



CryoVita 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 are designed to balance LN2 injection volume for precise temperature control and accelerated freezing
- 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
- User security: 3 levels of user accessibility
- 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
- Remote alarm contacts
- USB port to download running data

Specifications

Model	CryoVita 18	CryoVita 34	CryoVita 49
Temperature range	-180°C~+60°C		
"Exterior Dimensions W*D*H (mm/in.)"	810*540*790 (31.9*21.3*31.1)	960*540*790 (37.8*21.3*31.1)	1110*540*790 (43.7*21.3*31.1)
"Interior Dimensions W*D*H (mm/in.)"	180*305*330 (7.1*12.0*13.0)	330*305*330 (13.0*12.0*13.0)	485*305*330 (19.1*12.0*13.0)"
Capacity	18 L(0.6 cu. ft.)	34 L(1.2 cu. ft.)	49 L(1.7 cu. ft.)
Net Weight	64 kg(141 lbs.)	75 kg(165 lbs.)	83 kg(183 lbs.)
Freezing Rate	0.1 ~ 50 °C/min		
Heating Rate	0.1 ~ 10 °C/min		
Temperature Deviation	<2°C		
Control	Micro-processor		
Control Parameter	Sample temperature or Cabin Temperature		
Display	7" Touch Screen		
Program	6 preset programs, customized program up to 20		

Freezing Capacity

Model	CryoVita 18	CryoVita 34	CryoVita 49
2ml Vials	380	805	1185
5ml Vials	152	322	474
25/50ml Blood Bag	30	60	90
250ml Blood Bag	4	8	12

CryoVita Freezing Racks and Rack Holders

Image	Description	Dimensions HxWxD (in./cm)	Storage	CryoVita 18 L	CryoVita 34 L	CryoVita 49 L	Cat. No.
	Straw rack for .25/.5mL straws - holds 40 straws	11.3 x 3 x 5.25 (28.7 x 7.6 x 13.3)	Racks per chamber	4	8	12	CRF-A001
			Straws per rack	40	40	40	
			Total # straws per chamber	160	320	480	
	Cane freezing rack - large	11 x 12 x 12 (28 x 30.5 x 30.5)	Racks per chamber	N/A	1	1 lrg & 1 sm	CRF-A002
			Canes per rack	N/A	162	162 & 77	
			Vials (2 mL) per cane	N/A	5	5	
			Total # vials per chamber	N/A	810	1,195	
	Cane freezing rack - small	11 x 6 x 12 (28 x 15.2 x 30.5)	Racks per chamber	1	N/A	1 lrg & 1 sm	CRF-A003
			Canes per rack	77	N/A	162 & 77	
			Vials (2 mL) per cane	5	N/A	5	
			Total # vials per chamber	385	N/A	1195	
	1.2/2 mL freezing rack - small (order qty 5 each when ordering with CRF-A005 rack holder)	1.1 x 6 x 12 (2.8 x 15.2 x 30.5)	Racks per chamber	5	N/A	5 lrg & 5 sm	CRF-A004
			Vials per rack	76	N/A	161 & 76	
			Total # vials per chamber	380	N/A	1,185	
	Small rack holder for CRF-A004 racks	9.8 x 6.2 x 12.4 (24.9 x 15.7 x 31.5)	Rack holders per chamber	1	N/A	1 lrg & 1 sm	CRF-A005
			Racks per rack holder	5	N/A	5 & 5	
			Total # racks per chamber	5	N/A	10	
	1.2/2 mL freezing rack - large (order qty 5 each when ordering with CRF-A007 rack holder)	1.1 x 12 x 12 (2.8 x 30.5 x 30.5)	Racks per chamber	N/A	5	5 lrg & 5 sm	CRF-A006
			Vials per rack	N/A	161	161 & 76	
			Total # vials per chamber	N/A	805	1,185	
	Large rack holder for CRF-A006 racks	9.8 x 12.2 x 12.4 (24.9 x 31 x 31.5)	Rack holders per chamber	N/A	1	1 lrg & 1 sm	CRF-A007
			Racks per rack holder	N/A	5	5 & 5	
			Total # racks per chamber	N/A	5	10	
	4 or 5 mL freezing rack- small (order qty 3 each when ordering with CRF-A009 rack holder)	2.6 x 6 x 12 (6.6 x 15.2 x 30.5)	Racks per chamber	3	N/A	3 lrg & 1 sm	CRF-A008
			Vials per rack	76	N/A	161 & 76	
			Total # vials per chamber	228	N/A	711	
	Small rackholder for CRF-A008 racks	8.1 x 6.2 x 12.4 (20.6 x 15.7 x 31.5)	Rack holders per chamber	1	N/A	1 lrg & 1 sm	CRF-A009
			Racks per rack holder	3	N/A	3 & 3	
			Total # racks per chamber	3	N/A	6	
	4 or 5 mL freezing rack - large (order qty 3 each when ordering with CRF- A011 rack holder)	8.1 x 12.2 x 12.4 (20.6 x 31 x 31.5)	Racks per chamber	N/A	3	3 lrg & 3 sm	CRF-A010
			Vials per rack	N/A	161	161 & 76	
			Total # vials per chamber	N/A	483	711	
	Large rack holder for CRF-A010 racks	8.1 x 12.2 x 12.4 (20.6 x 31 x 31.5)	Rack holders per chamber	N/A	1	1 lrg & 1 sm	CRF-A011
			Racks per rack holder	N/A	3	3 & 3	
			Total # racks per chamber	N/A	3	6	
	Two level skin rack (holds skin packets measuring 5 x 7 in.)	10.5 x 6.2 x 12.6 (26.7 x 15.7 x 32)	Rack holders per chamber	1	2	3	CRF-A012
			Skin packets per rack	48	48	48	
			Total # skin packets per chamber	48	96	144	
	One level skin rack (holds skin packets measuring 5 x 7 in.)	5.2 x 6.2 x 12.6 (13.2 x 15.7 x 32)	Rack holders per chamber	2	4	6	CRF-A013
			Skin packets per rack	24	24	24	
			Total # skin packets per chamber	48	96	96	
	Cord blood freezing rack for 50mL cannisters (4000610)	11 x 4 x 5 (28 x 10.2 x 12.7)	Rack holders per chamber	3	6	9	CRF-A014
			Canisters per rack	10	10	10	
			Total # canisters per chamber	30	60	90	
	Adjustable freezing rack for canisters	11.6 x 5.5 to 7.5 x 8.2 (29.5 x 14 to 19 x 20.8)	Rack holders per chamber	N/A	2	2	CRF-A015
			Canisters per rack	N/A	10	10	
			Total # canisters per chamber	N/A	20	20	