

Climate Chambers for ICH Stability, Shelf Life & Materials Testing

Patented Forced Air Convection, Cooling & Controlled Humidity



Temperature:

0°C up to 100°C (10°C up to 90°C w/humidity)

- ECO: -10°C min. temp. option available.
- EVO: -20° min. temp. option available.

Humidity:

ECO: 10% RH up to 95% RH (uniformity up to 2%).

EVO: 10% RH up to 98% RH (uniformity up to 2%).

- RH controlled in 1% increments for EVO devices.
- Active dehumidification.

Chamber:

AISI 304 stainless steel (AISI 316 SS option available).

Double wall, seamless main chamber with removable inner chamber.

Optional Lighting (EVO):

- Programmable UV & VIS ICH Q1B lighting for photostability studies.
- VIS LED shelf and door lighting.
- Light intensity controlled in 1% increments.

Electrical:

230V 50/60Hz

Optional Equipment:

- Stainless steel exterior: AISI 304 or 316.
- AISI 316 stainless steel chamber.
- Stacking frame for 111 devices.
- 160°C sterilization cycle on EVO models .
- 1" (25mm) / 2" (50mm) / 4" (100mm) access port.
- Flexible PT 100 temperature sensor.
- Ethernet communication port.
- Automatic key and door lock.
- Door sensor and alarm.
- Waterproof interior electrical socket: 230V.
- Rolling cart for 111 and 222 models.
- 4-20mA and BMS contacts (24V, 1A).
- IQ/OQ protocols with 9pt. or 27pt. temperature mapping.
- Warmcomm software:
 - 4.0B - data monitoring.
 - 4.0P - data monitoring and control.
 - 4.0F - FDA 21 CFR part 11 compliance.

Climacell climate chambers simulate specific environmental conditions through precise control of temperature, humidity and optional lighting.

Applications for the Climacell include ICH Q1A stability testing of drug products and substances, shelf-life studies of food and beverage products, and materials testing. Climacell devices also meet the requirements for ICH Q1B photostability studies when equipped with the EVO advanced controller and fully programmable fluorescent shelf lighting.

Key Benefits:

- Pharmaceutical-grade stainless steel chamber for easier cleaning and sterilization.
- Patented forced air convection system with simultaneous vertical and horizontal airflow for precise uniformity of temperature and humidity with rapid heating and cooling times.
- Repeatable simulation of a wide range of climate conditions.
- Temperature ramping and cycling.



ECO Controller:

- 3" LCD display.
- Fuzzy Logic algorithm constantly monitors chamber conditions and continuously optimizes parameters.
- (9) programs with (8) segments each for varying loads and parameters.
- Real-time programming and cycling.
- Programmable audible & visual alarms – temperature, time & humidity.
- USB flash & device, RS232 & optional Ethernet port.
- Integrated USB 30-day data logger for temperature measurement & recording.
- Keypad lock against unauthorized access.
- Optional FDA CFR 21 part 11 compliance.
- 50mm (2") port.



EVO Controller:

- 5.7" LCD touch display.
- Fuzzy Logic algorithm constantly monitors chamber conditions and continuously optimizes parameters.
- (100) programs with (100) segments each for varying loads and parameters.
- Real-time programming and cycling with settings for temperature ramping.
- Fan adjustments in 1% increments.
- Programmable audible & visual alarms – temperature, time & humidity.
- Service programs for quick error diagnostics.
- USB device, RS232 & optional Ethernet port.
- Integrated SD card 30-day data logger & multi-level secure user authentication.
- Optional FDA CFR 21 part 11 compliance.
- 50mm (2") port.

Climacell ECO/EVO Technical Data		Model	111	222	404	707	1212
Interior Dimensions Chamber: AISI 304 stainless steel (AISI 316 stainless steel option available)	Volume	ft ³	4	8	14.3	25	43
		liters	111	222	404	707	1212
	Width	inches	21.3	21.3	21.3	37	3 x 21.3
		mm	540	540	540	940	3 x 540
	Depth	inches	14.6/15	20.5/20.9	20.5/20.9	20.5/20.9	20.5/20.9
		mm	370/380	520/530	520/530	520/530	520/530
	Height	inches	20.9/21	29.9/30.1	55.7	55.7	55.7
		mm	530/535	760/765	1415	1415	1415
Exterior Dimensions (ECO/EVO)	Width	inches	29.9/30.7	29.9/30.7	41.7/43.1	57.5/59.2	95.9/99.6
		mm	760/780	760/780	1060/1100	1460/1500	2435/2530
	Depth	inches	29.5/29.7	35.4/34.8	33.9/34.8	33.9/34.8	34.2/35.4
		mm	750/755	895/885	860/885	860/885	870/898
	Height	inches	44.9/47.8	53.9/57.1	75/74.4	75/74.4	75.2/75.6
		mm	1140/1215	1370/1450	1905/1890	1905/1890	1905/1921
Shelves: Stainless Steel	Capacity: # 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	20.5x13.2	20.5x19.1	20.5x19.1	36.3x19.1	20.5x19.1x3
		mm	520x335	520x485	520x485	920x485	520x485x3
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
# Outer Metal Doors			1	1	1	2	3
# Inner Glass Doors			1	1	1	2	3
Volume of Steam Space		ft ³	5.8/5.9	10.6/10.8	18.5/18.7	30.9/31	61.9
		liters	163/167	299/305	524/530	876/878	1753
Operation Temperature	From 0°C (-10°C / -20°C)	up to °C	100	100	100	100	100
Temperature Accuracy	Distribution @ 10°C	± °C	<0.5	<0.5	<1	<1	<0.9
	Distribution @ 37°C	± °C	<0.5	<0.5	<1	<1	<0.5
	Uniformity	± °C	<0.2	<0.2	<0.3	<0.4	<0.2
Heating Time to 37°C From the Ambient Temperature		minutes	<11	<11	<13	<13	<30
Cooling Down Time From 22°C to 10°C		minutes	<21	<17	<19	<21	<21
Recovery Time After Door Opened for 30 s according to DIN 12880	@ 37°C	minutes	<4	<3	<3	<6	<10
	@ 50°C	minutes	<5	<6	<7	<6	<10
Relative Humidity (RH)	Range	%	10 - 95/98	10 - 95/98	10 - 95/98	10 - 95/98	10 - 95/98
Accuracy RH (T_{CHAMBER} ≥ 21°C)	In Time	%	2	2	2	2	2
Heat Emission	@ 37°C	W	70	63	123	148	200
CO₂ Concentration (EVO Only)		%	0.1 - 20	0.1 - 20	0.1 - 20	-	-
N₂/O₂ Control		%	1 - 20	1 - 20	1 - 20	1 - 20	1 - 20
CO₂ Required Pressure (EVO Only)		Bar/PSI	0.3-0.7/5-10	0.3-0.7/5-10	0.3-0.7/5-10	-	-
Noise Level of Complete Device		dB	46	50	56	58	60
Electrical Data: ECO & EVO 0°C	Max Consumption 50/60Hz	W	2050	2200	3150	3400	3500
		A	8.9	9.6	13.7	14.8	15.2
		V	230	230	230	230	230
Electrical Data: EVO -20°C <i>Protective system: 16A minimum</i>	Max Consumption 50/60Hz	W	1630	1780	2115	2640	3215
		V	230	230	230	230	230
IP Code			IP20	IP20	IP20	IP20	IP20
ECO/EVO Weight	Net	lbs	229.3/242.5	297/324.1	520.3/529.1	599.6/617.3	1193/1250
		kg	104/110	135/147	236/240	272/280	541/567
	Gross	lbs	322/485	406/580	628/860	730/1102	1898/1956
		kg	146/220	184/263	285/390	331/500	861/887
EVO Weight -20°C	Net	lbs	264.5	331	551	639	1257
		kg	120	150	250	290	570
	Gross	lbs	485	580	860	1102	1956
		kg	220	263	390	500	887

ECO value/EVO value