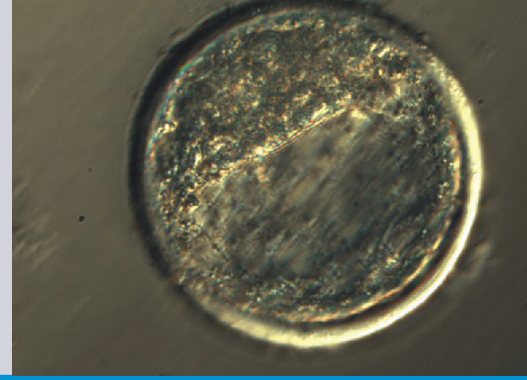




# Freeze Control® embryo freezers



Freeze Control® embryo freezing systems have been designed for practitioners. The system uses liquid nitrogen as cooling medium, and heat control for regulating temperature.

## Components of the system

- Cryochamber
- Controller
- Cryobath
- Carry case
- Manual



## ■ Cryochamber

Cryochambers are available in four different models for vet applications. Each model has a core designed to accommodate a particular specimen container: straws or ampoules. Cores are fixed in the cryochamber and cannot be removed. The cryochambers provide easy access during program loading, manual seeding, inspection, and removal of specimens.

### ★ Product features\*

- Capacity:
  - 46 x 0.25 ml straws or
  - 23 x 0.5 ml straws
- Maximum cooling rates (unloaded):
  - 9°C/min at 20°C
  - 6°C/min at -40°C



\*Standard cryochamber with 23-slot core

## Controllers

A range of Freeze Control® temperature controllers is available, which provide reliable and accurate temperature regulation of specimens. The temperature controllers use a tightly coupled servo-loop in which specimen temperature is matched with pre-installed temperature data by a process of continuously variable heat flow regulation.

Compliant temperature protocols are precisely followed, and temperatures can be held constant at any point within the control range. Temperatures well below the specified ranges can be reached through freefall, and temperature controllers can display these temperatures.

The CL8800i, CL5500 and CL2200 are pre-programmed temperature controllers. The CL5500 has an inbuilt power pack (battery backup pack). CL2200 and CL8800i can be run from the external power pack. Controllers can be operated from an external power source such as a car battery.

### CL 2200

- Temperature control range +20°C to -43°C
- Up to 8 preinstalled programs
- 1.5 l cryobath
- External power supply

### CL 5500

- Temperature control range +20°C to -43°C
- Up to 16 preinstalled programs
- 1.5 l cryobath
- Inbuilt power pack

#### Embryo freezing device Freeze Control®

with controller CL2200 [1]	19406/2200
with controller CL5500 [2]	19406/5500
with controller CL8800i [3]	19406/8800

## Accessories

External power pack for CL2200/CL 8800i [4] 19407/0000

12 V cable for power pack and CL5500 19407/0001



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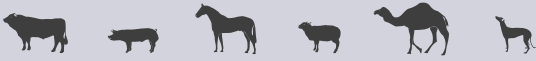
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### CL 8800i

- Temperature control range +40°C to -120°C
- Up to 16 preinstalled programs
- Includes software for programming of freezing curves
- 3.8 l cryobath
- External power supply



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## Freezing programs and techniques

- **Preinstalled programs:** the systems are delivered with 8 or 16 preinstalled programs according to the client's specifications. Programs suitable for freezing bovine embryos in glycerol or ethylene glycol can be installed.
- Cooling rates from less than 0.1°C/min can be specified, and temperature can be held at any point in the control range.
- **Controlled temperature range:** +20°C to -43°C
- **Seeding:** is initiated manually when the temperature reaches the seeding plateau of the program. Straws are raised and a LN<sub>2</sub> soaked cotton swab is briefly applied.
- **Free Fall:** At the end of a program the controller can be directed to let the temperature continue to drop below the controlled range (Free Fall) or maintain the last temperature specified in the temperature program (Hold). In either state, the controller continues to monitor the temperature.
- If users wish to include a Free Fall or Hold step in any programs, it must be specified when ordering.
- **Plunging:** After completing the freezing program, straws are transferred from the chamber directly into LN<sub>2</sub>. They may be first plunged in the cryobath, then transferred into storage.

