

# Catalogue

Controlled Rate Freezers

Benchtop Incubators

Alarms & Monitoring

Sample Tracking



# PLANER

PRESERVE / PROTECT / NURTURE

# Helping scientists and medical professionals look after cells

For over 40 years, we have been helping hospitals, research laboratories, pharmaceutical companies and the IVF industry with the safe storage and preservation of medical and biological specimens.

We work closely with scientists and the medical profession to understand their requirements and supply high quality, reliable equipment that conforms to ISO and Medical Device standards and, where appropriate, assist with compliance including 21 CFR Pt 11.

## FREEZING

Planer can significantly increase the viability of frozen cells and tissues in a reproducible, documented and reliable controlled rate freezer.

## INCUBATING

Our benchtop incubators provide a superior in vitro environment for cells, combining rapid recovery following lid opening, low gas consumption and a modest footprint.

## MONITORING

Protecting the irreplaceable, Planer monitoring systems use an array of sensor types to ensure sample, laboratory and personal safety.

## STORING

User definable software platform Pro-Curo ensures that no sample will ever be lost or misplaced.

## SUPPORT

With nearly half a century of experience servicing leading laboratories and organisations around the world plus a global network of 80 distributors, you and your samples are in safe hands.



To find out more, please contact us on +(44) 1932 755 000 or email [enquiries@planer.com](mailto:enquiries@planer.com)

# Index

## FREEZING

A range of programmable freezers and peripherals, ideal whether you need to freeze straws, vials or blood bags.



## INCUBATING

For both human and animal IVF applications, the Planer benchtop incubators provides an ideal in-vitro environment.



## MONITORING

Keep your laboratory safe and compliant with our range of alarms and monitoring equipment that is quick and easy to set up.



## STORING

Track your samples, with off-the-shelf intuitive software, that is quick and easy to set up.





**Compact controlled rate freezer**

# Kryo 360

**Controlled temperature reduction prevents the formation of lethal intracellular ice: the Kryo 360 significantly improves viability yield post-thaw and is ideal for small sample sizes.**

Accurate control, safety features and sample history data logging make these freezers world-class leaders.

The Kryo 360 range is simple to programme and operate, with the controller displaying demand, sample and chamber temperatures.

Whether you wish to freeze up to 60 straws or up to 60 ampoules, the freezers produce repeatable, consistent results with easy data recording thanks to the integral printer and PC comms port.

Batch freezing is possible using our DeltaT software. Large sample numbers can be deposited in different machines with the subsequent freezing profile for all samples being displayed on the same graph.

The system controller offers password-controlled access on multiple user levels, with users being able to customize up to 10 profiles.

Additional safety features have been fitted to help protect against power and PC failure.

- Optimised for different cell types – user definable freezing profiles
- Assured cryopreservation – inbuilt alarms and user notifications
- QA support - password protection, reporting and temperature graphs
- Flexible design - different chamber size options accommodate straws or vials
- Post thaw viability up by 20% compared to non-dynamic freezing methods

Want to optimise freezing profiles? [enquiries@Planer.com](mailto:enquiries@Planer.com)



## Compact controlled rate freezers

Kryo 360

SYSTEM SPECIFICATION	
Range	+40 °C to -180 °C
Heating rate	0.01 °C/min to 10 °C/min
Cooling rate	-0.01 °C/min to -50 °C/min
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	320/640 dot thermal printer
Keypad	20 key membrane keypad
Programmable Cooling Rate Range	-0.01 °C/min to -99.9 °C/min
Number of profiles	10
Steps per profile	32
Number of stored runs	10
CHAMBER SPECIFICATION	
Weight (kg)	14.4(1.7 L chamber) or 14.7(3.3 L chamber)
Chamber dimensions	1.7 L chamber: Internal 200 mm x 150 mm diameter External 450 mm high x 300 mm wide x 420 mm deep 3.3 L chamber: Internal 400 mm x 150 mm diameter External 450 mm high x 300 mm wide x 420 mm deep
0.25 ml straws	60 (1.7 L and 3.3 L chamber)
0.5 ml straws	45 (1.7 L and 3.3 L chamber)
2 ml vials	30 (1.7 L chamber) or 60 (3.3 L chamber)
Power requirements (including 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
22 psi System (alternative)	Vacuum Jacketed Pipe Work System
	Phase Separator - MVPHASE



## Medium sized controlled rate freezer

# Kryo 560

**A gold standard in the cryopreservation of bone marrow, cord blood and cells, the Kryo 560 is the tool of choice to ensure the best possible clinical outcome.**

Whether you wish to freeze 2,900 straws or 48 PALL bags, the Kryo 560 provides a reliable, robust solution.

This top opening programmable freezer is simple to programme and operate, but flexible enough to offer multiple protocols.

Batch freezing is possible using our DeltaT software. Large sample numbers can be deposited in different machines with the subsequent freezing profile for all samples being displayed on the same graph.

Information is displayed and can be printed via the integral printer.

Security and safety is of paramount importance. There is password controlled multiple level user access, plus safety features to protect against power and PC failure.

- Flexibility – accommodates straws, vials or blood bags
- User assurance – an approved and proven Medical Device
- QA – internal support with password protection, reporting and temperature graphs
- Scalable – option to control multiple chambers via one interface (batch freezing)
- Post thaw viability up by 20% compared to non-dynamic freezing methods

Want to optimise freezing profiles? [enquiries@Planer.com](mailto:enquiries@Planer.com)



## Medium sized controlled rate freezers

Kryo 560

SYSTEM SPECIFICATION	
Range	+30°C to -180°C
Heating rate	0.01°C/min to 10°C/min
Cooling rate	-0.01°C/min to -50°C/min
Controller accuracy	±(0.3 + 0.005 x TM)°C (where TM is the magnitude of the temperature)
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	320/640 dot thermal printer
Keypad	20 key membrane keypad
Programmable Cooling Rate Range	-0.01 °C/min to -99.9 °C/min
Number of profiles	10
Steps per profile	32
Number of stored runs	5
CHAMBER SPECIFICATION	
Weight (kg) (approx)	23 kg
Capacity	16 litres
Chamber dimensions	350mm high x 230mm wide x 230mm deep
0.25 ml straws	2904 on canes or 456 on racks
0.5 ml straws	968 on canes or 456 on racks
Vials	784 x 1.0ml - 2.0ml or 244 x 5.0ml
50ml blood bags	22
250ml - 500ml blood bags	11
PALL Bags	22
Power requirements (including MRV Controller)	115V~ 50/60Hz 1500VA / 230V~ 50/60Hz 1500VA
RECOMMENDATION OF ADDITIONAL EQUIPMENT	
5 psi System	System Pump - LNP4-C
	System Dewar - MVLAB 30 or GDPB35
22 psi System	System Cylinder - MVEUROCYL230SB
	Phase Separator - MVPHASE
22 psi System (alternative)	Vacuum Jacketed Pipe Work System

Ai009V1



**Medium sized controlled rate freezer**

# Kryo 750

**Sophisticated temperature control and simple operation – the Kryo750 is perfect for ensuring viable preservation of high volume valuable biological cells and tissues.**

This controlled rate freezer is designed for freezing of bigger volumes of samples in bags, vials and straws. It has a simple 2 button operation to prevent the user accidentally running the wrong protocols. By using our PC software, DeltaT, enables password protected multiple protocols, online data-viewing, capture and storing for validation.

Batch freezing is possible using our DeltaT software. Large sample numbers can be deposited in different machines with the subsequent freezing profile for all samples being displayed on the same graph.

A forced laminar flow cooling system ensures efficient, even cooling. The machine has top or front opening for easy loading.

The heated door seals prevent the lid freezing shut at cryogenic temperatures. Protocol stage “trigger on sample”, or chamber temperature, or time.

The inner chamber is removable for sterilisation. The 750 has a Comms port – for PC connection and has flexible and fast cooling rates.

- Simple freezer operation - two button control
- Convenient flexibility - front and top loading options
- Optimised for different cell types - user definable freezing profiles
- Scalable - option to control multiple chambers via one interface (batch freezing)
- Accommodate large sample number - a big 29 litre chamber

Want to optimise freezing profiles? [enquiries@Planer.com](mailto:enquiries@Planer.com)



## Medium sized controlled rate freezer

Kryo 750



TECHNICAL SPECIFICATIONS		
Dimensions – Front Loading	External	Internal
Height	55cm	26cm
Width	79 cm	46.5 cm
Depth	48cm	25cm
Dimensions – Top Loading	External	Internal
Height	48cm	25cm
Width	79 cm	44.5 cm
Depth	55cm	26cm
Weight	45 kg (shipping weight inc. Packaging) approx.	
2 ml vials	1452 on canes or 784 in baskets	
Straws	5808 x 0.25ml (on canes), 2420 x 0.5ml (on canes) or 836 x 0.25ml-0.5ml (on racks)	
PALL bloodbags	96	
250-1000 ml blood bags	20	
Circulation	Horizontal laminar flow	
Temperature range	+100.0 °C to -160 °C	
Cooling medium	Liquid Nitrogen 22 ±2 psi	
Heater	1000W	
Sensors: Control and sample	4-wire Platinum resistance thermometer. Sensors are linearised in software to international standards that utilise a 4096-point lookup table based on BS1904:1984 Table 1. Calibration facility provided.	

Accuracy	±0.5 °C at a hold at 0 °C (dynamic accuracy depends on actual programme, e.g. Rate of change of temperature)
Heating rates	0.01 °C/min to 10 °C/min
Cooling rates	-0.01 °C/min to -10 °C/min
Programmable cooling rate range	-0.01 °C/min to -99.9 °C/min
Operating positions	Vertical or horizontal
Thermal cutout	120 °C cutout
Power Requirements	103 - 126VAC 50/60Hz 1200VA (max.) (470VA freezing only, with seal and bearing heaters operating). The freezer may be damaged by voltage surges in excess of 15 % above nominal.
Chart sensitivity	16.7 mV/°C. Nominal impedance > 10K
Recorder Scaling	0V = -200 °C, +5V = +100 °C
Standards	Designed to comply with BSEN 61010, CSA22.2No.125-M1984, CSA22.2No.151- M1986, EN50082-2, EN50081-2
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 % non-condensing
<b>RECOMMENDATION OF ADDITIONAL EQUIPMENT</b>	
22 psi System	System Cylinder - MVEURO-CYL230SB Phase Separator - MVPHASE
22 psi System (alternative)	Vacuum Jacketed Pipe Work System Phase Separator - MVPHASE



Large controlled rate freezer

# Kryo 1060

Share what leading pharmaceutical companies know with the increased yield provided by the Kryo 1060.

This top opening stainless steel freezer is ideal for precise freezing of samples in high volumes, such as volume cell line or vaccine storage.

Even and accurate temperature control, in all phases of the protocol, are possible due to the unique forced laminar flow pattern of the coolant and cryogenic insulation.

The -100 °C end temperature ensures sample integrity during transfer to storage, whilst the high capacity liquid nitrogen cylinder offers a large cooling reservoir with an extended hold time at the protocol end temperature.

Batch freezing is possible using our DeltaT software. Large sample numbers can be deposited in different machines with the subsequent freezing profile for all samples being displayed on the same graph.

- Demonstrable, repeatable viability increases for vaccines, cells and tissues
- Exact temperature control for up to 8000 ampoules
- Compliant – robust access control, ‘per run’ reporting and real time alarms
- Optimised for different cell types – user definable freezing profiles

Want to optimise freezing profiles? enquiries@Planer.com



## Large controlled rate freezer

Kryo 1060



TECHNICAL SPECIFICATIONS		
Kryo 1060 180:		
Dimensions	External	Internal
Height	112 cm	64 cm
Width	86cm	1x50cm
Depth	116cm	50cm
Weight	211 kg (shipping weight inc. Packaging) approx.	
Capacity	4000 x 2 ml vials	
Kryo 1060 380:		
Dimensions	External	Internal
Height	112 cm	64 cm
Width	132 cm	100 cm
Depth	116cm	50cm
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.	

Capacity data for straws, vials and blood bags available on request.

Cooling medium	Liquid Nitrogen 22 -30 psi
Heater	1700 W
Accuracy	±0.5 °C at a hold at 0 °C (dynamic accuracy depends on actual programme, 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 +60 °C
Storage humidity	Up to 95 % non-condensing
Operating temperature	+5 °C to 40 °C
Operating humidity	Less than 90 % non-condensing
<b>RECOMMENDATION OF ADDITIONAL EQUIPMENT:</b>	
22 psi System	System Cylinder - MVEUROCYL230SB Phase Separator - MVPHASE
22 psi System (alternative)	Vacuum Jacketed Pipe Work System Phase Separator - MVPHASE



Freezer control with batch option

# DeltaT Software

## Deploy one profile to several freezers with our DeltaT v7 software.

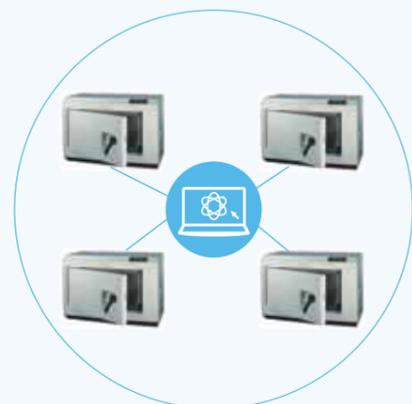
Each freezing run produces a detailed, date and time stamped summary, which can automatically be stored to a secure location over a local area network.

Password protection and tamper proof files helps compliance with 21 CFR Part 11.

Profiles can be created with up to 32 different stages (heat / cool / hold) combined with real time updates of both sample and chamber sensor readings.

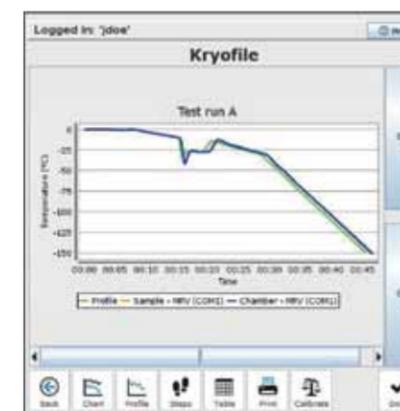
Email notifications during the freezing run, as well as the audible alarm of the freezer, alert users of any significant deviations from the selected profile.

- Email alerts and real time profile updates during freezing run
- Control multiple freezers with one instance of DeltaT
- Profiles with up to 32 different stages can be created
- Remote access of freezing run
- Password protected and tamper proof files
- Helps compliance with 21 CFR Part 11



## Freezer control with batch option DeltaT v7

	DeltaT v7
Create profiles	yes
Run Profiles	yes
View kryofiles	yes
Print kryofiles	yes
Export kryofiles	yes
Calibration	yes
Run qualification	yes
Batch mode	yes
Network capabilities	yes
Compatibility with the MR6 controller	yes





## Sensors, accessories & personal protection equipment

## Sensors, accessories & personal protection equipment

PRODUCT NAME/ NUMBER	DESCRIPTION
Personal Alarm	Personal CO <sup>2</sup> & O <sup>2</sup> portable alarm
Oxygen Monitor	Oxygen Monitor for Rooms with LCD, 4-20mA, Repeater with visual and Audible alarms
Face Shield, Goggles and Spectacles	Eyewear blocks ultraviolet radiation
Apron	Cryo Apron is also made from state of the art materials. The multi-layered construction allows for a maximum level of thermal protection, and a waterproof nylon outer shell protects from cryogenic splashes
Glove (large & medium)	LN2 Safety Gloves specially developed for handling objects stored in the vapour phase of liquid nitrogen

Keep safe in the laboratory. We provide a range of equipment to protect your people.

### Cryo-apron

Made from state of the art materials, the cryo-apron has thermal protection, with a waterproof nylon outer shell protecting the wearer from cryogenic splashes.

### Face Shield, goggles and spectacles

Specialist eyewear to block ultraviolet radiation.

### LN2 Safety Gloves

The LN2 safety gloves are designed for handling objectives in the vapour phase of liquid nitrogen.

### Oxygen Monitor

Monitor the oxygen levels in your rooms with visual and audible alarms.

- Cryo-apron
- LN2 gloves
- Face shield, goggles and spectacles
- Oxygen monitor





# Controlled Rate Freezer Comparison Table

Model	Kryo 360-1.7	Kryo 360-3.3	Kryo 560-16	Kryo 750-30	Kryo 1060-180	Kryo 1060-380
<b>Chamber (Litres)</b>	1.7	3.3	16	30	180	380
<b>Straw Capacity</b>	60 (0.25ml) 45 (0.5ml)	60 (0.25ml) 45 (0.5ml)	2904 (0.25ml) 1210 (0.5ml) on canes 456 (0.25ml-0.5ml) on racks	5808 (0.25ml) 2420 (0.5ml) on canes 836 (0.25ml-0.5ml) on racks	5000 (0.25ml and 0.5ml)	10500 (0.25 and 0.5ml)
<b>Vial Capacity</b>	30 (2ml)	60 (2ml)	784 (1.0ml - 2.0ml) 244 (5.0ml)	1452 on canes 784 in baskets	4000 (2ml)	8000 (2ml)
<b>Blood Bag Capacity</b>	N/A	N/A	22 (50ml) 11 (250ml - 500ml) 48 (PALL bags)	20 (250 - 1000 ml) 96 (PALL bags)	Please Enquire	Please Enquire
<b>Controlled Range</b>	40°C to -180°C	40°C to -180°C	30°C to -180°C	100°C to -160°C	40°C to -100°C	40°C to -100°C
<b>Cooling Rates</b>	-0.01 to -50 (°C/Min)	-0.01 to -50 (°C/Min)	-0.01 to -50 (°C/Min)	-0.01 to -10 (°C/Min)	-0.01 to -5 (°C/Min)	-0.01 to -5 (°C/Min)
<b>Controlled Heating Rates</b>	0.01 to 10 (°C/Min)	0.01 to 10 (°C/Min)	0.01 to 10 (°C/Min)	0.01 to -99.9 (°C/Min)	0.01 to 1 (°C/Min)	0.01 to 1 (°C/Min)
<b>Freezing Alignment</b>	Both	Both	Vertically	Both	Vertically	Vertically
<b>System Controller</b>	MRV	MRV	MRV	Built-in	KS1	KS1

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**Benchtop incubator humidity controlled**

**BT37**

**Provide your cells with a near in vivo culture environment with the BT37 benchtop incubator – ideal for human and animal IVF and stem cell applications.**

The incubator keeps cells at an optimal temperature, humidity and gas content by maintaining a constant and clean environment.

Within sample dishes, the BT37 has unrivalled temperature accuracy – essential for providing an outstanding cell culture environment.

Want to find out more about benchtop incubators? [enquiries@planer.com](mailto:enquiries@planer.com)

Easy to use, each chamber in this compact incubator can be set independently – and can be continuously monitored via your web browser.

All critical operating parameters are password protected for additional security.

- Ensures optimal clinical and experimental outcome - accurate temperature and gas control
- Reduce metabolic stress - rapid temperature and gas recovery
- The reassurance of an in built battery back-up - in case of lab power failure
- Flexibility - accommodates a variety of different culture dishes
- Stay informed - easily incorporate independent monitoring options



**Benchtop incubator**

BT37



PHYSICAL	
Dimensions	420 mm wide x 270 mm deep x 210 mm high
Weight	15.5 kg
Storage temperature	-10 °C to +50 °C
Storage humidity	5% to 95% relative humidity non-condensing
Operating environment	For indoor use only
Operating temperature	+5 °C to +40 °C for safe operation. See also temperature control range restriction.
Operating humidity	10% to 90% relative humidity non-condensing
Altitude	up to 2000 m
Pollution degree	Pollution degree 2 (BS EN61010-1)
CONTROL	
Temperature control range	(ambient + 5 °C) to 40 °C.
Temperature measurement accuracy	± 0.2 °C
Temperature control accuracy	± 0.1 °C measured after any transient effects due to set-point changes have subsided.
Flow control range	0 ml/minute to 900 ml/minute. Flow measurements are normalised to 0 C , 50% RH and 1 bar.
Flow accuracy	The greater of ± 10% or ± 0.3 ml/minute
Flow control accuracy	The greater of ± 5% or ± 0.2 ml/minute measured after any transient effects due to set-point changes have subsided.

CAPACITY	
Dishes per chamber	4 x NUNC 4 well dishes 4 x NUNC 60 mm dishes 10 x NUNC 30 mm dishes 4 x MINITUB 5 well dishes 4 x FALCON 60 mm dishes 4 x FALCON 60mm single-well "organ culture" dishes & many more types accepted
POWER	
Power requirements (see note) Includes Controller	100 - 230 V~ / 50/60Hz / 1.1 A
Internal battery backup	Gelled sealed lead acid battery / 12 v x 12 Ah
GAS SUPPLY	
Gas supply	Premixed gas. Typically 6% CO2, 5% O2, balance N2
Supply pressure	1.5 ± 0.15 bar
Connectors	Regulator must be supplied with Swagelok 1/4" connection SS-400-1-4RT
ALARMS	
Alarms	The incubator provides 3 volt-free terminals which provide normally-open and normally-closed contacts.
REMOTE MONITORING	
LAN	10 Base T Ethernet - RJ45 shielded. Modbus-TCP-IP protocol.
Remote PT100 sensors	PT100 Class A to EN60751 Maximum diameter 2.51 mm. Minimum length 100 mm. Sensing region should be within 15 mm of the tip..



**Benchtop incubator not humidity controlled**

# INC-A20

**Ideal for non-clinical culture applications, the INC-A20 provides high precision temperature and gas regulation, modest footprint and integrated sample protection.**

The Planer benchtop incubator provides a precisely controlled environment, with accurate control of the chamber, ensuring a cell or embryo suffers little or no exposure to temperature or pH level changes.

The compact size allows placement in cabinets and the two chambers allow samples to be processed separately. Full control over the gas flow is provided, allowing gas usage to be minimised.

- Low cost of ownership - gas consumption a fraction of large incubators
- The reassurance of an in built battery back-up in case of lab power failure
- No requirement for ongoing consumable costs
- Stay informed with easily visible status indicators

Want to find out more about benchtop incubators?  
enquiries@planer.com

## Benchtop incubator: No Humidity INC-A20



PHYSICAL	
Dimensions	420 mm wide x 270 mm deep x 210 mm high
Weight	15.5 kg
Storage temperature	-10 °C to +50 °C
Storage humidity	5% to 95% relative humidity non-condensing
Operating environment	For indoor use only
Operating temperature	+5 °C to +40 °C for safe operation. See also temperature control range restriction.
Operating humidity	10% to 90% relative humidity non-condensing
Altitude	up to 2000 m
Pollution degree	Pollution degree 2 (BS EN61010-1)
CONTROL	
Temperature control range	(ambient + 5 °C) to 40 °C.
Temperature measurement accuracy	± 0.2 °C
Temperature control accuracy	± 0.1 °C measured after any transient effects due to set-point changes have subsided.
Flow control range	0 ml/minute to 900 ml/minute. Flow measurements are normalised to 0 °C, 50% RH and 1 bar.
Flow accuracy	The greater of ± 10% or ± 0.3 ml/minute
Flow control accuracy	The greater of ± 5% or ± 0.2 ml/minute measured after any transient effects due to set-point changes have subsided.

CAPACITY	
Dishes per chamber	4 x NUNC 4 well dishes 4 x NUNC 60 mm dishes 10 x NUNC 30 mm dishes 4 x MINITUB 5 well dishes 4 x FALCON 60 mm dishes 4 x FALCON 60mm single-well "organ culture" dishes
POWER	
Power requirements (see note) Includes Controller	100 - 230 V~ / 50/60Hz / 1.1 A
Internal battery backup	Gelled sealed lead acid battery / 12 v x 12 Ah
GAS SUPPLY	
Gas supply	Premixed gas. Typically 6% CO2, 5% O2, balance N2
Supply pressure	1.5 ± 0.15 bar
Connectors	
ALARMS	
Alarms	The incubator provides 3 volt-free terminals which provide normally-open and normally-closed contacts.
REMOTE MONITORING	
LAN	10 Base T Ethernet - RJ45 shielded. Modbus-TCP-IP protocol.
Remote PT100 sensors	PT100 Class A to EN60751. Maximum diameter 2.51 mm. Minimum length 100 mm. Sensing region should be within 15 mm of the tip.



## Compliant monitoring

# ReAssure

**A comprehensive monitoring system for your laboratory and biological samples, ReAssure can help compliancy. Scalable from 1 to 1,000 sensors, this system allows you to monitor and record alarm events for your laboratory and equipment.**

Reassure collects, stores and helps report data from your laboratory equipment. Sensors can monitor CO<sub>2</sub>, O<sub>2</sub>, humidity, pH, temperature and door status for a range of devices such as benchtop incubators, big box incubators, vessel controllers and LN dewars.

The Reassure system is very flexible, allowing you to add additional sensors as your needs evolve. Our current range of compatible sensors include the flat temperature sensors, the wireless temperature / level sensor and the latest Petri dish CO<sub>2</sub>/pH sensor.

ReAssure is available as a cloud-based or installed system.

- Per Chamber CO<sub>2</sub> monitoring for benchtop incubators
- Fluorescent pH Monitoring for big box incubators
- Integration of Cryogenic vessel controllers
- Temperature Sensor options for a variety of equipment and storage vessels
- Compliant storage and reporting module

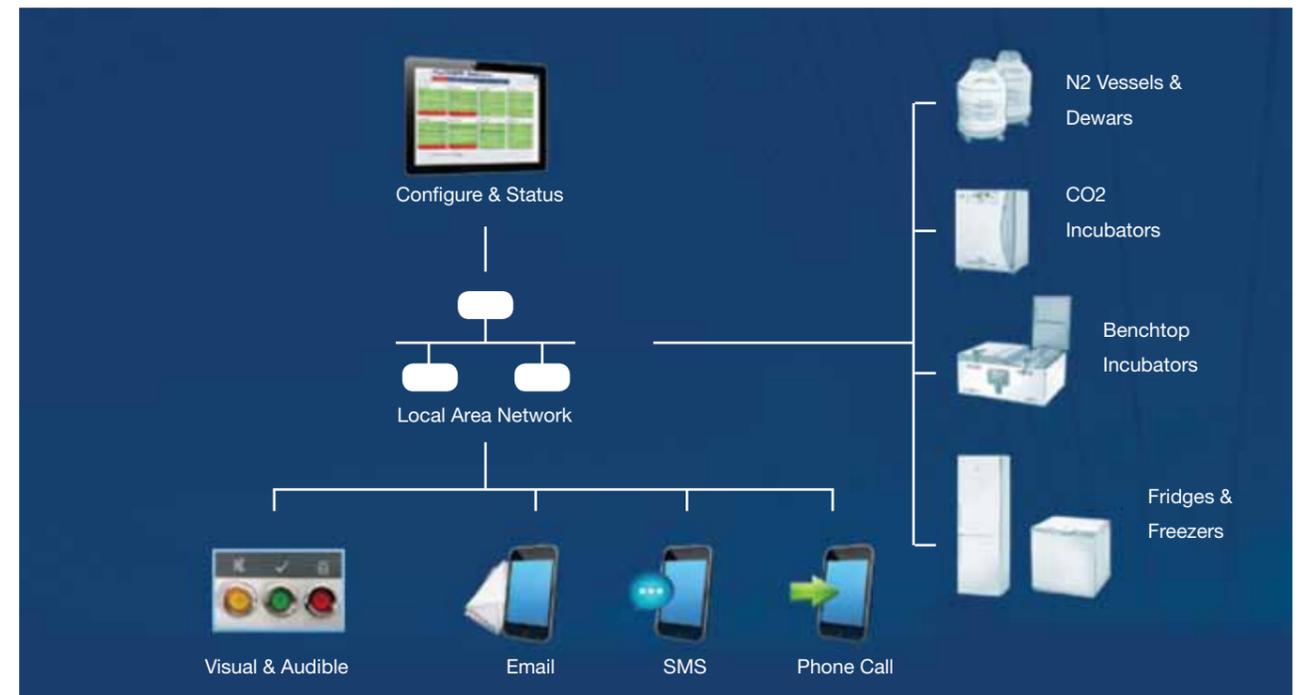
Want to find out more about monitoring? [enquiries@planer.com](mailto:enquiries@planer.com)



## ReAssure



	REASSURE
No of sensors supported (per module)	Up to 50
Local data logging	Yes
Temperature	Yes
O <sub>2</sub>	Yes
Door status	Yes
Environmental O <sub>2</sub>	Yes
Benchtop incubator O <sub>2</sub>	Yes
LN <sub>2</sub>	Yes
Pressure	Yes
Compliant 'cloud' storage	Yes
User definable searching	Yes
Exception reporting	Yes
Modbus connection	Yes
Connection to vessel controllers	Yes





## Wireless monitoring and alarm system

# DATAcentre

Keeping a busy laboratory safe and compliant can be difficult. The DATAcentre standalone alarm system can help you look after your valuable samples and the safety of your team.

The DATAcentre base station can support up to 120 sensors to monitor temperature, humidity, carbon dioxide, liquid nitrogen and oxygen levels, the door status and much more. You can extend the system by adding additional base stations.

If there is an alarm, text or email alerts can be sent to key personnel wherever they are in the world. As every alarm event is logged and access only by password can be configured, a complete audit trail is easily available either via the base centre or web browser.

- Monitors temperature, LN2, O2, CO2, humidity etc.
- Monitors door status
- Connects up to 120 wireless sensors and 120 wired sensors
- Optional SD card can store data for up to 10 years
- Range of alarm options, including visible, audible and email alerts
- Plug in and go, so no need for expensive installation

Want to find out more about monitoring? [enquiries@planer.com](mailto:enquiries@planer.com)



## Monitoring and alarm system

DATAcentre



GENERAL	
Dimensions	200mm (W) x 140mm (H) 55mm (D)
Weight	550 to 800g depending on fitted modules
Operating Temp.	0°C to 40°C
Material	4mm thick High Impact UL94V0 Fire rated polystyrene
Supply	5V DC via external power brick (Supplied)
Operating System	Embedded
Processor	DS400 with 2M flash 1M Static Ram
Display	High contrast 128 x 64 graphics display
USER MANAGEMENT	
Passwords	Service and user level passwords
Log	Alarm and event log
ARCHIVE DATA & REPORT	
MMC (Mass Storage)	2GB providing 1 yrs archived data at 1m interval
USB	USB 2.0 (For reports and data backup)
HACCP	HTML & CSV reports produced daily to internal MMC
BATTERY BACK UP OPTIONS	
Part Number	Description
FTEM02LCMU101/BB	Battery Backup 3.5 Hour Internal
FTEM02BBU101	Battery Backup 15 hour External
FPLG60T	Uninterruptible power supply which powers the DATAcentre for at least 27 minutes without mains power
ALARM NOTIFICATION	
Screen	Provides real-time data detailing current alarm status
LED	LED Traffic light style (OK, WARNING, ALARM)
Sounder	Internal sounder

### Features

- Stand alone operation, or optionally connect to local area network (LAN)
- Receives input from up to 120 wireless or wired Sensors
- Repeaters available to boost wireless signal
- Built in visual, audible and email alarms
- Connectable to auto-dialers for text message and phone call alarms
- Up to 10 years on board data storage
- 1 minute recording intervals
- Up to 8 hard wired temperature sensors can connect directly to the system
- Email alarms available via LAN

Relay	Single volt free relay output providing NC & NO contacts
Email	Up to 5 external email addresses
IP	Alarm message directed to up to 3 IP addresses
LOW POWERED RADIO MODULE	
Frequency	433MHz (Europe) licence free, 6 channels 915MHz (US) licence free, 6 channels
Power	10mW maximum
Communications	Bi-directional
Protocol	Proprietary
SENSOR TYPES	
Internal inputs	Up to 8 hardwired temperature and/or volt- free digital inputs
Networked inputs	Up to 20, 8 channel modules providing temperature and volt free digital inputs
Wireless	Up to 120 devices providing temperature, humidity, 4-20 mA, pulse count and volt-free digital inputs
TECHNICAL SPECIFICATIONS	
Memory Capacity	16 Points 32 Points 64 Points 120 Points
2GB (std)	5.1 years 2.7 years 1.4 years 0.7 years



**Data logger for vapour shippers**

# ShipsLog

**Keep an eye on the temperature of your valuable samples, during transit, with our liquid nitrogen vapour shipper data logger. ShipsLog™ keeps an accurate, downloadable temperature history of your samples throughout their journey.**

The ShipsLog™ monitor is fitted in the top of the dry shipper's cover, with the temperature probe measuring the warmest part of the vapour shipper. Alarms can be set at predetermined intervals during transit.

On arrival, the recipient can check whether the temperature range has deviated from the pre-set profile.

The complete temperature history can be downloaded, giving the exact temperature pattern throughout the journey. The logger is user programmable via PC software – and the logging process can be started either via PC software or a magnetic swipe key.

- Records temperature of samples
- Clear LED display
- High / low temperature alarms
- Alarm trip points
- User programmable
- Hard or soft copy
- Flying lead version available

Want to find out more about monitoring? [enquiries@planer.com](mailto:enquiries@planer.com)

## ShipsLog™ for vapour shippers



MEASUREMENT	
Range	-200°C to 0°C
PC Programme	Display units user selectable -°C, °F or K
Probe Type	Platinum Resistance, Pt 100, Class B
Accuracy	±1.5°C at 0°C, rising to ±2.5°C at -200°C, including uncertainty due to measurement resolution and probe errors
Calibration	Traceable to NAMAS standards; semi-automatic user calibration possible using optical PC calibration pack; calibration certificate printed automatically
DATA LOGGING	
Number of points	8192
Logging Interval	30 seconds to 99 minutes in 30 second increments
Logging Resolution	0.1°C
Max Number of Logs	8192 (Limited to number of points)
ALARM GENERATION	
High Alarm Level	-200°C to 0°C in 1.0°C steps
Low Alarm Level	-200°C to 0°C in 1.0°C steps
Alarm Delay Period	0 to 120 logging intervals
CONTROL & INDICATION	
Manual Control	Magnetic non contact Start / Stop Switch using supplied fob
Communication	RS232 Serial communications to proprietary PC program

Programming	Using propriety PC program
Indicators	Three x LED Indicators: Yellow=Normal, Orange=Warning,
BATTERY	
Type	Lithium Thionyl Chloride, internally fitted, factory replaceable
Life	Approximately 3 years in normal operation; battery life remaining is indicated via PC programme
PC Software Requirements	PC to be Windows '95, '98 or NT
ORDERING INFORMATION	
Description	Ordering Ref
ShipsLog with temperature probe	GDSHIPSLOG-FL
ShipsLog with fixed probe 720mm long	GDSHIPSLOG-FL-720
ShipsLog for Cryoshipper vapour shipper	GDSHIPSLOG-CS
ShipsLog for SC4/3V vapour shipper	GDSHIPSLOG-SC4/3V
ShipsLog for SC4/2V vapour shipper	GDSHIPSLOG-SC4/2V
Temperature Probe for ShipsLog	GDSHIPSLOG-PRT-610MM
Serial Cable to connect ShipsLog to PC	AC013808
Please refer to your vessel documentation for details. Note that use of the ShipsLog for the SC4/3V could result in an increase in liquid nitrogen evaporation rate of 22% and this may affect the hold-up time of the system.	



## Flat temperature sensors

**Monitor benchtop incubators or heated stages easily and reliably with our range of innovative and versatile temperature sensors. Designed to work with equipment without access ports, with an ultra-small footprint these sensors can be used with both wired and wireless alarm and monitoring systems – to provide precise and continuous temperature monitoring.**

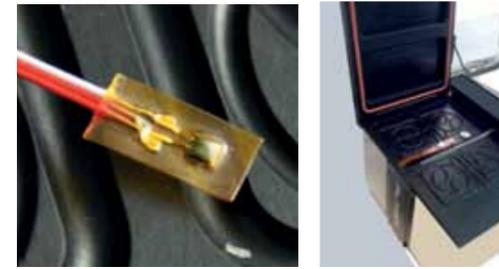
### Benchtop incubator monitoring

The small size of culture chambers found in benchtop incubators can make independent temperature measurement difficult. These temperature sensors include an ultra-thin connecting cable which can pass under the seal of an incubation chamber without adversely affecting the gas concentration. The flat sensor head is in contact with the lower surface of the incubation chamber, giving users a precise indication of the temperature samples are exposed to.

### Surface temperature monitoring

Comprising a small sensor head (6.35 x 13 x 1.3mm) and a thin connecting cable, this sensor is ideally suited to the monitoring of heated surfaces without interfering with workflow. This type of sensor also benefits from being resistant to moisture and it can be partly submerged without affecting temperature readings. Users are able to disinfect the sensor using alcohol, making it ideally suited for the monitoring of cell culture environments.

- **Convenient**  
Can monitor equipment without access ports
- **Low maintenance**  
Straightforward installation with annual calibration
- **Flexible**  
Use as part of a wired or wireless system



## Flat temperature sensors

Measurement Range	-200°C to 260°C
Calibration Frequency	Annual
Moisture Resistant	Yes
Accuracy	+/- 0.3°C at 0°C
Operating Temperature	0°C to 70°C (limited by connector type)

**Surface Temperature Sensor:  
For ICSI Rig or heated platform**

Measurement Range	0°C to 50°C
Calibration Frequency	Annual
Moisture Resistant	Yes
Accuracy	+/- 0.3°C at 0°C
Operating Temperature	0°C to 70°C (limited by connector type)

**Benchtop Incubator Flat Sensor:  
For in chamber temperature monitoring**



## Petri dish pH / CO<sub>2</sub> sensor

Measure pH / CO<sub>2</sub> in bench top incubators, big box incubators and environmental chambers with our Petri dish pH / CO<sub>2</sub> sensor which includes a detector shaped into a standard 35mm Petri dish and an ultra thin ribbon cable.

The new sensor is available as a stand-alone unit, with a display option which can be used to help validate CO<sub>2</sub> and provide virtual pH in a variety of laboratory equipment. It also has the ability to be used for continuous measurement as part of a monitoring system.

The system uses the established relationship between CO<sub>2</sub> and pH to produce reproducible indications of pH culture conditions.

The Petri dish sensor can also be used as part of a new or existing monitoring and alarm system.

Providing standard outputs and a small footprint makes for uncomplicated integration.

The sensor size (equivalent to a 35mm petri dish) combined with an ultra-thin ribbon cable makes installation into any device straightforward.

- Easy installation**  
 Benchtop incubators, big-box incubators and environmental chambers
- Flexibility**  
 Use as a static monitoring sensor or a validation tool
- Straightforward operation**  
 With only an annual calibration required
- Reliable results**  
 With no pH drift due to sensor saturation

Want to find out more about monitoring? [enquiries@planer.com](mailto:enquiries@planer.com)

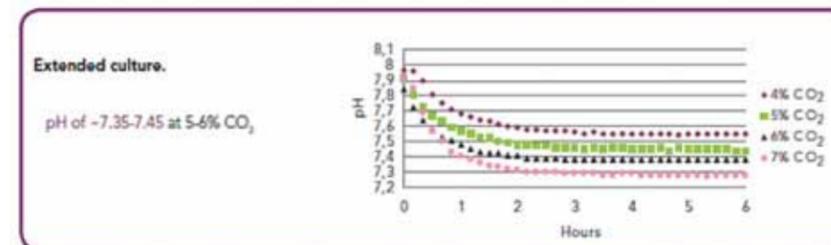
## Petri dish pH / CO<sub>2</sub> sensor

Option 1		Use as stand-alone alarm option for CO <sub>2</sub> and pH
Option 2	 + 	Download our free app to enable portable CO <sub>2</sub> and pH monitoring and validation
Option 3	 + Monitoring	Use as a sensor option for a new or existing monitoring system

Operating Temperature	10°C to 42°C
Storage Temperature	-40°C to +80°C
Sensor Type	Infrared Sensor
Power Supply	3.6 to 5 V
Accuracy	±50 ppm, ± 3% of Reading
Power Consumption	<33 mW
Size	Equivalent to 35mm NUNC-150255 IVF Petri dish (35 mm x 10 mm)
Measurement Range	0-20% CO <sub>2</sub> , 0-14 virtual pH
Life Span	Five years
Output	4-20 mA
Alarm	Audio/Visual alarm on control
Calibration Frequency	Annual

### Computed pH

The relationship between CO<sub>2</sub>, bicarbonate concentration in buffered media and atmospheric pressure, allows a pH value to be computed without the expense or inconvenience of traditional pH measuring devices.



The relationship between pH and CO<sub>2</sub> concentration is well characterised for all leading culture media. Here is the characterisation of the Origio blastocyst media.



Using the relationship between CO<sub>2</sub> and pH, the Petri dish pH / CO<sub>2</sub> sensor can determine the effect of environmental CO<sub>2</sub> change on the pH in culture media.



## Wireless temperature/level sensor

### Continuous monitoring of high value cryogenic samples is not only good laboratory practice, but also often a regulatory requirement.

This new wireless temperature and level sensor combines accurate temperature measurement in liquid nitrogen storage vessels with liquid level monitoring – helping scientists to ensure stored cells and tissues are maintained in an optimal environment.

This latest addition to our expansive range of monitoring sensors give users the flexibility of wireless temperature and level monitoring in addition to the popular wired version. Incorporating a high accuracy Pt100 platinum sensor, this option provides +/-0.3°C precision measurement between +150°C and -200°C.

Unlike traditional thermocouple measuring devices, the new wireless temperature/level sensor is not subject to recorded drift after calibration, meaning the sensors stay more accurate for longer between service visits.

The sensor is installed at a user defined height and will produce an alarm if the level falls below this point. This provides the user with 24/7 temperature and liquid nitrogen level monitoring and provides clear traceability that samples have been stored in optimal conditions.

- Easy Installation**  
 No requirement for cork drilling with an adjustable sensor shape
- Reliable Operation**  
 Independent battery power supply for continuous monitoring
- Convenience**  
 Wireless connectivity allows dewar/sensor movement without interruption
- Durable**  
 Sensor moulded around contour of dewar reduces chance of damage

Want to find out more about monitoring? [enquiries@planer.com](mailto:enquiries@planer.com)



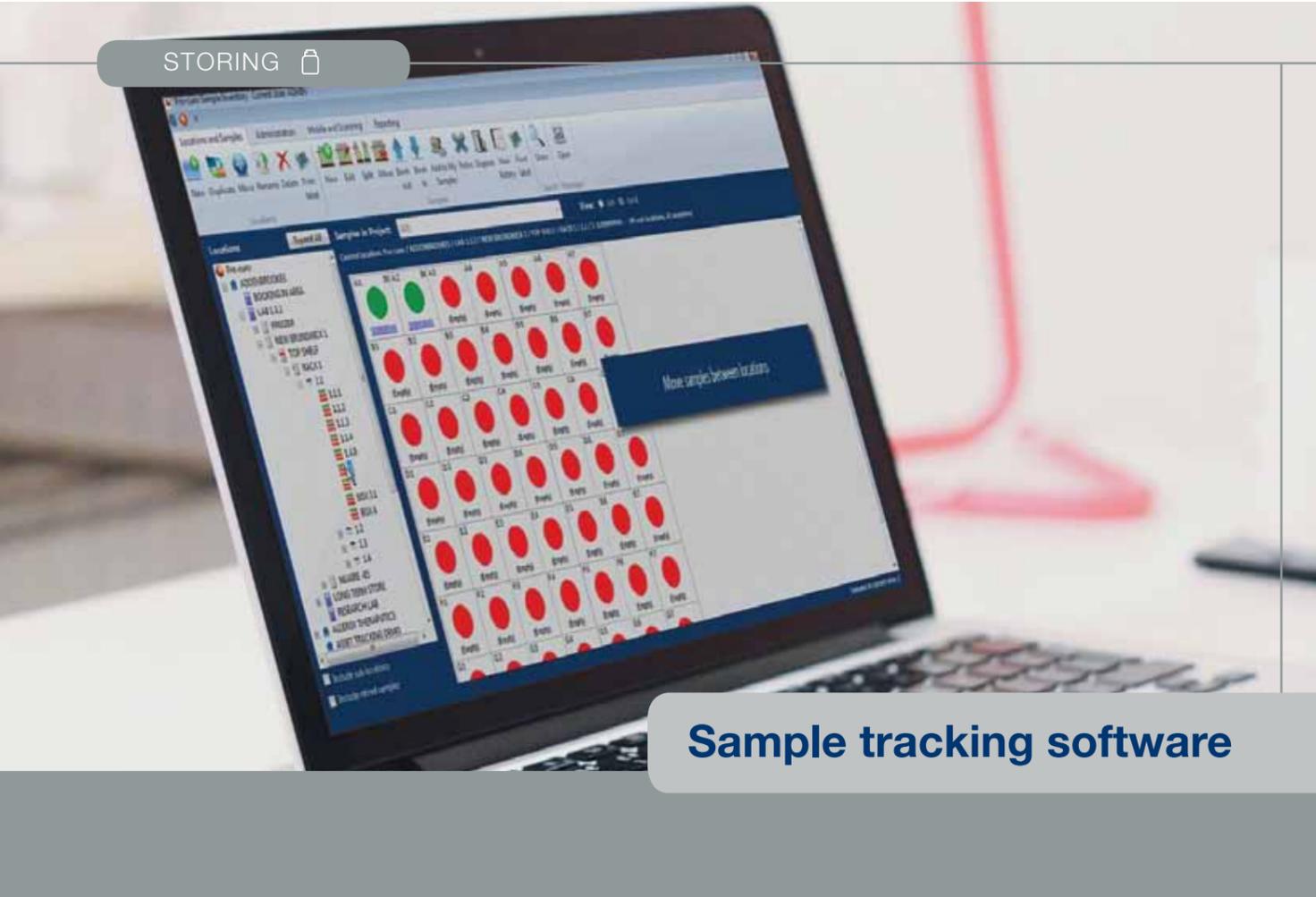
## Wireless temperature/level sensor



Sensor Type	Dual level and Platinum Resistance Thermometer 100
Battery Life	Five years for temperature and one year for level
Suitability	Any aluminium LN2 tank. Can be any length, standard lengths are 450mm and 750mm
Compatibility	DATAcentre range of monitoring, up to 120 per system
Temperature Range	-200°C to + 150°C
Temperature accuracy	±0.3°C at 0°C, ±2.04 at -200°C
Calibration	Annually
Mounting	No drilling of cork; mounted around the neck. Battery pack mounted using strapping
Installation	Can be performed with fully working tank full with samples
Transmission Range	Approximately 100m. Depends on number of walls, wall construction, etc.
Data	Can be viewed via base station or over network PC, tablet or phone

Temperature/level sensors are now available for both wired and wireless ReAssure configurations. Wired systems benefit from utilising the users existing IT infrastructure while wireless systems provide a smaller installation footprint and are unaffected by local network interruptions. Users also can benefit from hybrid systems to best meet their requirements.





## Sample tracking software

### Significantly reduce the amount of time to recover stored samples with the Pro-Curo inventory management solution.

Pro-Curo is simple to get up and running so no intense training will be required. And if you do have a problem, there is around the clock telephone support.

The software can be quickly adapted to your needs – whether you need to track your specimens across multiple sites or need add a patient consent form to sample information.

The software is fully FDA CFR 21 part 11 Compliant, giving you complete history of every transaction and an auditable trail of your samples.

Sign up for a 14 day free trial to see just how easy Pro-Curo software is to get up and running to track samples in your laboratory.

- Fully scalable - with support for one lab up to multiple sites
- Convenient standard integration with bar code readers
- Build context around sample information - option to include attachments
- Stay informed with granular traceability for all samples
- Secure multi-level defined access control

Want to find out more about tracking your samples?  
enquiries@planer.com

## Sample tracking software

### Pro-Curo



Version	LITE	PRO	ENT
<b>FEATURES</b>			
Max no of samples	1,000,000	10,000,000	100,000,000
Complete history of every transaction	Yes	Yes	Yes
Multi user	No	Yes - 5	Yes - 5, 10, Unlimited
Database structure	Microsoft Access	Microsoft Access	MSSQL & MySql
User manager	Yes	Yes	Yes
MySamples	No	No	Yes
Sample view restricted by project	No	Yes	Yes
Auto logoff function	No	Yes	Yes
Split samples function	Yes	Yes	Yes
Customisable user fields.	Yes	Yes	Yes
Edit multiple samples	No	No	Yes
Book in and book out function.	Yes	Yes	Yes
Multi level location structure	Yes - 5	Yes - 7	Yes - 7
X/Y sublocations (box/plate level)	No	No	Yes
Grid view	No	No	Yes
Standard report generation	Yes	Yes	Yes
Custom reports	No	No	Yes
Label design	Basic	Graphical	Graphical
Barcode generation*	2D - Only	1D & 2D	1D & 2D
Data import function	No	No	Yes
Sample search function	Yes	Yes	Yes
Advanced SQL search builder	No	No	Yes
Date alerts	No	No	Yes
Double blind auditing function.	Yes	Yes	Yes
History archive function	Yes	Yes	Yes
Internal messaging	No	No	Yes

## We help Researchers, Embryologists and Medics look after cells

- Cryo Freezers
- Precision Incubators
- Alarms and Monitoring
- Sample Tracking

There are over eighty distributors worldwide for sales and support see:

[www.planer.com](http://www.planer.com)

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