

Bio-Cool® Controlled-Rate Freezer

Bio-Cool III and IV controlled-rate freezers

Bio-Cool controlled-rate freezers precisely control cooling rates for convenient, reliable, and economical cell and tissue freezing. Since they are mechanically refrigerated they do not require expendable refrigerants. All that is required for use is 1.5 liters of methanol—one of the more stable heat transfer mediums—and a small dewar of LN₂ for tissue crystallization and storage.

A low-profile, ergonomic design allows for easy bath access and requires minimal bench space. Choose from -40°C or -80°C units to meet even the most stringent protocols. The Bio-Cool III is registered with the FDA as a medical device.

Standard features and specifications

The following specifications are common to all Bio-Cool freezers:

- Bath chamber: liquid capacity of 1.5 liters, includes liquid-tight lid for transport
- Dimensions: 5" (12.5 cm) diameter x 6.5" (16.2 cm) depth
- Refrigeration: mechanically refrigerated, hermetically sealed.

Stirring:

- Bottom-driven stirrers provide unobstructed use of bath
- Vortex breaker and microprocessor speed control ensure isothermal conditions
- Assembly constructed of stainless steel



Call **800.251.1531**
or visit www.ftssystem.com

Increase efficiency

Conducting controlled-rate freezing at your own facility allows for greater control of the replication process when compared to the use of outside facilities. In-house freezing also reduces cost.

BC-IV-40

The BC-IV-40 includes a carrying case for easy transport. The case is made of heavy-duty padded cordura with handles and shoulder straps.



Bio-Cool III-80

- ▶ Enables in-house controlled-rate freezing
- ▶ Reduces the need for liquid nitrogen
- ▶ Available with low temperatures to -40°C or -80°C

Temperature programmer

Both the BC-III and BC-IV come with a microprocessor controller with the control module built into the front face. Both models also have a guaranteed soak, so hold time will not start until the bath temperature reaches the hold temperature $\pm 0.2^\circ\text{C}$. An audible alarm signals the end of all programs.

Maximum Cooling Rates*

	BC-IV-40	BC-III-80
+20 to -20°C	3°C/minute	2.5°C/minute
-20 to -30°C	2°C/minute	2.5°C/minute
-30 to -40°C	1°C/minute	2.5°C/minute
-40 to -60°C	—	2.5°C/minute
-60 to -80°C	—	1.3°C/minute

* Rates calculated at 72°F (22°C) ambient with clean methanol

Model Specifications

	BC-III-80	BC-IV-40
Cabinet-refrigeration module	Polyurethane-coated sheet metal with rubber, non-marring feet	Polyurethane-coated sheet metal with rubber, non-marring feet, and auto-retracting handle
Dimensions	19.125" W x 13" H x 23.25" D	10.5" W x 14.5" H x 20.5" D
Weight	100 lbs. (45.5 kgs)	57 lbs. (25.9 kgs)
Temperature range	-80°C to +30°C	-40°C to +30°C
Electrical	120V/60Hz, 15 amps or 220V/50Hz, 8 amps	120V/60Hz, 9 amps or 220V/50Hz, 5 amps

Optional Straw Racks

	Standard
SR-36	Maximum capacity of 36 straws (0.25cc or 0.50cc). Made of Lexan®, Delrin®, and stainless steel
SR-12	Maximum capacity of 12 ampules up to 5 ml. Configured of polycarbonate and stainless steel.

BC-III-80

- Eight-segment microprocessor controller. Utilizes T-type thermocouple (copper/constantan). Resolution of 0.1°C, accuracy of ±0.5°C and stability of ±0.1°C.
- Eight independent programs can be stored and called up on demand. Each program contains eight segments. Each segment contains a ramp, hold-temperature, and hold-time. Ramp rate is adjustable from 0.1°C to 5.0°C (maximum allowable rate determined by Bio-Cool ramp rate specifications). Hold-times are programmable within 0 to 999 minutes.

BC-IV-40

- Single-segment microprocessor controller. Utilizes platinum RTD. Resolution of 0.1°C, accuracy of ±0.2°C and stability of ±0.1°C.
- Programmable parameters include start temperature, ramp rate, hold temperature and holdtime. Ramp rate is adjustable from 0.1°C to 5.0°C (maximum allowable rate determined by Bio-Cool ramp rate specifications). Hold temperature may be any value within the temperature range of the Bio-Cool. Hold times are programmable within 0 to 999 minutes.



Committed to Product Excellence...and Continuous Support

SP Industries

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