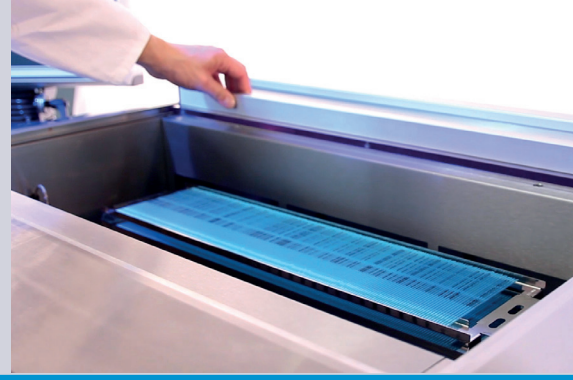




# TurboFreezer



## The innovation in straw freezing technology

Semen freezing in conventional freezers suffers from unpredictable cold and warm spots distributed throughout the freezing chamber. This issue is effectively addressed by the innovative TurboFreezer technology:

- + The aerodynamic design of the TurboFreezer and the unidirectional, horizontal nitrogen gas flow ensure that all straws pass through identical freezing curves
- + The freezing pattern of each single straw is precisely controlled by instant removal of crystallization energy
- + The heat energy produced by each straw during crystallization is directly removed and does not influence other straws
- + A homogeneous nitrogen gas flow is provided over the complete height and length of the stacks of straw racks

### + Your benefits

- + Standardized semen freezing curves independent of straw position
- + Higher yields through improved, uniform post-thaw quality of ejaculate
- + Precise control through user defined freezing programs
- + Ergonomic and easy handling of racks and straws in ample freezing chamber
- + Outstanding economy due to high throughput
- + Option to start with temperature  $-50^{\circ}\text{C}$  from second freezing cycle on, saving time and  $\text{LN}_2$



Directed, horizontal nitrogen gas flow for homogeneous and superior freezing results



## ⚙️ Product features TurboFreezer L

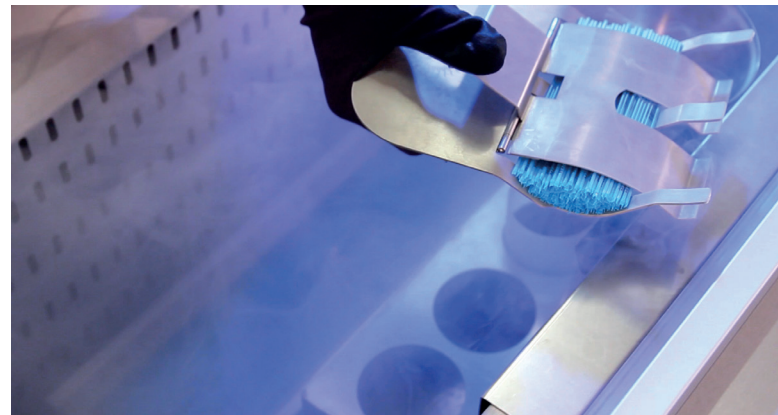
- Highly insulated body with stainless steel cover
- Dual operation lid: inserted sliding covers for low impact in terms of cold loss when handling straws and racks after freezing; complete cover opens supported by gas pressure springs
- Subsequent freezing cycle can start immediately after the previous one
- Temperature curves and data of each freezing cycle can be stored, displayed, and transferred into MS Excel for further analysis
- Quadruple LN<sub>2</sub> injection ports, required LN<sub>2</sub> pressure: 2.5 bar
- Conditioning plenum separated from the freezing chamber
- 2 fan blocks with 4 fans each for homogenous LN<sub>2</sub> dispersion and precision gas flow throughout the chamber
- Programmable controller for custom curves
- 2 temperature sensors (1 chamber sensor, 1 sample sensor)
- Outside dimensions: 222 x 132 x 86 cm (W x H x D)
- Chamber size: 145 x 41 x 32 cm (W x H x D)
- Capacity: 30 racks
  - 175 x 0.25 ml straws (total: 5250 straws)
  - 100 x 0.5 ml straws (total: 3000 straws)

**TurboFreezer L, 220 V/50 Hz\*** 16811/0000

## ⚙️ Product features TurboFreezer M

- Outside dimensions: 102 x 103 x 86 cm (W x H x D)
- Chamber size: 78 x 41 x 32 cm (W x H x D)
- Capacity: 15 racks
  - 175 x 0.25 ml straws (total: 2625 straws)
  - 100 x 0.5 ml straws (total: 1500 straws)

**TurboFreezer M, 220 V/50 Hz\*** 16810/0000



### Both freezers come with

2 holding devices for 4 goblets, straw pliers, holding box for straw pliers, funnel for filling straws into goblets (65 mm)

\* 220 V/60 Hz optional

## ↔️ Accessories

| Freezing rack Turbo                   |                   |
|---------------------------------------|-------------------|
| for 175 0.25 ml straws                | 15040/0175        |
| for 100 0.5 ml straws                 | 15040/0100        |
| Loading and counting device           |                   |
| for 175 0.25 ml straws                | 15041/0175        |
| for 100 0.5 ml straws                 | 15041/0100        |
| <b>Pressure container, 189 liters</b> | <b>16150/0185</b> |

| Heating module to shorten heating time between cycles |                     |
|---|---------------------|
| left side cable outlet                                | 16811/1100          |
| right side cable outlet                               | 16811/1101          |
| <b>Rack lifter for TurboFreezer M and L</b>           | <b>5016810/1503</b> |
| <b>Platform for racks</b>                             | <b>5016810/1504</b> |