Series 577
Vertical Flow Softwall Portable Cleanroom

S O L U T I O N S

The Series 577 softwall portable clean rooms are a cost-effective method of providing quality particulate control enclosures. The system utilizes proven clean room manufacturing and design techniques to provide a lightweight, low-cost, easy-to-assemble clean room system. A variety of sizes and shapes are available to ensure a system that is matched to individual needs.

The portable clean rooms are available from Class 100,000 to Class 10. They typically operate as positive pressure enclosures but can also be used as negative pressure containment areas to HEPA filter all the outgoing room air.

The lightweight, easy-to-assemble sections have a maximum size of 12 ft. x 12 ft. with a leg on each corner. Larger units can be constructed by simply adding on standard room components to create one continuous room with support legs on a 12 ft. x 12 ft. pattern. A 24 ft. x 24 ft. room would have one center post. The rooms can be expanded or reduced in size without taking the entire clean room down. This feature makes it fast and easy to add sections or change the shape for other requirements. A number of smaller rooms can be combined for a large clean room project and then be changed back to smaller rooms and relocated at a later time.

Features

- ❖ Lightweight, easy-to-assemble 2 x 4 in. tubular steel frame with 2 x 2 in. tubular steel support legs
- ❖ Modular design offers great flexibility and expandability
- ❖ Room Class 100,000 to Class 10
- ❖ Complete with motorized ceiling HEPA filters, lights and prefab wiring kit — Requires only assembly and electric power connection
- ❖ Rigid acrylic panels are an option to create a hardwall clean room
- ❖ Fast delivery; most portable clean rooms shipped from stock

For more information or to download or fax this product from the web, simply go to:
www.cleanairproducts.com/577

Construction

This portable clean room's frame is constructed of high-strength tubular steel with a white baked-enamel finish. The tubes are bolted together to form the upper frame assembly to which the tubular steel support legs are attached. The frame is lightweight to allow the frame and components to be hand-lifted and assembled. One person can assemble the rooms, but it is easier to do with two people.

The tubular steel frame is constructed to form the top surface which supports the filters, lights, and blank panels. Tee bar dividers attach to the frame between the filters, lights, and blank panels. The tee bars provide the mounting surface and hold the filters, lights, and blank panels in place.

General Features

- 99.99% DOP test on 0.3 micron HEPA filters
- Aluminum-frame HEPA filters
- White lights
- Clear vinyl curtains
- 120-volt filters and lights
- White painted finish

The rooms use the CAP112-424 (2x4) motorized ceiling HEPA filter, CAP1210-2x4 (4) lamp "Seal Tight" clean room light or the CAP1220-2x4 (4) lamp flow-thru light and blank ceiling panels in various quantities, depending on the size and class of clean room.

The perimeter of the room is enclosed by a clear, polished-vinyl curtain or optional acrylic panels. These are easily attached to the room by 3M Dual Lock (clean room Velcro type material). Optional styles and materials for hardwall sided rooms are also available.

The rooms can be furnished with a prefab wiring kit for quick and easy connections of the filters and lights to a single electrical connection.

Options

(consult factory for additional items)
- ULPA filters (Class 10)
- Strip doors
- NON DOP test filters
- Yellow or opaque curtains
- Special room heights
- Casters
- Ionization
- Prefabricated wiring kit
- Acrylic or lexan walls
- Gowning rooms
- Economy swing doors
- All stainless steel frame
- Building suspension bracket

Curtains

Standard clean room curtain dimensions are clear 40 mil vinyl with Velcro strips sewn in along the top for mounting. All standard and optional curtain dimensions will be 54 in. x 90 in. x 40 mil thick.

To enter or exit the clean room, the curtains are simply spread apart at the seams. The curtains automatically reseal as the two halves come back together.

Optional Material:

- Static or non-static dissipative curtains are available
- 13 mil yellow vinyl curtain is available with channel or Velcro mounting; this curtain can be used for ultraviolet light filtration or photo-resist applications (yellow static dissipative not available)
- Clear conductive 20 mil vinyl with a diamond-shaped grid bonded to one side; these curtains are constructed to allow for grounding, so the carbon grid can dissipate the surface charge to ground. Attached with channel top mounting and chain bottom.
- Black herculite
- Yellow 13 mil used for ultraviolet light filtration; this can also be used with photo resist applications; at-tached with channel-top mounting and chain bottom.

NOTE: Special "extra length" curtains are available for all of the above materials.

Strip Doors

The strip door consists of (8) 8-in. x 80 mil. thick strips with 2-in. overlap on each side along the length. The strip doors are shipped assembled, with mounting angle on top.

Optional Material:

- Heavy 125 mil clear vinyl strips for high traffic areas
- Clear anti-static vinyl
- Clear flame-retardant anti-static vinyl
- Yellow standard vinyl
- Yellow flame-retardant vinyl

Other strip door options available upon request.

Clean Room Ceiling Height Requirements

The standard height dimension is 8 ft. Standard filter unit height is 14 in. A 2-in. minimum space is required between the filter unit top and ceiling. Standard room heights are 7, 8, 9, 10, and 12 ft. Other clean room heights are available.

Flow-thru lights add 5-1/2 in. to standard filter unit height (see flow-thru light description listed in this document).

Acrylic or Lexan Walls With Economy Swing Door

Standard clean rooms consist of softwalled vinyl curtain and/or strip doors. Acrylic or lexan panels provide a sturdy, attractive and economic clean room wall option. These panels are attached to the steel framing with 3M Dual Lock (clean room Velcro type material).

Economy swinging doors also consist of these panels attached with Velcro to steel framing. Included with the economy door are hinges and a door closer.

NOTE: Panel length is cut to allow for a 12 in. opening along the bottom of the entire clean room to achieve proper air flow.

Tee Bar Seal Tight Gasketing System

The clean room ceiling consists of ceiling lights, filter units and blank panels that fit into a 2 ft. x 4 ft. seal tight tee bar ceiling grid system.

Gasketed filter units, clean room lights and vinyl-covered ceiling panels provide a zero-leak clean room which is essential for optimum clean room performance.

Clean Room Ceiling Lights (standard)

Cleanroom lights consist of a 2x4 - 4 lamps, 120V, 60 Hz, 1.0 Amp enclosed "seal tight" white fluorescent panel light. The clean room lights are set into the tee bar ceiling grid system. Gasketing provides the seal between the tee bar mounting surface and the light housing surface.

Flow-Thru Lights

Flow-thru lights are similar to standard clean room lights with the exception that a motorized ceiling HEPA filter unit is mounted directly on top of it. This light fixture is open enough that filtered air is able to flow through the light fixture down into the clean room.

Flow-thru lights are used when space for lighting is limited. For example, Class 10 conditions require 100% ceiling filter unit coverage. Providing the light sources beneath the filter unit becomes a viable solution to this space limitation. Flow-thru lights are also valuable in situations where

concentrated "clean areas" and lighting need to be achieved within a clean room.

The filter unit and light fixture are joined together at the factory with fasteners to form one complete flow-thru light unit.

Casters

Casters with brakes are available on clean rooms. Consult factory for rooms over 12 ft. x 12 ft.

Anteroom or Gowning Room Areas

Anterooms (to perform pre-clean room procedures) or gowning rooms are modular and can easily be added to the clean room. Mobility can be added to these rooms by adapting them with the caster option. The anterooms and gowning rooms can then be relocated to another location along the outside perimeter of the clean room for adaptation or modifications to manufacturing processes.

Prefab Electric Wiring Kit

Clean Air Products offers a prefab electric wiring kit as a cost-effective and time-saving option to conventional electrical wiring. It facilitates quick and easy "plug together" type electric connection of the lights and filter units by assembly personnel. The electrician simply connects power to a single point.

The "plug together" male/female connectors included with your prefab wiring kit are Reloc brand connectors. They are designed to be repeatedly plugged and unplugged as necessary.

Basic Components

The basic components included with your prefab wiring kit are as follows:
• Metal "plug together" male/female connectors and "plug together" flex metal cable segments.

• Electrical junction box.
• Lights and ON/OFF light switch.

Connections

The "plug together" system consists of "Reloc" brand metal connectors and "Reloc" brand metal flex cables.

The "plug together" system provides connection between the ceiling lights, filter units and junction box, and is UL listed.

Electrical Junction Box

The electrical junction box receives your building-supplied electric power source. It is located on the top horizontal beam near the outside corner of the clean room.

Lights and ON/OFF light switch

Ceiling lights will be on their own separate 20 amp max. electric circuit and will be controlled by a standard light switch(s).

The ON/OFF switch is conveniently located on the clean room corner leg outside the curtain below the junction box.

Filter Units

CAP112-424 filter units will also be on their own separate 20 amp max. electric circuit (2.8 RLA per filter unit).

Each filter unit will have an electric junction box that has its own ON/OFF switch mounted to it. Filter units also have a 3-speed switch to designate low, medium, and high speeds. The filter unit ON/OFF switch is not exposed to the clean room ceiling interior. An adjacent ceiling panel can be removed to gain access to it if necessary.

NOTE: Filter units and ceiling lights will not be on the same circuit.

Speed Control

The CAP112 fan filter unit (FFU) has a 3-speed switch located on the top of the unit. Low, medium, and high speeds are selectable. The switch can

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be moved to compensate for filter loading. If closer airflow adjusting is required, see option 1 or 2.

Option 1

Manually adjustable variable speed control — located on top of the FFU. The speed is adjusted by turning a knob on top of the FFU.

Option 2

Automatic speed adjustment. This speed control has a built-in sensor that measures the airflow of the unit. Once set, it will maintain a constant velocity until the filters need to be changed — eliminating the need to manually increase filter speed.

Assembly

Electrical assembly is simplified because all connections can be completed with a continuous series of the "plug together" type cable segments and connectors.

The electric power for each series of lights and filter units begin with a "plug together" cable connection being established at the clean room electrical junction box. This cable then continues on to connect any number in a series of lights or filter units within their circuit.

NOTE: Set the lights and filter units in place. It is easiest to start closest to the clean room's prefab kit included electric junction box plugging in any number in a series of light or filter circuits.

Each ceiling light and filter unit has its own electrical junction box to which the cable connector is mounted. The cable is then connected to the connection on the electrical junction box to complete the electric power connection.

The cables have "plug together" connectors attached on each end. These cables allow a series of connections to be made between any number of filter units or ceiling lights within their circuit.
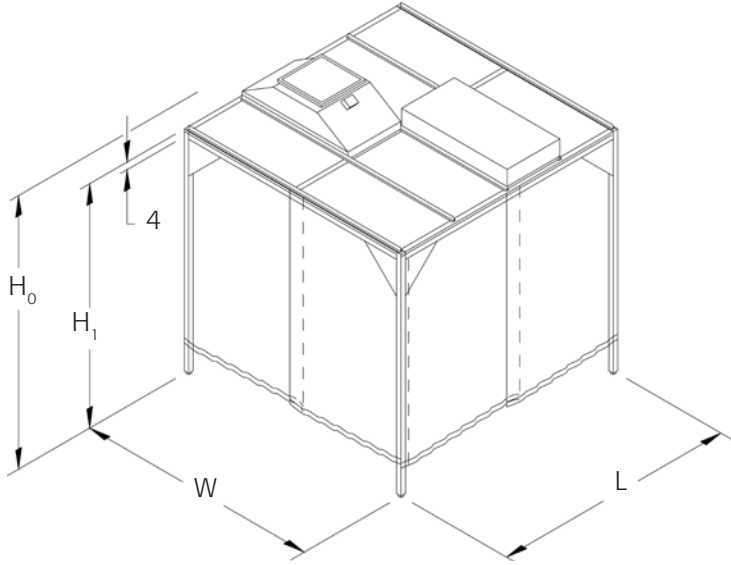
NOTE: Reloc cables also have a connector on one end that is a 2-in-1 connector. One of the 2-in-1 connections of this single connector establishes connection to the next light or filter in the series. The other connection of this single 2-in-1 connector connects to the receptacle connector of the light or filter unit and supplies power to them.

Serviceability

The "plug together" prefab wiring kit makes connect and disconnect of ceiling light and filter unit for maintenance fast and easy.

Cleanroom light and filter unit relocation and additions can be made quickly be using the "plug together" connectors.

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Guarantee

A written 1 year Warranty is furnished with each cabinet.

Standard Sizes

	Width (in.)	Length (in.)
4 ft. x 4 ft.	50	50
4 ft. x 6 ft.	50	78
4 ft. x 8 ft.	50	99
4 ft. x 10 ft.	50	123
4 ft. x 12 ft.	50	146
6 ft. x 6 ft.	74	74
6 ft. x 8 ft.	74	99
6 ft. x 10 ft.	74	123
6 ft. x 12 ft.	74	146
8 ft. x 6 ft.	99	74
8 ft. x 8 ft.	99	99
8 ft. x 10 ft.	99	123
8 ft. x 12 ft.	99	146
10 ft. x 10 ft.	123	123
10 ft. x 12 ft.	123	146
12 ft. x 12 ft.	146	146

Outside dimension shown. Standard inside height is 8 ft. Other inside heights available upon request. Can make clear spans up to 24 ft. Consult factory for details.

Common Larger Combined Sizes:
Combined smaller sections to form larger enclosures.

8 ft. x 16 ft.	16 ft. x 16 ft.*
8 ft. x 20 ft.	16 ft. x 20 ft.*
10 ft. x 16 ft.	16 ft. x 24ft.*
10 ft. x 20 ft.	20 ft. x 24 ft.*
12 ft. x 16 ft.	24 ft. x 24 ft.*
12 ft. x 20 ft.	24 ft. x 36 ft.**
12 ft. x 24 ft.	The above are

standard sizes and are the most cost-effective. Special sizes are available upon request.
* = number of interior support legs. (i.e. * = 1, ** = 2)
Note: Optional heavy-duty beams can span up to 24 ft. Consult factory for details.

Specifications subject to change. Please contact factory for details.

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