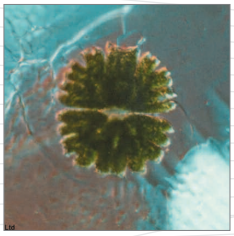
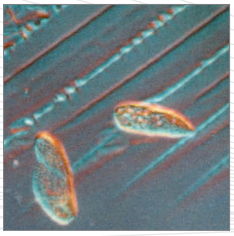
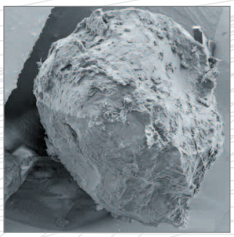
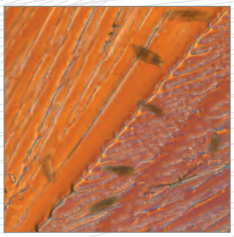
Grant
TECHNOLOGIES

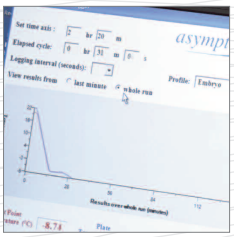
Asymptote EF600

Nitrogen and cryogen free controlled rate freezer





QUALITY DESIGN « » CONSISTENT PERFORMANCE « » SOUND INVESTMENT

Asymptote EF600

The Grant Asymptote EF600 is the world's first nitrogen and cryogen free controlled rate freezer. It has been specifically designed for use in human and animal IVF applications for the cryopreservation of embryos, stem cells and spermatozoa but can also be used for a wide range of freezing applications.

Unlike conventional controlled rate cooling equipment, the EF600 poses no contamination risk and can be used in cleanrooms. The EF600 fits neatly on a bench-top and its performance in terms of samples frozen and successfully recovered is proven to be directly comparable with that of a standard liquid nitrogen freezer.

Main applications

The EF600 is a versatile piece of equipment which can be used for the cryopreservation of a wide range of samples, including:

- Human and veterinary IVF
- Stem cells
- Clinical and research samples, e.g. lymphocytes and tissue culture cells in conventional cryovials
- Cord blood in flexible bags
- Matrix type tubes – containing cell suspensions
- The EF600 may also be integrated into robotic systems, including biorepositories and biobanks
- The freezer may also be operated as a portable device: ideal for many veterinary and conservation applications

The Grant Asymptote EF600 – the next generation of controlled rate freezers

Cooling down to -100ºC without liquid nitrogen or any other cryogen the EF600 truly is the next generation of controlled rate freezers. It uses an electrically powered Stirling Cycle engine as its cooling source to cryopreserve embryos, oocytes, spermatozoa and stem cells, in a range of standard cooling arrangements.

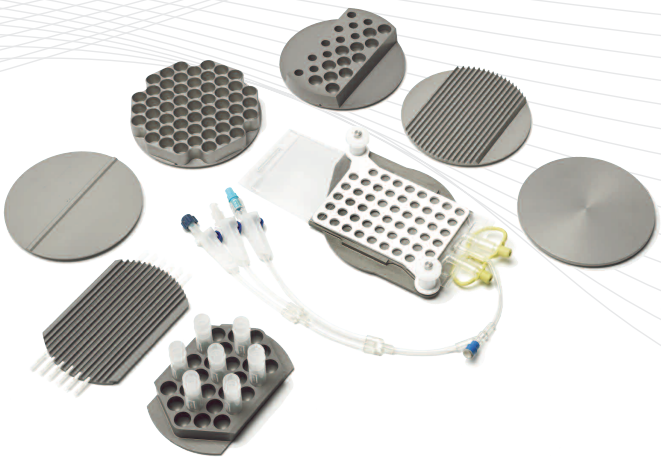
The cooling rate of the EF600 is precisely controlled, ensuring good recovery of cells upon thawing. Operation is simple and can be carried out with or without a PC to automatically log and display data. Different cooling profiles are available from a drop down menu. Published trials[1] have demonstrated successful freezing and recovery of embryos, sperm and embryonic stem cells.

Sample plates accommodate ordinary straws or cryovials. A number of different plates are available to suit a range of applications.

The compact and quiet EF600 is ideal as a personal freezer for clinicians and researchers, especially in clinics where space is at a premium. With a smooth easy-clean exterior and cryogen free operation, it is highly suited for laboratories that operate under sterile conditions or require high air quality and where the use of liquid nitrogen freezers should be avoided.

Key benefits

- **Clean room compatible: no cryogen contamination risk**
- **Accurate cooling rate and sample temperature control**
- **Linear and non-linear cooling profiles**
- **Low running costs: estimated at 1% of liquid nitrogen controlled rate freezing**
- **Temperature remains at e.g. -100ºC at end of cycle until freezer is switched off**
- **A converter allows field use**
- **Inexpensive warranty, servicing and calibration**



[1]RBM Online 13, 421-426, 2006; Cryoletters 27(3), 179-184 (2006)

Product specifications

- **Temperature range:** +30 to -100°C
- **Cooling rate with straws:** up to 15°C/min
- **Overall size:** W 36.5cm, D 25.4cm, H 42cm
- **Weight:** 7kg
- **Power requirements:** 100-240V, 48-62Hz, 3A max
- **Operating temperature (environment):** 5°C to 30°C
- **A number of fixed plates available:** standard straws, high security straws, cryovials, bags (other plates may be available on request)
- **Freezer:** stand alone pre-programmed or connected to a control PC (laptop with serial port, with preloaded control software and Windows)
- **Software:** software for data logging, to change linear and non-linear temperature programs, to allow full programming. All data is logged onto the hard disc in an encrypted form and Excel readable form
- **Cleaning:** seamless, no dirt traps, may be cleaned using standard wipes

Ordering information

Grant Asymptote EF600: freezer with data logging to a dedicated PC

Pre-loaded with a single default program specified at the time of ordering.

Accessories

- **Cryopen ice nucleating tool:** a small nitrous oxide cryosurgical device which uses the rapid expansion of sterile N_2O to induce ice nucleation ("seeding") in the samples. The gas does not compromise the sterility of the operating environment
- **Backup electrical supply:** uninterruptable Power System (UPS) capable of running the freezer for a 3 hour cycle in the event of an electrical power failure
- **Conversion kit:** allows use of the EF600 as a portable device
- **Customised case:** for shipping the EF600

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Grant/Asymptote partnership

Grant Instruments, a world renowned manufacturer and supplier of custom and own-brand scientific, life sciences and data acquisition products has partnered with Asymptote (www.asymptote.co.uk), a specialist in controlled solidification research and product development to develop patented Asymptote technologies embodied in this product.

Your local distributor is:

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