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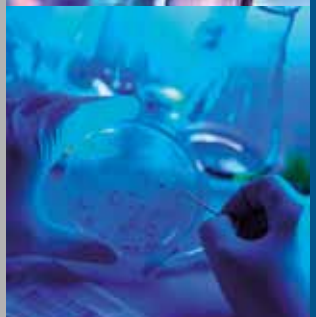
LIFESCIENCE

Automated Freezers
Smartfreezer® Series



Lab Automation

→ Get rid of human errors and preserve the value of your biorepository using the most advanced robotic system for storage and retrieval of biological samples at -180 °C in Liquid Nitrogen Vapor or at -80 °C with mechanical freezer.

PRO
-80°
-180°

Automated Freezers
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Fully automated storage and retrieval of vials at ultra low temperatures.

→ Professional Line.
→ Nominal working temperature of mechanical freezer model: -80°C.
→ Nominal working temperature of LN2 vapor phase model: -180°C.

Technical features

Fully Automated Retrieval

- Robotic retrieval of the desired sample in less than 20 seconds.
- Individual sample retrieval guarantees no exposure of other samples to deteriorating warming events.
- Available for 1.0 ml and 2.0 ml vials.
- Capacity: over 17.000 vials of 1.0 ml and over 10.000 vials of 2.0 ml.

Temperature Control

- Two models available, for LN_2 vapor phase or -80°C mechanical storage.
- Standard stainless steel tank for LN_2 and stainless steel chamber for -80 °C model.
- The samples, are not dipped in liquid nitrogen, eliminating the risks of cross contamination of specimen and outbreak of the tests-tube at the ambient temperature.
- Liquid nitrogen amount controlled by configurable thresholds to guarantee the ranges of temperature (LN_2 model).
- Optional rack for loading/unloading of up to five vials preventing samples thawing.

Ice Formation Prevention

The robotic arm stores and retrieves samples in a sealed area with controlled humidity, thus preventing ice formation on vials.

Access Control

- Only authorized people are allowed to store and retrieve samples.
- User access to samples is always tracked.

01 02 03

Operator And Sample Protection

- Access through robotic arm prevents any accidental or intentional physical damage of samples.
- Operator is protected from exposure to ultra low temperature.

Sample Tracking

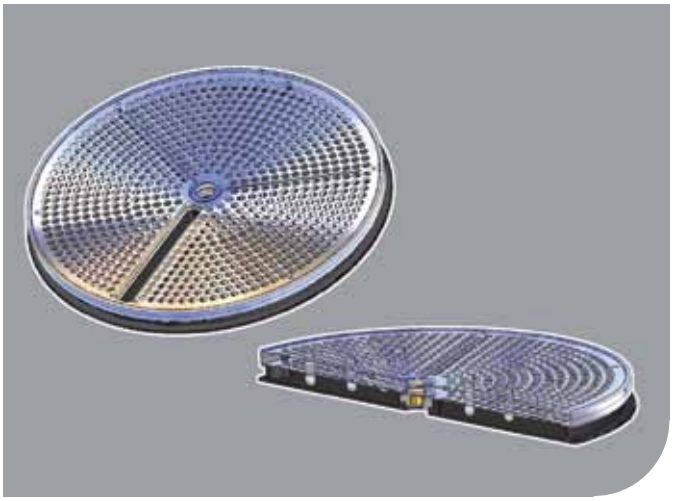
- A dedicated software running on an on board touch screen PC guarantees a complete sample tracking.
- Complete history of storage operations and temperature conditions.
- Samples always identified by 2D and linear barcodes reader.
- Built in match between inventory data and physical sample locations.
- Samples mix ups and losses prevention.

Technical specifications

Model	SMARTFREEZER®			
	V 80.20	V 180.20	V 80.10	V 180.10
Storage capacity (n°)	10.092	8.410	17.364	14.470
Type of vial (ml)	2		1	
Vial identification	Bar Code		Dot Code	
Speed to load and un-load (s/vial)	10			
External dimension (mm)*	1400×890×1960			
Working temperature (°C)	-80	-180	-80	-180
Dry System**	Yes	Not necessary	Yes	Not necessary
Refrigeration plant	Two compressors	Liquid nitrogen	Two compressors	Liquid nitrogen
Supply voltage (V)*	230V +6% -10% / 1 / 50 Hz			
Installed Power (W)	2800	1500	2800	1500
Absorbed power (W)	1400	800	1400	800
Temperature backup	CO_2 /LN_2	Auto-backup***	CO_2 /LN_2	Auto-backup***
Uninterruptible power supply	Yes			
Remote alarm****	Yes			
Ports	Ethernet - Modem - USB			

→ Illustration, description and technical data may be changed without notice.
(*) Cover on the top of the machine for external automation needed at installation. Height after installation: 2.740 mm.
(**) OPTIONAL. It is a device that produces dry air with a dew point of -40°/-50°C to be injected in the room over the storage place.
This system allows to avoid defrosting because ice formation cannot take place. This device is not necessary if anhydrous nitrogen gas is used.
(***) Temperature can be kept for 36 hours without supplying liquid nitrogen.
(****) ON/OFF.

01. Robot Gripper - The robot can retrieve a vial in less than 20 sec.
02. Loading /Unloading drawer.
03. Thermal Rack - To keep samples at the right temperature during loading/unloading.
04. 2D and linear barcodes are used to identify and rack samples.
05. Storage discs. Each sample is stored in an individual loacation.



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Ultra low temperature, ultra high security.

→ **Biological samples are useful as long as they are identified and stored reliably, without deterioration, protected from accidental and intentional physical damage.**

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Laboratory automation and biomedical equipment for storage at low temperatures (+4°C/-180°C) and chambers for stability tests.

Refrigerating systems for industrial processes.

acotec

Project design and implementation of controlled contamination environments (clean rooms).

STERIL

Laminar flow equipment for laboratory and non contamination industrial equipment.

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