



Kryo 1060 - 380



The Planer Kryo 1060 - 380 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
- 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

The Kryo 1060 - 380 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 -160°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. Additionally the lid is prevented from freezing shut at cryogenic temperatures, whilst the stainless steel finish enables wipe clean functionality and ruggedness.

The MRV controller system has been created to offer multiple protocols whilst remaining simple to programme and operate. Both during and after a run it offers the widest range of displayed information, alphanumerically and graphically via the easy view display and as a print out on the integral full view printer. Validation is a high priority and the MRV 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.

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 Human 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. For example all control and data systems are separated, the controller can be removed from the operating freezer with no loss of programme integrity; data storage and run processing are operated on completely isolated electronic systems.

SPECIFICATION OVERVIEW

- Chamber volume: 380 litres
- Ampoule capacity: 8000 x 10ml in baskets
- Lower temperature limit: -160°C
- Cooling rates: -0.01 to $-5^{\circ}\text{C}/\text{Min}$
- Controlled heating rates: 0.1 to $1^{\circ}\text{C}/\text{Min}$
- System controller: MRV
- System Pump: Cylinder
- System Dewar: N/A
- PC Software: Delta T™

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TECHNICAL SPECIFICATION Kryo 1060 - 380

Dimensions	External	Internal
Height	112cm	64cm
Width	132cm	2 x 50cm
Depth	116cm	50cm
Weight	160kg (shipping weight including packaging) approx.	
Capacity	8000 10ml ampoules	
Circulation	Horizontal laminar flow	
Temperature range	+40.0°C to -160°C	
Cooling medium	Liquid nitrogen 22 - 30 psi.	
Heater	1700W	
Sensors	Control and sample: 4-wire Platinum resistance thermometer	
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	230 V ~ 50-60Hz , 16A (max.)	
Chart Recorder	Sensitivity: 16.7mV/°C. Nominal impedance >10K Scaling: 0V = -200°C, +5V = +100°C	
Standards	Designed to comply with BSEN 61010, EN50082-2, EN50081-2.	
Storage temperature	-10°C to +70°C	
Storage humidity	Up to 95% noncondensing	
Operating temperature	5°C to +40°C	
Operating humidity	Less than 90%	