



Cryopreservation

CRFT

Liquid nitrogen and cryogen free controlled rate freeze and thaw system for cryopreservation

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Controlled rate freeze and thaw system

The CRFT brings accuracy, precision and reproducibility to biological cryopreservation. This unit is ideal for research into the cryopreservation of a wide range of material including embryos, stem cells, mammalian cells, spermatozoa, antibodies, tissue sections and rodent organs.

The system has been developed to minimize and reduce the risk of contamination and designed for use in cleanrooms and barrier facilities. Its performance of cell viability after freezing and thawing is equal to, if not more advanced than, comparable systems. As alcohol is not used, there is also a greatly reduced fire risk. Its performance of cell viability after freezing is equal if not more advanced to comparable liquid nitrogen freezers.

The freezing and thawing rate is precisely controlled, ensuring accuracy and reproducibility throughout the freezing and thawing profiles, especially for the important nucleation/seeding phase. This provides optimal recovery of cells on thawing. Operation is simple and can be carried out with or without a PC; data can be logged via PC software and profiles are directly displayed on PC screen. Different freezing profiles are available from a drop-down menu and customised profiles can be designed through the software editing suite.



MAIN APPLICATIONS

The CRFT is highly versatile and can be used for the cryopreservation research of a wide range of samples in cryovials, straws, bags, microplates and Matrix-96-well block plates in the following areas:

- Transgenic embryos research
- Stem cell research
- Clinical and research samples, e.g. lymphocytes and tissue cell lines in conventional cryovials
- Various mammalian cells including cardiomyocytes, adipose, liver and muscle
- Cord blood derived stem cells
- Adherent cells and stem cells in microplates
- Cell suspensions in numbered/barcoded arrays
- Robotic integration – the CRF-1 has also successfully been integrated into robotic systems
- Suitable for applications in veterinarian IVF

KEY BENEFITS AND FEATURES

- Accurate and reproducible control of cooling rates and sample temperatures
- Interchangeable heads
- Controlled thawing system
- Easy to use and samples can be nucleated/seeded in-situ
- Linear and non-linear cooling profiles
- Low running costs: estimated at 1% of liquid nitrogen-controlled rate freezing
- Temperature remains at -100 °C at the end of cycle for straw applications until freezer is switched off
- Uninterruptible Power Supply (UPS): complete cycle run if power fails (supplied as an optional accessory)
- CE marked (laboratory use)
- Servicing and calibration available
- Runs on a 24V supply
- 2 year warranty

TECHNICAL SPECIFICATION

Dimensions (w x d x h (mm))	345 x 290 x 380 (lid off) / 460 (lid on)
Weight (kg)	5kg
Max plate temp (°C)	30°C
Min plate temp (°C)	-100°C
Temp accuracy	+/- 0.5°C
Temp stability	+/- 0.1°C
Temp uniformity	+/- 1.0°C Ref
Max cooling rate	10°C min⁻¹
Max temp stabilisation time	5 mins
Heat up time	Thawing 10°C/min from -100°C



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