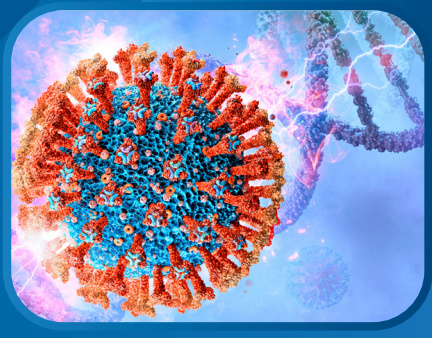
ESCO LIFESCIENCES

Labculture® G4

Class II Type A2 Biological Safety Cabinets

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



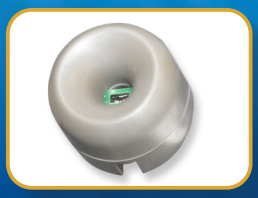
LABCULTURE® G4 (LA2 G4) CLASS II TYPE A2 BIOSAFETY

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

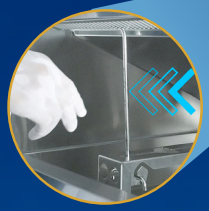
- Displays all safety information on one large screen
- Shows cabinet parameters with intuitive 3D illustration
- Easy to use menu, similar to Smart Phone Apps
- Large buttons, easy to operate when wearing gloves
- Self-guidance to users to deal with specific situations
- Centered and angled down for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

Single Piece Wall

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

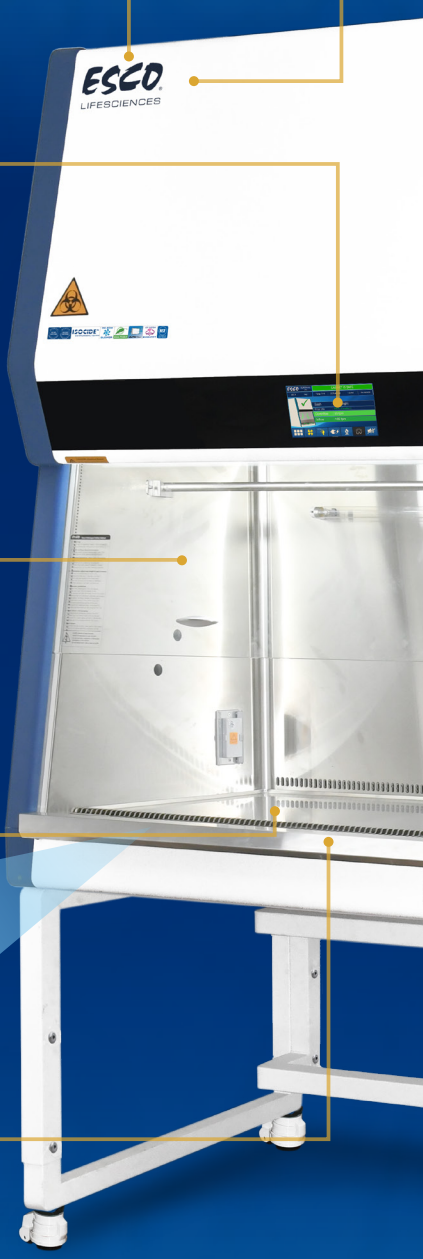
User-friendly Work Tray

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



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 ≥ 1226 lux (≥ 114 ft-cd)
- Industry-leading dimmable LED for optimum work comfort
- Airtight seal port for cable/tube exit protected by a negative pressure side wall

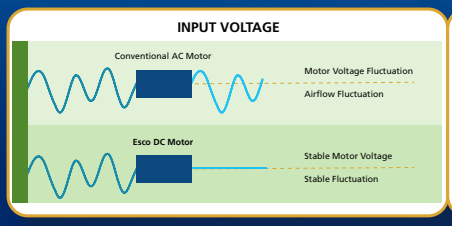
CABINET, FEATURING ADVANCED TOUCHSCREEN CONTROLLER

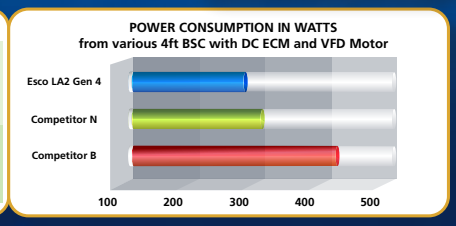
Power Inlet Receptacle

- Easy to install with plug and play design

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

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

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

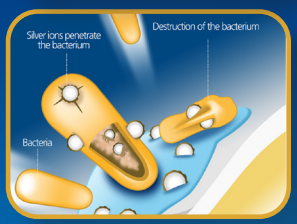
- 3" Port with ¼" hole on rubber membrane inside
- Surrounded by negative pressure
- Allows cables and tubes to exit with fully closed sash

Tray Support Beams

- Support work tray evenly for less vibration
- Tray support rods to easily wipe the drain pan

ISOCIDE™ Powder Coat

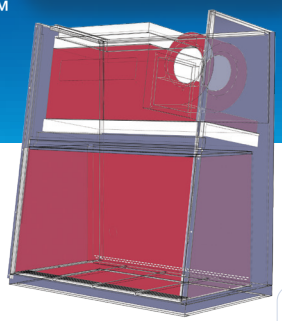
- Silver-ion impregnated powder coat
- Inhibits microbial growth to improve safety
- Prevents the plenum from becoming biohazard landfill



Certification					
	Performance	**Air Quality**	**Filtration**	**Electrical Safety**	**Electromagnetic Compatibility (EMC)**
Standards Compliance	NSF / ANSI 49, USA	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 IEC61010-1, Worldwide	EN IEC 61326-1 Group 1 / Class A

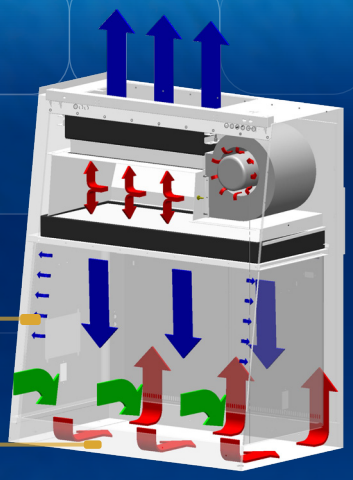
Dynamic Chamber™

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



Positive Pressure

Negative Pressure



Dynamic air barrier, where inflow and downflow converge

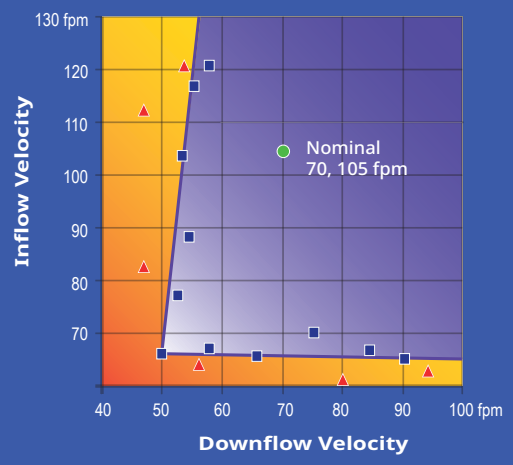
Side capture zones

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

Cabinet Filtration System

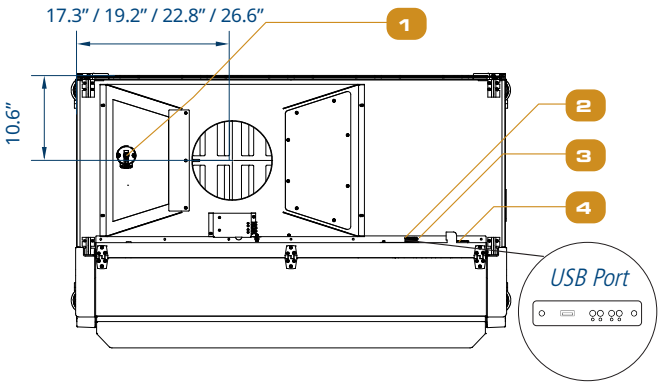
- Ambient air is pulled through front grille to create inflow, without going into the work surface. Inflow is joined by half of the downflow, to create front air curtain that is fine-tuned to create a large performance envelope. The combined air stream travels through the back air column towards the 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.

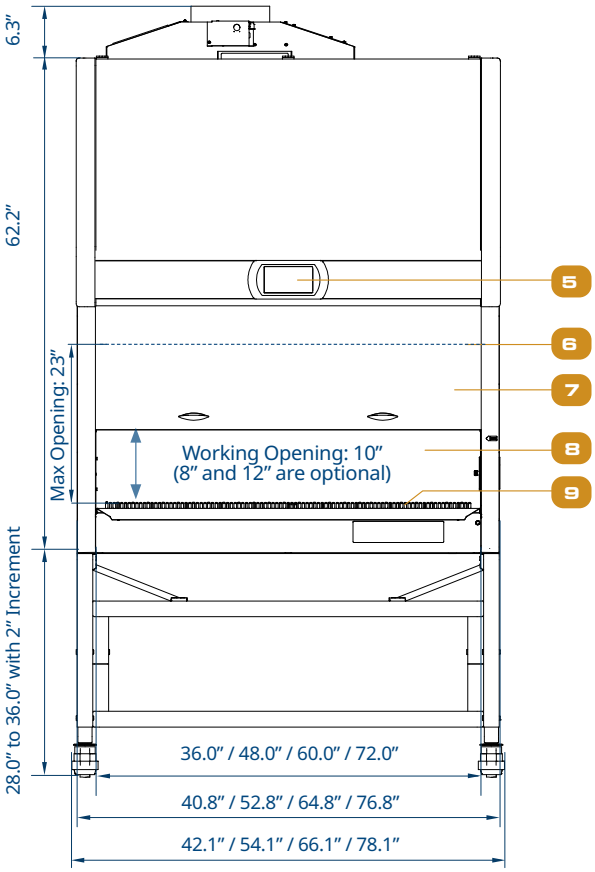
The Performance Envelope Concept

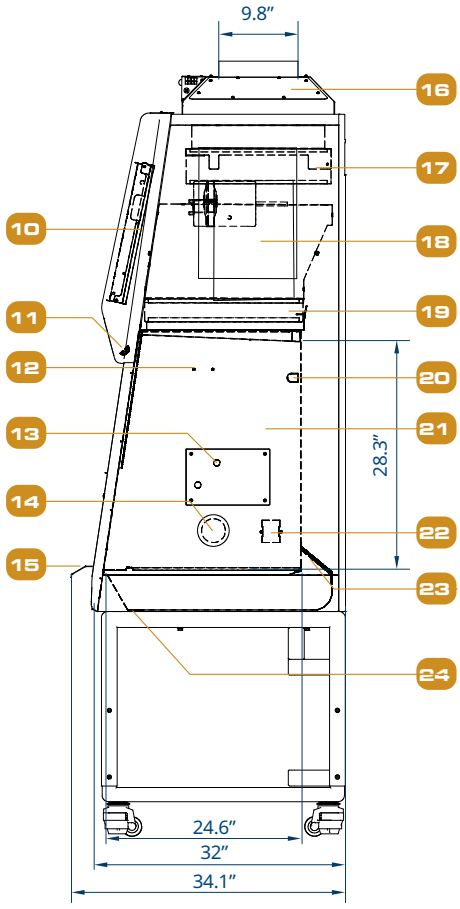


- Nominal Airflow
- Personnel / Product Protection
- Area of Personnel / Product Protection
- No Personnel / Product Protection
- Area of no Personnel / Product Protection

Engineering Drawing







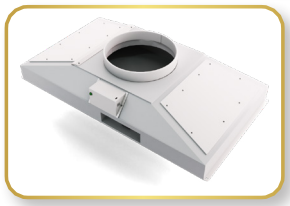
1. *Airflow sensor*
2. *USB Port*
3. *Zero Volt Relay Contact*
4. *Power Inlet (1 for 3-4 ft, 2 for 5-6 ft)*
5. *Centurion Touchscreen Controller*
6. *Maximum Sash*
7. *10° Angled Sash Window*
8. *Single-piece Stainless Steel Back Wall*
9. *Single tray for S-series*
10. *Electrical Panel*
11. *Dimmable LED Lamp*
12. *IV Bar Retrofit Kit Provision*
13. *Service Fixture-2U*
14. *Cable Port (NSF Approved)*
15. *Stainless Steel Arm Rest*
16. *Exhaust Collar (optional)*
17. *Exhaust ULPA (H14) Filter*
18. *DC-ECM Blower*
19. *Downflow ULPA (H14) Filter*
20. *UV Lamp Provision*
21. *Stainless steel side walls for S-series*
22. *Duplex GFCI Outlets (1L/1R), total max 5A*
23. *Paper catch*
24. *Drain Valve Provision*

TECHNICAL SPECIFICATIONS						
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			3'	4'	5'	6'
External Dimensions (W x D x H)	Without Arm Rest		41" x 32" x 62"	53" x 32" x 62"	65" x 32" x 62"	77" x 32" x 62"
	With Arm Rest		41" x 34" x 62"	53" x 34" x 62"	65" x 34" x 62"	77" 34" x 62"
Internal Dimensions (W x D x H)			36" x 25" x 28.3"	48" x 25" x 28.3"	60" x 25" x 28.3"	72" x 25" x 28.3"
Usable Work Area (W x D)			35.5" x 20.5"	47.5" x 20.5"	59.5" x 20.5"	71.5" x 20.5"
Sash Opening			10" sash opening (8" and 12" are optional)			
Maximum Sash Opening			23"			
Average Airflow Velocity	Inflow		105 fpm			
	Downflow		65 fpm	60 fpm	65 fpm	60 fpm
Airflow Volume	Inflow		263 cfm	350 cfm	438 cfm	525 cfm
	Downflow		374 cfm	499 cfm	624 cfm	748 cfm
	Exhaust		263 cfm	350 cfm	438 cfm	525 cfm
Additional Static Pressure for Optional Thimble Exhaust Collar (Measured 360mm or 14" from the top of exhaust collar)			0.080 - 0.12 in.w.g	0.14 - 0.18 in.w.g	0.1 - 0.14 in.w.g	0.22 - 0.26 in.w.g
Required Exhaust with Optional Thimble Exhaust Collar			283 cfm	375 cfm	453 cfm	556 cfm
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			
Sound Emission (dBA)*	NSF / ANSI 49		59	62	63	64
LED Lamp Light Intensity			≥ 1226 lux (≥ 114 ft-cd)			
Electrical Rating (9) 110-130 VAC 50/60Hz**	Nominal power (Watt)		203	205	380	421
	Heat Load (BTU/hr)		693	699	1297	1471
	Full Load Amps exclude 5A EO		15 A, 1 NEMA 5-15, 10ft cable for BSC and Outlets		15 A, 1 NEMA 5-15, 10ft cable, for BSC	
	Optional Outlets FLA				5 A, 1 NEMA 5-15, 10ft cable, for Outlets	
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 (0.25") UV-absorbing Tempered Glass			
Net Weight			536 lbs	633 lbs	840 lbs	882 lbs
Shipping Weight			644 lbs	772 lbs	968 lbs	1116 lbs
Shipping Dimensions, Maximum (W x D x H)			45.3" x 35.4" x 75"	55.1" x 35.4" x 75"	69" x 35.4" x 75"	81" x 35.4" x 75"
Shipping Volume			81 cu.ft	106 cu.ft	138 cu.ft	155 cu.ft

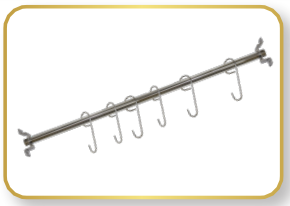
Disclaimer: Technical Specifications may be subjected to further changes without prior notice.
**Noise reading in open field condition / anechoic chamber. Noise reading in normal room varies by room size, layout, and background noise, but may reach roughly 3-4 dBA above these values.*
***Electrical power consumption is a measurement of new unit with clean filter operated within nominal setpoint. Result per unit may vary.*

Options and Accessories

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
Exhaust Damper		DAMPER-10 5170104			
UV Lamp		UV-15A-L 5170251	UV-30A-L 5170255		
IV Bar		IV-910 (5170499)	IV-1215 5170231	IV-1520 5170500	IV-1825 (5170501)
Electrical Outlet	GFCI	EO-GFCI 5170071			
Service Fixtures	US SF-Universal-20 mm	SF-2U22 5170504			
	Copper Piping for SF	CU-Pipe 5170026			
Support Stand	**Telescoping Stand with Caster Wheels**	STA-3A0 5131340	STA-4A0 5131341	STA-5A0 5131427	STA-6A0 5131389
	Motorized Stand Height with Levelling Feet	SPML-3A2 5131503	SPML-4A2 5131504	SPML-5A2 5131505	SPML-6A2 5131506
	Motorized Stand Height with Levelling Feet and Seismic Bracket		SPML-4A2-SB 5131403	SPML-5A2-SB 5131443	SPML-6A2-SB 5131404
	Motorized Stand Height with Caster Wheels	SPMC-3A2 5130093	SPMC-4A2 5130047	SPMC-5A2 5130100	SPMC-6A2 5131141
	Motorized Stand with Castors Cradle		SLC-4A2 G4 with 20" piston 5131441	SLC-5A2 G4 with 20" piston 5131447	SLC-6A2 G4 with 20" piston 5131440
Pipette Storage Shelf		5260327			
Arm Rest Padding		MEWREST 5170127			
Foot Rest		FT-REST 5170073			
Laboratory Chair		ME-LD-AR360 1150006			
IQOQ Protocol		9010179			

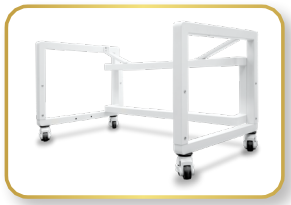

ECO-F-LA2/AC2-4 G4


UV LAMP


IV Bar with 6 Hooks


EO-GFCI


SF-2U


STA


SPML

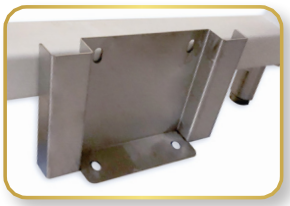

SPMC


SLC


Pipette Storage Shelf


MEWREST


FT-REST


Seismic Bracket


ME-LD-AR360


IQOQ

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Life Science Tools


Biological Safety Cabinets


Laminar Flow Cabinet


Animal Workstation


CO_2 and Trigas Incubators

Chemical Research


Ducted Fume Hoods


Ductless Fume Hoods

Pharma Compounding


cGMP and USP Isolators


Powder Containment Workstations

Medical (IVF)


Multi-room Incubators


Time-Lapse Incubators


IVF Workstations

PCR


PCR Workstations

Bioprocessing


Bioreactors

Pharmaceutical


cGMP and Filling Line Isolators


Air Shower and Pass Boxes


Downflow Booths

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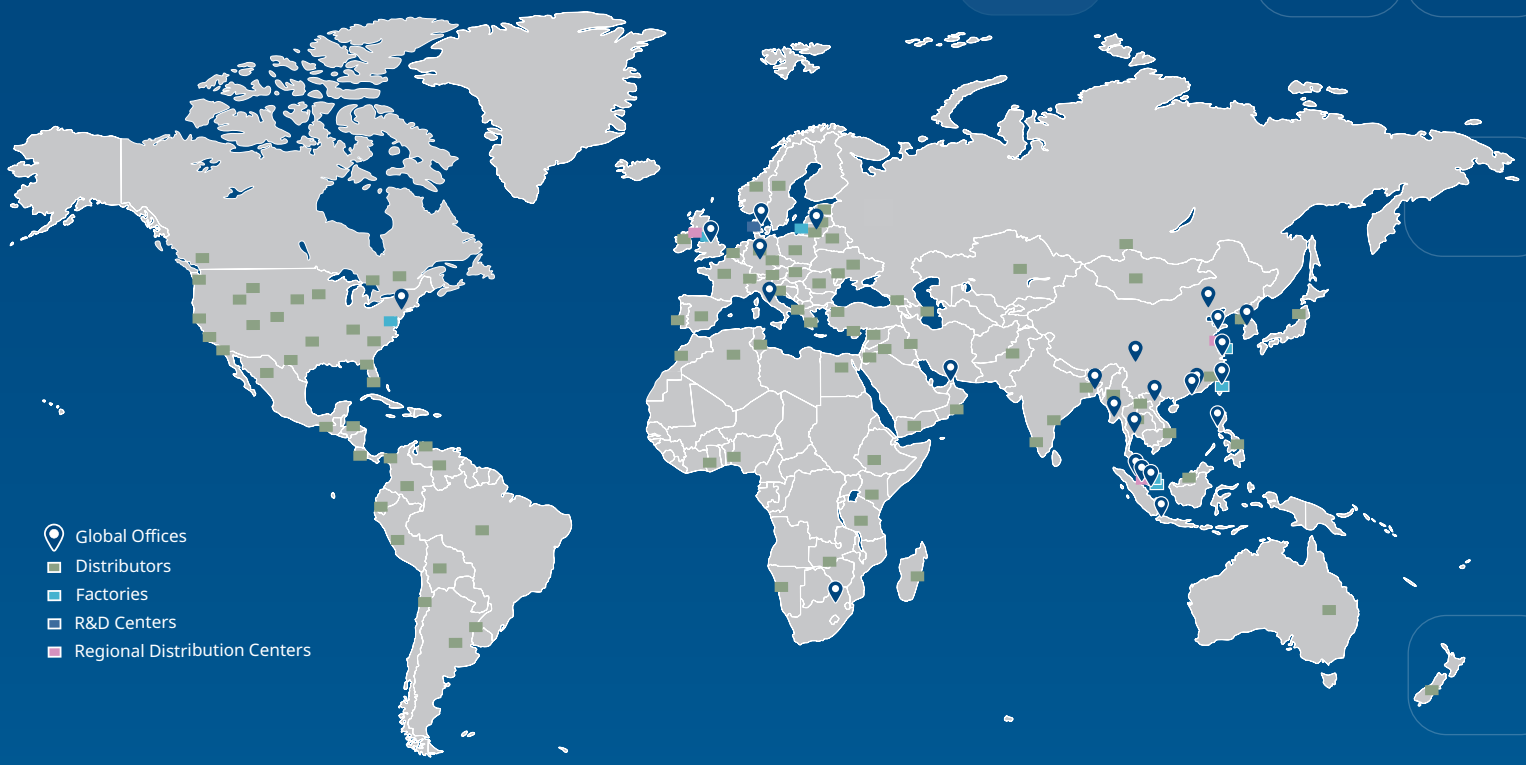
42 LOCATIONS IN 24 COUNTRIES ALL OVER THE WORLD



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