

### General Description

The Series 577 softwall and rigid wall cleanrooms is a cost-effective method of providing a quality particulate control enclosure. The system utilizes proven cleanroom manufacturing and design techniques to provide a light weight, low cost, easy to assemble cleanroom system. A variety of sizes, shapes and accessories is available to ensure a system that is matched to individual needs.

The cleanrooms 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.

NOTE: CATEGORIZED AND DETAILED INFORMATION TO FOLLOW THE GENERAL SECTIONS LISTED BELOW.

### General Room Design

The Series 577 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 attaching on standard room components to create one continuous room with support legs on a 12 ft. x 12 ft. pattern. A 16 ft. x 20 ft. room would have (1) center post; a 20 ft. x 32 ft. would have (3) center posts. The rooms can be expanded or reduced in size without taking the entire cleanroom 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 cleanroom project and later changed back to smaller rooms and relocated.

The cleanroom'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 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

The rooms use the CAP109BL-424 (2x4) motorized ceiling HEPA filter, CAP1210-2x4 (4) lamp "Seal Tight" cleanroom light or the CAP1220-2x4 (4) lamp flow-thru light and blank ceiling panels in various quantities, depending on the size and class of cleanroom.

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 (cleanroom 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



## Series 577

 For more information or to download or fax this product from the web, simply go to:

[www.cleanairproducts.com/577](http://www.cleanairproducts.com/577)

## Series 577 Vertical Flow Softwall Modular Cleanrooms

## Technical Data continued

## Standard Sizes

Model 577 Feet	Size Outside Inches
4 x 4	50-1/4 x 50-1/4
4 x 6	50-1/4 x 74-3/8
4 x 8	50-1/4 x 98-1/2
4 x 10	50-1/4 x 98-1/2
6 x 6	74-3/8 x 74-3/8
6 x 8	see 8 x 6
6 x 10	122-5/8 x 74-3/8
8 x 6	98-1/2 x 74-3/8
8 x 8	98-1/2 x 98-1/2
8 x 10	98-1/2 x 122-5/8

The standard inside height is 8 ft. Other inside heights available upon request.  
Common larger combined sizes.  
Combine smaller sections to form larger enclosures.

8 x 12	10 x 12	12 x 16*	16 x 16*	20 x 24**
8 x 16	10 x 16	12 x 20*	16 x 20*	20 x 28***
8 x 20	10 x 20	12 x 24**	16 x 24**	20 x 32***

The above are standard sizes and the most cost effective. Special sizes are available upon request. Star (\*) equals number of interior support legs; \*=1, \*\*=2, \*\*\*=3.

## Features

- ❖ Features lightweight easy-to-assemble 2x3 tubular steel frame and 2x2 tubular steel support legs.
- ❖ Modular design offers great flexibility and expandability.
- ❖ Provide Class 100,000 to Class 10 cleanroom environments.
- ❖ Complete system including motorized ceiling HEPA filters, lights and prefab wiring kit. Requires only assembly and electric power connection.
- ❖ Softwall or rigid acrylic wall panels.
- ❖ Fast delivery, most units shipped from stock.

**Curtains:** Standard cleanroom curtain dimensions are clear 20 mil double polished vinyl with Velcro strips sewn in along the top for mounting. All standard and optional

curtain dimensions will be 54 in. x 84 in. x 20 mil thick and will contain a sewn/riveted loop at the curtain bottom that will house a chain weight to hold the curtain down.

To enter or exit the cleanroom, 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 and are available in standard 20 mil and 40 mil optional curtain thicknesses.
- ❖ 13 mil yellow vinyl curtain is available with channel or Velcro mounting. This curtain can be used for ultra violet light filtration or photo resist applications (yellow static dissipative not available).
- ❖ Clear double polished 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. Attached 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. wide strips with 2-in. overlap on each side along the length. This makes the standard strip door dimension 48 in. wide x 84 in.

long x 80 mil thick. 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.

NOTE: 72 in. wide special "extra length" strip doors are available for all of the above materials.

## Cleanroom Ceiling Height Requirements

The standard height dimension is 8 ft. Standard filter unit height is 17 in. A 2-in. minimum space is required between the filter unit top and ceiling. Standard room heights are 8, 9 and 10 feet. Other cleanroom heights are available.

NOTE: Low profile filter units are available that reduce the standard filter unit height by 3 in.

Flow-thru lights add 5 in. to standard filter unit height (see flow-thru light description listed below).

## Acrylic or Lexan Walls With Economy Swing Door

Standard cleanrooms consist of soft walled vinyl curtain and/or strip doors. Acrylic or Lexan panels provide a sturdy, attractive and economic cleanroom wall option. These panels are attached to the steel framing with 3M Dual Lock (cleanroom 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 cut to allow 12 in. opening along the bottom of the entire cleanroom to achieve proper air flow.

### Tee Bar Seal Tight Gasketing System

The cleanroom 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, cleanroom lights and vinyl covered ceiling panels provide a zero leak cleanroom which is essential for optimum cleanroom performance.

### Cleanroom Ceiling Lights (standard)

Cleanroom lights consist of a 2x4 - 4 lamps, 120V, 60 Hz, 1.5 Amp enclosed "seal tight" white fluorescent panel light. The cleanroom lights 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 cleanroom 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 cleanroom.

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 cleanroom.

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 cleanroom sizes 8 ft. x 10 ft. Cleanroom sizes over 12 ft. x 12 ft. require extra legs with casters if mobility is required.

### Anteroom or Gowning Room Areas

Anterooms (to perform pre-cleanroom procedures) or gowning rooms are modular and can easily be added to the cleanroom. 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 cleanroom for adaptation or modifications to manufacturing processes.

### Prefab Electric Wiring Kit

Clean Air Produces offers the prefab electric wiring kit as a cost and time effective option to conventional electrical wiring. It facilitates quick 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.
- ❖ Speed control.

### 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 contains light and filter unit circuit breakers and speed control adjustment switches. It also receives your building supplied electric power source. It is located on the top horizontal beam near the outside corner of the cleanroom.

### 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 cleanroom corner leg outside the curtain below the junction box.

### Filter Units

Filter units will also be on their own separate 20 amp max. electric circuit (2.7 amp per filter unit).

Each filter unit will have an electric junction box that has its own ON/OFF switch mounted to it. The filter unit ON/OFF switch is not exposed to the cleanroom 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

Initially, air flow velocities of filter unit areas within your cleanroom can be balanced with other filter areas within the cleanroom. This can be accomplished by using the speed control adjustment included with your prefab wiring kit. One speed control adjustment switch(s) are located on the cleanroom electrical junction box and are easily accessible from the outside of the cleanroom. There may be more than one adjustment switch depending on the amount of filter units being used.

Over time, the cleanroom airflow velocity of your motorized HEPA filter units may become slightly reduced. The time that this occurs and the airflow reduction will be dependent on the environmental conditions it is operating in.

Compensations for air flow velocity changes can be made with the speed control adjustment switch(es).

### 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 cleanroom 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 cleanroom'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 by using the "plug together" connectors.

Specifications subject to change. Please contact factory for details.