



FRIOCELL ECO Pharma



ICH Q1A Stability & FDA 21 CFR part 11 Compliant

bmtusa.com



Pharmaceutical & Bio Tech
ICH Q1A stability testing



Cosmetics
Stability and durability testing of cosmetic products



222 on optional cart



Back (L - R) 404, 707, 1212

Front (L - R) 55, 111, 222

The FRIOCELL ECO chambers are designed for ICH Q1A stability testing. Complete your testing with secure data storage and data evaluation with Warmcomm Software, which fully conforms to **FDA 21 CFR part 11**.

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

BMT's patented air-flow system (vertical & horizontal air movement) system creates precise conditions for validating the process.

Forced Air Convection: Patented air flow, vertical & horizontal
Chamber Size: 22, (.8 ft3), 55 (2 ft3), 111 (4 ft3), 222 (8 ft3), 404 (14.3 ft3), 707 (25 ft3), 1212 (43 ft3)

Working Temperature Range: 0°C up to 100 °C

Lower Temp: -10°C with auto defrost option available

Power: 115V for models 22, 55, 111, 222, 404 & 707 50 / 60Hz

Chamber AISI 304 seamless stainless-steel w/ rounded corners

Fuzzy Logic ensures accurate temperatures w/out overshooting & flexible and repeatable cycles

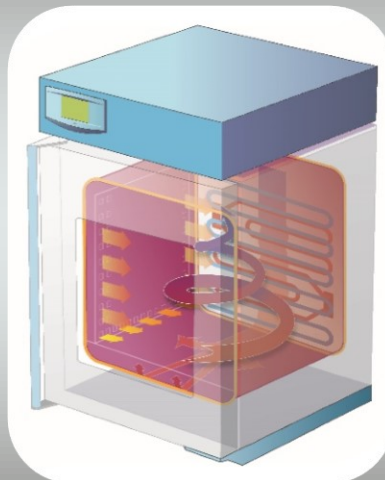
Smart Handle with four-point locking, tightly sealing the chamber door to the chamber gasket

ECO LCD Control Panel



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

Patented Air Flow



Options

- USB Flash port with 30day data logging
- **ECO +** add 6 programs for each program segment
- temperature down to - 10°C
- access ports 25 (1"), 50 (2"), 100 (4") mm
- Ethernet communication
- rolling carts for 22, 55, 111, 222 models
- Door sensor and alarm
- automatic and key door lock
- WarmComm 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
- Flexible PT 100 sensor
- stainless steel exterior
- interior light
- water-proof socket 115V or 230V
- IQ / OQ protocols with 9pt temperature mapping

FRIOCELL ECO	Technical Data	Model	22	55	111	222	404	707		
Interior dimensions Chamber: stainless steel	volume	ft3	0.8	1.9	3.9	7.8	14.3	25		
		liters	22	55	111	222	404	707		
	width	inches	9.5	15.7	21.2	21.2	21.2	37		
		mm	244	400	540	540	540	940		
	depth	inches	11.6	14.6	14.6	20.5	20.5	20.5		
		mm	306	370	370	520	520	520		
height	inches	13.3	13.8	20.8	29.9	55.7	55.7			
	mm	296	350	530	760	1415	1415			
Volume of the steam space		ft3	1.5	3.1	5.8	10.6	18.5	31		
		liters	43	89	163	299	524	876		
Shelves: stainless steel	number of shelf guides in chamber side walls	max. number	4	4	7	10	19	19		
		standard #	2	2	2	2	2	2		
Shelf distance	min. distance between trays	inches	2.4	2.8	2.8	2.8	2.8	2.8		
		mm	60	70	70	70	70	70		
Useable shelf area	width x depth	inches	7.3x10.4	15x13.2	20.5x13.3	20.5x19.1	20.5x19.1	36.3x19.1		
		mm	185x265	380x335	520x338	520x485	520x485	920x485		
Outer metal doors Inner glass doors		No.	1	1	1	1	1	2		
		No.	1	1	1	1	1	2		
Maximum shelf load	one shelf	lbs	22	44	44	66.1	66.1	110.2		
		kg	10	20	20	30	30	50		
	total per unit	lbs	55.1	110.2	110.2	154.3	220.5	286.6		
		kg	25	50	50	70	100	130		
Electric parameters <i>230V option available</i> Protective system	max consumption 50/60 Hz	W	150	840	863	1012	1829	2070		
		V	115	115	115	115	115	115		
			IP 20	IP 20	IP 20	IP 20	IP 20	IP 20		
Temperature Data Working temperature	range °C		+5°C – +7°C	0 – 99.9	0 – 99.9	0 – 99.9	0 – 99.9	0 – 99.9		
		Temperature Distribution	at 10°C	± °C	<0.3	<0.5	<0.5	<0.5	<1	<1
			at 37°C	± °C	<0.3	<0.5	<0.5	<0.5	<1	<1
		Temp. Uniformity		± °C	<0.1	<0.2	<0.2	<0.2	<0.3	<0.4
		Heating up time from ambient temp.	to 37°C	min.	<10	23	24	25	26	27
		Cooling down time	from 22°C to 10°C	min.	<31	<14	<21	<21	<21	<21
		Recovery time after 1 min. door open	at 37°C at 50°C	min.	1	1	1.5	1.5	1.5	1.5
min	2.5			1.5	2	2.5	5.5	3.5		
Heat Emission	at 37°C	W	50	62	70	97	123	148		
External dimensions (incl. door / handle, feet / rollers)	width	inches	15.9	24.4	29.9	29.9	41.7	57.5		
		mm	406	620	760	760	1060	1460		
	depth	inches	22	25.6	25.6	31.1	31.1	31.1		
		mm	592	640	640	790	790	790		
	height	inches	23.7	34.5	39.4	50.2	75	75		
mm		605	875	1000	1275	1905	1905			
Weight	net	lbs	72.8	176.4	222.7	291	507	595.2		
		kg	33	80	101	132	230	270		
	gross	lbs	83.8	218.3	288.8	372.6	696.2	696.7		
		kg	38	99	131	169	270	316		

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 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
 - MMM / BMT reserve the right to changes in design and manufacture of the device

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