

Kryo 1060



The **Kryo 1060** incorporates all of the critical features expected of a high class biological freezer. The system is specifically designed and specified for high volume cell line work, with full system safety protection. The -100 °C end temperature ensures sample integrity during transfer to storage. The high capacity liquid nitrogen cylinder offers a large cooling reservoir with the reassurance of an **extended hold time at the protocol end temperature**. The system sample capacity is sufficient for the most intense process situations and the state of the art design will enhance the most modern laboratory or process area. The top opening chamber, combined with a unique forced laminar flow pattern of the coolant and cryogenic insulation, ensures even and accurate temperature control in all phases of the protocol. The stainless steel finish enables wipe clean functionality and ruggedness.

The KS1 controller system has been designed to be simple to program and operate. Both during and after a run a PC offers the widest range of displayed information, alphanumerically and graphically via the monitor and as a print out on a network printer.

User calibration with associated hard copy is featured and PC connection compatible with Planer's comprehensive Delta T™ software application is standard. In line with the specification for use, the system has been fitted with **numerous safety features**. These help protect against power failure and PC failure when running with software; processor or system problems are controlled and the system restarts to protect samples.

Validation is a high priority and the DeltaT-iQ software offers **password controlled access** on multiple user levels, time and date stamping, programme preview and verification before running and data storage for the last five runs for subsequent printing.

The Planer Kryo 1060 for the freezing of Pharmaceutical Cell Lines, Viruses and other samples in high volumes

- Designed for freezing of samples in ampoules or other containers in baskets
- Integrated floor standing design
- Standard PC software enables password protected multiple protocols (Not Individually Protected)
- Mechanically aided top opening design
- Unique forced laminar flow cooling system ensures efficient, even cooling
- Standard operating features:-
 - ◆ Start above ambient
 - ◆ Controlled heating
 - ◆ Comms port for PC connection

SPECIFICATION OVERVIEW

- Chamber volume: 180 or 380 litres
- Ampoule capacity: 4000/8000 x 2 ml in baskets
- Lower temperature limit: -100 °C
- Cooling rates: -0.01 to -5 °C/min
- Controlled heating rates: 0.1 to 1 °C/min
- System controller: KS1
- PC Software: Delta T™ Lite (Upgradable to DeltaT and DeltaT-iQ)

SYSTEM REQUIREMENTS

22 psi Liquid Nitrogen Supply

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TECHNICAL SPECIFICATION - Kryo 1060

Kryo 1060 - 180

Dimensions	External	Internal
Height	112 cm	64 cm
Width	86 cm	1 x 50 cm
Depth	116 cm	50 cm
Weight	211 kg (shipping weight inc. Packaging) approx.	
Capacity	4000 x 2 ml ampoules	

Kryo 1060 - 380

Dimensions	External	Internal
Height	112 cm	64 cm
Width	132 cm	2 x 50 cm
Depth	116 cm	50 cm
Weight	423 kg (shipping weight inc. Packaging) approx.	
Capacity	8000 x 2 ml ampoules	
Circulation	Horizontal laminar flow	
Temperature Range	+40 °C to -100 °C. Warning! The freezer is fitted with a manually-resettable thermal cut-out to prevent over heating. This will operate if the chamber is programmed to run above +40 °C and will require a Service Engineer to reset it.	
Cooling medium	Liquid nitrogen 22 - 30 psi	
Heater	1700W	
Accuracy	±0.5 °C at a hold at 0 °C (dynamic accuracy depends on actual program, e.g. rate of change of temperature).	
Heating Rates	0.01 °C/min to 1 °C/min	
Cooling Rates	-0.01 °C/min to -5 °C/min	
Power Requirements	230V~ 50/60Hz, 16A (max.) The freezer may be damaged by voltage surges in excess of 15% above nominal.	
Standards	Complies with 89/336/EEC EMC Directive as amended by 93/68/EEC and 73/23/EEC Low Voltage Equipment Directive as amended by 93/68/EEC	
Storage temperature	-10 °C to +70 °C	
Storage humidity	Up to 95 % non-condensing	
Operating temperature	+5 °C to +40 °C	
Operating humidity	Less than 90 %	

Recommendation of additional equipment	22 psi System	System Cylinder - MVEUROCYL230SB Phase Separator - MVPHASE
(Alternative)	22 psi System	Vacuum Jacketed Pipe Work System Phase Separator - MVPHASE