115VAC, 20amp

- ___ Labconco #2834800

Service Fixture Kit, Gas

- ___ Labconco #2832605

Airflow Monitor, 115VAC

- ___ Guardian Jr. (Analog), Labconco #9743202
- ___ Guardian 1000 (Digital), Labconco #9743201

See Blower Selection Guide on page 8. Consult Labconco for help with blower sizing. Ductwork length and configuration are needed to size the blower correctly.

For base cabinet or stand selection, see page 6.

Additional models are available. Contact Labconco for details and ordering information.

EXPERIMENTAL HOODS

Simple

Basic 47 and 70 Hoods



Requires Ductwork

Basic 47 Laboratory Hood 2247300 shown with Work Surface 4882803 and Protector Standard Storage Cabinet 9900000

- For non-corrosive chemistry applications
- Epoxy-coated steel interior and exterior
- Basic Hoods are less deep and high than Premier and ClassMate models. Designed to fit existing counter tops and cramped areas.

All Basic Hood models listed are equipped with a built-in exhaust blower. Blower can be relocated to the roof. Electrical receptacles and service fixtures are sold as accessories.

Size (w x d x h)

- ___ 47" x 25" x 53" Labconco #2247300
- ___ 70" x 25" x 53" Labconco #2246300

ACCESSORIES:

Solid Epoxy Flat Work Surface (no sink cut out)

- ___ 4' Labconco #4882803
- ___ 6' Labconco #4882804

6" x 3" Cup Sink & Turret Kit (mounts on right side wall of hood)

- ___ Labconco #4852500

Electrical Duplex Kit, 115VAC, 20amp

- ___ Labconco #4844400

Service Fixture Kit, Gas

- ___ Labconco #2832605

Airflow Monitor, 115VAC

- ___ Guardian Jr. (Analog), Labconco #9743208
- ___ Guardian 1000 (Digital), Labconco #9743207

For base cabinet or stand selection, see page 6.

Additional models are available. Contact Labconco for details and ordering information.

DUAL ACCESS HOODS

Protector® Pass-Through Hood



Requires Ductwork and Blower

Protector Pass-Through Laboratory Hood 9942502 shown with Work Surface 9972500 and Protector Standard Storage Cabinets 9900200

- Vertical rising sashes front and back permit dual access
- Audible alarm prevents simultaneous opening of both sashes
- Chemical resistant composite panel liner
- Available with right side viewing window for classrooms or without viewing window for through-wall installations

All models include one electrical duplex receptacle.

Size (w x d x h)

With right side viewing window:

- ___ 48" x 33.2" x 59" Labconco #9942402
- ___ 60" x 33.2" x 59" Labconco #9942502
- ___ 72" x 33.2" x 59" Labconco #9942602

Without viewing window:

- ___ 48" x 33.2" x 59" Labconco #9942403
- ___ 60" x 33.2" x 59" Labconco #9942503
- ___ 72" x 33.2" x 59" Labconco #9942603

ACCESSORIES:

SpillStopper™ Work Surface (no sink cut out)

- ___ 4' Labconco #9972400
- ___ 5' Labconco #9972500
- ___ 6' Labconco #9972600

Airflow Monitor, 115VAC

- ___ Guardian Jr. (Analog), Labconco #9743204
- ___ Guardian 1000 (Digital), Labconco #9743203

Blower

- ___ Fiberglass
- ___ Coated Steel

See Blower Selection Guide on page 8. Consult Labconco for help with blower sizing. Ductwork length and configuration are needed to size the blower correctly.

For base cabinet or stand selection, see page 6.

DUCTLESS HOODS

Paramount® Ductless Enclosure



Paramount Ductless Enclosure 6963302 shown with Work Surface 3909901 and Telescoping Base Stand with casters 3746711

- Requires no ducting and can be moved from lab to lab
- For light to moderate chemistry applications
- Clear tempered safety glass sides, back and baffle
- Uses carbon filters to trap or treat chemical fumes
- Uses HEPA filters to trap particulates
- Equipped with a built-in blower

Size (w x d x h)

- ___ 36" x 29" x 53" Labconco #6963302
- ___ 48" x 29" x 53" Labconco #6963402

ACCESSORIES:

Paramount Filters

- ___ Ammonia-Amine Filter Labconco #6938202
- ___ Acid-Sulfur Filter Labconco #6938201
- ___ Organic Vapor Filter Labconco #6938200
- ___ Formaldehyde Filter Labconco #6938203
- ___ Mixed Bed Filter (four chemicals listed above) Labconco #6938204
- ___ HEPA Filter Labconco #6938100

See www.labconco.com/chemical_usage.html to complete a Chemical Assessment form for your application.

Solid Epoxy Dished Work Surface

- ___ 3' Labconco #3909901
- ___ 4' Labconco #3909902

Hydraulic Lift Base Stands

Adjust from 25.5" to 33.5" for easy access to filters and mobility through 80" doorways. Stands include leveling feet which can be replaced with 5" diameter toe-locking casters.

- ___ 3' Electric Labconco #3780300
- ___ 3' Manual Labconco #3780400
- ___ 4' Electric Labconco #3780301
- ___ 4' Manual Labconco #3780401
- ___ Casters for field replacement of leveling feet Labconco #3784000

For additional stand or base cabinet selection, see column to right.

Additional models are available. Contact Labconco for details and ordering information.

BASE CABINETS



Standard Storage Cabinet 9900000

Standard Storage Cabinet

- ___ 24" single right hinge Labconco #9900300
- ___ 24" single left hinge Labconco #9900600
- ___ 30" dual doors Labconco #9900200
- ___ 36" dual doors Labconco #9900100
- ___ 48" dual doors Labconco #9900000

Acid Storage Cabinet

- ___ 24" single right hinge Labconco #9901300
- ___ 24" single left hinge Labconco #9901500
- ___ 30" dual doors Labconco #9901200
- ___ 36" dual doors Labconco #9901100
- ___ 48" dual doors Labconco #9901000
- ___ Vent Kit for Acid Storage Cabinet Labconco #3591100

Solvent Storage Cabinet

- ___ 24" single right hinge Labconco #9902300
- ___ 24" single left hinge Labconco #9902400
- ___ 30" dual doors Labconco #9902200
- ___ 36" dual doors Labconco #9902100
- ___ 48" dual doors Labconco #9902000
- ___ Vent Kit for Solvent Storage Cabinet Labconco #9910000

BASE STANDS



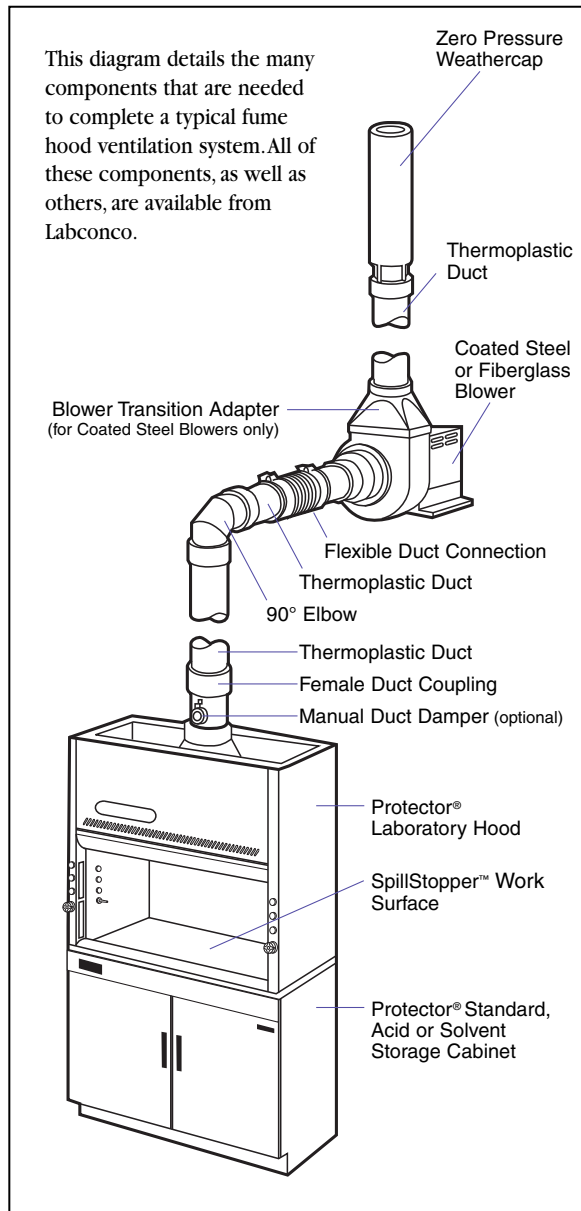
Telescoping Base Stand 3746702

Telescoping Base Stands

Adjust to seven height positions from 27.5" to 33.5" in 1" increments

- ___ 2' Labconco #3767000 (Use with Protector XVS)
- ___ 2' with casters Labconco #3767010 (Use with Protector XVS)
- ___ 3' Labconco #3746701 (Use with Paramount Ductless Enclosure, Protector XVS, Demonstration Hood and Fiberglass 30)
- ___ 3' with casters Labconco #3746711 (Use with Paramount Ductless Enclosure, Protector XVS and Demonstration Hood)
- ___ 4' Labconco #3746702 (Use with Paramount Ductless Enclosure, Protector XVS, Protector Hoods and Basic 47)
- ___ 4' with casters Labconco #3746712 (Use with Paramount Ductless Enclosure and Protector XVS)
- ___ 5' Labconco #3746703 (Use with Protector Hoods)
- ___ 6' Labconco #3746704 (Use with Protector Hoods and Basic 70)

TYPICAL VENTILATION SYSTEM



DUCTWORK AND ACCESSORIES

Thermoplastic Duct, 10 feet lengths

- ___ 6" Labconco #4708600
- ___ 8" Labconco #4718900
- ___ 10" Labconco #7027200
- ___ 12" Labconco #5602000



Duct Couplings, Female

- ___ 6" Labconco #4708900
- ___ 8" Labconco #4719200
- ___ 10" Labconco #7027500
- ___ 12" Labconco #5602300



Duct Couplings, Male

- ___ 6" Labconco #2144700
- ___ 8" Labconco #4719900
- ___ 10" Labconco #7027800
- ___ 12" Labconco #7067300



Elbows, 90 degree

- ___ 6" Labconco #4708700
- ___ 8" Labconco #4719000
- ___ 10" Labconco #7027300
- ___ 12" Labconco #5602100



Elbows, 45 degree

- ___ 6" Labconco #4708800
- ___ 8" Labconco #4719100
- ___ 10" Labconco #7027400
- ___ 12" Labconco #5602200



Duct Reducers

- ___ 6" x 8" Labconco #5605900
- ___ 8" x 10" Labconco #5606000
- ___ 10" x 12" Labconco #5606100



Zero Pressure Weather Caps

- ___ 6" Labconco #4722200
- ___ 8" Labconco #4722300
- ___ 10" Labconco #7095100
- ___ 12" Labconco #5622100



Blower Transitions, for Blowers 7068000-7068700

- ___ 8" Labconco #4722400
- ___ 10" Labconco #4722401



Flexible Duct Connections

- ___ for 6" Duct, Labconco #4861800
- ___ for 8" Duct, Labconco #4726500
- ___ for 10" Duct, Labconco #7034200
- ___ for 12" Duct, Labconco #5621400



Manual Duct Dampers

- ___ 6" Labconco #4724200
- ___ 8" Labconco #4741300
- ___ 10" Labconco #5983400
- ___ 12" Labconco #5981200



BLOWERS

Labconco Blowers have been specifically designed to meet the demanding day-to-day ventilation requirements for a wide range of hood choices. Coated Steel Blowers are recommended for low to moderately corrosive applications. They are offered in a broad spectrum of capacities from 300 to 2150 CFM at static pressures to 1.50" H₂O.

Labconco Fiberglass Blowers are ideal for fume hood exhaust systems in moderate to highly corrosive conditions. They are offered in a broad range of capacities from 250 to 3500 CFM at static pressures to 4.0".

Coated Steel Blowers and Fiberglass Blowers feature forward curved impellers to ensure quiet operation and optimum air delivery. They are belt-driven with adjustable sheave and self-adjusting gravity belt tightener. The variable exhaust orientation adjusts to eight outlet positions for installation flexibility (vertical discharge is recommended).

How To Calculate "Equivalent Length" of Hood Duct

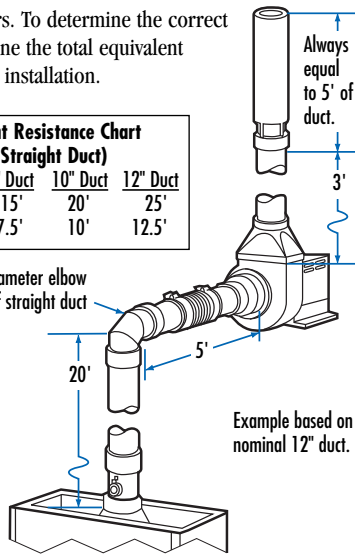
The equivalent length duct method is used to properly size blowers. To determine the correct blower, first determine the total equivalent length of duct in the installation.

	6" Duct	8" Duct	10" Duct	12" Duct
90° Elbow	12'	15'	20'	25'
45° Elbow	6'	7.5'	10'	12.5'

90° x 12" diameter elbow equals 25' of straight duct

Calculation:

Straight Length,
20' + 5' + 3' = 28'
Weathercap = 5'
90° Elbow = 25'
Total
Equivalent
Feet = 58'
(in straight duct)



Protecting your laboratory environment

LABCONCO®

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Blower Type/Equivalent Duct Run

Hood	Sash Open	Face Velocity(ftpm)	Airflow (CFM)	Duct Run Dia.(in)	Steel 25'	Fiberglass 25'	Steel 50'	Fiberglass 50'	Steel 75'	Fiberglass 75'	Steel 100'	Fiberglass 100'
4 ¹ Protector Premier Hood	100%	100	730	12	7068800	7181000	7068800	7181000	7068800	7181000	7068800	7181000
4 ¹ Protector Premier Hood	60%	100	470	12	7068000	7180000	7068000	7180000	7068000	7180000	7068000	7180000
5 ¹ Protector Premier Hood	100%	100	960	12	7069000	7181200	7069000	7181200	7069000	7181200	7069000	7181200
5 ¹ Protector Premier Hood	60%	100	610	12	7068800	7180800	7068800	7180800	7068800	7180800	7068800	7180800
6 ¹ Protector Premier Hood	100%	100	1180	12	7069000	7181400	7069000	7181400	7069200	7181400	7069200	7181400
6 ¹ Protector Premier Hood	60%	100	750	12	7068800	7181000	7068800	7181000	7068800	7181000	7068800	7181000
4 ¹ Protector ClassMate Hood	60%	100	570	8	7068200	7180200	7068200	7180200	7068200	7180400	7068400	7180400
5 ¹ Protector ClassMate Hood	60%	100	730	8	7068400	7180400	7068400	7180600	7068600	7180600	7068600	7180600
6 ¹ Protector ClassMate Hood	60%	100	890	10	7068600	7180600	7068600	7180600	7068600	7180600	7068600	7180600
4 ¹ Protector Pass-Through Hood	100%	100	830	10	7068400	7180400	7068400	7180400	7068600	7180600	7068600	7180600
4 ¹ Protector Pass-Through Hood	60%	100	530	8	7068000	7180200	7068200	7180200	7068200	7180200	7068200	7180200
5 ¹ Protector Pass-Through Hood	100%	100	1100	12	7069000	7181400	7069200	7181400	7069200	7181400	7069200	7181400
5 ¹ Protector Pass-Through Hood	60%	100	700	8	7068200	7180400	7068400	7180400	7068400	7180600	7068600	7180600
6 ¹ Protector Pass-Through Hood	100%	100	1350	12	7069200	7181400	7069400	7181400	7069400	7181600	7069400	7181600
6 ¹ Protector Pass-Through Hood	60%	100	865	10	7069000	7180600	7068600	7180600	7068600	7180600	7068600	7180600
2 ¹ Protector XVS Ventilation Station	100%	80	95	6	4863500	—	4863500	—	4863500	—	4863500	—
3 ¹ Protector XVS Ventilation Station	100%	80	145	6	4863500	—	4863500	—	4863500	—	4863500	—
4 ¹ Protector XVS Ventilation Station	100%	80	200	6	4863500	—	4863500	—	4863500	—	4863500	—
Protector Demonstration Hood, 22.75" tall	100%	80	145	6	4863500	—	4863500	—	4863500	—	4863500	—
Protector Demonstration Hood, 32" tall	100%	80	185	6	4863500	—	4863500	—	4863500	—	4863500	—