CryoVita Series

Controlled Rate Freezer

- Innovative technology for reproducible result and highest sample viability.

In order to maintain cellular viability during the freezing process, certain cells – such as protist, mammalian, and plant cells – require precise control of the freezing rate in order to minimize the detrimental effects of undercooling and the heat liberated during the phase change process from water to ice.

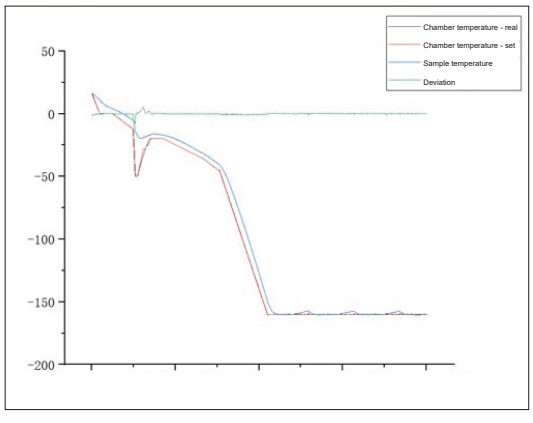
Controlled rate freezing is an established procedure for the cryopreservation of biologic material in research and clinical applications. In-line with GMP protocols, cell material can be frozen then stored at cryogenic temperatures.

CryoVita controlled-rate freezer (CRF) achieve reliable, reproducible results with maximum operational safety. They are used for clinical, veterinary and research tasks for controlled rate freezing of samples.

Dependable sample protection

For customers in research, cell and gene therapy, vaccine production, and biobanking, the CryoVita CRF provides precise, repeatable freezing results that protect the sample from intracellular freezing.

Liquid nitrogen flows via a metal hose connection, as a gas, into the freezing chamber. Predetermined cooling profiles are used to freeze samples prior to removal and storage at cryogenic temperatures. Data logging ensures continual monitoring of the entire process, including multiple temperature sensor set-points, actual values and the supply pressure of liquid nitrogen.

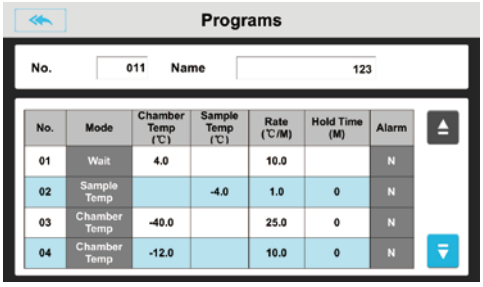


Reliable temperature performance for high-throughput usage

- Dual solenoid valves design, one for working, the other for backup. When one valve fails, switch to the other valve through touch screen controller
- Consistent temperature control and uniformity achieved via an air-handling system and liquid nitrogen injection device
- Environmentally friendly insulating foam
- Type 304 stainless steel with exterior powder-coat finish

User-friendly operation with enhanced data traceability

- Intuitive touchscreen display allows for easy set-up, operation, and review of a freezing run
- Six pre-set freezing profiles and space for up to 20 user-defined, “custom” freeze profiles
- Convenient to create and edit a custom program on touch screen
- Record temperature curve of each cycle automatically
- External influences are avoided during freezing



Real-time run monitoring for sample protection

- Chamber and sample temperatures are monitored by Type T thermocouples, eliminating lag time and providing “real time” responsiveness
- Standard alarms to alert users of thermocouple failures, heater malfunction, high/low temperature limits, temperature tracking, power failure, and completion of run
- RS232 Port
- USB port to download running data

Installation

CryoCenter series self-pressurized liquid nitrogen.
Container is recommended to supply liquid nitrogen.
CryoVita series controlled rate freezers.

- 0.1MPa pressure
- Pressure building regulator
- Liquid level meter (float type/ electric digital type)
- Casters for easy movement

Specifications (Vertical)

Model	CryoVita 18	CryoVita 34	CryoVita 49
Door type	Front open (upright)	Front open (upright)	Front open (upright)
Capacity (Liter)	18	34	51
2ml vial	380	810	1190
5ml vial	228	486	714
Cassette BBC-A/B	30	60	90
Cassette BBC-C	10	20	30
Cassette BBC-D	10	20	30
1/2 cc straw	450	900	1350
1/4 cc straw	594	1188	1782
Interior dimensions W x D x H (mm)	180 x 305 x 330	330 x 305 x 330	502 x 305 x 330
Exterior dimensionsW x D x H (mm)	860 x 540 x 550	1006 x 540 x 550	1190 x 540 x 550
Net weight (kg)	73	86	97
Heating power (W)	2500	3000	3000
Power supply	AC 100~240V, 50/60Hz		
Interior material	SUS304		
Door seal	Yes		
Temperature range (°C)	-190 ~ 50		
Freezing rate (°C/min)	0.1 ~ 60		
Heating rate (°C/min)	0.1 ~ 10		
Temperature deviation (°C)	<2		
Controller	Touch screen & microprocessor		
Freezing program storage	Up to 20 (6 default programs)		
Data storage and USB port	Yes		
Temperature display	Chamber & sample		
Remote alarm contact	Yes		
Door-operation safety interlock	Yes		
Printer	Optional		
Refrigerant	Liquid nitrogen		
Prefilter for liquid nitrogen	Yes		
Liquid nitrogen source pressure	14 ~ 22 PSI		
Pressure relief valve	Yes, 125 PSI		
Freezing racks	Optional		

Freezing Racks and Rack Holders

Image	Model	Dimensions	CryoVita 18	CryoVita 34	CryoVita 49
	CRF-V1	Small size rack system for 2ml vials: 5 layers, 76 vials per layer, 380 vials per rack	1 small	–	1 small & 1 large
	CRF-V2	Small size rack system for 5ml vials: 3 layers, 76 vials per layer, 228 vials per rack			
	CRF-V3	Large size rack system for 2ml vials: 5 layers, 162 vials per layer, 810 vials per rack	–	1 large	
	CRF-V4	Large size rack system for 5ml vials: 3 layers, 162 vials per layer, 486 vials per rack			
	CRF-B1	10 layer rack for 25ml blood bag	3	6	9
	CRF-B2	10 layer rack for 50ml blood bag	3	6	9
	CRF-B3	10 layer rack for 250ml blood bag	1	2	3
	CRF-B4	10 layer rack for 500ml blood bag	1	2	3
	CRF-B5	8 layer rack for 700ml blood bag	1	2	3

* **Cassette BBC-A**: Pall MEDSEPTM 25 mL, OriGen CS 25; **Cassette BBC-B**: Fenwal 4R9951, OriGen CS 50;
Cassette BBC-C: Fenwal 4R9953 & 4R5461, OriGen CS 25, CryoMACS 50 & 250, CryoPAC 025B & 050B; **Cassette BBC-D**: Fenwal 4R9955 & 4R5462, OriGen CS 500, CryoPAC 250B & 500B;
Cassette BBC-E: Gambro DF-200 or CryoMACS 50 & 250; **Cassette BBC-F**: Gambro DF-700, OriGen CS 1000, CryoMACS 500 & 750 &1000, CryoPAC 750B.

Specifications (Horizontal)

Model	CryoVita 26H	CryoVita 90H	CryoVita 150H
Door type	Top open (horizontal)	Top open (horizontal)	Top open (horizontal)
Capacity (Liter)	26	90	150
0.25ml Straw	1000	3000	5500
0.5ml Straw	750	2250	4125
Interior dimensions W x D x H (mm)	476 × 184 × 340	476 × 552 × 340	476 × 767 × 380
Exterior dimensions W x D x H (mm)	701× 769× 539	701× 1244 × 570	711× 1444 × 584
Net weight (kg)	40	62	140
Heating power (W)	2500	3000	3000
Power supply	AC 220~240V, 50/60Hz		
Interior material	SUS304		
Door seal	Yes		
Temperature range (°C)	-180 ~ 50		
Freezing rate (°C/min)	0.1 ~ 50		
Heating rate (°C/min)	0.1 ~ 10		
Temperature deviation (°C)	<2		
Controller	Touch screen & microprocessor		
Freezing program storage	Up to 20 (6 default programs)		
Data storage and USB port	Yes		
Chamber temperature display	Yes		
Sample sensor & temp display	Yes		
Freezing step display	Yes		
Running time display	Yes		
Remaining time display	Yes		
Remote alarm contact	Yes		
Door-operation safety interlock	Yes		
Printer	Optional		
Refrigerant	Liquid nitrogen		
Prefilter for liquid nitrogen	Yes		
Liquid nitrogen source pressure	14 ~ 22 PSI		
Pressure relief valve	Yes, 125 PSI		
Freezing racks	Optional		

Global Users

sinovac

RemeGen