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# CLIMACELL EVO

## Environmental Chamber – Material Testing



**Materials & Degradation studies**



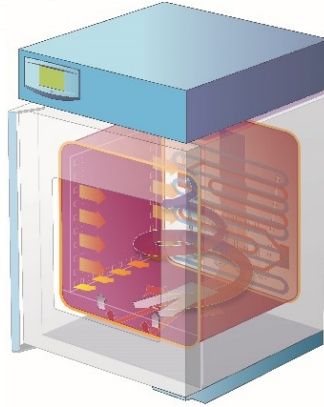
**Electronics**



**Metrology**



**Materials & Component Testing**



Patented Vertical & Horizontal Air Flow System for Precise Uniformity

The **CLIMACELL EVO** is designed for precise climate control. The Climacell applications are extensive: shelf-life testing, packaging, degradation studies & plant growth. Secure data storage with Warmcomm software.

The EVOs' all stainless-steel pharmaceutical graded (AISI 304) double-wall chamber design (main & inner chamber) allows for long life expectancy and facilitates the easy cleaning and sterilization of the chamber. Optional 160 °C sterilization cycle.

BMT's patented air-flow system, humidification and dehumidification creates precise conditions.

**Forced Air Convection:** Patented Air flow, both vertical & horizontal

**Chambers:** 111 (3.9), 222 (7.8), 404 (14.3), 707 (25), 1212 (43) ft3 / ltrs

**Working Temperature Range:** 0 °C up to 100 °C with humidity 10 °C up to 95°C

**Humidity Range:** 10 to 98%, controlled in 1% increments

**Optional Lighting:** VIS & UV shelf & door lighting – LED and fluorescent tube. Fully programmable light intensity, microprocessor dimming 0 – 100%.

**CO2 control option** available 0.1% to 20% with IR sensor

**Power:** 230V 50 / 60Hz

L to R: 111, 222, 404, 707, 1212



### Features

- removable inner chamber for cleaning & sterilization
- AISI 304 seamless stainless steel chamber & shelves with rounded corners
- data encryption corresponding to FDA 21 Part 11
- multi-level user administration
- continuous indication of temperature, humidity, time & alarm
- audio and visual alarm
- independent safety thermostat
- RS 232 communication port with Ethernet option
- inner chamber which can be fully removed
- 5 layers of insulation for precise chamber uniformity
- digital safety thermostat
- patented air flow and adjustable forced air fan rate 1% to 100 %
- automatic water supply from water supply
- pure water tank with automatic pump

### LCD Color Touch Screen



- fuzzy logic microprocessor controller
- LCD color, glove friendly color touch screen display with icon navigation
- humidification and de-humidification
- 100 programs – 100 segments – for varying loads and parameters
- SD card data storage in MS Excel format
- Graphic display of cycle parameters
- 30 day data logger with graphs
- High process security – users protected by passwords (5 users, 1 admin)
- program temperature ramps, real time, heating sequences and cycling
- delayed heating start and stop

### Lighting: LED & Tube – ICH Q1B

- VIS & UV fluorescent lighting
- VIS LED shelf and door lighting
- digitally programmable intensity 0 – 100%

### Options

- Communication module: WiFi, Ethernet, USB
- 20°C with automatic defrost
- Temperature control from 100°C to 160°C
- VIS & UV measurement w/data output: -10 to 70°C
- access ports 25mm (1"), 50 (2"), 100 (4")
- automatic door lock or standard key lock
- 160°C sterilization cycle
- programmable water proof inner outlet
- BMS remote alarm monitoring contacts
- PT 100 flexible sensor
- WarmComm software: FDA 21 CFR part 11 and Bi directional communication
- Stainless steel exterior
- AISI 316 stainless steel chamber
- Stainless steel exterior

Climacell EVO Technical Data		Model	111	222	404	707	1212	
Interior dimensions Chamber: stainless steel AISI 304 AISI 316 available as option	volume	ft3	3.9	7.8	14.3	25	43	
	width	liters	111	222	404	707	1212	
		inches	21.25	21.25	21.25	37	3 x 21.25	
	depth	mm	540	540	540	940	3 x 540	
		inches	14.6	20.5	20.5	20.5	20.5	
	height	mm	370	520	520	520	520	
inches		20.9	29.9	55.6	55.6	55.6		
Volume of the steam generator capacity		ft3	5.9	10.8	18.7	31	62.9	
		liters	167	305	530	878	1781	
Shelves: stainless steel	# of shelf guides in chamber side walls	maximum #	7	10	19	19	3 x 19	
		standard #	2	2	2	2	6	
Shelf distance	min. distance between trays	inches	2.8	2.8	2.8	2.8	2.8	
		mm	70	70	70	70	70	
Useable shelf area	width x depth	inches	20.5x13.3	20.5x19.1	20.5x19.1	36.3x19.1		
		mm	520x338	520x485	520x485	920x485		
Outer metal doors		No.	1	1	1	2	3	
Inner glass doors		No.	1	1	1	2	3	
Maximum shelf load	one shelf	lbs	44	66.1	66.1	110.2	66.1	
		kg	20	30	30	50	30	
	total per unit	lbs	110.2	154.3	220.5	286.6	661	
		kg	50	70	100	130	300	
Electric parameters: EVO 0°C Protective system: 16 Amp minimum	max consumption	W	2050	2200	3150	3400	3,500	
		A	8.9	9.6	13.7	14.8	15.2	
		50/60 Hz	V	230	230	230	230	230
Electric parameters: EVO -20°C Protective system: 16 Amp minimum	Max consumption	W	1630	1780	2115	2640	3215	
		50/60 Hz	V	230	230	230	230	230
			IP 20	IP 20	IP 20	IP 20	IP 20	
Temperature Data	from 0.0°C to °C		0 °C - + 100	decontamination	160°C			
Operation Temperature	From -20°C to °C		-20 °C - + 100	decontamination	160°C			
Working temperature Temperature accuracy in the chamber ...Distribution ...Uniformity Heating up time from ambient temp., Cooling down time Recovery time after 1 min. door open	range °C		0 -- 100	0 -- 100	0 -- 100	0 -- 100	0 -- 100	
	at 10°C	± °C	<0.5	<0.5	<1	<1	<1.5	
	at 37°C	± °C	<0.5	<0.5	<1	<1	<1.5	
	to 37°C	± °C	<0.2	<0.2	<0.3	<0.4	<0.8	
		min.	20	25	26	27	30	
	from 22°C - 10°C	min.	<21	<21	<21	<21	<21	
at 37°C	min.	4	4	4	4	4		
	at 50°C	min	4	4	4	4		
Relative Humidity	range	%	10%-95%	10%-95%	10%-95%	10%-95%	10%-95%	
Heat Emission	at 37°C	W	70	97	123	148	200	
External dimensions (including door/Handle, feet / rollers)	width	inches	30.7	30.7	43.1	59.2	103.5	
		mm	780	780	1100	1500	2360	
	depth	inches	29.7	34.8	34.8	34.8	34.8	
		mm	755	885	885	885	885	
	height	inches	46.3	57.2	74.3	74.3	75.2	
		mm	1177	1452	1888	1888	1910	
Weight Climacell EVO 0°C	net	lbs	242.5	309	529	617	-	
		kg	110	140	240	280	-	
	gross	lbs	309	390	617	719	-	
		kg	140	177	280	326	-	
Weight Climacell EVO -20°C	net	lbs	264.5	331	551	639	750	
		kg	120	150	250	290	340	
	gross	lbs	331	412	639	741	871	
		kg	150	187	290	336	395	
CO2 Concentration		%	0.1 - 20	0.1 - 20	0.1 - 20	-	-	
CO2 Required Pressure		Bar / psi	0.3-0.7 / 5 -- 10	0.3-0.7 / 5 -- 10	0.3-0.7 / 5 -- 10	-	-	

**Note:** All technical data is related to 22 °C ambient temperature and +/- 10% voltage swing (if specified). For other parameters see section: Electrical connections. Temperature & humidity variation occurs in the case of consistent air-flow during operation. No more than 50% of the tray should be filled in order to facilitate uniform air circulation inside the chamber.

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#### Benchtop Models

- 111
- 222

Add optional leveling casters for bench placement