

BIOFREEZE[®] BV45

Technical Description

Cryopreservation of
biological samples and
grafts at down to -196°C.



BIOFREEZE BV45

Programmable biological controlled rate freezer

The BIOFREEZE BV45 can be used with ampoules, cryo-bags, paillettes, cryo-straws, or any other suitable cryo-packaging for the programmed controlled rate freezing of:

- Stem cells
- Hepatocytes
- Cardiocytes
- Lymphocytes
- Platelets
- Hybridoma
- Cancer Cells
- Cordblood
- Bonemarrow
- Algae
- Pancreas islets
- Fibroblasts
- Virus
- Heartvalves
- Cornea
- Bacteria
- Skin
- Sperm
- Tissues
- Granulocytes
- Plantcells

- Comfortable, reproducible, and reliable
- Graphical display of freezing curves
- Highly accurate freezing rates
- In color with zoom function
- Easy operation with Windows

- Temperature range: -180°C / +30°C
- Large freezing capacity and cooling power
- Intelligent TCA and seeding action
- Fully automatic freeze control
- User and supervisor authorization

Innovation

The system combines state-of-the-art technology with our decades of experience. All necessary parameters for optimal freezing of living cell material can be preset.

The programmed temperature curve and the temperature of the chamber, reference bag, and vial are displayed graphically in different colors on a monitor. The zoom function allows sections to be enlarged.

At the same time, the pressure of liquid nitrogen is monitored and displayed.

For maximum security, the freezing chamber is equipped with a safe electromagnetic door lock.

The system offers a database for samples and freezing lots, both linked with the freezing curve. It contains an inventory database for stored samples in liquid nitrogen refrigerators.

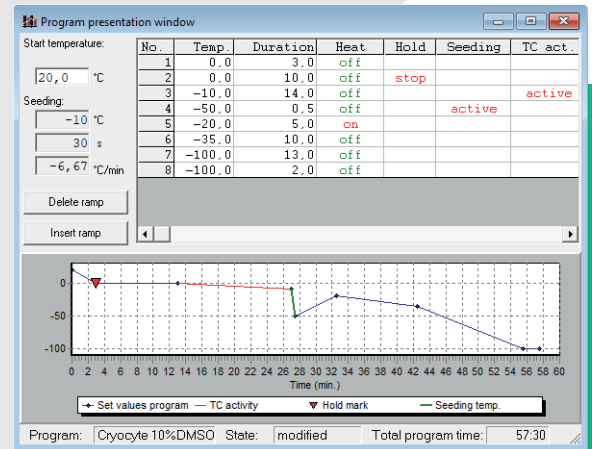
The advantages of the Windows operating system (installed as standard) are put to excellent use, as different levels with their own access rights can be set up.

Best Performing Controlled Rate Freezer

The BIOFREEZE BV45 comes with a proven German Red Cross Lymphocyte Freezing Program, which can also be used to freeze many other samples and grafts as well. Almost unlimited memory space is available for user-defined freezing or defrosting programs, allowing to also use other freezing programs.

Without monitoring during the freezing or thawing process, the BV45 delivers reproducible results. Moreover, temperature stability and gradient within the freezing chamber are precisely controlled by a special design.

The freezing process can be stopped or prematurely terminated at any time. Also, a fast forward is possible. The final temperature is maintained until the samples are removed and the process is terminated.

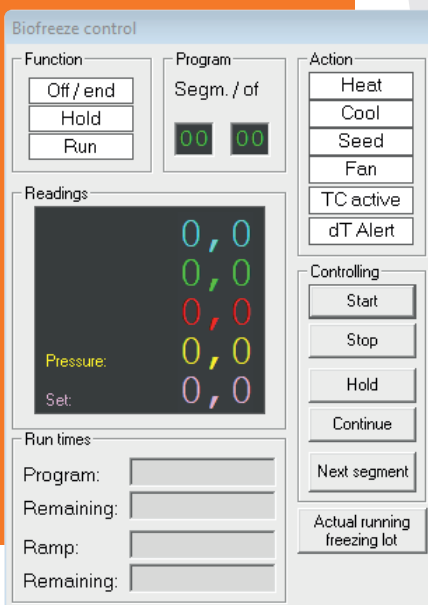


Perfect Control

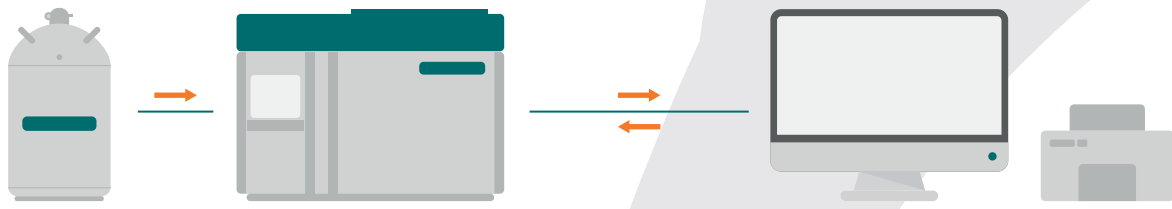
The CST co-processor is the central control and monitoring unit of the freezing chamber. It reads and processes the temperatures of the freezing chamber and the pressure of the liquid nitrogen container.

The most important system components are monitored by internal routines and issue error messages, if necessary.

In the event of a temporary power failure, it provides the **highest possible level of protection**. The measured data are automatically stored on the hard disk using the history function.



Excellent System Performance



- BV45 Freezing Chamber with CST co-processor
- Temperature sensor for reference bag
- Temperature sensor for pilot tube

- BIOFREEZE Software
- Process Control Computer (Windows)
- Color Printer

Unique TC-Activity

The integrated TCA sustainably optimizes the freezing process. As soon as the heat of crystallization is detected in the frozen product, a pre-programmed shock freezing process takes place automatically.

This ensures optimum heat dissipation. The freezing process is then carried out according to the program.

Seeding

The BIOFREEZE® BV45 control function makes it possible to trigger a local crystallization start of the graft.

Accessories

Sample holder for bags and pilot tubes, liquid nitrogen supply tanks.

Highest Safety Standards

- Password protection against unauthorized access
- Pressure and liquid nitrogen deficiency monitoring
- Monitoring of the expiration date of the cryo packaging
- Automatic execution of the program in case of computer failure
- Program continuation after temporary power failure
- Display of SET/ACTUAL temperatures on chamber and screen
- Interruption of liquid nitrogen supply when the chamber door is open
- Freezing program protection by different user authorization levels

Technical Data

Description	Details
Maximum Freezing Capacity	15 Cryobags (750 ml) in CR100FH cassette 30 Cryobags (50 ml) in CR20S cassette 60 Cryobags (25 ml) in CRP30 cassette 960 Cryovials (2 ml)
Temperature Range	-180°C / +30°C
Freezing Rate	0.1°C - 60°C/min.
Thawing Rate	15 minutes from -100°C to +20°C
Temperature Display	Numeric/Graphical on 17" LCD Monitor
Chamber Material	Stainless Steel
Internal Dimensions (L x W x H)	326 x 300 x 380mm
External Dimensions (L x W x H)	720 x 510 x 500mm (945mm if cover open)
Cover with insulated glazing	Hinges, Magnetic Hook
Heat Power	1000VA
Power Consumption	1250VA
Weight	Approx. 40kg
Mains Connection	220/240V 50/60Hz
Temperature Control Sensor	Pt100, applied Norm DIN EN60751
Reference Sensors	CuCuNi "T", ø1mm
Relative Humidity	Industrial Standard
Environmental Temperature	0°C - 50°C
Data Bus	RS422
Protection Norm	EN60529
Electrical Safety	EN61010, EN60601-1
Electromagnetic Compatibility	EN50081-1, EN50082-2, EN60601-1-2



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As a full-service provider of life science cryogenic technology with over 1,500 customers in more than 30 countries and decades of experience, Consarctic is known for reliable and innovative cryogenic products and services.

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