Temperature Control Incubator & Stability

BETATEK INC.

Instrumentation Superbly Supported

L'instrumentation à son meilleur

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BMT USA
MMM Group
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FRIOCELL

Temperature Control Incubators & Stability

Assuring Your Quality

Biology & Microbiology
Testing and growth of bacteria cultures and microorganisms

Research & Laboratory
Testing and growth of bacteria cultures and microorganisms

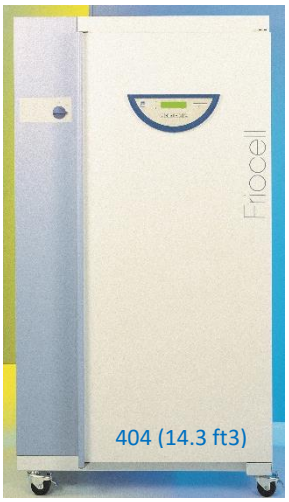
Plant Growth
Simulating environmental conditions for agricultural applications; germination, Arabidopsis, green plant growth, plant tissue culture, crops and fruits

Cosmetics
Stability and durability testing of cosmetic products

Food Science, QA & QC
Stability testing and photo stability testing of food products including shelf life studies

Aerospace, Auto, Industrial
Testing of materials quality and durability; adhesives, textiles, seals, composites, components & electronics

55 (2 ft3)



404 (14.3 ft3)

The **Friocell** allows exact incubation while **maintaining precise temperature control**. The unique cooling system ensures that samples do not over dry. Each unit can be equipped with high performance lighting for growth and testing of products. The patented forced air convection ensures even temperature distribution throughout the entire chamber. Ideal for use in food labs, biological laboratories, plant science, cosmetics, materials testing and chemical industries. **Elevate sterilization standards with BMT's unique double chamber design and removable inner chamber.**

Forced Air / Mechanical Convection

Chamber Volumes 22, 55, 111, 222, 404, 707 liters
.8, 2, 4, 8, 14.3, 25 ft3

Working temperature 0.0°C up to 99.9°C (**FC 22**: 5°C to 70°C)

Compliant with FDA and ICH guidelines

Patented Forced-Air system

Access ports 25 mm (1"), 50 mm (2"), 100 mm (4")

Double Wall Removable inner chamber for cleaning

Chamber AISI seamless stainless steel w/ rounded corners

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

Smart Handle with four-point locking

Features

- removable inner chamber walls for cleaning and sterilization
- smart handle with 4-point locking
- RS 232 – interface for printer or PC-communication, Ethernet option.
- delayed heating start and stop function
- acoustic and visual alarms
- digital safety thermostat
- real time
- program temperature ramps
- heating sequences
- programming cycles
- patented air flow and adjustable forced air fan rate 10 to 100 %
- AISI 304 stainless steel chamber w/ rounded corners
- manual control of air exhaust port

Comfort Control Panel

- short recovery times
- fuzzy logic ensures there is no temperature overshooting.
- 6 programs with up to 40 segments, for varying loads and parameters
- chip card system for individual program storage and administrator security
- time range 0 – 16 years with 1 min. intervals
- Clear user friendly LCD display

Options

- –9.9 °C cooling and automatic defrost
- Fluorescent lighting including ICH Q1B
- Shelf lighting – programmable time and intensity, fluorescent VIS and UV
- Door lighting – programmable time and intensity, fluorescent VIS
- stainless steel access ports 25, 50, 100 mm
- automatic door lock
- programmable water proof inner socket
- lighting sensor UV & VIS (-10–70 °C)
- BMS – monitoring system relay alarm contacts
- PT 100 flexible sensors
- WarmComm 4.0 software: Bidirectional & FDA 21 CFR part 11
- Stainless steel exterior
- AISI 316 stainless steel chamber
- IQ / OQ protocols
- 9-point temperature mapping

FRIOCELL	Technical Data	Model	22	55	111	222	404	707
Interior dimensions	volume	ft3	0.78	1.9	3.9	7.8	14.3	25
		liters	22	55	111	222	404	707
Chamber:	width	inches	9.6	15.75	21.25	21.25	21.25	37
stainless steel		mm	244	400	540	540	540	940
	depth	inches	12.1	14.6	14.6	20.5	20.5	20.5
		mm	307	370	370	520	520	520
	height	inches	11.7	13.8	20.9	29.9	55.6	55.6
		mm	296	350	530	760	1410	1410
Volume of		ft3	1.5	3.1	5.8	10.6	18.5	31
the steam space		liters	43	89	163	299	524	876
Shelves:	number of shelf guides in chamber	max. number	4	4	7	10	19	19
stainless steel	side walls	standard #	2	2	2	2	2	2
Shelf distance	min. distance	inches	2.4	2.8	2.8	2.8	2.8	2.8
	between trays	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		No.	1	1	1	1	1	2
Inner glass doors		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	max consumption	W	1380	1610				1690
230V option available	50/60 Hz	V	115	115	115	115	115	115
Protective system			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	at 37°C	min.	1	1	1.5	1.5	1.5	1.5
1 min. door open	at 50°C	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	width	inches	15	24.4	30	30	39.8	57.5
(incl. door / handle, feet / rollers)		mm	406	620	760	760	1010	1460
	depth	inches	23.3	25.2	25.2	31.1	31/1	31/1
		mm	592	640	640	790	790	790
	height	inches	23.8	32.3	39.4	48.5	75.3	75.3
		mm	605	820	1000	1230	1910	1910
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 and 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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