



# Series 301

## Horizontal Laminar Flow Clean Bench

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The Series 301 is a general-purpose, horizontal flow clean bench ideally suited to many types of mechanical or processing work. It is designed to provide an ISO Class 5 (Class 100) or ISO Class 4 (Class 10) clean air environment suitable for laboratory work, testing, manufacturing, inspection and/or pharmaceutical operations.

The clean HEPA-filtered air flows outward from the cabinet. This horizontal laminar flow air washes out particulates and prevents contamination from entering the clean work zone. The cabinet features "clean edge" construction that puts the hood and table top in shear with the media edge of the HEPA filter. This reduces turbulence along the sides of the hood, improves the laminar flow, and prevents contamination infiltration around the perimeter of the hood.

### Features

- ❖ FLEX DUCT provides a factory sealed clean laminar airflow system with simple front HEPA filter removal
- ❖ HEPA filter 99.99% efficient
- ❖ Formica tabletop
- ❖ Duplex outlet for auxiliary equipment
- ❖ Motor speed variable with solid state controller
- ❖ Protective grill for absolute filter
- ❖ Fiberglass prefilter easily removable
- ❖ "Clean edge" air-shear of the absolute filter
- ❖ Superior quality, excellent appearance, and ruggedness have been achieved through the use of new wrap-around structural design
- ❖ Vinclad steel or painted structural materials offer the ultimate in appearance and a surface resistant to abuse
- ❖ Shipped fully assembled, ready for operation, certified to meet or exceed ISO Class 5 of ISO Standard 14644-1 (Class 100 conditions of Federal Standard 209E)
- ❖ Selected sizes and options UL listed



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

[www.cleanairproducts.com/301](http://www.cleanairproducts.com/301)

## Series 301 Horizontal Laminar Flow Clean Bench

### Overview

The Series 301 clean bench cabinet has all-metal construction with a Vinclad exterior.

The table work surface is fabricated of white plastic laminate over particle board. This surface provides a durable, cleanable and attractive surface.

Two white fluorescent lamps, with energy efficient ballast, are provided to illuminate the work area. An on/off switch is provided for lamp control.

The work area hood assembly is fabricated of clear polycarbonate. The hood provides a controlled work area and assists in directional air flow.

Standard floor to table top height is 30 inches. The length and height will depend on the process it is used for. Standard widths are 2-1/2 inches over nominal 3, 4, 5, 6, 8 foot increments and the interior depth (interior table or working space) of 21-1/2 inches. The overall cabinet width, depth and height will depend on the size of unit chosen.

### Cabinet

The Series 301 cabinets feature heavy 18 gage white Vinclad (vinyl clad steel) exterior finish. The vinyl is 8 to 10 mils in thickness and is laminated to provide an attractive appearance and toughness. It is superior to paint and plastic laminate over board material. It is resistant to abrasion, corrosion, stains, and attacks by chemicals. Vinclad will not support combustion; it is resistant to scratching, scuffing, crazing or cracking and will not chip. Vinclad is peel-proof and has moderate acoustical control.

A unique "wrap-around" cabinet design is used to achieve excellent appearance and ruggedness through the exclusive use of metal components.

The clean HEPA filtered air flows horizontally from the cabinet. The cabinet puts the built-in table top in shear with the media edge of the HEPA filter.

The clean bench cabinet houses: blower, motor, the HEPA or ULPA filter, fluorescent lights, on/off switches, circuit breakers and electrical junction box.

Most sizes fit through standard doors and hallways. See the attached drawing and chart for sizes on your specific model. Consult factory for details.

### Filter

The final filter is 99.99% effective on 0.3 micron and larger particles. Standard final filters have an aluminum anodized frame, painted white metal faceguard and mini pleated filter media construction. Filters are removable through the table top enclosure area. Optional ULPA filters, 99.999% on .12 micron are available.

### Negative Pressure Plenum for Final Filters: HEPA or ULPA

The Series 301 utilizes the HEPA FLEX duct system to provide air flow from the blower to the HEPA filter. This ducting system in conjunction with the cabinet blower provides a negative pressure area on the cabinet interior. The negative pressure serves as a safety seal that prevents gasket leaks which can occur in positive pressured filter systems.

### HEPA/ULPA Filter Replacement

The HEPA or ULPA filter is serviced from the front of the unit.

### Prefilters

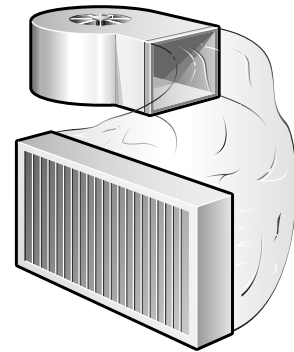
The 1.0 inch fiberglass prefilter is removable from the front lower cabinet and is accessible behind hinged prefilter grills.

The cabinet has a large prefilter area to keep the filtering efficiency high and to minimize the pressure drop across the prefilters. The prefilters are shipped in place. The cabinets have

a commonly available 20x25x1 and 20x20x1 disposable prefilter style depending on its size. These prefilters are interchangeable in size with pre-filters of higher efficiency. The higher efficiency prefilters can be ordered with the unit or upgraded with the first prefilter change.

### FLEX DUCT

The FLEX DUCT filter system provides a negative pressure area between the cabinet and the duct that gathers any contaminated air and recirculates it through the HEPA filter.



### Air Flow

The air flow for the unit is factory set at an average filter face velocity of approximately 90 FPM. This velocity is maintained by adjusting blower speed as filter pressure increases with use.

### Light Level

White fluorescent lamps are provided to illuminate the work area. An on/off switch is provided for lamp control. This will provide approximately 100 foot candle illumination 24 inches below the hood top.

The standard unit has T8 lamps. The new energy saving lamps and ballast are not available in all sizes. Consult factory for details.

See chart for the number of lamps in the selected unit.

**Sound Level**

The cabinets are designed for quiet operation. The typical sound level is approximately 65dbA. Larger size units and those with multiple blowers may have a slightly higher sound level. The sound levels are measured with ambient of 55dbA. The sound level of your particular unit may vary depending on the size of the unit, surrounding room size and acoustics.

**Electrical**

The electrical requirement is 120V, single-phase, 3-wire system with 8 foot flex power cord or hard wiring exiting the back side of the unit.

The motor speed is variable with Solid State controller.

The electrical outlet is a 15 amp duplex installed in the base right front under the table and is used

for auxiliary equipment. The power available for this receptacle is 3 amps, unless otherwise specified.

The system provides independent motor and light on/off switches.

The direct drive motor and dynamically balanced blower assembly is isolated from cabinet by rubber mounts and by the HEPA FLEX DUCT connection.

The system meets requirements of the NEC electrical codes and includes UL recognized components.

**Motor/Blower**

The system utilizes a PSC direct drive motor with a dynamically balanced blower wheel. The assembly is double vibration isolated from cabinet to provide excellent vibration control. The motor is vibration isolated

from the blower by multiple rubber isolation mounts. The blower/motor assembly is again vibration isolated from the cabinet by a second set of vibration isolation mounts. The FLEX DUCT connection between the blower and HEPA filter also serves to further reduce vibration.

Each cabinet has a blower/motor assembly sized for reserve capacity to ensure a long HEPA filter life. A motor speed control mounted on the side of the blower can be adjusted to compensate for extra pressure drop caused by loading or contamination build-up on the HEPA filter surface.

**Blower, Motor, Electrical, and Filter Sizes**

			Fluorescent					
301-24	Blower	Motor	Lamp	Electrical*	HEPA Filters**	Prefilters		
324	(1) DD-10-4	1/3HP PSC	(2)	120V/60HZ 9.7 amp*	(1) 24x36x3**	(1)	20x20	
424	(1) DD-10-6	1/3HP PSC	(2)	120V/60HZ 12.5 amp*	(1) 24x48x3**	(1)	20x25	
524	(1) DD-10-8	1/2HP PSC	(2)	120V/60HZ 12.5 amp*	(2) 24x30x3**	(2)	20x20	
624	(1) DD-10-8	1/2HP PSC	(2)	120V/60HZ 12.5 amp*	(1) 24x72x3**	(2)	20x25	
824	(1) DD-10-6	1/3HP PSC	(4)	120V/60HZ 19.2 amp*	(2) 23-5/8x47-5/8x3**	(3)	20x25	
<b>301-30</b>								
330	(1) DD-10-6	1/3HP PSC	(2)	120V/60HZ 9.7 amp*	(1) 30x36x3**	(1)	20x20	
430	(1) DD-10-8	1/2HP PSC	(2)	120V/60HZ 12.5 amp*	(1) 30x48x3**	(1)	20x25	
530	(1) DD-10-8	1/2HP PSC	(2)	120V/60HZ 12.5 amp*	(1) 30x60x3**	(2)	20x20	
630	(1) DD-10-8	3/4HP PSC	(2)	120V/60HZ 14.7 amp*	(1) 30x72x3**	(2)	20x25	
830	(2) DD-10-8	1/2HP PSC	(4)	120V/60HZ 19.95 amp*	(2) 30x48x3**	(3)	20x25	
<b>301-36</b>								
336	(1) DD-10-8	1/2HP PSC	(2)	120V/60HZ 12.5 amp*	(1) 36x36x3**	(1)	20x20	
436	(1) DD-10-8	1/2HP PSC	(2)	120V/60HZ 12.5 amp*	(1) 36x48x3**	(1)	20x25	
536	(1) DD-10-8	3/4HP PSC	(2)	120V/60HZ 19.8 amp*	(1) 36x60x3**	(2)	20x20	
636	(2) DD-10-8	1/2HP PSC	(2)	120V/60HZ 19.8 amp*	(2) 36x36x3**	(2)	20x25	
836	(2) DD-10-8	1/2HP PSC	(4)	120V/60HZ 19.95 amp*	(2) 36x48x3**	(3)	20x25	
<b>301-48</b>								
448	(1) DD-10-8	3/4HP PSC	(2)	120V/60HZ 14.3 amp*	(1) 47-1/4x47-5/8x3**	(1)	20x25	
548	(2) DD-10-8	1/2HP PSC	(2)	120V/60HZ 19.8 amp*	(2) 48x30x3**	(2)	20x20	
648	(2) DD-10-8	1/2HP PSC	(2)	120V/60HZ 19.8 amp*	(2) 48x36x3**	(2)	20x25	
848	(2) DD-10-8	3/4HP PSC	(4)	120V/60HZ 19.95 amp*	(2) 47-1/4x47-5/8x3**	(3)	20x25	

\*Includes 3 Amp receptacle.

\*\*3 in. dimension can vary depending on filter type used.

## Series 301 Horizontal Laminar Flow Clean Bench

### Work Area Top and End Enclosure Panels

There is an end panel at each end of the table top. The end panels are table top width and extend to the top of the unit where they join the top enclosure panel. (See enclosure height in working dimension section.) The top and end panels are attached together to form a one-piece enclosure. This enclosure is fastened to the cabinet along the edges of the top and the end panels.

### Options

- Stainless steel table top
- Removable grill in front of HEPA filter
- Safety glass hood
- Extended table top/hood
- Ultraviolet germicidal lamps
- 36 in. table top height
- Electrical duplex outlet (additional)
- "Minihelic" 0 to 2 inch differential pressure gauge. (HEPA)
- Table top support legs
- Gas cock
- Bar and hooks for bottle hanging
- Yellow fluorescent lamps
- Fluorescent yellow lamp sleeves
- Conductive Formica top
- Ion bars and power supply
- Painted cabinet – color code, manufacturer and chip required
- Hood depth – extended (standard 21-1/2 inch)
- End panels – \_\_\_RH \_\_\_LH
- End panels – stainless steel
- Table top – rolled front edge
- Casters with locking brake
- 175 footcandles – 4 lamp fluorescent lighting at table top
- Hood – safety glass top with stainless steel end panels
- Drawers and storage trays
- Foot rest
- Cabinet shell – all stainless steel
- ULPA filter 99.999% on 0.12 micron particles

- Units can be coupled together to form a continuous work area
  - Special designs upon request
- Shipped fully assembled ready for operation and certified to meet or exceed ISO Class 5 of ISO Standard 14644-1 (Class 100 conditions of Federal Standard 209E).

Operations manual and test reports provided with unit at shipment.

### Dimensions

#### Overall Width of Cabinet: Dimension "A"

- \_\_\_ 3 foot = 38-1/2 in.
- \_\_\_ 4 foot = 50-1/2 in.
- \_\_\_ 5 foot = 62-1/2 in.
- \_\_\_ 6 foot = 74-1/2 in.
- \_\_\_ 8 foot = 98-1/2 in.

#### Work Area Internal Width (distance between end panels): Dimension "B"

- \_\_\_ 3 foot = 34 in.
- \_\_\_ 4 foot = 46 in.
- \_\_\_ 5 foot = 58 in.
- \_\_\_ 6 foot = 70 in.
- \_\_\_ 8 foot = 94 in.

#### Work Area Internal Height (distance from top enclosure panel to table top surface): Dimension "C"

- \_\_\_ 22 in. (24 Series)
- \_\_\_ 28 in. (30 Series)
- \_\_\_ 34 in. (36 Series)
- \_\_\_ 46 in. (48 Series)

#### Overall Height of Cabinet (distance from floor to top of unit): Dimension "D"

(Add 6.0 inches for 36-inch high table top option.)

- \_\_\_ 58-1/2 in. (24 Series)
- \_\_\_ 64-1/2 in. (30 Series)
- \_\_\_ 70-1/2 in. (36 Series)
- \_\_\_ 82-1/2 in. (48 Series)

#### Overall Depth of Cabinet (front to back): 34 in.

(Power cord or hard electrical connection on the rear of the unit.)

#### Table Top Depth (table outside edge to cabinet HEPA filter): 21-1/2 in.

Deeper table top available but increases overall cabinet depth. With deeper table top, check door path or consult factory for removable table options.

#### Table Top Height: 30.0 in. from floor (-0.25 in. or +3 in. with leg leveler adjustment)

### Estimated Weight

#### 301\*24

- 324 = 370 lb.
- 424 = 400 lb.
- 524 = 450 lb.
- 624 = 500 lb.
- 824 = 750 lb.

#### 301\*30

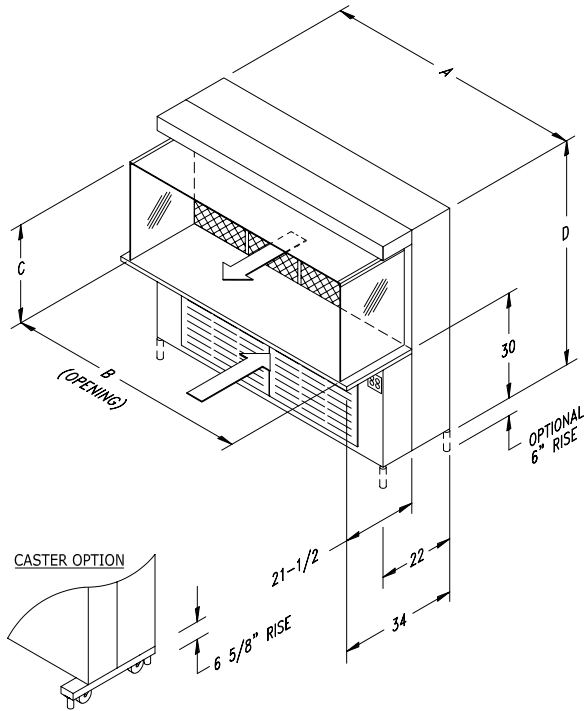
- 330 = 400 lb.
- 430 = 450 lb.
- 530 = 500 lb.
- 630 = 550 lb.
- 830 = 770 lb.

#### 301\*36

- 336 = 450 lb.
- 436 = 500 lb.
- 536 = 550 lb.
- 636 = 600 lb.
- 836 = 800 lb.

#### 301\*48

- 448 = 570 lb.
- 548 = 650 lb.
- 648 = 750 lb.
- 848 = 900 lb.



**Standard Models**

MODEL	(in inches)			
	A	B	C	D
CAP 301-324-30H	38 1/2	34	22	58 1/2
CAP 301-330-30H	38 1/2	34	28	64 1/2
CAP 301-336-30H	38 1/2	34	34	70 1/2
CAP 301-348-30H	38 1/2	34	46	82 1/2
CAP 301-424-30H	50 1/2	46	22	58 1/2
CAP 301-430-30H	50 1/2	46	28	64 1/2
CAP 301-436-30H	50 1/2	46	34	70 1/2
CAP 301-448-30H	50 1/2	46	46	82 1/2
CAP 301-524-30H	62 1/2	58	22	58 1/2
CAP 301-530-30H	62 1/2	58	28	64 1/2
CAP 301-536-30H	62 1/2	58	34	70 1/2
CAP 301-548-30H	62 1/2	58	46	82 1/2
CAP 301-624-30H	74 1/2	70	22	58 1/2
CAP 301-630-30H	74 1/2	70	28	64 1/2
CAP 301-636-30H	74 1/2	70	34	70 1/2
CAP 301-648-30H	74 1/2	70	46	82 1/2
CAP 301-824-30H	98 1/2	93	22	58 1/2
CAP 301-830-30H	98 1/2	94	28	64 1/2
CAP 301-836-30H	98 1/2	94	34	70 1/2
CAP 301-848-30H	98 1/2	93	46	82 1/2

Note - Units are shipped assembled in one piece. Check all the dimensions to make sure the unit will fit through all doorways. Units can be constructed to fit through a smaller opening, but must be specifically ordered with that option.

Standard units shipped F.O.B. factory by padded van.

Equipment specification, dimensions and upgrades are subject to change without notice.

**Guarantee**

A written 1 year Warranty is furnished with each cabinet.

Specifications subject to change. Please contact factory for details.



**Solutions Built to Your Specifications.**

8605 Wyoming Ave. N. • Minneapolis MN 55445  
 tel: 763.425.9122 800.423.9728 fax: 763.425.2004  
 e-mail: sales@cleanairproducts.com [www.cleanairproducts.com](http://www.cleanairproducts.com)