

# LABGUARD ES AIR

NU-543 CLASS II TYPE A2 BIOSAFETY CABINET

THE SAFER CHOICE FOR YOUR LABORATORY.



NuAire, Inc. | 2100 Fernbrook Lane | Plymouth, MN 55447 | U.S.A. | [nuaire.com](http://nuaire.com)

## Designed By You. Designed for your Application.

You deserve a quality and robust Biological Safety Cabinet every time you sit down to work. Every NuAire Biological Safety Cabinet goes through a series of quality assurance checks before it reaches your laboratory. As your product moves through the assembly plant, each work station double checks the work of the previous station, filters are triple-checked, and biological tests are constantly being performed under dynamic conditions to ensure maximum safety.

Each cabinet is built to order for your application. It is as simple as including an additional service valve or as complex as developing the interior to fit a specific piece of machinery.

Our local sales representatives are the best in the industry. They assist with product selection, review built-in options and accessories, discuss pricing, offer installation guidance, and provide support over the life of your NuAire product.

**The LabGard<sup>®</sup> ES (Energy Saver) AIR model NU-543 is a Class II, Type A2 Biological Safety Cabinet offering Personnel, Product, and Environmental Protection through the use of quality design, an ultra high efficiency motor, and longer lasting filters all at an affordable price.**



environmental,  
product & personnel  
protection

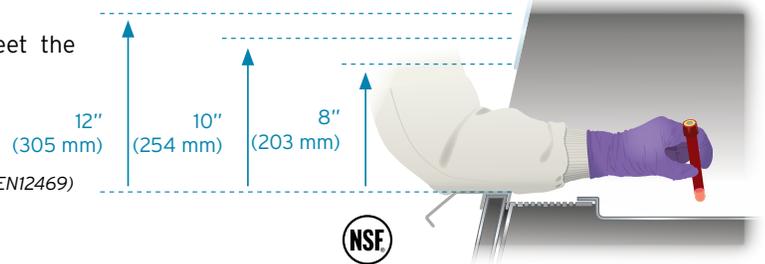
## Flexibility and Innovative Design

### Maximum Access Flexibility

Select from three window access opening options to meet the concerns of your facility and/or staff.

- **8"** (203 mm) lower operating cost (NSF/ANSI 49)
- **10"** (254 mm) lower costs and improved ergonomics (NSF/ANSI 49, EN12469)
- **12"** (305 mm) improved ergonomic reach by 40%\* (NSF/ANSI 49)

\* As compared to an 8" (203 mm) access opening.



### Ultra High Efficiency Motor

A single ultra-high efficiency ECM motor with a properly sized fan blade minimizes energy usage while extending the life of filters. LabGard® offers the lowest total cost of ownership compared to other models.



### Sizes to Fit Your Facility or Application

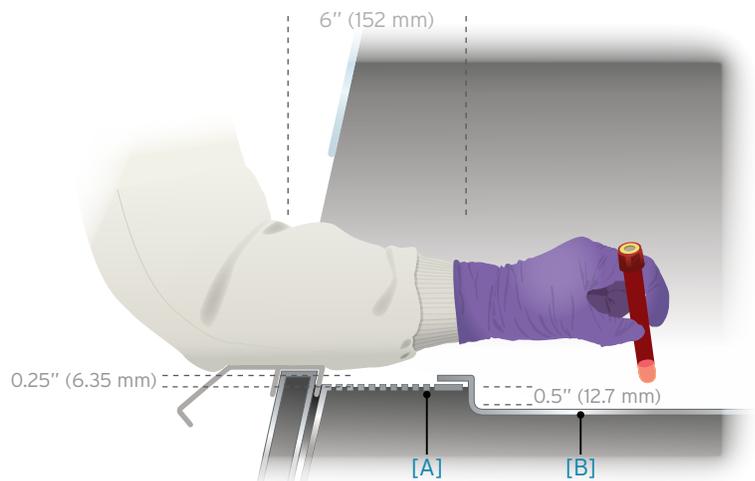


## Ergonomic Design

NuAire designs equipment for you that provides improved safety conditions; improved productivity; improved quality and reliability; and reduction of arm, shoulder, and neck strain which can contribute to common work place injuries.

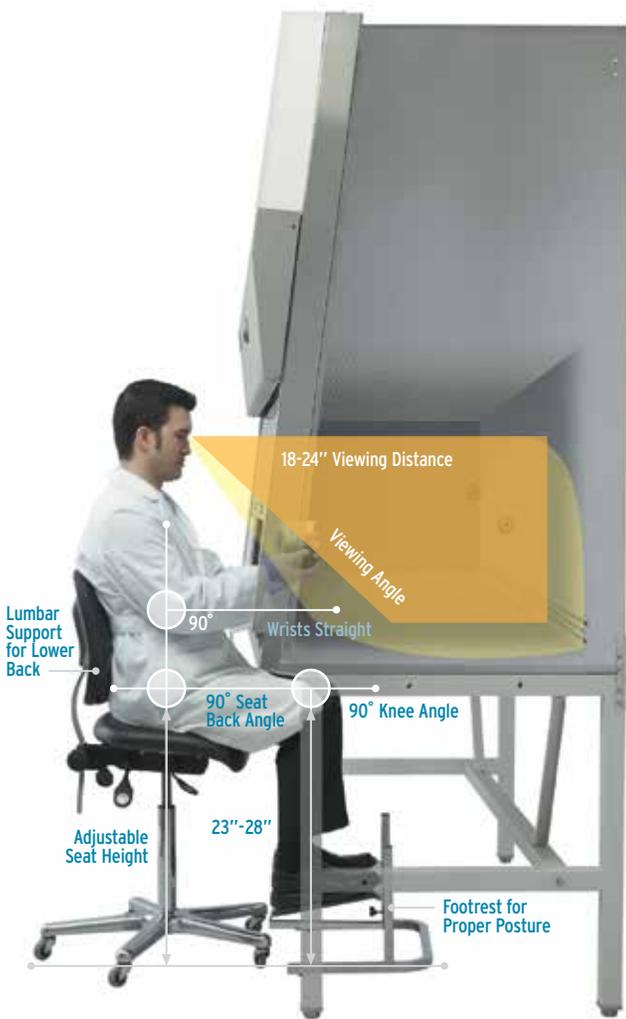


- ADA Compliant
- More Usable Work Area
- Shorter Reach Into Work Zone
- Recessed Air Foil
- Recessed Work Zone
- More Knee Room
- Ability to Sit or Stand at a Range of Heights
- 21" (533 mm) Frame-less Edge Window Sash Improves Vision/Sight Lines Into Work Zone
- Staggered Service Valves
- Accessories: Elbow rests, Armrest Foam Pads, Ergo chair, Adjustable Base Stand, Stainless Steel Turntable



A recessed airfoil grill **[A]** allows users to use the ergonomic armrest without blocking airflow compromising safety. A recessed work tray **[B]** provides users greater flexibility when working with bottles or pipettes. A shorter reach into the work zone allows users to bring work closer without sacrificing safety. These are just some of the user focused ergonomic designs NuAire® incorporates into all our laboratory products.

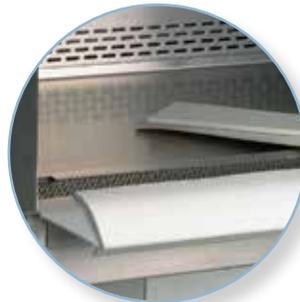
\* As compared to an 8" (203 mm) access opening.



[ Larger Work Area ]



[ Expanded Vision Zone ]



[ Disposable Arm Rest Pads ]



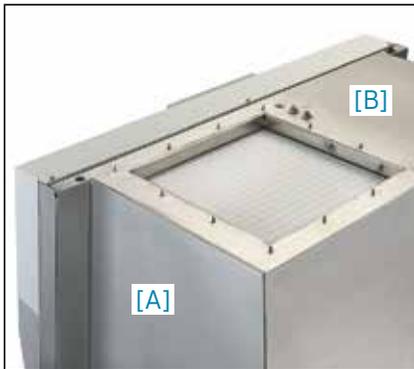
[ Recessed Airfoil Grill and elbow rest accessory ]

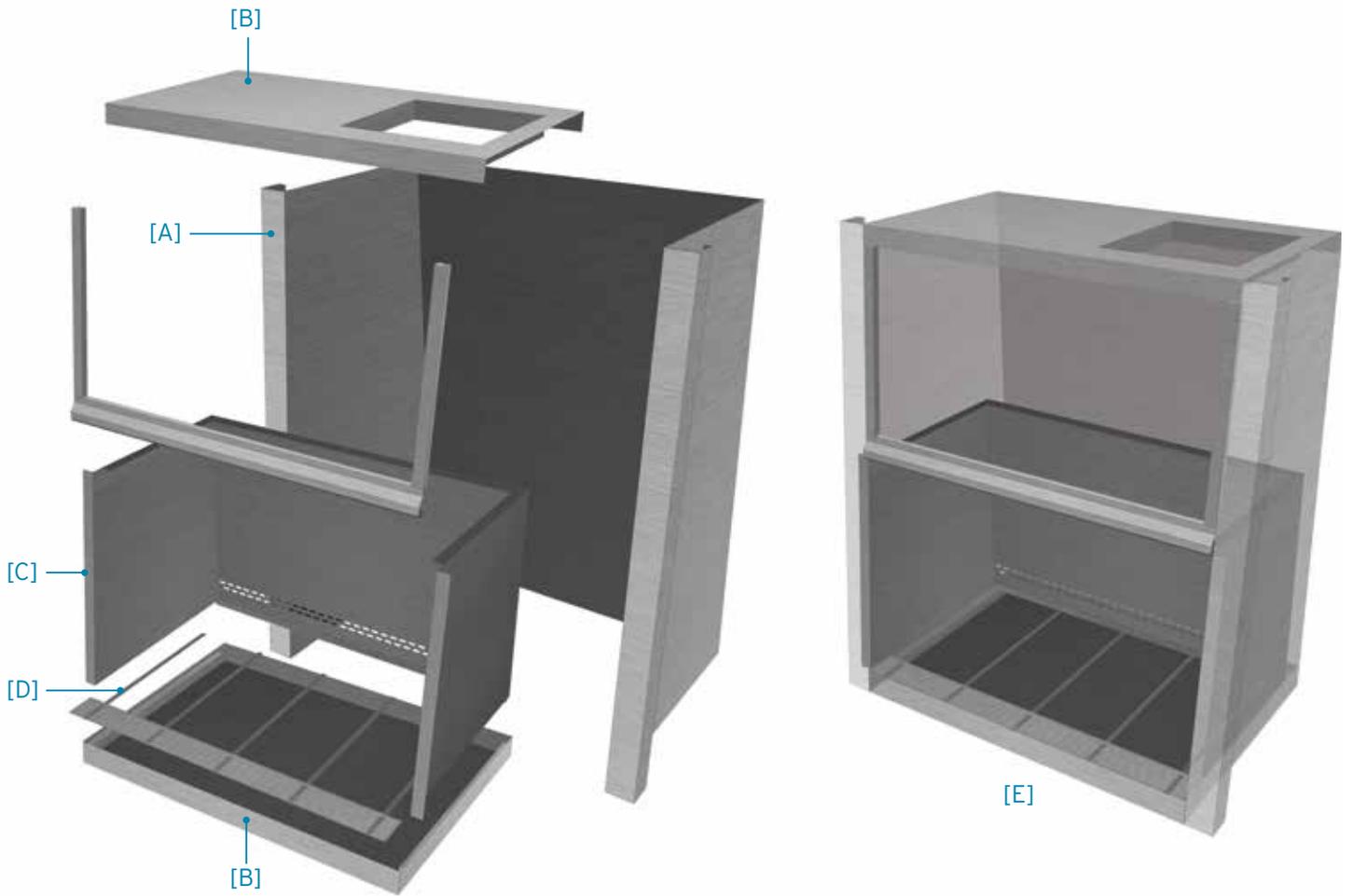
## Quality - Nothing is Built like a NuAire

**Monolithic Design.** At core of any biosafety cabinet is its basic structure. NuAire has over 100,000 biological safety cabinets in the field; some of which have been running strong since the 1970's.

The NuAire design is a single piece of type 304 stainless steel. A stainless steel wrap **[A]** makes up the walls of the cabinet. Stainless steel sheets **[B]** are welded in place to make up the top and bottom of the cabinet. A smaller wrap **[C]** featuring covered interior corners is welded in place to make up the back wall of the cabinet. This improves the cabinet integrity by creating a double sidewall. New work tray supports **[D]** help minimize the vibration transfer from the shell of the cabinet to the work zone.

The end result is a monolithic shell of 100% stainless steel **[E]** without the use of silicone like many multi-piece cabinets. This provides you with a solid foundation for longer product life eliminating potential leaks.





## Save More Money Over a Longer Period of Time

**Ultra High Efficiency Motor.** An ultra-high efficiency ECM motor combined with the properly sized fan blade lowers energy usage while extending the life of filters. LabGard® offers the lowest total cost of ownership compared to other models.

### Total cost of ownership breakdown.

Motor Comparison	NuAire DC ECM	NuAire AC PSC	BSC with AC 3-Phase	BSC with DC
<b>8 hrs per day / 5 days per week = 2,000 hrs per year</b>				
KWH per year	598	1128	828	326
\$0.09/kwh	\$54	\$102	\$75	\$29
<b>24 hrs per day / 7 days per week = 8,736 hrs per year</b>				
KWH per year	2612	4927	3617	1424
\$0.09/kwh	\$235	\$443	\$326	\$128
<b>15 Year Life Cycle Costs</b>				
Avg. Filter Changes*	1 Set	2 Sets	1 Set	3 Sets
Estimated Cost of HEPA Filters	\$715	\$1,430	\$715	\$2,145
Total Cost of Decon/Certification	\$450	\$900	\$450	\$1,350
Motors to Replace**	1 Motor	1 Motor	1 Motor	2 Motors
Cost of Motors/ Power Supplies/ Fan Control	\$650	\$420	\$725	\$2,544
Utility Costs (2,000 hrs/yr over 15 years)	\$810	\$1,530	\$1,125	\$435
<b>Total Cost of Ownership</b>	<b>\$2,625</b>	<b>\$4,280</b>	<b>\$3,015</b>	<b>\$6,474</b>

\* estimate based on Filter Load capacity

\*\* estimate based on historical information.

**Disclaimer:** This example is for illustrative purposes only and should not be deemed a representation of future performance or a guarantee of any kind. Information is based on internal performance data obtained through NuAire® testing and information provided by motor, blower, HEPA filter manufacturers, and independent service technicians.

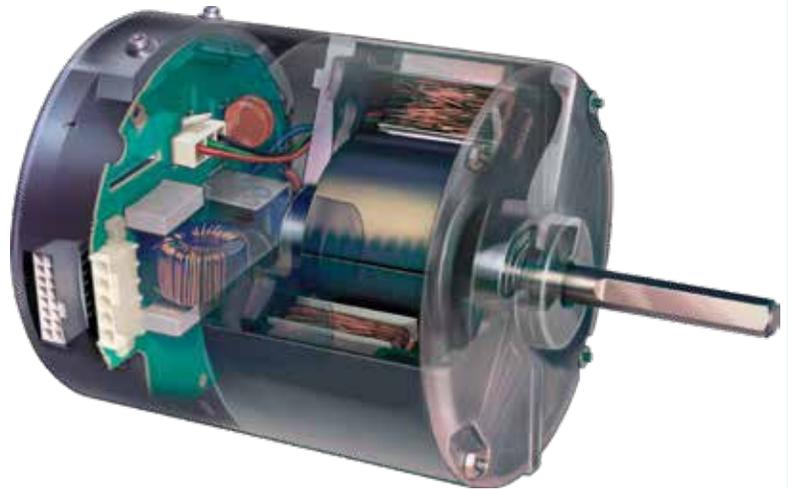
## Efficient, Quiet, Powerful

The LabGuard® AIR comes standard with an Ultra High Efficiency Motor. Each motor has a specifically designed blower fan to maximize energy efficiency and filter life. The more powerful motor in model NU-543 equates to longer filter life lowering your total cost of ownership.

### Power Savings

Model	Nominal Width	Motor Power	Savings*
NU-543-300	3 ft (0.9 m)	¾ HP	59%
NU-543-400	4 ft (1.2 m)	¾ HP	
NU-543-500	5 ft (1.5 m)	1 HP	
NU-543-600	6 ft (1.8 m)	1 HP	

\* Compares NuAire DC ECM motor technology and a BSC featuring DC motor technology. Information taken from page 7.



## Your Safety is Our Number One Priority

NuAire's commitment to safety doesn't stop at meeting industry standards. NuAire continually performs dynamic tests to push the limits of our product's performance to ensure you and your laboratory personnel will remain safe.

Automatic Airflow Compensation - the Ultra High Efficiency motor will automatically increase or decrease speed to maintain proper airflow settings based on readings from FlowGard Electronic Control System.



True laminar (unidirectional) downward moving air flushes the work surface at 60 fpm (0.30 m/s) minimizing cross contamination.



A dynamic air barrier at the front of the cabinet separates the laboratory from the work zone environment at an air speed of 105 fpm (0.53 m/s).



The HEPEX™ Zero Leak Airflow system evenly disperses air over the supply and exhaust HEPA filters, minimizes vibration transfer, and eliminates potential leaks by surrounding positive pressure chambers with negative pressure.

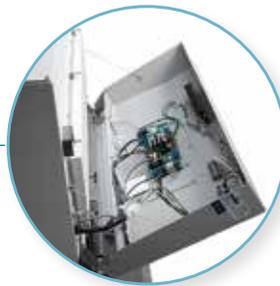


## Make it Easier on your Service Personnel

We at NuAire® have designed each LabGard® Biosafety Cabinet to be service friendly. **100%** of service functions can be performed at the front or top of the cabinet.

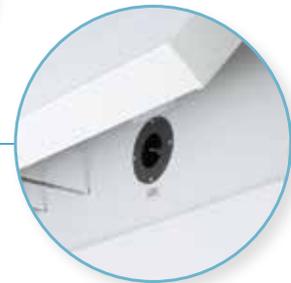
### Drop Down Control Panel

A flip down control panel creates a workable tray for service technicians.



### Exhaust Choke

Easy access to exhaust choke to certify airflows.



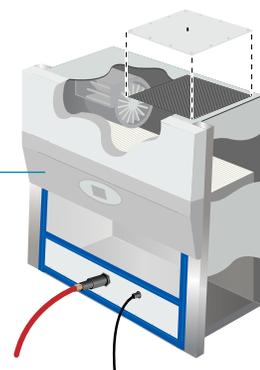
### Front Filter Access

Access filters and the motor blower from the front of the cabinet with the removal of a safety panel.



### DECON101 System

Easily connect to a variety of decontamination systems that use Formaldehyde, Chlorine Dioxide or Vapor Phase Hydrogen Peroxide



## Controlled Safety - **FLOWGARD** Electronic Control System

The LabGard<sup>®</sup> AIR offers the latest digital microprocessor design technology for improved cabinet performance and safety. The FlowGard<sup>™</sup> control system integrates a dual thermistor airflow sensor (*intelliflow*<sup>™</sup>) to monitor the cabinet's airflow performance. The FlowGard<sup>™</sup> control system also integrates an ultra high efficiency motor/ blower that provides automatic compensation for both filter loading and line voltage variances. The FlowGard<sup>™</sup> also controls the motor/ blower, visible light, UV light (optional), outlet(s), alarms, and the sliding window position via micro switches.



Dual Thermistor intelliflow Airflow Probe



### nitecare

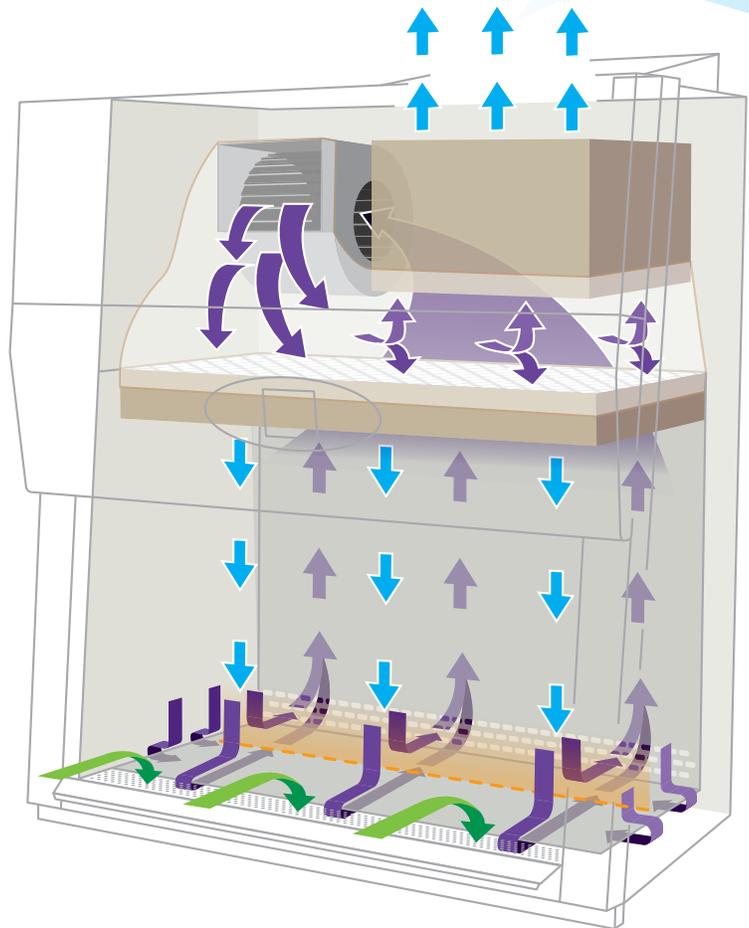
Night Setback Mode - Upon sliding the window sash into the closed position, the motor blower will continue to operate at a lower rate to save energy and maintain interior clean air conditions ready for use upon window sash opening.

Perfectly Designed for You and Your Safety

**Airflow Protects Personnel and Product**

LabGuard® AIR utilizes a single motor blower system to maintain airflow performance. The single motor blower system is inherently balanced. As particulates load the HEPA filters between certifications, NuAire's single motor/blower system maintains a consistent ratio of down flow to inflow, preventing uneven filter loading. This maintains a safer environment for you and your laboratory as well as maintains the proper down flow to minimize cross contamination within the work zone.

-  **HEPA Filtered Air**
-  **Contaminated Worksurface Air**
-  **Contaminated Room Air**
-  **Air Split**

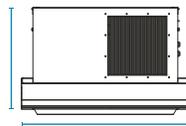
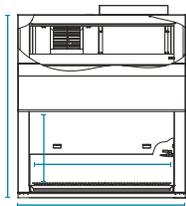
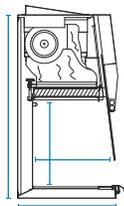


The LabGard NU-543 AIR is a Class II Type A2 Biological Safety Cabinet that can be either exhausted back into the room or connected to a facility HVAC system. The cabinet's airflow is 30% exhausted / 70% recirculated to minimize cross-contamination of low to moderate risk biologicals in the absence of volatile toxic chemicals.

### Specifications

Model	Width Size (nominal)	Electrical (all sizes)	Interior Dimensions (W x D x H) in [mm]	Exterior Dimensions (W x D x H) in [mm]	Net Weight
NU-543-300	3 ft [ 0.9 m ]	115V 60Hz E: 230V 50/60Hz K: 100V 60HZ J: 100V 50/60Hz	34 <sup>3</sup> / <sub>8</sub> x 25 <sup>3</sup> / <sub>4</sub> x 28 1/2 [ 873 x 654 x 724 ]	41 <sup>5</sup> / <sub>8</sub> x 31 <sup>7</sup> / <sub>16</sub> x 60 <sup>7</sup> / <sub>8</sub> [ 1057 x 799 x 1546 ]	400 lbs [ 181 kg ]
NU-543-400	4 ft [ 1.2 m ]		46 <sup>3</sup> / <sub>8</sub> x 25 <sup>3</sup> / <sub>4</sub> x 28 1/2 [ 1178 x 654 x 724 ]	53 <sup>5</sup> / <sub>8</sub> x 31 <sup>7</sup> / <sub>16</sub> x 60 <sup>7</sup> / <sub>8</sub> [ 1362 x 799 x 1546 ]	465 lbs [ 211 kg ]
NU-543-500	5 ft [ 1.5 m ]		58 <sup>3</sup> / <sub>8</sub> x 25 <sup>3</sup> / <sub>4</sub> x 28 1/2 [ 1483 x 654 x 724 ]	65 <sup>5</sup> / <sub>8</sub> x 31 <sup>7</sup> / <sub>16</sub> x 60 <sup>7</sup> / <sub>8</sub> [ 1669 x 799 x 1546 ]	550 lbs [ 249 kg ]
NU-543-600	6 ft [ 1.8 m ]		70 <sup>3</sup> / <sub>8</sub> x 25 <sup>3</sup> / <sub>4</sub> x 28 1/2 [ 1788 x 654 x 724 ]	77 <sup>5</sup> / <sub>8</sub> x 31 <sup>7</sup> / <sub>16</sub> x 60 <sup>7</sup> / <sub>8</sub> [ 1972 x 799 x 1546 ]	620 lbs [ 281 kg ]

\* Specify models with appropriate letter suffix for electrical specifications. "NU-543-400E" for 230 VAC 50/60 Hz



### Performance Specifications:

Airflow 30% exhausted / 70% recirculated  
 105 fpm (0.53 m/s) Inflow  
 60 fpm (0.30 m/s) Down Flow  
 Filter Load Capacity 300% Plus  
 Filter Life +/- 10 Years

### Efficiency Features:

Ultra High Efficiency ECM Eon™ Motor  
 Auto Filter Loading Compensation  
 Motor Speed Controller  
 Internal Exhaust Damper  
 nitecare Night Setback

### Superior Construction Features:

Monolithic 16/18 Gauge, Type 304 Stainless Steel  
 Welded Pressure Tight Construction (Silicone Free)  
 Removable Control Center  
 Removable Stainless Steel Coved Work Tray  
 Recessed and Removable Front Intake Grill  
 Stainless Steel Spill Trough with Drain Valve  
 Vibration Reducing Work Surface Support System  
 External Non-Glare 100 lm/ft<sup>2</sup> Fluorescent Lighting

### Safety Features:

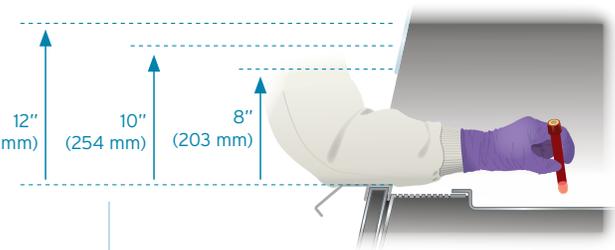
3" (76 mm) Supply HEPA Filter,  
 99.99 @ 0.3 Micron Efficiency Rating  
 12" (305 mm) Exhaust HEPA filter,  
 99.99 @ 0.3 Micron Efficiency Rating  
 Airflow / Window Alarms with Ring Back Function  
 Security Password Protection  
 HEPEX Zero Leak Airflow System  
 NSF/ANSI 49, EN12469, UL Listed

### Standard Features:

Energy Saver (ES) DC/ECM Motor  
 Motor Speed Control  
 Internal Exhaust Damper  
 Monolithic Pressure Tight Design  
 (Silicone Free)  
 HEPEX Zero Leak Airflow  
 Front Filter Removal  
 Permanent Plenum with Quick  
 Release Supply Filter (305 mm)  
 Metal Frame Supply HEPA Filter  
 99.99% @ 0.3 Microns  
 Metal Frame Exhaust HEPA Filter  
 99.99% @ 0.3 Microns  
 10" [254 mm] Access Opening (NSF/ANSI 49,  
 EN12469)  
 Frame-less Sliding Tempered  
 Glass View Screen  
 External Fluorescent Lighting  
 Plastic Armrest  
 Removable Work Tray  
 Work Surface Support System  
 Metal Diffuser Over Supply Filter  
 Spill Trough with Drain Valve  
 Two Duplex Outlet Back-wall  
 One Service Valve Right Side Wall  
 One Service Coupling Right Side Wall  
 Two Service Couplings Left Side Wall  
 12 ft [2.5 m] Power Cord

### Optional Features and Accessories\*:

12" [305 mm] Access Opening (NSF/ANSI 49)  
 8" [203 mm] Access Opening (NSF/ANSI 49)



Stainless Steel Armrest  
 LED Lighting  
 Germicidal UV Light  
 Ground Fault Interrupter  
 IV Bar with Six Hooks  
 Base Support Stand  
 Base Storage Cabinet  
 Auto Lift Base Stand  
 Microscope Window  
 Additional Service Valves  
 Exhaust Transitions  
 Storage Pull-Out Trays  
 Decorative Side Panels  
 Pre-piped Plumbing  
 Sinks with Hot/Cold or DI water Faucets  
 Heated Work-surface  
 Adjustable Footrest  
 Elbow Rests  
 Custom Solutions

\*Note: some optional features are not approved by 3rd party listings. Please contact NuAire information.

## Design Your Very Own

Each laboratory or pharmacy is unique and every application can differ. Set your laboratory up for success by designing your own NuAire Biosafety Cabinet. It can be as simple as adding a service valve or as involved as customizing the height of the work zone. NuAire can do it all. Invest in a product that lasts and is designed for your needs.

### Popular Configurations:

#### Configuration 1 - Hazardous Drug Compounding



Smooth Interior for clean-ability



IV Bar with Three Locations and Six Hooks



Cord Pass-thru (NSF)



Stainless Steel Armrest



Prop Up Work Surface



VFC Exhaust Transition



Silicone Sleeve



Telescoping Leg Leveler or Castor Base Stand

#### Configuration 2 - Tissue Culture



Service Valves/Couplings [Gas, Air, Vac]



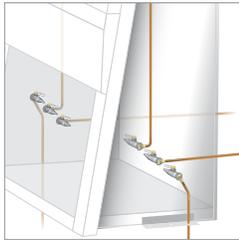
Ultraviolet (UV) Light



Cord Pass-thru (NSF)



Automatic Adjustable Base Stand



Pre-Piped Plumbing



Elbow Rest



Motorized Base Stand



Microscope Window



Base Stand Shelf



Adjustable Foot Rest



Stainless Steel Turntable



Fixed Exhaust Canopy Transition w/ Alarm



Flex Duct



Manual and Automatic Butterfly Valves



8" (204 mm) to 10" (254 mm) Round Transition



Duplex and/or GFI Outlets



Airflow Alarms



Texwipe Cleaning Supplies



Ergotron® Arm for Monitor and Keyboard / Mouse



LED Lighting (Replaces Florescent Lighting)

## Complete your Laboratory

NuAire offers a variety of Laboratory Equipment to meet the needs of the research, vivarium, pharmacy, environmental laboratory and more. Join the NuAire family and complete your laboratory with complementary NuAire Quality products.



**LABGARD**  
Biological Safety Cabinets



**IN-VITROCELL<sup>ES</sup>**  
CO<sub>2</sub> Incubators



**NUWIND**  
Centrifuges



**Koki**  
CENTRIFUGES



**BREEZE**  
Microcentrifuges



**Mini-Centrifuges**



**BLIZZARD**  
Ultralow Freezers



**AIRECARD<sup>ES</sup>**  
Laminar Airflow Workstations



**PHARMGARD<sup>ES</sup>**  
Compounding Isolators



**ALLERGARD<sup>ES</sup>**  
Animal Laboratory Products



**Polypropylene Fume Hoods  
and Casework**



**Custom Solutions**

**Delivering product to the customer that is cost effective, exceeds their requirements, delivers product on-time, and increases productivity and profitability.**

In every NuAire product you'll find brilliant but practical design, keen attention to detail in every phase of the fabrication and assembly process, thoroughly tested, outstanding value, and dependable service. These are the foundation for NuAire's international reputation, and practical reasons why NuAire is universally recognized as the finest. NuAire's Quality Policy to Satisfy Customers, Comply with Quality System Requirements and Continually Improve.

**Sales and Service Like No Other** NuAire employs a network of knowledgeable sales and service individuals some of which have been selling and servicing NuAire Laboratory Products since our inception in 1971.

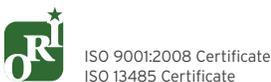
**Working Safely Video Series.** Learn how to work safely in your NuAire Biological Safety Cabinet with this 7 Chapter online video series.



Our Sales Representatives are located throughout the globe providing you with a local individual who can assist product selection, pricing, installation, training, and service throughout the life of your product. Once you buy a NuAire you're a part of our family and we'll work hard to satisfy your needs.

NuAire offers service-training classes and individualize assistance to service professionals in the laboratory community. These NuAire certified companies are located throughout the world allowing NuAire to provide service and assistance to the farthest corners of the earth. Have the option to select from multiple service vendors in your area to find a company that fits your needs.

**Contracts, GPO's and many more!** NuAire has a variety of Contracts set up through Group Purchasing Organizations, Government Associations, Health Systems, Universities and many more.





For more information please visit  
**[www.nuaire.com](http://www.nuaire.com)** or call **1.800.328.3352**

SHARE A PICTURE AND TAG YOUR NUAIRE BIOSAFETY CABINET USING #MYNUAIRE



Your Local NuAire Partner

