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# CLIMACELL ECO

## Shelf Life, Stability, Environmental Climate Chamber



### Food & Beverage Science

Stability testing of food, beverages and packaging including shelf life studies



### Plant Growth & Seed Germination

Simulating environmental conditions for agricultural applications; germination, green plant growth, plant tissue culture, crops and fruits



404 (14.3 ft3)



111 (4 ft3)



707 (25 ft3)



1212 (43 ft3)

The **CLIMACELL** was developed to create exact reproducible simulation of a wide range of environmental conditions for Shelf Life studies including product and packaging, plant growth, materials & components.

The Climacells' stainless steel pharmaceutical graded (AISI 304) double-wall chamber design (main & inner chamber) allows for long life expectancy and facilitates the easy cleaning & sterilization of the chamber.

Combine these features with lighting and BMT's patented air-flow system, humidification and dehumidification, the Climacell will create precise controllable chamber conditions.

**Forced Air Convection:** Patented Air flow system: vertical & horizontal

**Chamber Sizes:** 111 (4), 222 (8), 404 (14.3), 707 (25), 1212 (43) ft<sup>3</sup> / liters

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

**Humidity Range:** 10 to 95%, controlled in 1% increments

#### Lighting:

VIS & UV shelf & door lighting: fluorescent tube

111 & 222: up to 2 shelf lights

404, 707 & 1212: up to 3 shelf lights

**Power:** 230V 60Hz

### ECO LCD Control Panel



- 3" LCD COG display
- 9 programs & 8 segments for varying loads and parameters
- constant monitoring of chamber conditions
- fuzzy logic enabled microprocessor
- USB flash port
- USB & RS232 device ports
- 50mm (2") port
- delayed heating start & stop function
- digital safety thermostat
- acoustic and visual alarms
- keyboard security against unauthorized use
- inner glass door to view into chamber

### Optional Lighting

#### Degradation - Growth - Insect Rearing

- fluorescent lighting
- UV or VIS range light
- ON or Off shelf or door lighting
- door lighting is VIS only
- applications include but not limited to degradation, growth & insect rearing

Interior view of 707 model (25 ft3)



### Options

- temperature down to - 10°C
- access ports 1", 2", 4"
- Ethernet communication port
- rolling carts for 111 & 222
- Door sensor and alarm
- automatic and key door lock
- WarmComm Data capture software...
- ✓ 4.0B - Receive data
- ✓ 4.0P - Receive data and control the unit
- ✓ 4.0F - FDA 21 CFR part 111 compliant
- BMS - Building monitoring alarm contact
- 4 - 20mA contacts
- Flexible PT 100 sensor
- stainless steel exterior
- interior light
- water-proof interior outlet 230V
- IQ / OQ protocols & 9pt temperature mapping

Climacell ECO Technical Data		Model	111	222	404	707	1212	
Interior dimensions  Chamber: stainless steel	volume	ft3	3.9	7.8	14.3	25	43	
		liters	111	222	404	707	1212	
	width	inches	21.2	21.2	21.2	37	3 x 21.25	
		mm	540	540	540	940	3 x 540	
	depth	inches	14.6	20.5	20.5	20.5	20.5	
		mm	370	520	520	520	520	
	height	inches	20.9	29.9	55.7	55.7	55.6	
	mm	530	760	1415	1415	1410		
Volume of the steam space		ft3	5.8	10.6	18.5	31	62.9	
		liters	163	299	524	876	1781	
Shelves: stainless steel	Shelf capacity: # of shelf guides / brackets in chamber side walls	max. number	7	10	19	19	3 x 19	
		standard #	2	2	2	2	6	
Shelf distance	min. distance	inches	2.8	2.8	2.8	2.8	2.8	
	between trays	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	20.5x19.1x3	
		mm	520x338	520x485	520x485	920x485	520x485x3	
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	max consumption	W	2,050	2,100	3,150	3,400	3,500	
	Protective system	50/60 Hz	V	230	230	230	230	230
			A	9	9	13.7	14.8	15.2
Working temperature Temperature accuracy in the chamber Distribution  Uniformity	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	
		± °C	<0.2	<0.2	<0.3	<0.4	<0.8	
	Heating up time from ambient temp., Cooling down time	to 37°C	min.	24	25	26	27	30
	from 22°C to 10°C	min.	<21	<21	<21	<21	<21	
Recovery time after 1 min. door open	at 37°C	min.	4	4	4	4	4	
	at 50°C	min	4	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 / casters)	width	inches	29.9	30	41.7	57.5	103.5	
		mm	760	760	1060	1460	2360	
	depth	inches	29.5	35.4	33.9	33.9	34.8	
		mm	750	900	860	860	885	
	height	inches	44.9	54.2	75	75	75.2	
		mm	1140	1370	1905	1905	1910	
Weight	net	lbs	222.7	291	507	595.2	1,193	
		kg	101	132	230	270	541	
	gross	lbs	288.8	372.6	696.2	696.7	1,898	
		kg	131	169	270	316	861	