

**ESCO**  
LIFESCIENCES



# Labculture® G4

## Class II Type B2 Biological Safety Cabinets

*The Most Advanced, Energy-efficient, Safe,  
and Ergonomic Biosafety Cabinet in the World*



# LABCULTURE® G4 (LB2 G4) CLASS II TYPE B2 CABINET,



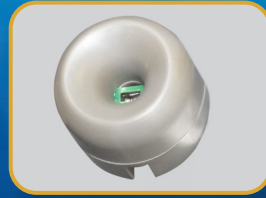
## USB Port

- Export Data Logging
- Software Update
- Wired data transaction to BMS



## Zero Volt Relay Contact

- Free Relay Contact
- Exhaust Free Relay Contact



## Airflow Sensor

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



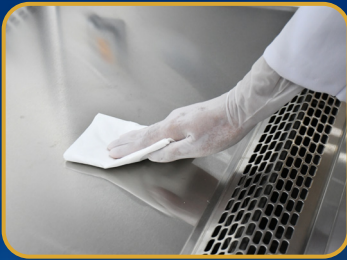
## Centurion 7" Capacitive Touchscreen Controller

- 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
- Optional: 21 CFR Part 11 Compliance



## Single Piece Wall

- Easy to reach service fixtures and electrical outlets on sidewalls
- Large radius corners for easy cleaning



## User-friendly Work Tray

- Largest useable area in the market
- Recessed to contain spillage
- Sloped perimeter for easy cleaning
- Large, easy to clean tray handle



## 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 >1200 lux (111 ft. cd)
- Industry-leading dimmable LED for optimum work comfort
- Airtight seal port for cable/tube exit protected by a negative pressure side wall

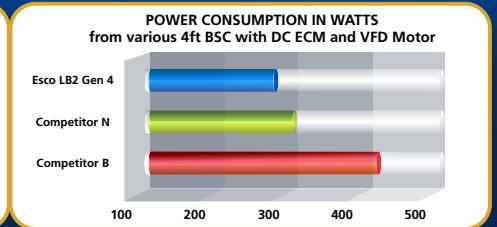
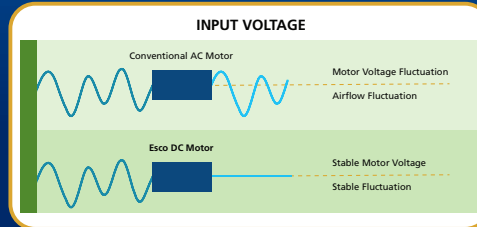


Esco Labculture® G4 Class II Type B2 Biosafety Cabinet  
Available in 3 feet, 4 feet, 5 feet, and 6 feet models.

# FEATURING ADVANCED TOUCHSCREEN CONTROLLER

## Energy-efficient DC ECM Blower

- The leading energy efficient Class II Type B2 Biosafety Cabinet in the world with 70% energy savings compared to AC motor
- Stable airflow despite building voltage fluctuations and filter loading



## Advance Filtration System

- 10x Filtration efficiency of HEPA filter
- Creates ISO Class 3 work zone instead of industry-standard ISO Class 5
- Same 10 years filter life and replacement cost as HEPA filters
- LB2 G4 available in Bag-In Bag-Out System (BIBO) - integrated models

Note:

- 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

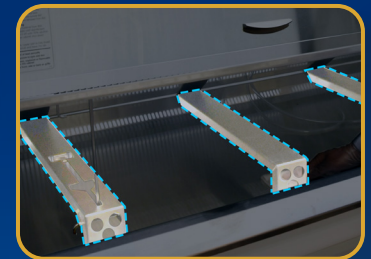


## Dimmable LED

- Save energy and optimize work comfort

## 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

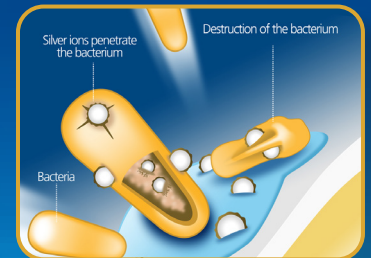


## Tray Support Beams

- Support work tray evenly for less vibration
- Cleaning holder to easily wipe the drain pan

## ISOCIDE™ Powder Coat

- Silver-ion impregnated powder coat
- Inhibits microbial growth to improve safety
- Prevents the plenum from becoming biohazard landfill



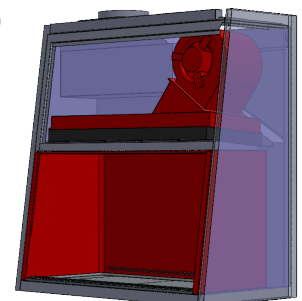
## Certification

	Performance	Air Quality	Filtration	Electrical Safety
<b>Standards Compliance</b>	NSF / ANSI 49, USA EN 12469	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	UL 61010-1 3rd Ed, USA CSA22.2, No.1010-192, Canada

## Dynamic Chamber™

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

- Positive Pressure
- Negative Pressure

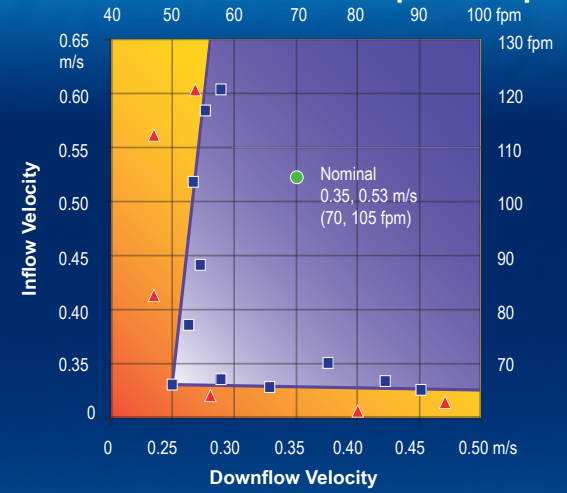


Note : All are NSF/ANSI 49 certified, except LB2-3ft G4 and LB2-5ft G4 including the corresponding 8/9 for power rating

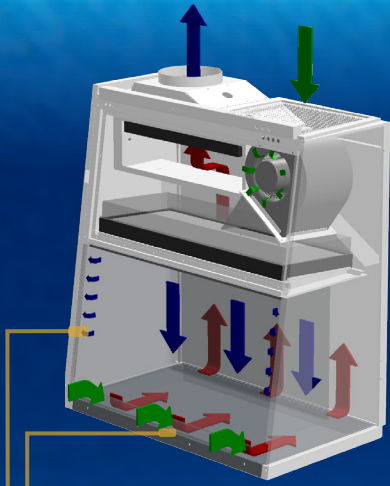
## Cabinet Filtration System

- Ambient air is pulled through the front grille to prevent contamination of the work surface and work product. The inflow does not mix with the clean air within the cabinet work zone.
- Ambient air is taken in through a pre-filter at the top of the cabinet, and passes through the downflow ULPA filter, entering the work zone as laminar flow. The uniform, non-turbulent air stream protects against cross contamination within and throughout the work area.
- Near the work surface, the 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 ULPA filtered downflow enters the intake perforations at the side capture zones at a higher velocity (small blue arrows).
- A combination of inflow and downflow air streams forms an air barrier that prevents contaminated room air from entering the work zone, and prevents work surface emissions from escaping the work zone. The downflow combined with the inflow air enters the common air plenum.
- All air in the common plenum is HEPA-filtered and exhausted via a dedicated ducting system to the external environment.
- Fail-safe system ensures that in case of exhaust failure, the cabinet's main fan automatically shuts down to ensure safety to the user

## The Performance Envelope Concept



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



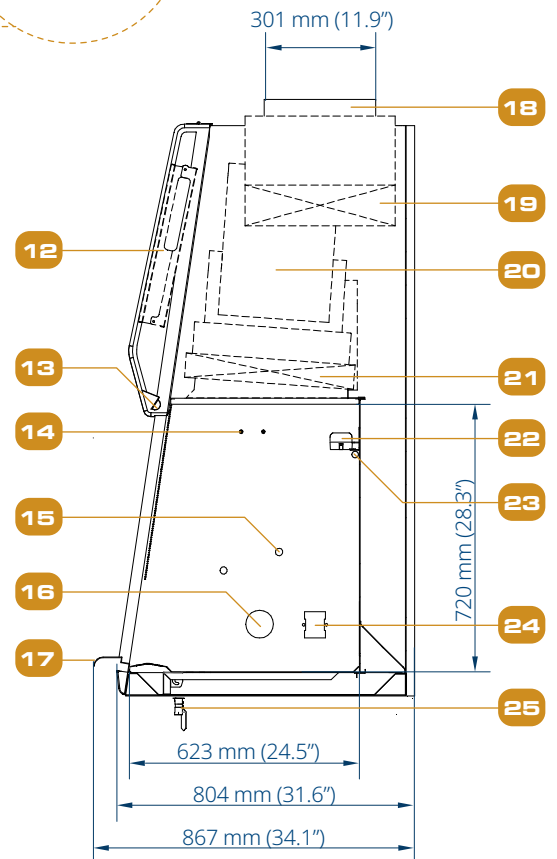
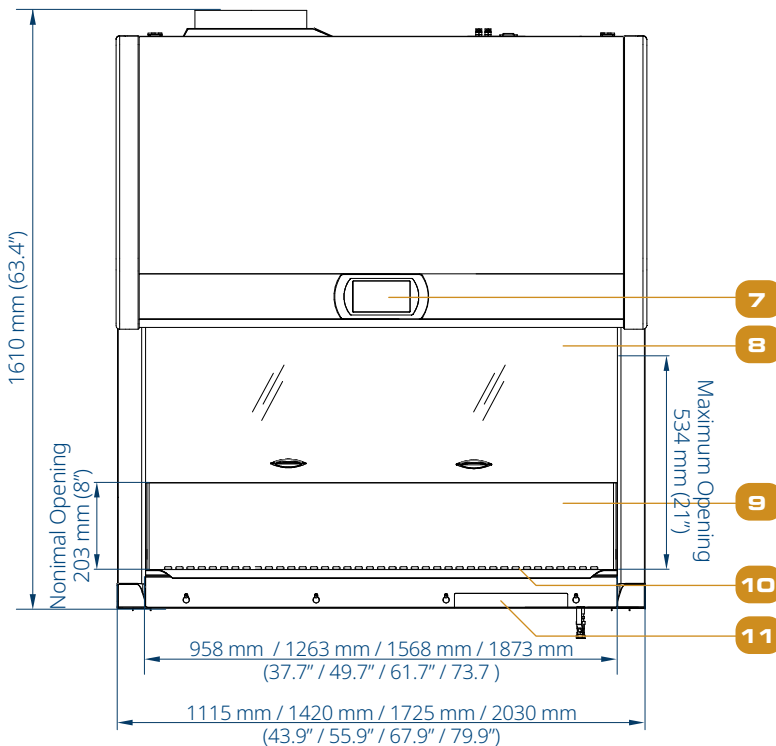
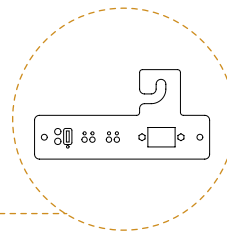
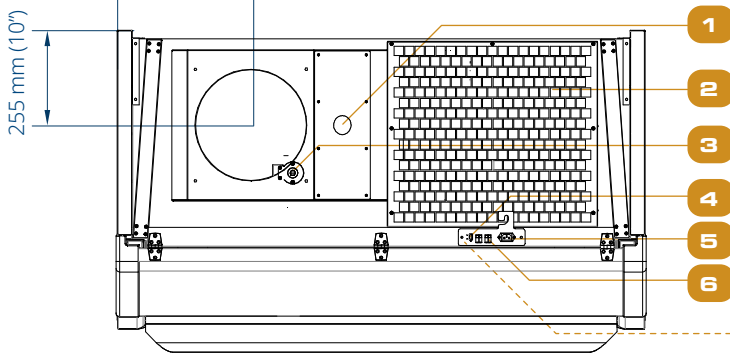
Dynamic air barrier, where inflow and downflow converge

Side capture zones

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

## Engineering Drawing

314 mm / 360 mm / 579 mm / 797 mm  
(12.4" / 14.2" / 22.8" / 31.4")



- VHP Out Provision (optional)
- Pre-filter
- Exhaust Airflow Sensor
- USB Port
- Power Inlet (single)
- Zero Voltage Relay Contact
- Centurion 7" Touch Screen Controller

- Sash Glass
- Single-piece Stainless Steel Backwall
- Stainless Steel Work Tray
- Data Plate
- Electrical Panel
- Dimmable LED Lamp
- IV Bar Retrofit Kit Provision

- Service Fixture Retrofit Kit Provision
- Cable Port
- Stainless Steel Armrest
- Exhaust Collar
- Exhaust Filter
- DC ECM Blower
- Downflow Filter

- Downflow Sensor
- UV Lamp Provision
- Electrical Outlet
- Drain Valve (optional)

## Class II Type B2 Biological Safety Cabinets (203 mm / 8" Opening)

TECHNICAL SPECIFICATIONS						
Labculture® Class II Type B2	Stainless Steel Side Walls	220-240 VAC, 50/60 Hz	LB2-3B8 G4 2011364	LB2-4B8 G4 2011365	LB2-5B8 G4 2011366	LB2-6B8 G4 2011367
		110-130 VAC, 50/60 Hz	LB2-3B9 G4 2011360	LB2-4B9 G4 2011361	LB2-5B9 G4 2011362	LB2-6B9 G4 2011363
Labculture® Class II Type B2 with BIBO		220-240 VAC, 50/60 Hz	LB2-3B8-BIBO G4 2011377	LB2-4B8-BIBO G4 2011378	LB2-5B8-BIBO G4 2011379	LB2-6B8-BIBO G4 2011380
		110-130 VAC, 50/60 Hz	LB2-3B9-BIBO G4 2011373	LB2-4B9-BIBO G4 2011374	LB2-5B9-BIBO G4 2011375	LB2-6B9-BIBO G4 2011376
Nominal Size		0.9 meter (3')	1.2 meter (4')	1.5 meter (5')	1.8 meter (6')	
External Dimensions (W x D x H)	Without Optional Base Stand		1115 x 867 x 1610 mm (43.9" x 34.1" x 63.3")	1420 x 867 x 1610 mm (55.9" x 34.1" x 63.3")	1725 x 867 x 1610 mm (67.9" x 34.1" x 63.3")	2030 x 867 x 1610 mm (79.9" x 34.1" x 63.3")
Internal Dimensions (W x D x H)		958 x 623 x 720 mm (37.7" x 24.5" x 28.3")	1263 x 623 x 720 mm (49.7" x 24.5" x 28.3")	1568 x 623 x 720 mm (61.7" x 24.5" x 28.3")	1873 x 623 x 720 mm (73.7" x 24.5" x 28.3")	
Usable Work Area		0.45 m <sup>2</sup> (4.8 sq.ft.)	0.60 m <sup>2</sup> (6.5 sq.ft.)	0.75 m <sup>2</sup> (8.1 sq.ft.)	0.90 m <sup>2</sup> (9.7 sq.ft.)	
Sash Opening		203 mm (8")				
Maximum Sash Opening		534 mm (21")				
Average Airflow Velocity	Inflow	0.53 m/s (105 fpm)				
	Downflow	0.31 m/s (60 fpm)				
Airflow Volume	Inflow	376 m <sup>3</sup> /h (223 cfm)	493 m <sup>3</sup> /h (292 cfm)	608 m <sup>3</sup> /h (361 cfm)	724 m <sup>3</sup> /h (429 cfm)	
	Downflow	628 m <sup>3</sup> /h (363 cfm)	822 m <sup>3</sup> /h (476 cfm)	1016 m <sup>3</sup> /h (588 cfm)	1210 m <sup>3</sup> /h (700 cfm)	
	CBV Exhaust Air Volume*	1111 m <sup>3</sup> /h (662 cfm)	1455 m <sup>3</sup> /h (867 cfm)	1798 m <sup>3</sup> /h (1072 cfm)	2142 m <sup>3</sup> /h (1277 cfm)	
	Minimum Exhaust Static Pressure	350 Pa / 1.4 in H <sub>2</sub> O	325 Pa / 1.3 in H <sub>2</sub> O	285 Pa / 1.2 in H <sub>2</sub> O	325 Pa / 1.3 in H <sub>2</sub> O	
	CBV Exhaust Static Pressure*	523 Pa / 2.1 in H <sub>2</sub> O	498 Pa / 2.0 in H <sub>2</sub> O	473 Pa / 1.9 in H <sub>2</sub> O	498 Pa / 2.0 in H <sub>2</sub> O	
Supply ULPA Filter Typical Efficiency		≥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				
Exhaust HEPA Filter Typical Efficiency		≥99.95% at 0.1 to 0.3 micron, HEPA as per IEST-RP-CC001.3 USA ≥99.95% at MPPS, H13 as per EN 1822 EU				
Sound Emission**	NSF / ANSI 49	57 dBA	58 dBA	59 dBA	60 dBA	
	EN 12469	54 dBA	55 dBA	56 dBA	57 dBA	
Light Intensity	LED Lamp	≥1200 Lux (≥111 foot-candles)				
	Optional UV Lamp	253.7 nm				
Electrical Requirements*** (230 VAC, 50-60Hz)	Nominal Power Consumption	128 W	174 W	207 W	230 W	
	Heat Load	436 BTU/Hr	593 BTU/Hr	707 BTU/Hr	785 BTU/Hr	
	Full Load Amps	9.5 A	10 A	10.5 A	11 A	
Electrical Requirements*** (115 VAC, 50-60Hz)	Nominal Power Consumption	160 W	167 W	202 W	225 W	
	Heat Load	546 BTU/Hr	570 BTU/Hr	690 BTU/Hr	768 BTU/Hr	
	Full Load Amps	13 A	13.1 A	13.2 A	13.3 A	
Cabinet Construction	Main Body	Electro-galvanized steel with white oven-baked epoxy-polyester Isocide™ antimicrobial powder-coated finish, 1.5 mm (0.06") / 16 gauge thick				
	Work Zone	Stainless steel Type 304 with No.4 finish, 1.5 mm (0.06") / 16 gauge thick				
	Sash Window	6 mm UV-absorbing Tempered Glass				
Net Weight		279 Kg (615 lbs)	317 Kg (699 lbs)	359 Kg (791 lbs)	438 Kg (966 lbs)	
Shipping Weight		318 Kg (701 lbs)	370 Kg (816 lbs)	402 Kg (884 lbs)	491 kg (1082 lbs)	
Shipping Dimensions, Maximum (W x D x H)		1210 x 950 x 1950 mm (47.6" x 37.4" x 76.8")	1520 x 950 x 1950 mm (59.8" x 37.4" x 76.8")	1900 x 950 x 1950 mm (74.8" x 37.4" x 76.8")	2150 x 950 x 1950 mm (84.7" x 37.4" x 76.8")	
Shipping Volume Dimensions (W x D x H)		2.24 m <sup>3</sup> (79.1 cu.ft.)	2.82 m <sup>3</sup> (99.6 cu.ft.)	3.52 m <sup>3</sup> (124.3 cu.ft.)	3.98 m <sup>3</sup> (140.6 cu.ft.)	

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

\*This Concurrent Balance Value (CBV) Exhaust Volume (per Pitot Duct Traverse) and Static Pressure at cabinet exhaust connection should be used when sizing the HVAC exhaust and supply.

\*\*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

<b>Anti-blowback Valve 10 inches</b>	EG Powder-Coated	ANTI-BLOW BACK VALVE 12" ABBV-12P (5170353)			
	304 Stainless Steel	ANTI-BLOW BACK VALVE 12" ABBV-12S (5170355)			
<b>Inlet Collar LB2-A</b>		ICO-LB23 5170320	ICO-LB24 5170263	ICO-LB25 5170316	ICO-LB26 5170322
<b>Prefilter, 565 x 500mm</b>		PF-2 (5090001)			
<b>UV Lamp</b>		UV-15A-L (5170251)	UV-30A-L (5170255)		
<b>IV Bar</b>		IV-955 (5170276)	IV-1260 (5170277)	IV-1565 (5170278)	IV-1870 (5170279)
<b>Electrical Outlet</b>	Direct Mounted	EO- _			
	GFCI	EO-GFCI 5170071			
<b>Service Fixtures</b>	EU SF-Gas-40 mm	SF-1G40 (5170002)			
	EU SF-Vacuum-40 mm	SF-1V40 (5170003)			
	EU SF-Air-40 mm	SF-1A40 (5170006)			
	EU SF-Nitrogen-40 mm	SF-1N40 (5170011)			
	EU SF-Water-40 mm	SF-1W40 (5170017)			
	SF-Nitrogen/Gas/Vacuum-40 mm	SF-2U40 (5170018)			
	Copper Piping for SF	CU-Pipe (5170026)			
<b>Support Stand</b> (705 to 915 mm with 50 mm increment / 28.0" to 36.0" with 2" increment, combination of caster wheels and leveling feet with lock)		STA-3A0 5131340	STA-4A0 5131341	STA-5A0 5131427	STA-6A0 5131389
<b>VHP-OUT PORT KIT WITH COVER</b>		5171398	5171397		
<b>Top Decon Cover W/VHP</b>		ALL SIZE LB2 G4 (5171399)			
<b>Front Decon cover with VHP IN PORT</b>		5171341	5171342	5171343	5171344
<b>Drain Valve</b>		5142493			
<b>Anti Blowback Valve (EG Powder Coated)</b>		ABBV-12P (5170353)			
<b>Manual Volumetric Exhaust Damper 12"</b>		Damper 12" (5170105)			
<b>Stainless Steel Pipette Storage Shelf</b>		5260327			
<b>Arm Rest Padding</b>		MEWREST (5170127)			
<b>Foot Rest</b>		FT-REST (5170073)			
<b>Laboratory Chair</b>		ME-LD-AR360 (1150006)			
<b>IQQQ Protocol</b>		9010179			



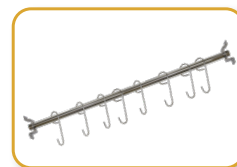
ABBV\_



PF-2\_



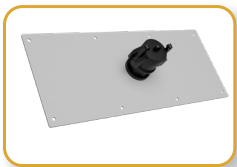
UV- A-L



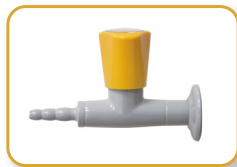
IV\_



EO-H\_



VHP OUT



SF-1\_



SF-2U\_



STA\_



SS Pipette Storage Shelf



MEWREST



FT-REST



ME-LD-AR360



IQQQ



**DIRECT MANUFACTURER**

## Improving Lives Through Science



- Animal Research Workstation
- Biosafety Safety Cabinet
- CO<sub>2</sub> Incubator
- Ducted Fume Hood
- Ductless 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
- CO<sub>2</sub> Incubator
- Anti-Vibration Table
- Gas Analyser
- Centrifuges

### ESCO ASTER

# ESCO LIFESCIENCES GROUP

42 LOCATIONS IN 21 COUNTRIES ALL OVER THE WORLD



Follow us on social media, download our apps,  
and scan the QR code for more info.



@Escolifesciences



@Escolifesciences



@Escolifesci



@Esco



@Escolifesciences



@Escolifesciences



Esco Lifesciences



Esco Lifesciences

# ESCO

LIFESCIENCES GROUP

Esco Micro Pte. Ltd. • 19 Changi South Street 1 • Singapore 486777  
Tel +65 6542 0833 • Fax +65 6542 6920 • mail@escolifesciences.com  
www.escolifesciences.com

Esco Technologies, Inc. • 903 Sheehy Drive, Suite F, Horsham, PA 19044, USA  
Tel: +1 215-441-9661 • Fax 484-698-7757  
eti.admin@escolifesciences.com

Esco Lifesciences Group Offices: Bangladesh | China | Denmark | Germany | Hong Kong | India | Indonesia | Italy | Japan | Lithuania  
| Malaysia | Myanmar | Philippines | Russia | Singapore | South Africa | South Korea | Taiwan | Thailand | UAE | UK | USA | Vietnam

9010633\_LB2 Labculture Gen 4 BSC Brochure\_A4\_vB\_062226

Esco can accept no responsibility for possible errors in catalogues, brochures and other printed materials. Esco reserves the right to alter its products and specifications without notice. All trademarks and logotypes in this material are the property of Esco and the respective companies.

