

## DEEP FREEZER : Nicool Range



## NICOOL RANGE : Nicool LM100



*A digital temperature indicator (optional) enables the user to monitor the freezing cycle with precision.*

### The advantages that make the difference:

#### Easy to use

The rotating speed of the turbine is the only parameter to be determined.

#### Easy to handle

Light and small, the LM10 takes up little space on the laboratory bench and can be transport easily.

#### Cost effective

Inexpensive, the LM10 does not require any maintenance and consumes very little nitrogen.

The NICOOL LM10 is a minifreezer designed to freeze small quantities of biological products.

The samples are placed above a Dewar flask filled with liquid nitrogen. A turbine located at the top of the appliance cools down the products by gaseous convection. The speed of freezing is determined by the rotating speed of the turbine. At the end of the cycle, the samples can be immersed in the liquid nitrogen.

### CHARACTERISTICS

#### Dimensions

Overall height (mm): 590  
Diameter (mm): 250  
Weight (kg): 3

#### Freezing capacity

2 ml vials: 10  
Straws (0.25ml or 0.5ml): 100

#### Cooling speed

0.5 to 10°C/minute (between +20°C and -125°C)

#### Consumption

3 litres per cycle\*

#### Electricity supply

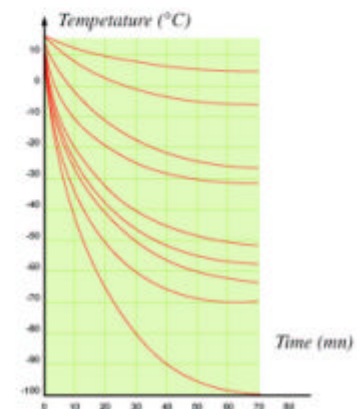
220 V single phase  
110 V single phase

#### Filling

AGIL stainless steel Dewar flask  
Polystyrene tipper

#### Accessory

Digital temperature indicator



*Cooling speeds obtained from the speed of the turbine (from 1 to 10)*

\* Nominal values liable to vary significantly as a function of the type and quantity of the products frozen, and of the cycle programmed.

• CE : The NICOOL range complies with current European directives.

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## NICOOL RANGE : Nicool BAG MS21



### The advantages that make the difference:

#### Easiness of use

Three parameters only need to be determined. The nitrogen is poured manually into the freezing chamber.

#### Mobility

Shaped like a case, it is easy to transport.

#### Autonomy

The NICOOL BAG MS21 can be connected to a 12-volt car battery.

Autonomous, easy to use and efficient, the NICOOL BAG MS21 is a semi-automatic freezer specially designed for freezing embryos. The straws are placed horizontally in a heating cabinet installed above the liquid nitrogen. The freezing cycle is defined by 3 parameters which are entered in the programmer regulator.

- SP1: stabilization temperature before seeding (compensation of latent heat).
- SP2: intermediary temperature before immersion in liquid nitrogen.
- PR: slope in °C/minute between both increments.

Seeding is carried out manually. The temperature of the straws is then lowered according to the programmed slope. The freezing cycle ends up by immersing the chamber in the liquid nitrogen.

### CHARACTERISTICS

#### Dimensions of freezer

Overall height (mm): 370  
Width (mm): 550  
Depth (mm): 335  
Weight (kg): 20

#### Dimensions of freezing cabinet

Overall height (mm): 35  
Width (mm) : 210  
Depth (mm) : 120

#### Freezing capacity

Straws (0.25 ml): 20

#### Temperature range

Between + 20°C and - 196°C inclusive  
Cooling speed between SP1 and SP2  
From 0.1 to 5°C/minute

#### Electricity supply

220 V single phase  
Can be connected to a 12-volt battery

#### Electricity consumption

150 Watts

#### Alarms

2 audible alarms available for SP1 and SP2

#### Temperature sensor

Alumel chromium thermocouple

#### Filling

AGIL stainless steel Dewar flask  
Polystyrene tipper

#### Accessory

Thermal inductor (seeding bar)

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## NICOOL RANGE : Nicool PC



The ability to control the freezing process is a matter of vital importance in cryobiology. The development of new applications necessitates the determination of freezing protocols which improve the survival rate of cells and preserve their structure and biological functions.

The MINICOOL 40 PC and NICOOL PC are programmable cryogenic freezers intended to freeze sensitive biological samples. They have been designed to cater for a dual need for safety (programmed freezing conditions the preservation of the most valuable products) and flexibility (for each type of sample, the optimum protocol can be programmed).

The NICOOL is connected to a desk-top computer and a pressurized vessel (TP) which supplies it with nitrogen. The operator configures the desired freezing cycle. The software manages the programmed cycle between + 37°C and - 170°C. The temperature of the products is measured by a sensor placed in a reference sample. Injection of nitrogen, ventilation and heating of the chamber are controlled on the basis of their thermal reactions. Seeding (offsetting of latent heat) can be carried out manually or automatically.

### The advantages that make the difference:

#### **Precision freezing**

The temperatures of the chamber and the reference sample are monitored in real time. The slightest discrepancy with respect to the required protocol is immediately detected.

Freezing is controlled on the basis of the temperature of the reference product. This makes for better control of the thermal reaction of the samples.

#### **Flexibility of programming**

The freezing software makes it possible to construct specific freezing protocols for each type of sample. There is no limit on the number of programmable cycles.

#### **Reproducibility of freezing**

Each freezing protocol can be stored to make for perfect reproducibility of the freezing.

#### **Traceability**

The freezing curves can be saved on floppy or hard disk for viewing at a later stage. They can also be printed.

#### **Easiness of use**

The freezing operation can be easily programmed and monitored by computer.



CHARACTERISTICS	MINICOOL 40 PC	NICOOL PLUS PC
<b>External Dimensions</b>		
Length (mm)	700	880
Width (mm)	370	500
Height (mm)	460	500
Weight (kg)	33	68
<b>Dimensions of freezing chamber</b>		
Length (mm)	Diamètre : 170	300
Width (mm)		250
Height (mm)	170	350
Temperature sensors	PT 100 model platinum type	
Temperature range (°C)	+ 37°C à - 170 °C	
Cooling speed (°C/min)	0.1 à 50	
<b>Freezing capacity per cycle</b>		
0.25 ml straws	400	-
CBS 0.5 ml straws	176	Contact us
2 ml vials	42	896
5 ml vials	21	672
Bags (up to 1000 ml)	-	14
Electricity consumption (W)	500	1200
Supply of liquid nitrogen	TP type self-pressurized vessel. Operating pressure 0.4 bar. Connection by hose equipped with safety valve calibrated to 1.4 bar	
Nitrogen consumption per cycle (l)*	5	12
Electricity supply (V/Hz)	220/50	

\*Nominal values liable to vary significantly as a function of the type and quantity of the products frozen, and of the cycle programmed.

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#### Accessories:



#### MINICOOL 40 PC

- Vertical rack for straws
- Horizontal holder for 20 straws
- Thermal inductor for straws (seeding bar)
- Freezer sensor holder for straws
- Vial holder rack



#### NICOOL PLUS PC

- Holder
- Superimposable inventory system for 224 straws
- Inventory system for 14 bags
- Holders for bags



Stem cells programmed deep freezing.



## Contact

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