GLOVEBOXES+

Low-Cost Solutions for High Technology

TERRA UNIVERSAL.COM
Critical Environment Solutions

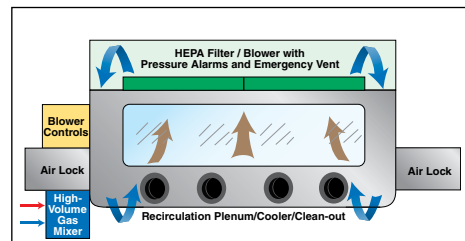# SAMPLE APPLICATIONS
Isolation

These chambers protect sensitive samples from environmental contaminants, using standard components for economical configuration. More information at TerraUniversal.com.

System shown: No. 1695-01

### Photoresist Deposition Isolator

Provides a clean, moisture-free environment for applying photoresist. HEPA filtration module maintains ISO 10 particle conditions, and high-volume gas mixer provides process gas purge that maintains 5-10%RH. The bottom plenum includes cooling coils to ensure a constant temperature of 68°F. Fits most wafer spinners used in the deposition process. Radius corners facilitate cleaning.
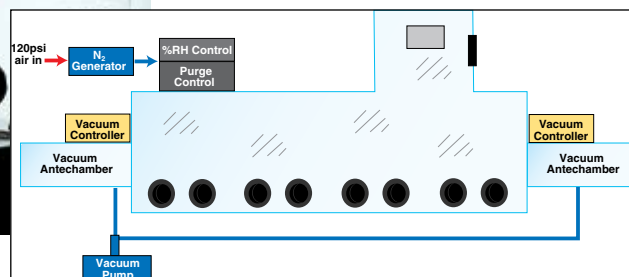

Protein Analysis Isolator

A refrigeration unit and nitrogen purge system facilitate protein analysis of meat samples in an inert gas environment down to -20°C. The 304 stainless steel chamber features double-wall construction with 4" of polyurethane insulation for optimal thermal efficiency. A microscope bellows is included.

System shown: No. 1695-03. See page 17 for standard models.
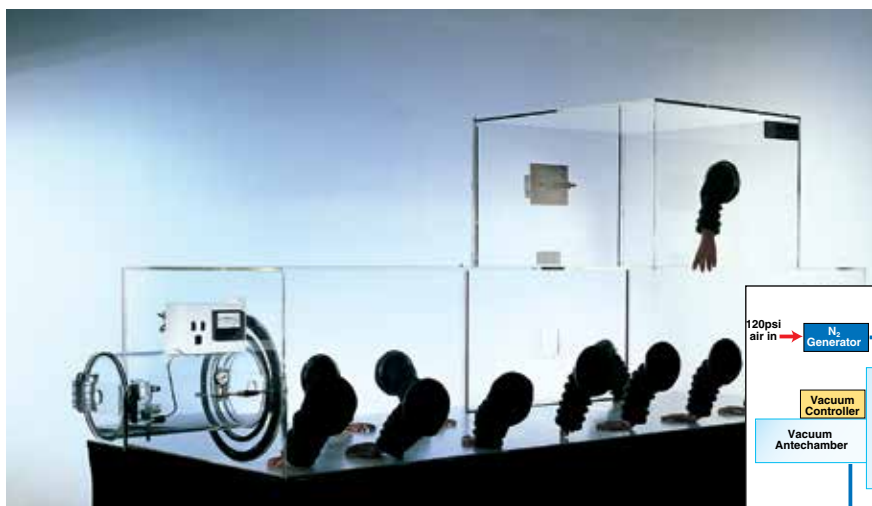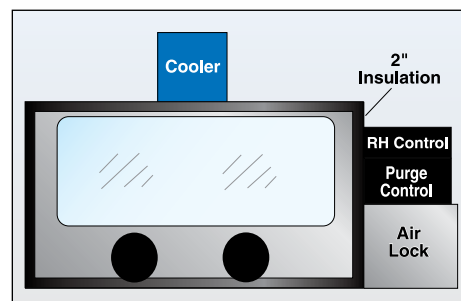
RF Sealing Isolator

Custom designed for transfer of delicate museum artifacts, including manuscripts, fossils and other fragile specimens, to an acrylic sealing chamber, where an RF sealer preserves them. Vacuum antechambers dry samples before introduction to the isolator, and nitrogen purge controls maintain 10%RH.

System shown: No. 1695-11.

Items with **blue prices** usually ship in 1–3 days. For current lead times: TerraUniversal.com
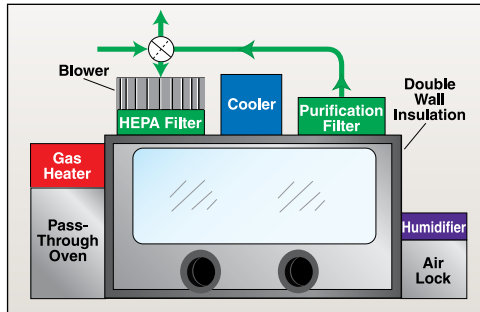
Meteorite Glove Box Isolator

This 304 Stainless Steel chamber is configured for processing meteorite samples in a low-particle, low-humidity environment. Each system consists of two glove boxes linked by a pass-through air lock, which allows transfer of samples without affecting low RH levels in either chamber. Stainless steel glove ports with hypalon gloves allow manipulation of samples, and stainless steel shelves allow organized sample storage.

System shown: No. 1695-16

Material Stress Testing Isolator

Designed for accelerated-life testing of elastomers, fiber composites and other materials over a broad temperature (-20° to +140°F) and humidity (5 to 95% RH). Double-wall stainless steel construction with polyurethane insulation enhances temperature stability and energy efficiency. A pass-through oven allows degassing at up to 300°C.

Double-wall construction features 4" of insulation

System shown: No. 1695-02

Blower
HEPA Filter
Cooler
Purification Filter
Double Wall Insulation
Gas Heater
Pass-Through Oven
Humidifier
Air Lock

High-Throughput Processing Chamber

Ideal for electronics testing and assembly, this nitrogen-purged isolator accommodates up to six operators working at individual test/assembly stations. Samples are passed from station to station and removed via an air lock, which minimizes disruption of internal cleanliness and low-humidity conditions.

Ionizing Bar
RH Control
Purge Control
Ionizing Bars
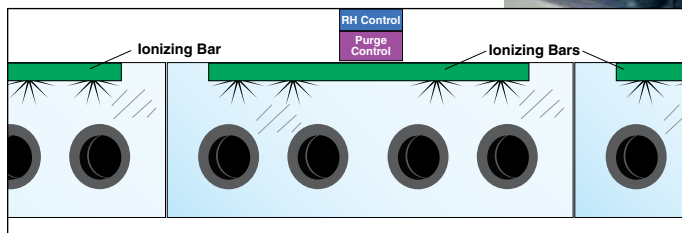
System shown: No. 1695-15

SAMPLE APPLICATIONS
Containment

These chambers contain potential hazards to protect the operator and environment, while also shielding samples from environmental contaminants. More information at TerraUniversal.com.

Radioactive Isotope Containment Chamber

This 12-gauge stainless steel glove box is designed for safe handling of isotopes processed in medical applications. It features two chambers connected by a vacuum port. A counterbalanced bag-in, bag-out transfer hatch ensures a low leak rate of 0.5% of the volume of the total enclosure per hour, and radius corners allow easy cleaning and sterilizing

Radius corners simplify cleaning, eliminate seams and cracks

System shown: No. 1695-10

Anaerobic Test Chamber

Designed for drug efficacy and dosing studies of extremely drug-resistant (XDR) TB strains in anaerobic environments, this chamber maintains an oxygen concentration down to 0.1% at a selected temperature. PLC-controlled interlocks and rapid purging antechambers allow transfer of test samples without disturbing the internal environment.
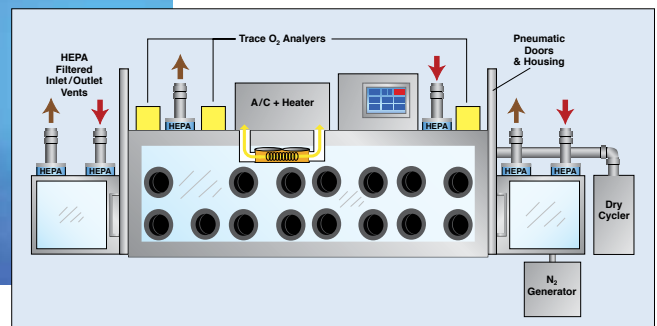
System shown: Cat. No. 1695-17

Pharmaceutical Mixing/Packaging Isolator

This static-dissipative PVC chamber accommodates introduction of drug powders via a hopper interface. A mixing/packaging station is installed inside the low-humidity, static-safe environment, and Ultra-Low Penetration Air (ULPA) filters continuously scrub the process environment to remove potentially hazardous airborne powders. Dual-side air locks allow sample transfer.

System shown: No. 1695-18
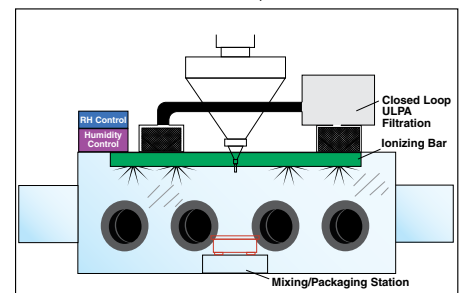
Carbon Monoxide Sensor Calibration Glove Box

Potentially lethal CO gas is fed into a large stainless steel chamber at precise concentrations to allow accurate sensor calibration. A gas mixing system maintains a CO/air ratio, and a Humex™ humidifier raises the moisture to 95% RH. A process gas heater and cooler maintain the stable process temperature of 120°F. A safety ventilation system exhausts process gas in an emergency.
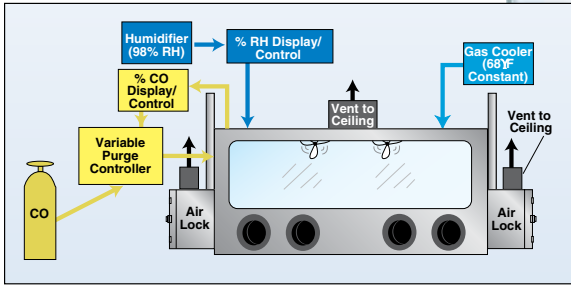

*Pneumatic door air locks — see page 28*

Model shown: No. 1695-08

Stable Temperature/Humidity Containment Glove Box

This chamber safely contains potential biohazards while providing a stable environment over a broad temperature range (-2 to +36°C) tested at various humidity levels between 0 and 75% RH. The chamber includes a bag in/bag out port for transferring waste, and a large swing-up access door easy cleaning and transfer of large equipment.
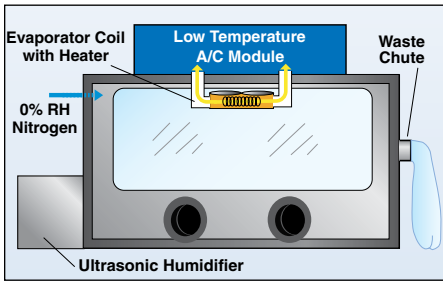
System shown: No. 1695-10
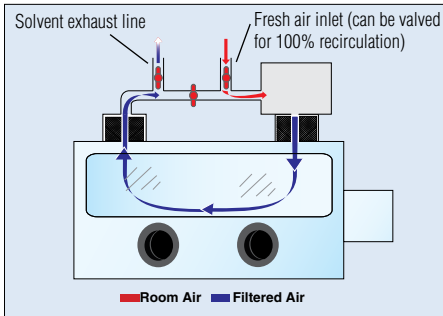
Medical Nano-fiber Processing Chamber

This containment chamber facilitates evaporation of volatile solvents used in the processing of nano-fibers for medical applications such as organ components, tissue engineering, and drug delivery. Common processes require low humidity (down to 5% RH) in a chamber that must resist corrosive solvents and provide a safe exhaust line for vapor removal. Dry process gas is micro-filtered to remove contaminants.


Model shown: No 1695-19

BASIC RESEARCH AND PROCESSING GLOVE BOXES

- Economical processing chambers for laboratory applications requiring a clean, low-humidity environment – *in stock for immediate shipping*!

- Select single or twin sizes in your choice of four application-specific materials

- Optional air locks prevent cross-contamination during parts transfer

BUY ONLINE! Items priced in blue usually ship in 1–3 days.

These low-cost isolation chambers are designed for performance and versatility. All models come with a removable back panel for installing large process equipment. Select optional desiccant or flowmeter for nitrogen purging.

No. 3305-00G

All models shown with optional air locks.
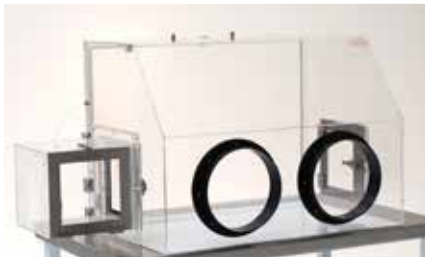
No. 1689-00H (Single Acrylic)

No. 1681-29H (Single Polypropylene)

No. 3305-10G (Twin SDPVC)

No. 1681-31H (Single Polycarbonate)

No. 3305-00G (Single SDPVC)

No. 1681-30H (Twin Polypropylene)
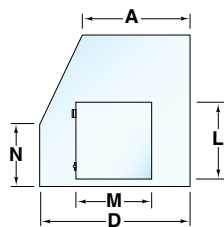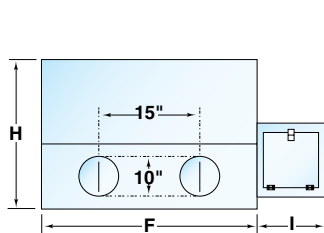
Low-cost performance available for next-day delivery! See page 12 for models with automatic humidity set-point capability.

Nominal Dimensions (inches)								
Type	A	D	F	H	I	L	M	N
Single	16.75	24	35	25	10.5	10	10	14
Twin	16.75	24	59	25	10.5	10	10	14

Basic Research and Processing Glove Boxes						
Material	Single		Twin		Air Lock*	
	Cat. #	S/Each	Cat. #	S/Each	Cat. #	S/Each
Acrylic	1689-00H	1,188.00	1689-16H	1,533.00	1680-78B	446.00
Static-Dissipative PVC	3305-00G	2,093.00	3305-10G	2,876.00	1680-81B	612.00
Polypropylene	1681-29H	1,525.00	1681-30H	1,764.00	1680-87B	495.00
Polycarbonate	1681-31H	1,485.00	1681-32H	1,834.00	1680-90B	557.00

See facing page for other options. Standard air lock mounting is on right side of chamber.

VALULINE™ PORTABLE GLOVE BOXES

- **Cleanliness and moisture control at a lower cost for small, benchtop requirements – in stock for immediate shipping!**
- **Select among three application-specific materials**
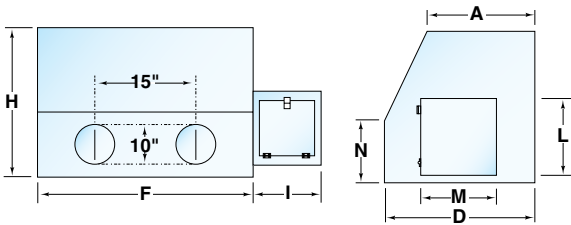- **Air locks and tilt-up windows allow convenient parts transfer**

BUY ONLINE! Items priced in blue usually ship in 1–3 days.

These ValuLine Glove Boxes are ideal for processing small parts in a clean, particle-free environment. All models come with a removable back panel, a tilt-up window, and right-side air lock, as well as flowmeter port and installed Automatic RB Valves to accommodate a nitrogen purge (select flowmeter separately).

Select gloves on page 30.
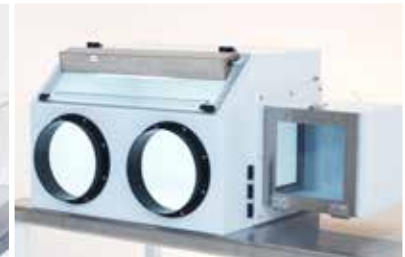
No. 3308-53 (air lock included)

No. 3308-51 (Single Acrylic)

No. 3308-55 (Single Polypropylene)

Nominal Dimensions (inches)							
Type	A	D	F	H	I	L	M	N
Single	12.75	20	26	18	11.5	10	10	11.75

ValuLine Portable Glove Boxes		
Material	**Single**	
	Cat. #	S/Each
Acrylic	3308-51	1,445.00
Static-Dissipative PVC	3308-53	2,485.00
Polypropylene	3308-55	1,866.00

Glove Box Accessories	Cat. #	S/Each
Relief/Bleed Valve*	1600-60A	119.00
Flow Meter	1600-32	118.00
RH/Temperature Data Logger	9500-10	205.00
Powder-Coated Stand: Single	1681-48	763.00
Powder-Coated Stand: Twin	1681-51	940.00
Casters (for stands)	1700-44	258.00

* Included on ValuLine Portable Glove Boxes

Portable Glove Box
- Fully assembled, ready to use (includes gloves)
- One-piece molded shell makes cleaning a breeze
- Can be configured to allow ducting of fumes

This economical, lightweight glove box is constructed of molded polyethylene, with a large acrylic viewing panel. Interior corners are rounded for easy cleaning, and an 8"-diameter side ports allows sample transfer. Includes neoprene gloves that fit snugly on the 6"-diameter glove ports. Dimensions: 27"W x 13"D x 22"H.

Cat. #	S/Each
3308-10	1,076.00
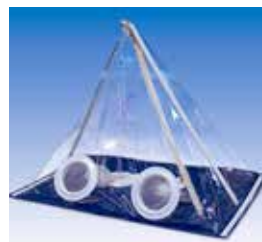
Captair Pyramid Glovebox— for laboratory and field investigations!
- Strong, reliable protection in a mobile and disposable enclosure
- Light simple structure allows for easy assembly
- Laboratory Certified—tested for optimal air-tightness
- Top mounted O-ring piece makes for high mobility and easy storage

The Captair Pyramid is a disposable isolation enclosure that provides excellent protection in a mobile design.

The enclosure, base, and gloves are made of flexible PVC and assembled by high frequency welding to guarantee laboratory certified air tightness. Arm openings are equipped with cuffs on arm sleeves for better rigidity during handlings and support rods maintain the enclosure upright during manipulations.

Cat. #	S/Each
3015-00	399.00

No. 3306-62
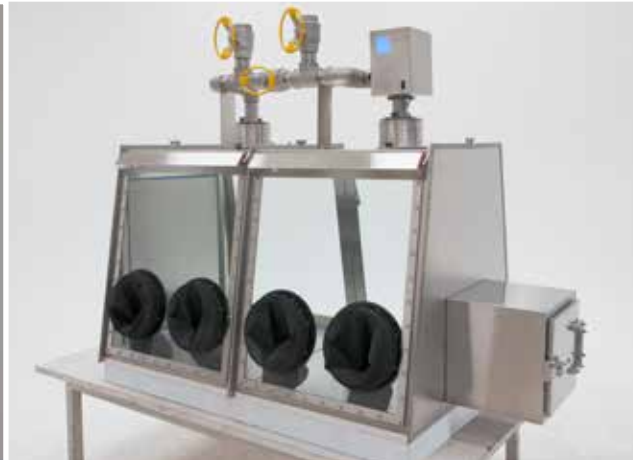
(Above) Stainless steel full-view glove box with tempered glass windows and all-stainless steel piping and valves (No. 1694-90) includes dual chambers with glove ports, fluorescent illuminator, and oversized access door for transferring large process equipment. Shown with optional air lock.

Adjustable filtration design - perfect for weighing and packaging pharmaceutical powders, processing contamination-sensitive samples, and containing fine dust generated during glove box operations (shown with optional pressure gauge and right-side air lock).

FILTRATION GLOVE BOXES

- **ULPA filters remove 99.999% of particles 0.12µm or larger**
- **Brushless EC motor is non-contaminating and energy-efficient**
- **Three configurations available: Open Loop design exhaust air for safe release; Closed Loop design continuously circulates process gas; Adjustable design lets you select open or closed loop operation**

Versatile micro-filtration modules remove powders and other particulates to protect samples and the outside environment—plastic models in stock for immediate shipping!

Plastic and stainless steel construction meets diverse chemical compatibility requirements

ADJUSTABLE AIRFLOW DESIGN

Three valves let you configure open-loop operation, which provides fresh make-up air and filtered exhaust, or closed-loop operation, which continuously circulates the glove box environment through inlet and exit ULPA filters.

Closed Loop   ■Room Air ■Filtered Air   **Open Loop**
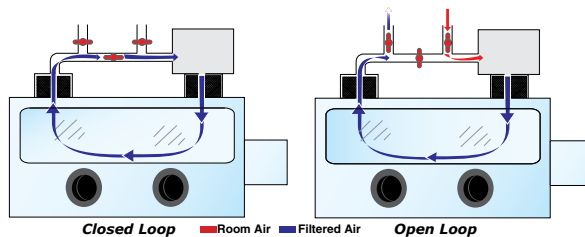
No. 3306-66 (Polypropylene)   *No. 3306-60 (Acrylic)*   *No. 3306-62 (Static-Dissipative PVC)*

Adjustable Filtration Glove Boxes						
Material	**Single**		**Twin**		**Air Lock***	
	Cat. #	$/Each	Cat. #	$/Each	Cat. #	$/Each
Acrylic	3306-60	2,817.00	3306-61	3,186.00	1680-78B	446.00
Static-Dissipative PVC	3306-62	3,848.00	3306-63	4,658.00	1680-81B	612.00
Polypropylene	3306-66	3,060.00	3306-67	3,636.00	1680-87B	495.00
Polycarbonate	3306-68	3,521.00	3306-69	3,983.00	1680-90B	557.00
Stainless Steel	—		1694-90	19,253.00	1702-12C	3,534.00

Standard air lock mounting is on right side of chamber.

No. 3306-69 (Polycarbonate)

OPEN-LOOP CONTAINMENT

This single-pass configuration includes an inlet ULPA filter that removes microcontaminants from air drawn into the glove box. An exit ULPA filter captures fine particles from the exhaust, allowing safe indoor release of exhaust air.

Open Loop ▬ Room Air ▬ Filtered Air
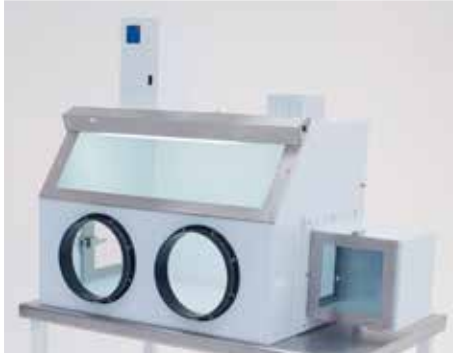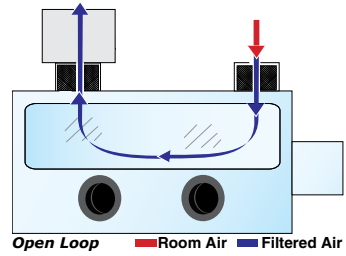
No. 3306-66-OL (Polypropylene)

No. 3306-60-OL (Acrylic)
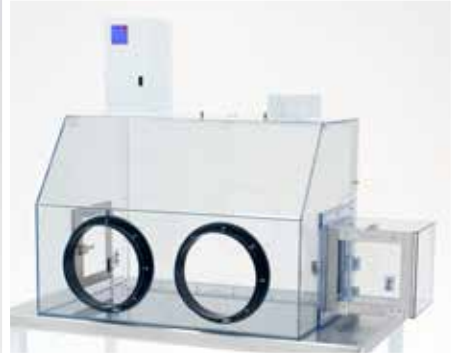
No. 3306-62-OL (Static-Dissipative PVC)
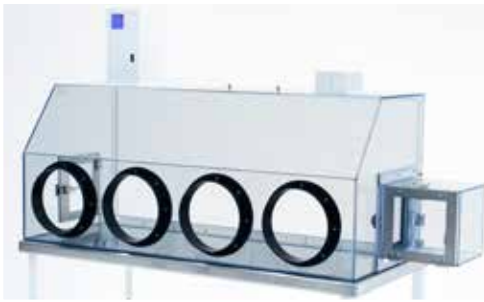
No. 3306-63-OL (SDPVC)

Open-Loop Filtration Glove Boxes

Material	Single		Twin		Air Lock	
	Cat. #	S/Each	Cat. #	S/Each	Cat. #	S/Each
Acrylic	3306-60-OL	2,007.00	3306-61-OL	2,268.00	1680-78B	446.00
Static-Dissipative PVC	3306-62-OL	2,912.00	3306-63-OL	3,659.00	1680-81B	612.00
Polypropylene	3306-66-OL	2,214.00	3306-67-OL	2,547.00	1680-87B	495.00
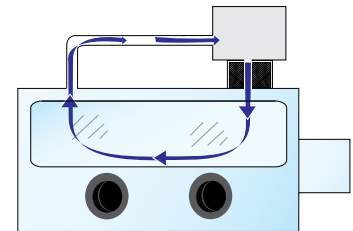
CLOSED-LOOP CONTAINMENT

Closed-loop models continuously recirculate the process gas through an ULPA filter.
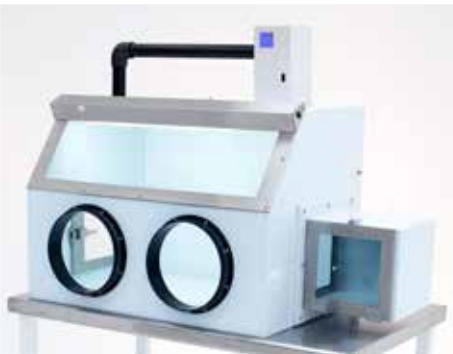
No. 3306-66-CL (Polypropylene)

No. 3306-60-CL (Acrylic)
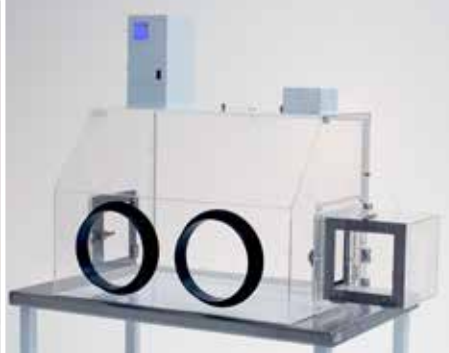
No. 3306-62-CL (Static-Dissipative PVC)

Closed-Loop Filtration Glove Boxes

Material	Single		Twin		Air Lock	
	Cat. #	S/Each	Cat. #	S/Each	Cat. #	S/Each
Acrylic	3306-60-CL	1,917.00	3306-61-CL	2,178.00	1680-78B	446.00
Static-Dissipative PVC	3306-62-CL	2,822.00	3306-63-CL	3,569.00	1680-81B	612.00
Polypropylene	3306-66-CL	2,124.00	3306-67-CL	2,457.00	1680-87B	495.00

Glove Box Accessories

	Cat. #	S/Each
Relief/Bleed Valve	1600-60A	119.00
Flow Meter	1600-03	118.00
RH/Temperature Data Logger	9500-10	205.00
Powder-Coated Stand: Single	1681-48	763.00
Powder-Coated Stand: Twin	1681-51	940.00
Casters (for stands)	1700-44	258.00

No. 3306-67-CL (Polycarbonate)

MINI-ENVIRONMENT EQUIPMENT ENCLOSURE

Interchangeable access ports let you configure the optimal enclosure for your application —

- Solid Panels
- Glove Ports
- Iris Ports
- Access Doors
- Microscope Bellows
- Custom Interface Modules

These Mini-Environment Equipment Enclosures provide a controlled environment for delicate process equipment. Each includes dual front doors for easy access. The bottomless design allows convenient placement over equipment; select the optional spill tray if a bottom is required. Standard size: 49"W x 25"D x 30.25"H (without filter/fan module). Door opening: 22.38"W x 22.25"H (for each door).

Spill Tray
2"H tray safely contains chemical spills and is easy to clean.

	Cat. #	$/Each
Stainless steel	2003-35	543.00
Polypropylene	2003-36	543.00

Ionizing Bar

	Cat. #	$/Each
22"L (4 emitters)	2005-06A	560.00
44"L (8 emitters)	2005-07A	806.00

Microscope Bellows

	Cat. #	$/Each
Indicate desired location.	1681-53	246.00

Vapor-Sealed

Fluorescent Illuminator	2400-40	401.00

Dissipative PVC housing. 120VAC, 60Hz. Other voltages and special lighting available, including germicidal UV.

No. 2003-20 with optional filter module and side doors.

Shown with Iris Ports Cat. # 1694-54, $340.00/pair. See page 31.

Shown with Glove Ports Cat. # 2003-37, $302.00/each. See page 30 for gloves.

Mini-Environment Enclosures			Corresponding Side Access Door*			
Material			**Right Side**		**Left Side**	
	Cat. #	$/Each	Cat. #	$/Each	Cat. #	$/Each
Acrylic	2003-20	3,143.00	2003-25	265.00	2003-30	265.00
Static-Dissipative PVC	2003-21	3,767.00	2003-26	293.00	2003-31	293.00
Polycarbonate	2003-22	3,850.00	2003-27	306.00	2003-32	306.00

* Front access doors included (as in photos above). Side doors feature stainless steel frame and chrome-plated lift latch. Opening: 15"W x 21"H

Filter/Fan Units
(120VAC, 50/60Hz)
Includes 99.99% efficient HEPA filter. Adds 13" to height. Exit slots provided for air release.

Cat. #	$/Each
6601-24-H	777.00

Room Air
Filtered Air
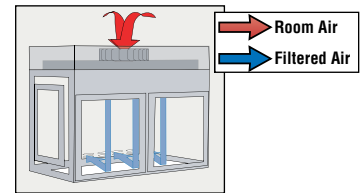
Temperature-controlled models available in sizes up to 120"W —see page 39.

A. Mini-Environment Equipment Enclosure: Incorporates closed-loop filtration system.

B. Mini-Environment Equipment Enclosure: Incorporates humidification and dehumidification modules and process gas heater/cooler to maintain stable %RH and temperature levels.

C. Glovebox with Perforated Bottom: Accommodates recirculation of filtered process gas

D. Polypropylene Glovebox: includes 0.5"-thick lead base and rear storage shelves

E. Glovebox with Recirculation System: FilterMate™ removes particles and vapors from recirculated, low-oxygen environment

Call to Discuss Your Unique Requirements!

A

B

D

E
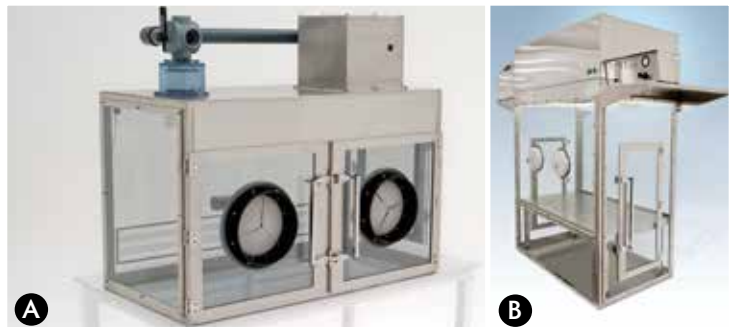
SMART GLOVEBOX™
AUTOMATED RH CONTROL SYSTEM

- **Automates low-humidity processing to prevent degradation of moisture-parts**

- **Gas control system auto-adjusts nitrogen purge to maintain humidity set point**

Terra's Smart Glovebox automatically maintains a low-humidity environment to protect moisture-sensitive parts.

Its quick-response feedback system continuously monitors the chamber's relative humidity level and indicates the measured value on a bright LED display. The minute the %RH climbs above a set point value, the Smart Glovebox activates a flow of dry nitrogen for as long as needed to restore the desired humidity level.

This fast-acting control system economizes on nitrogen use. Comparison testing reveals that the Smart Glovebox maintaining a 10% RH level uses only 22% of the nitrogen required by a flowmeter-based system of identical size. More importantly, this automated operation maintains the integrity of sensitive parts.

The Smart Glovebox includes a control system, Automatic RB valve, and inlet/outlet fittings for 0.25"-diameter gas line. A removable back wall allows introduction of large process equipment. Select air lock, work surface and gloves separately.
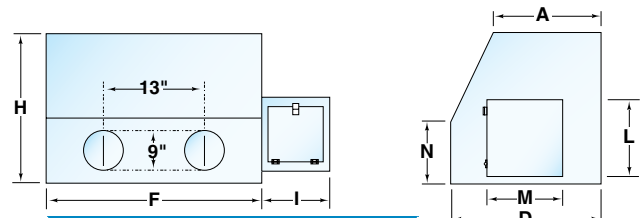
Nominal Dimensions

A	D	F	H	I	L	M	N
12	20	26	18	11.1	10.5	10	11

Other Accessories

Stainless Steel Work Surface
Recommended for use in plastic chambers to prevent scratching. Price includes installation (order together with glovebox).

	Cat. #	S/Each		Cat. #	S/Each
For Smart Glovebox	**3305-44**	**226.00**	For Air Lock	**3305-45**	**64.00**

Gloves
Unless indicated, all feature a size 9 hand and are for 8" port.

|	Cat. #	S/Pair	
Two-piece Accordion Sleeve/ Nitrile Glove Combination	**1681-91B**	**311.00**	*Other sizes and materials at TerraUniversal.com*
One-piece Neoprene (black)	**1689-03**	**187.00**	
Hypalon (white, shown above)	**1671-10**	**234.00**	

Smart Glovebox

See Dimensions Above	Acrylic[1]		Static-Dissipative PVC[2]		Polypropylene[4]		Polycarbonate		304 Stainless Steel[4]		316 Stainless Steel	
	Cat. #	S/Each	Cat. #	S/Each	Cat. #	S/Each	Cat. #	S/Each	Cat. #	S/Each	Cat. #	S/Each
Smart Glovebox	3305-30A	2,045.00	3305-31A	3,036.00	3305-32A	3,071.00	3305-33A	3,194.00	3305-34A	3,724.00	3305-35A	4,628.00
Air Lock[3]	3305-38	330.00	3305-39	551.00	3305-40	447.00	3305-41	365.00	3305-42	1,783.00	3305-43	2,229.00

(1) Acrylic is damaged by alcohol and other cleaning agents.
(2) Includes grounding terminals. Stainless steel work surface is required to prevent scratching the dissipative surface.
(3) Standard mounting is on right side (as shown in photo). Includes gas inlet to allow gas purging
(4) Includes 120VAC/60Hz fluorescent light

NitroWatch™
Humidity Controller

Glovebox Dual Purge™ System

Changeable Sleeve and Glove Combination

Series 100
POLYMER GLOVEBOXES

- Optional gas purge controls automatically
  - ✓ establish a particle-free environment
  - ✓ maintain a humidity set point down to 0% RH
  - ✓ minimize system recovery time
- Dual-gasketed side doors and a fully gasketed back permit introduction of small and large equipment
- 10"-diameter glove ports accept a wide variety of gloves, including Terra's accordion sleeve and glove assembly

Terra's Series 100 Polymer Gloveboxes provide a clean, low-humidity environment for critical processing operations in such industries as semiconductor and pharmaceutical manufacturing. Their modular design lets you add automated humidity controls to meet critical requirements. Dual side access doors open inward to allow easy parts transfer from inside the chamber. Doors feature stainless steel reinforcement frames that increase the structural rigidity of the door by a factor of five. A built-in LiftLatch™ securely seals the door without applying lateral torque that could damage hinges.
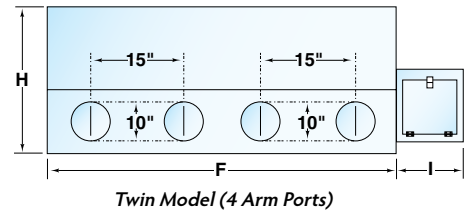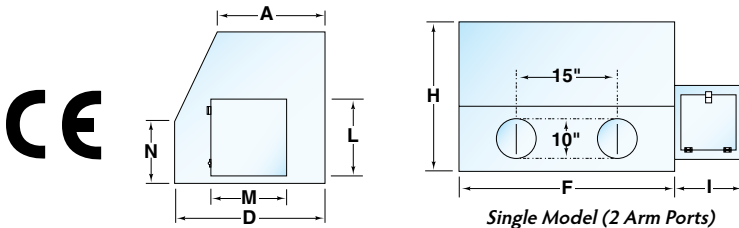
Twin Model (4 Arm Ports)

Single Model (2 Arm Ports)

CE

Nominal Dimensions (inches)								
Type	A	D	F	H	I	L	M	N
Single	16.75	24	35	25	10.5	10	10	14
Twin	16.75	24	59	25	10.5	10	10	14

Type	Series 100 Plastic Gloveboxes*									
See Dimensions Above	Acrylic****		Static Dissipative PVC**		Nondissipative PVC		Polypropylene*** (Dissipative PVC viewing window)		Polycarbonate	
	Cat. #	$/Each	Cat. #	$/Each	Cat. #	$/Each	Cat. #	$/Each	Cat. #	$/Each
Single Models (2 glove ports)	1689-00G-RH	1,288.00	3305-00F-RH	2,193.00	3305-03F-RH	1,575.00	1681-29G-RH	1,625.00	1681-31G-RH	1,585.00
Twin Models (4 glove ports)	1689-16G-RH	1,633.00	3305-10F-RH	2,976.00	3305-11F-RH	2,031.00	1681-30G-RH	1,864.00	1681-32G-RH	1,934.00

* Complete with inlet and outlet for gas fittings and relief/bleed valve (order separately).
** Includes grounding terminals. The Stainless Steel Work Surface is recommended with the Static-Dissipative PVC glovebox to prevent scratching.
*** Includes 110VAC, 50/60Hz fluorescent illuminator (for 220VAC/50Hz, add "-220" to the part number).
**** Acrylic is damaged by alcohol and other cleaning agents.

Stainless Steel Work Surface (prevents scratching)

	Cat. #	$/Each
Single	1689-11	422.00
Twin	1681-33	591.00

Standard Air Lock

These air locks mount on the right side of the glovebox to allow easy pass-through of parts into and out of the chamber. They feature a swing-down door on the front (outside) and a second door that is easy to open by a gloved hand from inside the glovebox. One-piece nonadhesive gasket enhances sealing performance and extends service life. Capped ports are provided to allow purging of the air lock with nitrogen. Right mounting is standard.

Pass-Through Air Lock

Chrome-plated racks accommodate adjustable shelves. In-line double-door construction lets you pass small parts easily into the glovebox; you simply slide a shelf through the outside door to load parts and then through the inside door to unload them in the chamber. Order shelves separately. Right mounting is standard.

	Cat. #	S/Each
Acrylic Shelf	1680-67	21.00
Stainless Steel Shelf	1680-68	80.00

Universal Air Lock

The Universal Air Lock features dual flanges (each with gaskets) to permit mounting on either the right or left side of any Terra plastic glovebox. They also allow multiple gloveboxes to be connected in series. Select material compatible with your glovebox(es). Right mounting is standard.

Stainless steel frames now standard on all access doors.

Type	Series 100 Air Locks ** (each includes ports for nitrogen purging/bleeding)											
See Dimensions Above	Acrylic*		Static Dissipative PVC		Nondissipative PVC		Polypropylene (Dissipative PVC viewing window)		Polycarbonate		Stainless Steel Work Surface (prevents scratching)	
	Cat. #	S/Each	Cat. #	S/Each	Cat. #	S/Each	Cat. #	S/Each	Cat. #	S/Each	Cat. #	S/Each
Standard Air Lock	1680-78B	446.00	1680-81B	612.00	1680-84B	495.00	1680-87B	495.00	1680-90B	557.00	1680-69	212.00
Pass-Through Air Lock	1680-79B	485.00	1680-82B	710.00	1680-85B	533.00	1680-88B	602.00	1680-91B	515.00	1680-69	212.00
Universal Air Lock	1680-80B	491.00	1680-83B	720.00	1680-86B	541.00	1680-89B	610.00	1680-92B	524.00	1680-69	212.00

* Acrylic is damaged by alcohol and other cleaning agents.   ** All are right mount chambers. Left mount chambers available.

Changeable Sleeve and Glove Combination (for 10"-diameter ports)

Can be used with a variety of gloves, allowing you to change glove size or type without changing the sleeve itself. The convoluted section keeps the sleeve off the operator's arm for better air circulation and comfort. Supplied with one pair of nitrile gloves (select desired size). Clamps included.

See page 30 for additional gloves.

Glove Size	With 18" Sleeve	
	Cat. #	S/Pair
8	1689-46	359.00
9	1689-47	343.00
10	1689-48	344.00

IonBar™ (with fan module)

Projects a balanced stream of ions for neutralization of static charges throughout a restricted area. Price includes installation inside specified glovebox. Models below are for 120VAC operation.

Fans ensure even ion distribution.

	Cat. #	S/Each
22" Long	2005-30	900.00
33" Long	2005-32	1,016.00
44" Long	2005-31	1,133.00

Stands for Series 100 Gloveboxes

Constructed of all-welded 2" square tubing.

	For Single Models (35"W x 24"D x 30"H)		For Twin Models (59"W x 24"D x 30"H)	
	Cat. #	S/Each	Cat. #	S/Each
Powder-Coated Steel Stand	1681-48	763.00	1681-51	940.00
Stainless Steel Stand	1681-49	1,055.00	1681-52	1,410.00
Casters (set of 4, 2 with brakes)			1700-44	258.00

Fixed Rear Wall

A fixed rear wall can be specified in place of the standard removable rear wall.

	Cat. #	S/Each
	1681-58	134.00

Detachable Bottom

Allows Series 100 glovebox to be lifted for easy placement over large equipment.

	Cat. #	S/Each
	1681-55	395.00

Plastic Glove Port (see pg. 31 for other designs)

Standard on all Terra gloveboxes; can be retrofitted on chamber with 11.25" dia. cutouts. Price for single port.

	Cat. #	S/Each
Glove Port	1694-52	225.00
Port Caps	1694-53	218.00
Iris Adapter (see pg 31)	1694-54	340.00

Corresponding Options											
Ionizing Bar (see above)		Fluorescent[4] Illuminator		Power Strip[5] 110VAC/60Hz		Dual Purge System (see page 32)		NitroWatch™ (see page 32)		Automatic RB® Valve (see page 32)	
Cat. #	S/Each	Cat. #	S/Each	Cat. #	S/Each	Cat. #	S/Each		Cat. #	S/Each	Cat. #	S/Each
2005-32	1,016.00	1681-78	458.00	1681-80	167.00	1603-57	2,994.00	Control:	9500-00A	1,002.00	1600-60B	104.00
2005-31	1,133.00	1681-79	618.00	1681-80	167.00	1603-57	2,994.00	Sensor:	9500-02A	596.00	1600-60B	104.00

[4] Comes standard on polypropylene models. Models above are 110VAC/60Hz. Add "-220" to the catalog number for 220VAC/50Hz power.
[5] Mounted horizontally on the inside rear wall, 3" from the bottom (specify other position, if desired). Includes master on/off switch, 15-Amp circuit breaker and 4 outlets.

Stainless steel door frames with unique "e" profile elastomer gasket increase structural rigidity, extend service life, improve sealing performance

Series 200
NEGATIVE-PRESSURE GLOVEBOXES

- **Ideal for drying, degassing, and ventilation applications**
- **Clear construction (of acrylic or polycarbonate) provides full visibility of work in progress**
- **Sturdy construction allows sustained negative pressure operation at 5" WG (29.9" Hg in vacuum antechamber)**
- **Vacuum safety valve included to prevent damage to walls or seals**

These economical vacuum gloveboxes are designed for degassing operations, chemical mixing, biological tests, and other processes requiring sustained negative pressure. Each chamber is fabricated out of solvent-welded 1⁄2" transparent material that combines full visibility with light weight, cleanliness and durability. Dual glove ports allow full access to work in progress. Select acrylic for general applications, or polycarbonate for resistance to a wide range of chemicals and thermal stress. Equipped with a vacuum safety valve on a standard basis, these chambers are designed for operations with sustained negative pressures down to 5" WG (Water Gauge). Dual side access doors open inward to allow easy parts transfer from inside the chamber.

No. 1681-15D with No. 1680-93B air lock

Optional negative-pressure air lock

Optional Swing-Up Front Access Panel

Other Options:
See gloves on page 30.

Stainless Steel Work Surface
Protects the bottom of the chamber against scratching. Price includes installation.

	Cat. #	$/Each
For Air Lock	1680-69	212.00
For Glove Box	1689-11	422.00

Glove Port Covers
"O"-ring ensures a tight seal. Includes handle for easy removal.

	Cat. #	$/Each
Port Cover	1694-53	218.00
Iris Port Adapter	1694-54	340.00
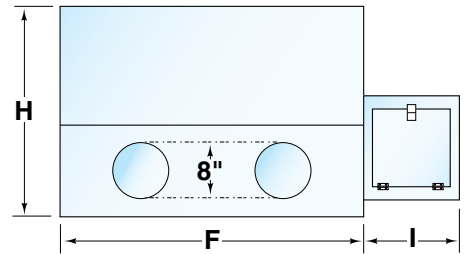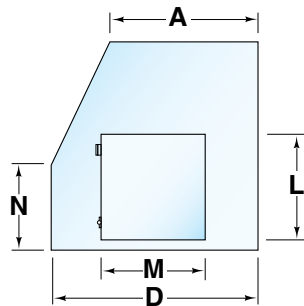
Nominal Dimensions (inches).

Glove Ports	A	D	F	H	I	L	M	N
2	16.25	24	35	25	11.5	10	10	14

Series 200 Negative-Pressure Gloveboxes								Corresponding Accessories					
With Front Access Panel*				Without Front Access Panel				Vacuum Antechamber (12" Diameter, see photo below)				Negative Pressure Air Lock ***	
Acrylic**		Polycarbonate		Acrylic**		Polycarbonate		12"L		23"L		Vacuum to 5" WG	
Cat. #	$/Each	Cat. #	$/Each	Cat. #	$/Each	Cat. #	$/Each	Cat. #	$/Each	Cat. #	$/Each	Cat. #	$/Each
1681-13D	2,781.00	1681-14D	5,171.00	1681-15D	2,375.00	1681-16D	4,401.00	1681-63	3,052.00	1681-67	3,696.00	1680-93B	815.00

* Cutout Size: 20"W x 10"H
** Acrylic is damaged by alcohol and other cleaning agents.
*** Right mount acrylic airlock. Other styles at TerraUniversal.com
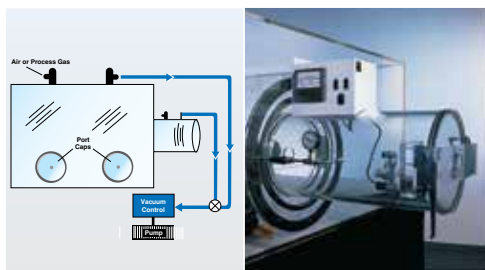
Vacuum Antechamber (ordering information above)
Allows drying or degassing at up to one full atmosphere (29.9" Hg).

Vacuum Control Module

110VAC, 50/60Hz	Cat. # 1681-75	$/Each 2,878.00
220VAC, 50Hz	Cat. # 1681-75-220	$/Each 2,878.00

Vacuum Pump

110VAC, 50/60Hz	Cat. # 7901-00	$/Each 2,895.00
220VAC, 50Hz	Cat. # 7901-08-220	$/Each 2,937.00

Air or Process Gas

Port Caps

Vacuum Control

Pump

Series 210
VACUUM GLOVEBOXES

- **1.5"-thick reinforced acrylic walls support full vacuum (to 29.9" Hg)**
- **Dual hose barb fittings simplify connection to vacuum pump to allow rapid air removal and backfill with clean, dry process gas**
- **Perfect for anaerobic processing in a low-humidity nitrogen or argon environment**
- **Select Trace Oxygen Analyzer to maintain oxygen levels to 1 ppm**

The Series 210 Glovebox supports a wide range of vacuum and degassing operations.

This vacuum capability also allows removal of atmospheric humidity and oxygen and backfill with a process gas, quickly providing a moisture-free, low-oxygen environment.

For automated vacuum control, select the Vacuum Control Module, pump and connection kit below. For automated backfill and purging, select the Dual Purge™ System and Trace Oxygen Analyzer, which work in tandem to provide oxygen levels down to 10 ppm(v).

The optional air lock allows transfer of materials into the glovebox without breaching the controlled environment.

Series 210 Vacuum Glovebox

Includes leveling feet, dual valves for connection to vacuum pump and backfill gas source, pressure gauge and relief/bleed valve, which closes during vacuum operations. Order airlock gloves and vacuum/purge controls separately.

Max Vacuum	Cat. #	$/Each
29.9" Hg	**3305-46A**	**10,244.00**

Series 210 Vacuum Air Lock

Left Mount	Right Mount	
Cat. #	Cat. #	$/Each
3305-48	**3305-49**	**2,078.00**

Designed to support 29.9" Hg vacuum, it includes dual vacuum/gas valves and vacuum gauge.

Purge Connection Kit

Required for applications requiring continuous nitrogen purge following vacuum cycling. Includes bleed valve and ports for Oxygen Analyzer and Dual Purge System, with isolation shut-off valves.

Cat. #	$/Each
3305-50	**305.00**

Glove Ports

Special designs and materials, including oval stainless steel ports and bag-out ports.

See page 31.

No. 3305-46A with airlock and accordion sleeve/glove combination

Front doors close to seal chamber during vacuum cycles

How to Attain Extremely Low RH/O$_2$ Concentrations:
Vacuum Cycling vs. Purge and Bleed

Vacuum cycling provides a fast, economical way to achieve extremely low moisture and oxygen levels inside a glovebox.

Purge-and-bleed displacement relies on a continuous purge of dry process gas (typically, nitrogen or argon) to displace moisture-laded air, which exits through a bleed valve. This process typically requires many hours, consumes a high volume of process gas, and may never achieve very low oxygen concentrations (below 5 ppm) required in many applications.

Vacuum cycling evacuates ambient air—and with it, moisture and oxygen—inside a vacuum chamber or glovebox. When air is removed, you simply backfill the chamber with process gas until the chamber attains neutral pressure. If needed, this process is repeated until oxygen or moisture concentration reaches the desired level. Typically, only a few cycles, requiring only a fraction of the gas and time of a purge-and-bleed protocol, are all that's needed to reach single-digit oxygen concentrations.

Once set point levels are attained, close off vacuum valves and use a Dual Purge System and appropriate controller (NitroWatch™ for relative humidity, Trace Oxygen Analyzer for O$_2$ concentration) to maintain dry, anaerobic conditions.

See Bactron chambers on page 35 for an alternative anaerobic environment.

See pages 38 – 39 for vacuum chambers
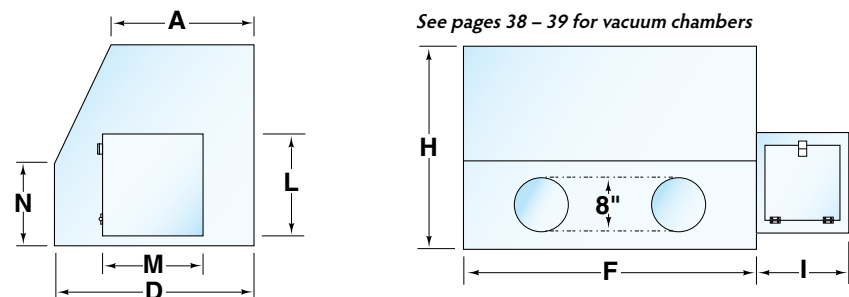
See pages 32 – 33

Nominal Dimensions (inches).

	Nominal Dimensions (OD includes external support ribs)							
	A	D	F	H	I	L	M	N
OD	16	29	32	29.5	12.75	12	11	17.33
ID	14.69	22.13	30.25	22.75	10.83	10.13	9.13	13.63

No. 1672-07   No. 1672-10   No. 1672-27

No. 3305-54B, shown with optional metering valves and vacuum gauge

Series 310
STAINLESS STEEL NEGATIVE PRESSURE GLOVEBOX

- **Designed for rapid removal of oxygen and backfill with nitrogen or argon to establish anaerobic processing environment (see sidebar on page 15)**

- **Continuous-seam welds with radius corners simplify cleaning and reduce leak rate during vacuum cycling**

- **Optional vacuum controls accelerate oxygen removal and backfill with inert process gas**

- **Select Trace Oxygen Analyzer and Dual Purge™ System to maintain oxygen levels to 1 ppm (see pages 32 and 33)**

The Series 310 Stainless Steel Glovebox features reinforced 12-gauge stainless steel construction with continuous-seal welds to support vacuum pressure/inert gas backfill cycling that quickly removes atmospheric oxygen and moisture. A tempered safety glass window and fluorescent light provides visibility of the work area.

For automated vacuum control, select the Vacuum Control Module, pump and connection kit below. For automated backfill and purging, select the Dual Purge System and Trace Oxygen Analyzer, which work in tandem to provide oxygen levels down to 10 ppm(v). Right or left-side air locks allow transfer of materials into the glovebox without breaching the controlled environment.

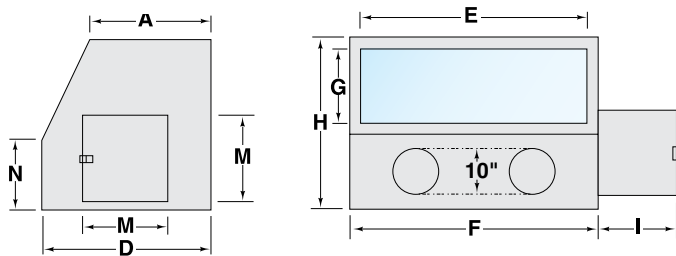| Nominal Dimensions								
A	D	F	H	I	L	M	N	N
16.56	24	28.25	35	11.75	28	28	14.75	14

Series 310 Negative Pressure Stainless Steel Glovebox (Tempered Safety Glass Window)

Material	With Right-Side Air Lock		With Left-Side Air Lock		With Dual-Side Air Locks	
	Cat. #	S/Each	Cat. #	S/Each	Cat. #	S/Each
304 SS	3305-54B	17,740.00	3305-55B	17,740.00	3305-56B	22,130.00
316 SS	3305-60B	21,569.00	3305-61B	21,569.00	3305-62B	26,444.00

For 220V models, add "-220" to the part number. Order gloves, port covers, and vacuum/purge controllers separately (full specifications at TerraUniversal.com)

	Cat. #	S/Each		Cat. #	S/Each
Stand (powder-coated steel)	3305-66	591.00	**Vacuum Valves** (order two/chamber)	5235-09	168.00
Port Cover	1694-53	218.00	**Vacuum Gauge** (order one/chamber)	5235-10	206.00
Accordion Sleeve/Glove Combo (pair)	1689-47	343.00	**Glovebox Vacuum Control Module**	3305-67	Call TUI

Automates vacuum application to allow vacuum/purge cycling, allowing rapid moisture and oxygen removal.

GLOVEBOX IONIZING MODULES

- **Provides safe, effective static neutralization inside a glovebox or other process chamber**

- **Generates a balanced stream of positive and negative ions to neutralize surface charges, eliminating the risk of electro-static discharge**

- **Low-voltage design is safe, minimizes EMI/RFI**

- **Fans ensure uniform ion distribution throughout the chamber**

These ionizing modules incorporate highly reliable emitters that operate on 24V input voltage, enhancing product safety. Discharge times directly under the unit average 28 seconds (from ± 1,000 volts to 100 volts, measured in accordance with Ionization Standard ANSI ESO/ESD S3.1-1991 of the ESD Association).

Glovebox Ionizing Modules (price includes installation)

Bar Length	110VAC		220VAC	
	Cat. #	S/Each	Cat. #	S/Each
11" (2 emitters)	2005-29	790.00	2005-29-220	790.00
22" (4 emitters)	2005-30	900.00	2005-30-220	900.00
33" (6 emitters)	2005-32	1,016.00	2005-32-220	1,016.00
44" (8 emitters)	2005-31	1,133.00	2005-31-220	1,133.00

Partial window model No. 1696-06A

Full window model No. 1696-05A
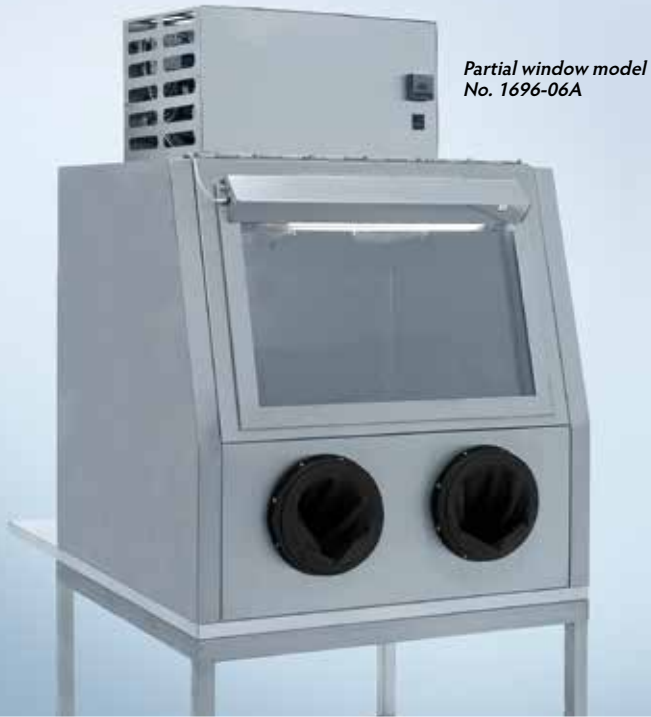
INSULATED GLOVEBOXES

- 2" of polyurethane insulation ensure stable, efficient temperature control over a wide operating range (-25°F to +140°F/-32°C to +60°C)

- Provide stable operating temperatures in critical applications

- 304 stainless steel chamber provides a noncontaminating, durable, chemical-resistant enclosure

- Double-glazed polycarbonate viewing windows provide visibility of work in progress (select partial or full-view design)

- Includes fluorescent illuminator

- Terra's Constant Temperature Control System provides stable temperature (order separately)

These double-wall, insulated chambers boost thermal efficiency to create stable process temperatures and decrease the cost of heating and cooling cycles.

Both include two 10"-diameter ports, providing ample space for arm motion inside gloves (order gloves separately). Select Full-View or Partial-View front panels. Both models include double-glazed polycarbonate windows.
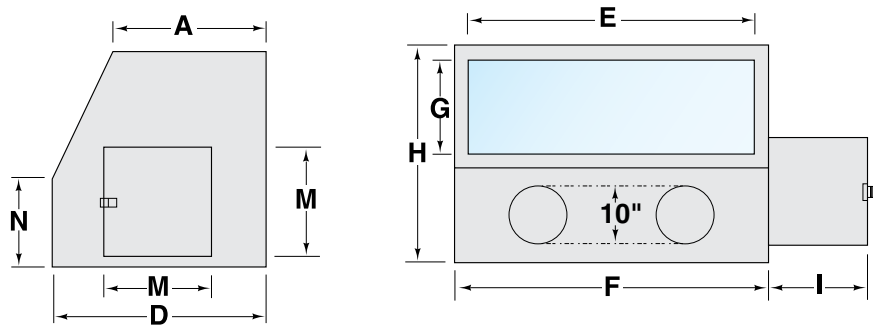
Outside Dimensions (subtract 4" for I.D.)									
Front Panel	A	D	E	F	G	H	I	M	N
Full Window	28	33	37	41	35	43	14	12	—
Partial Window	31	37	28.25	37	12.81	39	14	12	14

Special sizing and configurations available — call to discuss your requirements.

Constant Temperature Control System						
Temperature Range	Compressor Size	BTU/Hour Capacity	110VAC, 50/60Hz		220VAC, 50/60Hz	
			Cat. #	S/Each	Cat. #	S/Each
-10° to 120°F	0.5HP	3800	1694-76	16,670.00	1694-76-220	16,670.00
-25° to 120°F	0.75HP	5900	1694-78	20,143.00	1694-78-220	20,143.00
5° to 120°F	0.5HP	3800	1694-75	15,513.00	1694-75-220	15,513.00
5° to 120°F	0.75HP	5900	1694-77	18,985.00	1694-77-220	18,985.00

Insulated Gloveboxes					Air Lock*		Stands		Tilt-up Door	
Window	120VAC		220VAC		Right Side	Left Side				
	Cat. #	S/Each	Cat. #	S/Each	Cat. #	Cat. #	S/Each	Cat. #	S/Each	Cat. #	S/Each
Full Window	1696-05A	15,693.00	1696-05A-220	15,693.00	1696-07A	1696-08A	3,146.00	1696-11	651.00	1684-92	2,067.00
Partial Window	1696-06A	16,087.00	1696-06A-220	16,087.00	1696-09A	1696-10A	3,146.00	1696-12	627.00	1684-93	2,376.00!

* Air locks feature double-wall constructions but no insulation. Inside dimensions: 12" x 12" x 12"
   Order desired gloves and temperature control module separately.

Series 300
STAINLESS STEEL GLOVEBOXES

- Provides a clean, controlled environment for manufacturing processes in semiconductor, pharmaceutical, and other industries

- Transparent dissipative PVC window affords full view of processing area

- Side flanges simplify insertion/removal of process equipment and allow easy addition of ovens and air locks

- 10"-diameter ports accept a wide variety of gloves and accommodate port covers and iris adapters

- Select single model (with two glove ports) or twin model (with four glove ports)

The Series 300 Stainless Steel Controlled Atmosphere Chamber provides a hermetically sealed environment for such manufacturing operations as resistance welding of semiconductor hybrids, parts degassing, temperature and humidity testing, and chemical mixing in a nonreactive environment.

Elastomer seal for superior performance

Air Lock Provides Convenient Access. Shown with optional viewing window. See page 28.

DewWatch™ Humidity Controller (see page 32)

Glovebox Dual Purge™ System (see page 32)

Air Lock

4-Port Twin Chamber (No. 1694-02)

Pass-Through Oven (No. 5401-00A; see page 29)

Vacuum/Nitrogen Pump

Cleanroom Chair No 1012-41 $477.00

STAINLESS STEEL GLOVEBOX
# SPECIFICATIONS & ORDERING INFORMATION

Door Openings: 12 1/2" x 12 1/2" with gasketed doors supplied with air locks (see ordering information below); doors open inward.

Arm Ports: 10" round with flange for connecting glove assembly. See page 31

Gas Ports: Fittings for 1/4" gas inlet and system pressure lines; port for Automatic RB® Valve. Appropriate adapter inserts are supplied for any Terra gas systems ordered.

Light: Fluorescent. (select voltage below)

Window: Static-dissipative PVC
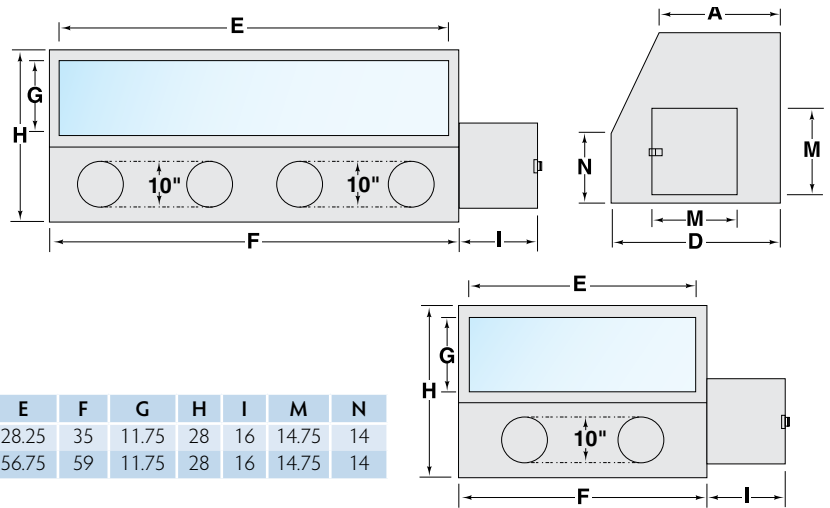
All dimensions in inches

Model	Glove Ports	A	D	E	F	G	H	I	M	N
Single	2	16.5625	24	28.25	35	11.75	28	16	14.75	14
Twin	4	16.5625	24	56.75	59	11.75	28	16	14.75	14

Series 300 Gloveboxes*		120VAC		220VAC		Corresponding Air Locks**			
Model	Glove Ports					Right Side	Left Side		
		Cat. #	S/Each	Cat. #	S/Each	Cat. #	Cat. #		S/Each
Single	2	1694-01C	6,543.00	1694-01C-220	6,543.00	1702-10C	1702-11C		3,534.00
Twin	4	1694-02C	10,066.00	1694-02C-220	10,066.00	1702-10C	1702-11C		3,534.00

* 304 stainless steel with static-dissipative PVC viewing window
** Multiple air lock sizes available; see page 28

Stands for Series 300 Gloveboxes

Constructed of all-welded 2" square tubing. Select oven support for use with Terra's High-Performance Pass-Through Oven (No. 5401-00, see page 25). All stands raise chambers 28.75" off of floor (add 3" for casters).

No. 1690-03

	Powder-Coated Steel				304 Stainless Steel			
	Chamber Only		Chamber and Oven		Chamber Only		Chamber and Oven	
	Cat. #	S/Each	Cat. #	S/Each	Cat. #	S/Each	Cat. #	S/Each
For Single Models (2 ports)	1690-03	602.00	5401-01	906.00	1694-09	1,178.00	1694-11	1,780.00
For Twin Models (4 ports)	1690-04	731.00	5401-02	1,035.00	1694-10	1,442.00	1694-12	2,051.00

	Cat. #	S/Each
Heavy-Duty Casters (set of 4, 2 with brakes)	1700-44	258.00

Other Optional Accessories

	Cat. #	S/Each	Page
Glovebox Dual Purge™ System	1603-57	2,994.00	32
NitroWatch™	9500-00A	1,002.00	32
NitroWatch Sensor	9500-02A	596.00	32
Stainless Steel Automatic RB® Valve	1606-60	198.00	32
Required for operation with Dual Purge System			
Accordion Sleeve/Glove Combination	1689-47	343.00	30
18"L, with size 9 gloves (pair)			
Right-Side Access Door	1685-94-300	994.00	
Left-Side Access Door	1685-96-300	994.00	
High-Performance Vacuum Oven			
See pg. 29 for specifications and ordering information.			
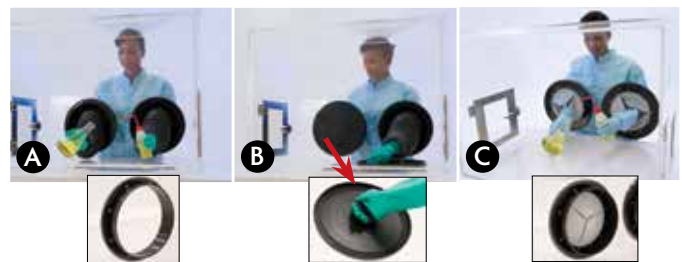
Oval and stainless steel ports— see page 31.

IonBar™ (with fan module)

Projects a balanced stream of positive ions for neutralization of static charges throughout a restricted area. Price includes installation inside specified glovebox. Models below are for 120VAC operation.

Fans ensure even ion distribution.

	Cat. #	S/Each
22" Long	2005-30	900.00
33" Long	2005-32	1,016.00
44" Long	2005-31	1,133.00

Plastic Glove Port, Cover, and Iris Adapter

10"-diameter port is standard on all Terra gloveboxes. Order covers and iris adapter separately (see page 31).

	Cat. #	S/Each
A. Replacement Glove Port	1694-52	225.00
B. Glove Port Cover	1694-53	218.00
C. Iris Adapter	1694-54	340.00

Series 400
STAINLESS STEEL GLOVEBOX

- **Roomy 304 stainless steel chamber provides ample space for large processing equipment**

- **Interfaces with Vacuum Antechamber for vacuum operations down to 29.9" Hg**

- **Optional gas purge controls automatically maintain a humidity set point down to 0% RH/0.5 ppm(v) H$_2$O**

These chambers are a larger version of the Series 300 chambers listed on the preceding pages.

In addition to all of the features of the Series 300 models, these chambers also accommodate Terra's Vacuum Antechamber, which supports vacuums down to 29.9" Hg for a wide range of operations in many industries. Their double-gasketed side flange allows easy insertion of large process equipment into the work chamber and easy mounting of the antechamber, a vacuum/nitrogen oven, or a standard air lock.

Specifications: Series 400 Glovebox

Door Openings:	12" x 12" gasketed doors supplied with air locks (see ordering information on facing page); doors open inward.
Arm Ports:	10" round with flange for connecting glove assembly
Windows:	Static-dissipative PVC

Specifications: Vacuum Antechamber

Construction:	6061 Aluminum (with brass fittings); or stainless steel (with stainless steel fittings); high-vacuum design; TIG welded structure
Dimensions:	15" dia. x 24" long
Tray Dimensions:	12" x 23"; extends to 14" beyond opening for loading
Doors:	Single center-clamped, O-ring sealed, counterbalanced, vertical travel; stainless steel on both models
Vacuum Capability:	1 x 10-3 Torr
Vacuum Gauge:	21/2" compound Bourdon tube dial type
Connections:	1" evacuation valve, 1/4" backfill valve, 1/4" IPS plug

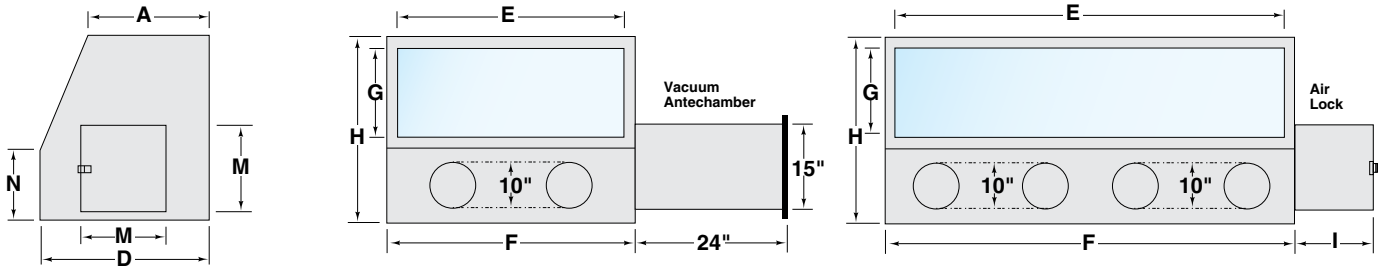| Series 400 Chambers (304 Stainless Steel)			
Model	**Glove Ports**	Cat. #	S/Each
Single	2	**1694-13B**	**10,651.00**
Twin	4	**1694-14B**	**16,437.00**

Modular Vacuum/Nitrogen Oven (see facing page)

Order Air Locks from table on the next page

Dual Purge™ System

Air Lock

Model shown: Single Chamber (Cat. No. 1694-13) with Dual Purge System, and Air Lock

Items with **blue prices** usually ship in 1–3 days. For current lead times: TerraUniversal.com

Glove Ports	A	D	E	F	G	H	I	M	N
2	27	33	28.25	33	12.9325	33	16	12	14
4	27	33	56.5	60	12.9325	33	16	12	14

All models include a 120VAC/60Hz fluorescent illuminator. For 220VAC/50Hz power, add "-220" to the catalog number. For electropolishing of any stainless steel component, add "-2" to the catalog number and 30% to the price. All dimensions in inches.

Air Lock**			Vacuum/Nitrogen Ovens (left side mounting standard)					
			High Performance Pass-Through Oven* (see pg. 29)			Modular Oven (see pg. 29)		
Right Mount	Left Mount		Right Mount	Left Mount		Right Mount	Left Mount	
Cat. #	Cat. #	$/Each	Cat. #	Cat. #	$/Each	Cat. #	Cat. #	$/Each
1698-01C	1698-02C	3,350.00	5401-12A	5401-00A	18,131.00	9602-30A	9602-03A	6,134.00

* Requires support stand for safe operation (order below). For 220VAC operation, add "-220" to the part number.
** Prices for left-mount and right-mount models are the same. Optional 7"W x 9.5"H safety glass viewing window—Cat. # 1702-02

Stands for Series 400 Gloveboxes

Constructed of all-welded 2" square tubing, these stands are specially designed to support Series 400 gloveboxes. Select powder-coated (white) steel or stainless steel stands, with or without rubber casters.

	Cat. #	$/Each
Heavy-Duty Casters (set of 4, 2 with brakes)	1700-44	258.00
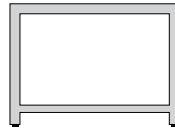
For chamber only
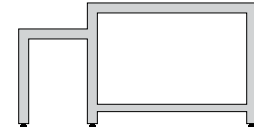
For chamber and oven No. 5401-00

	304 Stainless Steel		Powder Coated Steel		304 Stainless Steel		Powder Coated Steel	
	Cat. #	$/Each	Cat. #	$/Each	Cat. #	$/Each	Cat. #	$/Each
For Single Models (2 ports)	1694-15	1,327.00	1694-17	602.00	1694-19	1,940.00	1694-21	902.00
For Twin Models (4 ports)	1694-16	1,410.00	1694-18	674.00	1694-20	2,064.00	1694-22	956.00

Fans ensure even ion distribution.

IonBar™ (with fan module)

Projects a balanced stream of positive ions for neutralization of static charges throughout a restricted area. Price includes installation inside specified glovebox. Models below are for 120VAC operation.

	Cat. #	$/Each
22" Long	2005-30	900.00
33" Long	2005-32	1,016.00
44" Long	2005-31	1,133.00
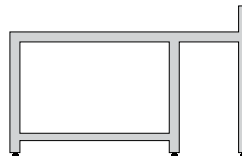
For chamber and vacuum antechamber
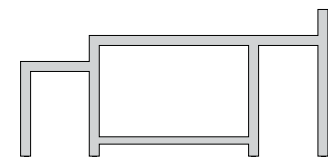
For chamber, vacuum antechamber, and oven No. 5401-00

	304 Stainless Steel		Powder Coated Steel		304 Stainless Steel		Powder Coated Steel	
	Cat. #	$/Each	Cat. #	$/Each	Cat. #	$/Each	Cat. #	$/Each
For Single Models (2 ports)	1694-23	2,191.00	1694-25	1,064.00	1694-27	2,670.00	1694-29	1,363.00
For Twin Models (4 ports)	1694-24	2,318.00	1694-26	1,117.00	1694-28	2,984.00	1694-30	1,406.00

Other Optional Accessories

	Cat. #	$/Each	Page
Glovebox Dual Purge™ System	1603-57	2,994.00	28
NitroWatch™	9500-00A	1,002.00	28
NitroWatch Sensor	9500-02A	596.00	28
Stainless Steel Automatic RB® Valve	1606-60	198.00	28
Required for operation with Dual Purge System			
Accordion Sleeve/Glove Combination	1681-91B	311.00	26
18"L, with size 9 gloves (pair)			

Other designs— see page 31

Plastic Glove Port

Standard on all Terra gloveboxes; can be retrofitted on chamber with 11.25" dia. cutouts. Price for single port.

	Cat. #	$/Each
	1694-52	225.00
Port Covers	1694-53	218.00
Iris Adapter	1694-54	340.00

Bag-In/Bag-out Ports — See page 31

Series 500
FULL-VIEW GLOVEBOX

- Transparent front and rear panels ensure full visibility of work in progress
- Opposing glove ports allow convenient, dual-side access
- Large chamber size accommodates bulky process equipment
- Rugged 304 stainless steel top, bottom and sides create a durable, chemical-resistant enclosure
- Select access doors or air locks to allow convenient parts transfer

The Series 500 Glovebox offers several convenient features that reduce the cramped, claustrophobic feeling operators often experience: a spacious processing chamber, transparent full-view windows, and dual-side access to work in progress.

Select windows of polycarbonate or static-dissipative PVC, which helps control surface charges and the particles they attract. All models below include an externally mounted fluorescent illuminator. Terra's 10"-diameter glove ports allow wide arm motion for easier parts manipulation; select gloves separately. Available with a full line of options, including side air locks or access doors for easy parts transfer, stands, and humidity control systems (see below).

Twin Series 500 chambers, No. 1694-32A
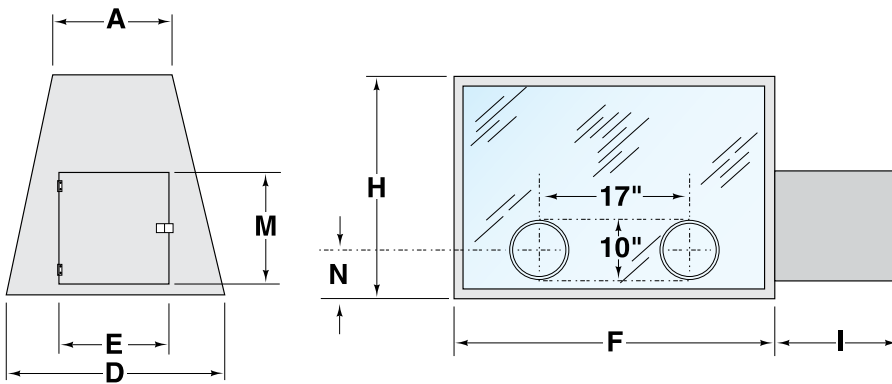
Glove	A	D	E	F	H	I	M	N
2	26	36	14.75	48	30	16	14.75	12
4	26	36	14.75	96	30	16	14.75	12

Series 500 Full-View Gloveboxes*					Air Locks**			Access Door***		
Model	Static-Dissipative PVC Panels		Polycarbonate Panels		Right Mount	Left Mount		Right Mount	Left Mount	
	Cat. #	S/Each	Cat. #	S/Each	Cat. #	Cat. #	S/Each	Cat. #	Cat. #	S/Each
Single	1694-31A	7,870.00	1694-33A	7,752.00	1702-12C	1702-13C	3,534.00	1694-45-500	1694-46-500	1,183.00
Twin	1694-32A	14,537.00	1694-34A	12,316.00	1702-12C	1702-13C	3,534.00	1694-45-500	1694-46-500	1,183.00

* All models are 120VAC, 50/60Hz. For 220VAC, add "-220" to the part number.
** Mounted on either side panel; see page 28 for details.
*** Mounted on either side panel; 18"W x 20"H.

Optional Accessories (see also facing page)

Stands
All-welded 2" square tubing, each stand provides optimal support for its corresponding chamber.

	Stainless Steel		Powder-Coat Steel	
For Series 500 Chambers	Cat. #	S/Each	Cat. #	S/Each
Single	1694-39	2,116.00	1694-40	1,259.00
Twin	1684-75	2,212.00	1684-76	1,342.00
For Series 600 Chambers	9670-02	1,385.00	9670-03	635.00

Air Locks
Air locks minimize nitrogen loss and contamination while parts are introduced or removed. BioSeal™ design features noncontaminating polyurethane seals. Standard units on ordering chart above come with solid stainless steel door (select window below).

	Cat. #	S/Each
Viewing Window	1702-02	487.00

Tempered Glass, 7"W x 9.5"H

Series 600
FRONT-VIEW GLOVEBOX

- Polycarbonate or tempered glass front window allows full view of processing operations

- Stainless steel frame lends strength and chemical resistance

- Select access doors or air locks for convenient parts transfer

- Full range of optional accessories includes gloves, filtration modules and process gas controllers for automatic humidity control

Full-front viewing windows on these chambers provide complete visibility of the processing environment and minimize the claustrophobic sensation created by other gloveboxes. Select chemical-resistant polycarbonate or tempered glass; all units come with a fluorescent illuminator and roomy 10"-diameter glove ports (order gloves separately).

Now with 10"-diameter ports for wider range of motion!

No. 9670-00, shown with right-side air lock.

Optional port cover seals against standard port to allow convenient glove replacement without compromising the internal environment

Cat. #   S/Each
1694-53   218.00

Optional iris port seals against standard port for easy access by operators with gloved hands

Cat. #   S/Each
1694-54   340.00
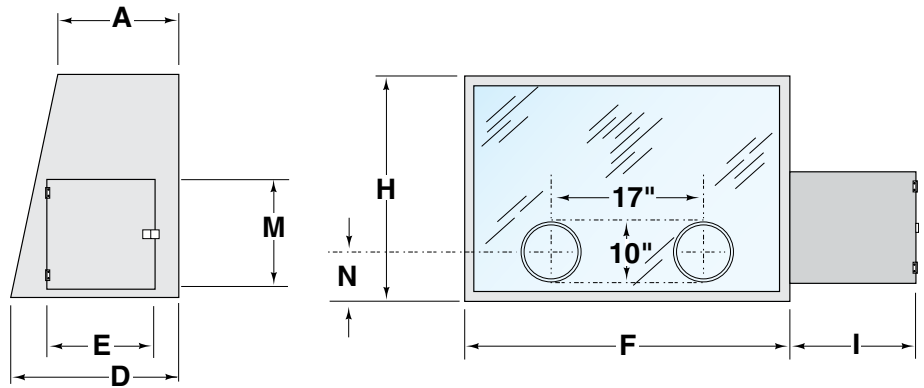
Glove	A	D	E	F	H	I	M	N
2	24	29	12	37.5	39	16	12	14

Series 600 Full-View Gloveboxes*		Air Locks**		Access Door***		
Tempered Glass Panels	**Polycarbonate Panels**	**Right Mount**	**Left Mount**	**Right Mount**	**Left Mount**	
Cat. # S/Each	Cat. # S/Each	Cat. #	Cat. # S/Each	Cat. #	Cat. # S/Each	
9670-01B 11,196.00	9670-00B 9,759.00	1702-14C	1702-15C 3,295.00	1694-45-600	1694-46-600 1,183.00	

* All models are 120VAC, 50/60Hz. For 220VAC, add "-220" to the part number.
** Mounted on either side panel; see page 28 for details.
*** Mounted on either side panel; 18"W x 20"H.

See stands on facing page.

Optional Accessories (see also facing page)

Sleeve and Glove Combination

Neoprene convoluted sleeve provides rigidity that enhances comfort and resists blowback in a pressurized chamber. Supplied with one pair of nitrile gloves of specified size. For 10"-diameter glove ports. See page 26 for other gloves.

Glove Size	Cat. #	S/Pair
8	1689-46	359.00
9	1689-47	343.00
10	1689-48	344.00
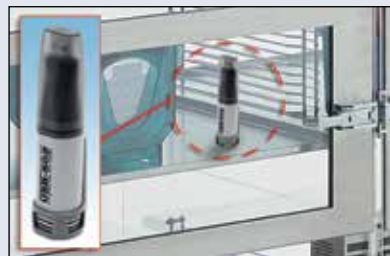
RH/Temperature Data Logger

USP device provides a convenient record of storage conditions. Records data at selected intervals and downloads to computer for display in several formats.

Cat. #   S/Each
9500-10   205.00

See pages 32 – 33 for Terra's Humidity Control Systems

No. 2900-46 shown

Swing-up access door and isolated antechamber

Sliding glass door isolates antechamber

COMPOUNDING ASEPTIC ISOLATOR

Helps meet USP<797> requirements

- Low-noise, low-vibration filter/fan unit provides continuous vertical flow of 99.99% particle-free air to meet Class 100 (ISO 5) cleanliness standards

- 304 Stainless steel enclosure is easy to clean and disinfect

- Large, ergonomically sloped static-dissipative PVC viewing window tilts open to allow insertion of filling machines or other large process equipment

- Antechamber features swing door for easy insertion/removal of IV bags and other small items

- Magnehelic® gauge monitors internal positive pressure inside the enclosure that prevents infiltration of contaminants

- Includes IV rod and externally mounted fluorescent illuminator

- Waste port available for disposing of materials through glovebox floor or side

This laminar flow glovebox provides an easy-to-clean environment for performing sterile pharmaceutical preparations. Its HEPA filtration module provides a positive pressure of 99.99% particle-free air inside the work area to meet ISO 5 requirements. A separate antechamber allows introduction of materials without contaminating the main work area. Includes polyurethane exit filter (HEPA exit filter available). Select gloves for 10"-diameter ports from page 26. Material: 304 stainless steel with tempered glass window and polypropylene dividing wall. Dimensions: 50"W x 30"D x 51"H.

ValuLine™ Isolator provides a USP <797>-compliant isolator at a lower cost! Polypropylene construction is easy to clean and resists biocides. No. 2900-58 shown.

Compounding Aseptic Isolators and Stands				
Material	**30" Chamber Depth**		**Easy Reach 24" Chamber Depth**	
	Cat. #	$/Each	Cat. #	$/Each
304 SS	2900-46C	8,294.00	2900-56	8,447.00
Polypropylene	2900-62	6,496.00	2900-58	6,650.00
Stand	1694-81	683.00	1694-82	581.00

No. 2900-56

Gloves — See page 30

Easy-Reach Model: 22" depth allows easy cleaning of back wall; rear baffle plate is removable without rear access to allow easy cleaning and sterilization
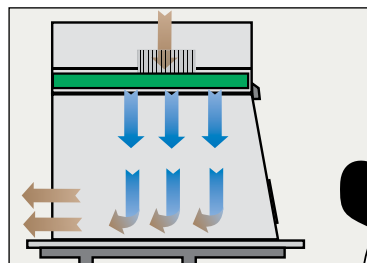
Single-pass flow-through design

Includes IV rod

Rear Baffle removes for cleaning

Sliding door

Smooth interior with radius corners for easy sterilization!

Available with sloping bottom and drain valve for disinfectant wash-down

No. 9670-32C shown

BIOSAFE® GLOVEBOXES

- Smooth, ultra-clean surfaces eliminate germ traps, simplify cleaning and disinfection
- Continuous-seam interiors create a sealed chamber
- Tempered glass or polycarbonate viewing windows allow full view of chamber

- Includes fluorescent illuminator (UV sterilization bulbs available)
- Optional access panel available for equipment transfer
- Custom configurations available—call to discuss your requirements!

Position	Window Material	304 Stainless Steel				316 Stainless Steel			
		Single (37.5"W x 29"/24"D x 39"H)		Twin (69"W x 29"/24"D x 39"H)		Single (37.5"W x 29"/24"D x 39"H)		Twin (69"W x 29"/24"D x 39"H)	
		Cat. #	$/Each	Cat. #	$/Each	Cat. #	$/Each	Cat. #	$/Each
Glovebox with Right-Side Air Lock*	Polycarbonate	9670-16C	20,687.00	9670-19C	26,185.00	9670-48B	29,125.00	9670-51B	36,931.00
	Safety Glass	9670-17C	21,942.00	9670-20C	27,444.00	9670-49B	30,941.00	9670-52B	38,654.00
Glovebox with Left-Side Air Lock*	Polycarbonate	9670-22C	20,656.00	9670-25C	26,223.00	9670-54B	29,125.00	9670-57B	36,931.00
	Safety Glass	9670-23C	22,170.00	9670-26C	27,444.00	9670-55B	30,941.00	9670-58B	38,654.00
Glovebox with Dual-Side Air Locks*	Polycarbonate	9670-28C	25,904.00	9670-31C	31,654.00	9670-60B	36,700.00	9670-63B	44,550.00
	Safety Glass	9670-29C	27,191.00	9670-32C	32,876.00	9670-61B	38,517.00	9670-64B	46,229.00

BioSafe Glovebox — All models are 120VAC; 220VAC models available

* Air lock dimensions: 16"W x 16"D x 16"H

Each chamber includes pair of 10"-diameter glove ports (twin models include two pairs). Order gloves separately on page 30.

	For Single		For Twin	
	Cat. #	$/Each	Cat. #	$/Each
Powder-Coat Stand	9670-41	658.00	9670-43	789.00
Stainless Steel Stand	9670-40	1,385.00	9670-42	1,519.00

Removable Panel

Allows you to remove and reseal front viewing window to allow transfer of large process equipment. Poured polyurethane BioSeal™ is easy to clean and sterilize.

	Cat. #	$/Each
Single Chamber	9670-35	2,894.00
Twin Chamber	9670-36	3,473.00

Filtration Module

Versatile system allows easy conversion from open-loop operation with fresh make-up air, to closed-loop recirculation for particle containment: just turn the valves. An inlet and outlet ULPA filter scrubs the air of contaminants, maintaining cleanliness.

See Page 8 for more details and ordering information.

Nitrogen Generators

Purity vs. Flow Rates (@100 PSI inlet feed, 72°F*)

Model	Purity		
	99%	98%	97%
No. 2700-12A	7.4 CFH	10.2 CFH	12.5 CFH
No. 2700-11A	49.0 CFH	65.0 CFH	75.0 CFH
No. 2700-09A	126.0 CFH	180.0 CFH	223.0 CFH

* Higher flow rates can be achieved with higher feed temperature (see Terra's process gas heater, No. 9450-00).

A   *No. 2700-12B*   *No. 2700-11B*   *No. 2700-09B*

B *Dryex 80*

C *Dryex 10*

PROCESS GAS GENERATORS & DRYERS

Terra's gas generators and gas dryers provide several ways to produce a dry, particle-free environment inside glove boxes, desiccators, and other enclosures.

Membrane separation systems operate with no moving parts and require almost no maintenance. The Nitrogen Generator uses this technology to provide a reliable source of clean, dry nitrogen.

On-Site Generation – a simple, reliable, hassle-free alternative to rented tanks that guarantees you'll never run out of clean, dry Nitrogen!

Outer Case
Enriched Nitrogen Product Gas
Support Core
Epoxy Tube Sheet
Oxygen-Enriched Air
End Plate
Hollow Fibers
Feed Air
O-Rings
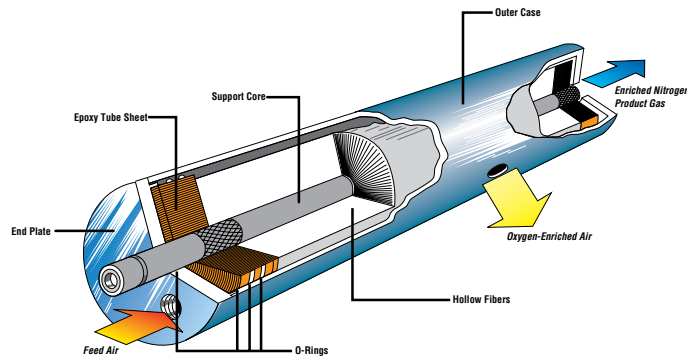
Comparative Guide to Terra Gas Dryers								
Product	Design Type	Outlet Flow Capacity	Service Requirement	Prefilters Included	Overall Dimensions (W" x D" x H")	Recommended Application	Cat. #	S/Pair
A. Nitrogen Generator	Membrane	See performance chart above	Air Compressor (#9505-47)	Yes (micro-fiber& coalescing)	18 x 18 x 81.25 / 24 x 12 x 49.25 / 20 x 12 x 35.5	Gloveboxes, desiccators & N$_2$-based process equipment in labs where N$_2$ is preferable to dry air	2700-09B / 2700-11B / 2700-12B	15,360.00 / 6,847.00 / 5,509.00
B. Dryex 80™ Gas Dryer	Membrane	420-900 SCFH	Air Compressor (#9505-43)	Yes (micro-fiber & coalescing)	24 x 12 x 49.25	Low-humidity applications (in gloveboxes or desiccators) where clean, dry air is acceptable	9082-00	5,194.00
C. Dryex 10™ Generator	Membrane	54-105 SCFH @ 100 PSIG	Air Compressor (#9505-43)	Yes (micro-fiber & coalescing)	16 x 7.25 x 6.5	Ideal source of purged gas in moisture-sensitive storage and processing applications	9082-01	2,699.00

Items with **blue prices** usually ship in 1–3 days. For current lead times: TerraUniversal.com

HIGH-CAPACITY NITROGEN GENERATOR

- **Turnkey solution supplies high-volume of 99%+ pure nitrogen for laboratory or industrial applications***

- **Compressor processes clean, dry air for nitrogen production**

- **Eliminates limitations of conventional nitrogen sources—gives you control of rate, purity and cost of nitrogen production**

- **Large nitrogen holding tank ensures a ready supply at all times**

- **Modular design allows easy accessibility of all components for required maintenance**

Terra Universal's High-Capacity Nitrogen Generator includes both a high-volume rotary screw air compressor and Terra nitrogen* tanks/membranes for a complete system. Simply allow the holding tank to fill, and you've got 60 gallons of N_2 ready to use. Easily and quickly replenish as needed. The generator is designed to provide a continuous flow of 99%+ pure nitrogen without the expense and inconvenience associated with gas cylinders. The rotary-screw air compressor features a direct-drive, energy-efficient 50 HP motor, with a moisture separator for cleaner air. Operating at 217 psig, it produces 157 ACFM. For N_2 production, the compressed air passes through the generator's coalescing filters to remove residual water, oil and particles. Hydrocarbon filters then remove vapors before the final step of separation from other gasses such as oxygen and carbon dioxide. Purified nitrogen is stored and ready to use.

High Capacity Nitrogen Generator, 120VAC, No. 2701-32

High-capacity Rotary Screw Air Compressor No. 2701-33

Specifications

Nitrogen Purity:	99%+ (depending on inlet pressure)
Power Requirements (compressor):	208/230/460 VAC, 60Hz, 3-phase, prewired for 460V operation
Power Requirements (generator):	120VAC / 240VAC
Generator Max. Power:	4kW
Footprint:	90" x 72" (generator and compressor)
Maximum height:	96"
Generator Tank Capacity	N_2 holding tank: 60 gal.; Compressed air storage: 200 gal.
Compressor pressure range	217 psig
Compressor Capacity	157 ACFM
Compressor Motor Power	50 HP
Compressor Dimensions	78.375"L x 40.5"W x 67"H
Compressor Weight	2,458 lb

		Cat. #	$/Each
High-Capacity Nitrogen Generator	120 VAC	**2701-32**	**17,850.00**
Compressed Air System	208/230/460VAC	**2701-33**	**26,000.00**

* See performance data at TerraUniversal.com for correlated flow.

A Reliable Nitrogen Source When You Need It!

Nitrogen's (N_2) inert properties make it a necessity for many industries, such as life science, semiconductor, aerospace, food, chemicals, and energy. It's widely used for drying, purging, cooling, and to create a protective barrier between sensitive parts and the damaging environment (i.e., oxygen). High-volume N_2 production is an effective process that eliminates limitations and higher cost of N_2 canisters.

Top view of component configuration inside nitrogen generator powder-coated steel cabinet

Nitrogen Generator System Components:
1. 200-gallon compressed air holding tank
2. 60-gallon nitrogen holding tank
3. Hydrocarbon filter
4. Two (2) nitrogen membranes and one (1) exit filter
5. Coalescing pre-filters
6. High-volume rotary screw compressor

STAINLESS STEEL AIR LOCKS

- **Smooth internal surfaces and all-welded seams for easy cleaning and disinfection**
- **No-lip design maximizes usable space**
- **Non-contaminating polyurethane Bio-Seal™**

Terra's improved air lock design ensures a sealed environment that minimizes nitrogen loss and contamination. Knife-edges along the chamber seat against recessed polyurethane seals. Double-wall stainless steel construction, with heavy-duty door latches and hinges, ensures a long service life.

Select optional safety glass viewing window on the access side. Mechanical interlocks are also available to prevent the chance of cross-contamination. Includes provisions for purging with nitrogen or other process gas, and for installation of an Automatic RB® (Relief/Bleed) valve.

Shown with optional 7"W x 9½"H tempered glass viewing window (Cat. # 1702-02, $464)

Optional mechanical interlocks: Cat. # 1702-03, $460

Elastomer seal for superior performance

Cleaner, More Durable Stainless Steel Latches
Terra's all-stainless steel latches, standard on all glovebox air locks, eliminate scratching, corrosion and contamination common with plated latches.

Glovebox Air Locks*												
Dimensions (ID):	**12"W x 12"H x 14"D**			**12"W x 12"H x 16"D**			**16"W x 16"H x 16"D**			**12"W x 20"H x 16"D**		
	Right Mount	**Left Mount**		**Right Mount**	**Left Mount**		**Right Mount**	**Left Mount**		**Right Mount**	**Left Mount**	
For Glovebox	Cat. #	Cat. #	$/Each	Cat. #	Cat. #	$/Each	Cat. #	Cat. #	$/Each	Cat. #	Cat. #	$/Each
Series 300 (page 18)	1702-10C	1702-11C	3,534.00	1681-17C	1681-18C	3,810.00	—	—	—	—	—	—
Series 400 (page 20)	1698-01C	1698-02C	3,350.00	1681-19C	1681-89C	3,810.00	1702-18C	1702-19C	5,062.00	1702-37C	1702-38C	4,316.00
Series 500 (page 22)	1702-12C	1702-13C	3,534.00	1681-93C	1681-94C	3,810.00	1702-31C	1702-32C	5,062.00	1702-39C	1702-40C	4,316.00
Series 600 (page 23)	1702-14C	1702-15C	3,295.00	1681-95C	1681-96C	3,810.00	1702-33C	1702-34C	5,062.00	1702-41C	1702-42C	4,316.00

* *Part numbers are for an air lock of the specified size with a flange for right or left mounting to the Terra glovebox indicated. (No part numbers in a column indicates that the air lock does not fit that glovebox).*

Shown with custom rear-wall installation

PNEUMATIC DOOR AIR LOCKS

Foot pedal operation eliminates awkward reaching—perfect for large chambers

This pneumatic access door eliminates clearance requirements—giving you full use of every square inch of valuable glovebox space. The pneumatic assembly and all moving parts are positioned outside the glovebox in a separate housing. Can be configured for rear chamber access or air lock access.

Door sealed in housing outside chamber

Air Lock with Pneumatic Door				
Corresponding Glovebox	**Right Side**		**Left Side**	
	Cat. #	$/Each	Cat. #	$/Each
For Series 300 Chamber	**1530-70**	7,583.00	1530-74	7,667.00
For Series 400 Chamber	**1530-71**	7,752.00	1530-75	7,837.00
For Series 500 Chamber	**1530-72**	7,920.00	1530-76	8,004.00
For Series 600 Chamber	**1530-73**	8,087.00	1530-77	8,174.00

PASS-THROUGH OVENS & ACCESS MODULES

A. High-Performance Pass-Through Oven

Features double doors for such pass-through operations as resistance and seam welding of hybrids and many other microelectronic packages. Door flanges hold circulating water to speed up the cooling of the chamber during cycling operations. These ovens require a support platform when mounted on a chamber; select a Terra stand with oven support. Select fittings kit for operation with Full-Vacuum Control Module.

Temperature range: Up to 300°C continuous, 350°C intermittent
Degree of vacuum: Up to 10^{-6} Torr and higher.

	Right Mount Cat. #	Left Mount Cat. #	S/Each
120VAC/60Hz	5401-12A	5401-00A	18,131.00
220VAC/50Hz	5401-12A-220	5401-00A-220	18,131.00

B. Modular Vacuum/Nitrogen Oven

This unit provides a compact, economical alternative to Terra's larger Vacuum/Nitrogen Oven. It is ideal for R&D, lab, and production operations.

Vacuum range: Atmosphere to 10 microns, with adequate pump
Temperature range: 10°C to 149°C
Capacity: 0.48 cu. ft.

	Right Mount Cat. #	Left Mount Cat. #	S/Each
110VAC/60Hz	9602-30A	9602-03A	6,134.00
240VAC/50Hz	9602-30A-220	9602-03A-220	6,134.00

C. Vacuum Control Module

Controls vacuum pump operation to maintain desired vacuum level inside the Series 400 vacuum antechamber or pass-through oven. See page 20.

	Cat. #	S/Each
120VAC	1681-75	2,878.00
240VAC	1681-75-220	2,878.00

D. Acrylic VAcuum Antechamber

Supports vacuum to 29.9" Hg. Available in plastic for Series 100/200/300 Glovebox.

	Cat. #	S/Each
12"	1681-63	3,052.00
23"	1681-67	3,696.00

E. Bellows Eyepiece Interface

This cut-out is sealed with a bellow-type diaphragm to allow viewing of a stereo microscope positioned inside any of Terra's stainless steel gloveboxes. Standard cut-out size is 8"W x 6"H. Specify size and location.

Cat. #	S/Each
1681-53	246.00

F. Flanges and Pipe Fittings

Terra provides a wide range of pipe and flange fittings, including Tri-Clover Flange Adapters, to accommodate glovebox feed or ventilation ports. Call to discuss your requirements.

- Weld-On and Bolt-On Configurations, all diameters
- 304/316 SS, brass and other materials
- PTFE and other linings

A Heating to 300°C

B Heating to 149°C, see TerraUniversal.com for other sizes

C

D

E

F

G

G. Tilt-Up Viewing Module

Swings open for easy access. Dual piston mechanisms hold the window securely in open. Price includes modification of plastic or stainless steel glovebox. Frame is stainless or powder-coat steel; window is static-dissipative PVC. Must be ordered together with affected glovebox.

Glovebox Material	Single Chamber Cat. #	S/Each	Twin Chamber Cat. #	S/Each
Plastic: SS Frame	3305-20	2,490.00	3305-21	2,953.00
Plastic: Powder-coat Frame	3305-22	2,142.00	3305-23	2,605.00
Stainless Steel	1684-92	2,067.00	1684-93	2,376.00

Shown: One-piece model available for 8"-dia. ports

GLOVES & SLEEVE COMBINATIONS

A. Accordion Sleeve and Glove

These accordion sleeves, made of neoprene, can be used for any size and type of gloves. The convenient two-piece design lets you change glove sizes and types for different operators or applications without the expense of changing the sleeve itself. The corrugated section keeps the sleeve off the operator's arm for better air circulation and greater comfort. Includes nitrile gloves. Glove Thickness: 18 mil.

Glove Size	18" Sleeve, 12.75" glove	
	Cat. #	$/Pair
8	1689-46	359.00
9	1689-47	343.00
10	1689-48	344.00

B. Heavyweight Nitrile Gloves

These heavy-duty nitrile rubber gloves provide unusual durability while maintaining optimum levels of form, fit and function. Resists a wide-range of chemicals, including solvents

Glove Size	13" Sleeve	
	Cat. #	$/Pair
8	1671-50	6.00
9	1671-51	6.00
10	1671-52	6.00

BUY ONLINE! Items priced in blue usually ship in 1–3 days.

C. Butyl Sleeve and Glove

Textured grip improves dexterity. Length: 32".

	One-Piece Fully-Dipped Glove		
Hand Size	Lightweight (.015")		Heavyweight (.030")
	Cat. #	$/Pair	Cat. #	$/Pair
9	1671-15	347.00	1671-16	384.00

D. Nitrile Sleeve and Glove

Two-piece units provide the convenience of quick glove replacement. Sleeve has GUS. (Glove-Under-Sleeve) Connectors to air-tight, liquid-tight seal. Unlined.

Hand Size	Nitrile Gloves 13" long		Nitrile Sleeve 22" long	
	Cat. #	$/Pair	Cat. #	$/Pair
8	1670-13	50.00	1670-17	202.00
9	1670-14	50.00	Sleeve has GUS	
10	1670-15	50.00	Connector (see above)	

E. Neoprene Sleeve and Glove

Select one-piece bonded or two-piece sleeve/glove combinations. Two-piece units provide the convenience of quick, easy glove replacement while leaving the sleeves attached to the glovebox. Sleeve and glove are joined by a Glove-Under-Sleeve (GUS) Connector, which ensures an air-tight, liquid-tight seal and protection against hazardous materials. Length: 30" total (22" sleeve only, tapering to a 4"-diameter cut-off). Sleeve thickness: 0.030" – 0.040".

F. Hypalon Sleeve and Glove

Select one-piece fully-dipped glove or two-piece sleeve/glove combinations. Two-piece units provide the convenience of quick, easy glove replacement while leaving the sleeves attached to the glovebox. Sleeve and glove are joined by a Glove-Over-Sleeve (GOS) Connector, which ensures an air-tight, liquid-tight seal and easy glove changeout. Length: 32" total (22" sleeve only, tapering to a 4"-diameter cut-off). Sleeve thickness: 0.015".

E. Neoprene Gloves for 10"-diameter ports

Hand Size	One-Piece Bonded Neoprene Dry Box Glove		Neoprene Gloves 13" long, unlined textured grip		Neoprene Sleeve Sections 22" long	
	Cat. #	$/Pair	Cat. #	$/Pair	Cat. #	$/Pair
8	1689-53	241.00	1670-83	68.00	1690-92	197.00
9	1689-55	241.00	1670-84	68.00	with G.U.S. connectors (see above)	
10	1689-56	241.00	1670-85	68.00		

F. Hypalon Gloves for 10"-diameter ports

Hand Size	One-Piece Fully-Dipped Hypalon Dry Box Glove		Hypalon Gloves 14" long, unlined textured grip		Hypalon Sleeve Sections 22" long	
	Cat. #	$/Pair	Cat. #	$/Pair	Cat. #	$/Pair
8	—	—	1671-05	82.00	1671-18	362.00
9	1671-17	330.00	1671-06	82.00	—	—
10	—	—	1671-07	82.00	—	—

GLOVE & IRIS PORTS

- **10"-diameter ports, standard on all Terra gloveboxes, allow ample arm motion**
- **Internal mounting system accepts port caps or iris ports, which seal against the port frame to expand glovebox versatility (order caps and iris ports separately)**

Versatile Three-Part System

Terra's standard 10"-diameter glove ports, made of ABS plastic, accommodate all the gloves on the facing page. Their versatile internal mounting hardware allows you to expand system capabilities by adding either port covers or iris ports.

Port covers include an O-ring that seals tightly against the glove ports from the inside of the chamber. This internal-mount system lets you seal a chamber when work is not in process, and to replace gloves without affecting the internal environment. Handles allow easy manipulation of the caps.

Iris ports also mount against the ports from the inside, converting the chamber into an easy-access, non-sealed chamber that operators can access using standard laboratory gloves.

Replacement Glove Port

Required for either caps or iris ports. Included standard on all Terra gloveboxes. Price is for one port.

Cat. #	$/Each
1694-52	**225.00**

New larger-diameter ports provide a wider range of motion to improve comfort and productivity!
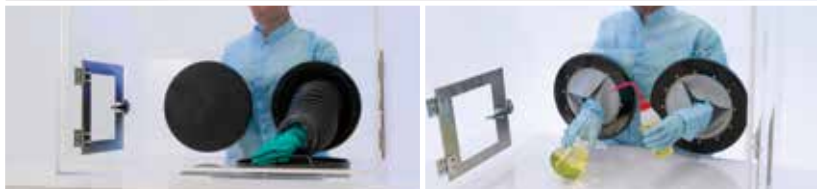
Optional port cover seals against port to allow glove replacement without compromising the internal environment

Optional iris port seals against port for easy access by operators with gloved hands

Port Cover
Mounts to a standard 10"-diameter port. Price is for one cover.

Cat. #	$/Each
1694-53	**218.00**

Iris Port
Includes iris port and port retaining ring. Mounts to standard 10"-diameter port. Price is for one iris port.

Cat. #	$/Each
1694-54	**340.00**

SPECIALTY GLOVE PORTS

- **Round or oval, in 304/316 stainless steel, PVC, polypropylene, and more**
- **Custom materials and configurations, including Delrin® ports and Viton® or Buna-N O-rings: TerraUniversal.com**

No. 1672-07   *No. 1672-10*   *No. 1672-27*   *No. 1694-43*

304 Stainless Steel Ports
(316L pharmaceutical-grade SS also available)

Diameter	Round		Oval	
	Cat. #	$/Each	Cat. #	$/Each
8"	**1672-05**	**460.00**	—	—
9"	**1672-06**	**620.00**	**1672-10**	**861.00**
10"	**1672-07**	**772.00**	**1672-11**	**924.00**
12"	**1672-08**	**899.00**	**1672-12**	**988.00**

PVC Ports

Diameter	Round	
	Cat. #	$/Each
6"	**1672-15**	**321.00**
8"	**1672-16**	**339.00**
10"	**1672-17**	**375.00**
12"	**1672-18**	**411.00**

Polypropylene Ports

Diameter	Round		Oval	
	Cat. #	$/Each	Cat. #	$/Each
6"	**1672-21**	**411.00**	—	—
8"	**1672-22**	**494.00**	**1672-27**	**494.00**
10"	**1672-23**	**494.00**	—	—
12"	**1672-24**	**499.00**	—	—

Bag-Out Port
9" diameter. Other sizes available.

	Cat. #	$/Each
	1694-43	**287.00**
Bags: Package of 10 12-mil PVC bags for 9" port	**1694-44**	**109.00**

Economizes on nitrogen consumption up to 78%
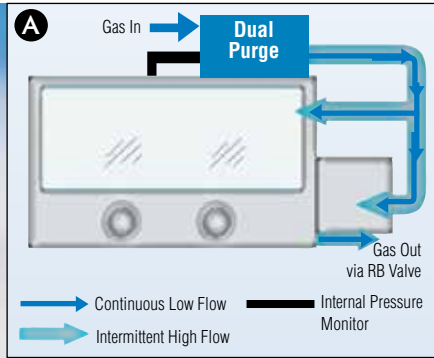
Extends shelf lives of stored materials by controlling moisture and moisture-related defects
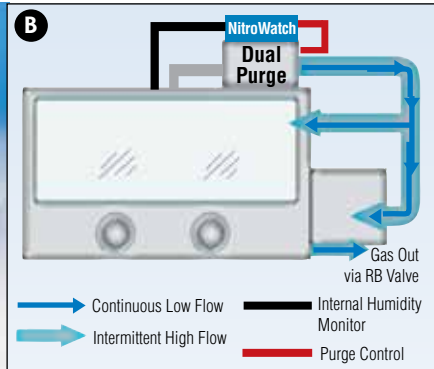
DewWatch: Humidity Monitor & Control (Dual Purge System, RB valve required)
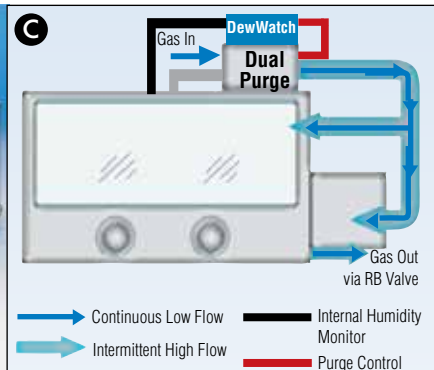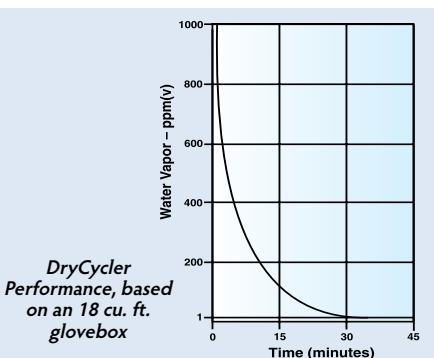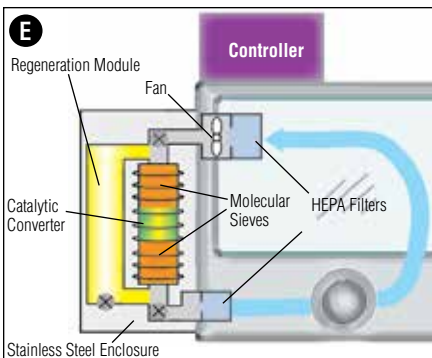

Typical application with NitroWatch/Dual Purge humidity controllers (not included)

A
Gas In → **Dual Purge**

→ Continuous Low Flow — Internal Pressure Monitor
→ Intermittent High Flow
Gas Out via RB Valve

B
NitroWatch
Dual Purge

→ Continuous Low Flow — Internal Humidity Monitor
→ Intermittent High Flow — Purge Control
Gas Out via RB Valve

C
Gas In → **DewWatch** / **Dual Purge**

→ Continuous Low Flow — Internal Humidity Monitor
→ Intermittent High Flow — Purge Control
Gas Out via RB Valve

D
Gas One / Gas Two → **Gas Mixer** → **NitroWatch** / **Dual Purge**

→ Intermittent High Flow → Continuous Low Flow
Gas Out via RB Valve

E
Controller
Regeneration Module
Fan
Catalytic Converter
Molecular Sieves
HEPA Filters
Stainless Steel Enclosure

DryCycler Performance, based on an 18 cu. ft. glovebox

(Graph: Water Vapor – ppm(v) vs Time (minutes))

PROCESS GAS & HUMIDITY CONTROLS

A. Dual Purge™ System
Purges a glovebox with dry process gas to maintain a continuous positive pressure that blocks out moisture and contaminants. Switches to high-flow purge to compensate for pressure drop-outs or rising humidity levels. Requires RB valve for safe operation.

	Cat. #	S/Each
110VAC, 60Hz or 220VAC, 50Hz	1603-57	2,994.00
High-Flow System	1603-58	3,341.00

For rapid purge required in low-O₂ chambers.

B. NitroWatch™
Operates in tandem with the Dual Purge System to maintain user-determined humidity level (down to 0%RH).

	Cat. #	S/Each
Control Unit	9500-00A	1,002.00
Humidity Sensor	9500-02A	596.00

C. DewWatch™ Hygrometer
A high-performance alternative to the NitroWatch, this unit monitors and displays dew/frost points between -80 and +20 degrees C. Sensor is sensitive to 0.5 PPM(v) of moisture.

	Cat. #	S/Each
Control Unit	1401-07	5,225.00
Sensor Probe	1401-12	1,703.00

D. Trace Gas Mixer™
Assures accurate gas mixtures. Model shown features two flow channels of specified flow.

	Cat. #	S/Each
2-20/2-20	2701-00	983.00
2-20/5-50	2702-00	1,001.00
5-50/5-50	2703-00	1,019.00
5-50/10-100	2704-00	984.00

E. DryCycler™ Regenerating Gas Dryer
Quickly provides an ultra-low humidity level (down to 1 ppm of water vapor) inside a glovebox or other enclosure. A humidity controller activates the dehydration module to maintain humidity set point.

Cat. #	S/Each
6706-01	15,814.00

F. Automatic RB® (Relief/Bleed) Valve
Automatically relieves pressure build-ups to ensure safe operating conditions with Terra's gas control systems.

For Stainless Steel Enclosures

Cat. #	S/Each
1606-60	198.00

For Polymer Enclosures

Cat. #	S/Each
1600-60B	104.00

G. Humex Humidifiers

Terra's Humex Humidification Modules allow controlled moisture testing in a glovebox or other chamber. The Humex incorporates a wate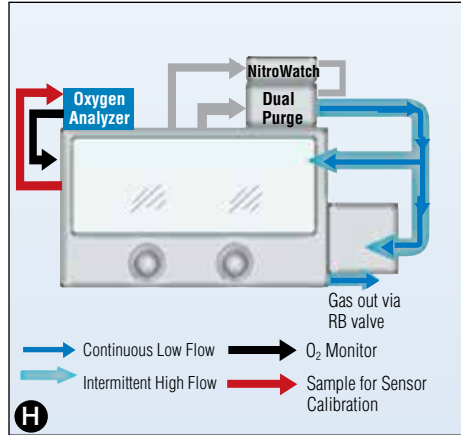r reservoir for high-volume applications. The Humex 2™ humidifies the nitrogen or other process gas being fed into the chamber. It is plumbed to a standard water line and includes a vaporization chamber that provides 15 – 30 CFH flow rate. Both require a humidity sensor for automated humidity control with ± 3% accuracy. Visit TerraUniversal.com for full specifications.

Humex

Humex 2

	Cat. #	$/Each
Humex (110VAC, 50/60Hz)	**9081-00**	**4,552.00**
Humex 2 (110VAC, 50/60Hz)	**9081-02**	**2,602.00**
Humidity Sensor (installed)	**9500-02A**	**596.00**

H. Trace Oxygen Analyzer

This Trace Oxygen Analyzer utilizes precise zirconia oxide diffusion sensors to accurately detect oxygen concentrations, making it ideal for applications in which even minute concentrations of oxygen can degrade parts. With a user-friendly, menu-driven microprocessor and a quick response time, this Oxygen Analyzer is capable of measuring from 0.01ppm to 100% oxygen with a high degree of accuracy. An RS232 interface is included.

The control housing contains: the electronics module, the sensor, the sample cell, and a high-purity pump that draws gas from the glovebox for analysis. It includes a high-visibility LED digital display that indicates oxygen concentration.

Sensor:	Quick response zirconia oxide diffusion sensor
Measurement Range:	Autoranging from 0.01 ppm to 100%
Accuracy:	1% or better of measured value in ppm
Repeatability:	0.2% of measured value
Response Time:	90% of step change within 5 seconds
Power:	User selectable 110/220VAC, 50/60Hz

Includes connection to specified glovebox.

Typical application with NitroWatch/Dual Purge humidity controllers (not included)

	Cat. #	$/Each
Trace Oxygen Analyzer	**2005-97**	**6,864.00**

CO_2 Analyzer also available

I. RH/Temperature Data Logger

This USB device provides a convenient record of humidity and temperature conditions inside the process chamber. You set the logging interval (from 10 seconds to 12 hours), units (°C or °F) and hi/low alarms; the device stores up to 16,382 temperature and RH readings. Included software lets you download data via USB port and then display it as a strip chart or export to an MSExcel® spreadsheet. Only 4" long, the unit is powered by a single 3.6V Li battery.
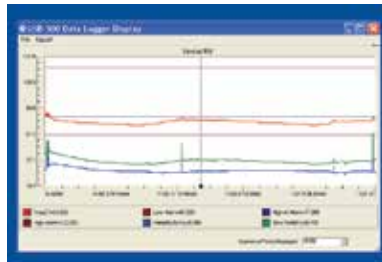
Cat. #	$/Each
9500-10	**205.00**

J. Programmable Logic Controllers

Terra configures and programs Allen-Bradley PLCs for a wide range of process applications involving temperature, humidity, UV sterilization, and other control variables. Capabilities include touchscreen monitor/control of process recipes and ramp cycles.

Call to discuss your process requirements!

WE'RE MORE THAN CLEANROOMS.
WE'RE WHAT GOES INSIDE.

For over 35 years, Terra has manufactured critical
environment enclosures and furnishings. We also offer
unbeatable value and technical service on a comprehensive
range of laboratory research and processing equipment.

For detailed technical specifications and pricing,
visit Terra's sister site Laboratory-Equipment.com.

Laboratory-Equipment.com
A Terra Universal Company

A. BACTRONEZ

Modular and economical BACTRONEZ anaerobic chambers can be configured to your specific application requirements. The patented cuffs enable glove-free handling and inspection of samples within a consistent, oxygen-free environment. These anaerobic chambers provide a faster sample turnaround compared to vacuum jars and bags. Units are ideal for research and clinical laboratories handling small volumes of anaerobic samples.

Includes: Sleeve assembly with medium cuff and interior electrical outlet

BACTRONEZ 13.7 cu. ft., 300 plate		
Description	Cat. #	S/Each
13.7 cu. ft., 110V	3901-00	10,893.00
13.7 cu. ft., 220V	3901-00-220	10,893.00

See Essential Accessories Kit

Modular unit with 13.7 cu. ft. work space and a 300-Petri plate capacity

B. BACTROX Hypoxia Chamber

The Bactrox Hypoxia Chamber provides precise control of oxygen and carbon dioxide from a range of 1% to 20% and in increments of 1/10th of a percent.

- Advanced atmospheric PID controller
- Independent incubator (5°C above ambient to 70°C)
- Ultra-fast extra large pass box, vacuum-less sleeve entry
- Vibrant LED exam lights; stainless steel construction Independent gas and condensation control
- RSS232; Condensation control; PC calibration of oxygen sensor; independent gas controls

BACTROX Hypoxia Chamber, 13.7 cu. ft.		
Description	Cat. #	S/Each
13.7 cu. ft., 110V	3900-87	20,776.00
13.7 cu. ft., 220V	3900-87-220	20,776.00

Accessories

C. BACTRONEZ Essential Accessories Kit

- Includes: vacuum pump, foot pedal assembly, AMG regulator, ergonomic grip catalyst holder, exterior LED light, Petri plate racks (2 x 11)
- Unit Weight: 65 lbs. (29.48 kg)

BACTRONEZ Essential Accessories Kit		
Description	Cat. #	S/Each
115V	3901-25	2,898.00
220V	3901-25-220	2,898.00

D. BACTRON Sleeve Assembly

For BACTRON and BACTROX chambers. Includes sleeves, cuffs and O-rings

Cuff Size	Arm Port Door	Cat. #	S/Each
Large	Ergonomic	3901-02	483.00
Medium	Ergonomic	3901-04	483.00
Small	Ergonomic	3901-06	483.00

E. Anaerobic Chamber Start-Up Kit

Start-up kit includes: spare gasket, anatox, chamber cleaner, scratch remover, acrylic cleaner, 10 anaerobic indicator strips, 2 sets of spare latex cuffs and spare O-ring.

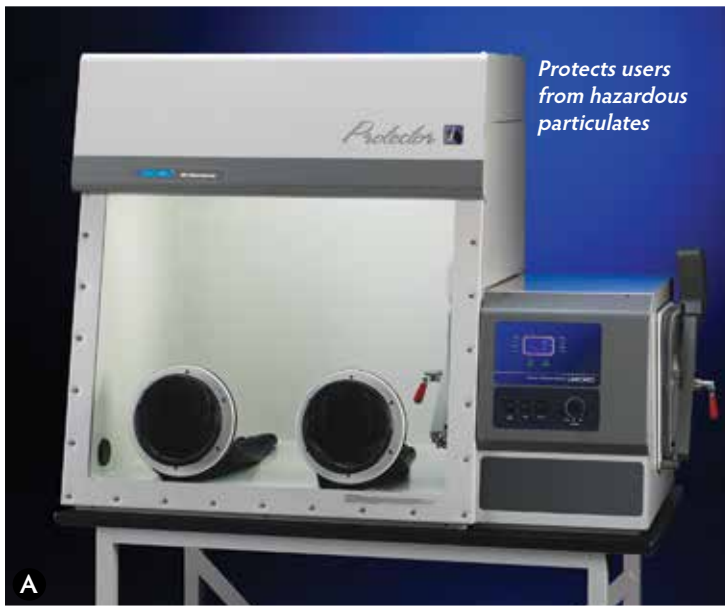| For use with	Cat. #	S/Each
BACTRONEZ	3901-01	478.00
BACTRON 300, 600, 900	3900-93	356.00

13.7 cu. ft. and 300-plate capacity unit provides precise control of oxygen and carbon dioxide

Includes all the most used accessories for the BACTRONEZ

Protects users from hazardous particulates

Isolates oxygen or moisture sensitive materials

Works as a Controlled Atmosphere or Filtered Glove Box

A. Protector® Filtered Glove Boxes

The inlet and outlet filters (HEPA or ULPA) provide optimum user protection from extremely hazardous particulates. Airborne particulate containment, with reversible air pressure from negative to positive, allows units to be used in cleanroom applications requiring ISO Class 3 conditions and exceeds ISO Class 5 conditions. These units are durably constructed with either stainless steel (**ULPA**) or one-piece molded fiberglass (**HEPA**) liners for a leak-tight isolation of hazardous or sensitive materials such as: microorganisms, low-level radio-chemicals, chemical carcinogens and asbestos. Features: inner and outer transfer chamber doors, built-in blower with speed control, pass-through plug, neoprene gloves, LCD real time display, epoxy-coated exterior and large laminated safety glass window. Dimensions: 63.5"W x 31.0"D x 45.7"H. Select models are ETL listed or CE marked. Model shown: 3644-00.

Applications nanoparticle manipulation, toxic powder weighing, pharmaceutical research and biochemistry

Type	Material	Cat. #	S/Each
Single Models (2 glove ports)	304 Stainless Steel	**3644-01***	**21,036.00**
	Fiberglass	**3644-00***	**16,794.00**
Twin Model (4 glove ports)	304 Stainless Steel	**3644-02***	**42,169.00**

* 120 VAC, 60 Hz Models; 220V models also available

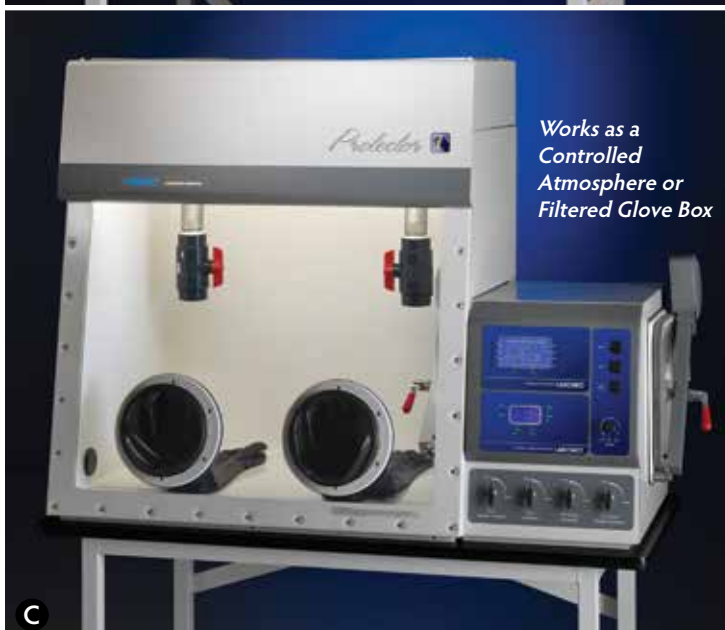## B. Protector Controlled Atmosphere Glove Boxes

These leak-tight, factory-tested units provide an impermeable environment that effectively isolates highly sensitive material from contamination. Ambient air inside the glove box is replaced with an inert gas (nitrogen, argon or helium) delivered manually or automatically (auto pressure controller model). Units are durably constructed with either stainless steel or one-piece molded fiberglass with both models achieving ISO Class 1 atmosphere conditions. Features: large laminated safety glass window, epoxy-coated steel exterior, LCD display (with auto pressure controller models), 4 inlet/outlet valves, neoprene gloves, and pass-through with plug. Dimensions: 63.9"W x 34.4"D x 45.7"H. Select models are ETL listed or CE marked. Model shown: 3644-07.

Applications: organometallic chemistry, lithium battery handling, hemoglobin research. hydrophilic chemical handling.

Type	Material	Cat. #	S/Each
Single Models (2 glove ports)	304 Stainless Steel	**3644-07**	**21,608.00**
	304 Stainless Steel	**3644-08***	**27,617.00**
	Fiberglass	**3644-05**	**17,379.00**
	Fiberglass	**3644-06***	**23,571.00**
Twin Model (4 glove ports)	304 Stainless Steel	**3644-09**	**43,107.00**
	304 Stainless Steel	**3644-10***	**48,827.00**

120 VAC, 60 Hz models listed above; 220V models also available

* With Auto Pressure Control

C. Protector Combination Glove Boxes

These glove boxes have two internal valves that convert models from a flow-through to an inert atmosphere glove box. Units are constructed with a leak tight physical barrier and an inlet and outlet HEPA or ULPA filtration to protect users working with hazardous or sensitive samples. Features: Exceeds ISO Class 4, achieves ISO Class 3, surpasses ASHRAE 110 standards, exceeds ISO Class 1, factory leak-tested, large laminated safety glass window, epoxy-coated steel exterior, built-in blower with speed control, LCD display for auto pressure controller, 4 inlet/outlet valves, neoprene gloves, and pass-through with plug. Dimensions: 62.4"W x 37.6"D x 46.4"H. Select models are ETL, UL, CAN/CSA or CE marked. Model show: 3644-15.

Applications: Filter-nanoparticle manipulation, toxic powder weighing, pharmaceutical research and biochemistry; controlled atmosphere-organometallic chemistry, lithium battery handling, hemoglobin research.

Type	Material	Cat. #	S/Each
Single Models (2 glove ports)	304 Stainless Steel	**3644-16***	**32,415.00**
	Fiberglass	**3644-15***	**28,368.00**
Twin Model (4 glove ports)	304 Stainless Steel	**3644-17***	**53,625.00**

* 120 VAC, 60 Hz Models; 220V models also available

A. LFGI Laminar Flow Glovebox/Isolator

With positive and negative configuration options, the LFGI Series provides ultimate product and operator protection. The ergonomic glove system and the HEPA filters provide the highest level of protection from microbiological particulates, dust, powders and aerosols. Units functions as a **CACI** and **CAI**.

Available in three sizes. Models meet or exceed ISO 14644-1 for Class 5 air quality.

Work Area Width	Cat. #	S/Each
34.5"	**5607-15**	**19,945.00**
46.5"	**5607-16**	**21,241.00**
70.5"	**5607-17**	**26,342.00**

B. VersaFlow Laminar Flow Compounding Aseptic Isolator

Constructed of high quality, all-welded stainless steel with pharmaceutical grade finish, this Compounding Aseptic Isolator (**CAI**) meets USP 797 regulations. The work area is bathed with unidirectional HEPA-filtered air with minimal turbulence for a sterile work environment. Units meet or exceed ISO 14644-1 Class 5 air quality and are designed to fit through standard door and elevator openings.

Available in 33", 49" and 55" work area dimensions with a fully adjustable shelf and a stainless steel stand with locking cleanroom grade casters.

System starts at $13,070.00

C. Radiopharmacy Isolator

Choose the LFGI Series Radiopharmacy Isolator for advanced user and product protection when compounding sterile radiopharmaceuticals. Units achieve USP 797 compliance without the need for costly pharmacy ventilation renovations. ISO 14644-1 Class 5 (Class 100) air quality is maintained under dynamic conditions with unidirectional laminar airflow system. Includes 1/4" lead shielding.

Overall dimensions are 36"W x 34"D x 79.5"H. CACI units are constructed from 100% stainless steel interior and exterior with a pharmaceutical grade #4 finish. Units are designed to fit through standard door openings and elevators.

Systems start at $45,533.00

D. SEA-III BSC

An ergonomically designed standard sized cabinet ideal for modern microbiology labs tasked with handling a wider range of hazardous biological materials. Features HEPA filtered air and double HEPA filtered exhaust air. Boosts preparedness of lab when working with emergency response networks for containing higher risk biological agents. Cost-effective stainless steel models with ergonomic design promotes natural arm position, extends reach and reduces fatigue. Exhaust system requirements: 50 cfm @ 2" H_2O (8.5 M3/hr. @ 500 Pa).

SEA-III Glove Boxes				
Glove Model	Interior Dims W" x D" x H"	Overall Dims. with 36" stand W" x D" x H"	Cat #	S/Each
2	41.25 x 22 x 29.25	60.25 x 24.75 x 76.375	**5607-25**	**51,638.00**
3	54 x 22 x 29.25	72.25 x 24.75 x 76.375	**5607-26**	**58,650.00**
4	78.125 x 22 x 29.25	95.125 x 24.75 x 76.375	**5607-27**	**70,088.00**

Safe, affordable, and ergonomic. Ideal for integrating Class III BSC into complex lab environments

VACUUM DESICCATORS

See specifications/ordering chart below.

A. High-Capacity Chamber (see chart below)

Ideal for degassing large assemblies. Powder-coated steel chamber with 1"-thick aluminum door. Includes 1"-thick polycarbonate viewing window, piping, fittings and solenoid valve for convenient control (order pump and vacuum controller separately). 18"W x 48"L stainless steel shelf creates a convenient platform 4.5" above chamber floor.

	Cat. #	$/Each
Powder-Coated Steel Stand		
Raises chamber shelf to 34.6" above floor level	**3404-04**	**1,248.00**

B. Stainless Steel Chamber (see chart below)

Double-wall construction; includes 8" x 8" tempered glass viewing window and dual metering valves and 0-30" vacuum gauge.

C. Aluminum Vacuum Chamber (see chart below)

One-inch-thick aluminum walls support sustained full vacuum without warping. Includes acrylic viewing window, dual metering valves and vacuum gauge. Many standard sizes! Model shown: 5235-34.

D. Full-View Acrylic Chamber (see chart below)

Made of $^1/_2$"-thick cylindrical acrylic. Designed for continuous pump operation with safety relief valve.

E. – J. Acrylic Chambers

See chart below.

Ideal for degassing and transporting small parts. Designed for continuous pump operation (order below).

Vacuum Chamber Accessories

	Cat. #	$/Each
Metering Valves (installed)	**5235-09**	**168.00**
Two required for direct connection to pump, or one if connecting Vacuum Controller.		
Vacuum Gauge (installed)	**5235-10**	**206.00**
Required if selected pump does not include metering kit.		

Vacuum Controller

Recommended for all continuous vacuum applications. For Full Vacuum (to 29.9" Hg). Select appropriate Turnkey Connection Kit below.

	Cat. #	$/Each
120VAC, 60Hz	**1681-75**	**2,878.00**
220VAC, 50Hz	**1681-75-220**	**2,878.00**

Connection Kit

Includes all connections, vacuum, solenoid, turnkey installation and testing charges.

	Cat. #	$/Each
For Type A–C Chambers	**5400-25**	**1,600.00**
For Type D–J Chambers	**5400-24**	**1,600.00**

Shown with optional stand, vacuum pump and controller

Complete line of pumps at TerraUniversal.com

Vacuum Chambers						Factory Tested*		
Type	**Dimensions** (W" x D" x H" excluding hardware)		**Max. Vacuum**			**Max. Vacuum**		
	Outside	**Inside**		Cat. #	$/Each		Cat. #	$/Each
A	49L x 30 dia.	48L x 26 dia.	29.9" Hg	**3404-03**	**24,178.00**	—	—	—
B	13 x 15 x 14	8 x 12 x 8	29.9" Hg	**3404-00**	**3,476.00**	—	—	—
C	17 X 17 X 13.5	15 X 15 X 11.5	29.5" Hg	**5235-34**	**5,968.00**	—	—	—
D	12"-dia. x 14.5	11"-dia. x 13.5	29.8" Hg	**5235-08**	**2,462.00**	—	—	—
E	17 x 11 x 12.5	14 x 8 x 9.5	27.0" Hg	**5235-00A**	**2,309.00**	29.9" Hg	**5235-16**	**3,359.00**
F	13 x 13 x 7.5	10.5 x 10.5 x 4.5	27.0" Hg	**5235-01A**	**1,738.00**	29.9" Hg	**5235-17**	**2,788.00**
G	9 x 9 x 9.5	6 x 6 x 6.5	27.0" Hg	**5235-02A**	**1,508.00**	29.9" Hg	**5235-18**	**2,558.00**
H	13 x 13 x 10.5	10 x 10 x 7.5	27.0" Hg	**5235-03A**	**2,025.00**	29.9" Hg	**5235-19**	**3,075.00**
I	17 x 17 x 13.5	15 x 15 x 11.5	27.0" Hg	**5235-04A**	**2,387.00**	29.9" Hg	**5235-20**	**3,437.00**
J	26.5 x 11 x 12.5	11 x 8 x 9.5	27.0" Hg	**5235-06A**	**2,612.00**	29.9" Hg	**5235-21**	**3,662.00**

* These models are individually factory leak tested and guaranteed to hold specified vacuum level for a minimum of 96 hours.

PCR WORKSTATIONS by Terra Universal

Terra manufactures turnkey laminar flow Polymerase Chain Reaction (PCR) Hoods with laminar flow HEPA filtering for cleanliness. The air-velocity meter monitors air flow. These lightweight models are made with acrylic or static-dissipative PVC panels. Models are available with a stainless steel work surface.

- Portable, economical turnkey hood converts any benchtop surface into a controlled PCR work station
- Safe UVC Disinfection Module with "exposure switch" to protect users from harmful UV light
- Fully-enclosed environment keeps UV energy safely contained during sterilization
- Samples and equipment introduced via large front sash
- Full-length front access shield enhances laminar flow when closed and gives users complete access to samples and equipment when open. It is held open, or safely closed during UV decontamination, with magnetic latches

PCR Workstation (No. 1692-90) on a polypropylene table (order separately)

PCR Workstations

PCR Hood Material	Dimensions W" x D" x H"	Cat. #	S/Each
Acrylic	36 x 24 x 30.25	**1692-90**	3,909.00
Acrylic	48 x 24 x 30.25	**1692-91**	4,185.00
Static-dissipative PVC	36 x 24 x 30.25	**1692-93**	4,689.00
Static-dissipative PVC	48 x 24 x 30.25	**1692-94**	5,018.00
Tempered Glass	36 x 24 x 30.25	**1692-95**	3,576.00
Tempered Glass	48 x 24 x 30.25	**1692-96**	3,827.00

Pipette Shelf

Material	Cat. #	S/Each
Acrylic	**1692-99**	170.00
Polypropylene	**1692-98**	170.00

mLINE® Pipette Multipacks by Sartorius

Multipacks	Cat. #	S/Each
Pipette 3-pack 10	**PP03-20**	792.00
Pipette 3-pack 20	**PP03-21**	792.00
Pipette 4-pack	**PP03-22**	995.00
Pipette 3+1 pack	**PP03-23**	1,314.00
Pipette 5-pack	**PP03-24**	1,232.00

Ultra-Violet C Sanitizing Lamp

99+% kill rate for common bacteria and viruses within 2 minutes!

Length	Cat. #	S/Each
21"	**3305-90**	426.00
33"	**3305-91**	471.00
61"	**3305-92**	594.00

THERMAL CYCLER by Benchmark Scientific

TC9639 Thermal Cycler

Ideal for medium- to high-throughput laboratories, the **TC9639** Thermal Cycler makes it quick and easy for users to set up programs and protocols. The large, **full-color touch screen** allows the creation of icons for most-used programs. The **program wizard** guides users through protocol set-up in a single screen and allows for program edits and alphanumeric naming of programs and folders. Condensation and evaporation of samples are prevented by the **fully adjustable heated lid**. Units also feature programmable lid temperature and the lid automatically shuts off when the block temperature is below 35°C. A proprietary algorithm with tight tolerances accurately controls heating and cooling of the block. The **multi-format block** of the TC9639 eliminates the expense and need for multiple interchangeable blocks and the model accepts 96 x 0.29 ml tubes, a 96-well plate or 39 x 0.5 ml tubes. For high-throughput labs, the **T5000-384** with 384-well block is available.

	Cat. #	S/Each
TC9639 US plug	**BR19-43**	3,850.00
TC9639 EU plug	**BR19-44**	3,850.00
T5000-384 US plug	**BR19-46**	4,250.00
T5000-384 EU plug	**BR19-47**	4,250.00

Provides consistent and reliable results with unlimited program storage capability

Heratherm General Protocol Ovens
by Thermo Scientific

Ideal for routine heating and drying up to 250 °C, these energy efficient units come in benchtop or large capacity models. Gravity convection units provide low turbulence heating and drying. Mechanical Convection models provide fast drying of glassware, powders, paper and textile. Select models are CE or cCSAus listed. 120V models listed

Model/Volume (L)	Cat. #	$/Each
Gravity / 2.3 cu. ft.	3700-87	1,612.00
Mechanical / 2.3 cu. ft	3700-90	1,880.00

"Squaroid" Vacuum Ovens
by Thermo Scientific

These ovens provide a max. temperature of 220°C. Radiant warm-wall heating provides more even chamber temperature, and built-in high-limit thermostat guards against overheating. Models below feature LED temperature readouts and operate at 120VAC; 240VAC and dial thermometer models are also available, as well as high-temperature models.

Chamber Volume	With LED Readout	
	Cat. #	$/Each
0.7 cu. ft.	3700-80	2,935.00
2.3 cu. ft.	3700-82	4,931.00

Large-Capacity Forced-Air Ovens
by Sheldon Manufacturing

These versatile multi-purpose ovens create true one-pass circulation pattern for optimal uniformity and fast recovery time. Includes an electronic digital timer with large LED display and overtemperature protection and isolated heating elements. Chamber interior is stainless steel. Models shown are 120VAC.

Chamber Size	Cat. #	$/Each
14.0 cu. ft.	3700-85	3,582.00
28.0 cu. ft.	3700-86	4,810.00

INCUBATORS

myTemp™ Mini Digital Incubators
by Benchmark Scientific

Compact with a lot of power, the myTemp packs 20 liters of capacity in Heat Only or Heat and Cool models that accommodate bottles and flasks up to 2L. Other features include a vibrant LED control panel, a carrying handle and two adjustable shelves.

	Cat. #	$/Each
myTemp H Heat Only	BR18-00	375.00
myTemp HC Heat & Cool	BR18-01	580.00

Midi 40 Small Capacity CO_2 Incubators
by Thermo Scientific

Designed specifically for cell culture scientists working within a limited space, the Midi 40 CO_2 Incubator delivers what bigger incubators do at a cost-effective price point. These compact units store up to 35 T75 culture flasks and they feature a comprehensive alarm system. Features: benchtop, stainless steel chamber and cabinet, and 1.4 cu. ft. capacity includes four stainless steel drawers.

	Cat. #	$/Each
120 V 60 HZ	3615-78	4,498.00
1230 V 50/60 HZ	3615-79	4,569.00

HERAcell® 150i & 240i CO_2 Incubators
by Thermo Scientific

Available with thermo conductivity (**TCD**) or infrared (**IR**) CO_2 sensors, units provide the ideal in vitro environment for optimum cell growth. Stackable models, have excellent parameter recovery rates, a smooth and rounded inner casing and a water level sensor alarm. Units can be decontaminated without disassembly.
- 100% solid copper or stainless steel inner chamber

	Cat. #	$/Each
150L Dual, Copper TCD	3615-40	16,067.00
150L Single, Copper IR	3615-44	8,912.00
150L Dual, SS TCD	3615-48	12,892.00
240L Single, Copper TCD	3615-45	12,085.00
240L Single, Copper IR	3615-47	13,217.00
240L Single, SS TCD	3615-51	10,759.00

Freeze and Thaw Environmental Chambers

Models provide accurate control of a wide range of thermal conditions. The automatic programmable cycling between setpoints enables continuous environmental simulation for rapid testing. The controller performs 4 programs, 40 steps, an infinite number of loops and a ramp based on any time or rate.

- Material: Cold Rolled Steel, Powder Coated (Exterior); Type 304, 2B Finish, Solid Stainless Steel (Interior)
- Temperature Range: -25°C to 70°C
- Temperature Control/Uniformity at 20°C: ±0.1°C/±0.3°C
- Humidity Range/Control: 20 to 98%/±3% RH
- Application: Pharma drug research, concrete and asphalt testing, coating and adhesive testing, outdoor weathering tests, stress testing

Model	Shelves Included/Max.	Capacity cu. ft.	208/230 V, 60 hz	
			Cat. #	$/Each
Humidified*	4/25	25	5757-32	19,528.00
Standard	4/25	25	5757-33	16,279.00
Humidified*	5/31	33	5757-34	21,965.00
Standard	5/31	33	5757-35	17,905.00

*   Humidified models feature gVapor energy efficient delivery of controlled humidity vapor (as needed)

33 cu. ft.   **25 cu. ft.**

Insect Growth Chambers

Designed for insect rearing in various fields and disciplines, these energy efficient units come standard with corrosion-resistant phenolic coated coils that protect interior components and contribute to unit longevity.

- Temperature range/control: 5°C to 70°C/ ±0.1°C
- Temperature uniformity/sensor: ±0.3°C/ 3-wire RTD
- Humidity range/control: 20% to 98%/ ±2% RH
- **gVapor™** delivers controlled humidity vapor as needed
- **gROD™** for energy savings; high R, CFC-free foam insulation
- **gLux™** Fluorescent Lighting System simulates day/night conditions
- Includes adjustable, perforated stainless steel shelves
- Application: Insect growth studies in various fields and disciplines

Model	Shelves Included/Max	Capacity cu. ft.	115 V, 60 hz	
			Cat. #	$/Each
Benchtop*	3/15	10	5757-26	13,602.00
Floor Model**	4/25	25	5757-27	15,422.00
Floor Model**	5/31	33	5757-28	17,172.00

*1 access port   **2 access ports

5757-28
Transportable,
30% more space w/
heavy-duty casters

5757-27
Transportable w/
heavy-duty casters

5757-26
Stackable w/ leveling
feet

Photostability Chambers

Specifically designed for operation near UV- and visual-light testing with fluorescent lamps, these benchtop units provide uniform light distribution and high-intensity levels for quick response to forced degradation and confirmatory processes.

- Dimensions: 37.6"W x 30.2"D x 46"H, with leveling feet.
- Shelf area dimensions: 19 x 23/Shelf capacity: 22 lbs. max
- Capacity: 10.5 cu. ft.; Lamp type: UVA and VIS
- Material: Stainless Steel/Reflective specular aluminum
- Features manual and automatic mode, programmable alarms
- Includes two access ports; two sliding shelves
- Application: Forced degradation studies and confirmatory studies in agriculture, pharmaceutical and biological industries

Model	Time Req. to reach ICH 200 Rec.: W-hr/m2 Rec.:1.2 million lux-hr	115V, 60hz	
		Cat. #	$/Each
Standard	10 hrs. 60 hrs.	5757-42	27,497.00
Humidified*	8 hrs. 35 hrs.	5757-43	29,247.00

* Isolates effects of hydration during photostability testing

VALULINE™ LAMINAR FLOW WORKSTATIONS

A low-cost solution for laminar flow applications —

- **HEPA filtration, with backpressure gauge to monitor filter operation**
- **Tilt-up dissipative PVC sash**
- **Stainless steel work station**

This economical free-standing workstation provides a particle-free environment for contamination-sensitive work. Select powder-coated or stainless steel construction. Dissipative PVC side panels help maintain a laminar flow of HEPA filtered air, and the tilt-up dissipative PVC sash allows transfer of bulky process equipment.

All models include HEPA fan/filter module(s), tilt-up sash, a stainless steel work surface and a GFI duplex power outlet. Dimensions: 32"D x 89"H (see chart below for width). Top module with filter/fan can be removed for transfer through standard door.

No. 2001-65

Valuline Laminar Flow Station						
Width (Inches)	304 Stainless Steel			Powder Coated Steel		
	20VAC, 50/60Hz	220VAC, 50Hz		20VAC, 50/60Hz	220VAC, 50Hz	
	Cat. #	Cat. #	S/Each	Cat. #	Cat. #	S/Each
52	2001-65	2001-65-220	6,947.00	2001-68	2001-68-220	5,183.00
76	2001-66	2001-66-220	7,798.00	2001-69	2001-69-220	5,809.00
100	2001-67	2001-67-220	8,936.00	2001-70	2001-70-220	6,703.00

CLEANBOOTH™ LAMINAR FLOW STATION

The backbone of this system is one or more filter/fan units (FFUs), each with industry-leading low-noise impeller blowers. Flexible side curtains create a 3-sided enclosure, enhancing the laminar flow. See other options below.

Mobile Frame Support
Includes set of 4 casters, 2 with locking brakes. Order FFUs below.

Overall Dimensions (W x D, nominal)	No. of FFUs (order below)	Standard Height: 82"*	
		Cat. #	S/Each
49" x 25"	(1) 24" x 48"	1870-01	1,230.00
73" x 25"	(2) 24" x 36"	1870-02	1,460.00

*Filter face 70" above floor

Filter/Fan Units
Includes HEPA filter rated 99.99% efficient @ 0.3 μm particles. All models are 120VAC, 220V models available.

Nominal Dim. width x length	Power	Avg. Flow @ 90 FPM	HEPA FFU		Ionizing Bar with FFU Connection Kit*	
			Cat. #	S/Each	Cat. #	S/Each
2' x 4'	110VAC	644 CFM	6601-24-H	777.00	2005-49	851.00
2' x 3'	110VAC	477 CFM	6601-23-H	777.00	2005-48	744.00

Order FFU separately.

Softwall Panel Kits
40-mil curtains are 60" long. Each kit includes 2'-wide side panels and appropriate length to cover the rear of the station.

For CleanBooth	Cleanroom Vinyl		Anti-Static Vinyl	
	Cat. #	S/Each	Cat. #	S/Each
49" width	1330-00A	293.00	1330-01A	370.00
73" width	1330-05A	570.00	1330-06A	721.00

Fluorescent Light   115/277VAC, 50/60Hz

	Cat. #	S/Each	
35.5" long	1870-10	249.00	(order two for 73" booth)
47" long	1870-11	306.00	(order one for 49" booth)

No. 1870-02 with optional filter/fan unit, light, panel kit and table.

BENCHTOP LAMINAR FLOW HOODS

Terra offers several bench-top systems to meet a variety of application requirements. Visit TerraUniversal.com for complete operating specifications and pricing on dozens of standard configurations.

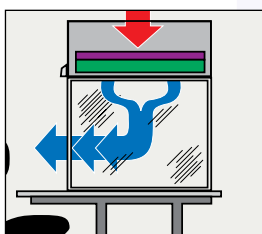## A. ValuLine™ Dust-Free Hoods

Provides an economical, HEPA-filtered enclosure for a host of contamination-sensitive applications, including sample testing, weighing and packaging. Models are available in four sizes and six materials: acrylic, polypropylene, static-dissipative and non-dissipative PVC, stainless steel and tempered glass. Model shown: No. 1715-09B hood with 6601-1636-H HEPA fan-filter unit (total price: **$1,692**).
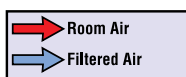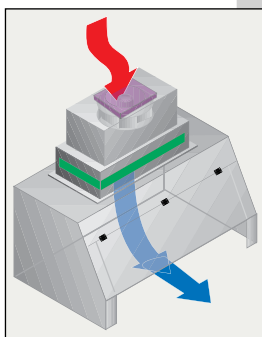
B. CleanCube™ Seamless Laminar Flow Hood

Terra's CleanCube™ provides a vertical laminar flow of filtered air to create a particle-free environment. Its one-piece hood design eliminates cracks and crevasses where germs or particles can collect. The coved corners are easy to wipe down, and the absence of corner support members ensures a full view of work in progress. It also eliminates the cramped, claustrophobic feeling that operators experience when working with a hood. Fan/Filter Unit (FFU) provides 310 CFM average flow of HEPA-filtered air at 260 ft./minute. Includes swing-up access shield.

System shown: 24"W x 24"D x 28"H acrylic hood No. 2003-10A ($1,722) with HEPA fan/filter unit No. 6601-22-H ($740). Polycarbonate also available, along with 36"-wide models.

C. WhisperFlow™ Bench-top Hood

This versatile system offers industry-leading low noise and vibration (48 dBA) in either a horizontal or vertical flow configuration. It consists of two modules: a fan/filter unit (FFU), which houses a HEPA or ULPA particle filter, and a hood. Models are available in 36" and 48" widths.
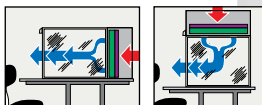
Benchtop Hoods 48"W (36"W models available)		
Hood Material*	Cat. #	$/Each
Vertical Flow		
Acrylic	1686-50C	2,719.00
Static Dissipative PVC	1686-51C	3,551.00
Nondissipative PVC	1686-52C	2,719.00
Stainless Steel (Dissipative PVC)	1686-54C	3,565.00
Horizontal Flow		
Acrylic	1686-55C	2,719.00
Static Dissipative PVC	1686-56C	3,551.00
Nondissipative PVC	1686-57C	2,719.00
Stainless Steel (Dissipative PVC)	1686-59C	3,565.00

* Unless indicated in parentheses, shield is made of the same material as the hood.

	Cat. #	$/Each
Fan/Filter Module	6601-24-H	777.00

24" x 48", with 99.99% efficient HEPA filter (rated @ 0.3 µm particles)

BUY ONLINE! Items priced in blue usually ship in 1–3 days.

Room Air
Filtered Air

A No. 1715-09B

Rounded corners for easy cleaning, full visibility

B No. 2003-10A

Horizontal or vertical configurations

C No. 1686-50C

Other models available at TerraUniversal.com

- 34" depths
- 2', 3' and 6' widths
- All-polypropylene models
- Spill trays

Model shown: No. 9620-64
For complete specifications: TerraUniversal.com

HORIZONTAL LAMINAR FLOW STATION

Terra's Horizontal Laminar Flow Station provides an economical work environment that exceeds the most stringent contamination requirements in the pharmaceuticals, biotech, electronics and semiconductor industries.

Powerful filter/blower modules provide a back-to-front laminar flow of filtered air across the work surface. The adjustable multi-speed, direct-drive blowers let you adjust air speed (90 – 130 feet per minute) to meet your requirements while providing low noise and vibration levels.

For enhanced air-stream control, this station also features return ducts along the front and side edges of the work area. These ducts enhance system efficiency by reducing backwash, the most common source of turbulence in a laminar flow system. Includes recessed illuminator; UV-C sterilization lamps available.

→ Contaminated Air
→ Filtered Air
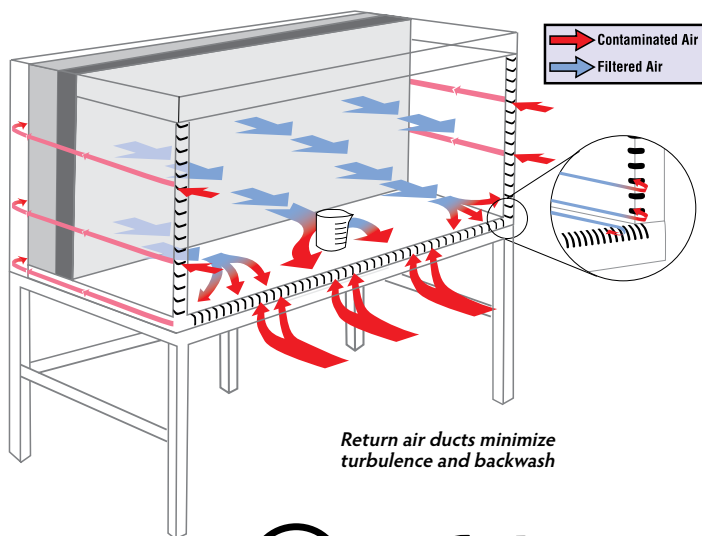
Return air ducts minimize turbulence and backwash

Fan Filter Units

230V, 50Hz models available

Petcocks	Cat. #	$/Each
Nitrogen/Clean Dry Air (CDA)	**9620-07**	**93.00**
Vacuum	**9620-08**	**93.00**
DI Water	**9620-09**	**93.00**

Horizontal Laminar Flow Station (order filters separately)							Filters			
Overall Dimensions* (W" x D" x H")	**Work Area Dimensions*** (W" x D" x H")	**No. of FFUs required** (order at right)	**Horizontal Laminar Flow: Interior Material****				**HEPA Filter/Fan Units*****			
			304 Stainless Steel		**Electropolished SS**		**Size** (W x L)			
			Cat. #	$/Each	Cat. #	$/Each		Cat. #		$/Each
52 x 44 x 63	48 x 30 x 28	(1) 2' x 4'	**9620-63**	9,858.00	9620-66	12,050.00	2' x 4'	**6601-24-H**		777.00
76 x 44 x 63	72 x 30 x 28	(2) 2' x 3'	**9620-64**	11,841.00	9620-67	13,567.00	2' x 3'	**6601-23-H**		777.00
88 x 44 x 63	84 x 30 x 28	(1) 2' x 4' & (1) 2' x 3'	**9620-65**	12,263.00	9620-68	14,574.00				

Note: All models are 115VAC, 50/60Hz. For 220VAC, 50Hz, add "-220" to the part number.
*   All dimensions are nominal.
**   Work top and side panels are of the material indicated. All exterior surfaces are powder-coated CR steel.
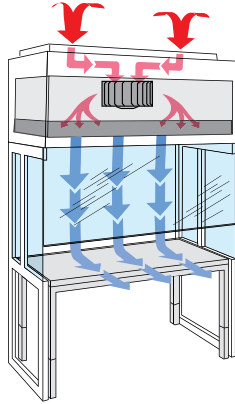*** 99.99% efficient @ 0.3 micron particles. ULPA filters also available.

Items with **blue prices** usually ship in 1–3 days. For current lead times: TerraUniversal.com

VERTICAL LAMINAR FLOW STATION

This economical system provides a laminar flow of HEPA-filtered air to meet the most critical contamination requirements. It incorporates industry-leading 48 dBA blowers for quiet, low-vibration operation. The all-304 stainless steel or powder-coated steel is cleanroom compatible and easy to clean and sterilize. An optional motorized front shield extends 3" – 25" above the work area for more effective particle control. Fluorescent lighting is included; for complete line of options, visit TerraUniversal.com

Strip shield access curtain (option)

Room Air
Filtered Air

Digital Control Panel
Fluorescent light
Motorized Sliding Shield*

Side Panels ensure effective laminar flow

Work Surfaces* available in many sizes and materials

Two-piece design isolates FFU vibration

*System option

91"
69"
32"
Shown with optional sliding shield and drawer unit
B
A

Filter/Fan Units (FFUs) 115VAC, 60Hz*
See chart below for quantity required

Nominal Dim. width x length	Avg. Flow @ 90 FPM	HEPA FFU		Ionizing Bar**	
		Cat. #	S/Each	Cat. #	S/Each
2' x 4'	650 CFM	6601-24-H	777.00	2005-49	851.00
2' x 3'	480 CFM	6601-23-H	777.00	2005-48	744.00
2' x 2'	360 CFM	6601-22-H	777.00	2005-47	621.00

* ULPA versions also available. For 220VAC model, add "-220" to the part number.
** See TerraUniversal.com for specifications. Includes installation kit.

Vertical Laminar Flow Station

Dimensions (inches)			No. of FFUs required (order above)	304 Stainless Steel (Order FFUs and Benches separately)			Powder Coated Steel (Order FFUs and Benches separately)			Side Panel* Static Dissipative PVC		Sliding Shield Static Dissipative PVC	
				120VAC, 50/60Hz	220VAC, 50Hz		120VAC, 50/60Hz	220VAC, 50Hz					
A	B	W x D		Cat. #	Cat. #	S/Each	Cat. #	Cat. #	S/Each	Cat. #	S/Each	Cat. #	S/Each
52	49	48 x 30	(1) 2' x 4'	2001-30A	2001-30A-220	6,197.00	2001-80A	2001-80A-220	4,403.00	2004-03	162.00	9207-04	1,712.00
76	73	72 x 30	(2) 2' x 3'	2001-32A	2001-32A-220	7,247.00	2001-82A	2001-82A-220	5,356.00	2004-03	162.00	9207-06	2,315.00
100	97	96 x 30	(2) 2' x 4'	2001-33A	2001-33A-220	8,192.00	2001-83A	2001-83A-220	6,289.00	2004-03	162.00	9207-07	2,487.00

* Replaces standard plexiglass side panels (each station requires two). Static-Dissipative PVC is recommended on units equipped with optional dissipative sliding shield.

Corresponding Solid Top Work Benches†

Dimensions (inches)			Nonconductive Steel Top		Conductive Top		304 Stainless Top		Polypropylene Top		Perforated-Top Work Benches† 304 Stainless Steel Top		304 Stainless Steel (Polypropylene Plenum)	
A	B	W x D	Cat. #	S/Each	Cat. #	S/Each	Cat. #	S/Each	Cat. #	S/Each	Cat. #	S/Each	Cat. #	S/Each
52	49	48 x 30	1722-00	690.00	1728-00	1,012.00	1521-45	1,285.00	1522-00	894.00	1522-56	1,313.00	1526-50	2,298.00
64	61	60 x 30	1724-00	767.00	1730-00	938.00	1751-00	1,236.00	1522-01	929.00	1522-57	1,404.00	1526-51	2,563.00
76	73	72 x 30	1726-00	756.00	1732-00	1,061.00	1752-00	1,290.00	1522-02	951.00	1522-58	1,589.00	1526-52	2,796.00
100	97	96 x 30	2402-00	937.00	2400-00	1,202.00	1753-00	1,452.00	1522-04	1,177.00	1522-60	1,974.00	1526-54	3,520.00

† Powder-coated adjustable-height frame; top of material indicated.

A   *No. 3646-05*

B   *No. 3646-49*

A. Basic Laboratory Hoods

These basic lab hoods are ideal for labs requiring light duty applications. The by-pass airflow maintains stable face velocity and vapor-proof or explosion-proof blower models provide safe ventilation. Various system options are available in 47" and 70" widths. Model shown: 3646-05 (70" width).

B. Fiberglass 30 Laboratory Hoods

Made with chemical resistant one-piece fiberglass interior and an epoxy-coated steel exterior, these compact by-pass models maintain stable face velocity, and the pivoting air foil maximizes containment. Select models are available with an integral exhaust blower. Model shown: 3646-49.

A. Basic 47 Laboratory Hoods: 47"W x 25"D x 53"H

Incandescent Lamp	Blower Motor	Equivalent Resistance*		Shipping Weight	115VAC, 60Hz		220VAC, 50Hz***		Work Surface†	
		10" dia	12" dia.	lbs./kg	Cat. #	$/Each	Cat. #	$/Each	Cat. #	$/Each
Vapor Proof	1/3 HP	100'	250'	370/168	3646-00	4,315.00	3646-00-220	4,315.00	3646-02	1,020.00
Explosion-Proof**	1/2 HP, EP	100'	250'	375/170	3646-01	5,088.00	3646-01-220	5,088.00	3646-02	1,020.00

Basic 70 Laboratory Hoods: 70"W x 25"D x 53"H

									Work Surface†	
Vapor Proof	3/4 HP	45'	100'	450/204	3646-05	5,575.00	3646-05-220	5,688.00	3646-07	1,406.00
Explosion-Proof**	3/4 HP EP	45'	100'	455/206	3646-06	6,115.00	3646-06-220	6,208.00	3646-07	1,406.00

*Maximum length of straight duct to achieve 100FPM face velocity.   ** Bulb not included on explosion-proof models.*
**** International electrical configuration. †48"/72"W x 30"D x 1.25" thick black epoxy-coated steel*

B. Fiberglass 30 Laboratory Hoods: 30"W x 30.16"D x 48"H*

Blower Motor	Equivalent Resistance**		Shipping Weight	115VAC, 60Hz		220VAC, 50Hz***		Work Surface†	
	6" dia	8" dia.	lbs./kg	Cat. #	$/Each	Cat. #	$/Each	Cat. #	$/Each
Yes††	20'	80'	230/104	3646-48	3,933.00	3646-48-220	4,029.00	3646-50	615.00
None	—	—	210/95	3646-49	3,603.00	3646-49-220	3,712.00	3646-50	615.00

*Model 3646-48-220 is 54"H
** Maximum length of straight duct to achieve 100FPM face velocity
*** International electrical configuration.
† 48"/72"W x 30"D x 1.25" thick black epoxy-coated steel
†† 1/10 HP (120V); 1/3 HP (220V)*

C. Purifier® Logic®+ Biosafety Cabinets

Ergonomically designed in harmony with the natural stance and movements of the human body, the Purifier Logic+ Class II, Type A2 biosafety cabinets protect users, products and environments from hazardous agents that require Biosafety Level 1, 2 or 3. The Logic+ recirculates 70% of the HEPA-filtered air into laboratory and 30% passes through an exhaust system with optional Canopy Connection.

- **Inclination™ Technology** provides comfort, safety and effortless operation for users of all sizes
- **Constant Airflow Profile (CAP) Technology** monitors and provides accurate airflow at all times without airflow sensors
- **Electronically Commutated Motor (ECM)** uses 60% less energy compared, is quiet in operation and it provides cooler working conditions.
- **MyLogic™ OS** is a large full-color display for intuitive programming and feedback
- Increased performance and productivity with new blower packages (tested, proven and optimized for each BSC)

By-pass models are NSF and ETL listed, CE listed (230V), and UL (115V and select 230V) listed. Nominal widths in: 3, 4, 5 and 6 foot options. Domestic and international electrical configurations are available.

Size	Dimensions W" x D" x H"	Cat. #	S/Each
4' with 10" sash opening, 115V	54.3 x 31.2 x 89.2-95.2	**3642-00***	9,368.00
6' with 8" sash opening, 115V	78.3 x 31.2 x 89.2-95.2	**3642-22***	11,546.00

* UV Light, Service Fixture, Vacu-Pass Portal and Base Stand

D. Paramount® Ductless Enclosures

These self-contained workstations require no ducting to the outside, making them ideal for applications that require portability or flexible installation. An air foil enhances fume containment. Other sizes and accessories, including filters, at TerraUniversal.com. Height work area dimension: 32".

Work Space Dimensions	115VAC, 60Hz		230VAC, 50Hz	
	Cat. #	S/Each	Cat. #	S/Each
33.6" W x 23.4" D	**3647-06**	6,321.00	**3647-06-220**	6,411.00
69.6" W x 23.4" D	**3647-07**	10,591.00	**3647-07-220**	10,693.00

E. Protector® XStream® Laboratory Hoods

High-performance, low-volume benchtop models provide maximum containment and energy savings. The patented features significantly reduce contaminants near the user's breathing and behind the sash opening. By-pass models available in 4, 5, 6 and 8 foot widths. Model shown: (5' width).

Work Space Dimensions	Cat. #	S/Each
60.0"W x 37.7"D	**1538-34**	6,949.00

F. Protector® Premier® Laboratory Hoods

As the only high performance hood in the market available with a built-in blower, these benchtop models have containment enhancing features and their dimensions match standard lab casework, base cabinets and stands. Available in 4, 5, 6 and 8 foot widths. Model shown: (4' width).

Work Space Dimensions	Cat. #	S/Each
48.0"W x 31.7"D	**3649-04**	6,105.00

WORK BENCHES and CHAIRS

Top designs for all applications—

A *Cleanroom laminate*

B *Stainless steel*

C *Dampens 90% of building vibrations*

D *Vibration platform*

Note: Benches above are pictured with optional drawer module No. 1740-07 (3", 6" and 12" drawer height); others configurations in both plastic and stainless steel are available.

Base Type (Epoxy Finish)	Width (Depth=30")	A. Nonconductive Laminate		B. Stainless Steel		C. Vibration-Free Laminate Top		Work Surface (W" x D" x H")	Electropolished Stainless Steel Top	
		Cat. #	$/Each	Cat. #	$/Each	Cat. #	$/Each		Cat. #	$/Each
Telescoping "A" Base 25"-34"	48	1722-00	690.00	1521-45	1,285.00	1570-00A	2,098.00	21.75 x 18.25 x 3	1580-02	2,566.00
	60	1724-00	767.00	1751-00	1,236.00	1570-01A	2,134.00	23 x 24 x 3	1580-03	2,766.00
	72	1726-00	756.00	1752-00	1,290.00	1570-02A	2,149.00	Visit TerraUniversal.com for other bench styles:		
Recessed "C" Base 30"	48	1521-09	637.00	1521-54	1,057.00	—	—	• ErgoHeight™ Adjustable Height Tables		
	60	1000-00	709.00	1521-55	1,315.00	—	—	• Acid-resistant polypropylene tops		
	72	1000-01	697.00	1521-56	1,182.00	—	—	• Dozens of standard sizes		

Work Benches—select desired top (all bases feature a white powder-coated finish) | **D. Vibration-Free Platform**

Class 100 Static Control #2802-62

Class 100 Static Control #2802-68

Class 100 Static Control #2802-74

Class 100 #1012-41

Class 100 #1013-52

E **F** **G** **H** **I**

E. – I. Class 100 & Static Control

Clean vinyl meets Class 100 (ISO 5) particle requirements. Static-Control chairs feature dissipative vinyl, conductive casters, and grounding chains.

Specs		Class 100 Static Control								Class 100		
Height	Color	E.		F.		G.		H.		Color	I.	
		Cat. #	$/Each	Cat. #	$/Each	Cat. #	$/Each	Cat. #	$/Each		Cat. #	$/Each
Desk	Black	2802-61*	427.00	2802-67*	433.00	2802-73*	441.00	1012-05*	489.00	Black	1012-11	495.00
	Blue	2802-62*	427.00	2802-68*	433.00	2802-74*	441.00	—	—	Black	1013-51*	568.00
Bench	Black	2802-64*	433.00	2802-70*	436.00	2802-76*	448.00	1012-41	450.00	Black	1012-12	495.00
	Blue	2802-65*	433.00	2802-71*	436.00	2802-77*	448.00	1013-12	529.00	Black	1013-52*	568.00

* Quick ship models—usually ship within one week!

Competitor's design

Hidden reinforcements minimize dead spots, add strength, and eliminate deflection bounce-back, no matter how large the benchtop.
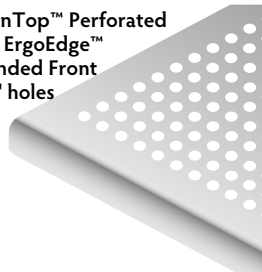
QuietTop Rod-Top Benches

Compare!
Rods anchored by non-outgassing elastomer that eliminates welds, dampens noise and vibrations.

Open-Top Perf-Top Benches

Heavy-Duty All-Electropolished Stainless Steel Work Stations (800-lb. load capacity)
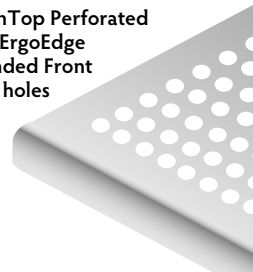
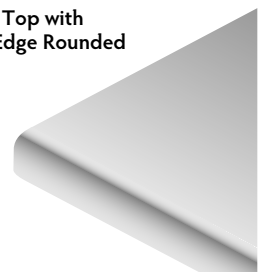**QuietTop™ Rods with Full Bullnose** ø ¼" rods on 1" centers
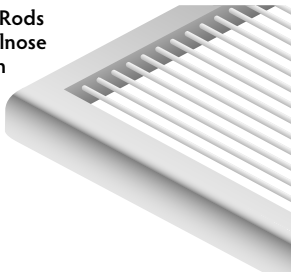
OpenTop™ Perforated with ErgoEdge™ Rounded Front ø ¼" holes

OpenTop Perforated with ErgoEdge Rounded Front ø ¾" holes

Solid Top with ErgoEdge Rounded Front

Bench Size * (W" x D")	"A" Base Cat. #	"C" Base Cat. #	$/Each	"A" Base Cat. #	"C" Base Cat. #	$/Each	"A" Base Cat. #	"C" Base Cat. #	$/Each	"A" Base Cat. #	"C" Base Cat. #	$/Each
36 x 30	9601-17	9601-18	1,685.00	9604-59	9604-80	1,636.00	9601-59	9601-60	1,494.00	9603-01	9603-02	1,314.00
48 x 30	9601-19	9601-20	1,895.00	9604-60	9604-81	3,127.00	9601-61	9601-62	2,085.00	9603-03	9603-04	1,512.00
60 x 30	9601-21	9601-22	2,124.00	9604-61	9604-82	2,347.00	9601-63	9601-64	2,111.00	9603-05	9603-06	1,637.00
72 x 30	9601-23	9601-24	2,484.00	9604-62	9604-83	2,625.00	9601-65	9601-66	2,205.00	9603-07	9603-08	1,830.00
84 x 30	9601-25	9601-26	2,648.00	9604-63	9604-84	2,746.00	9601-67	9601-68	2,342.00	9603-09	9603-10	2,038.00
96 x 30	9601-27	9601-28	3,028.00	9604-64	9604-85	3,249.00	9601-69	9601-70	2,871.00	9603-11	9603-12	2,346.00

* Prices for "A" base and "C" base designs are the same. Standard height is 30" (floor to top). Heights of 32" and 36" and widths of 34" are available at no extra charge. Specify when ordering.

Ergonomic Upholstered #2801-05

Ergonomic Upholstered #2801-33

Ergonomic Upholstered #2801-66

Urethane #1013-16

Ergonomic ESD #1012-24

J   K   L   M   N

J. – N. Laboratory Chairs

Select from our large assortment of Laboratory Chairs. Types J-L are upholstered chairs built with ergonomic benefits. Types M and N meet durability and budget needs.

Specs		Ergonomic Upholstered Chairs*						Specs	Urethane Chairs**		ESD Chair	
Height	Color	J. w/Seat Control		K. Standard		L. Large Backrest		Color	M.		N.	
		Cat. #	$/Each	Cat. #	$/Each	Cat. #	$/Each		Cat. #	$/Each	Cat. #	$/Each
Desk	Black	2801-01*	319.00	2801-33*	274.00	2801-65*	289.00	Black	1013-16	273.00	1012-14	437.00
	Blue	2801-02*	319.00	2801-34*	274.00	2801-66*	289.00		1013-17*	306.00	1012-19	498.00
Bench	Black	2801-05*	362.00	2801-37*	277.00	2801-69*	292.00	Black	1013-18*	334.00	1012-24	498.00
	Blue	2801-06*	362.00	2801-38*	277.00	2801-70*	292.00		—	—	1013-46	589.00

* Available in Grade 2 Vinyl or Grade 4 Breathable Nylon. Visit TerraUniversal.com for more color options.
** More configurations available on the website.

A

B *Hardwall rooms comply with USP-797 requirements*

E *ValuLine™ Cleanrooms—ship in 5 days*

C *Multi-room hardwall cleanroom with polycarbonate panels*

F *Hardwall cleanroom with internal-mount polypropylene panels for easy cleaning, A/C, and high speed CleanSeal® Roll-Up Doors*

Hardwall Acrylic ISO 7 Cleanroom
Reference No. 131609
Total Square Footage: 1391
Cost: $159,158

D

G *304 stainless steel BioSafe Cleanroom*

H *Versatile BioSafe® panels accommodate complex cleanroom designs, with interior production rooms and gowning areas dedicated to your workflow and cleanliness requirements*

MODULAR CLEANROOMS

Free-standing, all-steel structures create sturdy, versatile, clean processing solutions that meet cleanliness requirements to Class 10 (ISO 4). Whatever your application, Terra delivers a pre-tested, turnkey system.

Hardwall Designs
- Acrylic or static-dissipative rigid panels for full visibility
- Steel support frame spans up to 20 feet without internal pillars or external supports
- Mirror-finished stainless steel trim creates a showcase exterior
- A/C and humidity controls
- Available raised floors optimize laminar airflow

Models shown:
A. Static-dissipative PVC ISO 5 cleanroom interior: includes gowning antechamber with pass-through chamber and 9-foot ceilings.
B. Polycarbonate cleanroom designed to USP-797 requirements for compounding pharmacies
C. ISO 6 cleanroom with acrylic panels and multi-suite floorplan
D. ISO 7 cleanroom with acrylic panels and multi-suite floorplan

Softwall Designs
- New ValuLine™ rooms—full performance at lower cost
- Portable, expandable, easy to assemble and disassemble
- Curtain panels and parting strip shields, in anti-static cleanroom-grade vinyl
- Rigid steel support frame requires no ceiling supports
- Casters available

Models shown:
E. ValuLine Softwall Cleanroom provides value without sacrificing performance! Turnkey models start under $10,000 and ship in 3 – 4 days. Cleanliness to ISO 5 (Class 100).

Configured to Your Specifications!
- Air conditioning
- Humidification/Dehumidification
- Rapid-Operation Doors
- Raised Floor

BioSafe® All-Steel Designs
- Perfect for ultra-clean applications requiring frequent cleaning or sterilization
- Smooth interior walls with radius corners eliminate cracks that harbor germs and particles
- 304/316 stainless or powder-coated steel panels
- Negative-pressure airflow designs available for fume venting

Models shown:
F. Powder-coated BioSafe room with dual quick-response roll-up doors; ideal for transfer of bulky equipment or carts.
G. Stainless steel BioSafe ISO 5 cleanroom with air shower entry and ceiling plenum.
H. Powder-coated ISO 7 BioSafe cleanroom interior

Convert any space into a controlled environment—
in a fraction of the time, at a fraction of the cost!

BIOSAFE✚® PASS-THROUGH CHAMBERS

- **Flush Mount** — no cracks or surfaces to collect particles
- **Seamless** — Unique design eliminates cracks, corners and other contaminant traps!
- **Lipless** — Easy material transfer with no clearance obstruction
- **Easy to Clean** — Ultra-smooth internal surfaces
- **Easy to Sterilize** — 304/316 electropolished SS; removable doors can be steam sterilized
- **Double-Wall, Sealed Construction** — adds rigidity and houses interlock and standard or custom utilities

Other Styles at TerraUniversal.com

Roll-Up Door Pass-Through

CleanSeam+™ Pass-Through

Fire-Rated Pass-Throughs and Doors

VALULINE™ SMARTDESICCATOR™

- "Smart" relative humidity controller regulates nitrogen purge to maintain user-selected set point

- Easy two-button programming—takes seconds to install and set target relative humidity level

- Eliminates nitrogen waste by purging only when needed—cuts N₂ expenses by up to 78%

- Available in acrylic or static-dissipative PVC, which eliminates surface charges that attract particles and create electro-static discharge

- Reinforced doors and rigid cabinet construction ensure a long service life

- Chrome-plated rack allows versatile shelf positioning to accommodate various sample sizes (order plastic or electropolished stainless steel shelves separately)

Model shown is 10-chamber Acrylic, Cat. No. 3949-48A

ValuLine SmartDesiccator Plastic Desiccator*		Clear Acrylic**		Static-Dissipative PVC	
Specifications					
No of Chambers	Nominal Dimensions W" x D" x H" (mm)	Cat. #	$/Each	Cat. #	$/Each
1	17.12 x 16 x 13	3949-41A	1,301.00	3949-49A	1,450.00
2	17.12 x 16 x 25	3949-42A	1,603.00	3949-50A	1,902.00
3	17.12 x 16 x 37	3949-43A	2,015.00	3949-51A	2,277.00
4	17.12 x 16 x 49	3949-44A	2,132.00	3949-52A	2,693.00
5	17.12 x 16 x 61	3949-45A	2,369.00	3949-53A	3,078.00
6	35 x 16 x 37	3949-46A	3,054.00	3949-54A	4,117.00
8	35 x 16 x 49	3949-47A	3,464.00	3949-55A	4,740.00
10	35 x 16 x 61	3949-48A	4,203.00	3949-56A	5,863.00

* Order desired shelves and stands separately (see below).
** Acrylic is damaged by repeated contact with strong cleaning agents, including alcohol

CE

All plastic and stainless steel SmartDesiccator cabinets

RH Control Module takes seconds to program!

VALULINE™ ES DESICCATORS

Extended Storage Systems

- Reinforced doors and rigid cabinet construction

- Select economical acrylic of static-dissipative PVC for electro-static protection and enhanced particle control

- Adjustable-height acrylic or electropolished stainless steel shelves (order separately)

- Easy-clean rounded corners for particle-sensitive applications

- Flowmeter and Automatic RB® (Relief/Bleed) valve allow nitrogen purging for dry storage requirements (order separately)

- Also ideal for use with desiccant or as a general-purpose dust-free storage cabinet

No. 3949-27B (Acrylic) and No. 3949-32B (SDPVC)

ValuLine Extended Storage (ES) Desiccator*		Clear Acrylic**		Static-Dissipative PVC	
Specifications					
No of Chambers	Nominal Dimensions W" x D" x H" (mm)	Cat #	$/Each	Cat #	$/Each
1	19.125 x 16 x 13	3949-25B	301.00	3949-30B	450.00
2	19.125 x 16 x 25.25	3949-26B	603.00	3949-31B	902.00
3	19.125 x 16 x 37.25	3949-27B	1,015.00	3949-32B	1,277.00
4	19.125 x 16 x 49.25	3949-28B	1,132.00	3949-33B	1,693.00
5	19.125 x 16 x 61.25	3949-29B	1,369.00	3949-34B	2,078.00
6	36.75 x 16 x 37.25.	3949-35B	2,054.00	3949-38B	3,117.00
8	36.75 x 16 x 49.25	3949-36B	2,464.00	3949-39B	3,740.00
10	36.75 x 16 x 61.25	3949-37B	3,203.00	3949-40B	4,863.00

* Order desired shelves and stands separately (see below).
** Acrylic is damaged by repeated contact with strong cleaning agents, including alcohol

A. Barnstead™ MicroPure™ System

The compact units are ideal for producing ultrapure water for molecular biology, microbiology and analytical chemistry labs. They produce 15 liters/day of Type 1 water and are available with mix-and-match system option for UV, UF, UV/UF treatment.

	Cat. #	S/Each
Analytical and UV System	3614-91	3,375.00
UV-ST System	3614-96	3,531.00

(Includes integrated 6 L feed water tank)

B. B-Pure Cartridge Systems

Provides point-of-use deionization for laboratories and other facilities requiring pure water. The flexible design allows configuration to meet your water needs. Accepts most Thermo Scientific Barnstead cartridges and filters (ordering information at Laboratory-Equipment.com).

	Cat. #	S/Each
Single Holder	3613-52	373.00

C. Barnstead GenPure™ Water Purification System

Able to mix and match UF, UV and TOC systems for user-specific water purity levels, the GenPure system produces up to 200 L/day of GLP-compliant Type 1 ultrapure water from a pretreated feed water supply. It is ideal for a broad range of life sciences and analytical chemistry processes.

	Cat. #	S/Each
GenPure Water System	1714-32	5,049.00
GenPure UF Water System	1714-33	5,507.00

(Includes Ultra-Filtration; ideal for molecular biology, microbiology, PCR, IVR and monoclonal antibody processes)

D. GenPure xCAD Water Purification System

Includes all the features of the GenPure system above, plus remote dispensing, electronic dosing capabilities, and flexible mounting options.

	Cat. #	S/Each
GenPure xCAD Water System	1714-48	5,890.00
GenPure xCAD UF Water System	1714-49	6,214.00

(Includes Ultra-Filtration; ideal for molecular biology, microbiology, PCR, IVR and monoclonal antibody processes)

E. LabTower™ TII Water Purification System

This system converts tap water into GLP-compliant Type 2 water; choose 20 L or 20 L/hr. models. This stand-alone unit with casters has an integrated 100 L tank that recirculates reservoir water to preserve purity even during periods of stagnation. Optional UV light eliminates bacteria. More configurations and specifications.

	Cat. #	S/Each
LabTower TII System, 20 L/hr.	1108-50	8,327.00
LabTower TII System, 40 L/hr.	1108-52	9,076.00

F. LabTower EDI Water Purification System

Two stand-alone systems in one. These models produce either Type 1 (up to 200 L/day) or Type 2 (up to 500 L/day) purified water. Includes high-performance RO module with Electrodeionization (EDI) technology. Integrated 100-liter tank recirculates Type 2 water to optimize purity.

	Cat. #	S/Each
LabTower EDI System, 15 L/hr.	1714-60	11,546.00
LabTower EDI System, 30 L/hr.	1714-61	13,210.00

Heraeus™ Multifuge™ X3
3-Liter Capacity

The 3-liter Heraeus Multifuge X3 is ideal for high-throughput environments and takes up to 40% less benchtop space. With nearly twice the capacity for standard tubes compared to same-sized centrifuges, these energy saving models accommodate various swinging, fixed-angle and lightweight Fiberlite™ rotors.

- **Features**: 3-second rotor exchange; biocontainment solution; powersave; auto-correct detection
- Max Speed: 6000 to 15200 rpm (depending on rotor)
- Max RCF: 7164 to 25314 x g (depending on rotor)

Ventilated models have a low-profile design that takes up to 40% less benchtop space compared to other models.

Refrigerated models are ideal for temperature—sensitive processes in high-performance applications. CFC-free refrigeration systems have a temperature range of -10° to +40°C.

Transportable floor-standing model with an ergonomic height of 31.1" for easy reach of samples

Select models are UL, CE, or CSA certified

120V Models	Dimensions (W" x D "x H")	Cat. #	S/Each
Benchtop Models			
Ventilated	22.2 x 26.4 x 14.2	**3618-71**	6,879.00
Refrigerated	29.3 x 26.4 x 14.2	**3618-73**	9,231.00
Floor-Standing Models			
Ventilated	22.2 x 26.4 x 54.5	**3618-75**	7,795.00
Refrigerated	22.2 x 26.4 x 31.1	**3618-77**	10,066.00

Heraeus Multifuge X1
1-Liter Capacity

As the only 1-liter centrifuge capable of spinning 14 x 50 ml conical tubes in angle configuration at over 12000 xg, the energy-saving Multifuge X1 accepts various swinging bucket, fixed-angle and lightweight Fiberlite rotors. **Features**: 3-second rotor exchange; biocontainment solution; powersave; and auto-correct detection.

- Select models are UL, CE, or CSA certified
- Max Speed/RCF: 15200 rpm/25999 x g;
- Ventilated: 17.3"W x 23.8"D x 14.2"H
- Refrigerated: 24.5"W x 23.8"L x 14.2"H

120V Models	Cat. #	S/Each
Ventilated	**1538-52**	4,921.00
Refrigerated*	**1538-54**	7,048.00

* Model shown

Heraeus Megafuge™ 8
4 x 145 ml to 6 x 50 ml Capacity

This compact centrifuge accepts a wide variety of swing-out and fixed-angle rotors ideal for clinical and research applications. **Features**: 3-second rotor exchange; biocontainment solution; powersave; and auto-correct detection.

- Select models are UL, CE and IVD listed
- Max Speed/RCF: 4500 rpm/ 3260 x g
- Ventilated: 14.6"W x 18.9"D x 12.2"H

120V Models	Cat. #	S/Each
Ventilated	**1716-01**	2,188.00

Heraeus Clinifuge™
12 x 15 ml Capacity

Ideal for clinical blood sample processing in small labs and medical practices, units also display error faults, an autoclavable rotor, and accepts a wide range of adapters. Rotor chambers are completely sealed during centrifugation and the brushless motor eliminates replacement of carbon brushes.

- CSA Certified
- Max Speed/RCF: 5000 rpm /2600 x g
- Dimension: 11.2"W x 14.8"D x 9.5"H

120V Models	Cat. #	S/Each
Ventilated	**1798-58**	1,579.00

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