

Series 151

The Series 151 is a building suspended unit without legs. Show here is the soft-sided section supported by legs, which makes it the Series 551.



Series 152

Building suspended modular section. Available with or without legs. When legs are added, this becomes the Series 552.

Series 150

Vertical Flow Modular Plenum Section

The Series 150 is a vertical flow modular plenum section that is designed to provide superior cleanroom performance. It combines functionality with flexibility to create systems that will meet your cleanroom needs of today and into the future.

Units with blowers on the end are the Series 151. With legs added, these become the Series 551. Units with blowers on top are the Series 152. With legs added, these become the Series 552.

The Series 151 and Series 152 are designed to hang from a building or you may install them on a custom frame on a stand. The Series 551 and Series 552 are designed to be freestanding.

Features

- ❖ All feature full-ceiling HEPA filter plenum sections for superior cleanroom performance
- ❖ All metal construction
- ❖ Very energy efficient
- ❖ Modular sections
- ❖ Easily maintained
- ❖ Stainless steel versions available

Overview

The Series 150 consists of full-ceiling, HEPA filter plenum sections that provide filtered laminar flow air to clean areas. These sections are designed to deliver filtered air through 100% of the ceiling's available surface area.

The Series 550 utilizes the Series 150 ceiling HEPA filter plenum sections. These sections are available in various styles which divides the Series 550 into specific models to meet your specific application.

The Series 550 is constructed from heavy-duty 16 gauge cold-rolled steel with a white baked-enamel finish.

The following individual models are offered as a part of the Series 550.

Models

Series 551

The Series 551 is designed as a cleanroom that consists of legs and softwalled vinyl curtains that are mounted to the Series 151 low-profile filter plenum. The low-profile plenum extends beyond the end of the cleanroom. The Series 551 can be building suspended with or without curtains.

Series 552

The Series 552 is a building-suspended filter plenum. The blower and motor are mounted directly on top of the Series 152 filter plenum and blow directly into it. The Series 552 can be supplied with or without softwall curtains and can also be supported with legs.

Air Handling System

Air handling for the Series 550 is provided by the Series 150 ceiling HEPA plenum sections.

The Series 150 filter section assembly includes the following components:

Motor/Blower

The motors are efficient 3-phase, 1,725 RPM open drip-proof. They have pre-lubricated ball bearings, 1.15 service factor and are recognized by UL for their construction. The voltage can be 208, 230 or 460 volts, 60 Hz which is standard; other voltages and 50 Hz are available. The specific operating voltage must be specified.

NOTE: Motor HP will vary depending on ceiling filter plenum size.

The blowers are belt-driven by the motor at a fixed speed (1,725 RPM). A variable pitched pulley is installed on the motor. CFM and greater air velocities are achieved by moving the belt to another pulley on the motor.

An optional solid-state motor speed control is also available.

Airflow

The airflow is 90 LFM+/-20 LFM average uniformly at the filter face as defined by Federal Standard 209E.

Airflow CFM and pressure adjustments can be made as the filters load over time. The motor is equipped with a variable pitch pulley to control the speed of the blower. This allows for adjusting the blower CFM and pressure to the system as the filters load over time.

Filters

The HEPA filters are 3 in. thick and are of standard size. They have a glass fiber media pleated over aluminum separators and are glued to the outer frame by a non-hardening adhesive. Filters are rated 99.99% efficient on 0.3 micron and larger particles utilizing a DOP smoke test. The frame is extruded aluminum.

Filters are changed from the underside of the filter unit.

Other filter options are available upon request.

Prefilters

The prefilters are a disposable pleated style of standard industrial size. They use a non-woven cotton fabric reinforced with a wire mesh backing. The prefilters have a rigid Kraftboard frame. They have a 40% efficiency rating.

Lighting

The lighting is fluorescent, and individual lights can be spaced evenly below the HEPA filter or positioned between them. The lighting has a minimum of 90 footcandles illumination. The lights have a light diffuser grill to provide glare-free lighting and provide protection for the HEPA filter.

Greater lighting levels are available upon request.

Sound Attenuation (Optional)

Parts of the units are lined with acoustical duct liner to assist in sound attenuation.

Electrical

The wiring conforms with the National Electric Code and all components are UL listed. Voltage requirements will vary depending on the number of lights used.

Vibration

The blower/motor is vibration isolated from the cleanroom utilizing the VIBO-STAT isolation system.

Environmental Control

An optional temperature and humidity control can utilize the house air conditioning system or can be supplied by Clean Air Products with the cleanroom in one of the following methods: DX (direct expansion) Freon refrigeration system or chilled water coils. The chilled water coils utilize 45°F inlet customer provided water or a water chiller can be provided.

Filter Section Sizing

The following sizes are for the filter section only and do not include the blower/motor or optional cooling coil sections.

NOTE: 4, 5 and 6 ft. widths. Two units can be joined together using spanning brackets to form spans up to 32 ft. Longer spans available upon request.

Model Number and Style Description

The Series 551 and 552 model numbers will include an extension consisting of (3) numbers followed by (2) alpha letters. These numbers describe the size and style and light configuration of the unit.

NOTE: The lights included with the Series 550 are configured either evenly spaced below or between the filters. Contact factory for options and configurations

NOTE: The *** following CAP would be either the Series 551 with the blowers on the end or the Series 552 with the blowers mounted on the top. Contact factory for options and configurations.

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CAP*** 404	CAP*** 504	CAP*** 604
406	506	606
408	508	608
410	510	610
412	512	612
414	514	614
416	516	616

Example: The CAP 551FT-412 has a 4 ft. wide x 12 ft. filter area with the blower located on the end of the unit and the lights mounted below the filter.

- The CAP = Clean Air Products
- The next 3 numbers are the model number 551 or 552
- The letters following the model are unit style options.

- The numbers following the dash are the nominal dimension of the filter area in feet. The first number being the width and the second two being the length.

The following letters that follow model number describe the style options:

- F = Flush light
- R = Recessed lights mounted between the filters
- In the Series 551 the blower is located on the end of the filter module.
- T = Low-profile blower housing. The motor blower housing is longer but provides greater clearance under the blower housing.
- B = The motor is mounted below the blower housing. The blower housing is smaller, but sticks down further between the underside of the unit.
- The Series 552 blower is located on the top of the unit.
- A = The blower is blowing directly into the plenum chamber.
- U = The blower blows into a supply duct prior to going into the air plenum and has a cooling coil located down stream from the blower. Blow through cooling system.
- E = The blower blows into a supply duct prior to going in the air plenum but has no internal cooling coils.

Additional features can be specified.

Options

- Fire sprinklers – water or Halogen as well as smoke, heat infrared fire detection equipment can be provided to meet your requirements
- Hardwall – can be provided to

meet your requirements. Support legs can be made to meet any internal height requirements.

The walls can be insulated or non-insulated and can be furnished in a variety of materials.

- Aluminum
- Painted Aluminum
- Painted Steel
- Vinyl Covered Steel
- Vinyl Curtains
- Conductive Curtains
- Other materials available upon request

- Temperature control – can be provided from comfort cooling to precise temperature $\pm 0.5^{\circ}\text{F}$ and humidity control to $\pm 2\%$ RH.

Chilled water or DX coils can be built into the filter modules, saving the cost and valuable space taken up by a ducted air cooling system.

- Humidity control – humidity control can control both the minimum and/or maximum depending on the systems used. Control types 1) supply upper control, no humidity will be added, 2) upper and lower control with humidity being added by an electric steam humidifier. The control limit of $\pm 5\%$ RH is typical but can be controlled to $\pm 2\%$ RH. Consult the factory on particular applications.

- Extra sound attenuation – extra sound attenuation can be built into the Series 552 units in which the blowers blow into a supply duct prior to going into the air plenum.

- A/C inlet collar – would allow for an outside airconditioning system to be connected to the cleanroom for cooling and other environmental control.

- Starters and disconnects – can be provided mounted on the units or can be assembled on a pre-wired

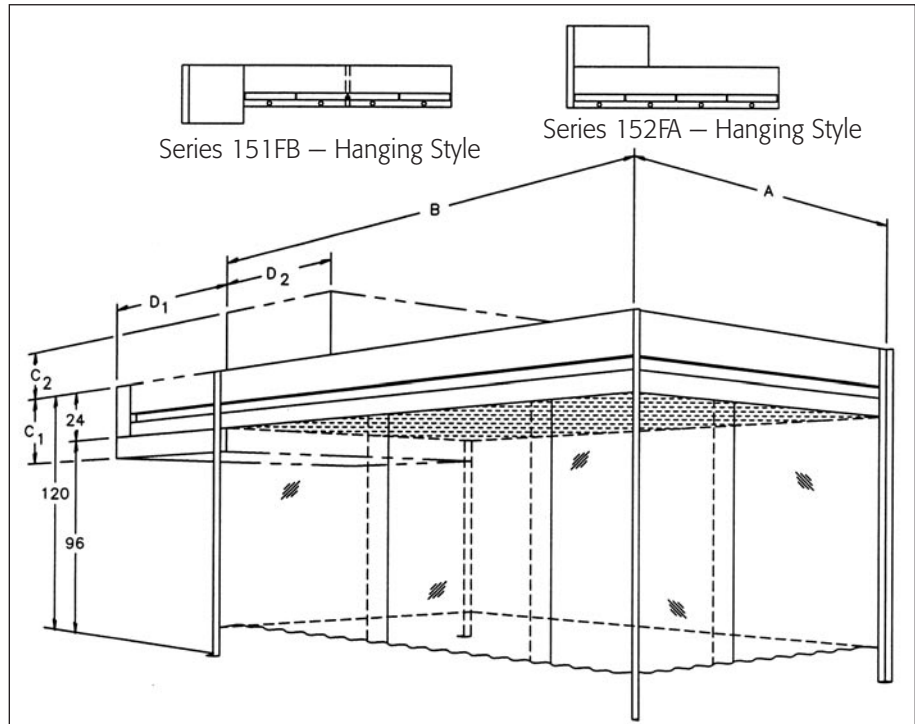
Series 150 Vertical Flow Modular Plenum Section

control panel. The pre-wired control panels would have main disconnects, step down control transformers, starters, indicating lights, start stop controls, etc. all pre-wired and tested. This system would eliminate much of the on-site wiring.

- Emergency shut down and computer controlled off hours controls
- ULPA filter 99.999% on 0.12 micron particles
- 230V, 460V, 50 Hz and other voltages
- Solid-state speed control

Guarantee

A written 1 year warranty is furnished with each cleanroom.



Series 550 – Support Legs Style

A x B Mean Dim.	A	B	C ₁	C ₂	D ₁	D ₂	Motor HP	Qty. Lights
4 x 4	50-1/2	51	24	24	24	30	3/4	2
4 x 6	50-1/2	78	24	24	24	30	1	2
4 x 8	50-1/2	96	34	24	24	44	1-1/2	4
4 x 10	50-1/2	121	34	24	30	44	2	4
4 x 12	50-1/2	146	34	24	30	44	3	6
5 x 6	62-1/2	78	24	24	24	30	2	2
5 x 8	62-1/2	96	34	24	24	30	3	4
5 x 10	62-1/2	121	34	24	30	44	3	4
5 x 12	62-1/2	146	34	24	30	44	5	6
6 x 4	74-1/2	51	24	24	24	30	1	2
6 x 6	74-1/2	78	24	24	24	30	2	2
6 x 8	74-1/2	96	34	24	24	30	3	4
6 x 10	74-1/2	121	34	24	30	44	3	4
6 x 12	74-1/2	146	34	24	30	44	5	6
8 x 4	101	51	24	24	24	30		
8 x 6	101	78	24	24	24	30	2-3/4	
8 x 8	101	96	34	24	24	44	2-1	
8 x 10	101	121	34	24	30	44	2-2	
8 x 12	101	146	34	24	30	44	2-3	

Measurements are in inches.

Specifications subject to change. Please contact factory for details.