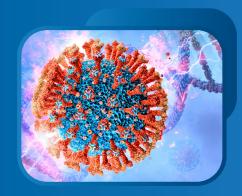




# Labculture® G4

# **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



#### **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

ESCO.

OCIDE # A D A



# 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 >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

Standards Compliance

HIIIIIIIIIIII

## CABINET, FEATURING ADVANCED TOUCHSCREEN CONTROLLER

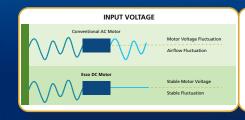


#### **Power Inlet socket**

Electrically 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 industrystandard ISO Class 5
- Same 10 years filter life and replacement cost as **HEPA filters**

- 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



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
- 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









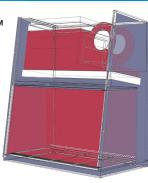


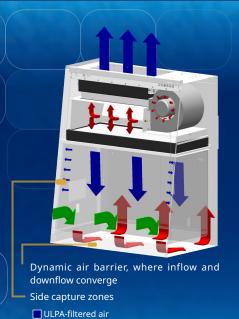
	 tion

Performance	Air Quality	Filtration	Electrical Safety	Electromagnetic Compatibility (EMC)
NSF / ANSI 49, USA	ISO 14644.1, Class 3, Worldwide US Fed Std 209E, Class 1 USA JIS 89920, 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





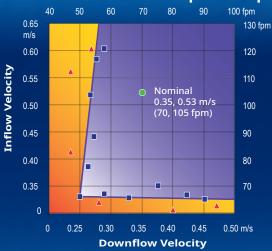
■ Unfiltered / potentially contaminated air

Room air / Inflow air

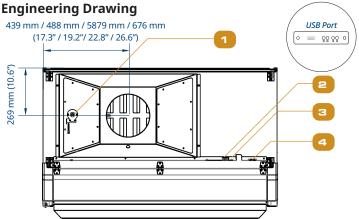
#### **Cabinet Filtration System**

- 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 ½ of the air in the common plenum is exhausted through the ULPA filter to the room. The remaining ½ 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

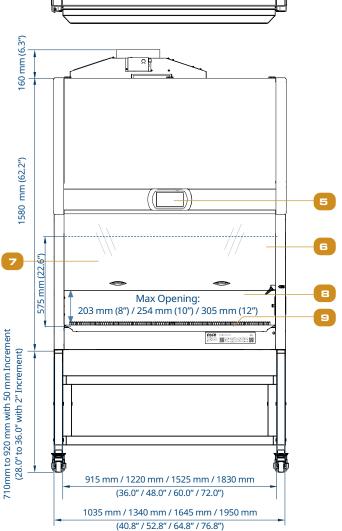


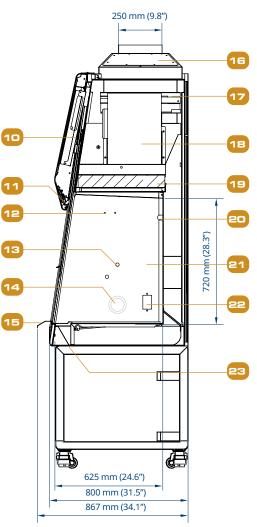
- Nominal Airflow
- Personnel / Product Protection
- Area of Personnel / Product Protection
- ▲ No Personnel / Product Protection
- Area of no Personnel / Product Protection



- 1. Exhaust sensor
- 2. USB Port
- 3. Zero Volt Relay Contact
- 4. Power Inlet (1qty for 3-4 ft, 2qty for 5-6 ft)
- 5. Centurion Touchscreen Controller
- 6. 10° Angled Sash Window
- 7. Maximum Sash Opening
- 8. Single-piece Stainless Steel Back Wall
- 9. Stingle tray for S-series and Multi tray for E-series
- 10. Electrical Panel
- 11. Dimmable LED Lamp
- 12. IV Bar Retrofit Kit Provision

- 13. Service Fixture Retrofit Kit Provision
- 14. Cable Port (NSF Approved)
- 15. Stainless Steel Arm Rest
- 16. Exhaust Collar (optional)
- 17. Exhaust Filter
- 18. DC ECM Blower
- 19. Downflow Filter
- 20. UV Lamp Provision
- 21. Stainless steel side walls for S-series and Glass side walls for E-series
- 22. Electrical Outlet Provision
- 23. Drain Valve Provision





			TECHNICAL SPEC	IFICATIONS			
			LA2-3S8 G4 8" 2011666	LA2-4S8 G4 8" 2011668	LA2-5S8 G4 8" 2011670	LA2-6S8 G4 8" 2011672	
Labculture® Class II		220-240 VAC, 50/60 Hz	LA2-3S8 G4 10" 2011682	LA2-4S8 G4 10" 2011684	LA2-5S8 G4 10" 2011686	LA2-6S8 G4 10" 2011688	
	Stainless Steel		LA2-3S8 G4 12" 2011714	LA2-4S8 G4 12" 2011716	LA2-5S8 G4 12" 2011718	LA2-6S8 G4 12" 2011720	
	Side Walls	110-130 VAC, 50/60 Hz	LA2-3S9 G4 8" 2011667	LA2-4S9 G4 8" 2011669	LA2-5S9 G4 8" 2011671	LA2-6S9 G4 8" 2011673	
			LA2-3S9 G4 10" 2011683	LA2-4S9 G4 10" 2011685	LA2-5S9 G4 10" 2011687	LA2-6S9 G4 10" 2011689	
			LA2-3S9 G4 12" 2011715	LA2-4S9 G4 12" 2011717	LA2-5S9 G4 12" 2011719	LA2-6S9 G4 12" 2011721	
Nominal Size			0.9 meter (3')	1.2 meter (4')	1.5 meter (5')	1.8 meter (6')	
External Dimensions	Without Arm Res	t	1035 x 800 x 1580 mm (40.8" x 31.5" x 62.2")	1340 x 800 x 1580 mm (52.8" x 31.5" x 62.2")	1645 x 800 x 1580 mm (64.8" x 31.5" x 62.2")	1950 x 800 x 1580 mr (76.8" x 31.5" x 62.2")	
W x D x H)	With Arm Rest		1035 x 867 x 1580 mm (40.8" x 34.1" x 62.2")	1340 x 867 x 1580 mm (52.8" x 34.1" x 62.2")	1645 x 867 x 1580 mm (64.8" x 34.1" x 62.2")	1950 x 867 x 1580 mn (76.8" x 34.1" x 62.2")	
(nternal 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")	
Jsable Work Area			0.47 m² (5.0 sq. ft.)	0.63 m² (6.8 sq. ft.)	0.79 m² (8.5 sq. ft.)	0.94 m² (10.3 sq. ft.)	
Sash opening			A	vailable in 203 mm (8"), 254	mm (10"), and 305 mm (12	")	
Maximum Sash Openi	ng			575 mn	າ (22.6")		
		203 mm (8")					
	Inflow	254 mm (10")	0.53 m/s (105 fpm) 0.53 m/s (105 fpm)				
Average Airflow		305 mm (12")		0.53 m/s	· · · · · · · · · · · · · · · · · · ·		
Velocity		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)	
	Downflow	254 mm (10")	0.33 m/s (65 fpm)	0.30 m/s (60 fpm)	0.33 m/s (65 fpm)	0.30 m/s (60 fpm)	
		305 mm (12")	0.35 m/s (70 fpm)	0.30 m/s (60 fpm)	0.35 m/s (70 fpm)	0.35 m/s (70 fpm)	
		203 mm (8")	356 m³/h (210 cfm)	473 m³/h (280 cfm)	593 m³/h (350 cfm)	709 m³/h (420 cfm)	
	Inflow	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	
Airflow Volume	Dannaflann	203 mm (8")	581 m³/h (345 cfm)	771 m³/h (461 cfm)	967 m³/h (567 cfm)	1156 m³/h (691 cfm	
arriow volume	Downflow	254 mm (10") 305 mm (12")	639 m <sup>3</sup> /h (374 cfm) 678 m <sup>3</sup> /h (397 cfm)	848 m <sup>3</sup> /h (499 cfm) 771 m <sup>3</sup> /h (461 cfm)	1063 m <sup>3</sup> /h (624 cfm) 1128 m <sup>3</sup> /h (662 cfm)	1272 m <sup>3</sup> /h (748 cfm 1349 m <sup>3</sup> /h (794 cfm	
		203 mm (8")	356 m³/h (210 cfm)	473 m <sup>3</sup> /h (280 cfm)	593 m³/h (350 cfm)	709 m <sup>3</sup> /h (420 cfm)	
	Exhaust	254 mm (10")	446 m³/h (263 cfm)	591 m³/h (350 cfm)	741 m³/h (438 cfm)	887 m³/h (525 cfm)	
	EXTIGUSE	305 mm (12")	535 m³/h (315 cfm)	710 m³/h (420 cfm)	890 m³/h (525 cfm)	1065 m³/h (630 cfm)	
Additional Static Bross	ture for Optional	203 mm (8")	15-25 Pa	25-35 Pa	20-30 Pa	40-50 Pa	
Additional Static Press Thimble Exhaust Colla	r (Measured		20-30 Pa	35-45 Pa	25-35 Pa	55-65 Pa	
60mm or 14" from th	e top of	254 mm (10")					
exhaust collar)		305 mm (12")	25-35 Pa	45-55 Pa	40-50 Pa	65-75 Pa	
Required Exhaust with	Optional	203 mm (8")	390 m³/h (230 cfm)	529 m³/h (311 cfm)	622 m³/h (366 cfm)	780 m³/h (459 cfm)	
himble Exhaust Colla		254 mm (10")	480 m³/h (283 cfm)	637 m³/h (375 cfm)	770 m³/h (453 cfm)	944 m³/h (556 cfm)	
		305 mm (12")	569 m <sup>3</sup> /h (335 cfm)	756 m³/h (445 cfm)	921 m³/h (542 cfm)	1133 m <sup>3</sup> /h (667 cfm)	
JLPA Filter Typical Eff	iciency		>99.9	999% at 0.1 to 0.3 micron, U >99.999% at MPPS, H		BUSA	
Sound Emission		203 mm (8")	57	57	60	63	
dBA)*	NSF / ANSI 49	254 mm (10")	60 62	59 60	63 65	63.3	
ED Lamp Light Inter-	sity	305 mm (12")	UZ			65.9	
.ED Lamp Light Inten	sity			≥ 1000 lux			
	Nominal power (Watt)	203 mm (8")	160	190	350	366	
		254 mm (10")	195	201	374	420	
		305 mm (12")	228	236	455	550	
Electrical Rating (8)**		203 mm (8")	546	648	1194	1249	
220-240 VAC 60/60Hz	Heat Load (BTU/hr)	254 mm (10")	665	686	1276	1433	
0U/6UHZ	(5.67)	305 mm (12")	778	805	1553	1877	
		203 mm (8")					
	Full Load Amps exclude 5A EO	254 mm (10")	6	A	10	A	
	CACIGGE SA EU	305 mm (12")					
	Nominal power (Watt)	203 mm (8")	163	193	355	372	
		254 mm (10")	203	205	380	421	
		305 mm (12")	232	240	380	537	
		203 mm (8")	556	659	1211	1269	
				699	1297	1471	
	Heat Load	254 mm (10")	693	033			
Electrical Rating (9)** 110-130 VAC 50/60H <i>7</i>	Heat Load (BTU/hr)	254 mm (10") 305 mm (12")	693 792	819	1570	1832	
		305 mm (12")			1570	1832	
110-130 VAC	(BTU/hr) Full Load Amps	305 mm (12") 203 mm (8")	792	819			
10-130 VAC	(BTU/hr)	305 mm (12")	792			1832	

<sup>\*</sup>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.

			TECHNICAL SPEC	IFICATIONS			
Labculture® Class II	Stainless Steel Side Walls	220-240 VAC, 50/60 Hz	LA2-3S8 G4 8" (2011666)	LA2-4S8 G4 8" (2011668)	LA2-5S8 G4 8" (2011670)	LA2-6S8 G4 8" (2011672)	
			LA2-3S8 G4 10" (2011682)	LA2-4S8 G4 10" (2011684)	LA2-5S8 G4 10" (2011686)	LA2-6S8 G4 10" (2011688)	
			LA2-3S8 G4 12" (2011714)	LA2-4S8 G4 12" (2011716)	LA2-5S8 G4 12" (2011718)	LA2-6S8 G4 12" (2011720)	
		110-130 VAC, 50/60 Hz	LA2-3S9 G4 8" (2011667)	LA2-4S9 G4 8" (2011669)	LA2-5S9 G4 8" (2011671)	LA2-6S9 G4 8" (2011673)	
			LA2-3S9 G4 10" (2011683)	LA2-4S9 G4 10" (2011685)	LA2-5S9 G4 10" (2011687)	LA2-6S9 G4 10" (2011689)	
			LA2-3S9 G4 12" (2011715)	LA2-4S9 G4 12" (2011717)	LA2-5S9 G4 12" (2011719)	LA2-6S9 G4 12" (2011721)	
	Main body		Electro-galvanized steel with white oven-baked epoxy-polyester Isocide™ antimicrobial powder-coated finish, 1.5 mm (0.06″) / 16 gauge thick				
Cabinet Construction	Work Zone		Stainless steel type 304 with no.4B finish, 1.5 mm (0.06") / 16 gauge thick				
	Sash Window		6 mm UV-absorbing Tempered Glass				
Net Weight			243 Kg (536 lbs)	287 Kg (633 lbs)	381 Kg (840 lbs)	400 kg (882 lbs)	
Shipping Weight			304 kg (644 lbs)	360 kg (772 lbs)	451 kg (968 lbs)	506 kg (1116 lbs)	
Shipping Dimensions, Maximum (W x D x H)			1185 x 950 x 2120 mm (46.7" x 37.4" x 83.5")	1490 x 950 x 2120 mm (58.7" x 37.4" x 83.5")	1950 x 950 x 2120 mm (76.8" x 37.4" x 83.5")	2200 x 950 x 2120 mm (86.6" x 37.4" x 83.5")	
Shipping Volume			2.3 m³ (81.2 cu. ft.)	3 m³ (105.9 cu. ft.)	3.9 m³ (137.7 cu. ft.)	4.4 m³ (155.4 cu. ft.)	
Options and Accessories							
Anti blassbank	EG Powde	er-Coated	ANTI-BLOW BACK VALVE 10" ABBV-10P 5170352				

Options and Accessories							
Anti-blowback Valve 10 inches	EG Powder-Coated	ANTI-BLOW BACK VALVE 10" ABBV-10P 5170352					
	304 Stainless Steel	ANTI-BLOW BACK VALVE 10" ABBV-10S 5170354					
Exhaust Collar		ECO-F1-LA2/AC2/LR2/ AR-3FT G4 5171097	ECO-F1-LA2/AC2/LR2/ AR2/VA2-4FT G4 5171098	ECO-F1-LA2/AC2/LR2/ AR2-5FT G4 5171099	ECO-F1-LA2/AC2/LR2/ AR2/VA2-6FT G4 5171100		
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	-H_			
Electrical Outlet	GFCI	EO-GFCI (5170071)					
	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)					
Service Fixtures	EU SF-Nitrogen-20 mm	SF-1N20 (5170503)					
	EU SF-Water-20 mm	SF-1W20 (5170458)					
	US SF-Universal-20 mm	SF-2U22 (5170504)					
	Copper Piping for SF	CU-Pipe (5170026)					
Support Stand (710 mm to 920 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		
Stainless Steel Pipette Storage Shelf		5260327					
Arm Rest Padding		MEWREST (5170127)					
Foot Rest		FT-REST (5170073)					
Laboratory Chair		ME-LD-AR360 (1150006)					
IQOQ Protocol		9010179					





















EO-GFCI SF-1\_







MEWREST FT-REST ME-LD-AR360



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- Animal Research Workstation Biosafety Safety Cabinet CO, Incubator Ducted Fume Hood Ductless Fume Hood Filtered Storage Cabinet Laboratory Centrifuge Laboratory Oven and Incubator
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  Laboratory Shaker
  Laminar Flow Cabinet
  PCR Cabinet
  PCR Thermal Cycler
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