



Kryo Series Precision Controlled-Rate Freezers

Kryo 750 - 30 - for freezing critical samples in high volumes

- Top, or Front opening for easy loading
- Inner chamber removable for easy sterilisation
- Freeze samples in bags, ampoules and straws
- Forced laminar flow for efficient and even cooling
- Trigger on sample, time or temperature



Kryo 750

The Kryo 750 - 30 is a unique integrated freezing system for the cryopreservation of large volume samples or samples in large numbers.

The easy access front opening door is closed via a 3 point closure system, ensuring a leak free seal which helps to prevent the door freezing closed at low temperatures; additional protection is provided by heated door seals.

The freezer's 'on board' control system is operated with a unique two button process. This ensures that the user cannot accidentally run the wrong protocol, enabling rapid user training and absolute process verification.

Optionally the system may be operated via Planer's PC application, DeltaT™ - this offers multiple protocols and data viewing on-line, as well as data capture and storage for validation.

The software is multi-level password protected to ensure only authorized users carry out procedures. User calibration to external standards is featured. The large easy access chamber offers great flexibility and high capacity to ensure the most demanding laboratory requirements can be met.

Protocols can be based on 'sample temperature event' triggering, which combined with the fast cooling rates and forced laminar flow of the system, ensures high efficiency cooling at the fusion temperature. This enables efficient latent heat removal, creating optimum sample viability post thaw.

KEY FEATURES

- Designed for freezing of samples in bags, ampoules and straws
- Unique 2 button operation
- Standard PC software enables password protected multiple protocols
- Protocol stage "trigger on sample", or chamber temperature, or time
- Unique forced laminar flow cooling system ensures most efficient, even cooling
- Top, or Front opening for easy loading
Heated door seal prevents freezing shut at cryogenic temperatures
- Inner chamber removable for sterilisation
- Standard operating features:-
 - Start above ambient
 - Controlled heating
 - Comms port for PC connection
 - Fast cooling rates

SPECIFICATION OVERVIEW

- **Chamber volume:** 29 litres
- **Capacity:** 20 x 250-1000 ml blood bags, or 40 x PALL blood bags, horizontally/vertically in chamber
- **Vial capacity:** 1452 x 2 ml
- **Straw capacity:** 5808 x 0.25ml (on canes), 1936 x 0.5ml (on canes) or 836 x 0.25ml-0.5ml (on racks)
- **Lower temperature limit:** -160 °C
- **Cooling rates:** -0.1 to -50 °C/min
- **Controlled heating rates:** 0.1 to 10 °C/min
- **System controller:** Integral
- **PC Software:** DeltaT included

SYSTEM REQUIREMENTS

22 psi Liquid Nitrogen Supply only

Kryo Series precision controlled-rate freezers

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Technical Specification:

• Dimensions - Front Loading	External	Internal
• Height	55 cm	26 cm
• Width	79 cm	46.5 cm
• Depth	48 cm	25 cm
• Dimensions - Top Loading	External	Internal
• Height	48 cm	25 cm
• Width	79 cm	44.5 cm
• Depth	55 cm	26 cm
• Weight	45 kg (shipping weight inc. Packaging) approx.	
• 2 ml vials	1452	
• Straws	5808 x 0.25ml (on canes), 1936 x 0.5ml (on canes) or 836 x 0.25ml-0.5ml (on racks)	
• PALL blood bags	40	
• 250-1000 ml blood bags	20	
• Circulation	Horizontal laminar flow	
• Temperature range	+100.0 °C to -160 °C	
• Cooling medium	Liquid Nitrogen 22 ±2 psi	
• Heater	1000W	
• Sensors: Control and sample	4-wire Platinum resistance thermometer. Sensors are linearised in software to international standards that utilise a 4096-point lookup table based on BS1904:1984 Table 1. Calibration facility provided.	
• Accuracy	±0.5 °C at a hold at 0 °C (dynamic accuracy depends on actual programme, e.g. Rate of change of temperature)	
• Heating rates	0.01 °C/min to 10 °C/min	
• Cooling rates	-0.01 °C/min to -10 °C/min	
• Programmable cooling rate range	-0.01 °C/min to -99.9 °C/min	
• Operating positions	Vertical or horizontal	
• Thermal cutout	120 °C cutout	
• Power Requirements	103 - 126VAC 50/60Hz 1200VA (max.) (470VA freezing only, with seal and bearing heaters operating). The freezer may be damaged by voltage surges in excess of 15 % above nominal.	
• Chart sensitivity	16.7 mV/°C. Nominal impedance > 10K	
• Recorder Scaling	0V = -200 °C, +5V = +100 °C	
• Standards	Designed to comply with BSEN 61010, CSA22.2No.125-M1984, CSA22.2No.151- M1986, EN50082-2, EN50081-2	
• Storage temperature	-10 °C to +70 °C	
• Storage humidity	Up to 95 % non-condensing	
• Operating temperature	5 °C to 40 °C	
• Operating humidity	Less than 90 % non-condensing	

Recommendation of additional equipment:

• 22 psi System	System Cylinder - MVEUROCYL230SB Phase Separator - MVPHASE
• 22 psi System (alternative)	Vacuum Jacketed Pipe Work System Phase Separator - MVPHASE