



PURCHASE SPECIFICATIONS : NUAIRE LABGARD® ES (ENERGY SAVER) NU-677E ANIMAL HANDLING BIOSAFETY SAFETY CABINET

The intent herein is to provide a concise statement of requirements for a quality Class II Laminar Airflow Biosafety Cabinet, which may be used to augment your purchase request/order.

The LABGARD® ES NU-677E meets the performance requirements of EN12469 and NSF/ANSI 49. Your confidence is well placed in a Biosafety Cabinet that meets these standards.

NuAire sales representatives will be pleased to explain the importance of the performance and control affected by each of the following requirements. The NuAire LABGARD® ES NU-677E meets all of the requirements in the following SPECIFICATION.

1. Dimensions Inches (mm)

Overall Dimensions - Inches (mm)	NU-677-400E	NU-677-500E	NU-677-600E
Width (W)	53 1/2 (1358)	65 1/2 (1663)	77 1/2 (1968)
Depth (D) (Armrest Removed)	31 3/8 (797)	31 3/8 (797)	31 3/8 (797)
(Include Control Center)	32 1/8 (817)	32 1/8 (817)	32 1/8 (817)
Height: (H) (Retracted)	79 (2007)	79 (2007)	79 (2007)
Height (H) (Extended)	97 1/2 (2477)	97 1/2 (2477)	97 1/2 (2477)
Interior Dimensions			
Width (W)	46 3/8 (1178)	58 3/8 (1483)	70 3/8 (1788)
Depth (D) +	25 1/4 (642)	25 1/4 (642)	25 1/4 (642)
Height (H)	28 1/2 (724)	28 1/2 (724)	28 1/2 (724)
+ Measured at 12 inch (305) window height			

2. Cabinet shall provide airflows & Biosafety performance as specified.

- a. Cabinet shall provide biological containment protection for both operator and product proven by an actual test, (e.g. test conducted by NuAire) and routinely validated by NuAire.
- b.* Cabinet shall be constructed from 16/18 gauge, Type 304 stainless steel forming a monolithic, sealed structure.
- c. Cabinet shall be easily fumigated employing an established procedure such as that recommended by EN12469.
- d. Supply HEPA filter 99.99% efficient @ 0.3 microns shall be of full cabinet work zone width and depth.
- e.* Supply HEPA filter shall be protected by a perforated metal diffuser covering the entire top of the work zone.
- f.* Air Velocity from the supply filter shall average 55 to 65 FPM (.28 to .32 m/s) with no single point outside the 20% of average range measured in a horizontal plane within the work zone.
- g.* Work access opening shall be 12 inches (305mm) high. Average inflow velocity shall nominally be 105 LFPM (.53 m/s).
- h. Exhaust HEPA filter 99.99% efficient @ 0.3 microns

3.* The cabinet shall be ergonomically designed for maximum user comfort and adjustability to meet the requirements of the American Disabilities Act (ADA.)

- Standard non-metallic armrest/airfoil incorporating large 2 inch (51mm) forearm support area with 1/2 inch (12mm) recessed front grill designed for armrest comfort while maintaining containment performance.
- Maximum visibility into cabinet workzone shall be at least 23-7/8 inches (605 mm) from front access airfoil to exterior light housing.
- Cabinet shall have a centrally located instrument panel within the control center that is easily serviced with quick disconnects.
- Cabinet shall have the capability of incorporating a user adjustable base stand or base storage cabinet as an option.
- The cabinet shall have a smooth operating sliding window from full closure to full opening at 21 inches (533mm).

- Cabinet shall have a large flat removable worktray (21-3/4 inch (552mm) depth). Worktray may also be raised in place and held with hinged support rods.
 - Cabinet shall have a 10 degree slope.
- 4.* The cabinet shall have all positive pressure plenums surrounded by a vacuum relative to the room (the LABGARD® ES employs the HEPEX™ Zero Leak Airflow System).
 5. Electrical power shall be supplied with a 12-foot (2.5m), 3-wire cord with molded plug. Electrical supply should be 230 VAC, 50/60 Hz (current rating varies per cabinet size, reference Electrical Requirements Page 4) protected with thermal circuit breaker from distribution panel.
 6. The cabinet shall use a DC ECM Motor with an optimally determined forward-curved fan for each model size/with to maximize both energy efficiency and filter loading capacity.
 7. The cabinet shall have two internal electrical circuits; one for blower/lights and one for the duplex outlets. Each circuit shall be protected with a fuse located in the Control Center on the electronic module.
 8. The cabinet shall be CE compliant to meet the requirements for electrical/mechanical integrity.
 - 9.* Cabinet shall contain the Aeromax™ control system consisting of electronic modules that will perform the following functions:
 - Easy user interface via LED's and function keys
 - Control blower via solid state switch.
 - Control lights via solid state switch.
 - Control outlets via solid state switch.
 - Disable audible alarm switch with ring back function.
 - Control blower DC ECM motor with solid-state DC Motor Controller that provides automatic compensation (constant volume control) for both filter loading and line voltage variances.
 - Monitor and display airflow system performance via PresurFlow™ monitor.
 - 10.* Cabinet shall contain the Aeromax™ control system that provides the following optional functional features (included with cabinet, but must be configured during certification):
 - Security password protection of cabinet use.
 - Night Care™ setback mode. Upon sliding window closure, blower will continue to operate at a lower rate to save energy and maintain interior clean air conditions ready for use upon sliding window opening.
 - Cabinet usage sync functions with blower, LED light, outlets and accessory outlet.
 - Cabinet usage auto duration timers, Nite Care, LED light, UV light and outlets
 11. Balancing of cabinet workzone downflow (recycling flow) to exhaust flow shall be accomplished with an internal exhaust flow damper, externally adjustable.
 12. The cabinet shall be easily transportable through a standard 36-inch (914mm) wide door without disassembly when in retracted position.
 13. Sound level shall be no more than 62 dbA measured 19-11/16 inches (.5m) in front area of the cabinet and 59 inches (1.5m) above the floor.
 14. Lighting shall be energy efficient LED (T8) internally mounted and provide 90 (968) to 120 (1291) foot-candles (LUX) on work surface.
 - 15.* Cabinet shall come standard with two outlets with a drip proof covers on back wall, and no service couplings on the side walls for cleanability.
 - 16.* Integral auto-lift base stand shall be stainless steel construction with 5-inch (127mm) heavy-duty lockable castors.
 - 17.* Cabinet workzone shall be all 16/18 GA. stainless steel (silicone free) with integral prefilter in rear wall drawer design for easy removal and cleaning.
 18. A 3/8-inch (10 mm) ball valve shall be provided in the drain trough beneath the work tray.

- 19.* Cabinet shall have a permanent positive pressure plenum with quick release supply filter removal.
- 20.* Motor/blower shall be positioned so as to create an even filter loading, thereby prolonging the life of HEPA filters, automatically handling a 250% minimum increase in filter loading without reducing total air delivery by more than 10%.
- 21.* Cabinet shall be capable of front filter removal without disassembly of the control panel and sliding window tracks/hardware.
- 22. The following optional equipment shall be available to support installation and user requirements:
 - Ultraviolet Light
 - Service Valves for Gas, Air, Vacuum
 - Additional Outlet
 - Storage Pull-Out Trays
 - Lay in Sorbent Exhaust Filter
 - Decorative Side Panels (hides plumbing fixture connections)
 - Stainless Steel Armrest
 - Exhaust Transition Canopy
 - Feed Hoppers

*Having all of these features is unique ONLY to NuAire cabinets.

LABGARD® ES Energy Saver Class II, Type A2
Animal Handling Biosafety Cabinet
Models NU-677-400E/500E/600E

Catalog Number	Catalog Number		
	NU-677-400E Nominal 4 foot (1.2m)	NU-677-500E Nominal 5 foot (1.5m)	NU-677-600E Nominal 6 foot (1.8m)
Performance Specifications 1. Personal Protection 2. Product Protection	NSF/ANSI 49 EN12469	NSF/ANSI 49 EN12469	NSF/ANSI 49 EN12469
NSF Std. No. 49 Class	Class II	Class II	Class II
Style of Cabinet	Bench top/console w/basestand	Bench top/console w/basestand	Bench top/console w/basestand
Cabinet Construction	All welded stainless steel 16/18GA, Type 304 pressure tight design	All welded stainless steel 16/18GA, Type 304 pressure tight design	All welded stainless steel 16/18GA, Type 304 pressure tight design
Diffuser for Air Supply (Metal)	Non-flammable	Non-flammable	Non-flammable
HEPA Filter Seal Type: Supply Filter-99.99% Eff. on 0.3 microns Exhaust Filter-99.99% Eff. on 0.3 microns	HEPEX Seal Neoprene, Spring-loaded	HEPEX Seal Neoprene, Spring-loaded	HEPEX Seal Neoprene, Spring-loaded
Fumigation per NIH/NSF Procedure	Yes	Yes	Yes
Standard Services: Outlet	Two, Backwall	Two, Backwall	Two, Backwall
Optional Services: Gas Cocks 3/8" NPT Ultraviolet Light	Up to 2 ea. Sidewall One, Backwall	Up to 2ea. Sidewall One, Backwall	Up to 2 ea. Sidewall One, Backwall
Cabinet Size Inches (mm): Height Maximum Height Minimum Width Depth (with Control Center and Armrest)	97-1/2 (2477) 79 (2007) 53-1/2 (1358) 32-3/4 (832)	97-1/2 (2477) 79 (2007) 65 1/2 (1663) 32-3/4 (832)	97-1/2 (2477) 79 (2007) 77 1/2 (1968) 32-3/4 (832)
Work Access Opening Inches (mm): Standard Opening Height/Optional Standard Inflow Velocity Work surface Height Min/Max	12 (305) 105 FPM (.53 m/s) 24-1/2 (662) / 43 (1092)	12 (305) 105 FPM (.53 m/s) 24-1/2 (662) / 43 (1092)	12 (305) 105 FPM (.53 m/s) 24-1/2 (662) / 43 (1092)
Work Zone Inches (mm): Height Width Depth Measured at 12 inches (305) Window Height	28 1/2(724) 46 3/8 (1178) 25 1/2(642)	28 1/2(724) 58 3/8 (1483) 25 1/2(642)	28 1/2(724) 70 3/8 (1788) 25 1/2(642)
Viewing Window Inches (mm): Standard is tempered sliding glass	Fully closed to 21 (533) open	Fully closed to 21 (533) open	Fully closed to 21 (533) open
Required Exhaust CFM/CMH Standard/ Optional: Variable Flow Canopy (NU-911) Fixed Flow Canopy (NU-907)	486-656 (626-1115) 526 (894)	611-761 (1038-1293) 651 (1106)	758-868 (1288-1475) 796 (1352)
Plant Duct Static Pressure Eng./Metric	0.05-0.1"/1.27-2.54mm	0.05-0.1"/1.27-2.54mm	0.05-0.1"/1.27-2.54mm
Heat Rejected, BTU, Per Hour (non- vented) (vented)	2551 157	2669 178	2787 198
Electrical: (CE) Volts, AC 50/60 Hz +Amps: Blower/Lights/Autolift Amps: Duplex Amps: Total 12 ft. Power Cord (one)	230 4.5 3 11 16A	230 5.5 3 11 16A	230 5.8 3 11 16A
* Crated Shipping Weight: Net Weight	800 lbs. /362 kg. 750 lbs. /340 kg.	865 lbs. /392 kg. 815 lbs. /369 kg.	930 lbs. /421 kg. 880 lbs. /398 kg.
Sound Pressure Level per ISO 4871****	Not to exceed 58 dbA ■	Not to exceed 60 dbA ■	Not to exceed 62 dbA ■

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

+ Based on cabinet with new filters running at 230VAC.

****Uncertainty is K = 2 dbA, measurement performed per ISO 11201 in normal running mode.

■Reference the customer test report for procedure and results.