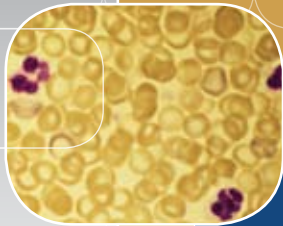




VIVA®



Viva Universal Access Animal Containment Workstation, Model VA2-4A.

Universal Animal Containment Workstation

The Safety Solution for Animal Research Laboratories





Main Features

- Provides Class II biological safety cabinet protection.
- Unique Dynamic Chamber™ plenum delivers quiet, uniform airflow.
- Negative pressure plenum surrounds contaminated positive pressure plenum; no fabric bags are used.
- Long-life ULPA filters for supply and exhaust airflow. (IEST-RP-CC001.3)
- Sentinel™ microprocessor, programmable, supervises all cabinet functions.
- Frameless, shatterproof sash is easier to clean, offers larger, unobstructed viewing area.
- Ergonomically angled front improves reach and comfort.
- Angled supply filter matches cabinet profile to achieve best downflow uniformity.
- One piece work surface removal simplifies cleaning.
- Raised airflow grille prevents blockage to airflow; maintains safety.
- Improved lighting is brighter, more uniform, reduces glare.
- Optional UV lamp is located away from direct line of sight; lamp operates on programmable timer.
- Esco **ISOCIDE™** antimicrobial surface on all painted surfaces.
- Activated carbon filter removes odors.

Model VA2 (available in 1.2 and 1.8 meter models / 4ft. and 6ft.) shown with optional infinitely adjustable stand, raised position.

Containment Protection

The Esco Universal Animal Containment Workstation provides Biosafety Cabinet Class II performance to help protect investigators and animal handlers from animal exposure which can create occupational hazards such as asthma and allergies.¹ In addition, the Universal Workstation can be used for

a variety of general laboratory applications which require clean air and containment.

The Workstation protects the user from airborne contaminants during cage changing and other procedures. It protects animals from external and cross contamination, and protects the environment from particulate emissions.



Shown with optional mobile hydraulic height-adjustable support stand fully lowered.



VIVA.

¹ National Institute for Occupational Safety and Health (NIOSH) 1998, *Preventing Asthma in Animal Handlers*, DHHS (NIOSH) Publication No. 97-116. Visit www.cdc.gov/niosh/animalrt.html.

Touchpad data entry buttons permit control settings and access to diagnostics, default settings and hierarchical menus.

Color coded indicator lamps display green for primary function (fan operation); blue for secondary function (fluorescent lights and electrical outlet); and orange for caution (UV lamp ON).

Programmable automatic UV light timer simplifies operation, enhances contamination control, extends UL lamp life and saves energy.

A graphical interface indicates cabinet performance.

Digital read-out with alpha-numeric display indicates all input, status and alarm functions.

All functions can be user activated through touch-pad programming access; see Operations Manual.



Sentinel Microprocessor Control System, Programmable

- When programmed ON
- the start-up sequence confirms status with Air Safe and local time display.
- the Personal Identification Number (PIN) access restricts unauthorized adjustments.
- an airflow alarm warns of deviations from normal velocities.

- The laminar airflow system creates a recirculating vertical flow of ISO Class 3 clean air across the work surface per ISO14644.1.
- A large 305 mm (12") sash opening accommodates standard size animal cages, provides ample room for surgical procedures and other animal research protocols.
- The sliding window opens to 450 mm (17.7") for insertion and removal or larger instrumentation and equipment.

Integrated Filtration System

A combination of twin ULPA filters, an activated carbon filter and an intake air pre-filter give the Universal Workstation a fully integrated envelope for animal, operator and environmental protection.

- ULPA filters (per IEST-RP-CC001.3), are tested to a typical efficiency of >99.999% for 0.1 to 0.3 micron particles.
- An improved mini-pleat separation technique maximizes filter surface area, improves efficiency and extends filter life over conventional separation.
- A disposable carbon pre-filter removes odors, traps larger particulates before they enter the blower chamber, and protects the supply ULPA filter to extend filter life.
- The supply ULPA filter provides clean air to the work surface in a gentle vertical laminar flow.

- The exhaust ULPA filter removes all particulates acquired from the work surface before the air is exhausted to the room.

Balanced Airflow

Intake and exhaust ratios are factory balanced before shipment to assure proper performance of the resulting air curtain.

- The cabinet creates an airflow ratio of 60% recirculation to 40% exhaust, similar to a Class II, Type A2 biological safety cabinet.
- The inflow of room air is captured in the slots peripheral to the work surface opening before it can contaminate the work area.
- Contaminated room air does not enter the work area.

Blower Efficiency

The Universal Workstation blower system is designed for maximum energy efficiency and minimal maintenance.

- One permanently lubricated independent blower is used.
- The centrifugal, direct-drive, external rotor motor is selected to reduce noise, vibration, and improve motor bearing life.
- Self-regulating airflow system automatically compensates for filter loading to extend filter life.

- The proprietary Escro motor/blower orientation minimizes noise (less than 65 dBA for VA2-4) and vibration at the work surface.
- The built-in solid-state variable speed controller is infinitely adjustable from Off to Maximum.
- A built-in RFI and electrical noise filter eliminates interference with adjacent instrumentation.

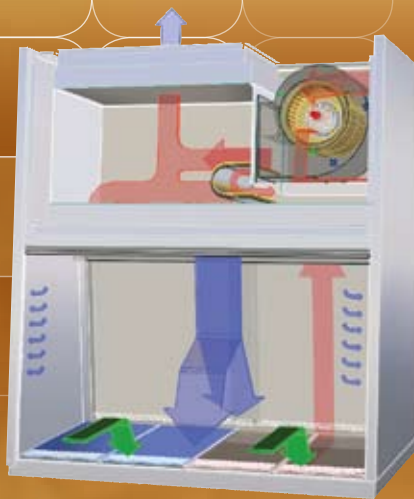
Sentinel Microprocessor Control, Alarm, Monitoring System

The Escro Sentinel microprocessor-based control system supervises operation of all cabinet functions.

- Control levels are locally configurable to meet user requirements.
- Continuous monitoring of cabinet airflow is displayed on a bright, easy-to-read LCD panel.
- Integrated, temperature-compensated true airflow velocity sensors provide the highest control accuracy.

Additional Sentinel functions are factory set to default OFF. These can be user activated through the touchpad data entry access.

- Automatic start-up sequence will prepare the cabinet for normal operation and advise when safe conditions are established.



- ULPA-filtered air
- Unfiltered / Potentially contaminated air
- Room air / Inflow air

Cabinet Airflow System

- Ambient air pulled through the perforations towards the work zone front prevents contamination of the work surface and work product. The inflow does not mix with the clean air within the cabinet work zone. Inflow air travels through a return path toward the common air plenum (blower plenum) at the top of the cabinet.
- Approximately 40% of the air in the common plenum is exhausted through the ULPA filter to the room. The remaining 60% of the air is passed through the downflow ULPA filter and into the work area as a vertical laminar flow air stream bathing the work surface in clean air.
- The uniform, non-turbulent air stream protects against cross-contamination within and throughout the work area.
- Near the work surface, the ULPA-filtered downflow air stream splits with a portion moving toward the front air grille, and the remainder moving to the rear air grille. A small portion of the downflow enters the side capture zones at a higher velocity (small blue arrows).
- A combination of inflow and downflow air streams form an air barrier that prevents contaminated room air from entering the work zone, and prevents work surface emissions from escaping the work zone.

- An administrator controlled PIN (personal identification number) can be set to restrict access to main menu.
- An independent airflow probe (standard) can be activated to warn of unsafe conditions.

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Consult your Esco Operating Manual or contact your Sales Representative for information on expanded programming capabilities built into the Sentinel microprocessor platform.

Comfortable Ergonomic Design

The VA2 cabinet is engineered for comfort, utility value and safety.

- The 10° angled viewing window and narrow profile front grille improves reach into the work area.
- The instant-start 5000k fluorescent lamp operates on an electronic ballast to reduce heat, improve comfort and conserve energy.
- The lamp delivers uniform lighting to the work surface for greater comfort, reduced glare and improved productivity; see Specifications.
- The front armrest is raised above the work zone to improve comfort and to ensure that the operator's arms do not block the forward airflow perforations.

Front Sash Assembly

Integrated sash proximity contacts sense proper sash position, serve as an interlock for the UV lamp, and activate alarm upon improper position.

- The sash is frameless to simplify cleaning by removing the side sash profile.
- All sash surfaces are easily accessible for cleaning from the front access; no tools required.
- The sash is counterbalanced for effortless one-hand operation.
- The inherently safe counterbalancing system remains in a safe position even if 1 out of the 2 cables is detached. The cabling system is rated to 6x maximum weight of frontal sash.
- The laminated glass maintains containment even if the sash is inadvertently broken.

Cabinet Construction

The cabinet is fully assembled and ready to install and operate when shipped.

- The interior work area is formed from a single piece of stainless-steel with large radius corners to simplify cleaning.
- The cabinet work zone has no welded joints to collect contaminants or rust.
- All stainless steel work surfaces are accessible for cleaning.

- Tray lift handle to easily lift the tray and encourage surface decon.
- A recessed central area and stainless steel drain pan channels spills and prevent liquids from entering the lower filtration and blower systems.
- The drain pan is flush with the side walls to eliminate concealed or hard-to-clean spaces.
- There are no screws in on the front or sides to trap contaminants or complicate cleaning.
- Optional service fittings are offset for easier access.
- External surfaces are coated with Esco Isocide antimicrobial coating to protect against surface contamination and inhibit bacterial growth. Isocide eliminates 99.9% of surface bacteria within 24 hours of exposure.

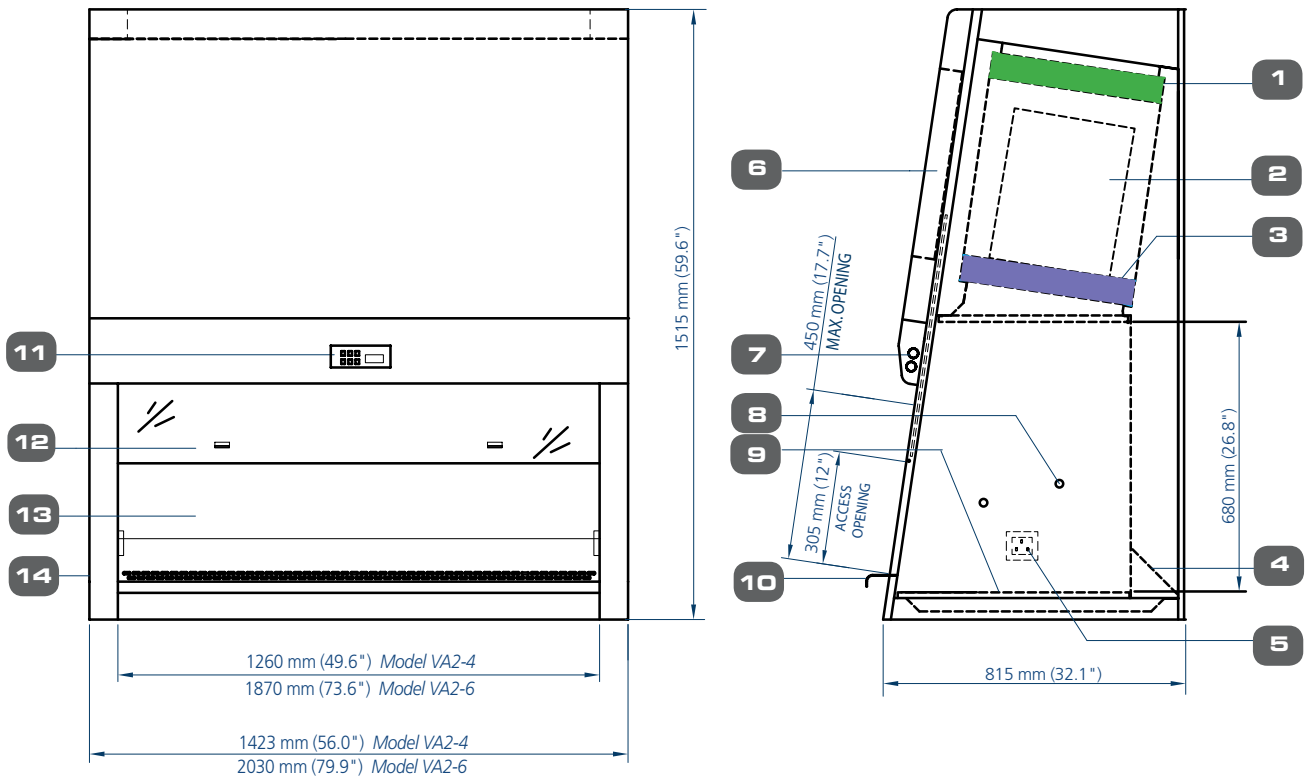
Electrical Safety and Certification

All components meet or exceed applicable safety requirements.

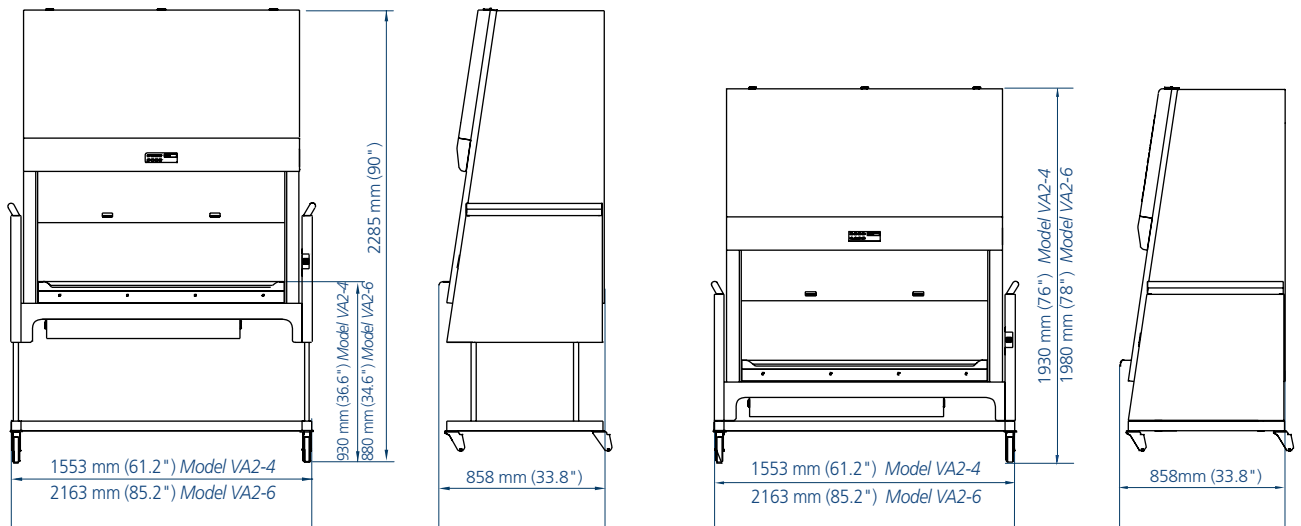
- Each cabinet is individually factory tested for electrical safety.
- Documentation specific to each cabinet serial number is maintained on file.



Model VA2 Universal Access Workstation Technical Specifications



- | | | | |
|--------------------------------|---|--|---|
| 1. Exhaust ULPA filter | 5. Electrical outlet Retrofit Kit™ provision (2 single outlets) | 8. Plugged service fixture provisions (2 on each side wall) for gas/vacuum /nitrogen | 11. Esco Sentinel microprocessor control system |
| 2. Blower | 6. Electrical/ Electronics panel | 9. Stainless steel single-piece work tray | 12. Laminated glass sliding sash window |
| 3. Angled downflow ULPA filter | 7. Fluorescent light | 10. Stainless steel armrest | 13. Stainless steel back wall and side wall |
| 4. Carbon pre-filter | | | 14. Removable side panel for plumbing access |



The VA2 Universal Workstation mounted on motorized adjustable height mobile support stand, shown in fully elevated position.

The VA2 Universal Workstation mounted on motorized adjustable height mobile support stand, shown in fully lowered position to for safe movement through hallways and standard doorways.

General Specifications, Universal Animal Containment Workstation

Note to customer: Insert electrical voltage number into last model number digit when ordering.

Model		VA2-4A_	VA2-6A_	
Nominal Size		1.2 meters (4')	1.8 meters (6')	
External Dimensions (W x D x H)		1423 x 815 x 1515 mm 56" x 32.1" x 59.6"	2030 x 815 x 1515 mm 79.9" x 32.1" x 59.6"	
Maximum External Dimensions with Support Stand (W x D x H)		1553 x 858 x 1930 mm 60.7" x 34.1" x 90.0"	2163 x 858 x 1980 mm 84.6" x 34.1" x 92.1"	
Internal Work Area (W x D x H)		1260 x 620 x 680 mm 49.6" x 24.4" x 26.7"	1870 x 620 x 680 mm 73.6" x 24.4" x 26.7"	
Average Airflow Velocity	Inflow	0.45 m/s (90 fpm)		
	Downflow	0.35 m/s (70 fpm)		
Airflow Volume	Inflow	625 m ³ / h (368 cfm)	921 m ³ / h (542 cfm)	
	Downflow, 60%	959 m ³ / h (547 cfm)	1414 m ³ / h (832 cfm)	
	Exhaust, 40%	625 m ³ / h (368 cfm)	921 m ³ / h (542 cfm)	
ULPA Filter Typical Efficiency		>99.999% at 0.1 to 0.3 microns		
Sound Emission	NSF 49	<64 dBA	<67 dBA	
	EN 12469	<61 dBA	<64 dBA	
Fluorescent Lamp Intensity		>1350 Lux (> 126 foot-candles) measured at work surface level, zero background	>1100 Lux (> 102 foot-candles) measured at work surface level, zero background	
Cabinet Construction		1.2 mm (18 gauge) electrogalvanized steel with Isocide white oven-baked epoxy power coating		
Net Weight Cabinet including stand		406 kg (895 lbs)	528 kg (1164 lbs)	
Shipping Weight Cabinet including stand		480 kg (1058 lbs)	624 kg (1376 lbs)	
Shipping Dimensions, Maximum (W x D x H) Cabinet including stand		1600 x 940 x 2210 mm 63.0" x 37.0" x 87.0"	2200 x 940 x 2210 mm 86.6" x 37" x 87.0"	
Shipping Volume, Maximum		3.32 m ³ (81 cu.ft.)	4.57 m ³ (161 cu.ft.)	
Electrical*	Model	Voltage	Model	Voltage
	VA2-4A1	220-240V, AC, 50Hz, 1Ph, 4 amps	VA2-6A1	220-240V, AC, 50Hz, 1Ph, 4 amps
	VA2-4A2	110-130V, AC, 60Hz, 1Ph, 11.5 amps	VA2-6A2	110-130V, AC, 60Hz, 1Ph, 11.5 amps
	VA2-4A3	220-240V, AC, 60Hz, 1Ph, 4 amps	VA2-6A3	220-240V, AC, 60Hz, 1Ph, 4 amps

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Standards Compliance	Air Quality	Filtration	Electrical Safety
	ISO 14644.1, Class 3, Worldwide JIS B9920, Class 3, Japan JIS B55295, Class 3, Japan US Fed Std 209E, Class 1 USA	EN-1822 (H14), Europe IEST-RP-CC001.3, USA IEST-RP-CC007, USA IEST-RP-CC034.1, USA	UL-61010A-1, USA CSA22.2, No.1010-192, Canada EN61010-1, Europe IEC61010-1, International

Warranty and Documentation

The Viva cabinet is warranted for 3 years excluding consumable parts and accessories.

- Each cabinet is shipped with a comprehensive User's Manual complete with a report documenting all test procedures.
- Additional IQ/OQ documentation is available upon request.
- Contact your local Sales Representative for specific warranty details or documentation requests.

Accessories and Options

Esco offers a variety of options and accessories to meet local applications. Contact Esco or your local Sales Representative for ordering information on these and other accessories.

Support Stand

- Infinitely adjustable motorized cradle stand, with castors
 - Elevates from seating to standing work surface height with a touch of a button.
 - When lowered permits movement through standard doorway.
 - Utilizes electro-hydraulic motor to adjust the height

Electrical Outlets and Utility Fixtures

- Electrical outlet, ground fault, North America
- Electrical outlet, Euro / Worldwide

Cabinet Accessories

- Germicidal UV lamp
 - Controlled by automatic UV lamp timer through Sentinel microprocessor control panel.
 - Emission of 253.7 nanometers for most efficient decontamination.
 - Lamp is positioned away from operator line-of-sight for safety and proper exposure to interior surfaces.
- PVC armrest
 - Chemically treated, improves operator comfort, easy-to-clean. 711 mm (28") standard size.



Importance Of Safety In Animal Containment Laboratories

With the introduction of Viva Animal Containment Workstations, Esco applies decades of experience in clean air technologies to the animal research laboratory. Personnel involved in the care and use of research animals work in an environment that presents a number of unique hazards from several sources.

- Hazards related to the equipment, materials and practices used in performing routine animal husbandry.
- Hazards related directly or indirectly to animal contact.
- Hazards related to the techniques or materials or biohazardous substances that may be used during the course of animal research.

According to US National Institute for Occupational Safety and Health (NIOSH), animal handlers should ensure measures are taken to protect themselves from exposure to animals and animal products which can cause occupational hazards such as asthma and allergies (NIOSH 1998).

The Viva range of workstations has been specially designed to protect laboratory personnel, the environment and the laboratory animal, or any combination of the three, from contaminants and allergens. For more information on allergens in the animal laboratory and proper working procedures in the animal containment laboratory, refer to the Esco booklet: "A Guide to Animal Containment Workstation". Visit our website at: <http://biotech.escoglobal.com> for more information.

For More Information

Source: *Preventing Asthma in Animal Handlers*, January 1998 DHHS (NIOSH) Publication No. 97-116.

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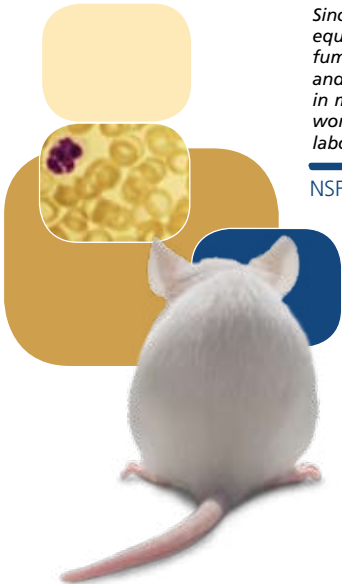


Esco Containment, Clean Air and Laboratory Equipment Products

- Biological Safety Cabinets, Class II, III
- Fume Hoods, Conventional, High Performance, Ductless Carbon Filtered
- Laminar Flow Cabinets, Horizontal, Vertical, PCR
- Animal Containment Workstations
- Hospital Pharmacy Isolators, Cytotoxic Safety Cabinets
- Specialty Workstations: *In-Vitro* Fertilization, Powder Weighing
- PCR Thermal Cyclers, Conventional, Real-Time
- Cleanroom Fan Filter Units, Modular Rooms, Air Showers, Pass Thrus

Since 1978, Esco has emerged as a leader in the development of controlled environment, laboratory and cleanroom equipment solutions. Products sold in more than 100 countries include biological safety cabinets, fume hoods, ductless fume hoods, laminar flow clean benches, animal containment workstations, cytotoxic cabinets, hospital pharmacy isolators, and PCR cabinets and instrumentation. With the most extensive product line in the industry, Esco has passed more tests, in more languages, for more certifications, throughout more countries than any biosafety cabinet manufacturer in the world. Esco remains dedicated to delivering innovative solutions for the clinical, life science, research and industrial laboratory community. www.escoglobal.com.

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