



PURCHASE SPECIFICATIONS: NUAIRE LabGard® ES ENERGY SAVER NU-640 ANIMAL HANDLING BIOSAFETY CABINET

The intent herein is to provide a concise statement of requirements for a quality Class II Type A2 Animal Handling Biosafety Cabinet which may be used to augment your purchase request/order.

The LabGard® ES NU-640 meets the performance requirements of the NSF/ANSI 49. Your confidence is well placed in an Animal Handling Biosafety Cabinet that meets the NSF standard.

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-640 meets all of the requirements in the following SPECIFICATION.

1. Dimensions Inches (mm)

Overall Dimensions	NU-640-400	NU-640-500	NU-640-600
Width (W) +	56 3/8 (1433)	68 3/8 (1737)	80 3/8 (2042)
Depth (D) (Incl. Control Center)	33 (838)	33 (838)	33 (838)
Height (H) (MIN/MAX)	78 1/4 (1987) 86 1/4 (2190)	78 1/4 (1987) 86 1/4 (2190)	78 1/4 (1987) 86 1/4 (2190)
Interior Dimensions			
Width (W)	46 1/2 (1181)	58 1/2 (1486)	70 1/2 (1791)
Depth (D)	22 3/4 (579)	22 3/4 (579)	22 3/4 (579)
Height (H)	24 5/8 (626)	24 5/8 (626)	24 5/8 (626)

+ Includes side push/pull bars

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.
 - * 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 NIH or NSF.
 - 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 defined by 4 inches (102mm) above the bottom edge of window.
 - * g. Work access opening shall be 14 inches (356 mm) high standard. Average Inflow velocity shall nominally be 105 LFPM (.53m/s).
 - h. Large High capacity exhaust HEPA filter 99.99% efficient @ 0.3 microns

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

- 3.* The cabinet shall be ergonomically designed for maximum user comfort and adjustability to meet the requirements of the American Disabilities Act (ADA).
 - Cabinet shall be a vertical design for standing application with footrest.
 - Cabinet shall have auto work access height adjustment of 35 inches (356mm) to 43 inches (1093mm) for ease of work material movement.
 - Maximum visibility into cabinet work zone shall be at least 23-7/8 inches (607mm) from front access airfoil to exterior window frame.
 - Cabinet shall have a centrally located instrument panel within the control center that is easily serviced with quick disconnects.
 - The cabinet shall have a smooth operating hinged window for full access into work zone.
 - Cabinet shall have a large flat removeable work tray (19 inch (483mm) depth) with prop-up holder for easy cleaning.
- 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 115 VAC, 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/width 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 listed by Underwriters Laboratories to meet the requirements of both the U.S. and Canada for electrical/mechanical integrity.
- 9.* Cabinet shall contain an 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 velocity 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.
 - Cabinet usage sync functions with blower, LED light, outlets and accessory outlet.
 - Cabinet usage auto duration timers, Nite Care, LED light, and outlets.
11. Balancing of cabinet work zone downflow (recycling flow) to exhaust flow shall be accomplished with an internal exhaust flow damper, externally adjustable with screwdriver
12. The cabinet shall be easily transportable through a standard 36 inch (914mm) wide door without disassembly.

13. Sound level shall be no more than 67 dbA measured 15 inches (381mm) above the work tray and 12 inches (305mm) in front of viewing window.
14. LED lighting shall be internally mounted and provide 90 (968) to 120 (1291) foot-candles (LUX) on work surface.
- 15.* Cabinet shall come standard with two duplex outlets with drip proof covers on back wall and one exterior accessory outlet.
- 17.* Cabinet work zone shall be all welded 16/18 gauge stainless steel (silicone free) and reinforced with stainless steel U channels to minimize vibration.
18. A 3/8 inch (10 mm) inch 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.
- 22.* Cabinet shall have a prefilter under the work tray for easy access.
23. The following standard optional equipment shall be available to support installation and user requirements:
 - Additional Service Couplings
 - Additional Service Valves for Gas, Air, Vacuum
 - Additional Duplex Outlet
 - Exhaust Transition Canopy
 - Storage Pull-Out Trays
 - Lay in Sorbent Exhaust Filter
 - Arm Rest (Stainless Steel)
 - GFI Outlets
 - Dirty Cage Collection
 - Custom garbage dump system

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LabGard® ES Energy Saver Class II Type, A2 Laminar Flow Biosafety Cabinet
Models NU-640-400/500/600

Catalog Number	Catalog Number		
	NU-640-400 Nominal 4 foot (1.2m)	NU-640-500 Nominal 5 foot (1.5m)	NU-640-600 Nominal 6 foot (1.8m)
Performance Specifications 1. Personal Protection 2. Product Protection	NSF/ANSI 49	NSF/ANSI 49	NSF/ANSI 49
NSF/ANSI 49	Class II, Type A2	Class II, Type A2	Class II, Type A2
Style of Cabinet	console	console	console
Cabinet Construction	All welded stainless steel 16/18 gauge, Type 304 pressure tight design	All welded stainless steel 16/18 gauge, Type 304 pressure tight design	All welded stainless steel 16/18 gauge, 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 Procedures	Yes	Yes	Yes
Standard Services: Duplex Outlet	Two Backwall	Two Backwall	Two Backwall
Optional Services: Gas Cocks 3/8" NPT	Up to 3 ea. Sidewall	Up to 3 ea. Sidewall	Up to 3 ea. Sidewall
Cabinet Size Inches (mm): Height (minimum) Height (maximum) Width (w/side push/pull bars) Depth	78 1/4 (1987) 86 1/4 (2190) 56 3/8 (1433) 33 (838)	78 1/4 (1987) 86 1/4 (2190) 68 3/8 (1737) 33 (838)	78 1/4 (1987) 86 1/4 (2190) 80 3/8 (2042) 33 (838)
Work Access Opening Inches (mm): Standard Opening Height Standard Inflow Velocity	14 (356) 105 FPM (.53 m/s)	14 (356) 105 FPM (.53 m/s)	14 (356) 105 FPM (.53 m/s)
Work Zone Inches (mm): Height Width Depth	24 5/8 (626) 46 1/2 (1181) 22 3/4 (579)	24 5/8 (626) 58 1/2 (1486) 22 3/4 (579)	24 5/8 (626) 70 1/2 (1791) 22 3/4 (579)
Window view height Inches (mm): Window Type	23 7/8 (607) Safety Glass/Hinged	23 7/8 (607) Safety Glass/Hinged	23 7/8 (607) Safety Glass/Hinged
Required Exhaust CFM/CMH (opening) Standard/Optional: Canopy Variable Flow Thimble (NU-911) Canopy Fixed Flow Thimble (NU-926)	14 (356) CFM (CMH) 575 - 725 (977 - 1232) 609 (1035)	14 (356) CFM (CMH) 699 - 829 (1188 - 1408) 731 (1242)	14 (356) CFM (CMH) 880 - 970 (1495 - 1648) 888 (1509)
Plant Duct Static Pressure Eng./Metric	0.05-0.1"/1.27-2.54mm H2O	0.05-0.1"/1.27-2.54mm H2O	0.05-0.1"/1.27-2.54mm H2O
Heat Rejected, BTU, Per Hour (opening) (non-vented) (vented)	14 (356) 1883 198	14 (356) 2197 198	14 (356) 2354 198
Electrical: Volts, AC 60 Hz +Amps: Blower/Lights Amps: Duplex Rated Amps: 12 ft. Power Cord (one)	U.L./U.L.-C Listed 115 4.8 3 14 12 gauge - 3 Wire, 20A	U.L./U.L.-C Listed 115 5.6 3 16 12 gauge - 3 Wire, 20A	U.L./U.L.-C Listed 115 6.0 3 16 12 gauge - 3 Wire, 20A
Crated Shipping Weight:*** Net Weight	610 lbs. /277 kg. 560 lbs. /254 kg.	700 lbs. /318 kg. 650 lbs. /295 kg.	790 lbs. /358 kg. 740 lbs. /336 kg.

***Crated shipping weight does not include weight for accessories or options + Based on cabinet with new filters running at 115VAC.