Product Sampler

Gloveboxes
Hoods & Vacuum Chambers
Turnkey Systems

TERRA UNIVERSAL.COM
Critical Environment Solutions

Terra Universal Gloveboxes Custom Configurations— On a Standard Basis!

Terra's versatile designs let you configure a chamber to your exact process specifications—using standard control modules and standard pricing!

Turnkey System — Whichever modules you select, Terra will deliver a tested, turnkey system that's ready for service!

| Glovebox: (See overview on facing page) Control Capabilities*	Series 100 Plastic	Series 200 Plastic	Series 300 SS	Series 400 SS	Series 500 Full View	Series 600 Front View
Low Humidity	•	•	•	•	•	•
High Humidity	•	•	•	•	•	•
Process Gas Mix	•	•	•	•	•	•
Vacuum to 5" WG		•				
Vacuum to 29.9" WG		•		•		
Pass-Through Oven (to 300°C)			•	•		
Gas Heating (to 300°F)**			•	•		
Refrigeration (to -40°C)**			•	•		
HEPA Filtration	•		•	•	•	•
Static Neutralization	•	•	•	•		•

* With selection of appropriate accessories
** Specify double-wall, insulated design for improved efficiency

Step 1: Select Enclosure Style and Material

Plastic Gloveboxes
(Series 100 and 200)

Stainless Steel Gloveboxes
(Series 300 - 600)

Step 2: Select Environmental Control Modules

Humidity Control—Begins on page 23
These modules monitor and regulate the process gas to maintain the humidity level you specify. Low-humidity modules achieve desired conditions by regulating the purge gas (nitrogen, argon, or dry air).
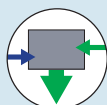
Process Gas Generation & Analysis—Begins on page 22
Terra provides gas generators, mixers, and monitors to guarantee a reliable processing environment.

Temperature Control—Begins on page 24
A wide range of process temperature solutions, from -40° to +300°C. Double-wall, insulated gloveboxes ensure stable temperatures. The Sequence Controller allows multi-cycle process documentation and control.
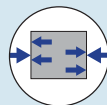
Vacuum Control—Begins on page 26
Control modules and pumps are available for a wide range of process pressures, from 5" WG to one atmosphere.

Static Control—Begins on page 25
Terra engineers will configure the right combination of ionizers and dissipative materials to protect sensitive parts against ESD.

Particle and Germ Control—Begins on page 21
Terra helps you meet cleanliness requirements as low as Class 1 through laminar flow and HEPA/ULPA filtration technologies. Radius corners and ultra-clean materials contribute to a clean, aseptic processing environment.

Laminar Flow and Exhaust Hoods— Begins on page 27

Custom Modifications

Our engineers work hand-in-hand with yours to develop cost-effective solutions to unique application challenges.

- *Custom Sizes*
- *Equipment Interface Modules*
- *Double-wall Construction*
- *Special Inlet/Exhaust Filtration*

- *Easy-clean radius corners*
- *Process Equipment Enclosures*
- *Process Control Software*
- *More!*

Standard Gloveboxes

A/B. Series 100 Plastic Gloveboxes
  – *See page 8*
- Available in five materials–
  - ✓ Static-Dissipative PVC
  - ✓ Non-Dissipative PVC
  - ✓ Polypropylene
  - ✓ Acrylic
  - ✓ Polycarbonate

C. Series 200 Plastic Gloveboxes
  – *See page 10*
- Designed for negative pressure operations (to 5" WG) - ideal for degassing, drying and ventilation

D. BioSafe™ Gloveboxes
  – *See page 17*
- Smooth, rounded corners with continuous seam welds for easy disinfection

E/F. Series 300 Stainless Steel Gloveboxes – *See page 12*
- Ideal for seam welding, leak testing, and other semiconductor and pharmaceutical processes
- Versatile side flanges allow easy installation of ai locks, vacuum ovens, and other modules

G. Series 350 Stainless Steel Gloveboxes – *See page 12*
- Single side access via glove ports
- Dual side viewing windows

H. Series 400 Stainless Steel Gloveboxes – *See page 14*
- Accommodates pass-through vacuum antechamber
- Roomy processing area

I/J. Series 500/600 Full-View Gloveboxes

Series 500 – *See page 16*
- Features opposing arm ports for dual-side access
- Transparent static-dissipative PVC or polycarbonate front/rear panels

Series 600 – *See page 16*
- Polycarbonate or safety glass front window
- Accommodates air locks and other access modules

Other Enclosures

Vacuum Chambers
See page 26

Hoods
See page 22

Product Showcase
Begins on page 34

Series 100 – Polypropylene

Series 100 – Acrylic

A

B

Series 200

BioSafe™ Glovebox for sterile processing

C

D

Series 300 with swing-up door

Series 300

E

F

Series 350

Series 400 with vacuum antechamber

G

H

Series 500

Series 600

I

J

Refrigerated, Low-Humidity Chamber

System shown: Cat. # 1695-03
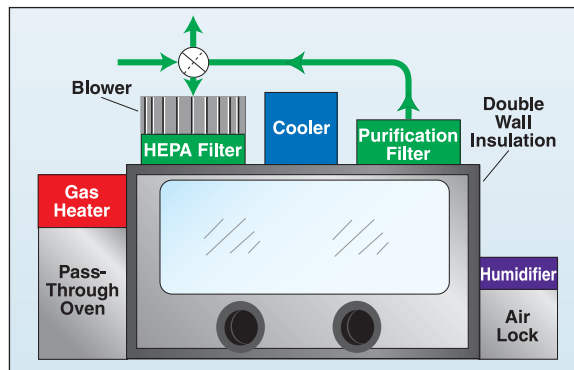
This chamber includes a refrigeration module capable of maintaining temperatures as low as -20°C. The stainless steel chamber features double-wall construction with 2" of polyurethane insulation for optimal thermal efficiency. A humidity control system, including a variable purge controller and automatic humidity controller, regulates the nitrogen process gas to maintain an internal moisture level as low as 2%RH.
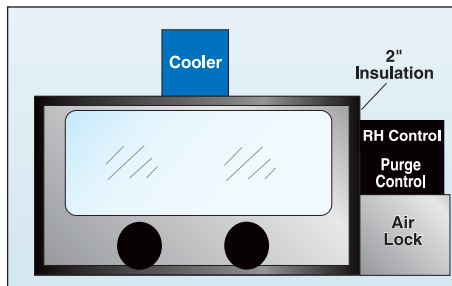
A microscope bellows accommodates the protein analysis equipment.

Sample Application: *Protein Analysis*

Diagram labels: Cooler | 2" Insulation | RH Control | Purge Control | Air Lock

Temperature/Humidity Cycling Chamber

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

Sample Application: *Material Stress Testing*

This glovebox is ideal for accelerated-life testing of elastomers, fiber composites, and other materials over a broad range of temperature (-20°F to +140°F) and humidity (5 to 95% RH).

Double-wall construction is provided on all sides. Viewing windows are double-pane polycarbonate for strength and temperature resistance. Stainless steel walls include 4" of polyurethane insulation.

A pass-through oven on one side of the processing chamber allows degassing at temperatures up to 300°C, and an opposing-side air lock allows parts removal. A closed-loop recirculation module continuously recycles air through a HEPA filter and an activated charcoal filter for removal of organic vapors.

Double-wall construction features 4" of insulation

System shown: Cat. # 1695-02

Pharmaceutical Compounding Chamber

Designed specifically for compounding pharmacists, this isolation chamber meets the requirements of USP<797> for sterile compounding. Fabricated of 304 stainless steel, its low-noise, low-vibration HEPA filter/fan module creates a contaminant-free environment. Smooth surfaces are easy to sterilize, and the sloped bottom includes a drain. The ergonomically sloped front window tilts open for sterile filling stations and other large process equipment; swing door accommodates vials, IV bags and smaller materials. Includes bag-out wasteport, IV rod and light.
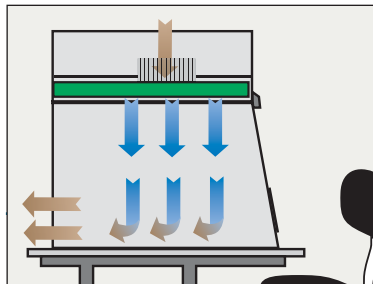
Closed-loop recirculating models available

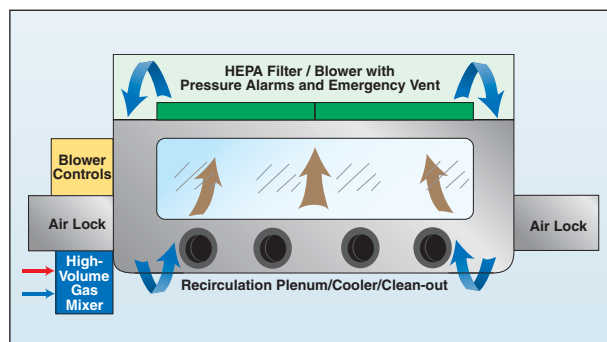**Bag-out waste port and optional power-strip**

Model shown: Cat. No. 2900-46

Particle-Free, Low-Humidity Glovebox

Designed to provide a clean, moisture-free environment, this glovebox is large enough to accommodate wafer spinners used in the deposition process. Its rounded internal corners also make it ideal for pharmaceutical powders.

It incorporates a high-volume process gas mixer that controls percentages of two process gases. A three-sided plenum design recirculates the process gas through dual filter/fan modules for HEPA filtration (99.99% efficient @ 0.3µm particles). The bottom plenum includes cooling coils that compensate for heat-generating process equipment to ensure a constant temperature of 68°F.

Dual-side air locks afford easy loading and unloading of wafers.

HEPA Filter / Blower with Pressure Alarms and Emergency Vent

Blower Controls

Air Lock

Air Lock

High-Volume Gas Mixer

Recirculation Plenum/Cooler/Clean-out

Sample Application:
Photoresist Deposition

Radius corners allow easy cleaning

System shown:
Cat. No. 1695-01

Stable Temperature/Humidity Containment Glovebox

This glovebox safely contains potential biohazards while providing a stable environment over a broad range of temperatures (-2°C to 36°C) tested at various humidity levels between 0 and 75% RH. The stainless steel chamber features 2" of insulation and internal dimensions of 33" x 33" x 33" (overall dimensions: 37"W x 37"D x 52"H). A high-capacity air conditioner holds a stable temperature down to –2°C, and a 4000W heater integrated into the evaporator coil achieves temperature stability to 36°C. The dry nitrogen feed gas provides a low %RH; an ultrasonic humidifier provides elevated RH to 74% without moisture condensation. The chamber includes a bag-in/bag-out port that can be used for transferring waste out of the chamber. The large swing-up access door allows easy cleaning of the chamber.

Bag-In/Bag-Out Port
9"-dia. port with closure operated from glovebox interior. Specify for any Terra glovebox.
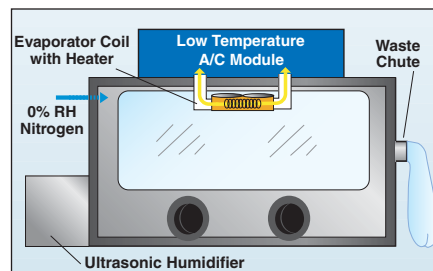
Cat. #	$/Each
1694-43	248.00

Bags
Package of 24 12-mil PVC bags

Cat. #	$/Each
1694-44	249.00

System shown: Cat. # 1695-26

Swing-up door for easy access and cleaning

Radioactive Material Handling Chamber

This 12-gauge stainless steel isolation glovebox is designed for safe handling of radioactive materials used in medical applications. It features two chambers connected by a vacuum port. One-piece gaskets and heavy-duty counter-balanced port hatches ensure a low leak rate of 0.5% of the volume of the total enclosure per hour (tested under 5" WG of vacuum).

Bag-in, Bag-out access port allows safe handling of packaging containing radioactive materials

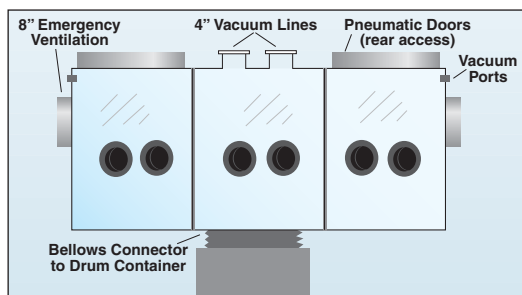*System shown: Cat. No. 1695-10*

Radius corners simplify cleaning, eliminate seams and cracks

Pharmaceutical Packaging Chambers

Designed for safe handling of pharmaceutical powders, this containment glovebox operates under negative pressure. Multiple ventilation ports ensure containment of powders when access doors are opened, and dual vacuum lines allow connection of vacuum wands for easy clean-up of powder spills.

Powder containers are introduced into the outside chambers via dual pneumatically operated, footswitch-activated doors; a loading platform at the rear of the unit accommodates bulk containers. A large opening on the bottom of the central chamber connects to a containment drum by means of a rubber bellows, allowing safe removal of large packages or loose powder. Overall dimensions: 104"W x 32.5"D x 33"H.

System shown:
Cat. # 1695-27

8" Emergency Ventilation
4" Vacuum Lines
Pneumatic Doors (rear access)
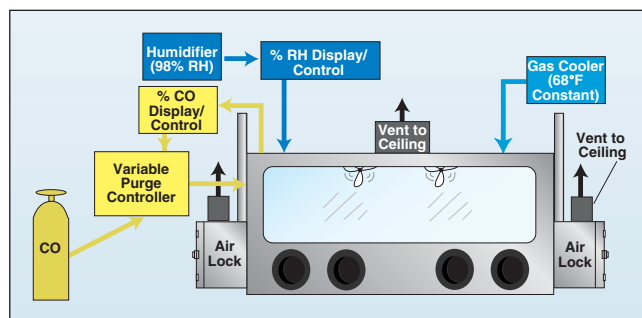**Vacuum Ports**
Bellows Connector to Drum Container

Pneumatic doors with rear loading platforms

Ventilated Hazardous Environment Chamber

In this application, potentially lethal CO gas is fed into a large chamber at precise concentrations to allow accurate sensor calibration.

A gas mixing system maintains a ratio of 2% CO/98% air during calibration. To meet requirements for high-humidity sensor performance, a Humex™ humidifier raises the moisture level inside the chamber to 95% RH. A process gas heater and cooler provide precise calibration temperatures. Circulation fans ensure uniform temperature and humidity throughout the main chamber. An emergency ventilation system evacuates the CO/air mixtures from the main chamber.

Humidifier (98% RH)
% RH Display/Control
Gas Cooler (68°F Constant)
% CO Display/Control
Vent to Ceiling
Vent to Ceiling
Variable Purge Controller
CO
Air Lock
Air Lock

Sample Application:
Carbon Monoxide Sensor Calibration

Model shown:
Cat. No. 1695-08

*Pneumatic door airlocks—see page 18*

Low-Humidity, High-Capacity
Processing Chamber

This custom glovebox provides optimal visibility and convenient access to a large, humidity-controlled processing area. Dual footswitch-activated pneumatic doors simplify parts insertion through large antechambers. The Dual Purge System and DewWatch humidity control systems maintain a user-selected sub-ambient moisture level down to 1 ppm(v).
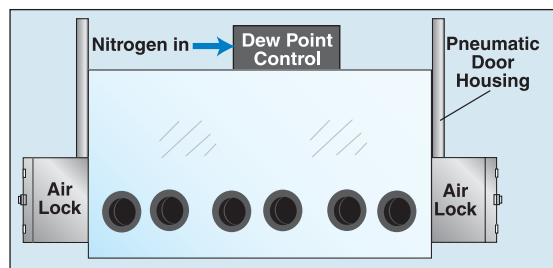
Ref. No. 1695-11

Biological
Research Chamber

This chamber maintains several critical environmental control capabilities essential for medical device biocompatibility testing, tissue cultivation studies, and other biological research:

Humidification/Dehumidification Cycling: Under precise PLC set point control, the system purges the chamber with water vapor to humidify the process environment; or with dry nitrogen to drive the humidity level below 1% RH. An onboard RO filter system removes contaminants from the water vapor.

Oxygen Concentration Control: Maintains precise O_2 set point concentration down to 0% to allow anaerobic processing.

Heating/Refrigeration Modules: Rapid cycling between 40° and 140°F.

VHP® Biodecontamination System: Vaporized hydrogen peroxide sterilizes the chamber between processing operations. A silica gel filtration module helps maintain a precise 30% H_2O_2 concentration.

HEPA Filtration: Process gas circulates through a 99.99% HEPA filtration module to remove airborne contaminants.

Ref. No. 1695-12
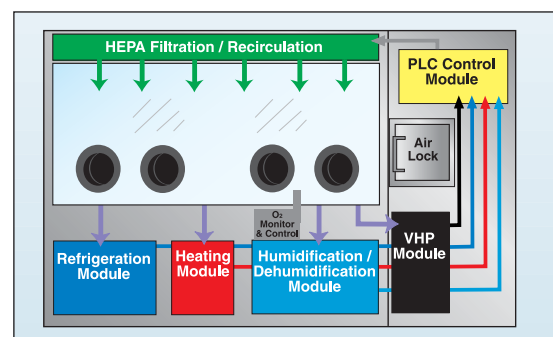
® VHP Biodecontamination is a registered trademark of Steris Corporation.

Low-Humidity, Easy-Access Glovebox

- **Space-saving corner installation**

- **Dual pneumatically operated, footswitch-activated access doors**

This glovebox makes optimal use of corner dead space and accommodates large process equipment. The unique chamber design and dual pneumatic doors put parts within easy reach of gloved operators (see more information on pg. 18).

A humidity control system regulates the flow of clean, dry nitrogen into the processing chamber to maintain any user-selected, sub-ambient humidity level. For optimal cleanliness, a closed-loop filtration system draws process gas through a 99.99% efficient HEPA filter; a diverter valve allows 100% recirculation or partial exhausting.

System shown: Cat. # 1695-28

Top View
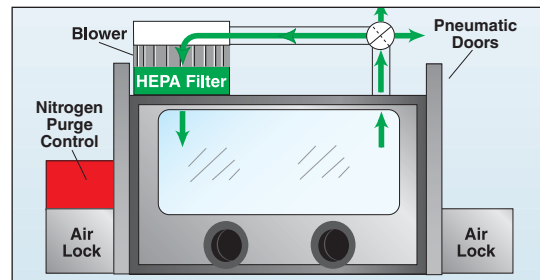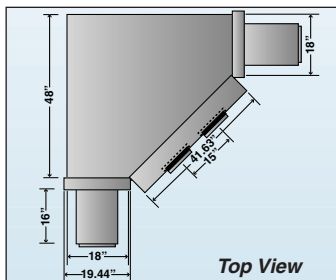
Mini-Environment Equipment Enclosure

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

Solid Panels	Access Doors
Glove Ports	Microscope Bellows
Iris Ports	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**	**469.00**
Polypropylene	**2003-36**	**469.00**

Ionizing Bar
See page 25 for installation information

	Cat. #	$/Each
22"L (4 emitters)	**2005-06A**	**461.00**
44"L (8 emitters)	**2005-07A**	**663.00**

Microscope Bellows
See page 19; indicate desired location.

	Cat. #	$/Each
	1681-53	**234.00**

Vapor-Sealed Fluorescent Illuminator

	Cat. #	$/Each
	2400-21	**347.00**

27"L x 5"W x 3"H; 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. # 1685-93, $421.00/Pair. See page 19.

Shown with Glove Ports Cat. # 2003-37, $261.00/Each. See page 20 for gloves.

Mini-Environment Enclosures			Corresponding Side Access Door*				
Material			**Right Side**		**Left Side**		
	Cat. #	$/Each	Cat. #	$/Each	Cat. #	$/Each	
Acrylic	**2003-20**	**2,307.00**	**2003-25**	**229.00**	**2003-30**	**229.00**	
Static-Dissipative PVC	**2003-21**	**2,992.00**	**2003-26**	**253.00**	**2003-31**	**253.00**	
Polycarbonate	**2003-22**	**3,064.00**	**2003-27**	**264.00**	**2003-32**	**264.00**	

* 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
6701-99A	**765.00**

Room Air
Filtered Air
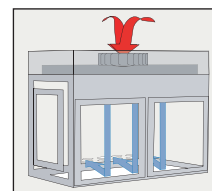
Temperature-controlled models available in sizes up to 120"W— see page 27.

- NitroWatch® Humidity Controller
- Glovebox Dual Purge™ System
- Universal Air Lock
- Changeable Sleeve and Glove Combination
- Powder-Coated Stand
- Casters

Series 100
Polymer
Gloveboxes

- **An economical controlled processing environment for a wide range of manufacturing and testing operations**

- **Dual-gasketed side doors and a fully gasketed back permit introduction of small and large equipment**

- **Optional gas purge controls automatically**
  - ✓ **establish a particle-free environment**
  - ✓ **maintain a humidity set point down to 0% RH**
  - ✓ **minimize system recovery time**

- **Arm ports accept a wide variety of gloves, including Terra's accordion sleeve and glove assembly**

- **Available in five materials: acrylic, static-dissipative PVC, nondissipative PVC, polypropylene and polycarbonate**

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 select the options you need for your application.

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.

How to Order:

1. Select the glovebox of the desired size (single or twin) and material from the ordering table below.

2. Select the Air Lock for your application. The Standard or Pass-Through Air Lock is for connection to one glovebox; Universal Air Lock allows connection of two gloveboxes in series. Right-side mounting is standard.

3. Read across the table to select the appropriate accessories for your system; all prices include installation. Other optional accessories are listed on the following pages.
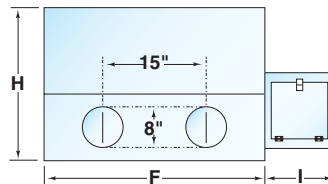
Single Model (2 Arm Ports)
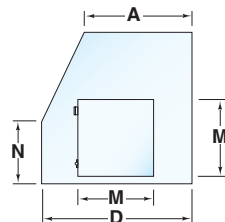
Twin Model (4 Arm Ports)

Type	A	D	F	H	I	M	N
Single	16^1/$_4$	24	35	22^1/$_8$	11^1/$_2$	10	11
Twin	16^1/$_4$	24	59	22^1/$_8$	11^1/$_2$	10	11

All dimensions in inches.

Type	Series 100 Plastic Gloveboxes ①					
See Dimensions Above	Acrylic ④	Static Dissipative PVC ②	Nondissipative PVC	Polypropylene③ (Dissipative PVC viewing window)	Polycarbonate	Stainless Steel Work Surface (prevents scratching)
	Cat. # $/Each	Cat. # $/Each	Cat. # $/Each	Cat. # $/Each	Cat. # $/Each	Cat. # $/Each
Single Models (2 glove ports)	1689-00C 1,084.00	3305-00C 2,048.00	3305-03C 1,480.00	1681-29C③ 1,593.00	1681-31C 2,162.00	1689-11 365.00
Twin Models (4 glove ports)	1689-16C 1,704.00	3305-10C 3,221.00	3305-11C 2,325.00	1681-30C③ 2,505.00	1681-32C 3,400.00	1681-33 510.00

① *Complete with inlet and outlet for gas fittings and relief/bleed valve (order separately).*
② *Includes grounding terminals. The Stainless Steel Work Surface is required with the Static-Dissipative PVC glovebox to prevent scratching.*
③ *Includes 110VAC, 50/60Hz fluorescent illuminator (for 220VAC/50Hz, add "-220" to the part number).*
④ *Acrylic is damaged by alcohol and other cleaning agents.*

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. #	$/Each
Acrylic Shelf	**1680-67**	**18.00**
Stainless Steel Shelf	**1680-68**	**69.00**

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. Each air lock includes a capped inlet and outlet for connection to purge gas and Automatic RB® Valve. 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 Descriptions above	**Acrylic***	**Static Dissipative PVC**	**Nondissipative PVC**	**Polypropylene** (Dissipative PVC viewing window)	**Polycarbonate**	**Stainless Steel Work Surface** (prevents scratching)
	Cat. # $/Each	Cat. # $/Each	Cat. # $/Each	Cat. # $/Each	Cat. # $/Each	Cat. # $/Each
Standard Air Lock	**1680-78A** 295.00	**1680-81A** 486.00	**1680-84A** 380.00	**1680-87A** 397.00	**1680-90A** 325.00	**1680-69** 183.00
Pass-Through Air Lock	**1680-79A** 349.00	**1680-82A** 543.00	**1680-85A** 391.00	**1680-88A** 450.00	**1680-91A** 375.00	**1680-69** 183.00
Universal Air Lock	**1680-80A** 355.00	**1680-83A** 552.00	**1680-86A** 397.00	**1680-89A** 457.00	**1680-92A** 382.00	**1680-69** 183.00

** Acrylic is damaged by alcohol and other cleaning agents.*

Changeable Sleeve and Glove Combination

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 tempered latex gloves (select desired size). Clamps included.

See page 20 for additional gloves.

Glove Size	With 18" Sleeve	
	Cat. #	$/Pair
8	**1681-90A**	**255.00**
9	**1681-91A**	**256.00**
10	**1681-92A**	**257.00**
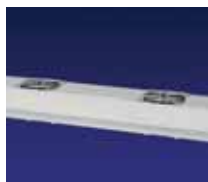
IonBar™ (with fan module)

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. #	$/Each
22" Long	**2005-30**	**777.00**
33" Long	**2005-32**	**878.00**
44" Long	**2005-31**	**979.00**

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. #	$/Each	Cat. #	$/Each
Powder-Coated Steel Stand	**1681-48**	**659.00**	**1681-51**	**811.00**
Stainless Steel Stand	**1681-49**	**911.00**	**1681-52**	**1,218.00**
Casters (set of 4, 2 with brakes)			**1700-44**	**223.00**

Fixed Rear Wall

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

Cat. #	$/Each
1681-58	**116.00**

Detachable Bottom

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

Cat. #	$/Each
1681-55	**341.00**

Plastic Glove Port

Standard on all Terra gloveboxes; can be retrofitted on chamber with 9.5" dia. cutouts. Price for single port.

	Cat. #	$/Each
	1694-51A	**108.00**
Port Caps	**1681-65A**	**53.00**

Mounted externally.

Corresponding Options					
Ionizing Bar (see above)	**Fluorescent[4] Illuminator**	**Power Strip[5] 110VAC/60Hz**	**Dual Purge System** (see page 23)	**NitroWatch®** (see page 23)	**Automatic RB® Valve** (see page 23)
Cat. # $/Each	Cat. # $/Each	Cat. # $/Each	Cat. # $/Each	Cat. # $/Each	Cat. # $/Each
2005-32 878.00	**1681-78** 395.00	**1681-80** 160.00	**1603-57** 2,586.00	Control: **9500-00A** 866.00	**1600-60B** 94.00
2005-31 979.00	**1681-79** 534.00	**1681-80** 160.00	**1603-57** 2,586.00	Sensor: **9500-02A** 490.00	**1600-60B** 94.00

[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.*

Series 200 Negative-Pressure Gloveboxes

See facing page for negative pressure configurations

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

Optional negative-pressure air lock

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

Optional Swing-Up Front Access Panel

- 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 ½" 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.

How to Order:

1. Select the glovebox of the desired material (either acrylic or polycarbonate). Models are available with or without the swing-up front access panel. Note: Terra recommends selection of a stainless steel work surface to prevent scratching in all plastic chambers.

2. Read across the ordering table to select a vacuum antechamber or air lock (price includes standard right-side installation).
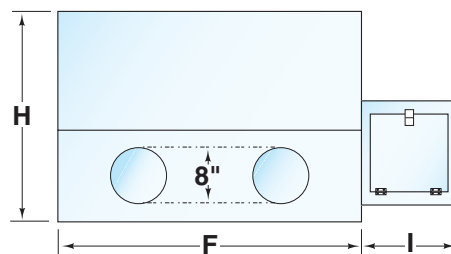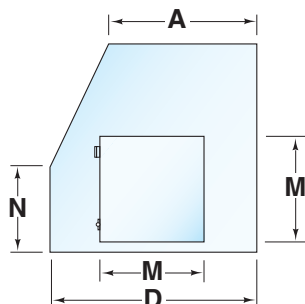
All dimensions in inches.

Glove Ports	A	D	F	H	I	M	N
2	16¼	24	35	22⅛	11½	10	11

Series 200 Negative-Pressure Gloveboxes								Corresponding Accessories					
With Front Access Panel*				Without Front Access Panel				Vacuum Antechamber (12" Diameter)				Negative Pressure Air Lock *Vacuum to 5" WG*	
Acrylic**		Polycarbonate		Acrylic**		Polycarbonate		12"L		23"L			
Cat. #	$/Each	Cat. #	$/Each	Cat. #	$/Each	Cat. #	$/Each	Cat. #	$/Each	Cat. #	$/Each	Cat. #	$/Each
1681-13A	2,294.00	1681-14A	4,358.00	1681-15A	1,943.00	1681-16A	3,692.00	1681-63	2,637.00	1681-67	3,192.00	1680-93A	704.00

* Cutout Size: 20"W x 10"H   ** Acrylic is damaged by alcohol and other cleaning agents.

Other Options:

Changeable Sleeve and Glove Combination. See page 20.

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

Cat. #	$/Each
1680-69	183.00

Replacement Glove Port Caps
Each 8"-diameter, ½"-thick acrylic port cap features an "O"-ring to ensure a tight seal during negative pressure service, along with a handle for easy removal. Can be inserted internally or externally.

| Cat. #	$/Each
1681-65A	53.00

Vacuum Service to 5" WG

This application, which supports sustained negative pressure to 5" WG in either the main chamber or the air lock, is ideal for degassing or applications with fuming chemistries.
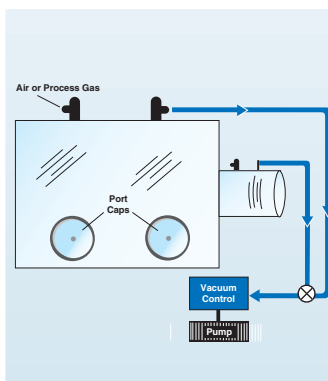
Series 200 Glovebox	*See previous page.*		
Negative-Pressure Air Lock	*See previous page.*		
Vacuum Control Module	*See page 26*		
110 VAC, 50/60Hz	Cat. # **1681-75**	$/Each	**2,012.00**
220 VAC, 50/60Hz	Cat. # **1681-75-220**	$/Each	**2,017.00**
Turnkey Connection Kit	Cat. # **5400-20**	$/Each	**1,382.00**
Diaphragm Vacuum Pump			
110 VAC, 50/60Hz	Cat. # **7903-00**	$/Each	**485.00**
220 VAC, 50Hz	Cat. # **7903-01**	$/Each	**529.00**
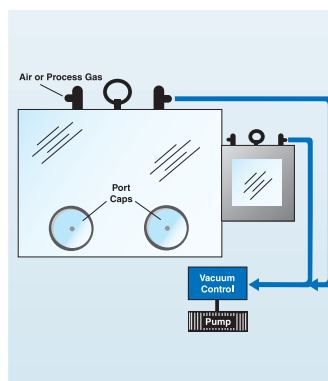
Vacuum Service to 29.9" Hg – see page 15 for stainless steel vacuum chambers

Like the configuration above, this application supports sustained negative pressure to 5" WG in the Series 200 Glovebox. The addition of a vacuum antechamber allows drying or degassing at up to one full atmosphere (29.9"Hg).
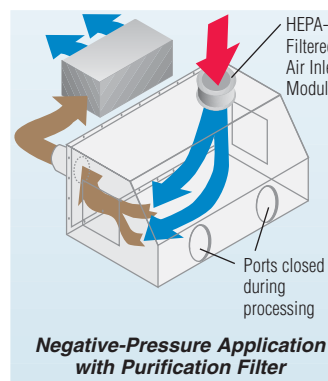
Series 200 Glovebox & Vacuum Chamber			
See previous page.			
Vacuum Control Module	*See page 26 for full description.*		
110 VAC, 50/60Hz	Cat. # **1681-75**	$/Each	**2,012.00**
220 VAC, 50Hz	Cat. # **1681-75-220**	$/Each	**2,017.00**
Turnkey Connection Kit 110 VAC	Cat. # **5400-20**	$/Each	**1,382.00**
220 VAC	Cat. # **5400-20-220**	$/Each	**1,382.00**
Vacuum Pump			
110 VAC, 50/60Hz	Cat. # **7901-00**	$/Each	**2,100.00**
220 VAC, 50Hz	Cat. # **7901-08**	$/Each	**2,100.00**

Remote Ventilation

In this configuration, noxious fumes generated inside the Series 200 Glovebox are ducted through a 6"-diameter conduit to a remote filter/blower module.

Series 200 Glovebox	*See previous page.*		
Air Inlet Module	Cat. # **1685-81**	$/Each	**303.00**
Replacement ULPA Filter	Cat. # **3333-35**	$/Each	**190.00**
Exhaust Flange Acrylic	Cat. # **1681-85**	$/Each	**36.00**
Polycarbonate	Cat. # **1681-86**	$/Each	**39.00**
Remote Filter/Blower Module	Cat. # **1681-68A**	$/Each	**799.00**
Activated Charcoal Purification Filter	Cat. # **1716-00A**	$/Each	**312.00**
HEPA Filter	Cat. # **1681-02**	$/Each	**260.00**
ULPA Filter	Cat. # **1681-10**	$/Each	**338.00**
Iris Ports	Cat. # **1685-93**	$/Each	**421.00**

HEPA-Filtered Air Inlet Module

Negative-Pressure Application with Purification Filter

Ports closed during processing

Filter/Blower Module Provides Remote Ventilation

with On-Board Ventilation Module

This configuration includes a Filter/Blower Module that ventilates fumes inside the Series 200 Glovebox.

Series 200 Glovebox	*See previous page.*		
Filter Module	Cat. # **1685-82**	$/Each	**381.00**
Exhaust Purification Filter (activated charcoal)	Cat. # **1716-00A**	$/Each	**312.00**
HEPA Filter (99.99% efficient @ 0.3μm)	Cat. # **1681-02**	$/Each	**260.00**
ULPA Filter (99.999% efficient @ 0.12μm)	Cat. # **1681-10**	$/Each	**338.00**
Blower Module			
110 VAC, 60Hz	Cat. # **1685-83**	$/Each	**619.00**
220 VAC, 50Hz	Cat. # **1685-83-220**	$/Each	**647.00**

For safe indoor release

Ductless Exhaust Fume Ventilation
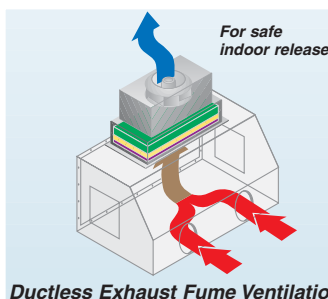
Series 300
Stainless Steel Glovebox

- **Provides a clean, controlled environment for a 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**
- **Removable arm ports can be interchanged to meet specific requirements and accept a wide variety of gloves**
- **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.

Series 350 Glovebox
Same footprint as the series 300 chamber but with sloping dual-side visibility. Model shown (with right-side airlock):

	Cat. #	$/Each
Single	**9000-22A**	**8,371.00**

Elastomer seal for superior performance

Air Lock Provides Convenient Access. Shown with optional viewing window. See page 18.

DewWatch™ Humidity Controller (see page 23)

Glovebox Dual Purge™ System (see page 23)

Air Lock

4-Port Twin Chamber (No. 1694-04B)

Pass-Through Oven (No. 5401-00A; see page 19)

Vacuum/Nitrogen Pump

Cleanroom Chair No 1012-41 $431.00

Door Openings: 12¹/₂" x 12¹/₂" with gasketed doors supplied with air locks (see ordering information below); doors open inward.

Arm Ports: 8" round with flange for connecting glove assembly

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

Light: 120VAC/60Hz fluorescent.

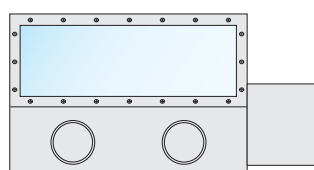***For 220VAC/50Hz, add "-220" to the part number***
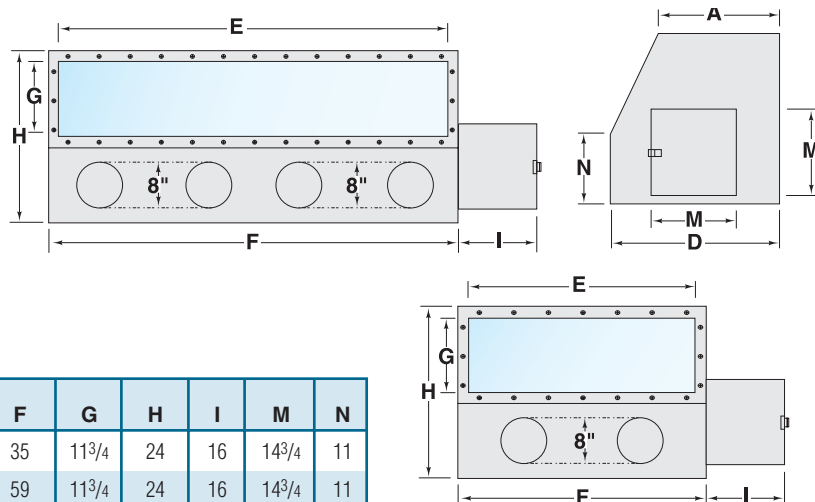
All dimensions in inches

Model	Glove Ports	A	D	E	F	G	H	I	M	N
Single	2	16⁹/₁₆	24	28¹/₄	35	11³/₄	24	16	14³/₄	11
Twin	4	16⁹/₁₆	24	54³/₄	59	11³/₄	24	16	14³/₄	11
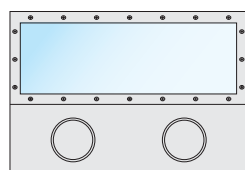
Series 300 Atmospheric Chamber with no Air Lock Unit
Select desired access door below

	Cat. #	$/Each
Single	1694-01A	4,201.00
Twin	1694-02A	7,055.00

Series 300 Atmospheric Chamber with right hand Air Lock Unit

	Cat. #	$/Each
Single	1694-03B	7,057.00
Twin	1694-04B	9,911.00
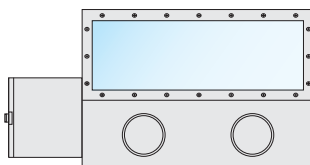
Series 300 Atmospheric Chamber with left hand Air Lock Unit

	Cat. #	$/Each
Single	1694-05B	7,053.00
Twin	1694-06B	9,905.00
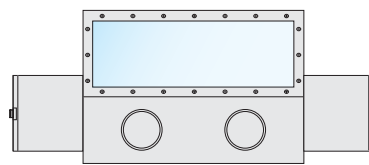
Series 300 Atmospheric Chamber with two Air Lock Units

	Cat. #	$/Each
Single	1694-07B	9,914.00
Twin	1694-08B	12,767.00

No. 1690-03

Stands for Series 300 and 350 Gloveboxes

Constructed of all-welded 2" square tubing. Select oven support for use with Terra's High-Performance Pass-Through Oven (No. 5401-00). All stands raise chambers 30" off of floor (add 3" for casters).

	Powder-Coated Steel				304 Stainless Steel			
	Chamber Only		Chamber and Oven		Chamber Only		Chamber and Oven	
	Cat. #	$/Each	Cat. #	$/Each	Cat. #	$/Each	Cat. #	$/Each
For Single Models (2 ports)	1690-03	520.00	5401-01	783.00	1694-09	1,018.00	1694-11	1,537.00
For Twin Models (4 ports)	1690-04	631.00	5401-02	894.00	1694-10	1,246.00	1694-12	1,771.00

	Cat. #	$/Each
Heavy-Duty Casters (set of 4, 2 with brakes)	1700-44	223.00

Other Optional Accessories

	Cat. #	$/Each	Page
Glovebox Dual Purge™ System	1603-57	2,586.00	23
NitroWatch®	9500-00A	866.00	23
NitroWatch® Sensor	9500-02A	490.00	23
Stainless Steel Automatic RB® Valve	1606-60	171.00	23
Required for operation with Dual Purge™ System			
Accordion Sleeve/Glove Combination	1681-91A	256.00	20
18"L, with size 9 gloves (pair)			
Right-Side Access Door	1685-94	1,022.00	
Left-Side Access Door	1685-96	1,022.00	
High-Performance Vacuum Oven			
See pg. 19 for specifications and ordering information.			

Plastic Glove Port
Standard on all Terra gloveboxes; can be retrofitted on chamber with 9.5" dia. cutouts. Price for single port.

	Cat. #	$/Each
	1694-51A	108.00
Port Caps	1681-65A	53.00

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	777.00
33" Long	2005-32	878.00
44" Long	2005-31	979.00

Fans ensure even ion distribution.

- **Provides all the features and capabilities of Terra's Series 300 models in a more spacious chamber**

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

- **Optional gas purge controls automatically establish a Class 1 particle-free environment and maintain a humidity set point down to 0% RH/0.5 ppm(v) H_2O**

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:	8" round with flange for connecting glove assembly

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:	1×10^{-3} Torr
Vacuum Gauge:	$2^1/_2$" 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. #	$/Each
Single	2	**1694-13A**	8,077.00
Twin	4	**1694-14A**	13,294.00

Elastomer seal for superior performance

Order Air Locks from table on the next page

Dual Purge System

Vacuum Control Module

Vacuum Antechamber
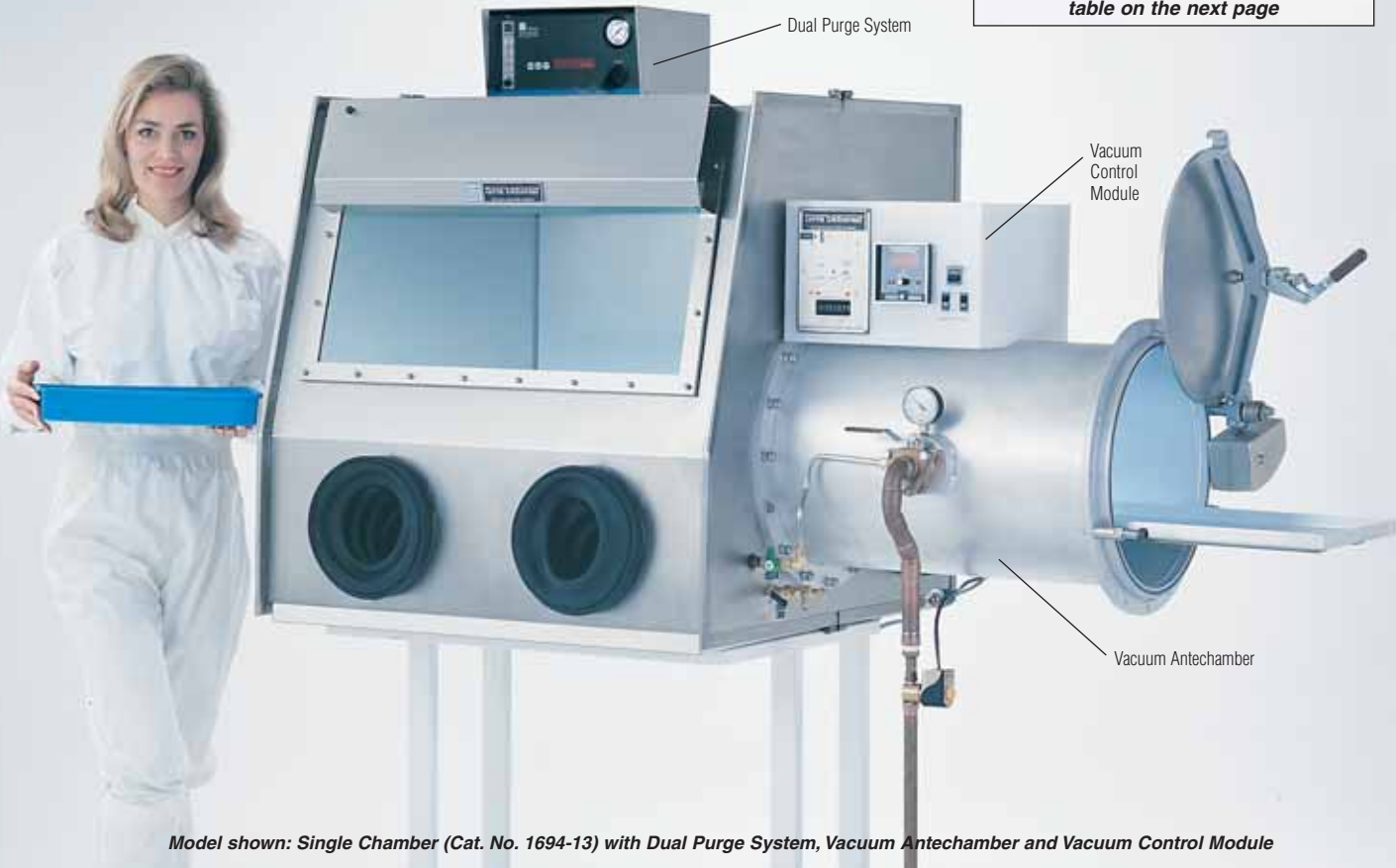
Model shown: Single Chamber (Cat. No. 1694-13) with Dual Purge System, Vacuum Antechamber and Vacuum Control Module
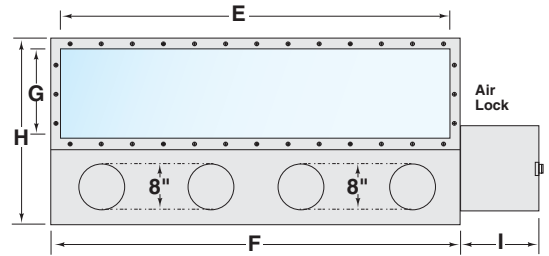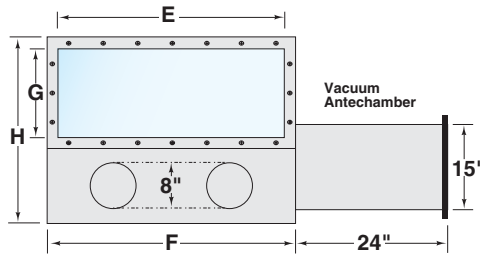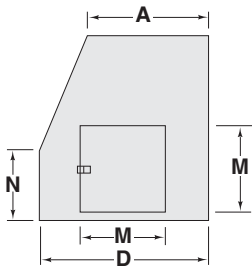
Glove Ports	A	D	E	F	G	H	I	M	N
2	27	33	28¼	33	12¹³/₁₆	33	16	12	11
4	27	33	56½	60	12¹³/₁₆	33	16	12	11

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.

Vacuum Antechamber (see below)						Air Lock**			Vacuum/Nitrogen Ovens (left side mounting standard)					
Aluminum**			Stainless Steel**						High Performance Pass-Through Oven* (see pg. 19)			Modular Oven (see pg. 19)		
Right Mount	Left Mount		Right Mount	Left Mount		Right Mount	Left Mount		Right Mount	Left Mount		Right Mount	Left Mount	
Cat. #	Cat. #	$/Each	Cat. #	Cat. #	$/Each	Cat. #	Cat. #	$/Each	Cat. #	Cat. #	$/Each	Cat. #	Cat. #	$/Each
5400-01	5400-03	6,689	5400-04	5400-05	8,206	1698-01A	1698-02A	2,473	5401-12A	5401-00A	9,693	9602-30A	9602-03A	4,299

* Requires support stand for safe operation (order below). For 220 VAC operation, add "-220" to the part number.
** Prices for left-mount and right-mount models are the same. Optional 7"W x 9½"H safety glass viewing window—Cat. # 1702-02.
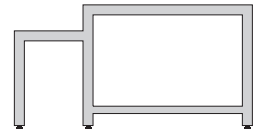
Stands for Series 400 Gloveboxes

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.

Heavy-Duty Casters
(set of 4, 2 with brakes)

	Cat. #	$/Each
	1700-44	223.00
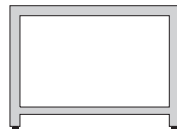
For chamber only

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	1,147.00	1694-17	520.00	1694-19	1,676.00	1694-21	779.00
For Twin Models (4 ports)	1694-16	1,218.00	1694-18	582.00	1694-20	1,783.00	1694-22	826.00

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. #	$/Each
22" Long	2005-30	777.00
33" Long	2005-32	878.00
44" Long	2005-31	979.00
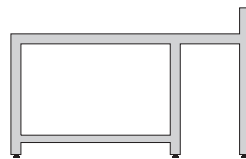
For chamber and vacuum antechamber

For chamber, vacuum antechamber, and oven No. 5401-00

	304 Stainless Steel		Powder Coated Steel		304 Powder Coated Steel		Powder Coated Steel	
	Cat. #	$/Each	Cat. #	$/Each	Cat. #	$/Each	Cat. #	$/Each
For Single Models (2 ports)	1694-23	1,893.00	1694-25	919.00	1694-27	2,307.00	1694-29	1,177.00
For Twin Models (4 ports)	1694-24	2,003.00	1694-26	965.00	1694-28	2,578.00	1694-30	1,214.00

Other Optional Accessories

	Cat. #	$/Each	Page
Glovebox Dual Purge™ System	1603-57	2,586.00	23
NitroWatch®	9500-00A	866.00	23
NitroWatch® Sensor	9500-02A	490.00	23
Stainless Steel Automatic RB® Valve	1606-60	171.00	23

Required for operation with Dual Purge™ System

Accordion Sleeve/Glove Combination	1681-91A	256.00

18"L, with size 9 gloves, one pair. See pg. 20.

Plastic Glove Port
Standard on all Terra gloveboxes; can be retrofitted on chamber with 9.5" dia. cutouts. Price for single port.

	Cat. #	$/Each
	1694-51A	108.00
Port Caps	1681-65A	53.00

Bag-In/Bag-out Ports — See page 4

Twin Series 500 chambers.

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

Series 500
Full-View Glovebox

- **Transparent front and back panels feature opposing glove ports for convenient access**

- **Large chamber sizes leave plenty of clearance for large equipment**

Dimensions: 48"W x 36"/26"D (bottom/top) x 30"H (single)
96"W x 36"/26"D (bottom/top) x 30"H (twin)

Series 500 Full-View Chambers				
Model	**Static-Dissipative ⊗ PVC Panels**		**Polycarbonate Panels**	
	Cat. #	$/Each	Cat. #	$/Each
Single	**1694-31**	**6,224.00**	**1694-33**	**5,529.00**
Twin	**1694-32**	**11,788.00**	**1694-34**	**9,936.00**

Series 600
Front-View Glovebox

- **Polycarbonate or safety glass window provides full view of work chamber**

- **All models on this page are 110VAC, 50/60Hz (add "220" to part number for 220VAC)**

Dimensions: 37.5"W x 29"/24"D (bottom/top) x 39"

Series 600 Glovebox		
Material	Cat. #	$/Each
Polycarbonate	**9670-00**	**8,193.00**
Safety Glass	**9670-01**	**9,415.00**

For air locks, stands and other options: TerraUniversal.com

Class 100 Static Control #2802-62
Ⓐ

Class 100 Static Control #2802-68
Ⓑ

Class 100 Static Control #2802-73
Ⓒ

Class 100 #2803-05
Ⓓ

Class 100 #2802-94
Ⓔ

A - E. Class 100 and Static Control
Clean vinyl meets Class 100 particle requirements. Static-Control chairs features dissipative vinyl, conductive casters, and grounding chains.

Specifications		Class 100 Static Control						Class 100			
Height	**Color**	**A**		**B**		**C**		**D**		**E**	
		Cat. #	$/Each	Cat. #	$/Each	Cat. #	$/Each	Cat. #	$/Each	Cat. #	$/Each
Desk	Black	**2802-61**	**469.00**	**2802-67**	**426.00**	**2802-73**	**455.00**	**2803-01**	**460.00**	**2802-93**	**429.00**
	Blue	**2802-62***	**469.00**	**2802-68***	**426.00**	**2802-74***	**455.00**	**2803-02**	**460.00**	**2802-94**	**429.00**
Bench	Black	**2802-64**	**476.00**	**2802-70**	**428.00**	**2802-76**	**464.00**	**2803-05**	**468.00**	**2803-09**	**482.00**
	Blue	**2802-65***	**476.00**	**2802-71***	**428.00**	**2802-77***	**464.00**	**2803-06**	**468.00**	**2803-10**	**482.00**

* Quick ship models – usually ship within one week!

Radius corners simplify cleaning, eliminate seams and cracks

Shown: Twin station No. 9670-13

BioSafe™ Stainless Steel Glovebox

- **Smooth, ultra-clean surfaces eliminate germ traps, simplify cleaning and disinfection**
- **Continuous-seam interiors create a hermetically 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 transfer of large equipment**
- **Custom configurations available – call to discuss your requirements!**

BioSafe™ Glovebox —All models are 120VAC; 220VAC models available				
Window Material	**Single** (37.5"W x 29"/24"D x 39"H) Cat. #	$/Each	**Twin** (69"W x 29"/24"D x 39"H) Cat. #	$/Each
Glovebox Only: No Air Lock				
Polycarbonate	9670-10	13,803.00	9670-13	18,803.00
Safety Glass	9670-11	14,967.00	9670-14	19,967.00
Glovebox with Right-Side Air Lock*				
Polycarbonate	9670-16	16,303.00	9670-19	21,303.00
Safety Glass	9670-17	17,467.00	9670-20	22,467.00
Glovebox with Left-Side Air Lock*				
Polycarbonate	9670-22	16,303.00	9670-25	21,303.00
Safety Glass	9670-23	17,467.00	9670-26	22,467.00
Glovebox with Dual-Side Air Locks*				
Polycarbonate	9670-28	18,803.00	9670-31	23,803.00
Safety Glass	9670-29	19,967.00	9670-32	34,967.00

* Air lock dimensions: 12"W x 14"D x 12"H*. See page 18 for details of air lock construction.

Class 1 #2805-06
F

Class 10 with Microfiber #2803-49
G

Class 10 with Microfiber #2803-57
H

Class 10 with Breather Lung #2803-22
I

Class 10 with Breather Lung #2803-38
J

F - J. Class 10 and Cleaner!
Select from several base styles. Types F - H feature a microfiber fabric that allows chair to breathe through micropores. Types I and J feature a breather lung that contains contaminants.

Specifications		Class 1 Chair		Class 10 Microfiber				Class 10 Breather Lung			
Height	**Color**	**F** Cat. #	$/Each	**G. Standard Back** Cat. #	$/Each	**H. Ergo Back** Cat. #	$/Each	**I. Standard Vinyl** Cat. #	$/Each	**J. ESD Vinyl*** Cat. #	$/Each
Desk	Black	—	—	2803-49	470.00	2803-57	464.00	2803-17	418.00	2803-33	447.00
	Blue	—	—	2803-50	470.00	2803-58	464.00	2803-18	418.00	2803-34	447.00
Bench	Black	2805-05	655.00	2803-53	477.00	2803-73	537.00	2803-21	426.00	2803-37	454.00
	Blue	2805-06*	655.00	2803-54	477.00	2803-74	537.00	2803-22	426.00	2803-38	454.00

* This ESD model includes a grounding chain.

Stainless Steel Air Locks

Terra's improved air lock design ensures a leak-proof environment that minimizes nitrogen loss and contamination inflow while parts are passed into and out of the glovebox. "Knife" edges along the doors seat against recessed polyurethane gaskets. Double-wall stainless steel construction, with heavy-duty door latches and hinges, ensures a long service life.

Elastomer seal for superior performance

Select optional safety glass viewing window on the access side. Includes a ⅛" NPT opening for connection of purge gas and outlet to accommodate an Automatic RB® (Relief/Bleed) valve.

Ordering Information: The chart below provides ordering information for air locks installed on each Terra glovebox. Each air lock comes with a mounting flange that allows it to be retrofitted onto the specified glovebox.

Shown with optional 7"W x 9½"H tempered glass viewing window (Cat. # 1702-02, $421)

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

Glovebox Air Locks*

Dimensions (ID): For Glovebox	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 Cat. #	Left Mount Cat. #	$/Each	Right Mount Cat. #	Left Mount Cat. #	$/Each	Right Mount Cat. #	Left Mount Cat. #	$/Each	Right Mount Cat. #	Left Mount Cat. #	$/Each
Series 300 (page 12)	1702-10A	1702-11A	2,597	1681-17A	1681-18A	2,977	—	—	—	—	—	—
Series 400 (page 14)	1698-01A	1698-02A	2,597	1681-19A	1681-89A	2,977	1702-18A	1702-19A	4,111	1702-37A	1702-38A	3,668
Series 500 (page 16)	1702-12A	1702-13A	2,597	1681-93B	1681-94A	2,977	1702-31A	1702-32A	4,111	1702-39A	1702-40A	3,668
Series 600 (page 16)	1702-14A	1702-15A	2,597	1681-95A	1681-96A	2,977	1702-33A	1702-34A	4,111	1702-41A	1702-42A	3,668

*   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).

Pneumatic Door Air Locks

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

Shown with custom rear-wall installation

Air Lock with Pneumatic Door

Corresponding Glovebox	Right Side		Left Side	
	Cat. #	$/Each	Cat. #	$/Each
For Series 300 Chamber	1530-70	5,550.00	1530-74	5,623.00
For Series 400 Chamber	1530-71	5,696.00	1530-75	5,770.00
For Series 500 Chamber	1530-72	5,842.00	1530-76	5,914.00
For Series 600 Chamber	1530-73	5,986.00	1530-77	6,061.00

Vacuum Antechamber
Supports vacuum to 29.9"Hg. Available in plastic for Series 200 Glovebox (see page 10) and aluminum or stainless steel for Series 400 Glovebox (see page 14).

Plastic Glove Port
Standard on all Terra gloveboxes; can be retrofitted on chamber with 9.5" dia. cutouts. Price for single port.

Cat. #	$/Each
1694-51A	108.00

Port Covers
Can be inserted from outside the glovebox without removing gloves.

Cat. #	$/Each
1681-65A	53.00

Bag In/Bag Out Ports — see page 4.

Pass-Through Vacuum/Nitrogen Ovens

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; helium mass spectrometer tight

	Right Mount	Left Mount	
	Cat. #	Cat. #	$/Each
120VAC/60Hz	**5401-12A**	**5401-00A**	9,693.00
220VAC/50Hz	**5401-12A-220**	**5401-00A-220**	9,693.00
Vacuum Control Fittings Kit	**5400-22**		**1,382.00**

(Order Vacuum Controller below)

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: .48 cu. ft.

	Right Mount	Left Mount	
	Cat. #	Cat. #	$/Each
110VAC/60Hz	**9602-30A**	**9602-03A**	4,299.00
240VAC/50Hz	**9602-30A-220**	**9602-03A-220**	4,299.00
Vacuum Control Fittings Kit	**5400-23**		**1,382.00**

(Order Vacuum Controller below: see page 27 for description.)

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 26.

	Cat. #	$/Each
120VAC	**1681-75**	**2,012.00**
240VAC	**1681-76**	**2,017.00**

Other Glovebox Interface Modules

D. 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. #	$/Each
1681-53	**234.00**

E. Tilt-Up Viewing Window (stainless steel frame)

Swings open for easy access. Dual piston mechanisms hold the window securely open. Price includes modification of plastic or stainless steel glovebox. Must be ordered together with affected glovebox.

	Single Chamber		Twin Chamber	
Box Material	Cat. #	$/Each	Cat. #	$/Each
Dissipative PVC	**1681-81**	**1,250.00**	**1681-82**	**1,316.00**
Acrylic	**1681-83**	**259.00**	**1681-84**	**391.00**
Stainless Steel	**1684-92**	**1,786.00**	**1684-93**	**2,052.00**

A *Heating to 300°C*

B *Heating to 149°C*

C

D

E

F

G

F. Hinged Removable Glove Port Covers

Allow you to seal the system and then remove gloves for cleaning or change-out—while maintaining the integrity of the internal glovebox environment. The hinged port covers lie flat on the glovebox floor when not in use. Part number is for one port cover.

	Cat. #	$/Each
Stainless Steel	**1684-09**	**421.00**
Acrylic	**1685-89**	**259.00**
Dissipative PVC	**1685-90**	**391.00**
Polypropylene	**1685-91**	**325.00**
Polycarbonate	**1685-92**	**285.00**

G. Iris Ports

Self-closing silicone ports allow convenient access to gloveboxes without the need for special gloves.

Cat. #	$/Pair
1685-93	**421.00**

H. Port Covers (not shown)

Cat. #	$/Each
1681-65A	**53.00**

I. Bag In/Out Ports (not shown)

See page 4.

Cat. #	$/Each
1694-43	**248.00**

Gloves & Sleeves

A. Changeable Latex Sleeve & Glove Combination

These accordion sleeves, made of neoprene, can be used for any size and type of gloves. The economy feature of these sleeves is the convenience of changing different 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 natural latex gloves. Glove Thickness: 18 mil.

Glove Size	18" Sleeve	
	Cat. #	$/Pair
8	1681-90A	255.00
9	1681-91A	256.00
10	1681-92A	257.00

B. Hypalon-Neoprene Gloves

These gloves combine the flexibility and dexterity of neoprene with Hypalon's exceptional resistance to ozone and chemicals. They thus provide an extra long service life under unusually severe conditions. Their all-white surface ensures good visibility and won't hide contamination. Weight per pair: 3.5 lbs. Size: 9. Length: 32".

	Cat. #	$/Pair
Heavyweight (.030 in.)	1671-10	203.00

C. Butyl Sleeve and Glove Combination

Textured grip improves dexterity. Length: 32".

Hand Size	One-Piece Fully- Dipped Glove			
	Lightweight (.015")		Heavyweight (.030")	
	Cat. #	$/Pair	Cat. #	$/Pair
8	1671-01	171.00	1671-12	245.00
9	1671-02	171.00	1671-13	245.00
10	1671-03	171.00	1671-14	245.00

D. Heavyweight Latex Gloves

With a 29-mil palm thickness that is 50% thicker than most standard flock-lined gloves, these heavy-duty latex rubber gloves provide unusual durability while maintaining optimum levels of form, fit and function. Flock lining inside facilitates putting on and taking off.

Glove Size	13" Sleeve	
	Cat. #	$/Pair
8	1689-08	6.00
9	1689-09	6.00
10	1689-10	6.00

E. Neoprene Sleeve and Glove Combination

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 Combination

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						
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	1689-02	158.00	1670-83	15.00	1690-91	120.00
9	1689-03	158.00	1670-84	15.00	with G.U.S. connectors	
10	1689-04	158.00	1670-85	15.00	(see above)	

| F. Hypalon Gloves						
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	1671-09	203.00	1671-05	60.00	1671-08	221.00
9	1671-10	203.00	1671-06	60.00	with G.O.S. connectors	
10	1671-11	203.00	1671-07	60.00	(see above)	

Filtration Modules

- Ideal for analyzing, mixing and packaging toxic pharmaceuticals and other chemical powders
- HEPA or ULPA filters remove sub-micron particles from the glovebox to ensure an ultra-clean processing environment
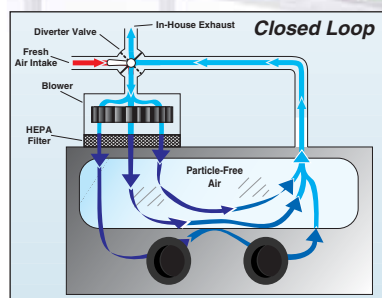
Closed Loop

Series 300 Stainless Steel Glovebox (No. 1694-04B) with:

- Closed-Loop Filtration Module
- Air Lock
- Glove/Sleeve Combination
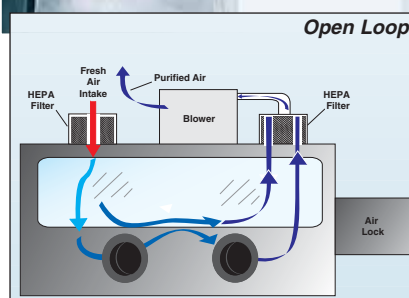
Open Loop

Series 300 Stainless Steel Glovebox (No. 1694-04B) with::

- Open-loop filtration module
- Air Lock
- Hinged Viewing Window
- Glove and Sleeve Combination
- Hinged Glove Port Covers

Closed-Loop Filtration Module
for Continuous Recirculation

Includes a 460-CFM impeller blower, mounted in an acrylic housing, that draws air through an inlet HEPA, ULPA or charcoal filter. HEPA and ULPA filters remove particulates, aerosols, spores and other contaminants to ensure a clean process environment. The charcoal filter removes common organic vapors. A 4-position PVC diverter valve determines the percentage of fresh make-up air entering the chamber: either 100% (no recirculation); 0% (complete recirculation); or 50% (half fresh, half recirculated). Pipes are 2"-dia. PVC (other sizes and materials available).
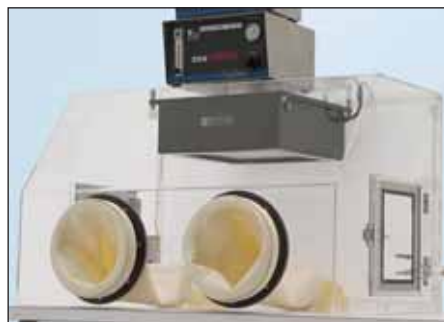
Open-Loop Filtration Module
for Safe Indoor Exhausting

Includes a 460-CFM impeller blower, mounted in an acrylic housing, that draws air through an inlet filter into the glovebox. This filter (HEPA or ULPA) removes particulates, aerosols, spores, and other contaminants. A HEPA or ULPA filter removes contaminants from the exhaust for indoor release. Both filters are enclosed in a disposable acrylic housing for safe, easy handling and disposal.

Select HEPA or ULPA filters (2 required).
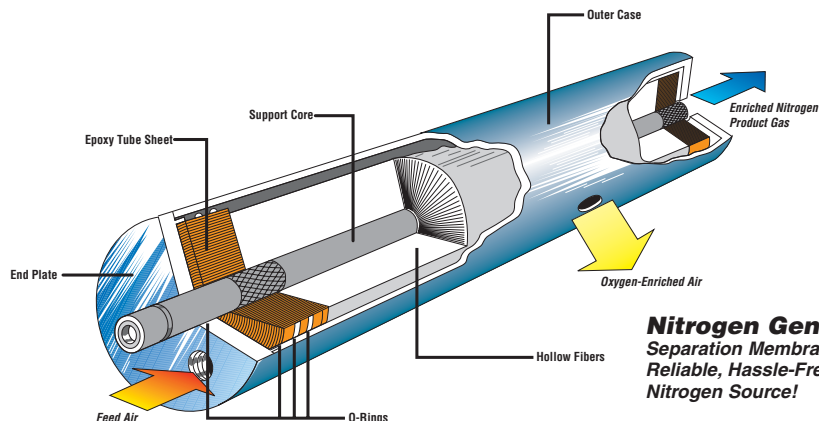
Powder Containment Filter

Encases 12" x 12" x 3" HEPA or ULPA filter inside an acrylic containment case for safe handling and disposal of filter containing pharmaceutical powders or other hazardous dust. To replace filter, simply remove and bag inner case. Outer housing includes 4"-dia. x 3"H flange for connection to in-house ventilation system—does not include blower.

For Glovebox Type	Closed-Loop Module		Open-Loop Module	
Order Separately	**For Continuous Filtration**		**For Safe Indoor Exhausting**	
	Cat. #	$/Each	Cat. #	$/Each
Series 100 (Plastic; see page 8)	1684-80	2,707.00	1684-82	1,366.00
Series 300/400 (Stainless Steel; see page 12)	1684-81	2,983.00	1684-83	1,637.00
Corresponding Filters				
HEPA	2100-30	106.00	1684-84*	256.00
ULPA	2100-29	114.00	1685-81*	303.00
Activated Charcoal	1701-90A	233.00	–	–

* These filters are encased in an acrylic housing for safe handling and disposal.

Cat. #	$/Each
2100-33	160.00

(14"W x 12.5"D x 16"H; order 2100-31 HEPA or 2100-32 ULPA filter module separately)

Filter Modules (including containment case)

	Cat. #	$/Each
HEPA	2100-31	136.00
ULPA	2100-32	146.00

Perfect for nitrogen-purged chambers

Internal Mount Recirculating Filtration Module
Ideal for process gas environments!

This module continuously circulates process gas through a HEPA or ULPA filter to remove sub-micron particles, producing cleaner-than-Class 10 conditions inside the glovebox. Includes dual 68 CFM motorized impellers for rapid filtration cycling. Price includes installation inside specified Terra glove box. Select desired filter separately. 120VAC, 50/60 Hz (220VAC models available)

Housing		Cat. #	$/Each
Acrylic		1694-70	2,507.00
Stainless Steel		1694-71	2,707.00
Filters	HEPA	2100-30	126.00
	ULPA	2100-29	134.00

Labels on diagram:
Outer Case
Support Core
Epoxy Tube Sheet
End Plate
Feed Air
O-Rings
Hollow Fibers
Enriched Nitrogen Product Gas
Oxygen-Enriched Air

Nitrogen Generator Separation Membrane – Reliable, Hassle-Free Nitrogen Source!

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.

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).

No. 2700-09   No. 2700-11   No. 2700-12

Ⓐ *Nitrogen Generator*

Ⓑ *Dryex 80™*

Ⓒ *Dryex 10™*

Comparative Guide to Terra Gas Dryers								
Product	Design Type	Outlet Flow Capacity	Service Requirement	Prefilters Included	Overall Dimensions (W x D x H inches)	Recommended Application	Cat. #	$/Each
A. Nitrogen Generator	Membrane	See performance chart	Air Compressor (#9505-47, cat. pg 482)	Yes (micro-fiber & coalescing)	18 x 18 x 81.25 24 x 12 x 49.25 20 x 12 x 35.25	Gloveboxes, desiccators & N₂-based process equipment in labs where N₂ is preferable to dry air	2700-09A 2700-11A 2700-12A	10,685.00 6,521.00 2,602.00
B. Dryex 80™ Gas Dryer	Membrane	420-900 SCFH (see performance chart, cat. pg 479)	Air Compressor (#9505-43, cat. pg 482)	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	3,955.00
C. Dryex 10™ Generator	Membrane	54-105 SCFH @ 100 PSIG	Air Compressor (#9505-43, cat. pg. 482)	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	2,220.00

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. #	$/Each
110VAC, 60Hz or 220VAC, 50Hz	**1603-57**	**2,586.00**

B. NitroWatch™

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

	Cat. #	$/Each
Control Unit	**9500-00A**	**866.00**
Humidity Sensor	**9500-02A**	**490.00**

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. #	$/Each
Control Unit	**1401-07**	**1,863.00**
Sensor Probe	**1401-12**	**1,548.00**

D. Trace Gas Mixer

Assures accurate gas mixtures. Model shown features two flow channels of specified flow.

	Cat. #	$/Each
2-20/2-20	**2701-00**	**486.00**
2-20/5-50	**2702-00**	**502.00**
5-50/5-50	**2703-00**	**517.00**
5-50/10-100	**2704-00**	**487.00**

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 (dual molecular sieves and catalytic converter) to maintain humidity set point. A regeneration module automatically reactivates the system. Dual HEPA filters ensure a particle-free air flow of about 300 CFH.

	Cat. #	$/Each
	6706-01	**14,344.00**

F. Automatic RB® (Relief/Bleed) Valve

Automatically relieves pressure build-ups to ensure safe operating conditions with Terra's gas control systems.
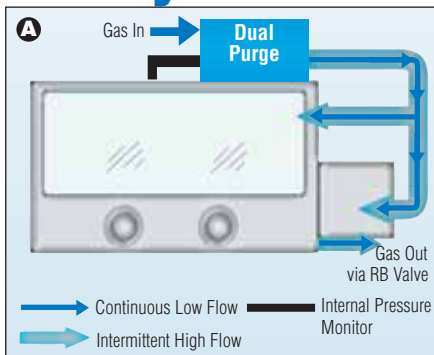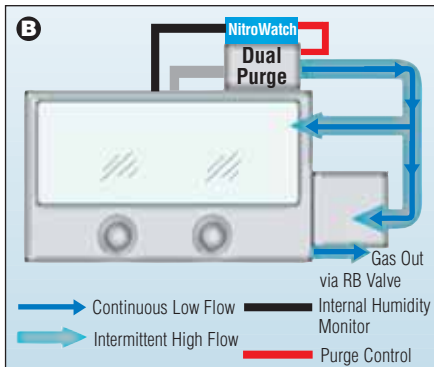
For Stainless Steel Enclosures

	Cat. #	$/Each
	1606-60	**171.00**

For Polymer Enclosures

	Cat. #	$/Each
	1600-60B	**94.00**

A Gas In → Dual Purge → Gas Out via RB Valve

→ Continuous Low Flow — Internal Pressure Monitor
→ Intermittent High Flow

Economizes on nitrogen consumption up to 78%

B NitroWatch / Dual Purge → Gas Out via RB Valve

→ Continuous Low Flow — Internal Humidity Monitor
→ Intermittent High Flow — Purge Control

Extends shelf lives of stored materials by controlling moisture and moisture-related defects

C Gas In → DewWatch / Dual Purge → Gas Out via RB Valve

→ Continuous Low Flow — Internal Humidity Monitor
→ Intermittent High Flow — Purge Control
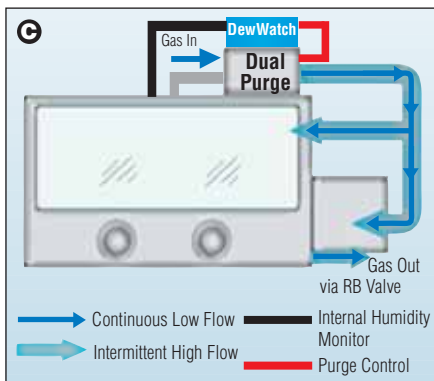
DewWatch™: Humidity Monitor & Control (Dual Purge System, RB valve required)
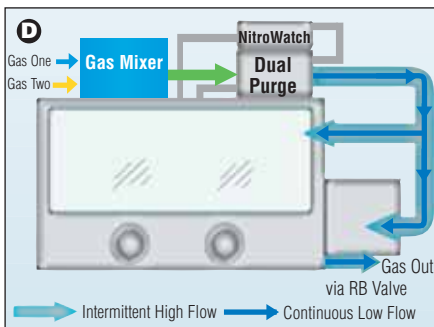
D Gas One / Gas Two → Gas Mixer → NitroWatch / Dual Purge → Gas Out via RB Valve

→ Intermittent High Flow → Continuous Low Flow

Typical application with NitroWatch/DualPurge humidity controllers (not included)

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

DryCycler™ Performance, based on an 18 cu. ft. glovebox
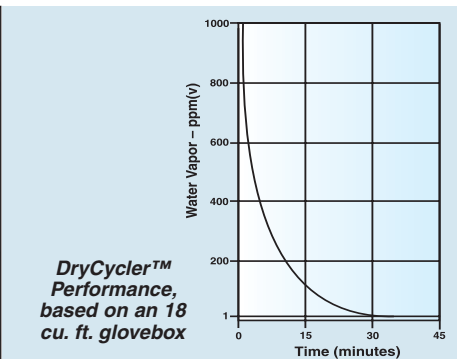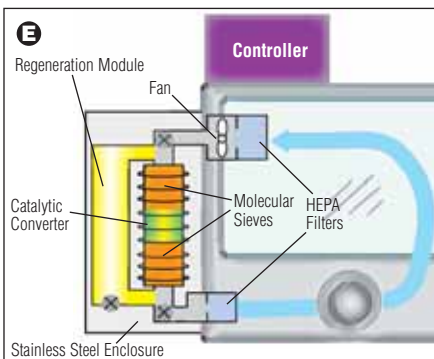
(Chart: Water Vapor – ppm(v) vs. Time (minutes))

A. Process Gas Heater

Terra Universal's Process Gas Heater raises the temperature of the process gas up to 350°F (see performance graphs). The thermostatic control ensures temperature stability. Its isolated heating system provides controlled heating without direct contact with the process gas—guaranteeing safe, noncontaminating operation with potentially explosive gases. The "smart" programmable temperature controller monitors and responds to gas temperature measured at the outlet, continuously adjusting the temperature profile and guarding against temperature overshoot.

	Cat. #	$/Each
120VAC/60Hz	**4320-00**	**2,434.00**
220VAC/50Hz	**4320-00-220**	**2,434.00**

B. Process Gas Cooler

The Process Gas Cooler adds cooling capability to Terra's line of environmental control devices. It incorporates a high-efficiency refrigeration unit that provides effective flow-through cooling down to 30°F. This low-temperature capability is especially important in chambers that include heat-generating equipment that disrupts a stable processing temperature.

	Cat. #	$/Each
120VAC/60Hz	**9450-00**	**2,707.00**
220VAC/50Hz	**9450-00-220**	**2,707.00**

C. High-Volume Gas Cooler (not shown)

This process gas cooler is designed to cool a flow of up to 500 SCFH of nitrogen, argon or other dry process gas down to 0°F. It includes a pressure and temperature monitor and Ethernet connection to allow remote monitoring. The explosion-proof design uses clean materials for non-contaminating operation, including an all-stainless steel gas path.
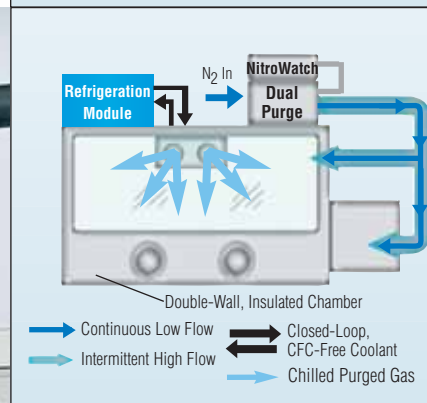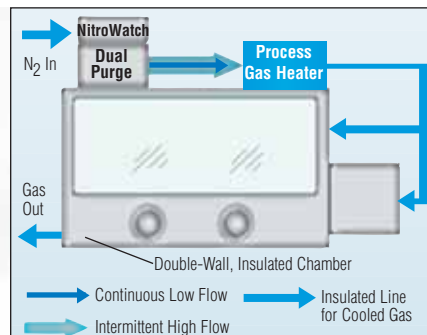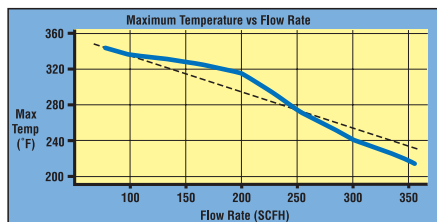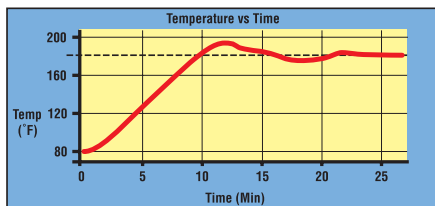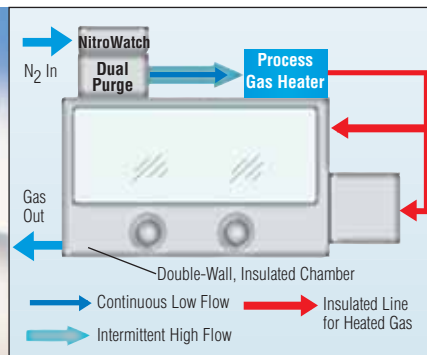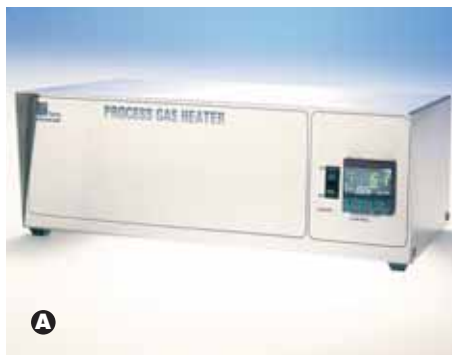
	Cat. #	$/Each
110VAC, 50/60Hz	**9450-02**	**6,896.00**

D. Refrigeration Module

This integrated, closed-loop refrigeration system consists of a ¼ HP compressor/condenser unit, mounted inside a stainless steel housing; and an evaporator cooler, mounted inside the glovebox. The system operates with R134 coolant, an environmentally safe, CFC-free material. An RTD sensor provides feedback to the temperature controller, which provides continuous temperature display and includes overtemperature protection and an internal bypass to prevent temperature overshoot.

Rating: 1050 BTU @ 15°F temp. differential
Control: Microprocessor-based single-point controller

	Cat. #	$/Each
110VAC, 50/60Hz	**1694-68**	**4,857.00**
220VAC, 50/60Hz	**1694-68-220**	**4,857.00**

Temperature vs Time

Maximum Temperature vs Flow Rate

Diagram labels: NitroWatch, N₂ In, Dual Purge, Process Gas Heater, Gas Out, Double-Wall, Insulated Chamber, Continuous Low Flow, Intermittent High Flow, Insulated Line for Heated Gas, Insulated Line for Cooled Gas, Refrigeration Module, Closed-Loop, CFC-Free Coolant, Chilled Purged Gas

Note: Illustrations depict typical applications with NitroWatch/Dual Purge controllers (order separately, pg. 23).

2" Polyurethane Insulation

Double-Wall, Insulated Chamber Boosts Thermal Efficiency!

If your application calls for heating or cooling, Terra will modify any standard glovebox to produce a more thermally efficient enclosure.

In most cases, these modifications include a double-wall design with 2" to 4" of polyurethane insulation, depending on the process temperature.

Call Terra to discuss your particular requirements!

Model shown:
Cat. # 1695-03
See page 2

Humex™
Humidifiers

Terra's Humex™ Humidification Modules allow controlled moisture testing in a glovebox or other chamber. The Humex™ incorporates a water 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.

	Cat. #	$/Each
Humex™ (110VAC, 50/60Hz)	9081-00	3,885.00
Humex 2™ (110VAC, 50/60Hz)	9081-02	2,248.00
Humidity Sensor (installed)	9500-02A	490.00

Humex™

Humex 2™
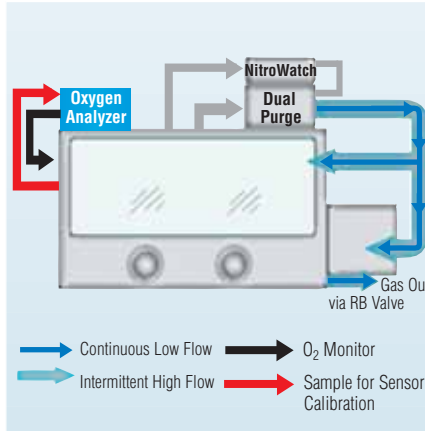
Trace Oxygen
Analyzer

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 110/220 VAC, 50/60 Hz

Includes connection to specified glovebox.

	Cat. #	$/Each
Trace Oxygen Analyzer	2005-97	6,953.00

Oxygen Analyzer — *NitroWatch* — *Dual Purge* — Gas Out via RB Valve

→ Continuous Low Flow → O₂ Monitor
→ Intermittent High Flow → Sample for Sensor Calibration

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

Static
Control

A. Ionizing Blow-off Gun

This gun emits a stream of ions to safely neutralize surfaces with pinpoint accuracy. It also helps remove surface contaminants by eliminating static attraction. Designed for use with either filtered air or nitrogen at 12-30 psi. Includes 0.4-micron filter and transformer.

	Cat. #	$/Each
Ionizing Blow-off Gun		
110VAC	2005-55	689.00
220VAC	2005-55-220	689.00
Capsule Filters (Replacement)		
0.04μm retention	2005-52	156.00
0.40μm retention	2005-53	107.00

B. 4-Outlet Power Strip (not shown)

Includes master on/off switch and resettable 15-amp circuit breaker. Installed along rear wall of glovebox.

	Cat. #	$/Each
120VAC, 50/60 Hz	2004-31	110.00

(A)

(C)

Ionizing module for glovebox

Ionizing module for laminar flow hood
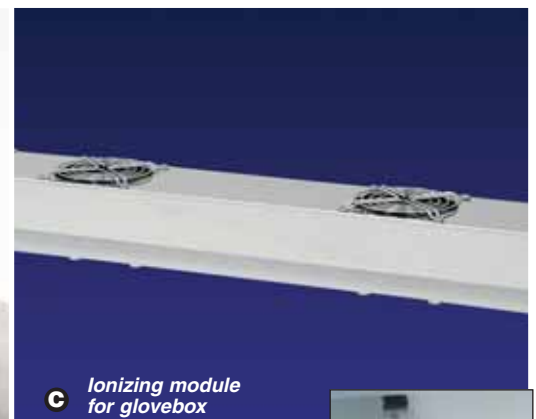
C. Ionizing Bar

Provides safe, effective static neutralization inside a glovebox or similar enclosure. Designed for overhead chamber mounting, it generates a balanced stream of positive and negative ions to neutralize surface static charges, safeguarding ESD-sensitive materials. The replaceable, machined titanium emitter points are long lasting and field-replaceable. Power: 120/240VAC (specify desired 24VAC output transformer).

IonBar™ (prices include installation)						
	IonBar™ for Laminar Flow Enclosures (1)		IonBar™ for Gloveboxes (2)			
			110VAC		220VAC	
Bar Length	Cat. #	$/Each	Cat. #	$/Each	Cat. #	$/Each
11" (2 emitters)	2005-35	595.00	2005-29	682.00	2005-29-220	682.00
22" (4 emitters)	2005-36	690.00	2005-30	777.00	2005-30-220	777.00
33" (6 emitters)	2005-38	791.00	2005-32	878.00	2005-32-220	878.00
44" (8 emitters)	2005-37	892.00	2005-31	979.00	2005-31-220	979.00

(1) Requires laminar flow for effective ion distribution. Recommended for Terra Modular Cleanrooms and Laminar Flow Stations.

(2) Price includes installation inside specified enclosure; fans ensure uniform ion distribution.

Vacuum Chambers

A – D Full-Vacuum Chambers
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	1,078.00

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 Chamber (see chart below)
1"-thick walls; includes dual metering valves and 0-30" Hg vacuum gauge.

	Cat. #	$/Each
Powder-Coated Steel Stand		
Raises chamber 17"; includes casters.	1590-61	541.00

D. Full-View Acrylic Chamber (see chart below)
Made of 1/2"-thick acrylic. Designed for continuous pump operation with safety relief valve.

E – J Low-Vacuum Chambers
See specifications/ordering chart below.
Ideal for degassing and transporting small parts. Designed for continuous pump operation with safety relief valve (order below).

Low-Vacuum Chamber Accessories

	Cat. #	$/Each
Metering Valves	5235-09	120.00

Two required for direct connection to pump, or one if connecting to Lo-Vac Controller (which includes vacuum bleed valve). See chart below.

	Cat. #	$/Each
Vacuum Gauge	5235-10	96.00

Required if selected pump does not include metering kit.

Safety Relief Valve
Required on all low-vacuum chambers to prevent damage.

	Cat. #	$/Each
For vacuum to 6" Hg	5235-11	86.00
For vacuum to 12" Hg	5235-14	84.00

Shown with optional stand, vacuum pump and controller

Call for custom modifications

Model shown: ref. 3404-05 modified for nitrogen backfill and thermocouple output.

Vacuum Chambers						Vacuum Controller			Connection Kit	
Type		Dimensions (W" x D" x H") Outside	Inside	Max. Vacuum	Cat. #	$/Each	Voltage	Cat. #	$/Each	Cat. #	$/Each
Full Vac.	A	49L x 30 dia.	48L x 26 dia.	29.9" Hg	3404-03	20,790.00					
	B	13 x 15 x 14	8 x 12 x 8	29.9" Hg	3404-00	2,423.00	120VAC, 60Hz	**1681-75**	2,012.00	5400-25*	1,382.00
	C	31.4 x 25.4 x 18.8	30.4 x 24.4 x 17.8	29.9" Hg	1590-60	8,289.00	220VAC, 50Hz	**1681-75-220**	2,017.00	5400-25*	1,382.00
	D	12"-dia. x 14.5	11"-dia. x 13.5	29.8" Hg	5235-08	1,704.00				5400-24*	1,382.00
Low Vac.	E	16 x 10 x 11.5	14 x 8 x 9.5	6" Hg	5235-00A	1,623.00					
	F	12 x 12 x 6.5	10.5 x 10.5 x 5	6" Hg	5235-01A	1,212.00					
	G	8 x 8 x 8.5	6 x 6 x 7.5	12" Hg	5235-02A	1,046.00					
	H	12 x 12 x 9.5	10 x 10 x 7.5	6" Hg	5235-03A	1,418.00					
	I	16 x 16 x 12.5	14.5 x 14.5 x 11.5	6" Hg	5235-04A	1,678.00					
	J	25 x 10 x 11.5	11 x 8 x 10.5	6" Hg	5235-06A	1,841.00					

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

Complete line of pumps at
TerraUniversal.com

* *Includes all connections, vacuum solenoid, turnkey installation and testing charges.*
   *For 220VAC, 50Hz models, add "-220" to the affected part number.*

Temperature
Stability Chamber

- **Provides a particle-free, heated environment for biocompatibility testing, sensor calibration and other critical operations**

- **Segmented access shields afford easy access to large working area**

- **Maintains stable temperature (± 0.5°C between 18 - 25°C) even with access shield partly open**

This enclosure maintains extremely stable temperature conditions (21°C, ± 0.5°C) even when the external temperature fluctuates as much as ± 20°C and the access shield is partially open.

Its large working area (up to 120"W x 54"D x 36"H) is divided into 40"W zones, each with independent access shield and temperature controls. Air flows vertically through 99.99% efficient HEPA filters to provide a continuous wash of laminar-flow air that creates a cleaner-than-Class 100 work environment. Air passes through perforations in the work surface and passes through a 10,000 BTU air conditioning module and then through zone heaters that bring it up to a constant temperature before it circulates through HEPA filters and re-enters the work area.

The system disassembles for convenient shipping and installation in facilities with restricted access. Front access shield cut-outs can be specified for glove ports.

Rear View
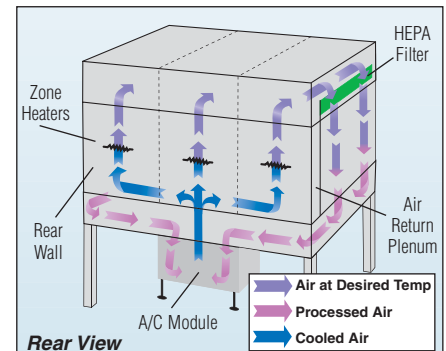
Overall Dimensions	Chamber Size (ID)	40"W Access Zones	Cat. #	$/Each
40"W x 64"D x 81"H	40"W x 54"D x 36"H	1	**1695-23**	**8,500.00**
80"W x 64"D x 81"H	80"W x 54"D x 36"H	2	**1695-24**	**16,287.00**
120"W x 64"D x 81"H	120"W x 54"D x 36"H	3	**1695-25**	**23,360.00**

***Order desired Fan/Filter Unit (HEPA or ULPA) separately - one 2' x 4' unit required per access panel.**

Temperature Stability Chamber

Refrigerated Incubator

Model shown: No. 1695-25

See page 35 for other environmental chambers

Vertical Laminar Flow Station
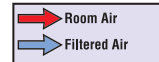
This economical system provides a laminar flow of HEPA-filtered air to meet the most critical contamination requirements. It incorporates industry-leading 48 dBA blowers for quiet, low-vibration operation. The all-304 stainless steel or powder-coated steel is cleanroom compatible and easy to clean and 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.

Fluorescent light standard; UV sterilization bulbs available

Digital Control Panel
• Filter/Fan Unit
• Light
• Backpressure alarm
• Motorized Shield*

Side Panels ensure effective laminar flow
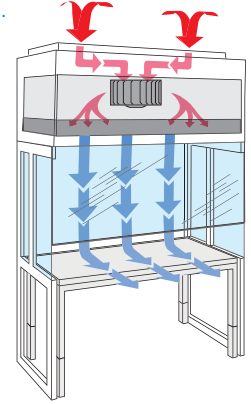
Motorized Sliding Shield* extends 3"-25" below hood to restrict access to work area and improve system efficiency. Rated for millions of operations!

Modular Cleanroom Drawers*— select stainless steel or plastic

Work Surfaces* available in many sizes and materials.

Two-piece design isolates FFU vibration.

*System option

Room Air
Filtered Air

Shown with optional sliding shield and drawer unit.

Strip shield access curtain (option)

Filter/Fan Units (FFUs) 115VAC, 60Hz* See chart below for quantity required					
Nominal Dim. width x length	Avg. Flow @ 90 FPM	HEPA FFU Cat. #	$/Each	HEPA FFU with Ionizing Bar** Cat. #	$/Each
2' x 4'	650 CFM	6701-99A	765.00	6701-97	1,403.00
2' x 3'	480 CFM	6702-08A	765.00	6701-95	1,315.00
2' x 2'	360 CFM	6702-10A	765.00	6701-93	1,225.00

*ULPA versions also available. For 220VAC model, add "-220" to the part number.
** See page 25 for specifications.

Vertical Laminar Flow Station										Side Panel*		Sliding Shield	
Dimensions (inches)			No. of FFUs required (order above)	304 Stainless Steel (Order FFUs and Benches separately)			Powder Coated Steel (Order FFUs and Benches separately)			Static-Dissipative PVC		Static Dissipative PVC	
A	B	W x D		120VAC, 50/60Hz Cat. #	220VAC, 50Hz Cat. #	$/Each	120VAC, 50/60Hz Cat. #	220VAC, 50Hz Cat. #	$/Each	Cat. #	$/Each	Cat. #	$/Each
52	49	48 x 30	(1) 2' x 4'	2001-30	2001-30-220	7,089.00	2001-80	2001-80-220	5,165.00	2004-03	140.00	9207-04	1,709.00
64	61	60 x 30	(1) 2' x 2' + (1) 2' x 3'	2001-31	2001-31-220	7,971.00	2001-81	2001-81-220	6,006.00	2004-03	140.00	9207-05	1,947.00
76	73	72 x 30	(2) 2' x 3'	2001-32	2001-32-220	8,350.00	2001-82	2001-82-220	6,366.00	2004-03	140.00	9207-06	2,186.00
100	97	96 x 30	(2) 2' x 4'	2001-33	2001-33-220	9,485.00	2001-83	2001-83-220	7,447.00	2004-03	140.00	9207-07	2,485.00

* 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†											Perforated-Top Work Benches†			
Dimensions (inches)			Nonconductive Steel Top		Conductive Top		304 Stainless Top		Polypropylene Top		304 Stainless Steel Top		304 Stainless Steel (Polypropylene Plenum)	
A	B	W x D	Cat. #	$/Each	Cat. #	$/Each	Cat. #	$/Each	Cat. #	$/Each	Cat. #	$/Each	Cat. #	$/Each
52	49	48 x 30	1722-00	552.00	1728-00	855.00	1521-45	960.00	1522-00	829.00	1522-56	1,223.00	1526-50	2,346.00
64	61	60 x 30	1724-00	608.00	1730-00	876.00	1751-00	1,037.00	1522-01	867.00	1522-57	1,317.00	1526-51	2,631.00
76	73	72 x 30	1726-00	617.00	1732-00	915.00	1752-00	1,088.00	1522-02	890.00	1522-58	1,507.00	1526-52	2,884.00
100	97	96 x 30	2402-00	737.00	2400-00	1,060.00	1753-00	1,168.00	1522-04	1,033.00	1522-60	1,807.00	1526-54	3,564.00

† Powder-coated adjustable-height frame; top of material indicated.
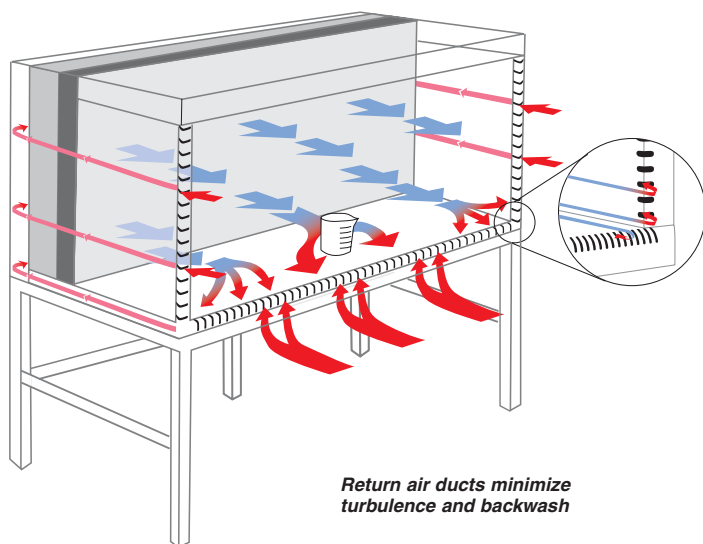
Horizontal
Laminar Flow Station

- **The ideal processing environment for contamination-sensitive materials**

- **Dual multi-speed filter/blower modules direct a continuous wash of HEPA- or ULPA-filtered air forward across the work area**

- **Take-up ducts along front and side edges minimize turbulence and backwash in the work area**

- **Face velocity is adjustable from less than 90 FPM to higher than 130 FPM**

- **Built-in recessed illuminator provides diffused lighting without interfering with laminar flow**

- **Electropolishing available to remove embedded subsurface particles in stainless steel surfaces**

- **Fluorescent lighting standard, UV sterilization lamps available**

Model shown: No. 9620-44
For complete specifications: TerraUniversal.com

Return air ducts minimize turbulence and backwash

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.

Petcocks	Cat. #	$/Each
Nitrogen/Clean Dry Air (CDA)	**9620-07**	**89.00**
Vacuum	**9620-08**	**89.00**
DI Water	**9620-09**	**89.00**

Horizontal Laminar Flow Station (order filters separately)							Filters		
Overall Dimensions*	Work Area Dimensions*	No. of FFUs required	Horizontal Laminar Flow: Interior Material**				HEPA Filter/Fan Units***		
			304 Stainless Steel		Electropolished SS		Size		
(W" x D" x H")	(W" x D" x H")	(order at right)	Cat. #	$/Each	Cat. #	$/Each	(W x L)	Cat. #	$/Each
52 x 44 x 63	48 x 30 x 28	(1) 2' x 4'	**9620-63**	**8,667.00**	**9620-66**	**10,655.00**	2' x 4'	**6701-99A**	**765.00**
76 x 44 x 63	72 x 30 x 28	(2) 2' x 3'	**9620-64**	**9,980.00**	**9620-67**	**12,031.00**	2' x 3'	**6702-08A**	**765.00**
88 x 44 x 63	84 x 30 x 28	(1) 2' x 4' & (1) 2' x 3'	**9620-65**	**10,849.00**	**9620-68**	**12,945.00**			

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.

CleanBooth™
Laminar Flow Station

Terra's Portable CleanBooth™ is ideal for kitting operations, assembly, or work with probe stations, screen printers and other free-standing or benchtop process equipment. The backbone of the 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. #	$/Each
49" x 25"	(1) 24" x 48"	**1870-01**	847.00
73" x 25"	(2) 24" x 36"	**1870-02**	1,045.00

*Filter face 70" above floor

Filter/Fan Units
Includes HEPA filter rated 99.99% efficient @ 0.3µm particles. ULPA filters and complete specifications available at TerraUniversal.com.

Nominal Dim. width x length	Power	Avg. Flow @ 90 FPM	HEPA FFU Cat. #	$/Each	HEPA FFU with Ionizing Bar Cat. #	$/Each
2' x 4'	110VAC	644 CFM	6701-99A	765.00	6701-97	1,403.00
2' x 4'	220VAC	644 CFM	6701-99A-220	765.00	6701-97-220	1,403.00
2' x 3'	110VAC	477 CFM	6702-08A	765.00	6701-95	1,315.00
2' x 3'	220VAC	477 CFM	6702-08-220A	765.00	6701-95-220	1,315.00

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. Easy, no tool installation in GripTrak™ mounts installed along frame.

For CleanBooth	Cleanroom Vinyl Cat. #	$/Each	Anti-Static Vinyl Cat. #	$/Each
49" width	**1330-00A**	253.00	**1330-01A**	319.00
73" width	**1330-05A**	492.00	**1330-06A**	623.00

Fluorescent Light   115/277VAC, 50/60Hz

	Cat. #	$/Each
35.5" long [1]	**1870-10**	237.00
47" long [2]	**1870-11**	264.00

(1) – Two required for 73"-wide CleanBooth. Includes installation.
(2) – One required for 49"-wide CleanBooth. Includes installation.

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

No. 1870-01 with optional filter/fan unit and panel kit.

Ionizing FFU controls static and particles (see pg. 25)

Narrow Profile
Vertical Flow Hood

- **Dual 2' x 4' HEPA Filter/Fan Units provide laminar flow of clean air to the work surface**

- **Powder-coated CR steel frame includes static-dissipative PVC side panels**

	Cat. #	$/Each
Hood Frame	1690-95	2,090.00

(98½"W x 28"D x 88"H)

HEPA Filter/Fan Unit (requires two)
Provides 650 CFM of HEPA-filtered air. Runs @ 50 dBA

	Cat. #	$/Each
110VAC, 60Hz	6701-99A	765.00
220VAC, 50Hz	6701-99A-220	765.00
Static-Dissipative Rear Panel	7018-58	481.00
Cleanroom Work Station	2402-00	737.00

(96"W x 30"D)

Narrow-Profile Wet Processing Station	7018-06	10,112.00

Call to discuss your application.

Hood shown with Narrow-Profile Wet Processing Station (shown with optional teardrop light)

See full line of work benches www.terrauniversal.com.

Benchtop Laminar Flow Hoods

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

A. Universal Hood

Completely modular design lets you configure an economical clean bench to your requirements, in acrylic, polypropylene, dissipative PVC or stainless steel. Single and twin hoods available. Options include two-piece stand that isolates blower vibration — perfect for high-magnification work.

System shown: acrylic hood No. 1715-10A ($925), with blower-filter module No. 1715-51 ($757). Includes swing-vane anemometer to monitor air speed. Select HEPA or ULPA filter.
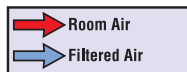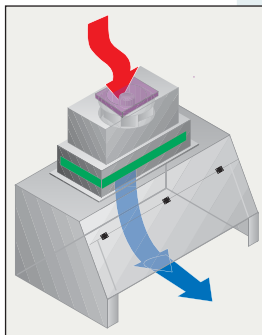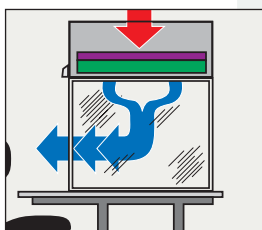
B. CleanCube™ Seamless Laminar Flow Hood

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 ($1,562) with HEPA fan/filter unit No. 6702-10A ($765). Polycarbonate also available, along with 36"-wide models.

C. WhisperFlow™ Bench-top Hood

This versatile system offers industry-leading low noise and vibration (48dBA) 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.

Room Air
Filtered Air

Ⓐ

Rounded corners for easy cleaning, full visibility

Ⓑ

Horizontal or vertical configurations

Ⓒ

Benchtop Hoods 48"W (36"W models available)		
Hood Material*	Cat. #	$/Each
Vertical Flow		
Acrylic	1686-50B	2,127
Static Dissipative PVC	1686-51B	2,849
Nondissipative PVC	1686-52B	2,127
Polypropylene (Nondissipative PVC)	1686-53B	2,728
Stainless Steel (Dissipative PVC)	1686-54B	2,860
Horizontal Flow		
Acrylic	1686-55B	2,127
Static Dissipative PVC	1686-56B	2,849
Nondissipative PVC	1686-57B	2,127
Polypropylene (Nondissipative PVC)	1686-58B	2,728
Stainless Steel (Dissipative PVC)	1686-59B	2,860

* Unless indicated in parentheses, shield is made of the same material as the hood.
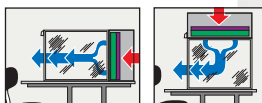
	Cat. #	$/Each
Fan/Filter Module	6701-99A	765.00

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

*Complete specs and ordering information –*

TerraUniversal.com

Free-Standing
Exhaust Fume Hoods

This Exhaust Fume Hood is designed to afford you maximum economy and flexibility in designing the system that's right for your application.

The frame is fabricated from welded 1½" x 3" powder-coated or 304 stainless steel to ensure sturdy support for the exhaust fume hood. The frame also isolates the hood (and any vibrations the hood causes) from the work surface. A 6" round discharge allows easy connection to your in-house exhaust system to provide the internal negative pressure necessary to safely remove fumes from the work surface.
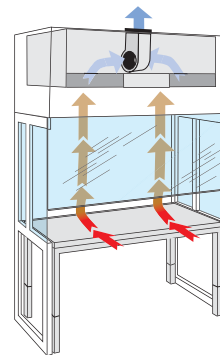
The front of the unit features an easy-glide sliding shield (also made of transparent PVC mounted in a powder-coated aluminum frame). The Ductless Exhaust Purification Hoods include an explosion-proof blower installed inside the hood and provisions for mounting purification filters and particle filters that safely remove a wide array of fumes to allow safe indoor release of exhaust.

	Room Air
	Filtered Air
	Contaminated Air

Shown with optional Cleanroom Bench.
(See Catalog 105, page 415 for complete information).

Dimensions			Exhaust Fume Hoods*				Ductless Exhaust Purification Hoods**			
Overall Length A	Inside Length B	Optional Work Surface	304 Stainless Steel		Powder-Coated CR Steel		304 Stainless Steel		Powder-Coated CR Steel	
			Cat. #	$/Each	Cat. #	$/Each	Cat. #	$/Each	Cat. #	$/Each
52"	49"	48" x 30"	2400-03	6,396.00	2400-08	4,100.00	2400-12	8,822.00	2400-16	6,729.00
64"	61"	60" x 30"	2400-04	7,160.00	2400-09	4,573.00	2400-13	11,228.00	2400-17	7,159.00
76"	73"	72" x 30"	2400-05	7,994.00	2400-10	5,528.00	2400-14	11,870.00	2400-18	8,027.00
100"	97"	96" x 30"	2400-06	8,448.00	2400-11	6.123.00	2400-15	12,650.00	2400-19	8,448.00

* Supporting frame is made of powder-coated steel tubing; stainless steel frame is available on a custom basis.
** Order Purification Filters separately. These systems include a ¾ HP explosion-proof blower mounted for negative-pressure venting.

New bonded filters improve safety and performance

ECM™ Modular System:

Ductless Exhaust Purifiers

These horizontal or vertical flow systems ventilate and purify fumes generated by such operations as soldering, chemical mixing and pharmaceutical packaging, allowing safe indoor release of exhaust.

Hoods are available in five materials, including stainless steel and dissipative plastic, in sizes from 28" to 56" wide. Options include fluorescent lighting, air flow meters, and work surfaces, see TerraUniversal.com for details.

Horizontal Exhaust Fume Hood
Model shown: acrylic hood No. 1682-87B with HEPA filter/blower module No. 1650-31. System dimensions: 42"W x 43.5"D (hood and blower) x 28"H

Vertical Exhaust Fume Hood
Model shown: acrylic hood No. 1683-29B with HEPA filter/blower module No. 1650-41. System dimensions: 42"W x 30"D x 41.5"H (hood and blower)

High-Clearance Chemical Fume Hood

This benchtop unit features over 28" of vertical clearance with the access shield open. The dual impeller blowers provide ample ventilation under filter load to maintain exhaust air speed ≥ 100 fpm for safe operation and worker protection. A polypropylene tray collects chemical spills, and quick-release clamps ensure easy access to activated charcoal and/or final HEPA filters. The sloped front access provides full view of and access to work in progress. Overall dimensions: 32.5"W x 25"D x 33.25"H (48"H with filter/blower module). Access shield clearance: 15.5" (closed); 28.25" (open).

Exhaust Flow: 400 CFM (with charcoal filter)
350 CFM (charcoal and HEPA final filter)
Air Velocity: 118 ft./min. with shield down
(operated with charcoal filter only)

| Hood Material*	Cat. #	$/Each
Acrylic***	2900-30	3,171.00
PVC	2900-31	3,232.00
Polypropylene (PVC shield)**	2900-32	3,424.00
Polycarbonate	2900-33	3,460.00

* *Includes filter/blower enclosure and spill tray made of white polypropylene. Order filter(s) separately.*
** *Includes Fluorescent Illuminator (110VAC). Add "-220" to the part number for 220VAC*
*** *Acrylic is damaged by alcohol and other cleaning agents.*

	Cat. #	$/Each
Charcoal Purification Filter	1716-00A	312.00
HEPA Final Filter	1681-02	220.00

**Full specifications –
TerraUniversal.com**
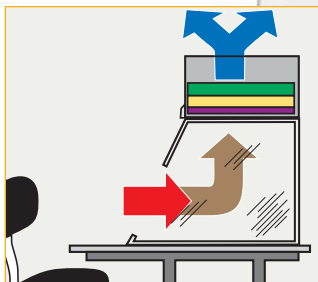
Ideal for distillation and other operations with large glassware or equipment.

High capacity blower maintains air speed >100 ft./min. with 15" of vertical working clearance!

High capacity blower maintains air speed 181 ft./min. with 8" of vertical working clearance!

Benchtop Ductless Exhaust Fume Hood

This high-capacity, turnkey fume hood features dual blowers to ensure a safe exhaust flow speed (181 ft./min.). Polypropylene construction resists chemical vapors, and an onboard air speed meter monitors operation. Includes a vapor-sealed fluorescent illuminator. Dimensions: 45"W x 28"D x 27"H. Other sizes and options available at **www.TerraUniversal.com**.
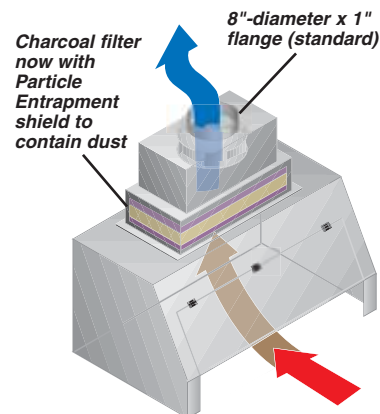
Cat. #	$/Each
2900-20	3,180.00

Air speed monitor ensures safe operation

Quick-release filter housing – replace filter from above or from inside enclosure!

Charcoal filter now with Particle Entrapment shield to contain dust

8"-diameter x 1" flange (standard)

"Squaroid" Vacuum Ovens

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**	**2,560.00**
2.3 cu. ft.	**3700-82**	**4,412.00**

Hi-Temp "Squaroid" Oven

Includes hydraulic thermostat controls for heating up to 300°C. Radiant warm-wall heating provides uniform temperatures and eliminates the hazards of open-wire heaters. Externally isolated heaters maximize safety and chamber space. Top-mounted operation panel controls vacuum to nearly 30" Hg. Chamber interior is stainless steel. Models below are 120VAC; 240 VAC models also available.

Chamber Size	Cat. #	$/Each
1.1 cu. ft.	**3700-39**	**5,312.00**
1.7 cu. ft.	**3700-41**	**5,548.00**

Class 100 Cleanroom Oven

Four-segment programmable controller provides precise heating to 250°C. Models below include HEPA filters that make them compatible for use in Class 100 (ISO 5) cleanrooms (models also available without HEPA filters for less stringent requirements). Interior walls are stainless steel, with stainless steel bottom and sidewall plenums. Delrin hinge pivots eliminate metal-on-metal surfaces. Model below is 120VAC; 240 VAC models also available. Includes 2"-dia. exhaust vent, .125" NPT fitting for introducing inert gas or house air, and four adjustable stainless steel shelves. Chamber size: 2.8 cu. ft.

Cat. #	$/Each
3700-70	**9,040.00**

No. 3700-85 (14 cu. ft.)

High-Capacity, HEPA-Filtered Cleanroom Oven

This oven provides a stable elevated temperature (60°C, ± 2°C) for a very large stainless steel chamber: 36"W x 36"D x 90"H (67.5 cu. ft.). Air or process gas is forced through dual HEPA filters located above the ceiling of the process chamber; continuous recirculation ensures temperature uniformity and a better-than Class 100 (ISO 5) process environment. Includes temperature uniformity certification based on 9-point temperature mapping. Overall dimensions: 43.5"W x 42"D x 107"H.

Cat. #	$/Each
2148-15	**25,600.00**

Large-Capacity Forced-Air Ovens

PID temperature controls provide stable heating to 220°C, and a unique turbo blower system creates 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 below are 120VAC.

Chamber Size	Cat. #	$/Each
14.0 cu. ft.	**3700-85**	**4,626.00**
28.0 cu. ft.	**3700-86**	**5,743.00**

Tube Furnaces

Ideal for growing electronic crystals, doping silicon wafers and many other microelectronics applications. Features temperature range from 100°C to 1200°C. Two interchangeable vestibule ends (1" and 2" dia.) accommodate tubes up to 2" in diameter. Chamber operates remotely or in horizontal, angular or vertical positions. Models below are 120VAC; select manual or single setpoint control. Length: 12".

Control Type	Temp. Range	Cat. #	$/Each
Manual	370°C to 1100°C	**4000-69**	**1,599.00**
Single Setpoint	100°C to 1200°C	**4001-86**	**1,965.00**

No. 5757-02

Complete Specifications—
TerraUniversal.com

30 Cubic-Foot Capacity		
	Cat. #	$/Each
Refrigerated Incubator	**5757-00**	**11,227.00**
Stability Chamber	**5757-02**	**14,000.00**

No. 5757-05

Environmental Chambers

These microprocessor-controlled chambers provide precise control over environmental conditions for repeatable results in material testing, component burn-in, shelf-life monitoring, and other critical studies. ***Refrigerated Incubators*** provide precise temperature control from 5°C to 60°C. ***Stability Chambers*** add a relative humidity system with solid-state humidity sensor and controller that allow humidification and dehumidification for operation from 20 to 98%RH. All incorporate environmentally friendly HFC refrigerant and CFC-free insulation. Light packages and chart recorders are optional.

Models below are 115VAC; 230VAC also available

10 Cubic-Foot Capacity	
Cat. #	$/Each
5757-03	**9,815.00**
5757-05	**13,160.00**

RH/Temperature Stability Chamber

This stainless steel cabinet is configured for storage of polycarbonate films used for high-precision screening of circuit boards. It maintains critical relative humidity and temperature levels to prevent dimensional aberrations that result from exposure to humidity and temperature fluctuations.

Air circulates horizontally across the shelves that hold the film. As air exits the storage area, it passes through an air conditioning/heating module that conditions it to within ± 2°F of the temperature set point. In addition, the continuously operating A/C module removes moisture to keep the %RH level within ± 3% of the set point. If humidity falls too low, an ultrasonic humidifier cycles on to add the proper amount of water vapor. If the temperature falls too low, the heater module cycles on. A water filtration system removes contaminants from the humidification feed water to eliminate the chance of mineral deposits or other vapor-borne contaminants.

As the process air exits the RH/temperature modules, an impeller blower draws it into an intake plenum area and forces it uniformly back through the storage area.

	Cat. #	$/Each
Stainless Steel with	**2148-10A**	**21,300.00**
Amber acrylic door		
All amber acrylic	**2148-11**	**17,500.00**

For large processing areas — up to 120"W x 54"D x 36"H See Terra's Temperature Stability Chamber on page 27.

No. 5321-39

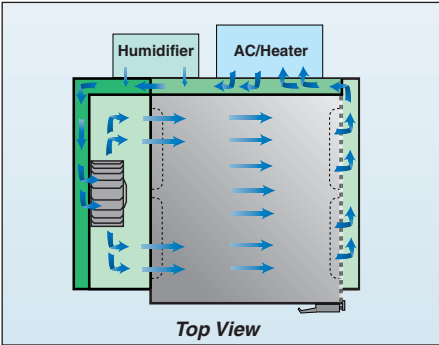### Large-Capacity Environmental Chambers

These chambers provide both above- and below-ambient control of temperature (4°C to 70°C) and humidity (20 to 98%RH, on select models). All models below include a password-protected 21-step programmable controller and RS485 data output, high/low safety alarms, door open/power out alarm and a chart recorder. Stainless steel interior and epoxy-coated wire shelves are easy to clean.

	Temperature Only		Temperature & Humidity	
	Cat. #	$/Each	Cat. #	$/Each
24 cu. ft.	**5321-34**	**12,900.00**	**5321-38**	**15,900.00**
33 cu. ft.	**5321-35**	**13,900.00**	**5321-39**	**16,900.00**
52 cu. ft.	**5321-36**	**16,500.00**	**5321-40**	**19,500.00**
80 cu. ft.	**5321-37**	**19,500.00**	**5321-41**	**22,500.00**

No. 2148-10A

± 2°F/± 3% RH Stability

Top View

Benchtop Muffle Furnaces

These muffle furnaces offer a heating range from 100°C to 1200°C and two chamber sizes. A ceramic shelf (standard for 350 cu. in. chambers) effectively doubles the working area. Open-coil heating elements on both sides of the chamber and high thermal-efficient ceramic insulation provide temperature uniformity and heating efficiency. A built-in venting system removes contamination and moisture. Models below are 120VAC; 240 VAC models also available.

Control Type	Chamber Size	Cat. #	$/Each
Single Setpoint	120 cu. in.	**1800-52**	**2,372.00**
Single Setpoint	350 cu. in.	**4000-64**	**2,820.00**
Prog. 8 ramp/8 dwell	120 cu. in.	**1800-54**	**3,008.00**
Prog. 8 ramp/8 dwell	350 cu. in.	**4001-84**	**3,334.00**

Compact Low-Cost Lab-Line Incubators

These compact and low-cost Lab-Line incubators are perfect for small or crowded workspaces and provide the added benefit of rugged construction and a choice of metal or acrylic door construction. The aluminum chamber and rugged metal door with positive latch provide excellent temperature uniformity, while the acrylic door model permits unobstructed sample views and eliminates temperature variations from opening and closing the door. A bimetallic thermostat controls heat uniformity.

1.0 Cubic-Foot Capacity	Cat. #	$/Each
120VAC Metal	**5321-69**	**367.00**
120VAC Acrylic	**5321-71**	**367.00**
240VAC Metal	**5321-69-220**	**409.00**
240VAC Acrylic	**5321-71-220**	**419.00**

Imperial III Incubators from Lab-Line

These durable gravity convection and mechanical incubators allow for years of dependable use due to their durable heating elements, and they come in three chamber capacities (see TerraUniversal.com). A tempered glass inner door on all models allows samples to be inspected without disturbing the chamber environment. Electrical outlets are provided internally to allow for the safe operation of shakers, stirrers and rotators. 220VAC models also available.

(See TerraUniversal.com for additional models)

2.6 Cubic-Feet Model	Cat. #	$/Each
120VAC 2.5A, 300W	**5321-76**	**1,912.00**
240VAC 1.3A, 300W	**5321-76-220**	**1,912.00**

Water- and Air-Jacketed Incubators from Lab-Line

The Lab-Line CO_2 water-jacketed and air-jacketed incubators feature five shelves and heated doors to prevent condensation for improved viewing of cultures. The chamber is corrosion-resistant stainless steel and provides 6.2 cubic feet of processing space. You can choose from an Infrared sensor for changing temperatures and humidity or a Thermocouple sensor for constant values.

Sensor and Type	Cat. #	$/Each
120VAC, 6.3A, 750W		
Water-Jacketed Thermocouple	**5321-95**	**4,978.00**
Water-Jacketed Infrared	**5321-97**	**6,294.00**
Air-Jacketed Thermocouple	**5321-89**	**4,848.00**
Air-Jacketed Infrared	**5321-91**	**5,999.00**
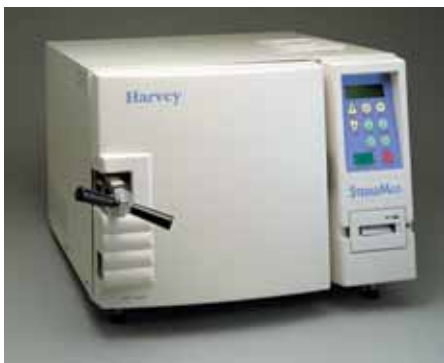
SterileMax Steam Sterilizer from Barnstead

At 1.2 cubic feet and 12-by-18 inches, the SterileMax chamber is the largest of any portable bench-top model and accommodates three 2-liter Erlenmeyer flasks. The triple door lock guarantees a secure operation, while operators can take advantage of four preset one-touch programs for liquids and hard goods. Visit TerraUniversal.com for options such as a non-recirculating feature that ensures debris and contaminants are not recycled. 220VAC available.

Model	Cat. #	$/Each
120VAC, 5.6A		
With printer	**1800-56**	**6,905.00**
Without printer	**1800-50**	**6,215.00**

MC8/MC10 Steam Sterilizers from Barnstead

The MC10 has a 10"-diameter chamber, and the MC8 an 8"-diameter chamber. These tabletop units come in three configurations: A basic sterilizer with manual cycling, a sterilizer with a non-recirculating feature that keeps internal components and filters free of debris and contamination, and a sterilizer in either configurations with a built-in data logger. 220VAC also available.

| Model	Cat. #	$/Each
MC10 (1425W)		
120VAC 50/60 Hz,12A	**1802-38**	**5,900.00**
MC8 (1350W)		
120VAC 50/60 Hz,12A	**1802-46**	**5,020.00**

Water Pre-Treatment and Biological/Temperature Indicators

Terra Universal offers the DI+ Water Pretreatment System to provide up to four liters of pure water per minute, and it's economical at 23 cents per gallon.

Terra's biological indicators verify the sterility of your instruments, vials, media, liquid cycles and other products.Our Chemitest See-Thru Pouches, coming in six sizes with self-sealing edges, are used for steam, ethylene oxide and chemical vapor sterilization. Our temperature indicators assure that items being processed have been run through a complete cycle, preventing the accidental use of items that have not been processed. All these necessary items can be found along with the sterilizers at TerraUniversal.com.

Specifications & Pricing: TerraUniversal.com
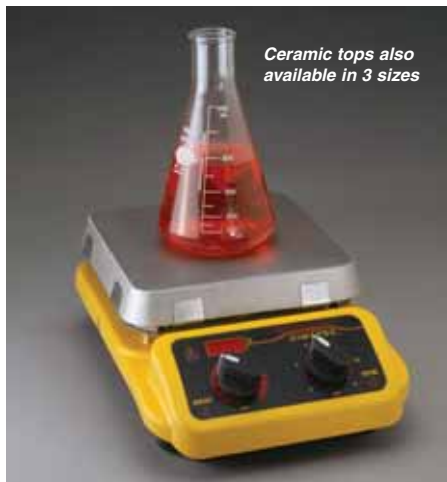
Ceramic tops also available in 3 sizes

Cimarec® Digital Aluminum Hot Plates and Stirrers

Rugged aluminum surfaces provide uniform heat distribution and durability. Microprocessor-controlled feedback maintains consistent, repeatable temperature settings. The easy-to-read display indicates temperature settings, adjustable in increments of 5°C up to 300°C. StirTrac™ technology offers improved slow-speed stirring, consistent speed control, and stronger magnetic coupling. All models below are 120V with 7" x 7" tops; other models available, including ceramic tops in several sizes.

	Cat. #	$/Each
Hot Plate	**4100-03**	**259.00**
Stirring Hot Plate	**4100-04**	**424.00**

Super-Nuova® Digital Hot Plates and Stirrers

These premium aluminum-top hot plates provide precise digital control of top plate and solution temperatures in 1° increments. Four user-presets let you call up often-repeated procedures. A magnetic stir bar provides the vortex motion to evenly disperse chemical in solution and/or heat. All models below are 120V with 7" x 7" tops; 220V and ceramic top models also available in several sizes.

	Cat. #	$/Each
Hot Plate	**4100-06**	**745.00**
Stirring Hot Plate	**4100-07**	**864.00**

Explosion-Proof Hot Plate

This corrosion-resistant, easy-to-clean unit is specifically designed to ensure safe heating in potentially explosive situations! The cast-aluminum top plate provides effective heat transfer, and all controls are contained in an aluminum housing, protected from the explosive atmosphere. Heating surface: 6" x 6". Temperature range: to 220°C (428°F).

	Cat. #	$/Each
Hot Plate	**4000-92**	**735.00**

UV Sterilization/Filtration Cabinet

This polypropylene cabinet features a ceiling filter that removes submicron particles, including bacteria, aerosols and other biohazards. Perforated shelves optimize the vertical flow of clean air through the cabinet; air exits through exhaust slots on the amber acrylic doors. Each of four chambers features a 254nm UV fluorescent germicidal light with timer. 25.75"W x 13.5"D x 56"H (including filter/blower module). Other sizes and chamber configurations available.

	Cat. #	$/Each
Sterilization Cabinet	**6081-05**	**3,533.00**
HEPA Filter (99.99% efficient @ 0.3µm)	**2100-30**	**106.00**
ULPA Filter (99.999% efficient @ 0.12µm)	**2100-29**	**114.00**

Lab Refrigerator/Freezers

These units come in 2 configurations. A 17.9 cubic-ft. two-door refrigerator/freezer features hydraulic thermostatic control and separate "cold air flow" control for the freezer. It includes 2 adjustable shelves and automatic defrost. A 20 cubic-ft. upright freezer features 4 fixed wire shelves and 6 door shelves and comes with manual defrost. Temperature range: 0° to 10°C (refrigerator compartment); -20°C to 0°C (freezer compartment). Models below are 120VAC; 240VAC and explosion-proof models available.

	Cat. #	$/Each
Freezer	**1720-60**	**1,694.00**
Combination	**1720-49**	**1,570.00**

Undercounter Refrigerator/Freezers

These 5.6 cubic ft. undercounter units come in 3 configurations: refrigerators with 3 adjustable wire shelves and adjustable hydraulic thermostat control; freezers with 2 fixed shelves, 3 door shelves and hydraulic thermostat; and refrigerator/freezer combinations with 3 adjustable wire shelves, 3 door shelves, and adjustable thermostatic control. Models below are 120VAC; 240VAC and explosion-proof models available.

	Temp. Range	Cat. #	$/Each
Refrigerator	2° to 7°C	**1720-43**	**1,335.00**
Freezer	-26° to 6°C	**1720-54**	**1,335.00**
Combination	Both above	**1720-47**	**1,360.00**

Three cleaners in one!
- *Vacuum*
- *Clean air blower*
- *Clean air ventilator*

Cleanroom Vacuum Cleaner
With ULPA Filtration
A four-stage filtration system, which includes a final ULPA filter, rated 99.999% efficient @ 0.12µm particles, and quiet operation (59dBA at 6.5 feet) make this vacuum ideal for cleanroom use. Includes filter set and tool kit with two 22" stainless steel tubes, 3" round brush, combination 12" floor nozzle, 6'6" conductive plastic hose, trolley, 30' power cord, conductive crevice nozzle and 5"utility nozzle.

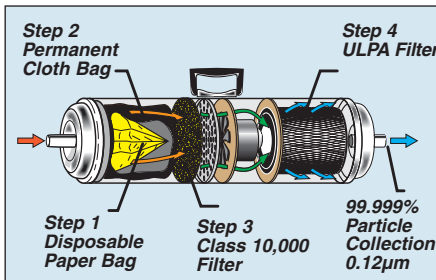|	Cat. #	$/Each
120VAC	**1764-00**	**1,016.00**
220VAC	**1764-00-220**	**1,063.00**

Cleanroom Vacuum Cleaner
With Absolute HEPA Filtration
A final HEPA filter removes 99.999% of 0.3µm particles for cleanroom use. Its lightweight, compact design and quiet operation (65 dBA at 6.5 ft.) make it convenient to use. Includes filter set and tool kit with 6' hose complete with end fittings, combination floor tool with telescopic wand, combination brush/small upholstery nozzle, crevice tool, and pack of 10 paper dust bags.

	Cat. #	$/Each
120VAC	**1001-00**	**478.00**

Step 2 Permanent Cloth Bag · **Step 4 ULPA Filter** · **Step 1 Disposable Paper Bag** · **Step 3 Class 10,000 Filter** · **99.999% Particle Collection 0.12µm**

MicroVac™ Portable Cleanroom Vacuum
The MicroVac™ incorporates a four-stage filtering system to trap particles as small as 0.12 microns. Made of stainless steel, it includes a mini-tool kit for use in drawers, computer keyboards, and other hard-to-clean surfaces.

	Cat. #	$/Each
110VAC/60Hz	**5100-00**	**955.00**
220VAC/50Hz	**5100-00-220**	**955.00**

Berkshire® BOND Cleanroom Paper
Bound by synthetic latex for optimal smoothness and cleanliness, Berkshire® BOND minimizes particle contamination. It runs through any copier or printer, whether laser or impact. Its high tear resistance withstands long periods in use. All items below are 8.5" x 11" 28-lb. stock and are priced by case (= 10 packs of 250 sheets each). Other sizes and weights available.

Color	Cat. #	$/Case
White	**5604-02**	**151.00**
Pink	**5604-03**	**162.00**
Canary	**5604-04**	**162.00**
Blue	**5604-05**	**160.00**

BCR® Spiral Notebook
These notebooks feature BCR® BOND noncontaminating paper and durable polyethylene covers that resist solvents. Each notebook includes 100 printed pages, either college ruled or 1/4" grid and double-wrapped for cleanliness.

Size (in.)	Qty./Case	Cat. #	$/Case
5.5 x 8.5	20	**5604-16***	**149.00**
5.5 x 8.5	20	**5604-17****	**149.00**
8.5 x 11	10	**5604-18***	**87.00**
8.5 x 11	10	**5604-19****	**87.00**

* College rule, ** 1/4" grid

BCR® Cleanroom Masks
Protect the environment from human contaminants while optimizing wearer comfort. Their ultrasonically bonded 3-layer polypropylene construction provides superior strength and filtration efficiency. Width: 180 (standard), 210 (wide), 180 (fractured film for optimal particle retention). Case includes 12 packages of 50 masks each.

	Cat. #	$/Case
Standard (180mm)	**5603-89**	**318.00**
Wide (210mm)	**5604-47**	**216.00**
Fractured Film (180mm)	**5604-48**	**146.00**

Ultrasonic Cleaners

These Branson CSA-listed cleaners provide thorough, safe cleaning of small- and medium-sized parts. Models below feature heat controls with digital timer and degas function, which allows immediate use at maximum efficiency. All operate on 115VAC; 230VAC and other heating and timer configurations are also available.

Tank Capacity	Cat. #	$/Each
0.5 gallons	**2631-00**	**394.00**
0.75 gallons	**2617-00**	**519.00**
1.5 gallons	**2618-00**	**805.00**
2.5 gallons	**2619-00**	**1,029.00**
5.5 gallons	**2637-00**	**1,799.00**

B-300 Tabletop Ultrasonic Cleaner

Provides quick, consistent, high-quality cleaning over a wide range of applications. Includes a stainless steel cleaning tank with integral ultrasonic transducer. The deep drawn tank has no corner welds and includes a cover and perforated stainless steel parts basket. Tank dimensions: 11.8"L x 3.9"W x 2.9"D. Capacity: 0.5 gallons. UL and CSA listed; meets CE requirements.

	Cat. #	$/Each
110VAC	**2624-00**	**313.00**
220VAC	**2624-00-220**	**313.00**

IC Series Ultrasonic Cleaning System

Includes 3/16, 14-gauge, all stainless steel construction and 12 industrial 40 kHz transducers.

Microprocessor controls allow precise process control. A digital temperature controller provides variable set points to 60°C; a digital timer sets cycles from 1-99 minutes. Includes a stainless steel parts basket and cover with handle.

Power	Cat. #	$/Each
230 VAC	**2637-13**	**4,365.00**
208 VAC	**2637-11**	**4,365.00**

Hand-Held Counter

This versatile device is available in two configurations. Both provide one-switch, quick-response operation.

Particle Counter
Provides continuous count for one minute.

Particle Size		
> 0.5µm	Cat. #	$/Each
	1506-97	**1,876.00**
> 0.3µm		
	1506-98	**2,102.00**

Concentration Meter
Samples air every 6 seconds.

Particle Size Range	Cat. #	$/Each
> 0.5µm	**1506-95**	**1,876.00**
> 0.3µm	**1506-96**	**2,102.00**

Portable Airborne Particle Counters

Particle sensitivity down to 0.3 or 0.5 microns at 0.1 CFM flow rate. Select between two display modes: cumulative count (total particles) or differential count (particles in each size range). Includes printer. Other size ranges available; see TerraUniversal.com

Particle Size Range	Cat. #	$/Each
0.5, 5.0	**1506-43**	**4,204.00**
0.5, 0.7, 1.0, 5.0	**1507-11**	**4,550.00**
0.3, 0.5, 1.0, 5.0	**1507-17**	**4,891.00**
0.3, 0.5, 0.7, 1.0, 2.0, 5.0	**1507-19**	**5,119.00**

200-gallon capacity!

51"
56.25"
61.5"

High-Capacity Ultrasonic Tank

This extra-large unit incorporates a 36"W x 36"D x 36"H processing vessel made of electropolished 316L ss.

	Cat. #	$/Each
	3307-60	**37,400**

AVC Chamber Vacuum Sealer

Cleanroom compatible, the AVC series of chamber vacuum sealers is compressed-air driven, eliminating noise, vibration and heat-generation issues. Unlike electromechanically driven vacuum sealers, the AVC design prevents particle generation and oil contamination. The AVC is ideal for tray, tape and reeled products, as well as popular shipping tubes. The AVC has a seal length of 20" and a width of 1/4". A gas flush system is optional. The AVC is a workhorse with a large chamber, one-button touch setting and preset vacuum controls.

	120VAC		220VAC	
Seal Length	Cat. #	$/Each	Cat. #	$/Each
20"	**4052-31**	**5,200.00**	**4052-31-220**	**5,550.00**
20"	**4052-32***	**5,525.00**	**4052-32-220***	**5,875.00**

Includes optional gas flush

AV Vacuum Sealer With Gas Purge

The foot-pedal-activated, retractable nozzle AV series vacuum sealers offer gas-flush vacuum packaging at its finest. The .25"-wide sealing element delivers a leak-proof seal for electronic devices that require moisture barrier bags. With one touch of the pedal, the AV flushes out oxygen and moisture with nitrogen, and your sensitive components are sealed in seconds. Also great for dry packaging applications and shipping containers. Compressed air required.

	120VAC		220VAC	
Seal Length	Cat. #	$/Each	Cat. #	$/Each
20"	**4052-15***	**1,995.00**	**4052-15-220***	**2,345.00**
20"	**4052-19**	**2,500.00**	**4052-19-220**	**2,850.00**
25"	**4052-20**	**2,985.00**	**4052-20-220**	**3,335.00**
30"	**4052-21**	**3,185.00**	**4052-21-220**	**3,535.00**
35"	**4052-22**	**3,385.00**	**4052-22-220**	**3,735.00**

* These models do not include the gas flush feature.

Sticky Mats®

Sticky Mats®

Peel-off sheets eliminate the need for messy cleaning and make it easy to maintain a clean surface. Many other styles available.

Dimen.	Blue Medium Tack		Corresp. Frame	
W" x D"	Cat. #	$/Each	Cat. #	$/Each
18 x 36	5601-16	50.00	5602-93	123.00
18 x 45	5601-17	59.00	5602-94	131.00
24 x 36	5601-18	68.00	5602-97	150.00
26 x 45	5601-19	85.00	5602-99	161.00

Wall-Mount and Free-Standing Garment Racks

Tubular 16-gauge, 304 stainless steel hanger rod features hanger locators scored at 2" increments for convenient hanger placement. The cylindrical surface wipes down easily without snagging wipers. Electropolished versions and other sizes available at TerraUniversal.com.

Wall-Mount	Cat. #	$/Each
4' wide	5656-01	761.00
5' wide	5656-02	802.00
6' wide	5656-03	839.00
Floor Mount		
4' wide	5656-34	859.00
5' wide	5656-35	880.00
6' wide	5656-36	900.00

*Motorized
Shoe Cleaner
No. 1784-00
$2,184.00*

Motorized Shoe Cleaner

Internal vacuum system removes contaminants on shoes. Five internal brushes clean deep into seams, welts.

	Cat. #	$/Each
110VAC, 50/60Hz	1784-00	2,433.00
220VAC, 50Hz	1784-00-220	2,651.00

Adjustable Computer Cart

Ideal for most laboratory applications, this unit features an adjustment range of 30" to 41" (measured from floor to keyboard tray), making it suitable for sitting or standing users. It includes a 25" keyboard tray with padded wrist rest and embossed mouse surfaces, a tilt-adjustable mounting plate for flat panel displays, and aluminum 25" base with casters. The powder-coat finish is durable and easy to clean.

	Cat. #	$/Each
	9600-76	800.00

CleanTech® Cleanroom Hand/Glove Washing System

This free-standing, microprocessor-controlled cleansing station performs wash cycles with reliable, repeatable results. It monitors cycle duration and amount of cleansing agent injected. A self-clean function eliminates bacteria colonization. A cycle counter verifies washing to help meet SSOP, HACCP and GMP programs. Model below uses tap water and operates on 110VAC; other configurations available.

	Cat. #	$/Each
	2121-02	6,950.00

Cleanroom Computer Cart

This easy-to-clean, all-electropolished 304 stainless steel cart features a retractable keyboard tray, CPU support stand and locking safety casters. Ideal for the cleanest locations!

	Cat. #	$/Each
Fixed Height	9600-19	1,889.00
56" floor to keyboard tray		
Adjustable Height	9600-20	2,689.00
Articulated arm moves flat panel screen and keyboard tray 56" - 68" floor to keyboard tray.		

All-Polypropylene Work Station

All-polypropylene construction resists chemical spills, making this bench safe for use with most acids. Reinforced design holds loads up to 200 lbs. Three sliding drawers hold handling tools, wipers and other small parts. 60"W x 30"D x 30"H (floor to top).

Cat. #	$/Each
7018-41	**1,982.00**

Polypropylene Casework

All-polypropylene construction makes these units ideal for general laboratory work, including operations with acids. Includes four sliding drawers; order sink and gooseneck separately. Dimensions: 60"W x 30"D x 30"H (floor to top).

	Cat. #	$/Each
Polypropylene Casework	**2902-74**	**2,975.00**
Polypropylene Sink (12" x 12" x 7.5")	**7018-22**	**317.00**
Gooseneck Faucet Assembly (installed)	**9412-98**	**183.00**

Stainless Steel Supplies Cabinets

Durable 304 stainless steel cabinets are easy to wipe down. Models below feature sliding doors; hinged doors also available. Select flat counter top or 4.5" backsplash.

W" x L" x H"	Cat. #	$/Each
30 x 48 x 34.5	**5656-10A**	**1,880.00**
30 x 60 x 34.5	**5656-11A**	**2,029.00**
30 x 72 x 34.5	**5656-12A**	**2,179.00**
30 x 48 x 34.5*	**5656-13A**	**1,892.00**
30 x 60 x 34.5*	**5656-14A**	**2,047.00**
30 x 72 x 34.5*	**5656-15A**	**2,199.00**

*** These models include 4.5" backsplash**

Mobile Work Centers

Corrosion-resistant polymer components and modular, portable designs create versatile units that are easy to move and reconfigure. Rigid aluminum and coated metal substructure adds strength and durability. Includes black resin epoxy top.

	Cat. #	$/Each
A. 43.4"L x 28.6"W x 81.9"H	**1306-84**	**4,266.00**
B. 63.2"L x 28.6"W x 81.9"H	**1306-83**	**5,252.00**

Biomedical Cart

Two swing-out side storage units increase the work surface by 135%. The overbridge shelf and utility pole provide additional utility space. A combination of 3", 6" and 9" drawers provide 36" total of internal height. Overall dimensions: 24.9"W x 34.2"W x 65"H.

Cat. #	$/Each
1306-86	**2,838.00**

Cleanroom Wipes — Complete line at TerraUniversal.com

Ideal for Class 10 Environments

SuperPolx® 1200 Cleanroom Wiper

This popular cleanroom wiper features non-run construction. Made of 100% knitted polyester, it is highly absorbent and offers extremely low particle generation, ion content and extractable residue. Each case includes 8 packages of 150 sheets each (9" x 9").
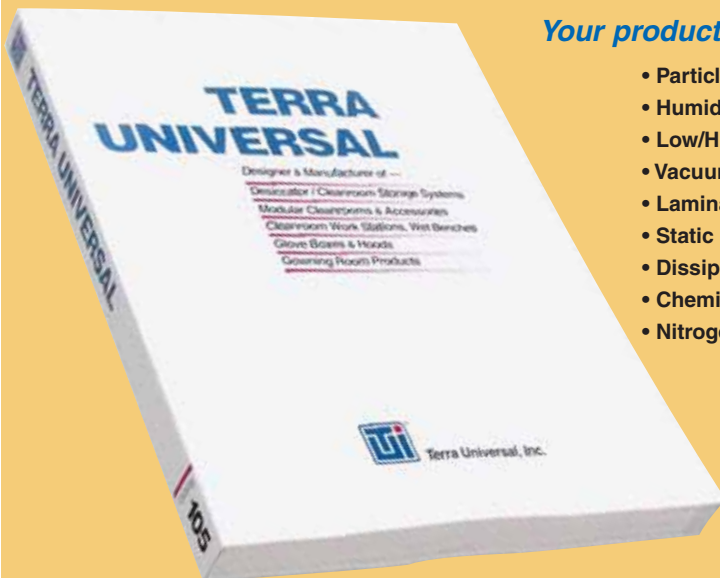
Cat. #	$/Case
5603-51	**379.00**

ValuSeal™ 1500® Wiper

This economical laser-cut wiper features a unique sealed edge. Made of 100% knitted polyester, it is highly absorbent and offers extremely low particle generation, ion content and extractable residue. Each case includes 8 packages of 150 sheets each (9" x 9").

Cat. #	$/Case
5604-43	**272.00**