Friocell EVO

Large Volume CO2 Incubators



Temperature range:	0°C – 100°C
CO2 concentration:	0% – 20%, Vaisala drift-free infrared sensor
Chamber volume:	8 cu. ft. (222 L) – 43 cu. ft. (1212 L)
Controller:	EVO advanced microprocessor
Housing material:	Galvanized mild steel, painted
Chamber material:	AISI 304 stainless steel
Regulatory labels:	CE, UL, and CSA listed



EVO Controller:

- 5.7" touch display, color, glove-friendly operation
- Up to 100 programs, up to 100 segments each, unlimited cycles
- Real-time programming with temperature ramp settings
- Fan adjustments in 1% increments
- Graphic cycle display
- Acoustic and visual alarms: temperature, CO2 deviation, and time
- Integrated SD card 30-day data logger with Excel-formatted export
- USB, SD card, RS-232, and optional Ethernet connectivity
- Multi-level secure user authentication
- Optional support for FDA 21 CFR Part 11 compliance

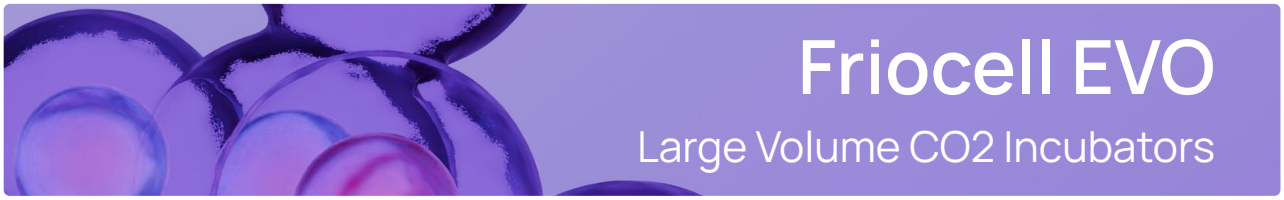
Standard Equipment:

- Patented forced air convection system with simultaneous vertical and horizontal airflow for precise temperature uniformity
- EVO advanced microprocessor with Fuzzy Logic for real-time adaptive control
- Controlled CO2 concentration, 0% – 20%
- Vaisala drift-free infrared CO2 sensor holds calibration without auto-referencing or zeroing
- HEPA filter on incoming CO2 gas line
- 160°C sterilization cycle (except 1212)
- AISI 304 stainless steel chamber, double-walled: seamless main chamber with rounded corners and fully removable inner chamber for ease of cleaning
- Five layers of insulation to minimize heat loss and efficiently maintain chamber conditions
- Shelving brackets molded into inner chamber walls
- Patented 4-point door locking system securely seals the door to the chamber
- Inner glass door for viewing samples with minimal disruption to chamber conditions
- 2" (50 mm) stainless steel access port for routing sensors, probes, or external connections

Optional Equipment:

- Stainless steel exterior, AISI 304 or 316
- AISI 316 stainless steel chamber
- Additional 1" (25 mm), 2" (50 mm), 4" (100 mm) stainless steel access port
- Flexible PT100 temperature sensor
- Ethernet communication port
- Automatic key and door lock
- Door sensor and alarm
- Interior electrical socket, 230 V
- Interior light
- Heated inner glass door to prevent condensation
- Tri-gas N2 injection for O2 control, 1% – 20% (222 only)
- Rolling cart: 222 only
- BMS contacts (24 V, 1 A)
- 4–20 mA output contacts
- IQ/OQ protocols with 9-pt. or 27-pt. temperature mapping
- WarmComm software:
  - 4.0B, data monitoring
  - 4.0P, data monitoring and control

4.0F, supports FDA 21 CFR Part 11 compliance



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	Unit	222	404	707	1212
Temperature					
Working temperature	°C	0 – 100	0 – 100	0 – 100	0 – 70
Temperature uniformity @ 10°C	±°C	‹ 0.5	‹ 1	‹ 1	‹ 0.6
Temperature uniformity @ 37°C	±°C	‹ 0.5	‹ 1	‹ 1	‹ 0.5
Temperature stability	±°C	‹ 0.2	‹ 0.3	‹ 0.4	‹ 0.2
Time to reach 37°C from ambient	minutes	‹ 11	‹ 13	‹ 13	‹ 30
Cool-down time from 22°C to 10°C	minutes	‹ 17	‹ 19	‹ 21	‹ 21
Recovery from door open 30 sec. (37 / 50°C)	minutes	‹ 2 / ‹ 3	‹ 2 / ‹ 4	‹ 6 / ‹ 6	‹ 10 / ‹ 10
Heat emission @ 37°C	watts	63	123	148	200
CO2					
CO2 concentration	%	0 – 20	0 – 20	0 – 20	0 – 20
CO2 supply pressure	bar	0.3 – 0.7	0.3 – 0.7	0.3 – 0.7	0.3 – 0.7
	psi	4.4 – 10.2	4.4 – 10.2	4.4 – 10.2	4.4 – 10.2
Chamber					
Capacity	cu. ft. / L	8.0 / 222	14.3 / 404	25.0 / 707	43.0 / 1212
Doors	#	1	1	2	3
Shelves (standard / max)	#	2 / 10	2 / 19	2 / 19	6 / 3x19
Shelf distance	in / mm	2.8 / 70	2.8 / 70	2.8 / 70	2.8 / 70
Usable shelf area (w x d)	in	20.5 x 19.1	20.5 x 19.1	36.2 x 19.1	20.5 x 19.1
	mm	520 x 485	520 x 485	920 x 485	520 x 485
Maximum shelf load	lb / kg	66 / 30	66 / 30	44 / 20	66 / 30
Maximum unit load	lb / kg	154 / 70	220 / 100	287 / 130	661 / 300
Overall Dimensions					
Width	in / mm	30.7 / 780	43.3 / 1100	59.1 / 1500	99.6 / 2530
Depth	in / mm	34.8 / 885	34.8 / 885	34.8 / 885	35.4 / 898
Height [1]	in / mm	55.7 / 1415	74.4 / 1890	74.4 / 1890	75.6 / 1921
Weight	lb / kg	315 / 143	507 / 230	595 / 270	1202 / 545
Internal Dimensions					
Width	in / mm	21.3 / 540	21.3 / 540	37.0 / 940	3x21.3 / 3x540
Depth	in / mm	20.9 / 530	20.9 / 530	20.9 / 530	20.9 / 530
Height	in / mm	30.1 / 765	55.7 / 1415	55.7 / 1415	55.7 / 1415
Electrical					
Voltage	V, Hz	115, 50/60	115, 50/60	115, 50/60	230, 50/60
Wattage	watts	1150	1700	2000	2500
Amperage	amps	11	16	18	12
IP code		IP20	IP20	IP20	IP20

[1] 222 model height measured with adjustable feet. 404, 707, and 1212 model heights measured with rolling casters.