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**SANYO**

# CBS Isothermal -190°C Dry Storage Freezers



- Patented Isothermal Design
- Outstanding temperature uniformity
- No cross-contamination through liquid nitrogen
- Certified to MDD 93/42/EEC:1993 Class IIA



# CBS Isothermal -190°C Dry Storage Freezers



- Outstanding temperature uniformity in the -190°C range.
- No loss of storage space.
- No cross-contamination through liquid nitrogen.
- User safety with no liquid nitrogen in the sample storage area.
- Automatic operation and filling.
- Certified to Medical Device Directive 93/42/EEC:1993 Class IIA.
- Choice of 4 models offering capacities between 9,100 and 46,500 2ml vials.



V-3000

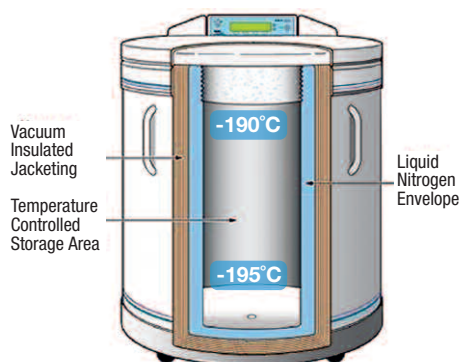


V-1500

CBS Isothermal -190°C Dry Storage Freezers offer a totally new approach to cryogenic storage. The freezers feature a patented liquid nitrogen jacket to provide uniform storage temperatures in the -190°C range, free from liquid nitrogen contact. This innovative design eliminates the risk of cross-contamination through liquid nitrogen and the need for special packaging to protect valuable cells and tissue.

With a minimal temperature gradient, the full internal volume of each freezer is available for storing samples at liquid nitrogen temperatures making the most efficient use of available capacity.

CBS Isothermal Freezers also provide added user safety by eliminating contact or splashing of liquid nitrogen.



## The Isothermal concept

The sample storage area is cooled by a liquid nitrogen jacket surrounding the stainless steel interior, and by nitrogen vapour entering the freezer from the jacket via directional vents.

This patented technology provides exceptional temperature uniformity in the  $-190^{\circ}\text{C}$  range, allowing the full freezer capacity to be used with confidence.

The circulation of vapour within the freezer also results in less cold air loss during lid opening and improved visibility. This allows full-width lids to be used providing quick, unrestricted access to sample racks.

## No liquid nitrogen contact

With no liquid nitrogen in the storage area, samples can be stored safely in the  $-190^{\circ}\text{C}$  range without the risk of cross-contamination through liquid nitrogen. The Isothermal design also provides added user safety with no splashing or contact of liquid nitrogen when removing racks and samples from the freezer.

## Automatic operation

CBS Isothermal Freezers feature the Series 2300 auto-fill and monitor system, which controls the automatic filling of the liquid nitrogen jacket and provides the user with an easy to read overview of the freezer temperature and status.

## Sample security

A comprehensive alarm system with remote alarm contact constantly monitors all aspects of the freezer's operation. Samples are also protected by lid and control panel locks. The freezer can be monitored by a central BMS or monitoring system.

## Sample storage

A wide selection of inventory systems for vials and bags are available to complete the system and optimize sample storage. A new, revolutionary storage and retrieval system for straws is also now available (see back page).

### SPECIFICATIONS Isothermal $-190^{\circ}\text{C}$ Dry Storage Freezers

Model	V-1500	V-3000	V-5000	V-5000EH
Liquid nitrogen capacity (liters)	30	70	93	140
Static evaporation rate (liters/day)	5	9	11	11
Static holding time (days)	6	8	8	12
External dimensions :				
Width (mm)	660	939	1219	1219
Depth (mm)	939	1219	1371	1371
Height (mm)	1143	1206	1320	1473
Usable interior height (mm)	736	736	736	864
Usable interior diameter (mm)	534	787	1016	1016
Weight empty (kg)	148	272	425	453
Weight full (kg)	174	327	500	566
Max. vial capacity (2ml)*	9100	22100	40300	46500
Max. blood bag capacity (50ml)*	434	1120	1936	2208

\* Capacity is subject to rack type

# CBS Isothermal -190°C Dry Storage Freezers

## CBS Straw Storage Inventory System

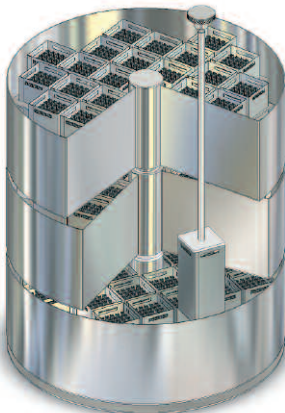
Designed for the CBS V-1500 Isothermal Freezer, this patent-pending Inventory System provides an efficient solution for storing and working with straws, free from liquid nitrogen contact.

- Ideal for IVF and other straw storage applications\*)
- Isothermal dry storage with uniform temperatures throughout the freezer from -195° to -190°C.
- 3-level rotating carousel provides convenient inventory control and maximises storage space. The system can hold up to 24,480\* straws in 68 canisters.
- The middle and lower levels are ideal for medium and long-term storage respectively, whilst the upper level can be used for storage and as a workspace for viewing and manipulating samples safely at -190°C.
- Easy retrieval of samples using the patent-pending retrieval tool.

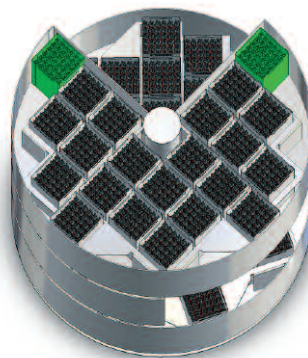
\* Maximum capacity is subject to straw diameter. Straws and goblets are not supplied.



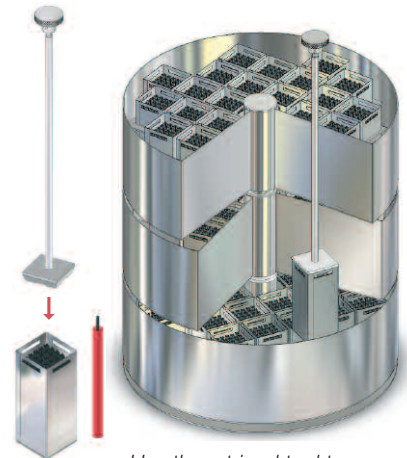
### How the System works.



Rotating carousels provide access to lower storage levels and maximise storage space.



The upper level provides a convenient workspace where canisters can be parked (shown in green) and samples inspected at -190°C.



Use the retrieval tool to place and retrieve canisters quickly and easily.



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