

General Description

The Series 575 cleanroom is a cost-effective method of providing quality particulate control in a soft walled enclosure. The 2x4 tubular steel nest tight ceiling grid system allows the cleanroom to enclose a large span without center posts. This system provides a durable, cost effective, easy to assemble cleanroom system. A variety of sizes and shapes are available to ensure a system that is matched to your 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.

The rooms are free standing and require only the building floor for support the NEST TIGHT ceiling grid system, HEPA filters and cleanroom lights. This tubular frame is held in place by steel support legs to ensure a strong rigid structure. The entire frame and leg support system is finished with a white cleanroom grade baked enamel paint.

General Room Design

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

The NEST TIGHT ceiling grid is used to maintain a leak free ceiling system. The NEST TIGHT grid system utilizes a special gasketed, overlapped and interlocking nested tee bar joint. This eliminates the butt joint space of conventional non cleanroom tee bar grid systems. The proven NEST TIGHT ceiling grid system eliminates

one of the largest problems in a cleanroom; a leaking ceiling grid system.

Gasketed CAP109 motorized ceiling HEPA filters, SEAL TIGHT CAP 1210-2x4 (4) lamp cleanroom lights, or CAP1220-2x4 (4) lamp flow thru light and vinyl covered blank ceiling panels complete the ceiling grid system. The quantities of these items will depend on the size and class of the cleanroom. These gasketed components along with the NEST TIGHT ceiling grid system provide a Zero Leak cleanroom ceiling which is essential for optimum cleanroom performance.

Features

The quantity of filter units and lights will be determined by the chosen system. The rooms can be Class upgraded by adding additional HEPA filters to the system to create better "clean zones" or to upgrade the entire cleanroom system. This upgrade feature of the room ensures that the cleanroom will be able to meet the needs of future requirements.

The room is enclosed by a heavy gage clear polished vinyl curtain. These curtains are installed in sections with the top sealing against the support frame and the seams overlapped to prevent contamination from entering the clean space. The overlapped joints are located on 4 ft centers around the perimeter of the room. To enter or exit the room the curtains are simply spread apart at the seams. The curtains automatically re-seal as the two halves come together. Optional styles and materials for hardwall sided rooms are also available. Strip doors are available in high traffic areas.

Installation of the cleanroom system is a fast and easy process. The room components are lightweight and prefabricated with no on site fitting or cutting required. The parts simply bolt, snap, or set into place. Standard assembly time is just a few hours on most rooms (consult factory for more details). Simple step by step assembly instruction with diagrams accompany every cleanroom system.

Series 575



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

www.cleanairproducts.com/575

Series 575 Vertical Flow Softwall Modular Cleanrooms

Technical Data continued

Prefabricated wiring is utilized, to not only reduce the on site wiring cost, but speeds up the installation process. Assembly personnel “plug” the electrical components together as the room is being assembled. The electrician simply connects power to a single point on the cleanroom.

Standard

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

Options (consult factory for additional items)

- ❖ 99.999% DOP test on 0.12
- ❖ Flow through lights
- ❖ Micron HEPA filters
- ❖ Lights on outside of room
- ❖ Non-DOP test filters
- ❖ Casters
- ❖ Yellow light
- ❖ Special room heights
- ❖ Pass Thru
- ❖ Yellow or opaque curtains
- ❖ Strip doors
- ❖ Inside room curtains
- ❖ Conductive curtains
- ❖ Acrylic or Lexan walls
- ❖ Ionization
- ❖ Economy swing doors
- ❖ Light switch
- ❖ Custom designs
- ❖ Building suspension bracket
- ❖ Hard exterior walls
- ❖ Prefab wiring kit
- ❖ Hard interior walls
- ❖ Gowning rooms
- ❖ All stainless steel frame

Standard Sizes

Model 575 Feet	Size Outside Inches
6 x 6	81 x 79
8 x 6	105 x 79
8 x 8	105 x 103
8 x 12	105 x 151
8 x 16	105 x 199
8 x 20	105 x 247
12 x 12	156 x 151
12 x 16	156 x 199
16 x 16	207 x 199
16 x 20	207 x 247
20 x 20	258 x 247

Outside Dim. shown
Inside = Outside - 5

Recommended to have 7" clearance above unit to properly service filters and light. Consult factory for details.

Curtains: Standard cleanroom curtain dimensions are clear 20 mil double polished vinyl. 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 top and bottom. The bottom loop will house a chain weight to hold the curtain down.

An aluminum mounting channel will be enclosed in the top loop. The curtain will be pierced in the areas where screws will fasten the channel to the cleanroom ceiling beam. The top loop stitching stops 7 inches back from the edge so the curtains can overlap between sections.

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: 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 7 in. minimum space is required between the filter unit top and ceiling. Standard room heights are 8, 9, and 10 ft. 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 steel framing with 3M Dual Lock (cleanroom velcro type material).

Economy swing 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.

Cleanroom Ceiling Lights (standard)

Cleanroom lights consist of a 2x4 - 4 lamp - 120v, 60 Hz, 1.5 amp enclosed "seal tight" white fluorescent panel light.

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 thru the light fixture down into the cleanroom.

Flow through 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 12 ft. x 12 ft. and smaller cleanroom sizes.

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 (on rooms 12 ft. x 12 ft. and smaller) 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 Products 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 can control the speed of up to (6) filter units. The adjustment switch(es) 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(s).

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 begins 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 that the cable connector is mounted to. 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.