

CELLCARE



energy saver



Class II, Type A2 Biological Safety Cabinets

The CellGard Class II Biological Safety Cabinet 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.



Features To Increase Your Productivity

HEPEX™

- Zero Leak Airflow System
- Unidirectional Airflow
- Large HEPA Filters
- Paper-Catch Screen
- Shell / Gaskets Under Negative Pressure
- Front Filter Removal
- Metal Diffuser
- DC ECM Motor Technology

EXPERIENCE ERGONOMICS™

- Features for worker comfort and safety
- External Fluorescent Lighting
- 8" or 10" Access Opening at
- Inflow Velocity of 100 fpm
- Armrest
- Two Outlets (Back Wall)
- One Service Valve (Right Sidewall)
- Drain Valve

ATTENUMOUNT™

- Vibration and Sound Control System

TOUCHLINK™

- Electronic Control System
- Actual Downflow and Inflow Velocity Controls
- Password Protection
- Five Timers

Design Features To Fit Your Individual Applications

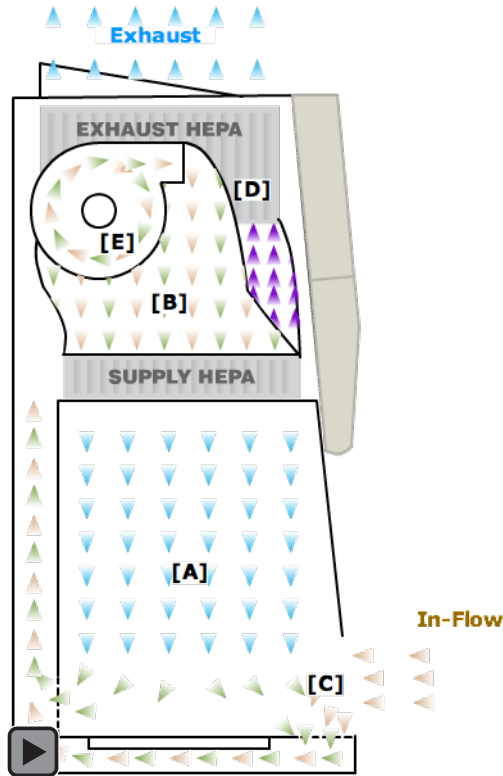
DECON Sealable Window

- Motorized Auto Window
- Ultraviolet Germicidal Light
- Additional Service Valves for Air, Vacuum, or Gas
- Double (2) Exhaust HEPA Filters
- Remote Service Valves

- Natural Gas Service Valve - Interlocked with Blower
- IV Bar with 6 Stainless Steel Hooks
- ULPA Filters
- Storage Pull-Out Trays
- Heated Work Surface
- Exhaust Transitions

- Base Support Stands
- Sinks with Hot and Cold or DI Water Faucets
- Decorative Side Panels
- Glass Side Walls - Shown Above
- Fume Absorption Carbon Exhaust Filters
- Custom Configurations

Improved Principles of Biological Safety Cabinet Design



[A] True Laminar Airflow

Unidirectional airflow moving along parallel flow lines at a constant velocity minimizes air turbulence within the work zone.

[B] HEPEX™ Zero Leak Airflow System

The HEPEX™ Zero Leak Airflow System eliminates the possibility of cabinet and gasket leaks.

[C] Greater Volume of Air Creates a Stronger Air Barrier

Air exchanges within the Class II Biological Safety Cabinet occur 25 times per minute.

[D] Larger, Long Lasting HEPA Filters

NuAire's metal framed HEPA filters are 25% larger than those in competitive products.

[E] Electronically Commutated Motor (ECM)

DC ECM (Electronically Commutated Motor) technology uses electronic controls with brushless DC motors which are inherently more efficient than the currently used permanent-split-capacitor (PSC) motor.

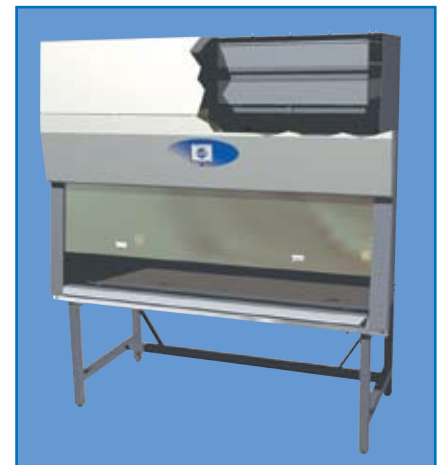
DC ECM Motors will:

- cut energy costs in half,
- more than double the life of the HEPA filters,
- reduce noise and vibration without adding any additional costs.

- ▶ HEPA FILTERED AIR
- ▶ CONTAMINATED WORK SURFACE AIR
- ▶ ROOM AIR
- ▶ CONTAMINATED EXHAUST AIR

HEPEX™ Zero-Leak Airflow System

NuAire's HEPEX™ Zero Leak Airflow System provides quiet, uniform velocities through the entire sterile work zone. NuAire's system surrounds all positive pressure flow chambers and ducts with vacuum (or negative) air pressure relative to the room. This feature eliminates the possibility of cabinet and gasket leaks. Uneven particulate loading is prevented by maintaining high-static pressure over the entire filter surface.



Dual HEPA exhaust filters optional



Features

- Blower Motor Controlled Via Solid State Traic
- Monitor, Display and Control Downflow Via Digital Dual Thermistor Airflow Sensor
- Alarm Setpoints, High/Low for Error Conditions (Downflow and Exhaust Flow)
- Date/Clock Display, and Timer Function
- Control Lights Via Solid State Switch
- Control Outlets Via Solid State Switch
- Perform Complete Diagnostic Functions
- Password Protection (Optional)

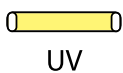


Interchangeable label plates available

User Interface Icons



Blower



UV Light



Flourescent
Light



Outlet

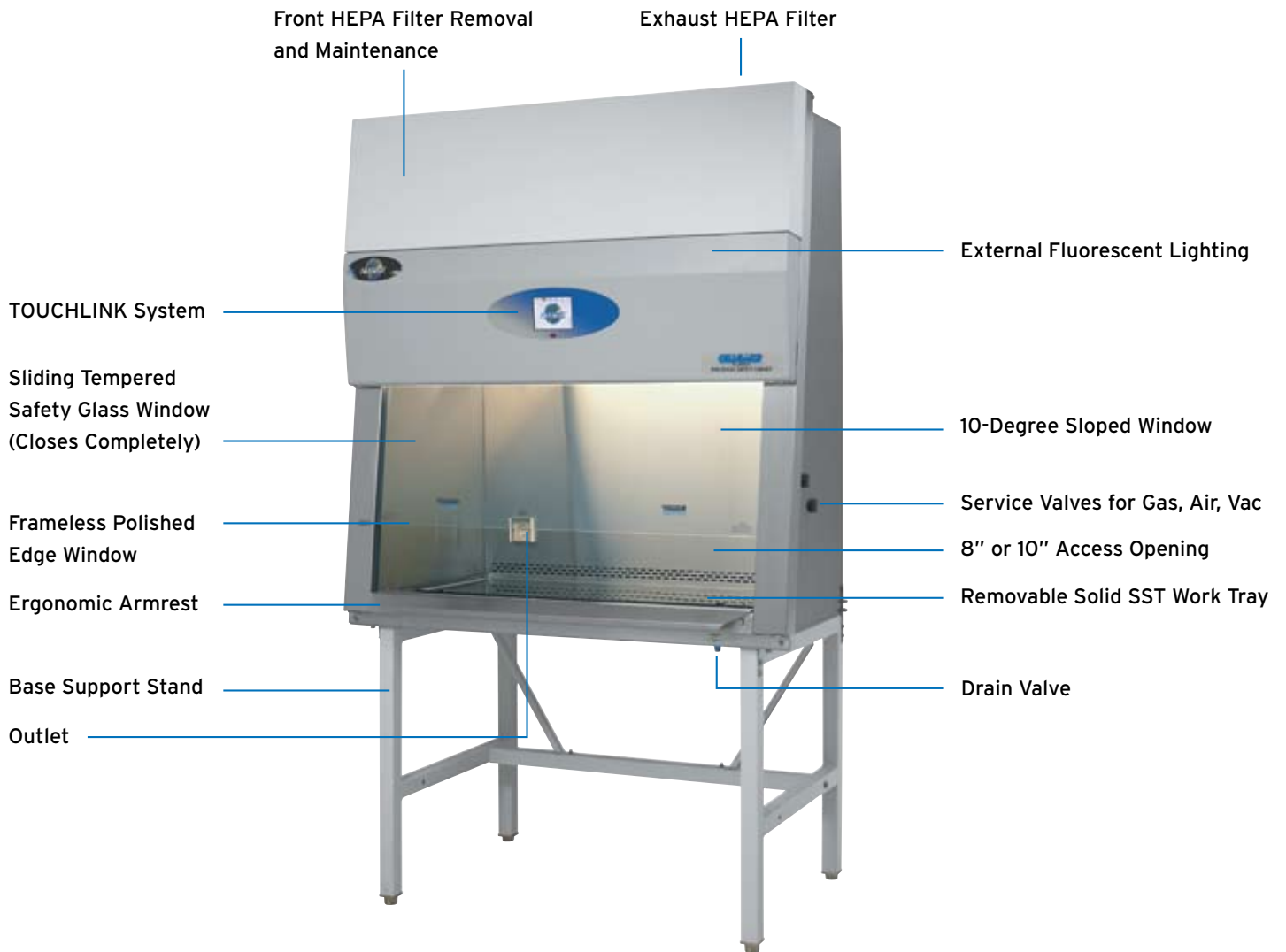


Timers



Menu

CellGard Class II Biological Safety Cabinet



Base Stand Options



Motorized Adjustable Base Stand



Base Stand with Storage Cabinet

Critical Cleaning Components™



critical cleaning components™

Critical Cleaning Components

means the combination of high-quality equipment, proper procedures, and appropriate cleaning aids which combine to help ensure a laboratory environment free from contamination.

Cleaning Aids

Cleaning aids such as the **Mini AlphaMop™** Isolator Cleaning Tool, 12" x 12" **SterileWipe®** and 9" x 9" **AlphaWipe®** Sterile, Low-Particulate wipes help personnel clean effectively.



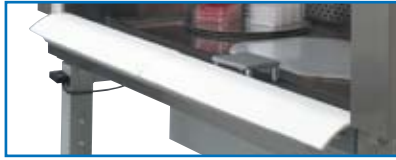
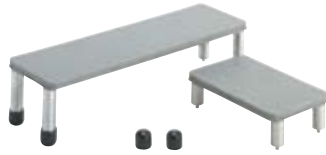
Equipment Design Features

- Hinged Wing Window Design
- 100% Stainless Steel Interior
- 90% Stainless Steel Overall Construction
- Stainless Steel Grills and Paper Catch
- Removable Stainless Steel Work Tray
- Easy-to-Clean Interior Corners
- Clean Lines- Smooth Surfaces for Effective Cleaning
- Stainless Steel Area Below Work Tray Holds 2 L of Liquid
- Stainless Steel Drain Valve
- Full Metal HEPA Diffuser Protects Filter
- Removable Armrest
- Baked Powder-Coat Polyurethane Paint Finish on Front Panel and Control Center

Cleaning and Disinfecting Process

- Cleaning and disinfecting at the beginning of each shift
- Cleaning and sanitizing the interior between procedures
- Cleaning, rinsing, disinfecting, rinsing, sterilizing after each use

Over 640 Muscles at Work • Experience Ergonomics



Forearm Support for Comfort and Safety

Optional 3/16" closed cell foam disposable armrest pad and elbow rest.



Ergonomically Designed Laboratory Chair and Footrest

Adjustable footrest and laboratory chair.



Expanded Vision Zone

The frameless polished edge windows and better sight lines.



Large Work Area for More "User-Friendly" Space

Large work zone and optional stainless steel turntable.

Ergonomic Accessories



Adjustable Footrest



Remote Controlled Service Valves



Foam Armrest Pad



Stainless Steel Turntable

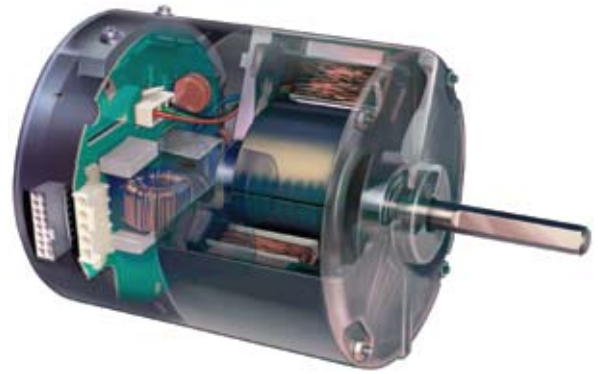


Elbow Rest

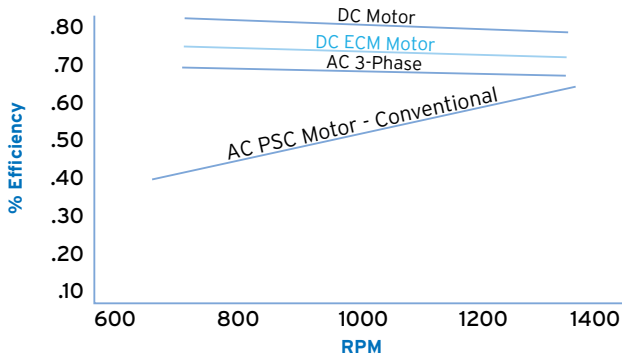


Harnessing the Efficiency of DC ECM Technology

NuAire has committed to using new affordable technologies that will save time, money, and energy. Our new CellGard™ NU-480 Class II, Type A2 Biological Safety Cabinet is designed to insure laboratory professionals the best performance in the most demanding environments. Besides the continual use of our existing technologies, the CellGard™ NU-480 employs the new DC ECM (Electronically Commutated Motor) technology that is based on a brushless DC (Direct Current) permanent magnet design. When properly designed and engineered into a biological safety cabinet, the DC ECM motor improves performance and offers greater efficiencies than the previously used AC Permanent-Split-Capacitor (AC PSC) motor.



Fan Motor Efficiency



The higher RPM represents the filter loading from particulates in the laboratory. As the filter loads, the RPM increases, motor efficiency decreases for the DC, DC ECM, and the AC-3 Phase motors. The efficiency of the AC PSC motor increases, but never reaches the efficiency of the other three types of motors.

Energy Costs	AC PSC (conv)	DC ECM	DC	AC/3-Phase
Watts	564	311	163	414
KW	.564	.311	.163	.414
KW-HR	4927	2724	1424	3617
* Multiply times .09 per KWH				
Annual Cost	\$443.43	\$245.16	\$128.16	\$325.53

4 Foot Type A2 BSC that runs 24/7 (8736 hours per year) plus the energy required to control the laboratory ventilation by adding the rejected heat
 * U.S. DOE Average Cost

Filter Loading Capacity

- Filter Size / Amount of Media
- Motor / Fan Function
- Percent increase in total load capacity
 - 50% - (NSF requirement) (3 Years)
 - 85% - DC (4 Years)
 - 180% - AC PSC (7 Years)
 - 250% - DC ECM (10 Years)
 - 250% - AC 3-Phase (10 Years)

Noise	AC PSC	DC ECM	DC	AC 3-Phase
Airflow (Design)	N/C	N/C	N/C	N/C
Fan (RPM)	1100-1700	800-1400	1400-2200	800-1400
Motor (Harmonics)	Yes	No	No	No

Vibration	AC PSC	DC ECM	DC	AC 3-Phase
Airflow (Design)	N/C	N/C	N/C	N/C
Fan (RPM)	Higher	Lower	Higher	Lower

Conclusions

AC PSC - Alternate Current, Permanent-Split-Capacitor Motor

The PSC motors are being replaced by the more efficient motors.

DC - Direct Current Motor

The DC motors provide the lowest cost to operate, but perform at the highest potential vibration levels. Fan motor efficiency is better, but the HEPA filter loading capacity is far behind the other three types of motors. Both supply and exhaust HEPA filters will have to be replaced 2 to 3 times as often. Filter change costs are approximately \$800.00 - \$1500.00 or more.

AC 3-Phase - Alternate Current, Three (3) Phase Motor

The AC 3-Phase motors are an improvement over AC PSC motors, however, they cost more to operate than DC or DC ECM motors. Although the vibration levels and filter loading is equivalent, the fan motor efficiency is lower.

DC ECM - Direct Current, Electronically Commutated Motor

The DC ECM motor when optimally designed into the biological safety cabinet provides the best results when combining fan motor efficiency, energy costs, HEPA filter capacity, and reduced noise and vibration.

The Exciting Advantages of Using NuAire

NuAire incorporates the best of our existing technology and the best of the new DC ECM technology to give you a better VALUE – lower energy costs, longer filter life, and reduced noise and vibration. NuAire uses the largest HEPA filters with the most pleats per square inch; the TouchLink™ airflow

control system; internal exhaust damper; and individually selected, optimally determined forward-curved fans for each model size/width. We are the only manufacturer to give you the best performance, quality, reliability, service and cost saving technologies.



DECON Sealable Window

If you are continuously using a multitude of biological agents and want to insure your safety - DECON Sealable Window is the option you must have.

CellGard's decontamination accessory system incorporates a new and unique method to sealing the biological safety cabinet for decontamination. Your laboratory and personnel will not be exposed to the disinfectant agent whether you use hydrogen peroxide, chlorine dioxide, or other disinfectant agents. The system is comprised of the Exhaust Canopy or Gastight Sealing Plate, and four (4) Window Clamps to insure a gas tight window seal.



DECON Sealable Front Access Window



[A] NU-912 Exhaust Decon Chamber

OR:

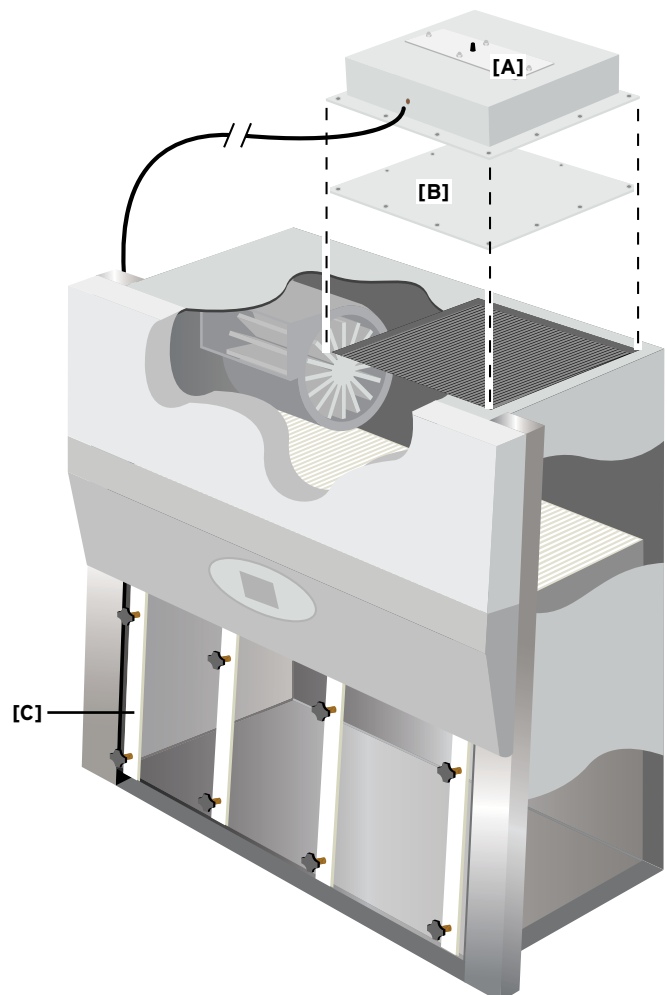


[B] Gas-Tight Plate

AND:



[C] Window Clamps



Specifications

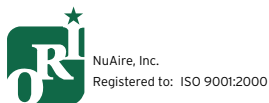
	NU-480-300 Nominal 3 ft.	NU-480-400 Nominal 4 ft.	NU-480-500 Nominal 5 ft.	NU-480-600 Nominal 6 ft.
Performance Specifications				
1) Personal Protection	NSF/ANSI/49	NSF/ANSI/49	NSF/ANSI/49	NSF/ANSI/49
2) Product Protection	NSF/ANSI/49	NSF/ANSI/49	NSF/ANSI/49	NSF/ANSI/49
HEPA Filter Seal Type				
	HEPEX™ Spring Loaded Neoprene Gasket			
Standard Services				
Service Coupling (3/8 inch NPT)	One, Right Sidewall	One, Right Sidewall	One, Right Sidewall	One, Right Sidewall
Gas Valve / Service Coupling (3/8 inch NPT)	One, Right Sidewall	One, Right Sidewall	One, Right Sidewall	One, Right Sidewall
Outlet	Two, Backwall	Two, Backwall	Two, Backwall	Two, Backwall
Optional Services				
Gas Cocks (3/8 inch NPT)	Up to 3 ea. Sidewall	Up to 3 ea. Sidewall	Up to 3 ea. Sidewall	Up to 3 ea. Sidewall
Remote Controlled Valves	Up to 3 ea. Sidewall	Up to 3 ea. Sidewall	Up to 3 ea. Sidewall	Up to 3 ea. Sidewall
Ultraviolet Light	One, Backwall	One, Backwall	One, Backwall	One, Backwall
Standard / Cup Sinks	Left or Right Work Surface	Left or Right Work Surface	Left or Right Work Surface	Left or Right Work Surface
Cabinet Size (Inches)				
Width x Height x Depth	41 5/8	53 5/8	65 5/8	77 5/8
Height	62	62	62	62
Depth	33	33	33	33
(With Control Center and Armrest Removed)				
Work Access Opening				
Standard Opening Height	8"	8" or 10"	8" or 10"	8" or 10"
Standard Inflow Velocity	105 fpm	105 fpm	105 fpm	105 fpm
Work Zone (Inches)				
Width	34 3/8	46 3/8	58 3/8	70 3/8
Height	28 1/2	28 1/2	28 1/2	28 1/2
Depth	26 1/8	26 1/8	26 1/8	26 1/8
(Measured at 8 inch Window Height)				
Viewing Window				
Standard is Safety Plate Sliding Glass	Fully closed to 18" open 8" work access opening	Fully closed to 18" open 8"/ 10" work access opening	Fully closed to 18" open 8"/ 10" work access opening	Fully closed to 18" open 8"/ 10" work access opening
Required Exhaust CFM/CMH Standard/Optional				
Thimble (NU-916)	326 (554)	428 (727)	480 (815)	606 (1030)
Plant Duct Static Pressure				
	.05" - 0.1"	.05" - 0.1"	.05" - 0.1"	.05" - 0.1"
Electrical				
Volts, AC 50/60 Hz	115	115	115	115
Amps: Total	12	12	16	16
3.7 m Power Cord (One)	14 GA -3 Wire, 15 A	14 GA -3 Wire, 15 A	14 GA -3 Wire, 20 A	14 GA -3 Wire, 20 A
Crated Shipping Weight (lbs.)				
	475	547	649	728
Net Weight (lbs.)				
	425	500	600	675

** Remote controlled valve handles project through faring. Decorative side panels are available to cover plumbing.

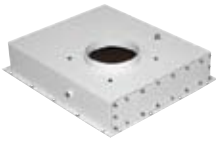
*** Crated shipping weight does not include weight for accessories or options.

Please note that performance specifications and listings vary for models and types. Please consult NuAire for exact performance specifications and listings.

Not all certifications apply to all products.



Exhausting



Low Profile
Exhaust Transition



Canopy
Exhaust Transition



Butterfly Valves



Flex Duct



Exhaust Airflow Monitors



Neoprene Connection Kit



8" to 10"
Round Transition

To Locate a NuAire Sales Team Member

Please visit NuAire's Web site at: www.nuaire.com and select the 'Sales Team' menu item. Information can be found there for both United States and international distributors.

www.nuaire.com



Other NuAire Products



AUTOFLOW
CO₂ Incubators



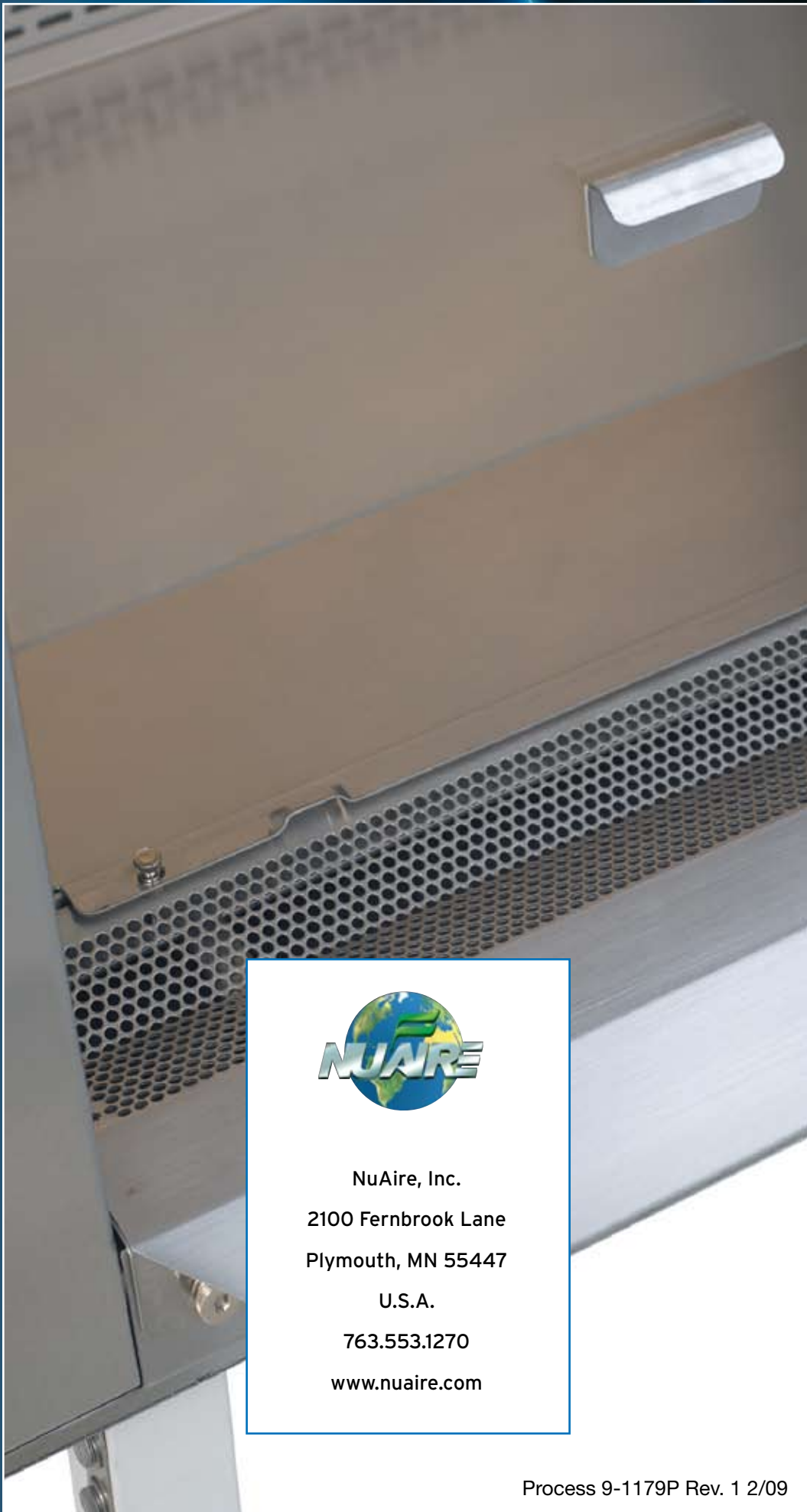
ALLERGARD
AllerGard Animal Handling Products



GLACIER
ULT Freezers

CELLULOSE

ES energy saver



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