ESCO
LIFESCIENCES GROUP

Labculture® G4

Class II Type A2 Biological Safety Cabinets

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

LABCULTURE® G4 (LA2 G4) CLASS II TYPE A2 BIOSAFETY CABI

USB Port and Zero Volt Relay Contact

- *USB Port to send operational information to Building Management System (BMS)*
- *Zero Volt Relay Contact to turn ON/OFF exhaust blower and signal the building alarm*

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*

Esco Labculture® G4 Class II Type A2 Biosafety Cabinet
Available in 3 feet, 4 feet, 5 feet, and 6 feet models.

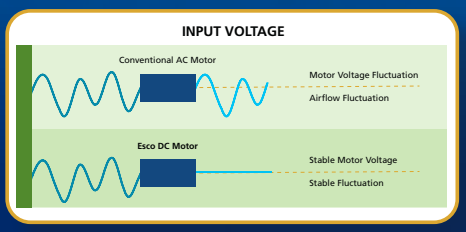
Ergonomic Work Zone

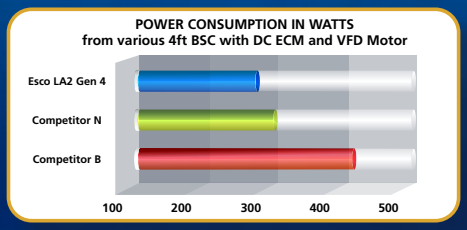
- *10° angle to optimize user comfort, reduce glare, and maximize reach into the work area*
- *Brightly illuminated with >1200 lux (111 ft. cd)*
- *Industry-leading dimmable LED for optimum work comfort*
- *Airtight seal port for cable/tube exit protected by a negative pressure side wall*

NET, FEATURING ADVANCED TOUCHSCREEN CONTROLLER

Energy-efficient DC ECM Blower

- *The leading energy-efficient Class II Type A2 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%*





Advanced ULPA 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*

Dimmable LED Lamp

- *Save energy and optimize work comfort*

Removable Paper Catch

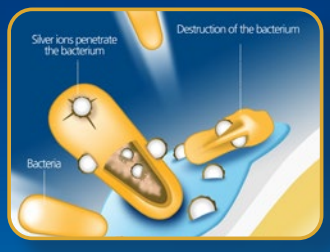
- *Prevent objects from being pulled into blower plenum*
- *Removable for easy cleaning*
- *Optional pre-filter can be fitted*

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*

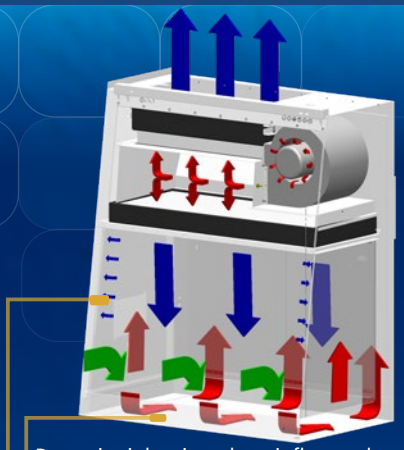


Certification				
	Performance	Air Quality	Filtration	Electrical Safety
Standards Compliance	NSF / ANSI 49, USA	ISO 14644.1, Class 3, Worldwide JIS B9920, Class 3, Japan JIS BS5295, Class 3, Japan US Fed Std 209E, Class 1 USA	EN-1822 (H14), Europe IEST-RP-CC001.3, USA IEST-RP-CC007, USA IEST-RP-CC034.1, USA	UL 61010-1 3rd Ed, USA CSA22.2, No.1010-192, Canada EN-61010-1, Europe IEC61010-1, Worldwide

Dynamic Chamber™

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

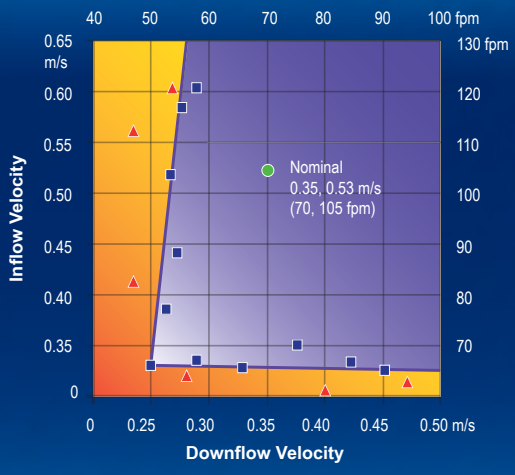
Positive Pressure
Negative Pressure



Cabinet Filtration System

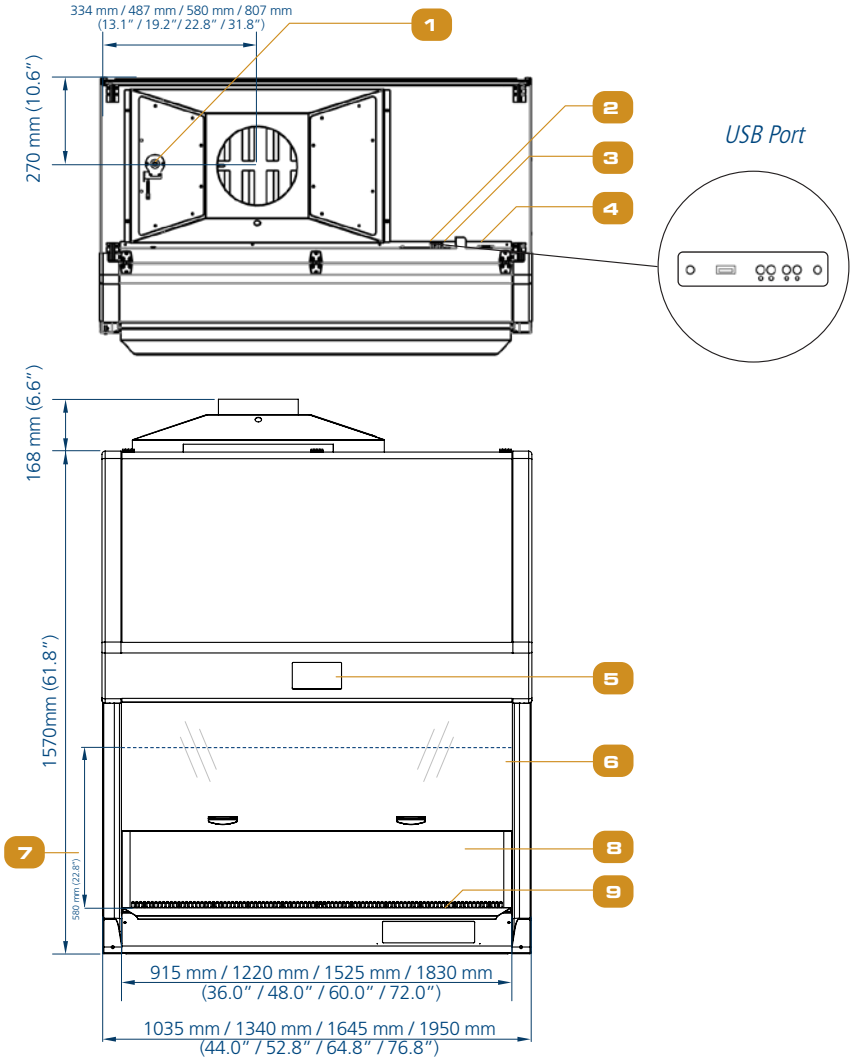
- Ambient air is pulled through front grille to create inflow, without going into the work surface. Inflow is joined by half of the downflow, to create front air curtain that is fine-tuned to create a large performance envelope. The combined air stream travels through the back air column towards the blower.
- Approximately ⅓ of the air in the common plenum is exhausted through the ULPA filter to the room. The remaining ⅔ 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.

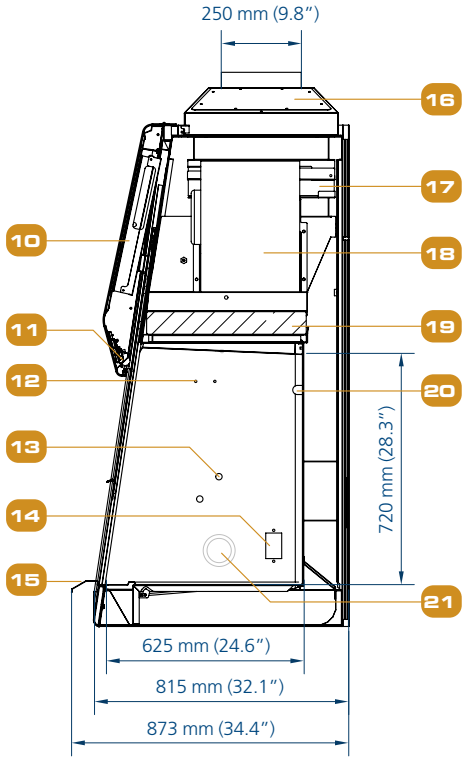
The Performance Envelope Concept



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

Engineering Drawing





1. Exhaust sensor
2. USB Port
3. Zero Volt Relay Contact
4. Power Inlet
5. Centurion Touchscreen Controller
6. 10° Angled Sash Window
7. Max. Sash Opening
8. Single-piece Stainless Steel Back Wall
9. Single-piece Stainless Steel Work Tray
10. Electrical Panel
11. LED Lamp
12. IV Bar Retrofit Kit Provision
13. Service Fixture Retrofit Kit Provision
14. Duplex GFCI Outlet (LIR), Max 5 Amp total
15. Stainless Steel Arm Rest
16. Exhaust Collar (optional)
17. Exhaust Filter
18. DC ECM Blower
19. Downflow Filter
20. UV Lamp Provision
21. Cable Port

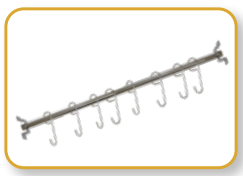
Options and Accessories

Anti-blowback Valve 10 inches	EG Powder Coated	ABBV-10P 5170352			
	304 Stainless Steel	ABBV-10S 5170354			
Exhaust Collar		ECO-F-LA2/AC2-3 G4 5171097	ECO-F-LA2/AC2-4 G4 5171098	ECO-F-LA2/AC2-5 G4 5171099	ECO-F-LA2/AC2-6 G4 5171100
UV Lamp		UV-15A-L 5170251	UV-30A-L 5170255		
IV Bar		IV-955 5170276	IV-1260 5170277	IV-1565 5170278	IV-1870 5170279
Electrical Outlet	Direct Mounted	EO-H_			
	GFCI	EO-GFCI 5170071			
Service Fixtures	EU SF-Gas-20 mm and Solenoid Valve	SF-1G20 5170410			
	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-20 mm	SF-2U22 5170504			
Support Stand		STA-3 5131340	STA-4 5131341	STA-5 5131427	STA-6 5131389
Pipette Storage Shelf		5260327			
Arm Rest Padding		MEWREST 5170127			
Foot Rest		FT-REST 5170492			
Laboratory Chair		ME-LD-AR360 1150006			
IQ OQ Protocol		9010179			


ABBV-_


ECO-L_2_-MK3-LH


UV-_A-L


IV-_


EO-H_


EO-GFCI


SF-1_


SF-2U_


STA-_


Pipette StorageShelf


MEWREST


FT-REST


ME-LD-AR360


IQOQ

TECHNICAL SPECIFICATIONS (10" OPENING)

Labculture® Class II	Stainless Steel Side Walls	110-130 VAC, 50/60 Hz	**LA2-3S9 G4 10" 2011683**	**LA2-4S9 G4 10" 2011685**	**LA2-5S9 G4 10" 2011687**	**LA2-6S9 G4 10" 2011689**
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 Arm Rest		1035 x 815 x 1570 mm (40.7" x 32.1" x 61.8")	1340 x 815 x 1570 mm (52.8" x 32.1" x 61.8")	1645 x 815 x 1570 mm (64.8" x 32.1"x 61.8")	1950 x 815 x 1570 mm) (76.8" x 32.1" x 61.8")
	With Arm Rest		1035 x 873 x 1570 mm (44.0" x 34.4" x 61.8")	1340 x 873 x 1570 mm (52.8" x 34.4" x 61.8")	1645 x 873 x 1570 mm (64.8" x 34.4" x 61.8")	1950 x 873 x 1570 mm (76.8" x 34.4" x 61.8")
Internal Dimensions (W x D x H)			915 x 625 x 720 mm (36.0" x 24.6" x 28.3")	1220 x 625 x720 mm (48.0" x 24.6" x 28.3")	1525 x 625 x 720 mm (60.0" x 24.6" x 28.3")	1830 x 625 x 720 mm (72.0" x 24.6" x 28.3")
Usable Work Area			0.47 m^2 (5.0 sq.ft.)	0.62 m^2 (6.7 sq.ft.)	0.80 m^2 (8.5 sq.ft.)	0.96 m^2 (10.3 sq.ft.)
Maximum Sash Opening			580 mm (22.8")			
Average Airflow Velocity	Inflow		0.53 m/s (105 fpm)	0.53 m/s (105 fpm)	0.53 m/s (105 fpm)	0.53 m/s (105 fpm)
	Downflow		0.30 m/s (60 fpm)	0.30 m/s (60 fpm)	0.33 m/s (65 fpm)	0.30 m/s (60 fpm)
Airflow Volume	Inflow		446 m^3/h (263 cfm)	591 m^3/h (350 cfm)	741 m^3/h (438 cfm)	887 m^3/h (525 cfm)
	Downflow		639 m^3/h (374 cfm)	848 m^3/h (499 cfm)	1063 m^3/h (624 cfm)	1272 m^3/h (748 cfm)
	Exhaust		446 m^3/h (263 cfm)	591 m^3/h (350 cfm)	741 m^3/h (438 cfm)	887 m^3/h (525 cfm)
	Required Exhaust with Optional Thimble Exhaust Collar		635 m^3/h (374 cfm)	627 m^3/h (369 cfm)	908 m^3/h (534 cfm)	1245 m^3/h (733 cfm)
	Static Pressure for Optional Thimble Collar		33 Pa / 0.13 in H_2O	18 Pa / 0.06 in H_2O	37 Pa / 0.15 in H_2O	61 pa / 0.25 in H_2O
ULPA Filter Typical Efficiency			≥99.999% for particle size between 0.1 to 0.3 microns			
Sound Emission (dBA)*	NSF / ANSI 49 (Anechoice chamber)		56	59	60	61
Light Intensity			> 1200 lux (111 ft. cd)			
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			
Electrical	Nominal power		186 W	200 W	277 W	385 W
	Heat Load		635 BTU/hr	682 BTU/Hr	945 BTU/Hr	1314 BTU/Hr
	Full Load Amps 110-130V exclude 5A EO		10 A		15 A (2 power inlet)	
	Optional Outlets FLA		5A		5A	
Net Weight			243 Kg (536 lbs)	287 Kg (633 lbs)	381 Kg (840 lbs)	400 kg (882 lbs)
Shipping Weight			292 Kg (644 lbs)	350 Kg (772 lbs)	439 Kg (968 lbs)	506 kg (1116 lbs)
Shipping Dimensions, Maximum (W x D x H)			1185 x 890 x 1900 mm (46.7" x 35.0" x 74.8")	1490 x 890 x 1900 mm (58.7" x 35.0" x 74.8")	1795 x 890 x 1900 mm (70.7" x 35.0" x 74.8")	2100 x 890 x 1900 mm (82.7" x 35.0" x 74.8")
Shipping Volume Dimensions (W x D x H)			2.00 m^3 (cu.ft.)	2.5 m^3 (cu.ft.)	3.00 m^3 (cu.ft.)	3.6 m^3 (cu.ft.)

**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.*

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Life Science Tools


Biological Safety Cabinets


Laminar Flow Cabinet


Animal Workstations


CO_2/O_2 Incubators

Chemical Research


Ducted Fume Hoods


Ductless Fume Hoods

Pharma Compounding


USP 797 / 800 Compliant Isolators


Powder Containment Workstations

Medical (ART)


Multi-room Incubators


Time-Lapse Incubators


IVF Workstations

PCR


PCR Workstations

Bioprocessing


Bioreactors

Pharmaceutical


cGMP Isolators


Filling Line Isolators


Downflow Booths

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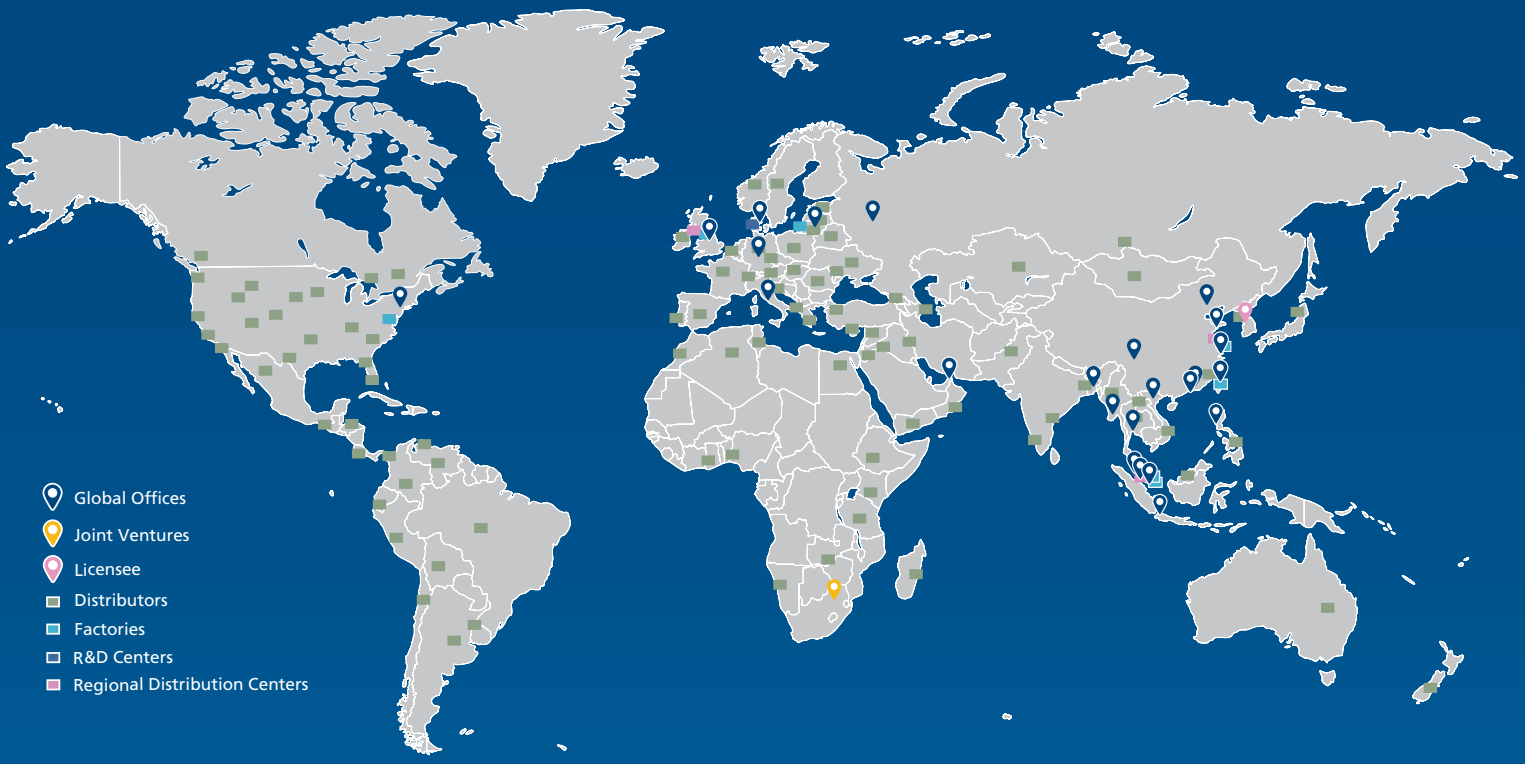
42 LOCATIONS IN 21 COUNTRIES ALL OVER THE WORLD



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