

Kryo 320 - 1.7



The **Kryo 320 - 1.7**, although an **entry level biological freezer**, incorporates many of the critical features of the more established freezers in the Planer range. Whilst **not recommended for Human work** due to the limited lower temperature of $-100\text{ }^{\circ}\text{C}$, the flexibility of the system is ideal for the more difficult to freeze animal samples.

Offering multiple programming, combined with flexible temperature rates, most standard protocols can be accurately completed with the **Kryo 320 - 1.7**.

Should applications change, or the regulation of processes require **greater validation or data retention**, the unit may be simply upgraded with the addition of a Planer Upgrade Pack which includes a built in printer and PC connection compatible with comprehensive Delta T™ software application. When fitted with the integral printer, any of the last 10 freezing runs may be graphed.

Planer developed the world's first programmable freezer in the 1970's. Since then with its customers it has pioneered the field of controlled rate freezing for biological and other materials on a world-wide basis, with many breakthroughs and awards.

With **distributors in over fifty countries**, Planer works with its customers and users continually. It is their needs which drive development. For this reason it aims to supply an integrated range that can be **easily upgraded**. This means, for example, that as techniques alter, throughput increases or validation requirements change, there should be an easy upgrade path to add an extra software level, a new inventory package or upgraded hardware to your system.

The Planer Kryo 320 - 1.7 entry level biological freezer specifically designed for low throughput freezing of non critical Embryos and Sperm

- Controller displays demand, sample and chamber temperatures programme stage and current temperature graphic
- Menu driven controller, simple to programme and operate
- Horizontal or vertical operation
- Compact design
- Full, logical upgrade path available to add features e.g.:-
 - ◆ Start above ambient
 - ◆ Controlled heating
 - ◆ Data Printing
 - ◆ Comms port for PC connection
 - ◆ Fast cooling rates

SPECIFICATION OVERVIEW

- Chamber volume: 1.7 litres
- Straw capacity: 60 x 0.25 ml straws in 4 positions, radially located
- Ampoule capacity: 30 x 2 ml ampoules in 4 positions radially located
- Lower temperature limit: $-100\text{ }^{\circ}\text{C}$
- Cooling rates: -0.01 to $-30\text{ }^{\circ}\text{C}/\text{min}$
- System controller: MRV light
- PC Software: Delta T™ Lite (Upgradable to Delta T or Delta T-iQ)

SYSTEM REQUIREMENTS

5 psi or 22 psi Liquid Nitrogen Supply

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TECHNICAL SPECIFICATION - Kryo 320

System Specification

Range	Ambient to -100 °C/min (*Upgradable to +40 °C to -140 °C)
Heating rate	None (*Upgradable to 0.01 °C/min to 10 °C/min)
Cooling rate	-0.01 °C to -30 °C (*Upgradable to -50 °C)
Controller accuracy	±0.3 °C measured on a hold at 0 °C
Storage temperature	-10 °C to +50 °C
Storage humidity	5 % to 95 % relative humidity non-condensing
Operating temperature	5 °C to 40 °C
Operating humidity	5 % to 90 % relative humidity non-condensing

Controller Specification

Dimensions	80 mm high x 220 mm wide x 350 mm deep
Weight (approx.)	2.6 kg
Display	240 x 64 LCD with CCFL backlight
Printer	None (*Upgradable to 320/640 dot thermal printer)
Keypad	20 key membrane keypad
Programmable Cooling Rate Range	-0.01 °C/min to -30 °C/min
Number of profiles	10
Steps per profile	32
Number of stored runs	10

Chamber Specification

Weight (approx.)	14.4 kg
Capacity	1.7 litres
Chamber dimensions	Internal: 200 mm x 150 mm diameter External: 450 mm high x 300 mm wide x 420 mm deep
0.25ml straws	60
0.5ml straws	45
2ml ampoules	30
50, 250 & 500 cc blood bags	N/a
Power requirements (Inc. MRV Controller)	115V~ 50/60Hz 600VA / 230V~ 50/60Hz 600VA

Recommendation of additional equipment	5 psi System	System Pump - LNP4-C System Dewar - MVLAB 30
	22 psi System	System Cylinder - MVEUROCYL230SB Phase Separator - MVPHASE
(Alternative)	22 psi System	Vacuum Jacketed Pipe Work System Phase Separator - MVPHASE

* Upgradable This product has upgrades for heating, cooling, printing and pc connectivity. See Upgrades Pack Sheet.