![ESCO SCIENTIFIC logo]

Labculture®
Class II Type B2 Biosafety Cabinet

Labculture® G4

Class II Type B2 Biological Safety Cabinets

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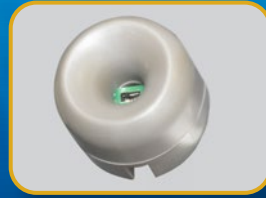and Ergonomic Biosafety Cabinet in the World*

Airflow Sensor

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

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*

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 B2 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*
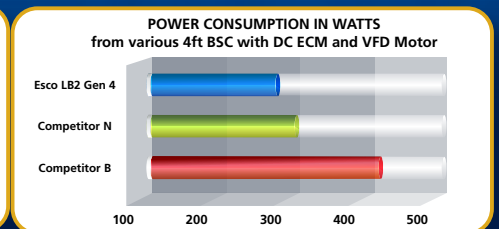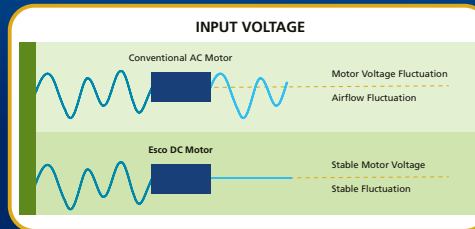
FEATURING ADVANCED TOUCHSCREEN CONTROLLER

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*

INPUT VOLTAGE

Conventional AC Motor
- Motor Voltage Fluctuation
- Airflow Fluctuation

Esco DC Motor
- Stable Motor Voltage
- Stable Fluctuation

POWER CONSUMPTION IN WATTS
from various 4ft BSC with DC ECM and VFD Motor

Esco LB2 Gen 4	
Competitor N	
Competitor B	

100 200 300 400 500

Labculture®
Class II Type B2 Biosafety Cabinet

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*

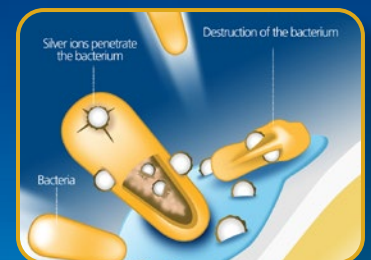## Dimmable LED

- *Save energy and optimize work comfort*

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*

Silver ions penetrate the bacterium
Destruction of the bacterium
Bacteria

Certification

Standards Compliance	Performance	Air Quality	Filtration	Electrical Safety
	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*
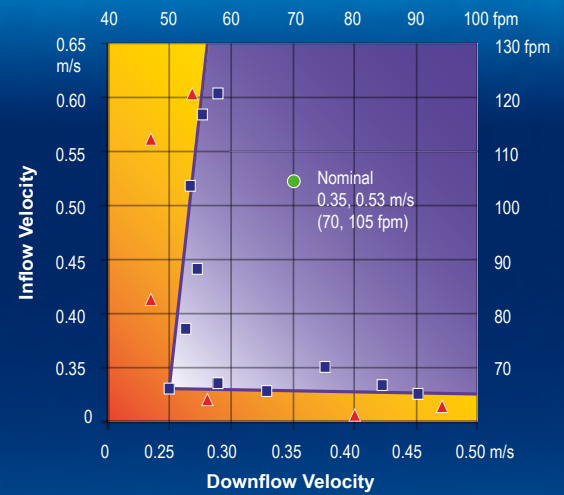- *Prevent contaminants from escaping outside*

  ■ *Positive Pressure*
  ■ *Negative Pressure*

Cabinet Filtration System

- Ambient air is pulled through 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
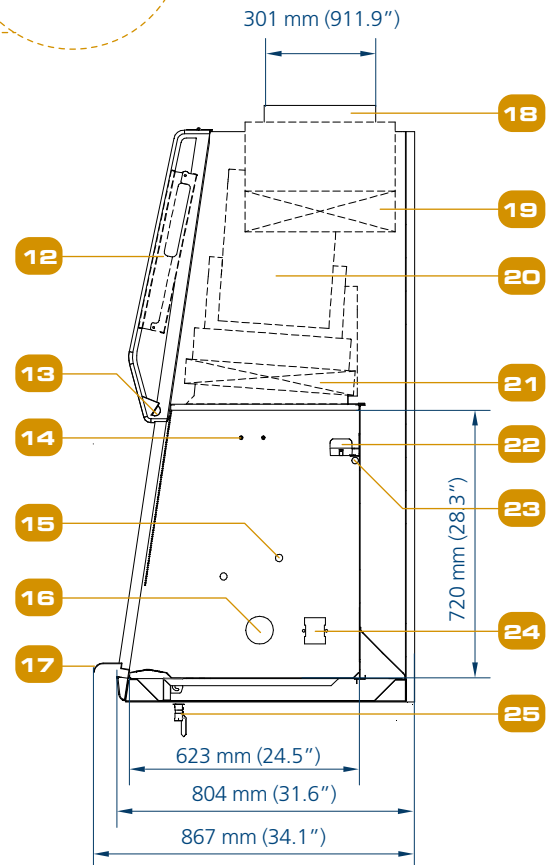
Dynamic air barrier, where inflow and downflow converge

Side capture zones

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

The Performance Envelope Concept

Nominal
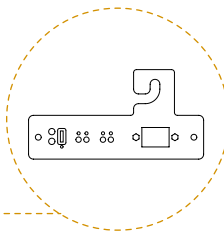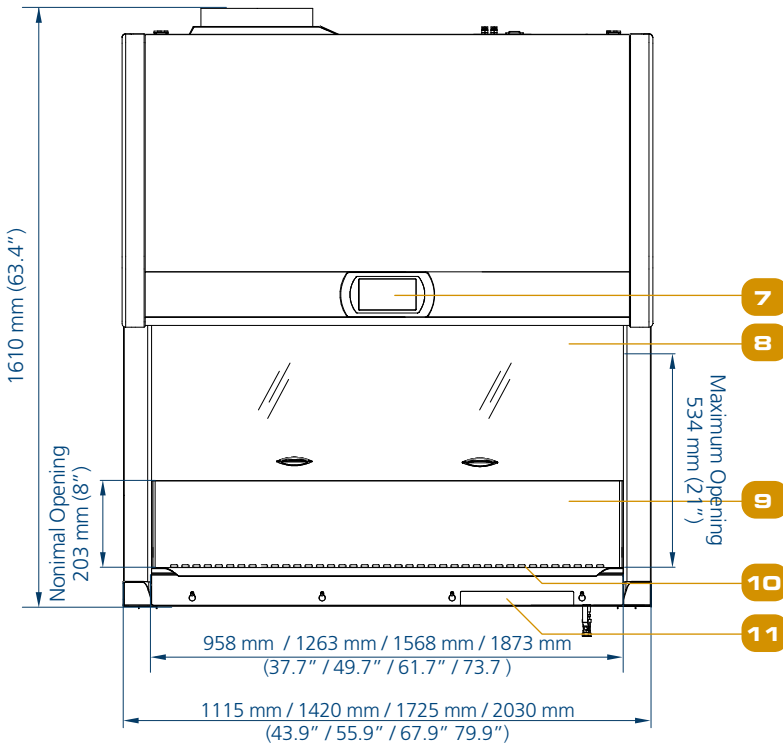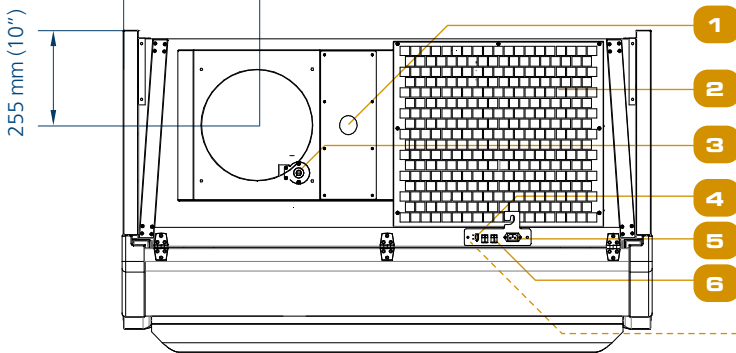0.35, 0.53 m/s
(70, 105 fpm)

- ● **Nominal Airflow**
- □ **Personnel / Product Protection**
- ▨ **Area of Personnel / Product Protection**
- ▲ **No Personnel / Product Protection**
- ■ **Area of no Personnel / Product Protection**

Engineering Drawing

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

255 mm (10")

301 mm (911.9")

1610 mm (63.4")

Nominal Opening 203 mm (8")

Maximum Opening 534 mm (21")

720 mm (28.3")

958 mm / 1263 mm / 1568 mm / 1873 mm
(37.7" / 49.7" / 61.7" / 73.7)

1115 mm / 1420 mm / 1725 mm / 2030 mm
(43.9" / 55.9" / 67.9" 79.9")

623 mm (24.5")

804 mm (31.6")

867 mm (34.1")

1. VHP In Provision
2. Pre-filter
3. Exhaust Airflow Sensor
4. USB Port
5. Power Inlet
6. Zero Voltage Relay Contact
7. Centurion 7" Touch Screen Controllet

8. Sash Glass
9. Single-piece Stainless Steel Backwall
10. Stainless Steel Work Tray
11. Data Plate
12. Electrical Panel
13. Dimmable LED Lamp
14. IV Bar Retrofit Kit Provision

15. Service Fixture Retrofit Kit provision
16. Cable Port
17. Stainless Steel Armrest
18. Exhaust Collar
19. Exhaust Filter
20. DC ECM Blower
21. Downflow Filter

22. Downflow Sensor
23. UV Lamp Provision
24. Electrical outlet
25. Drain Valve (optional)

Options and Accessories					
LB4-G4		**3 feet**	**4 feet**	**5 feet**	**6 feet**
Anti-blowback Valve 10 inches	304 Stainless Steel	ABBV-10S 5170354			
UV Lamp		UV-15A 5170251	UV-30A 5170255		
IV Bar		IV-910 5170499	IV-1215 5170231	IV-1520 5170500	IV-1825 5170501
Electrical Outlet	Direct Mounted	EO-HC 5170035			
	GFCI	EO-GFCI 5170071			
Service Fixtures	EU SF-Gas-40 mm and Solenoid Valve	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			
	US SF-Universal-0 mm	SF-2U40 5170018			
	Copper Piping for SF	CU-Pipe 5170026			
Support Stand		STA-3A0 5131340	STA-4A0 5131341	STA-5A0 5131427	STA-6A0 5131389
Pipette Storage Shelf		STAINLESS STEEL PIPETTE STORAGE SHELF 5260327			
Arm Rest Padding		MEWREST 5170127			
Foot Rest		FT-REST 5170492			
Laboratory Chair		ME-LD-AR360 1150006			
IQOQ Protocol		IQOQ 9010179			

ABBV-_

UV-_A-L
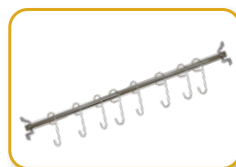
IV-_

EO-H_

EO-GFCI

SF-1_

SF-2U_

STA-_
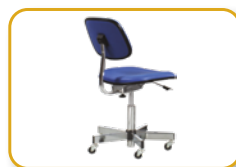

Pipette Storage Shelf

MEWREST

FT-REST

ME-LD-AR360

IQOQ

Class II Type B2 Biological Safety Cabinets

TECHNICAL SPECIFICATIONS						
Labculture® Class II Type B2	Stainless Steel Side Walls	220-240 VAC, 50/60 Hz	**LB2-3B8 G4** 2011682	**LB2-4B8 G4** 2011684	**LB2-5B8 G4** 2011686	**LB2-6B8 G4** 2011688
		110-130 VAC, 50/60 Hz	**LB2-3B9 G4** 2011683	**LB2-4B9 G4** 2011685	**LB2-5B9 G4** 2011687	**LB2-6B9 G4** 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 (40.8" 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 (40.8" 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 m² (5.0 sq.ft.)	0.63 m² (6.8 sq.ft.)	0.80 m² (8.5 sq.ft.)	0.96 m² (10.3 sq.ft.)
Sash opening			Available in 203 mm (8"), 254 mm (10"), and 305 mm (12")			
Maximum Sash Opening			570 mm (22.5")			
Average Airflow Velocity	Inflow	203 mm (8")	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	203 mm (8")	0.30 m/s (60 fpm)	0.30 m/s (60 fpm)	0.30 m/s (60 fpm)	0.30 m/s (60 fpm)
Airflow Volume	Inflow	203 mm (8")	356 m³/h (210 cfm)	473 m³/h (280 cfm)	593 m³/h (350 cfm)	709 m³/h (420 cfm)
		254 mm (10")	446 m³/h (263 cfm)	591 m³/h (350 cfm)	741 m³/h (438 cfm)	887 m³/h (525 cfm)
		305 mm (12")	535 m³/h (315 cfm)	710 m³/h (420 cfm)	890 m³/h (525 cfm)	1065 m³/h (629 cfm)
	Downflow	203 mm (8")	581 m³/h (345 cfm)	771 m³/h (461 cfm)	967 m³/h (567 cfm)	1156 m³/h (691 cfm)
		254 mm (10")	639 m³/h (374 cfm)	848 m³/h (499 cfm)	1063 m³/h (624 cfm)	1272 m³/h (748 cfm)
		305 mm (12")	678 m³/h (397 cfm)	771 m³/h (461 cfm)	1128 m³/h (662 cfm)	1349 m³/h (794 cfm)
	Exhaust	203 mm (8")	356 m³/h (210 cfm)	473 m³/h (280 cfm)	593 m³/h (350 cfm)	709 m³/h (420 cfm)
		254 mm (10")	446 m³/h (263 cfm)	591 m³/h (350 cfm)	741 m³/h (438 cfm)	887 m³/h (525 cfm)
		305 mm (12")	535 m³/h (315 cfm)	710 m³/h (420 cfm)	890 m³/h (525 cfm)	1065 m³/h (630 cfm)
ULPA Filter Typical Efficiency			≥99.999% for particle size between 0.1 to 0.3 microns			
Sound Emission (dBA)*	NSF / ANSI 49	203 mm (8")	57	57	60	63
		254 mm (10")	60	59	63	63.3
		305 mm (12")	62	60	65	65.9
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 (Watt) (8)	203 mm (8")	160	190	350	366
		254 mm (10")	195	201	374	420
		305 mm (12")	228	236	455	550
	Nominal power (Watt) (9)	203 mm (8")	163	193	355	372
		254 mm (10")	203	205	380	431
		305 mm (12")	232	240	460	537
	Heat Load (BTU/hr) (8)	203 mm (8")	546	648	1194	1249
		254 mm (10")	665	686	1276	1433
		305 mm (12")	778	805	1553	1877
	Heat Load (BTU/hr) (9)	203 mm (8")	556	659	1211	1269
		254 mm (10")	693	699	1297	1471
		305 mm (12")	792	819	1570	1832
	Full Load Amps (8) exclude 5A EO	203 mm (8")	6 A		10 A	
		254 mm (10")				
		305 mm (12")				
	Optional Outlets FLA		5A			
	Full Load Amps (9) exclude 5A EO	203 mm (8")	10 A		16 A	
		254 mm (10")				
		305 mm (12")				
	Optional Outlets FLA		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 m³ (cu.ft.)	2.5 m³ (cu.ft.)	3.00 m³ (cu.ft.)	3.6 m³ (cu.ft.)

Disclaimer: Technical Specifications may be subjected to further changes without further notice.
*Electrical power consumption is an measurement of new unit with clean filter operated within nominal setpoint. Result per unit may vary.

ESCO
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Improving Lives through Science

ESCO SCIENTIFIC

- Animal Research Workstation
- Biological 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
- Powder Weighing Balance Enclosure
- Thermal Cycler
- Ultra-low Temperature Freezer

ESCO MEDICAL

- Time-Lapse Incubator
- Benchtop Incubator
- ART Workstation
- CO_2 Incubator
- Anti-Vibration Table
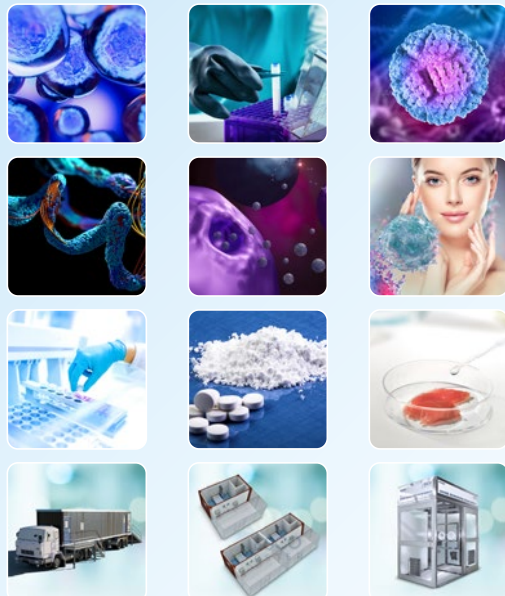- Gas Analyser

ESCO Healthcare | "Discovery to Delivery"

ESCO PHARMA ESCO TaPestle Rx ESCO VACCIXCELL

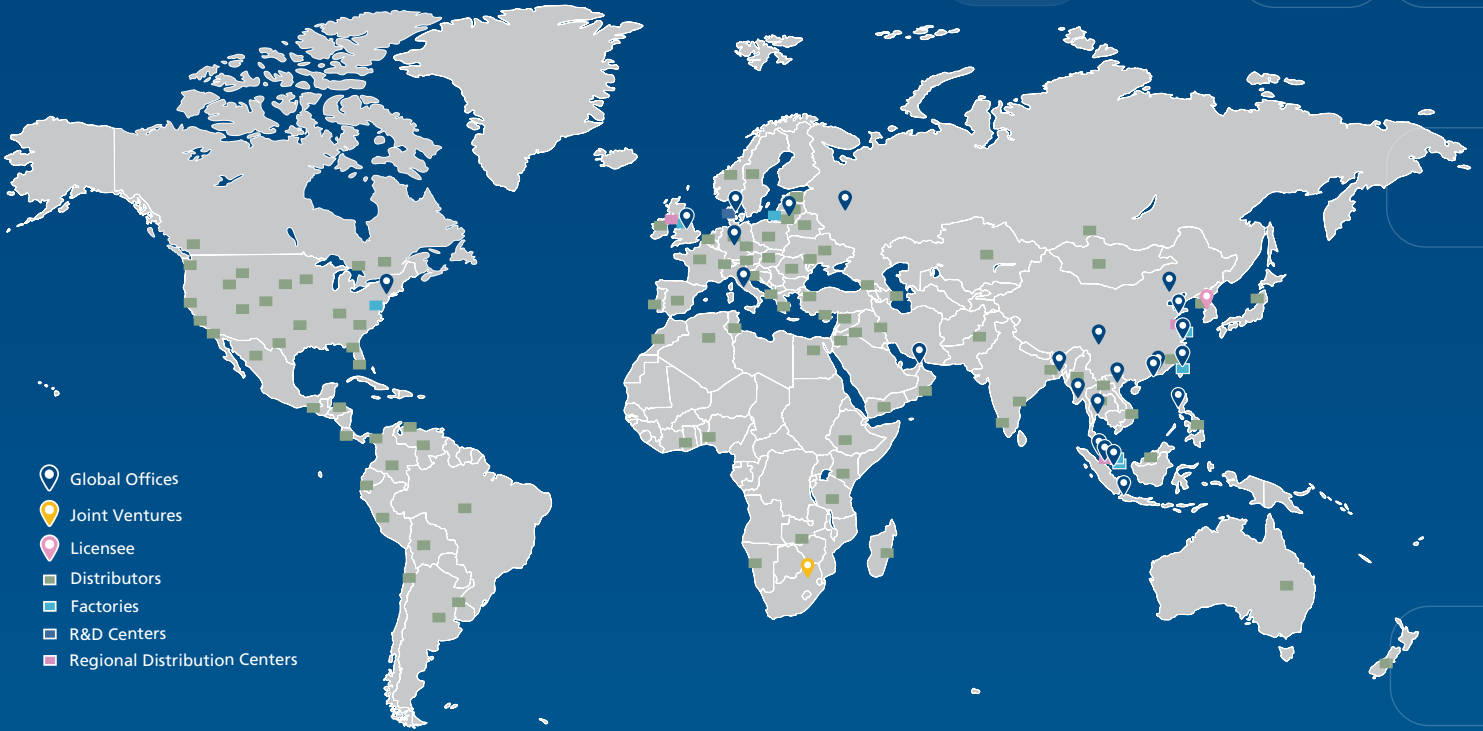**Pharmaceutical Manufacturing, Pharmacy Compounding, and Bioprocessing Tools**

ESCO ASTER

CRDMO Services

ESCO LIFESCIENCES GROUP
42 LOCATIONS IN 21 COUNTRIES ALL OVER THE WORLD

Legend:
- Global Offices
- Joint Ventures
- Licensee
- Distributors
- Factories
- R&D Centers
- Regional Distribution Centers

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ESCO®
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