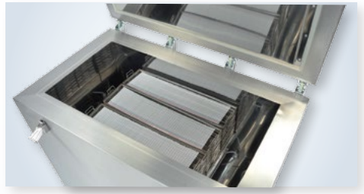
Cryo Bio System
Groupe I.M.V. Technologies

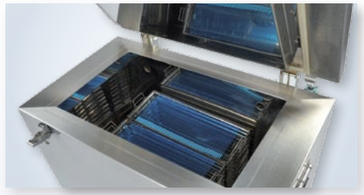
Digitcool®

Digitcool®: a complete range of controlled-rate freezers to fulfill your cryopreservation needs in CBS™ High Security straws, cryogenic vials, glass ampoules and blood bags (special rack design upon request)



Digitcool®

- Ideal for large cryopreservation centers
- Straws, Tubes and Bags

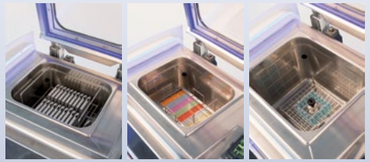


Mini-Digitcool®

- Suits every user with moderate freezing needs (tissue banks, cellular therapy)
- Straws, Tubes and Bags

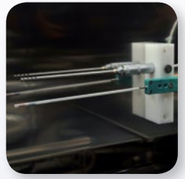
Micro-Digitcool®

- The preferred compact freezer for tissue and cord blood banks, cellular culture, clinical trial
- Straws, Tubes and Bags



Nano-Digitcool®

- The best compact freezer for day-to-day use in Assisted Reproductive Technology centers



Technical features

- Temperature range: -150°C to +50°C
- Cooling rate: 0.1°C to 60°C per minute
- Structure: 100% 304L stainless steel
- Insulation: Strong stainless steel lid with gas tight seal
  95 mm polyurethane foam insulated walls
- Security control: Chamber alert when temperature is ready for loading and unloading
  Maintain -140°C at end of freeze until straws are accessed by user
- Low pressure: From 1.3 to 2 bars (18.9 to 29 psi)
- Warming of the chamber: 100% dry after warming cycle < 30 minutes
- Controller: High-end 2704 Eurotherm
  20 programs - 99 cooling rates
  450 segments

	Digitcool®	Mini Digitcool®	Micro Digitcool®	Nano Digitcool®
Outside dimensions (L x W x H)	1170 x 800 x 1000 mm (46 x 31.5 x 39.4")	770 x 510 x 730 mm (30.3 x 20.1 x 28.7")	600 x 380 x 520 mm (23.6 x 15 x 20.5")	722 x 475 x 472 mm (28.4 x 18.7 x 18.5")
Weight	130 kg (286 lb)	58 kg (128 lb)	38 kg (84 lb)	55 kg (121 lb)
Chamber inside dimensions	960 x 470 x 320 mm (37.8 x 18.5 x 12.6")	640 x 320 x 420 mm (25.2 x 12.6 x 16.5")	490 x 325 x 230 mm (19.3 x 12.8 x 9")	238 x 178 x 200 mm (9.4 x 7 x 7.8")
Chamber volume	150 L	90 L	26 L	11.5 L
Sample capacity	3,000 CBS™ straws	1,392 CBS™ straws	240 CBS™ straws	33 CBS™ straws
Air flow	2750 rpm / 1360 m3/h	2650 rpm / 495 m3/h	2650 rpm / 495 m3/h	2650 rpm / 495 m3/h
Power (Heater)	2500 W (2 x 1250 W)	2000 W (2 x 1000 W)	1000 W (2 x 500 W)	1200 W
Voltage / Frequency	220 V / 50 Hz / 16 A	220 V / 50 Hz / 10 A	220 V / 50 Hz / 6 A	220 V / 50 Hz / 6 A

Your distributor ?
www.cryobiosystem.com

Edition 3/2016 - CBS 1.0512973 - Non contractual pictures and technical specifications

Digitcool®

Automated cryopreservation solution for biological samples

State-of-the-art solution based on sealed cryogenic containers

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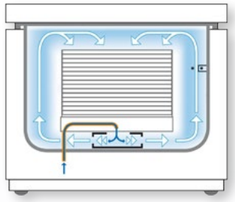
Digitcool®

Thermodynamics under control



To maximize the viability of preserved cells, the critical temperature lowering stages must be carefully controlled. The initiation of ice crystal formation – nucleation or seeding – must be strictly controlled to ensure optimal crystal size and shape.

Digitcool's perfect airtightness and insulation, its power and its constant regulation of data parameters, allow the user to determine optimal freezing curves, and provide for simple and accurate repetition. Temperatures are constantly and precisely monitored by two separate probes (chamber and product) to ensure that the main freezing stages are perfectly controlled.

Liquid to crystalline state

During the liquid stage (prior to reaching the crystallization point) the cooling rate must be regular to avoid any thermal shock affecting the cell membranes. Here, the Digitcool freezers demonstrate their precision and flexibility: ultrainsulated cabinet, controlled nitrogen inflow, and fine temperature control – as low as -0.1°C per minute.

The crystal formation stage, characterized by a sudden rise in temperature, is the most critical stage of the freezing process. The control software anticipates nucleation by instantaneously adapting the freezing curve with a powerful, strictly controlled temperature reduction. The Digitcool units thus provide maximal protection of the cell membrane.

Quality cryopreservation

- All CBS™ containers are developed to **optimize cryopreservation** of precious samples.
- CBS™ High Security straws benefit from a **high surface-to-volume ratio** for improved and **homogenous heat exchange** through the **entire volume** of the straw.
- Thermal seal of CBS™ straws, HSV kit and CBS™ tube enables **direct and complete immersion** in liquid nitrogen.
- **Color and bar code identification** without compromising the quality of the samples through temperature changes.

Reliability

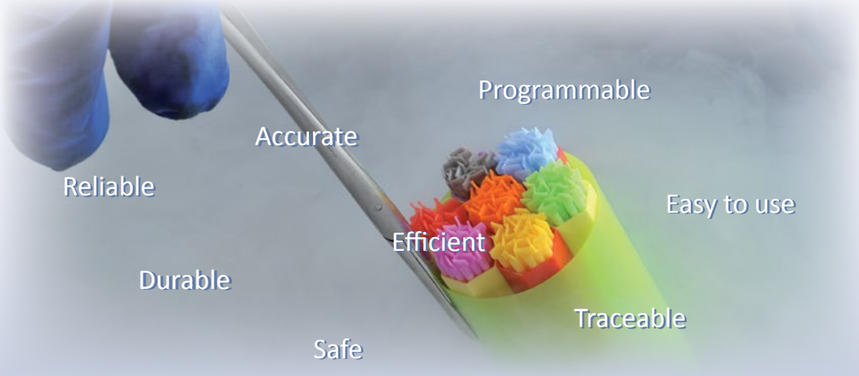
- Designed and manufactured by IMV Technologies
- Eurotherm temperature controllers with quick-release probes
- Nitrogen connectors, aeronautics-type technology
- Totally insulated container (304L polished stainless steel casing with high-density expanded polyurethane foam insulation): zero frigorie loss from the sample and controlled nitrogen consumption

Easy & practical use

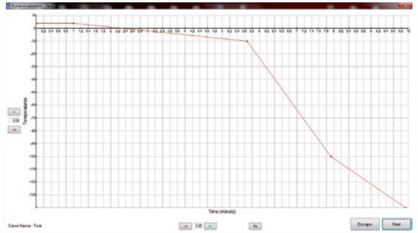
- Racks are easy to stack and remove
- Easy to clean and disinfect
- Vapor exhaust at the rear of unit
- Ergonomic design to facilitate the manipulation of straws (loading / unloading)
- Special sample rack design (bags / tubes / glass ampoules…) upon request

Traceability

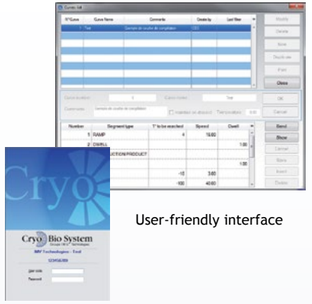
- Automated recording of freezing curves for each cycle
- Uniform and repeatable freezing cycles
- Process isolated from any possible human or external environmental influence
- Printed traceability of the freezing process, as required for GLP and SOP's qualification



CryoBioSoft software



Easy monitoring of temperature curve



User-friendly interface

Advanced control software

- Secure user traceability by user password and profiles
- Simple and fast programming of your freezing protocols
- Save all your freezing protocols
- Display on the screen instantaneous temperatures of the tank and the sample under freezing process
- Display graphical representation of freezing and enlarge specific points
- Memorizing of all deep-freezing processes carried out, to ensure complete traceability in accordance with Good Laboratory Practice requirements and standards of practice (GLP and SOP)
- Print on a paper all deep-freezing curves produced
- Extract a file containing all time points and freezing temperatures for use with Excel for example
- Setting the security password, login request on defined tasks, according to FDA regulation (21 CRF part 11)