

CleanBooth™ Laminar Flow Station

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Your Comprehensive Equipment Source





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CleanBooth™ Laminar Flow Station

1. General Information

The laminar flow station is ideal for kitting operations, assembly, screen printers and other free-standing or benchtop processing equipment with the ability to effectively block the inrush of contaminants. The backbone of the system is one or more filter/fan units (FFUs), each with industry-leading low-noise impeller blowers. Horizontal flow versions have the FFUs mounted on the side of the frame. The castered frame positions the FFU behind benchtop or large process equipment for repair operations wherever you need a temporary horizontal laminar flow of filtered air. Following the instructions and recommended maintenance will help insure a long and efficient service life from the unit.





2. Safety

Proprietary Notice

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Terra Universal makes no warranties applying to information contained in this manual or its suitability for any implied or inferred purpose. Terra Universal shall not be held liable for any errors this manual contains or for any damages that result from its use.

Safety Notice

A thorough familiarity with all operating guidelines is essential to safe operation of the product. Failure to observe safety precautions could result in poor performance, damage to the system or other property, or serious bodily injury or death. The following symbols are intended to call your attention to two levels of hazard involved in operation.



CAUTION

Cautions are used when failure to observe instructions could result in significant damage to equipment.



WARNING

Warnings are used when failure to observe instructions or precautions could result in injury or death.

The information presented here is subject to change without notice.

Critical Operation Conditions

- Because of their panel design, softwall cleanrooms cannot control pressure, humidity or temperature levels inside the enclosure, making them unsuitable for many requirements, including many ISO 5 applications. The flexible curtains can also be more difficult to clean than rigid hardwall panels.
- Please refer to our other cleanrooms if pressure, humidity and/or temperature control or frequent cleaning, sterilization is required.

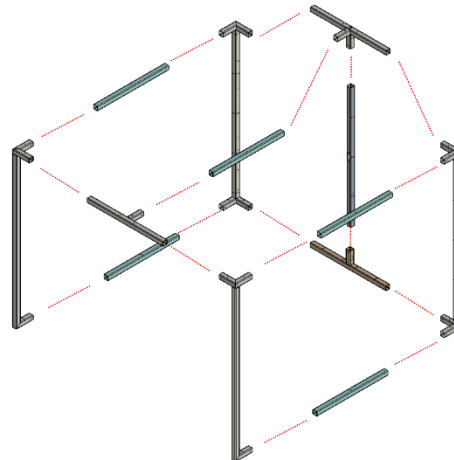
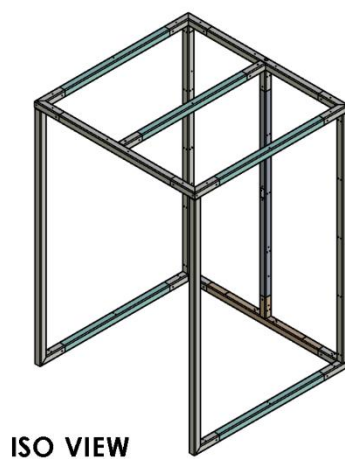


3. Installation

Before assembling, identify your frame part number from the table below to locate the correct assembly installation images for your unit.

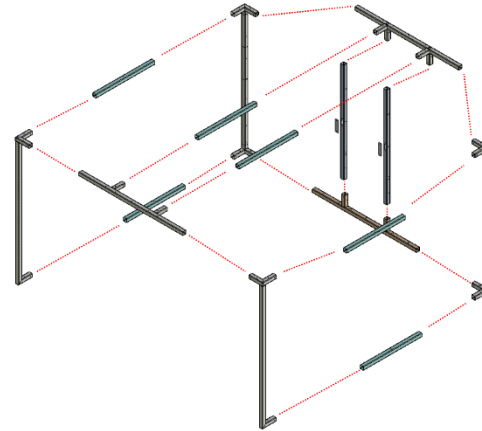
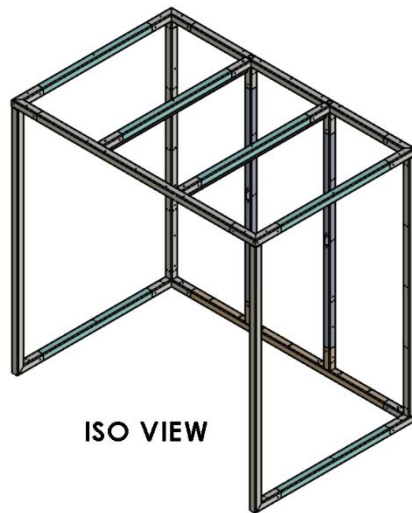
Frame	Compatible Unit Part Number(s)
AS09293-48	1870-03C, 1870-03C-220, 1870-18C, 1870-22C, 1870-22C-220, 1870-28C
AS09293-72	1870-17C, 1870-23C, 1870-23C-220, 1870-27C
AS09293-96H	1870-16C, 1870-25C, 1870-25C-220
AS09293-96V	1870-04C, 1870-04C-220, 1870-07C, 1870-07C-220, 1870-08C, 1870-08C-220, 1870-09C, 1870-09C-220, 1870-26C
AS09294-46	1870-01C
AS09294-48	1870-20C
AS09294-70	1870-05C, 1870-05C-220
AS09294-99	1870-21C

AS09293-48:

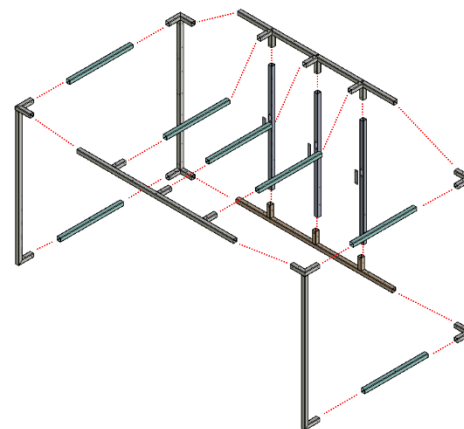




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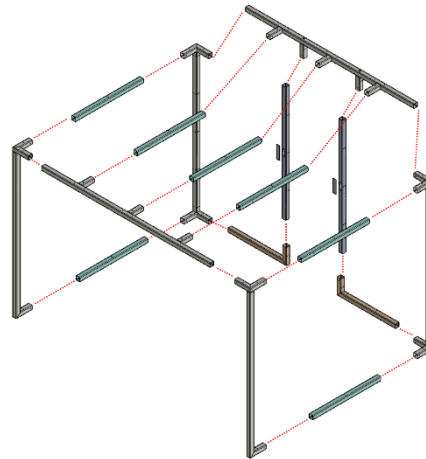
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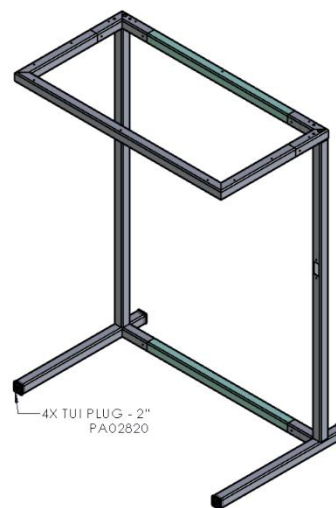
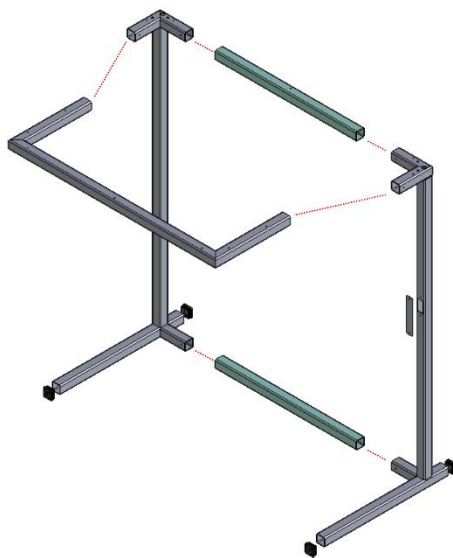


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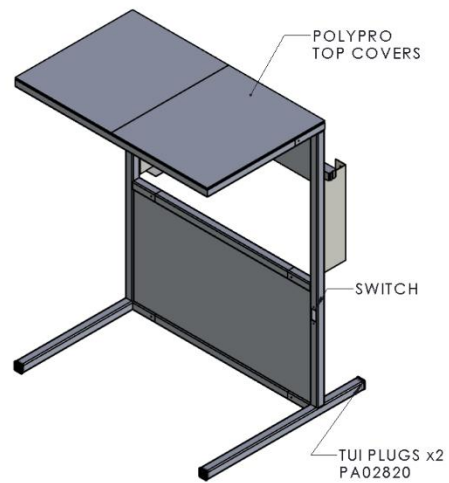
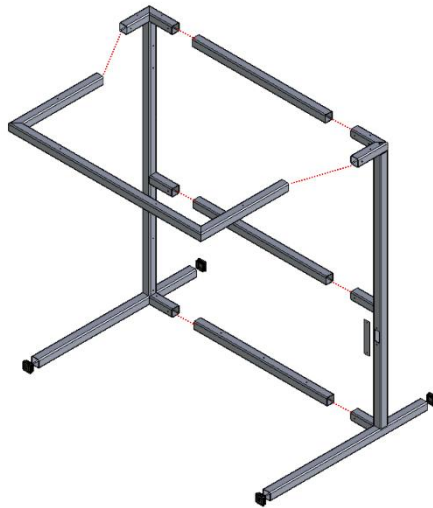
AS09294-46:





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AS09294-48:



AS09294-70:



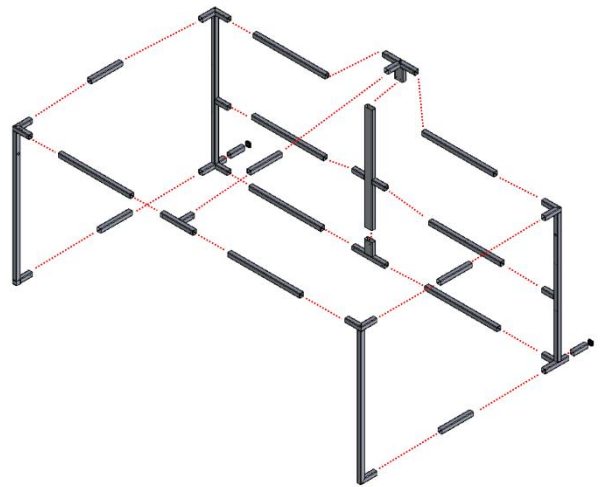


CleanBooth™ Laminar Flow Station

AS09294-99:



ISO VIEW





CleanBooth™ Laminar Flow Station

3.1 System Operation

1. Plug the power cord into an appropriate grounded receptacle (115VAC, 50/60Hz or 230VAC, 50/60Hz).
2. FFUs and light are controlled by means of a single ON/OFF switch, located on the right-rear portion of the work area.
3. The FFUs incorporate a 3-position impeller blower, which is normally shipped in the "High" position. Under normal operating conditions, this setting should not be changed. The blower speed control is located on the upper-right side of each unit.

3.2 Specifications

3.2.1 Terra Part Numbers: Knockdown Configurations

Vertical Airflow

Terra PN	Width Inside	Depth Inside	Height Inside	Width Outside	Depth Outside	Height Outside	Voltage
1870-01C	46.125"	24.35"	64.875"	50.125"	30.325"	66.875"	120 V
1870-03C	48.25"	48.125"	72"	52.25"	50.125"	74"	120 V
1870-03C-220	48.25"	48.125"	72"	52.25"	50.125"	74"	220 V
1870-04C	96.5"	48.125"	72"	100.5"	50.125"	74"	120 V
1870-04C-220	96.5"	48.125"	72"	100.5"	50.125"	74"	220 V
1870-05C	70.25"	24.35"	64.875"	74.25"	30.325"	66.875"	120 V
1870-05C-220	70.25"	24.35"	64.875"	74.25"	30.325"	66.875"	220 V
1870-07C	96.5"	48.125"	72"	100.5"	50.125"	74"	120 V
1870-07C-220	96.5"	48.125"	72"	100.5"	50.125"	74"	220 V
1870-08C	96.5"	48.125"	72"	100.5"	50.125"	74"	120 V
1870-08C-220	96.5"	48.125"	72"	100.5"	50.125"	74"	220 V
1870-09C	96.5"	48.125"	72"	100.5"	50.125"	74"	120 V
1870-09C-220	96.5"	48.125"	72"	100.5"	50.125"	74"	220 V
1870-26C	96.5"	48.125"	72"	100.5"	50.125"	74"	120 V
1870-27C	72.5"	48.135"	72"	76.5"	50.135"	74"	120 V
1870-28C	48.25"	48.125"	72"	52.25"	50.125"	74"	120 V

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Horizontal Airflow

Terra PN	Width Inside	Depth Inside	Height Inside	Width Outside	Depth Outside	Height Outside	Voltage
1870-16C	96.5"	48.135"	72"	100.5"	50.135"	74"	120 V
1870-17C	72.5"	48.135"	72"	76.5"	50.135"	74"	120 V
1870-18C	48.25"	48.125"	72"	52.25"	50.125"	74"	120 V
1870-20C	47.65"	29.6"	65.75"	51.64"	42.4"	67.75"	120 V
1870-21C	99.3"	29.6"	65.825"	103.325"	42.4"	68.75"	120 V
1870-22C	48.25"	48.125"	72"	52.25"	50.125"	74"	120 V
1870-22C-220	48.25"	48.125"	72"	52.25"	50.125"	74"	220 V
1870-23C	72.5"	48.135"	72"	76.5"	50.135"	74"	120 V
1870-23C-220	72.5"	48.135"	72"	76.5"	50.135"	74"	220 V
1870-25C	96.5"	48.135"	72"	100.5"	50.135"	74"	120 V
1870-25C-220	96.5"	48.135"	72"	100.5"	50.135"	74"	220 V

3.2.2 Strip Curtain

- Static-dissipative vinyl helps prevent surface charges and particle attraction.
 - Tests performed per ASTM D257 show surface resistivity of 1.8×10^7 ohms/sq.
- Heavy-gauge materials hang straight, without the need for sewn hems or sash weights.
- Static-Dissipative PVC includes built-in static inhibitors.
- Terra offers panels made from static-dissipative polyurethane that provides permanent, humidity-independent ESD protection from sensitive manufacturing conditions.
 - This material contains no plasticizer, making it virtually non-gassing.

3.2.3 Fan Filter Unit

WHISPERFLOW® FFU PERFORMANCE DATA					
Nominal Unit Size (ft.)	Filter	Sound (dB) @90FPM	AIR FLOW (CFM)		
			HIGH	MED	LOW
2' x 4'	HEPA	49	800	720	590
2' x 4'	ULPA	49	660	640	580

WHISPERFLOW® FFU ELECTRICAL DATA								
Nominal Unit Size (ft.)	Filter	Motor HP	Voltage	Full Load Amps	Frequency (Hz)	Power Consumption (Watts)		
						HIGH	MED	LOW
2' x 4'	HEPA	1/4	120	3.8	50/60	420	380	360
2' x 4'	HEPA	1/4	208-230/240	1.8/1.6	50/60	380	310	240
2' x 4'	ULPA	1/4	120	3.8	50/60	440	425	415



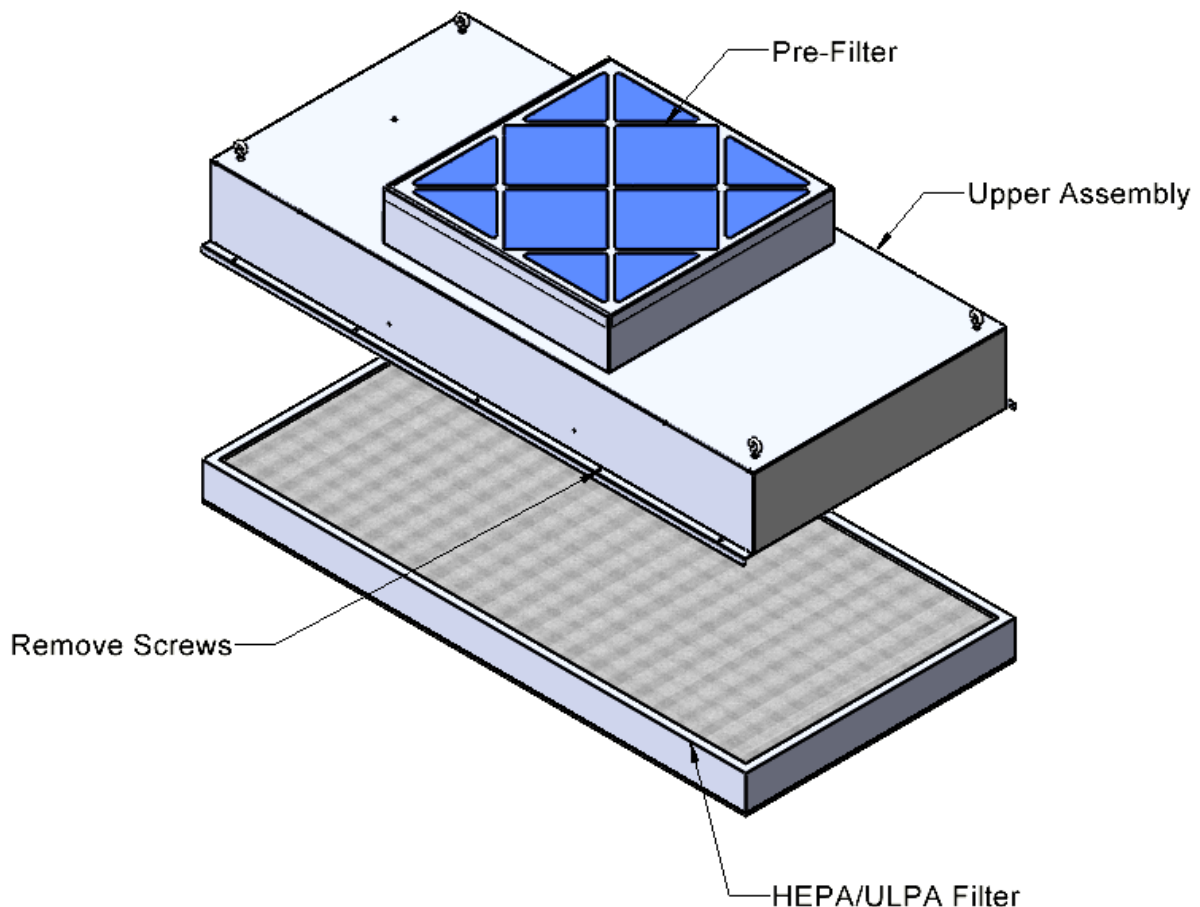
4. Maintenance

4.1 Filter Replacement

Air velocity should be monitored to ensure effective filtration using an appropriate air-speed monitor. Under typical conditions (8 hours of operation per day), filters should be replaced every year. As a HEPA filter clogs, you will notice increased blower noise and vibration, along with decreased air speed. The filter assembly is separate from the fan module, which stays in place in the ceiling grid.

Topside replaceable FFUs require the units to be removed from the hood for filter replacement.

1. Remove the unit from the ceiling grid.
2. Place the unit on a flat work surface and remove the 10 sheet metal screws that hold the HEPA/ULPA filter to the case.
3. Replace with a new HEPA/ULPA filter carefully handling edges only.
4. Secure filter to the case with the same screws used previously.
5. Place unit back onto the ceiling grid.





4.2 CleanBooth™ Frame Cleaning and Care

A thorough cleaning of coated components is required to conserve the façade decorative appearance and to reduce the corrosion strain. Powder coated surfaces proper maintenance and regular servicing are prerequisites for claims related to any guarantee and require regular cleaning at least once per year. When a coated component is soiled during transportation, storage or assembly, cleaning the component must take place immediately with clear cold or lukewarm water.

- Buildings must be cleaned more often when they are located in severe polluted environments such as; a region with increased salt contamination and/or chemical exhausts, a direct area of influence or within the vicinity of an industrial or chemical enterprise, the immediate vicinity of a sea coast or within a defined chemical/radioactive precipitation zone.
- A neutral or weak alkaline detergent can be used against severe soiling.
- Use only clean water with slight additives of neutral washing agents (pH 5-8) with the aid of non-abrasive soft cloths, rags or industrial cotton. Avoid strong rubbing.
- Use white spirit free of aromatic compounds or isopropyl alcohol (IPA) to remove greasy, oily or sooty substances. Can also be applied for adhesives, silicone cartouche, adhesive tapes or other residues.
- Use unidirectional (not circular) motion to remove surface contaminants from the edges of all surfaces.
- Do not use solvents or similar diluents containing ester, ketones, alcohol, aromatics, ethylene glycol or halogenated hydrocarbon.
- Do not use scratching or abrasive agents.
- Do not use strong acids, alkaline detergents or introfiers.
- Do not use detergents of unknown composition.
- Do not use stream-jet devices.
- Maximum exposure period of detergents must not exceed one hour. When necessary, the entire cleaning process can be repeated at least after 24 hours.
- Rinse with clean cold water immediately after every cleaning process.
- Detergents must not be used at temperatures higher than 77 °F (25 °C).
- Façade components surface temperature must not exceed 77 °F (25 °C).
- Joint sealants and other aids such as glazing aids, lubricant agents, drilling and cutting lubricants which come into contact with coated surfaces, must be pH-neutral and free of paint-damaging substance. They must be first subjected to a suitability test.

4.3 Vinyl Panel Maintenance and Care

- For critical cleanliness applications cleaning should be done at the beginning and end of each work shift.
- Follow your specific cleaning protocols as they vary greatly across industries and applications.
- Static-dissipative characteristics may degrade over time and require curtain replacement after two years (depending on temperature, humidity, UV exposure and other environment conditions).
- Static dissipative testing is recommended in static-sensitive applications.
- Anti-static vinyls have additive materials that continuously provide a naturally occurring hydro-scopic surface which is essential for the continuation of the anti-static process. Over time and with exposure the surface will develop a viscous feel. To remove the viscous coating clean periodically.
 - To clean standard PVC and Anti-Static Strips / Soft Wall curtains use mild dish soap and water solution with any biodegradable cleaner.
 - Wash the front and back of the strips and or curtains and rinse with clear water then wipe dry with a clean, lint-free soft cloth.
 - To clean anti-static vinyl use 50/50 solution of isopropyl alcohol and Di water.
 - Wash the front and back of the strips or curtains using a soft non-abrasive lint-free cloth.

Note: Excessive cleaning using harsh or abrasive cleaning compounds such as ammonia, 100% isopropyl alcohol, liquids with chlorinates, anti-fungals, highly active sterile cleaning solutions and dry powder additives are not recommended and will increase the aging process.



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5. Replacement Orders

Provide sales associate with pertinent information, such as serial number, model number and date, for replacement parts or a new knock-down CleanBooth™ Laminar Flow Station. The label for the CleanBooth™ is on the exterior left side of the frame and the label for the Fan Filter Unit is on the lower part of the FFU assembly.



Order Number _____

Serial Number _____

Unit Model Number _____

Date _____



6. Replacement Parts



Casters

1700-44



Grip-Track™

1322-60A



Prefilters

6601-34

Curtain Panel Kits – Includes Grip-Track™, wall panels and strip curtains

Part #	Description	Material
1330-01B	Side Softwall Panel Kit; for 4' x 2' W Horizontal Orientation Portable CleanBooth	Anti-Static PVC
1330-06B	Side Softwall Panel Kit; for 6' W Horizontal Orientation Portable CleanBooth	Anti-Static PVC
1330-09B	Side Softwall Panel Kit; for 4' W Vertical Orientation Portable CleanBooth	Anti-Static PVC
1330-11B	Side Softwall Panel Kit; for 8' W Vertical Orientation Portable CleanBooth	Anti-Static PVC
1330-18B	Side Softwall Panel Kit; for 6' W Vertical Orientation Portable CleanBooth	Anti-Static PVC
1330-19B	Side Softwall Panel Kit; for 4' x 3' W Horizontal Orientation Portable CleanBooth	Anti-Static PVC
1330-20B	Side Softwall Panel Kit; for 8' W Horizontal Orientation Portable CleanBooth	Anti-Static PVC

Strip Curtains

Part #	Description	Width / Thickness	Material
1330-15	Strip Shield Entrance for Portable CleanBooth	4' Width, 60 mil	Anti-Static PVC
1330-16	Strip Shield Entrance for Portable CleanBooth	6' Width, 60 mil	Anti-Static PVC
1330-17	Strip Shield Entrance for Portable CleanBooth	8' Width, 60 mil	Anti-Static PVC



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Filters			
Part #	Size	Type	Material
6601-25B	2' x 4'	HEPA	Aluminum
6601-28B	2' x 4'	ULPA	Aluminum
6601-28B-S	2' x 4'	ULPA	304 Stainless Steel



Fan Filter Units	
6601-24B-H	WhisperFlow 120 V
6601-24B-H-220	WhisperFlow 220 V



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7. Warranty



<https://www.terrauniversal.com/warranty/>

Thank you for ordering from Terra Universal!