ESCO
LIFESCIENCES

Cytoculture®

Cytotoxic Safety Cabinet

The Premium Solution for Cytotoxic Drug Processing



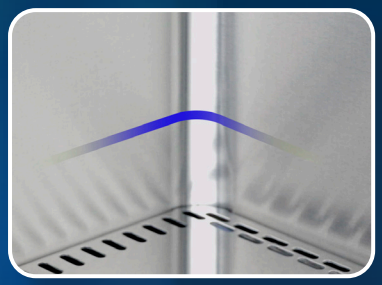


Standards Compliance	General Requirements	Air Quality	Filtration	Electrical Safety
	EN 12469, Europe	ISO 14644.1, Class 3, Worldwide IEST-G-CC1001, Worldwide IEST-G-CC1002, Worldwide	EN-1822 (H14), Europe IEST-RP-CC001.3, USA IEST-RP-CC007.1, USA IEST-RP-CC034.1, USA	UL-C-61010A-1, USA CSA C22.2, No.1010-92, Canada EN-61010-1, Europe IEC61010-1, International



Sentinel™ Silver Microprocessor Controller

- *Displays all safety information on one screen*
- *Centered and angled down for easy reach and viewing*



Curved Corner

- *Large corner radius for easy cleaning*
- *Stainless steel 304 interior walls (with available option for SS 316)*



Multi-piece Work Tray

- *Easy to lift and clean*
- *Stainless steel 304 work trays (with available option for SS 316)*
- *Customization to single-piece work tray is possible, please contact Esco*



Raised Arm Rest

- *Helps prevent grills blocking*
- *Comfortable working posture*



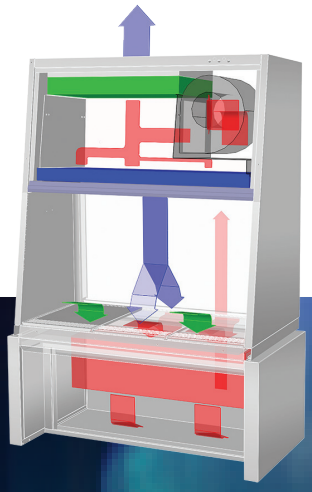
Available in 1.2 m and 1.8 m width (4' and 6' models)

Standard stand comes with casters and leveling feet

- *Casters for easier moving/transfer of cabinet*
- *Leveling feet allows height adjustment in cases of uneven floors*

Tri-filter System

- *Equipped with 1 supply downflow filter and 2 exhaust filters*
- *Dual long life ULPA filters (as per IEST-RP-CC001.3 or H14 as per EN 1822) for supply and exhaust filters*
- *V-bank design ULPA filter as per IEST-RP-CC001.3 or H14 filter as per EN 1822 for below work zone exhaust filter*





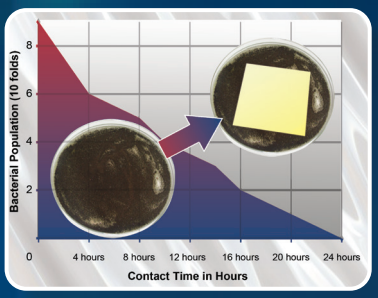
Airflow Sensor

- *Monitors real-time airflow for safety*
- *Alert the user if airflow is insufficient*
- *High-end Accusense sensor made by Degree C*



ISOCIDE™ Powder Coat

- *Silver-ion impregnated powder coat*
- *Inhibit microbial growth to improve safety*



Motorized Sash

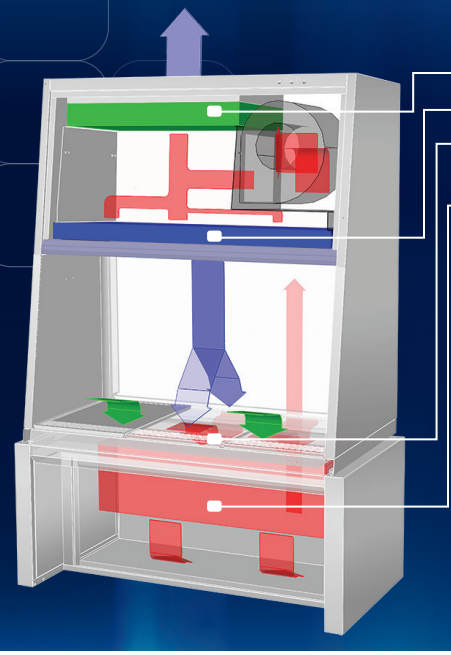
- *Easier closing and opening of sash, just by pressing the button help simplify use of the cabinet*



Exhaust HEPA filter

- *With additional V-bank HEPA filter below work zone*





Cytoculture® Cytotoxic Safety Cabinet Airflow

- Secondary exhaust filter
- Supply filter
- Dynamic air barrier, inflow and forward directed downflow air converge
- Primary exhaust filter

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

- Air enters the cabinet through perforations located along the front of the work zone before mixing with used downflow air in a common chamber below the work zone (this inflow air does not mix with the filtered downflow air in the cabinets main chamber). The mixed air then passes through the first stage exhaust fiter located beneath the work zone.
- The filtered air then passes through internal ducting in the back wall of the cabinet to a common air plenum where ~30% is exhausted through the second stage exhaust filter and ~70% is forced evenly through the supply filter. This sterilized air then passes through the main chamber as downflow air, flushing all contaminates from the work zone.
- At the work surface the downflow airstream splits and enters the common air chamber beneath the work zone through perforations located at the front and back of the main chamber, from where the cycle is repeated.

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 (LED lights and electrical outlet); and orange for caution (UV lamp ON).

Programmable automatic UV light timer simplifies operation, enhances contamination control, extends UV 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™ Silver Microprocessor Control System, Programmable

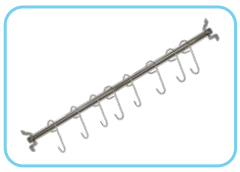
- *When programmed ON*
  - *the start-up sequence confirms status with Air Safe and local time display.*
  - *the Personal Identification Number (PIN) access restricts unauthorized adjustments.*
  - *an airflow alarm warns of deviations from normal velocities.*

Accessories for Cytoculture® Cytotoxic Safety Cabinets

Model		CYT-4A	CYT-6A
Exhaust Ducting	Anti-blowback Valve	ABBV-10P 5170352	
	Manual Volumetric Exhaust Damper	B2-Damper 5170104	
	Thimble Exhaust Collar (10 inches diameter)	ECO-LA24-Mk3-LH 5170099	ECO-LA26-Mk3-LH 5170102
Work Zone	UV Lamp	UV-30A 5170255	
	IV Bar	IV-1260 5170277	IV-1870 5170279
Electrical Outlet	Direct Mounted Electrical Outlet - Plug Code	EO-H	
Service Fixtures	EU SF - Gas - 40 mm	SF-1G40 5170002	
	EU SF - Vacuum - 40 mm	SF-1V40 5170003	
	EU SF - Nitrogen - 40 mm	SF-1N40 5170011	
	EU SF - Air - 40 mm	SF-1A40 5170006	
	EU SF - Water - 40 mm	SF-1W40 5170017	
	American Style Service Fixture - Universal - 40 mm	SF-2U40 5170018	
	Copper Piping for Service Fixture (Must be Factory Installed)	CU-Pipe 5170026	
Carbon Filter Options		CYT-001 5080008	CYT-002 5080009
Misc	Solenoid Valve Fitting	SL-Valve 5070086	
	IQ/OQ Protocol	9010179	
	Removable Granite Slab with SS304 Platform	5260310	


ABBV-10P


B2-DAMPER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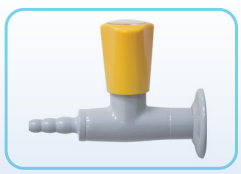
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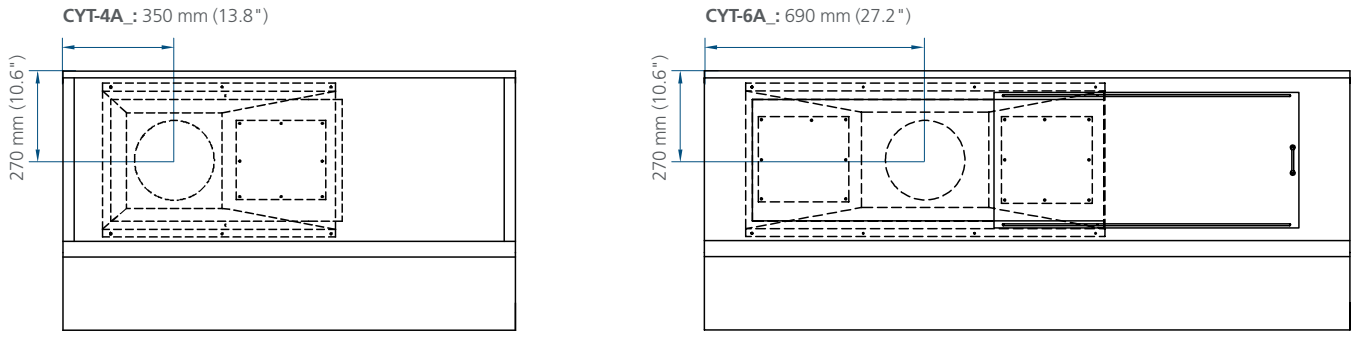
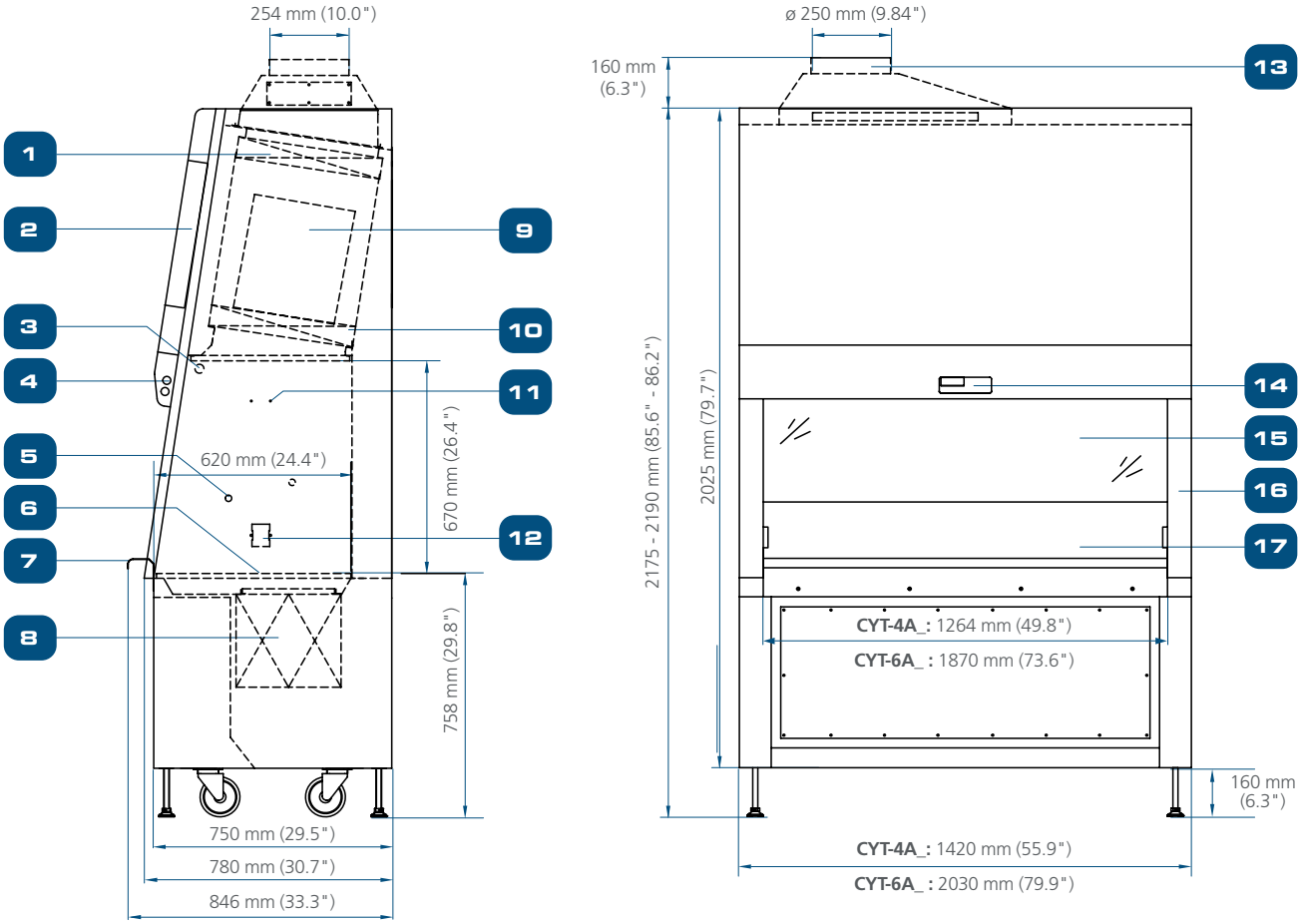
Note: For other customizations and accessories, please contact Esco.

Model CYT Cytotoxic Safety Cabinet
Engineering Drawing





1. *Exhaust filter*
2. *Electrical Panel*
3. *UV Lamp Retrofit Kit Provision*
4. *LED lamp*
5. *Service Fixture Retrofit Kit provision*
6. *Stainless steel multi-piece work tray*
7. *Stainless Steel Arm Rest*
8. *Exhaust V-bank filter*
9. *Blower*
10. *Downflow Filter*
11. *IV Bar Retorfit VKit Provision*
12. *Electrical Outlet Retrofit Kit Provision (two on each side)*
13. *Exhaust Collar (Optional)*
14. *Esco Sentinel™ Silver Microprocessor Controller*
15. *Motorized Sash Window*
16. *Removable Side Panel*
17. *Single-piece stainless steel back wall and side walls*

General Specifications, Cytotoxic Safety Cabinets

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

Cytoculture® Cytotoxic Safety Cabinet		CYT-4A_	CYT-6A_
Nominal Size		1.2 meters (4')	1.8 meters (6')
External Dimensions (W x D x H)		1420 x 846 x 2190 mm (55.9" x 33.3" x 86.2")	2030 x 846 x 2190 mm (79.9" x 33.3" x 86.2")
Internal Work Area Dimensions (W x D x H)		1264 x 620 x 670 mm (49.8" x 24.4" x 26.4")	1870 x 620 x 670 mm (73.6" x 24.4" x 26.4")
Usable Work Area		0.60 m^2 (6.4 sq.ft.)	0.90 m^2 (9.7 sq.ft.)
Tested Opening		203 mm (8.0")	203 mm (8.0")
Maximum Sash Opening		440 mm	440 mm
Average Airflow Velocity	Inflow	0.45 m/s (90 fpm)	
	Downflow	0.30 m/s (60 fpm	
Exhaust Volume with Ducting	Inflow	0.45 m/s (90 fpm)	
	Downflow	0.30 m/s (60 fpm	
	CBV Exhaust Volume	611 m^3 / h (360 cfm)	931 m^3 / h (548 cfm)
	Static Pressure at CBV Exhaust Volume	39 Pa / 0.15 in H_2O	63 Pa / 0.25 in H_2O
Filter Typical Efficiency	Downflow	>99.995% at 0.1 to 0.3 micron, ULPA as per IEST-RP-CC001.3 USA >99.995% at MPPS, H14 as per EN 1822 EU	
	Exhaust		
V-bank Filter Typical Efficiency	Exhaust	>99.995% at 0.1 to 0.3 micron, ULPA as per IEST-RP-CC001.3 USA >99.995% at MPPS, H14 as per EN 1822 EU	
Sound Emission per EN 12469*		61 dBA	63 dBA
LED Lamp Intensity at Zero ambient		>1300 Lux (>121 foot candles)	>1000 Lux (>93 foot candles)
Cabinet Construction	External	1.5 mm (0.06") 16 gauge electrogalvanized steel with Isocide white oven-baked epoxy powder-coating	
	Internal	Stainless steel Type 304 with No.4 finish, 1.5 mm (0.06") / 16 gauge thick	
Electrical**	**220-240V, AC, 50 Hz, 1Ø**	**CYT-4A1**	**CYT-6A1**
	Cabinet Full Load Amps (FLA)	8A	9A
	Optional Outlets FLA	5A	5A
	Cabinet Nominal Power	429W	568W
	Cabinet BTU	1464 BTU/hr	1938 BTU/hr
	110-120V,AC, 60 Hz, 1Ø	**CYT-4A2**	**CYT-6A2**
	Cabinet Full Load Amps (FLA)	11A	11.5A
	Optional Outlets FLA	5A	5A
	Cabinet Nominal Power	653W	793W
	Cabinet BTU	2228 BTU/hr	2706 BTU/hr
	220-240V, AC, 60 Hz, 1Ø	**CYT-4A3**	**CYT-6A3**
	Cabinet Full Load Amps (FLA)	9A	9.5A
	Optional Outlets FLA	5A	5A
	Cabinet Nominal Power	549W	778W
	Cabinet BTU	1873 BTU/hr	2655 BTU/hr
Net Weight		383 kg (844 lbs)	500 kg (1102 lbs)
Shipping Weight		415 kg (915 lbs)	578 kg (1274 lbs)
Shipping Dimensions, Maximum (W x D x H)		1560 x 930 x 2230 mm (61.4" x 36.6" x 87.8")	2170 x 930 x 2230 mm (85.4" x 36.6" x 87.8")
Shipping Volume, Maximum		3.26 m^3 (115 ft^3)	4.49 m^3 (158.6 ft^3)

** Noise as measured in open field / anechoic chamber.*
*** Additional voltages may be available; contact Esco for ordering information.*



After-Sales Services

Parts Availability
Whenever service is needed and parts are required, minimizing downtime is a critical objective. Statistical usage analysis helps Esco to predict parts life, permitting Esco to manage logistics and stage proper inventories around the world. The combination of predictive maintenance, historical data, and geospecific proximity assures our customers that parts and labor are available whenever service is scheduled through the local sales organization.

Registration, Documentation, and Instruction
Quality control at Esco extends from research and development through engineering, manufacturing, shipment, delivery, and customer feedback. Esco maintains an aggressive program to encourage warranty card registration by mail, email or online submission so that we know where Esco products are located and how they are being used. Rest assured that all information disclosed from warranty registrations will be kept confidential. All Esco products include unique serial numbers for identification. Documentation for all performance tests is archived and maintained for customer reference with all the backup procedures.

Online Technical Information
Site preparation instructions are useful before product arrival and installation. Installation and start-up manuals, operation manuals and quick reference guides are available anytime from the Esco resources online.

NSF International Accreditations and TÜV Nord Certification
The National Sanitation Foundation (NSF) International is an independent, non-profit organization that provides standards development, product certification, auditing, education, and risk management for public health and the environment.

The NSF mark is your assurance that the product complies with all the standard requirements, tested by one of the most respected independent certification organizations in existence today. NSF conducts periodic unannounced inspections and product testing to verify that the product continues to comply with the standard. It is valued by consumers, manufacturers, retailers, and regulatory agencies worldwide.

TÜV NORD GS certification has been helping to minimize risks and hence ensure maximum safety and quality. TÜV NORD's recognised certifications stand worldwide for an exemplary level of safety and make a valuable contribution to the continuing improvement of products and processes.

Esco has passed the stringent requirements during testing and inspection and has given the TÜV NORD approval mark that confirms compliance of the product with the provisions of the Product and Equipment Safety Act as regards health and safety.

In line with Esco's commitment in providing world-class services worldwide, Esco as a manufacturer feels the impact of providing the best after-sales service through our competent service engineers. Thus, Esco is the only manufacturer in the world with the most number of NSF accredited certifiers across the globe. In addition, Esco enhances the capacity to the highest quality of service by providing TÜV NORD GS certified service engineers with expertise to ensure timely preventive and corrective maintenance of the laboratory equipment. These accreditations make Esco not only an **E**xcellent **S**tandards **CO**mpany but also an **E**xcellent **S**ervice **CO**mpany, which exemplifies Esco's collective quest of being an **E**ternally **S**uccessful **CO**mpany.

References and Links
To know more about the services we offer, visit www.escolifesciences.com

Customized to Meet Your Specific Needs

Esco CYT cabinets can be configured to meet unique needs including:

- Lead shielding for nuclear medicine applications.
- An optional carbon filter impregnated with KI (potassium iodide) in place of the additional HEPA filter (this configuration does not protect service technicians when changing contaminated filters).

Comprehensive Performance Testing At Esco

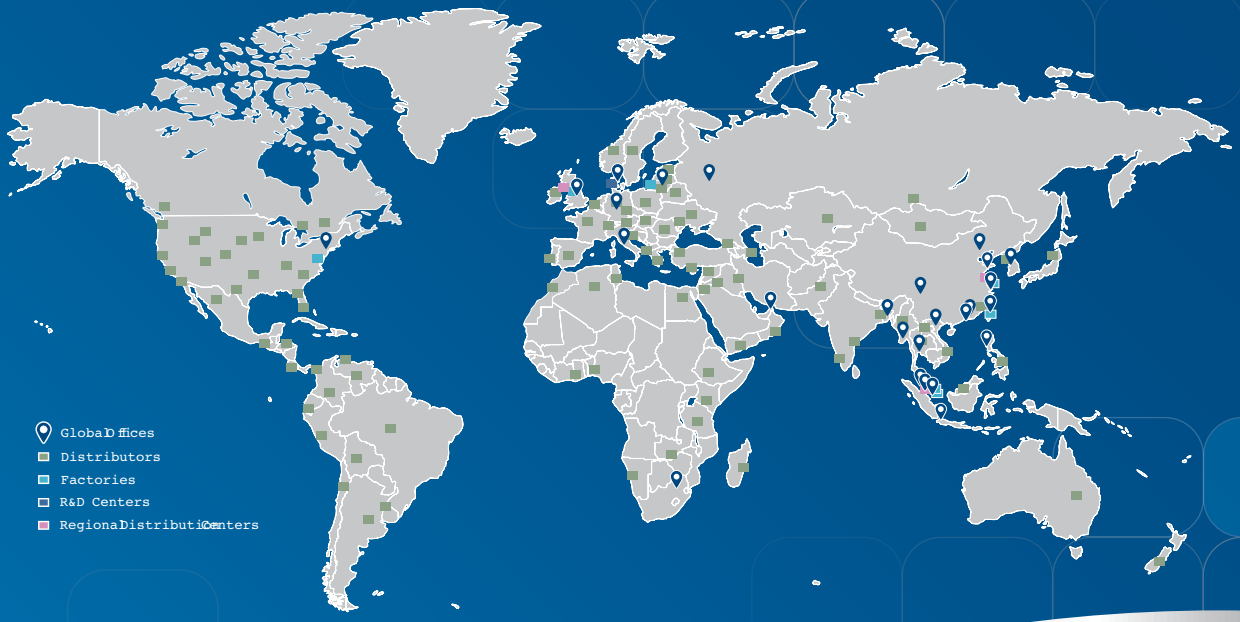




Every Cytoculture™ CYT model manufactured by Esco is individually tested, documented by serial number and validated with the following test methods.

- *Inflow / downflow velocity*
- *PAO aerosol challenge for filter integrity*
- *Airflow pattern visualization*
- *Electrical safety to IEC61010-1*
- *Additional KI-Discus containment and microbiological testing is performed on statistical sampling basis.*

ESCO LIFESCIENCES GROUP NETWORK
42 Locations in 24 Countries All Over the World





Air Shower
Aseptic Containment Isolator (ACTI)
Ceiling Laminar Airflow Units
Cleanroom Transfer Hatch
Containment Barrier Isolator (CBI)
Downflow Booth (DFB)
Dynamic Floor Laminar Hatch
Dynamic Pass Box
Evidence Drying Cabinet
Garment Storage Cabinet
General Processing Platform Isolator (GPPI)
Laminar Flow Horizontal Trolley
Laminar Flow Straddle Units, Single and Double
Laminar Flow Vertical Trolley
Pass Box
Soft Wall Cleanroom
Sputum Booth
Ventilated Balance Enclosure (VBE)
Weighing and Dispensing Containment Isolator (WDCI)

Since 1978, Esco has emerged as a leader in the development of controlled environment, laboratory and pharmaceutical 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.

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