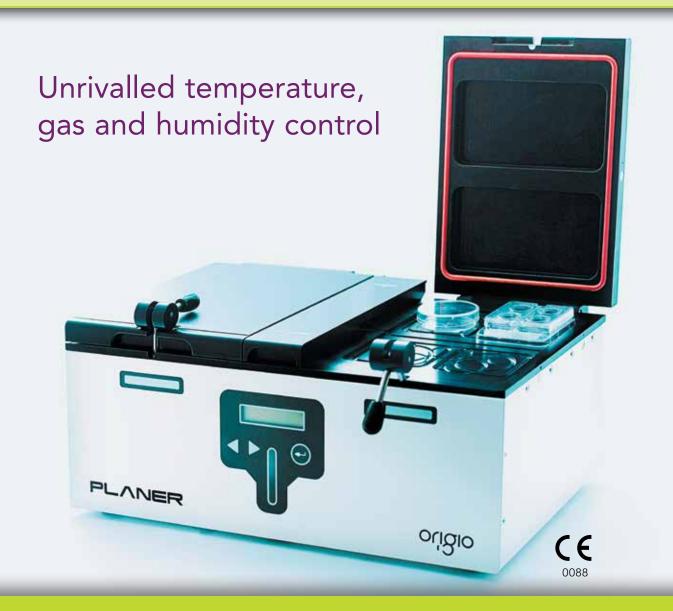
# ORIGIO / PLANER benchtop incubator BT37





# Designed to maintain consistent culturing environments for optimum temperature and pH control

- Rapid recovery to optimal environment
- Network connectivity for data output
- Integrated battery backup
- Base plate of chamber matched to common IVF dishes
- Reduced oxygen culture capability
- The BT37 works with any defined premixed gas of choice
- to achieve the proper  $CO_2$  and reduced  $O_2$  environment.

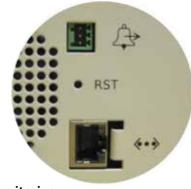


Homeostasis is imperative The ORIGIO/ PLANER benchtop incubator BT37 is primarily designed to grow and maintain cell cultures, particularly for IVF applications. The incubator will keep cells at an optimal temperature, humidity and gas

content by maintaining a constant and clean environment for the embryo. The BT37 works with any defined premixed gas of choice - to achieve the proper CO<sub>2</sub> and reduced O<sub>2</sub> environment." Incubators are temporary homes for embryos and must replicate the conditions within the human body thus reducing embryonic stress from temperature, humidity or pH change. Accuracy and control of the chamber to obtain environmental homeostasis is imperative. The BT37 benchtop incubator is very accurate, ensuring the embryo suffers little or no exposure to temperature or pH level changes. The compact size allows placement anywhere in the lab including flow cabinets and chambers and separation of individual patient embryos by chamber increasing security. Flow control is unique with a continuous, pulse and bleed options all available to optimize culture conditions and reduce gas usage.

## Secure gas flow Tube guides reduce risk of

- "kinking" (bent tubes)
- · Heated tube guides reduce risk of condensation in tubes
- Correct gas temperature
- Prevents condensation



## Remote monitoring

- 10 Base T Ethernet (RJ 45)
- Modbus TCP/IP protocol
- External alarm contact



calibration

## Full-contact heating plates

- Exceptional heat distribution
- Accepts largest selection of culture dishes

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- Absolute temperature control to 0.1c
- 7 point control



#### Gas connectors

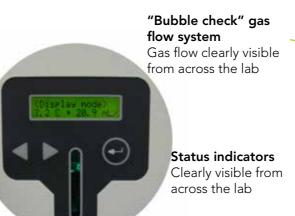
- std. SWAGELOK connectors
- can be connected in series

PLANER



- Remove excess heat
- Quick response to temperature changes
- Internal temperature control
- Prevents condensation





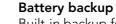
**Password protection** 

unauthorized modification

accidental "switch-off")

of operating parameters (no

No accidental or



Built-in backup for up to 2 hours



# Advantages

### **Temperature**

- The most accurate temperature controlled incubator currently available
- Control accuracy to 0.1c
- Utilizing tightly packed, full surface heating elements
- 7 temperature controllers ensure accuracy and control • Low gas usage over entire chamber
- Cooling fans to control internal temperature and humidity system

#### Gas control

- Delivering exact gas specification
- Dedicated non diffusing tubes
- Unique pulse, bleed and purge flow
- Rapid recovery after lid opening

## Humidity

- Heated gas tubes ensure gas is delivered at exact temperature
- Tube guides prevent tube blocking
- Airflow system prevents condensation
- Unique visual gas flow
- Unique visual water level system

LAN

Remote PT100 sensors

## ORIGIO / PLANER BT37 vs. standard large incubators

- Small volume chamber for culture = Far greater control and accuracy of pH, temperature, and humidity.
- Heated base and lid provides a very stable environment.
- Faster recovery of all parameters after lid opening
- Patient-specific chambers
- Compact, space-efficient

## Control is everything!

Fast temperature drop and slow recovery inside large incubator after opening of incubator door. The mini incubator chamber allows stable, constant temperature.

#### ORIGIO / PLANER BT37 vs. other commercial mini incubators

- Unrivalled temperature & humidity control using tightly packed, full-surface heating elements combined with a cooling fan.
- Holds the largest range of culture dishes
- Clear, unambiguous status indicators visible from across the lab.
- Password protected no accidental changes
- Built-in battery backup for up to 2 hrs
- Water level & gas flow visual indicator
- Ethernet access port
- Independent PRT ports for lid and base unit
- Advanced alarm system

#### Unrivalled accuracy

Temperature control is kept stable within +/- 0.1c at dish area. This, coupled with heated upper plates and humidification system, provides unrivalled temperature accuracy within sample dishes.



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	$+5~^{\circ}\text{C}$ to $+40~^{\circ}\text{C}$ for safe operation. See also temperature control range restriction.
Operating humidity	5% 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	$\pm0.1^{\circ}\text{C}$ 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 $\pm$ 10% or $\pm$ 0.3 ml/minute
Flow control accuracy	The greater of $\pm$ 5% or $\pm$ 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 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	SWAGELOK 1/4" tube fitting
Alarms	
Alarms	The incubator provides 3 volt-free terminals which provide normally-open and normally-closed

10 Base T Ethernet - RJ45 shielded. Modbus-TCP-IP protocol.

Sensing region should be within 15 mm of the tip.

In order to fit the monitoring ports the sensor must meet the following specification:

Remote PT100 sensors

PT100 Class A to EN60751.

Maximum diameter 2.51 mm.

Minimum length 100 mm.

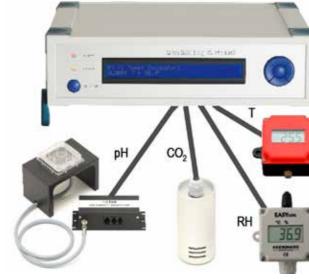
# Optional monitoring

All systems should be alarmed and monitored to provide ultimate security. The BT37 can communicate directly with any MODBUS system, can incorporate all monitoring systems and has specific design parameters for mounting of Octax Log and Guard and Planer ReAssure.

# Octax Log & Guard™

The only monitoring and alarming system which has specifically been designed for the needs of A.R.T.

- Independent monitoring and documentation of temperature from incubators, fridges, LN<sub>2</sub> tanks
- pH of culture media via pH Online™
- CO<sub>2</sub> from incubators
- RH in rooms / lab
- Mains (battery backed)
- SMS, audible, visual alarming
- Web interface for data access and management
- No PC required



#### Specifications:

Resolution: 0.01 pH Accuracy: ± 0.03 pH Measuring range: pH 5.5 – 9.0

Power supply: 12V DC

Dimensions: 47 x 134 x 36 mm (LxWxH)

Holding rack for dishes: 80 x 120 x 65 mm (LxWxH) Requires OCTAX Log & GuardTM controller

# pH Online™

## Continuous pH recording

- No pH drift
- Pre-calibrated
- Easy to use
- Disposable sensor dishes no cleaning or sterilization
- Unique sensor technology for long term measurement
- Remote alarming and data management via OCTAX Log & Guard™



#### **Specifications:**

Power supply: 110-240V AC, Dimensions: 360 x 300 x 90 mm (WxDxH), measuring intervals infinitely variable

Max. number of temperature sensors to be connected: 384

Max. number of pH OnlineTM sensors to be connected: 24

Max. number of CO<sub>2</sub> sensors to be connected: 192

SMS alarming requires SIM card



# Per chamber CO<sub>2</sub> monitoring

It is well understood that all incubators suffer some loss of gas from source to chamber – as much as 0.5% in some cases. Moreover, no technology exists to monitor the per chamber CO<sub>2</sub> concentration – until now.

The new monitoring solution for BT37 offers a retrofittable infra red (IR) based CO<sub>2</sub> sensor

mounted on the side of the incubator with existing fittings, high specification nafion tubing is connected to the exhaust ports at the back of each chamber, which in turn supply two independent IR sensors. This information is recorded directly into the ReAssure Configure and Status unit. When combined with other relevant parameters (chamber temperature, ambient temperature, ambient humidity) users are provided with a comprehensive view of environmental conditions and can ensure the best possible culture conditions.



- Inexpensive a cost effective alternative to pH monitoring
- Retrofittable connect to existing benchtop incubators
- Novel the first sensor to monitoring per chamber CO<sub>2</sub> levels
- Responsive allows users time to respond to low CO<sub>2</sub> levels before pH is affected

Range	0% -10% CO <sub>2</sub>
Measurement Accuracy	+/- (1.5%of range + 3% of reading) (+/-0.3%)
Response Time	1 min @ 0.5l/min flow
Sensor lifespan	> 10 years
Operating Temperature Range	+5°C - +55°C

# Temperature sensors

#### Ultra thin temperature sensor

This unique sensor option allows temperature monitoring (-200°C to + 200°C) in equipment that lacks a probe access port. With dimensions of 6.35 mm  $\times$  1.3 mm  $\times$  1.3 mm, the ultra thin sensor can be used to monitor laboratory equipment without the requirement for drilling an entry point.

#### Ribbon sensor for independent monitoring of benchtop incubators

Leading benchtop incubators, like the BT37, include access ports for independent environmental monitoring. For users who demand in dish/dish area temperature monitoring this ribbon sensor is ideal. With a measurement range between 0°C and 50°C, this sensor can be introduced into the culture chamber of a benchtop incubator to accurately and independently record temperature.



## Tri Gas Controller

Designed for ensuring the optimum gas mixture is always readily available.

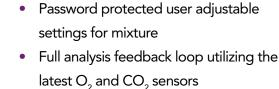
Fully adjustable for tri mix blend of  $CO_2$ ,  $O_2$  and  $N_2$ . Controller is specifically designed for supplying BT37 units from single installations to multiple banks of units.

## Simple, Safe and Easy!

The new Tri-Gas Controller allows simple connection of  $CO_2$ ,  $N_2$  and compressed air making it safe and easy.

The user then sets the mixture required using the intuitive colour display and the attached reservoir tank is filled with the correct mix.

A full loop feedback system continually monitors the mixture with both  $O_2$  and  $CO_2$  sensors to ensure accuracy. This unique system places the sensors within the reservoir of mixed gas providing effective and absolute control and accuracy of supply.



- Mix reservoir of 1300 litres ensuring full long term use capability.
- Low pressure output for use with BT37 benchtop incubator(s)
- Low pressure CO<sub>2</sub>, N<sub>2</sub> and compressed air input
- Full digital display
- Fast fill / normal fill systems
- Password protected fully adjustable alarm setup



# Table for ORIGIO / Planer BT37 Benchtop Incubators

The table is especially designed to display 4 or 6 incubators on two different shelves.

Dimensions:

Holds 4: 910 x 690 x 930 mm Holds 6: 1397 x 690 x 930 mm



Ref. No.	Description
BT37 AY102295	ORIGIO/PLANER Benchtop Incubator BT37 Replacement: 6 bottles and 6 filters
BT37-PH 9.006.000.100 9.006.000.102 9.006.000.103	pH Online Preparation OCTAX Log & Guard monitoring and alarming device OCTAX pH online sensor unit pH Online sensor dish with four wells, sterile
TGC-BT-37	Tri Gas Controller
BT37 4 TABLE BT37 6 TABLE	Stable Table for 4X Planer BT37 Incubators Stable Table for 6X Planer BT37 Incubators

#### About Planei

Planer was formed in 1973, and have since been pioneers in development of scientific technology. In IVF, they are renowned for their specialized products for controlled rate freezing. With decades of experience in precise temperature control and top-quality engineering, they have the best foundation for developing the best, most stable environment available for gamete and embryo culture. Planer is also the holder of several awards in technology and innovation. ORIGIO is the exclusive worldwide distributor of the BT37 incubator for IVF.