ESCO LIFESCIENCES

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

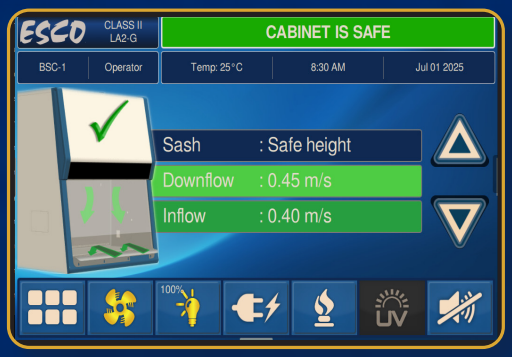
- Export logged data via USB drive
- Software Update via USB drive
- Wired data transaction to BMS via RJ45

Airflow Sensor

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

Zero Volt Relay Contact

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



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 customization of Viable and non Viable particle counter
  - Additional accessories of Particle Counter machine stand is available

Raised Arm Rest

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

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

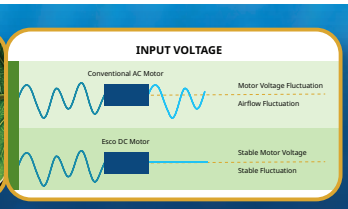
Ergonomic Work Zone

- 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

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

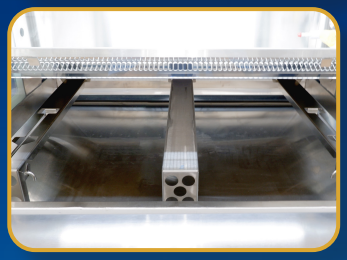
- Aerosol-tight sash window seal for additional protection when the cabinet is in working mode and to assist decontamination when the window is fully closed.

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 ¼" hole on rubber membrane inside
- Surrounded by negative pressure
- Allows cables and tubes to exit with fully closed sash

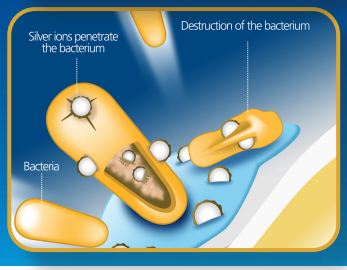


Removable Tray Support Beams

- 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

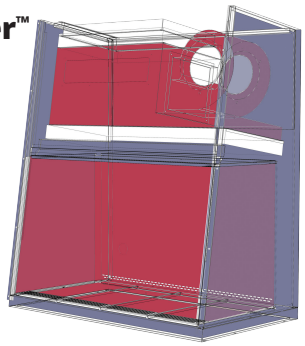
	Performance	Air Quality	Filtration	Electrical Safety	Electromagnetic Compatibility (EMC)
Standards Compliance	EN 12469 Certified ISO Class 4 ISO 14644-1: 2015, ISO 14644-14: 2016	ISO 14644.1, Class 3, Worldwide, US Fed Std 209E, Class 1 USA JIS B9920, Class 3, Japan	EN-1822 (H14), Europe IEST-RP-CC001,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

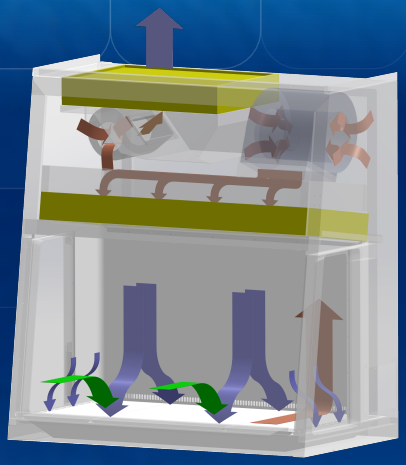
Dynamic Chamber™

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

Positive Pressure

Negative Pressure



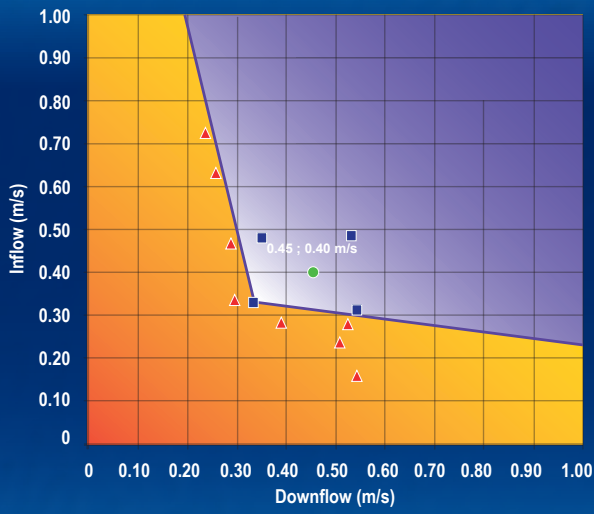


H14-filtered air
Unfiltered / potentially contaminated air
Room air / Inflow air

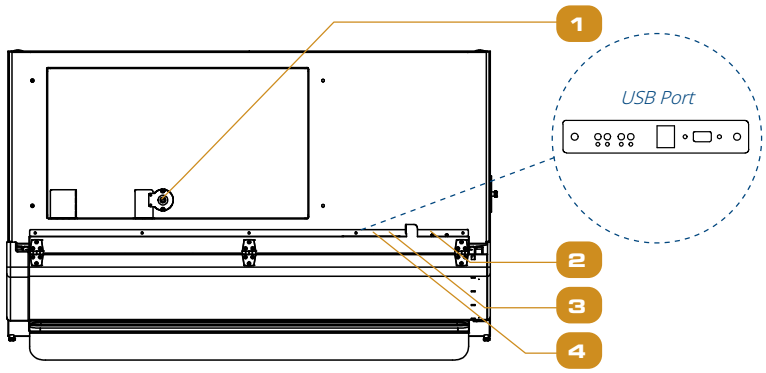
Cabinet Filtration System

- 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 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.

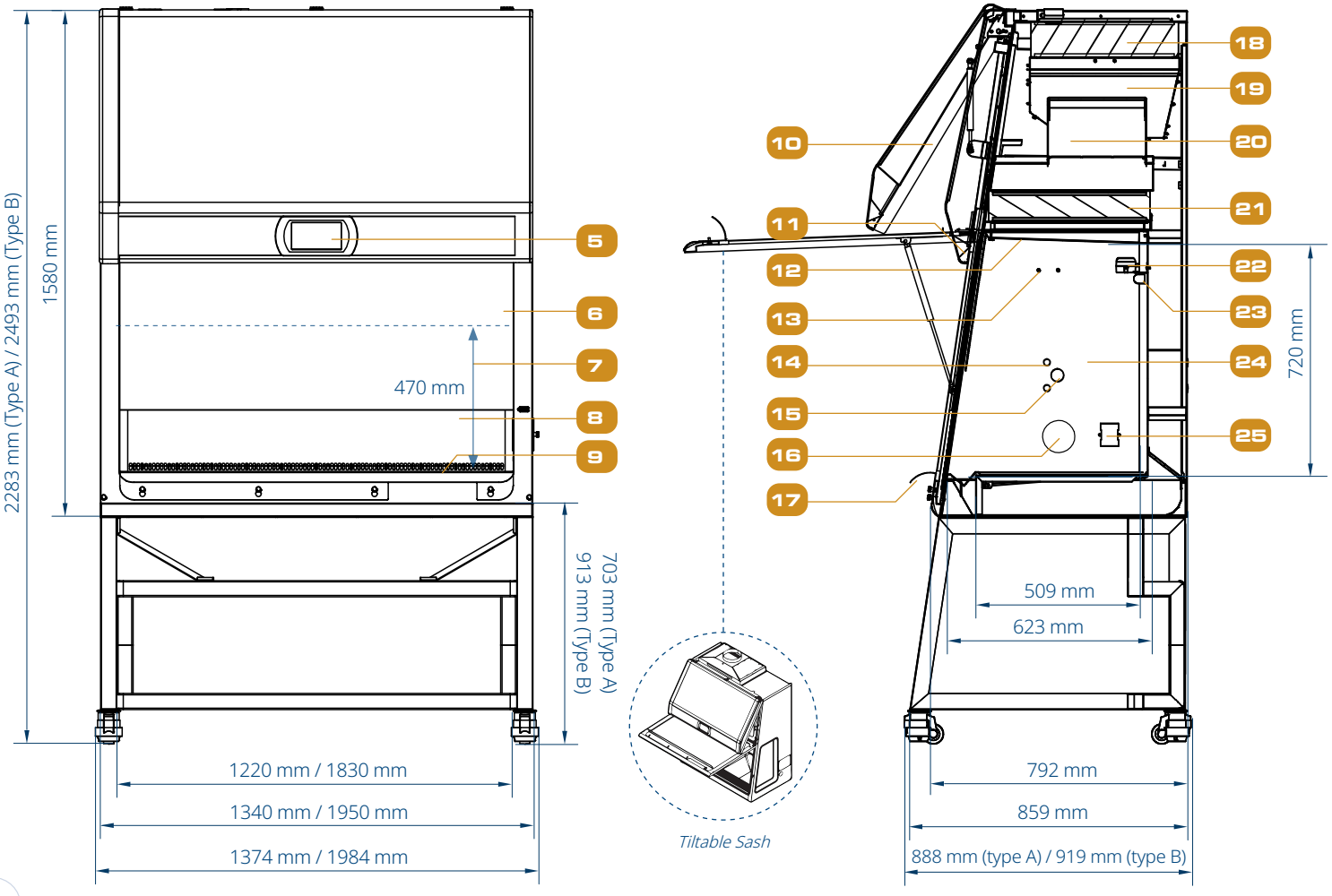
Performance Envelope Test of LA2-G Gen4



Engineering Drawing



1. Exhaust Airflow Sensor
2. Power Inlet
3. Zero Volt Relay Contact
4. USB Port
5. Centurion Touchscreen Controller
6. Angled Sash Glass Window
7. Maximum Sash Opening
8. Single-piece Stainless Steel Back Wall
9. Single-piece Stainless Steel Work Tray
10. Electrical Panel
11. Dimmable LED Lamp
12. SS 316 Perforate Diffuser
13. IV Bar Retrofit Kit Provision
14. Service Fixture Retrofit Kit Provision
15. VHP Port In (Optional)
16. Cable Port (right side only)
17. Stainless Steel Arm Rest
18. Exhaust Filter
19. ECM Exhaust Blower
20. DC-ECM blowers
21. Downflow Filter
22. Downflow Sensor
23. UV Lamp Provision
24. Stainless Steel Side Wall
25. Electrical Outlets (1 on each side)



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 m^2	0.93 m^2
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 m^3	4.0 m^3

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.*

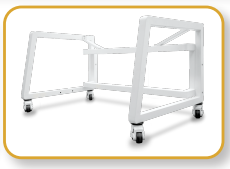
Options and Accessories

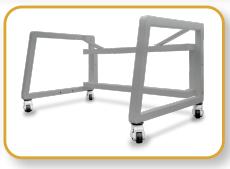
Anti-blowback Valve	EG Powder Coated	ABBV-10P 5170352			ABBV-10P 5170352	
	304 Stainless Steel	ABBV-10S 5170354			ABBV-10S 5170354	
Exhaust Collar		ECO-F-LA2EU-4FT G4 517187			ECO-F-LA2EU-6FT G4 517189	
Top Box with VHP Out		Top Box, LA2-4-EU G4 with VHP-Out 5171303			Top Box, LA2-6-EU G4 with VHP-Out 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

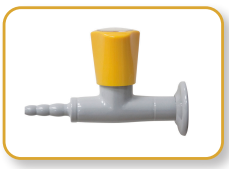
IV Bar

Various Electrical Outlet Types


SPEU Support Stand

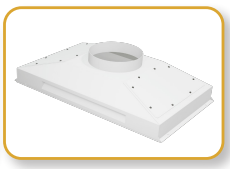

SPEU SS Support Stand

STL Support Stand


Various Service Fixture Types

Particle Count Probe Selection

Arm Rest Padding


Exhaust Collar

Foot Rest

Particle Counter Machine Stand

ESCO®
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Improving Lives Through Science

DIRECT MANUFACTURER

- Animal Research Workstation
- Biosafety Safety Cabinet
- CO_2 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®
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- 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_2 Incubator
- Anti-Vibration Table
- Gas Analyser

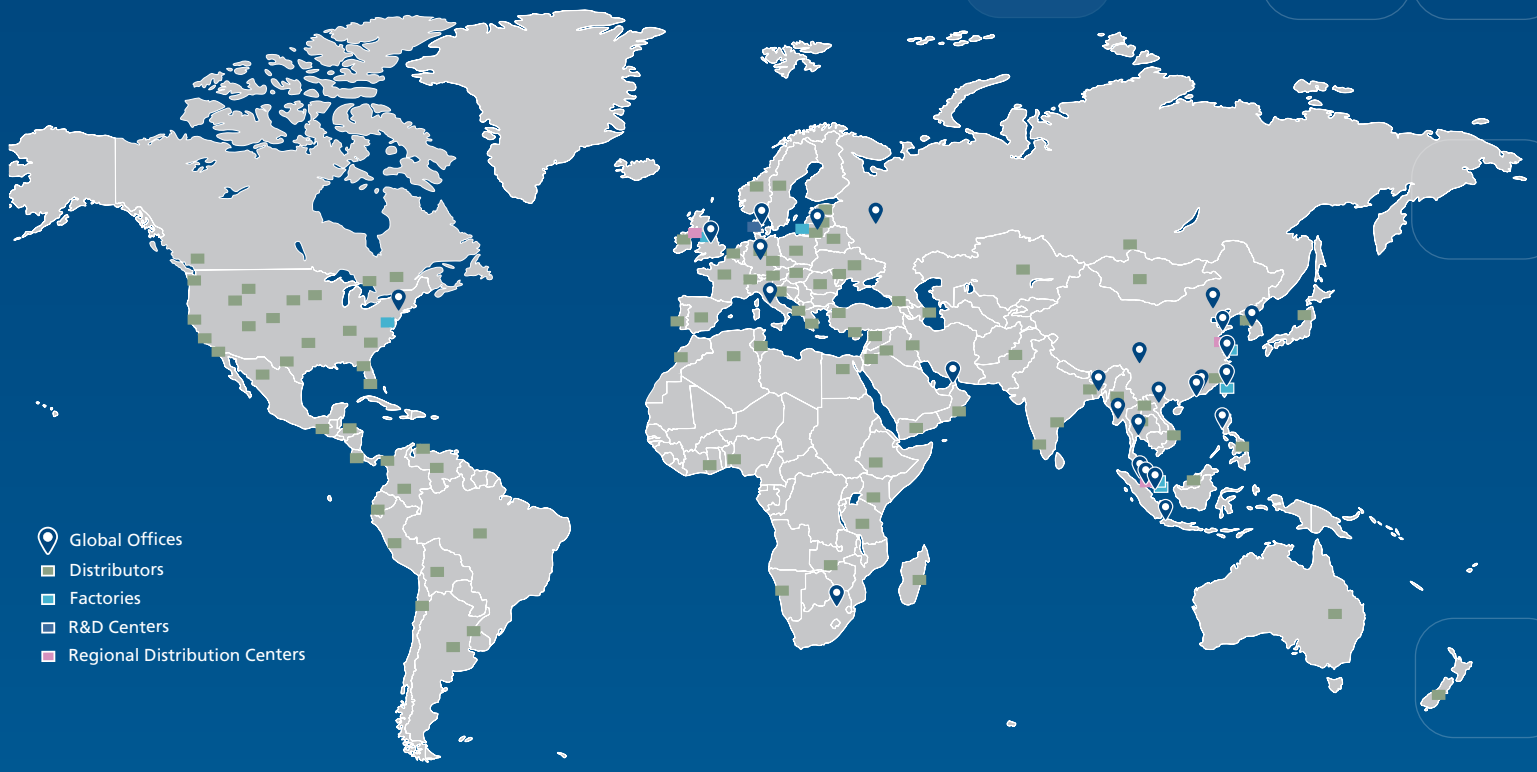
ESCO®
ASTER

CRDMO Services

www.escolifesciences.com

ESCO LIFESCIENCES GROUP

42 LOCATIONS IN 21 COUNTRIES ALL OVER THE WORLD



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