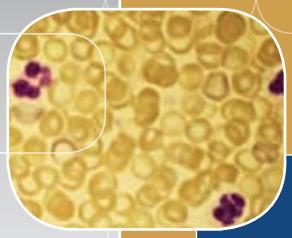


VIVA®

*Viva Dual Access Animal Containment Workstation, Model VDA-4A_*

Dual Access Animal Containment Workstation

The Portable Safety Solution for Animal Research Laboratories

ESCO

WORLD CLASS. WORLDWIDE.

Main Features

- Sentinel™ Microprocessor controller supervises all functions.
- Independent Minihelic™ gauges indicate both supply and exhaust filter pressures.
- Long-life ULPA filters protect supply and exhaust airflow (IEST-RP-CC001.3).
- Activated carbon filter removes odors.
- Work area lighting is bright and uniform to help improve productivity.
- Angled edges on drain area and integral work surface/grille component removal simplify cleaning.
- Recessed airflow grille prevents blockage to maintain performance.
- Esco ISOCIDE™ antimicrobial coating on all painted surfaces.
- Retractable power cord stores easily for moving workstation from one lab to another. *(115V, AC Model only)*

The Viva Dual Access Animal Containment Workstation, Model VDA-4A_ is KI-Discus tested for performance integrity.

Containment and Protection

The Esco Viva Dual Access Animal Containment Workstation provides clean air performance to help protect investigators and animal handlers from exposure to animals and animal products which can cause occupational hazards such as asthma and allergies.[1]

The Dual Access Workstation protects the operator from airborne contamination during cage changing or other procedures. At the same time, the workstation protects the animals or work product from external and cross-contamination, and protects the environment from allergens and particulate emissions.

[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).

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 push/pull airflow system creates a non-recirculating vertical laminar flow of ISO Class 4 clean air across the work surface per ISO14644.1.
- The cabinet work zone is fully accessible from two sides to permit multiple user access.
- A large 350 mm (14") opening accommodates standard size animal cages.
- Hinged windows on both sides can be opened for a 530 mm (20.5") access for handling larger items.

Comfortable Ergonomic Design, Portable

All Viva workstations are engineered for comfort, utility value and safety.

- Angled viewing windows reduce glare and permit easier reach into the work area from either side.
- Instant-start 5000k fluorescent lamps operate on electronic ballasts for energy efficiency.
- Lamps deliver 1100 Lux (> 102 foot-candles) to the work surface for overall illumination.
- The work surface height is electrically adjustable from 864 to 1164 mm (34" to 46") for ergonomic comfort and operator convenience.
- The workstation is easily moved on non-marking 125 mm (5") wheels with locking brakes.
- When fully lowered to a height of 1918 mm (75.5") the cabinet can be wheeled from lab to lab. A stainless steel push/pull bar is mounted on one end.

Integrated Filtration System

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

- Mini-pleat ULPA filters are tested to >99.999% efficiency for 0.1 - 0.3 micron particulates, better than HEPA filters.
- An improved mini-pleat separation technique maximizes filter surface area, improves efficiency and extends filter life over conventional separation.
- The disposable pre-filter traps larger particulates before they enter the blower chamber, and protects the supply ULPA filter to extend filter life.
- The supply ULPA filter supplies clean air to the work surface in a gentle vertical laminar flow.
- An activated carbon filter removes odors from the ULPA filtered exhaust air stream before returning air to the laboratory.
- The exhaust ULPA filter removes all allergens and particulates acquired from the work surface before the air is exhausted to the room.

Balanced Airflow

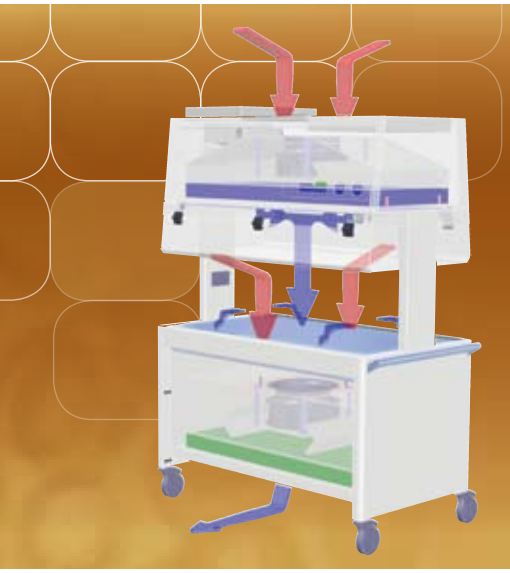
Contaminated room air does not enter the work area.

- Intake and exhaust ratios are factory balanced before shipment to assure proper performance of the resulting air curtain.
- The inflow of room air is captured in the slots peripheral to the work surface before it can contaminate the work area.
- Independent Minihelic gauges display both supply and exhaust filter pressures.

Blower Efficiency

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

- Two independent blowers are used, one for the supply filter and one for the exhaust filter.
- Centrifugal, direct-drive, external rotor motors are selected to reduce operating costs.
- Unique Esco motor/blower orientations minimize noise and vibration.
- Built-in solid-state variable speed controllers are infinitely adjustable from *Off* to *Maximum*.
- Built-in RFI and electrical noise filters eliminate interference with adjacent instrumentation.



Cabinet Airflow System

- The Model VDA Dual Access Workstation employs a total exhaust, non-recirculating airflow configuration.
- The blower system pulls ambient intake air through the pre-filter, trapping larger dust particles and extending the useful life of the ULPA filter.
- Air flows through the main ULPA supply filter and bathes the work zone in clean air with a non-turbulent airflow.
- Recessed air grilles on the peripheral work surface collect ambient air. Combined with vertical laminar downflow, the VDA creates an air curtain to protect the operator from contaminants released from the work surface.
- An activated carbon filter removes odors.
- The exhaust ULPA filter removes contaminants before air is returned to the environment.

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

Sentinel Microprocessor Control, Alarm, Monitoring System

The Esco 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.
- 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.

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

Electrical Safety and Certification

All components used in Esco products meet or exceed applicable safety requirements.

- Retractable power cord stores easily for moving from one location to another (110-130 V, 60 Hz model only).
- Each cabinet is individually factory tested for electrical safety.
- Documentation specific to each cabinet serial number is maintained on file.
- The Viva workstations meet general safety requirements set forth by independent testing laboratories (see Specifications).
- UL listing pending for USA and Canada.

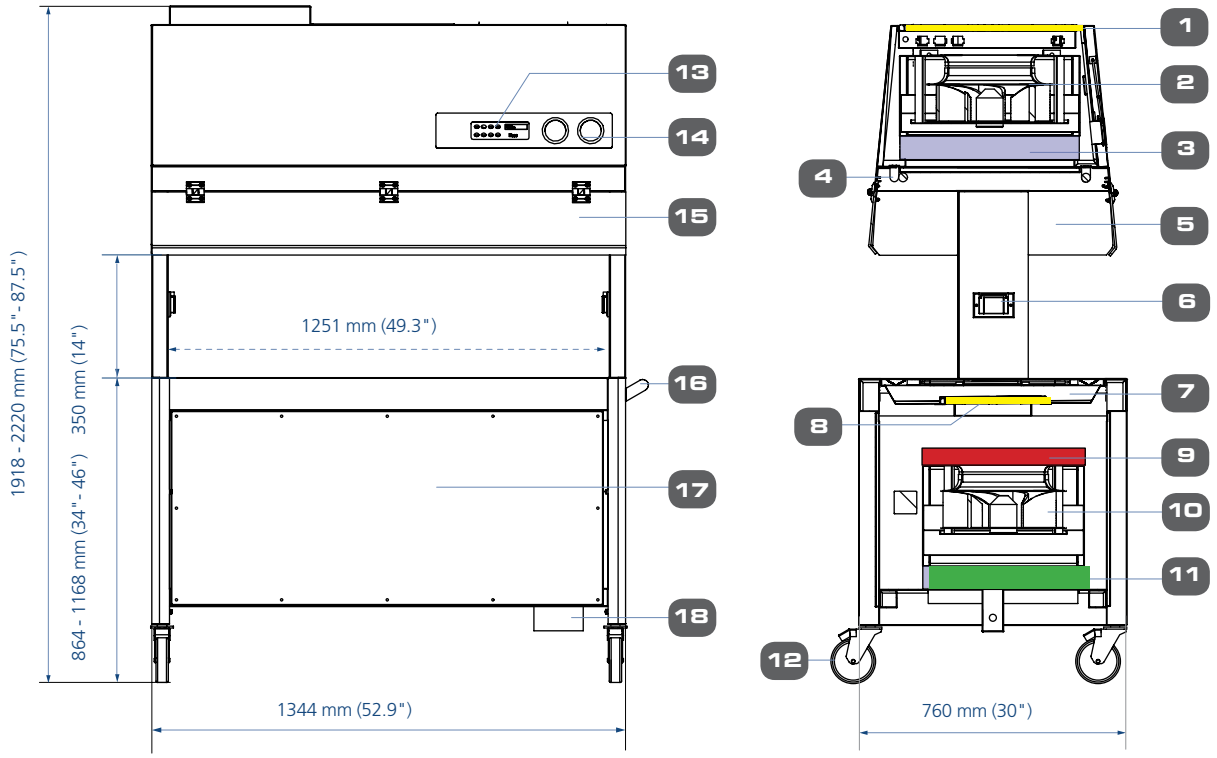
Cabinet Design and Construction

Robust construction and enhanced safety features qualify the workstation for the most demanding laboratory applications.

- A recessed central area and stainless steel drain pan contain spills and prevent liquids from entering the lower filtration and blower systems.
- Work surface air intake grilles are configured to prevent obstructions by objects placed outside the work zone.
- The cabinet structure is constructed of industrial-grade electrogalvanized steel.
- 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.

The stainless steel work surface is easy to clean. Tray components lift, tilt and fix position to provide access and simplify surface decontamination.

Model VDA-4A_ Dual Access Animal Containment Workstation Technical Specifications



1. *Pre-filter*
2. *Downflow blower*
3. *Downflow ULPA filter*
4. *Fluorescent light*
5. *Transparent side panel*
6. *Electrical outlet Retrofit Kit™ provisions (2 no's)*
7. *Stainless steel single-piece work surface*
8. *Second pre-filter*
9. *Activated carbon exhaust filter*
10. *Exhaust blower*
11. *Exhaust ULPA filter*
12. *Castor wheels*
13. *Sentinel microprocessor control*
14. *Minihelic™ pressure gauge*
15. *Hinged polycarbonate window*
16. *Steel side handle*
17. *Electrical / Electronics service panel*
18. *Exhaust airflow sensor*

Warranty

The Viva Dual Access Workstation is warranted for 3 years excluding consumable parts and accessories. Contact your local Sales Representative for specific warranty details.

Accessories and Options

Contact Esco or your Esco Sales Representative for details.

- Electrical outlet, ground fault
- Electrical outlet
- Plastic shield
- Foldable side tray

General Specifications	Model VDA-4A_ Dual Access Animal Containment Workstation	
External Dimensions (W x D x H)	1344 x 760 x 1918 mm (52.9" x 30.0" x 75.5") minimum height 1344 x 760 x 2220 mm (52.9" x 30.0" x 87.5") maximum height	
Internal Work Area (W x D x H)	1251 x 628 x 584 mm (49.3" x 24.7" x 23.0")	
Downflow Velocity	Initial setpoint: 0.30 meters/second (60 ft./min)	
Pre-Filter	Disposable, non-washable polyester fiber, 85% arrestance, EU3 rated	
ULPA Filter Typical Efficiency	>99.999% at 0.1 to 0.3 microns	
Sound Emission	Typically <60.5 dBA at initial blower speed setting (subject to acoustic properties of test environment)	
Fluorescent Lamps	> 1,100 Lux (> 102 foot-candles) measured at work surface level, zero background	
Construction, Main Body	1.2 mm (18 gauge) electrogalvanized steel with Isocide white oven-baked epoxy power coating	
Shipping Dimensions, Maximum (W x D x H)	1480 x 840 x 2100 mm (58.3" x 33.1" x 82.7")	
Shipping Weight	263 kg (580 lbs)	
Shipping Volume, Maximum	2.6 m^3 (92 cu.ft.)	
Electrical*	**Model**	**Voltage**
	VDA-4A1	220-240V, AC, 50Hz, 1Ph 4.5 amps
	VDA-4A2	110-130V, AC, 60Hz, 1Ph 9 amps
	VDA-4A3	220-240V, AC, 60Hz, 1Ph 4.5 amps
	VDA-4A5	100V, AC, 50/60Hz, 1Ph 9 amps

** Additional voltages available.*

	Air Quality	Filtration	Electrical Safety
Standards Compliance	ISO 14644.1, Class 4, Worldwide JIS B9920, Class 4, Japan JIS BS5295, Class 4, Japan US Fed Std 209E, Class 10 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

- *The Viva VDA Dual Access Workstation is easily accessible from two sides permitting multiple users to work at the same time.*
- *A large 350 mm (14") opening accommodates standard size animal cages.*
- *The transparent side panel (shown in the raised position) opens and stays to simplify loading or unloading of the work surface.*
- *The entire cabinet elevation can be adjusted by an integrated electric hydraulic lift with an up/down switch mounted on the control panel.*
- *The cabinet lowers to 1918 mm (75.5") for easy transport from lab to lab through a standard doorway. Cabinet shown in semi-elevated position to fit user preference.*

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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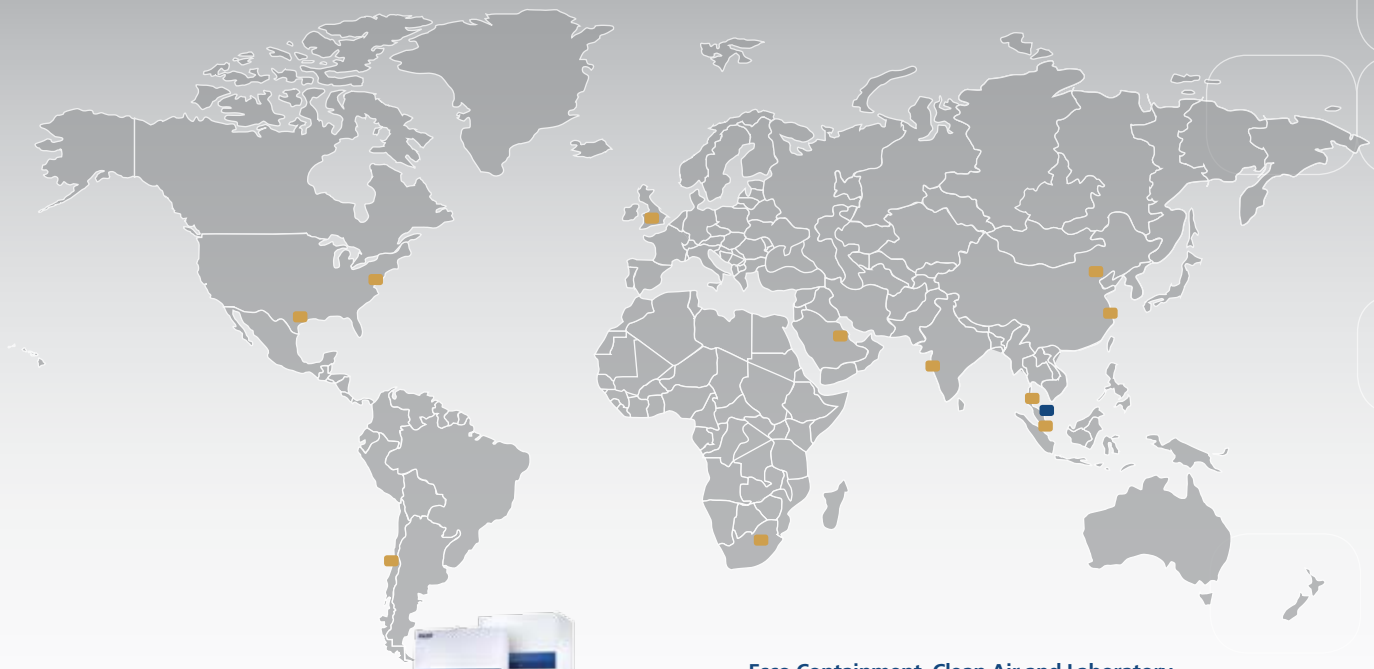

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Fume Hoods, Conventional, High Performance, Ductless Carbon Filtered
Laminar Flow Cabinets, Horizontal, Vertical, PCR
Animal Containment Workstations
Hospital Pharmacy Isolators, Cytotoxic Safety Cabinets
Specialty Workstations: *In-Vitro* Fertilization, 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 95 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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