



Labculture® G-Series, G4 (LA2-G G4)

Labculture® G-Series G4

Class II Biological Safety Cabinets

*The Most Advanced Biosafety Cabinet for
cGMP Pharma Compounding in Cleanroom*



LABCULTURE® G-SERIES (LA2-G G4) CLASS II BIOSAFETY



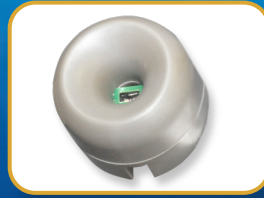
USB Port & RJ 45 Port

- Export logged data via USB drive
- Software Update via USB drive
- Wired data transaction to BMS via RJ 45



Zero Volt Relay Contact

- Signal cabinet operation status to remote monitoring stations
- Send signals to external exhaust blower



Airflow Sensor

- Monitors real-time airflow for safety
- Alert the user if airflow is insufficient



Centurion 7" Capacitive Touchscreen Controller

- Displays all safety information on one large screen
- Shows cabinet parameters with intuitive 3D illustration
- Easy to use menu, similar to Smart Phone Apps
- Large buttons, easy to operate when wearing gloves
- Self-guidance to users to deal with specific situations
- Centered and angled down for easy reach and viewing
- 21 CFR PART 11 as standard feature



Motorized Window

- Aerosol tight window seal
- Window automatically stops at safe operating height
- Conveniently move the window by fingertip
- Tiltable Sash for easy glass cleaning



User-friendly Work Tray

- Largest useable area in the market
- Sloped perimeter for easy cleaning
- Easy-to-lift tray
- V-shaped grill for strong air curtain
- Full Exterior SS304/SS316L Option Available
 - Optional ports for viable and non viable counting
 - Additional accessories of Particle Counter machine stand is available



Optional Viable and Non-Viable Sampling Ports



Raised Arm Rest

- Prevent grille blocking
- Comfortable working posture
- Durable stainless steel construction



Ergonomic Work Zone

- 10° angle to optimize user comfort, reduce glare, and maximize reach into the work area
- Brightly illuminated with >1000 lux
- Industry-leading dimmable LED for optimum work comfort
- Airtight seal port for cable/tube exit protected by a negative pressure side wall

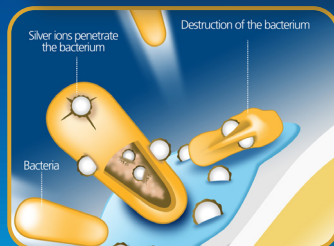
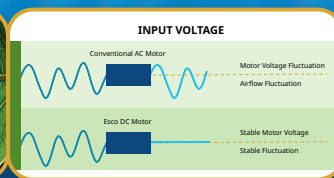


Esco Labculture® G-Series, Class II Biosafety Cabinet
Available in 1.2 m and 1.8 m

CABINET, FEATURING ADVANCED TOUCHSCREEN CONTROLLER

Dual Energy-efficient DC ECM Blower

- The leading energy efficient Class II Biosafety Cabinet in the world with 70% energy savings compared to AC motor
- Stable airflow despite building voltage fluctuations and filter loading
- Standby mode to further reduce power consumption by 80%



Advance Filtration System

- 10x Filtration efficiency of HEPA filter
- 10 times cleaner than other competitor in the market
- Less particle emission from the cabinet into the cleanroom

Dimmable LED

- Save energy and optimize work comfort

Airtight Window

- Aerosol-tight sash window seal for additional protection when the cabinet is in working mode and to assist decontamination when the window is fully closed.

Removable Paper Catch

- Prevent objects from being pulled into blower plenum
- Removable for easy cleaning
- Optional pre-filter can be fitted

User Modified Pass-Through / Cable Port

- 3" Port with 1/4" hole on rubber membrane inside
- Surrounded by negative pressure
- Allows cables and tubes to exit with fully closed sash

Removable Tray Support Beams

- Support work tray evenly for less vibration
- Tray props to easily clean the drain pan

ISOCIDE™ Powder Coat

- Silver-ion impregnated powder coat
- Inhibits microbial growth to improve safety
- Prevents the plenum from becoming biohazard landfill
- Optional full SS304 or 316L Exterior

Certification

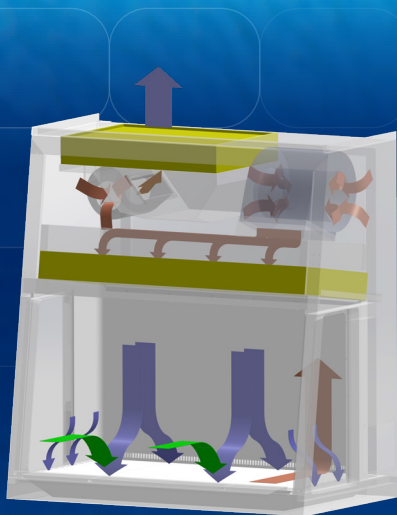
	Performance	Air Quality	Filtration	Electrical Safety	Electromagnetic Compatibility (EMC)
Standards Compliance	EN 12469 Certified ISO Class 4 ISO 14644-1: 2015, ISO 14644-14: 2016	ISO 14644.1, Class 3, Worldwide, US Fed Std 209E, Class 1 USA JIS B9920, Class 3, Japan	EN-1822 (H14), Europe IEST-RP-CC001, USA	EN-61010-1, Europe IEC61010-1, Worldwide	EN IEC 61326-1 Group 1 / Class A

Dynamic Chamber™

- Blower plenum and side walls are surrounded by negative pressure
- Prevent contaminants from escaping outside

■ Positive Pressure
■ Negative Pressure



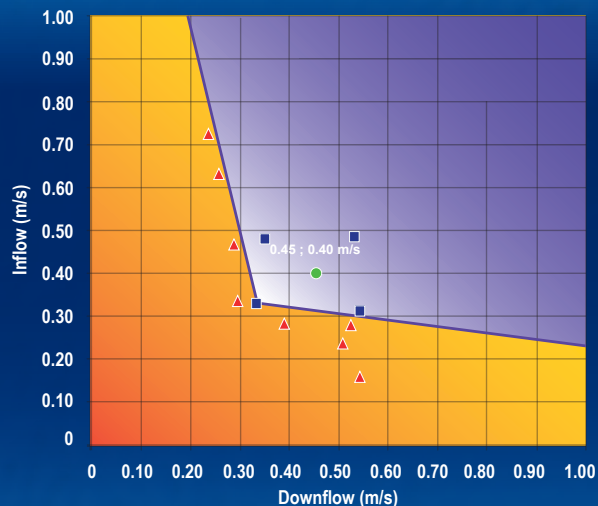


- H14-filtered air
- Unfiltered / potentially contaminated air
- Room air / Inflow air

Cabinet Filtration System

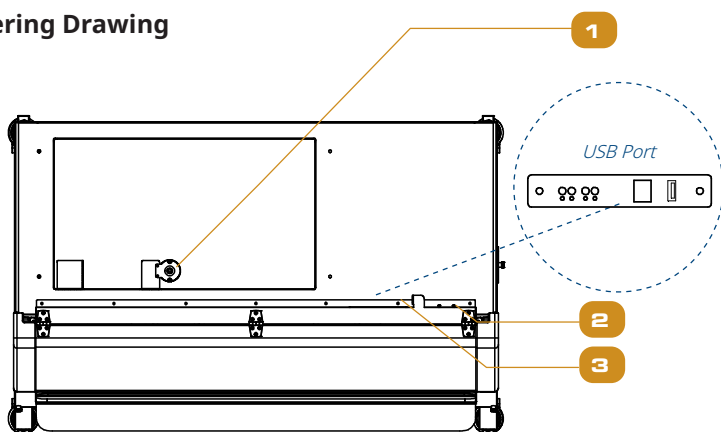
- Ambient air is pulled through front grille to create inflow, without going into the work surface. Inflow is joined by half of the downflow, to create front air curtain that is fine-tuned to create a large performance envelope. The combined air stream travels through the back air column towards the blower.
- Approximately $\frac{1}{3}$ of the air in the common plenum is exhausted through the ULPA filter to the room. The remaining $\frac{2}{3}$ of the air is passed through the downflow ULPA filter and into the work area as a vertical laminar flow air to create ISO Class 3 work surface and prevents cross contamination.
- Near the work surface, the downflow splits. About half goes to the front grille, and half goes to the rear grille. A small portion enters the the side capture zones to prevent dead air corners (small blue arrows).
- The design was optimized to give large performance envelope, that provides operator and product protection at wide Inflow and Downflow variation from the Nominal point.

Performance Envelope Test of LA2-G Gen4

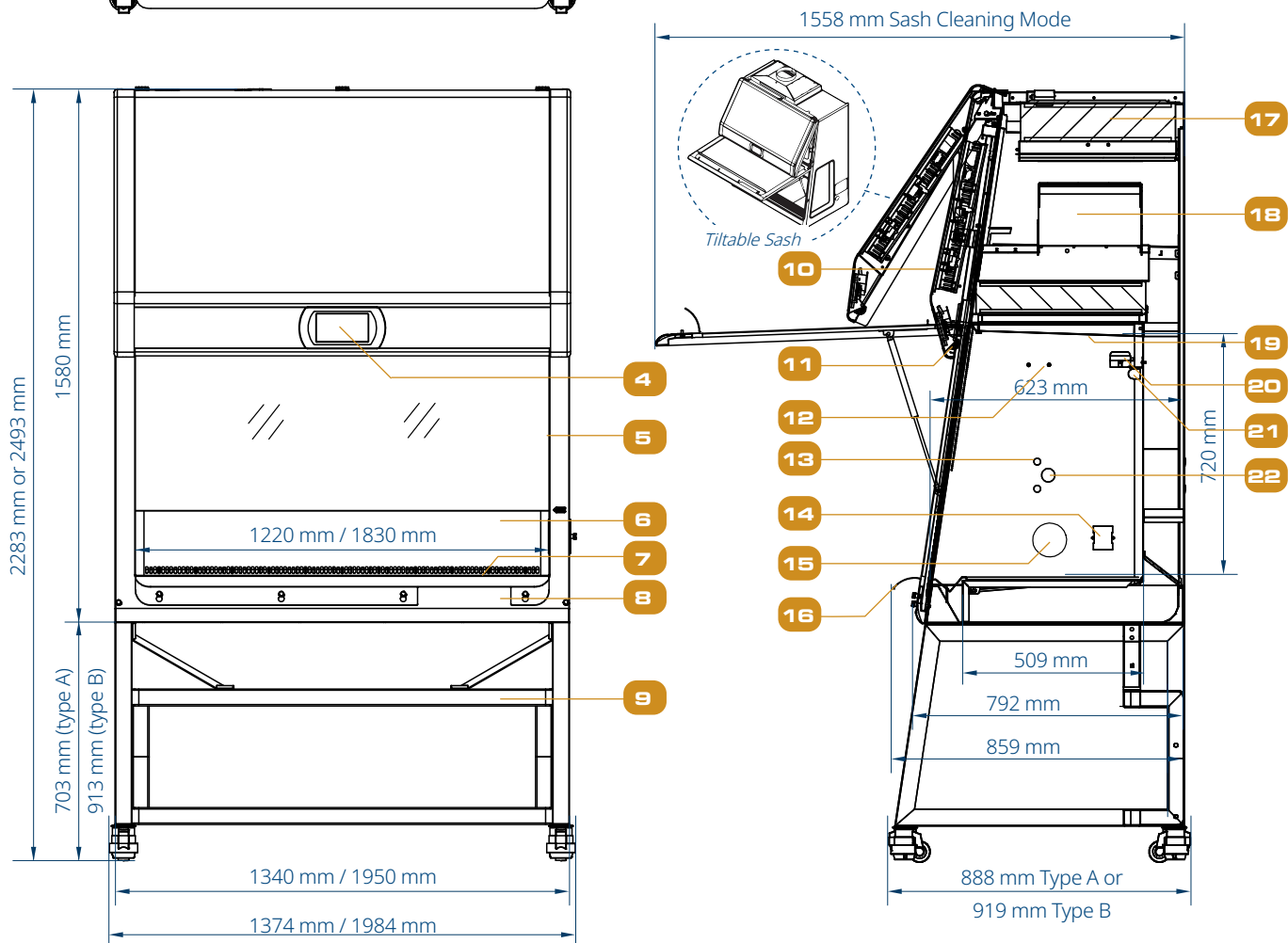


- Nominal Airflow
- Personnel / Product Protection
- ▲ No Personnel / Product Protection
- Area of Personnel / Product Protection
- Area of no Personnel / Product Protection

Engineering Drawing



1. Airflow Sensor
2. USB Port, RJ45, and Zero Volt Relay Contact (Blower & Alarm)
3. Power Inlet (1qty for 4 feet cabinet, 2qty for 6 feet cabinet)
4. Centurion™ Touchscreen Controller
5. Laminated Safety Glass Motorized Sash Window
6. Stainless Steel Back Wall
7. Stainless Steel Single Piece Tray
8. Data Plate
9. SPEU-4A/B0 Support Stand
10. Electrical Panel
11. Dimmable LED Lamp
12. Optional IV Bar
13. Optional Service Fixture (2 on each sides)
14. Electrical Outlet (left and right side)
15. Cable Port (right side only)
16. Stainless Steel Armrest
17. Exhaust Filter
18. Dual DC Blower
19. Stainless Steel 316 Perforated Diffuser
20. Downflow Sensor
21. Optional UV Lamp
22. Optional VHP Port In



TECHNICAL SPECIFICATIONS				
Esco Labculture® G-Series G4, Class II 220-240 V AC, 50/60 Hz	EG Powder coated external cabinet material	LA2-4G8 G4 (2011959)		LA2-6G8 G4 (2011961)
	SS304 external material	LA2-4G8-S4 G4 (2011707)		LA2-6G8-S4 G4 (2011709)
	SS316L external material	LA2-4G8-S6 G4 (2011708)		LA2-6G8-S6 G4 (2011710)
Nominal Size		1.2 meter		1.8 meter
External Dimensions (W x D x H)	Without Optional Base Stand	1340 x 859 x 1580 mm		1950 x 859 x 1580 mm
Internal Dimensions (W x D x H)		1220 x 623 x 720 mm		1830 x 623 x 720 mm
Usable Work Area		0.62 m²		0.93 m²
Sash opening		200 mm		
Maximum Sash Opening		470 mm		
Average Airflow Velocity	Inflow	0.40 m/s		
	Downflow	0.45 m/s		
Average Airflow Volume	Inflow	351 cmh	527 cmh	
	Downflow	1186 cmh	1779 cmh	
	Exhaust	351 cmh	527 cmh	
Advanced filtration system		*99.999% at 0.1 to 0.3 micron, ULPA as per IEST-RP-CC001.3 USA *99.999% at MPPS, H14 as per EN 1822 EU		
Sound Emission*		56 dBA	60 dBA	
Light Intensity	LED Lamp	>1000 Lux		
	UV Lamp wave length	253.7 nm		
Electrical Requirements**	Nominal Power Consumption	278 W	380 W	
	Heat Load	948 BTU/ Hr	1296 BTU/ Hr	
	Full Load Amps	10A		
Cabinet Construction	Main body	Electro-galvanized steel with white oven-baked epoxy-polyester Isocide™ antimicrobial powder-coated finish,1.5 mm 316 gauge thick		
		Optional stainless steel Type 304 with No.4 finish,1.5 mm / 16 gauge thick		
		Optional stainless steel Type 316L with No.4 finish,1.5 mm / 16 gauge thick		
	Work Zone	Stainless steel Type 316L with No.4 finish,1.5 mm / 16 gauge thick		
	Side Walls	Stainless steel Type 316L with No.4 finish,1.5 mm / 16 gauge thick		
	Sash Window	6mm thickness UV absorbing, laminated tempered glass		
Net Weight		330 kg	460 kg	
Shipping Weight		365 kg	489 kg	
Shipping Dimensions, Maximum (W x D x H)		1520 x 960 x 2120 mm	2200 x 960 x 2120 mm	
Shipping Volume Dimensions (W x D x H)		2.8 m³	4.0 m³	

Disclaimer: Technical Specifications may be subjected to further changes without prior notice.

*Noise reading in open field condition / anechoic chamber. Noise reading in normal room varies by room size, layout, and background noise, but may reach roughly 3-4 dBA above these values.

**Electrical power consumption is a measurement of new unit with clean filter operated within nominal setpoint. Result per unit may vary.

Options and Accessories

Anti-blowback Valve	EG Powder Coated	ABBV-10P 5170352			ABBV-10P 5170352		
	304 Stainless Steel	ABBV-10S 5170354			ABBV-10S 5170354		
Exhaust Collar		ECO-F-LA2EU-4FT G4 517187			ECO-F-LA2EU-6FT G4 517189		
Top Box with VHP Out		Top Box, LA2-4-EU G4 with VHP-Out 5171303			Top Box, LA2-6-EU G4 with VHP-Out 5171305		
Exhaust Collar with VHP Out Port		ECO-LA2-3-EU G4 with VHP-Out 5171312			ECO-LA2-3-EU G4 with VHP-Out 5171314		
VHP In Port		VHP-IN Port 5170552			VHP-IN Port 5170552		
Manual Volumetric Exhaust Damper		B2-Damper 5170104			B2-Damper 5170104		
UV Lamp		UV-30A-L 5170255			UV-30A-L 5170255		
IV Bar		IV-1215 5170231			IV-1825 5170501		
Prefilter		PF-42 5090062			PF-44 5090064		
Electrical Outlet	Direct Mounted	EO-HC 5170035					
Service Fixtures	EU SF-Gas-20 mm	SF-1G20 5170410					
	Solenoid Valve	SOLENOID VALVE FITTING FOR LA2-EU 5075239					
	EU SF-Vacuum-20 mm	SF-1V20 5170457					
	EU SF-Air-20 mm	SF-1A20 5170502					
	EU SF-Nitrogen-20 mm	SF-1N20 5170503					
	EU SF-Water-20 mm	SF-1W20 5170458					
	US SF-Universal-22 mm	SF-2U22 5170504					
	Copper Piping for SF	CU-Pipe 5170026					
Support Stand	SPEU Type A with 703 mm height	SPEU-4A0 5131344	SPEU-4A0-S4 5131614	SPEU-4A0-S6 5131615	SPEU-6A0 5131456	SPEU-6A0-S4 5131616	SPEU-6A0-S6 5131617
	SPEU Type B with 913 mm height	SPEU-4B0 5131458			SPEU-6B0 5131460		
	STL Type A 660-960 mm with 50 mm height increment	STL-4A0 G4 5131623			STL-6A0 G4 5131625		
Particle Count Machine Stand with usable area of 300 mm x 280 mm		MACHINE STAND EG (5171459)		MACHINE STAND SS304 (5022267)		MACHINE STAND SS316L (5022268)	
Arm Rest Padding		MEWREST 5170127					
Foot Rest		FT-REST 5170492					
Laboratory Chair		ME-LD-AR360 1150006					
IQ OQ Protocol		9010179					



UV Lamp



IV Bar



Various Electrical Outlet Types



SPEU Support Stand



SPEU SS Support Stand



STL Support Stand



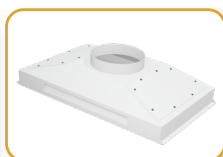
Various Service Fixture Types



Particle Count Probe Selection



Arm Rest Padding



Exhaust Collar



Foot Rest



Particle Counter Machine Stand

Improving Lives Through Science

**DIRECT
MANUFACTURER**



- Animal Research Workstation
- Biosafety Safety Cabinet
- CO₂ Incubator
- Ducted Fume Hood
- Filtered Storage Cabinet
- Laboratory Centrifuge
- Laboratory Oven and Incubator

- Laboratory Refrigerator and Freezer
- Laboratory Shaker
- Laminar Flow Cabinet
- PCR Cabinet
- PCR Thermal Cycler
- Powder Weighing Balance Enclosure
- Ultra-low Temperature Freezer

ESCO
LIFESCIENCES

- Airflow Containment
- Cross-Contamination Facility Integrated Barrier
- Isolation Containment
- Ventilation Containment
- Radiopharmacy

- Adherent Cell Bioreactors
- Adherent Automated Cell Harvesting System
- Cell Culture Monitoring Tools
- Single-use Consumables for Bioprocessing



ESCO
MEDICAL

- Time-Lapse Incubator
- Benchtop Incubator
- ART Workstation
- CO₂ Incubator
- Anti-Vibration Table
- Gas Analyser

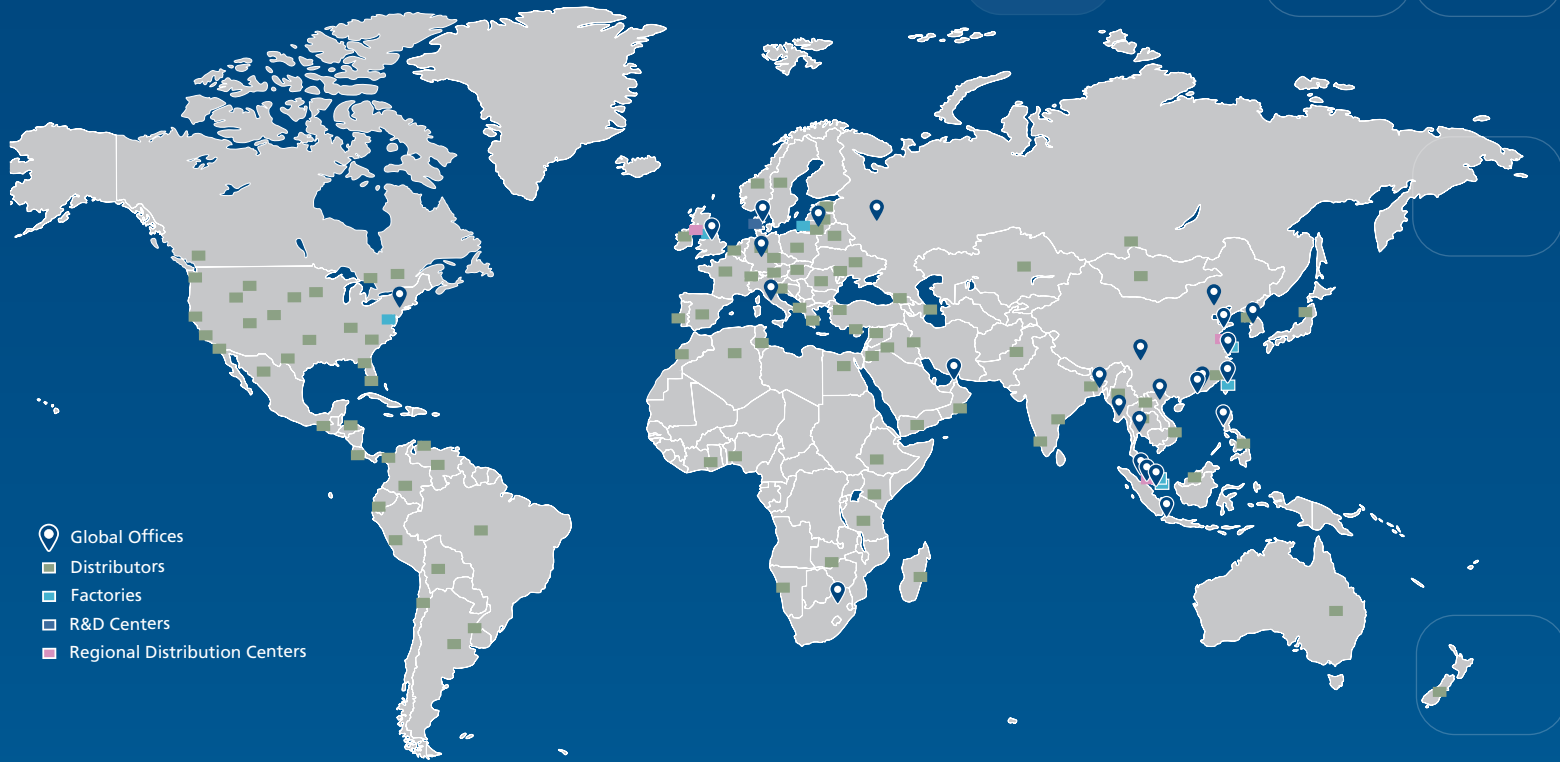
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LIFESCIENCES GROUP

Esco Micro Pte. Ltd. • 19 Changi South Street 1 • Singapore 486779
Tel +65 6542 0833 • mail@escolifesciences.com
www.escolifesciences.com

Esco Technologies, Inc. • 903 Sheehy Drive, Suite F, Horsham, PA 19044, USA
Tel: +1 215-441-9661 • eti.admin@escolifesciences.com

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