

ORIGIO / PLANER benchtop incubator BT37

Unrivalled temperature,
gas and humidity control



origio

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 CO₂ and reduced O₂ 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 CO₂ and reduced O₂ 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



6 monitoring ports

For external probes / calibration

Full-contact heating plates

- Exceptional heat distribution
- Accepts largest selection of culture dishes
- Absolute temperature control to 0.1c
- 7 point control



Gas connectors

- std. SWAGELOK connectors
- can be connected in series



Cooling fan

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

Password protection

No accidental or unauthorized modification of operating parameters (no accidental "switch-off")

"Bubble check" gas flow system

Gas flow clearly visible from across the lab



Status indicators

Clearly visible from across the lab

Battery backup

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 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
- Low gas usage

Humidity

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

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 °C to +40 °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	± 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 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 contacts.
Remote monitoring	
LAN	10 Base T Ethernet - RJ45 shielded. Modbus-TCP-IP protocol.
Remote PT100 sensors	Remote PT100 sensors PT100 Class A to EN60751. In order to fit the monitoring ports the sensor must meet the following specification: Maximum diameter 2.51 mm. Minimum length 100 mm. Sensing region should be within 15 mm of the tip.

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, LN₂ tanks
- pH of culture media via pH Online™
- CO₂ 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 & Guard™ 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 Online™ sensors to be connected: 24
 Max. number of CO₂ sensors to be connected: 192
 SMS alarming requires SIM card

Per chamber CO₂ 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 CO₂ concentration – until now.

The new monitoring solution for BT37 offers a retrofittable infra red (IR) based CO₂ 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 CO₂ levels
- Responsive – allows users time to respond to low CO₂ levels before pH is affected



Range	0% -10% CO ₂
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 x 13 mm x 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 CO₂, O₂ and N₂. 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 CO₂, N₂ 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 O₂ and CO₂ 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.



- Password protected user adjustable settings for mixture
- Full analysis feedback loop utilizing the latest O₂ and CO₂ sensors
- Mix reservoir of 1300 litres ensuring full long term use capability.
- Low pressure output for use with BT37 benchtop incubator(s)
- Low pressure CO₂, N₂ 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.

BT37
AY102295

BT37-PH
9.006.000.100
9.006.000.102
9.006.000.103

TGC-BT-37

BT37 4 TABLE
BT37 6 TABLE

Description

ORIGIO/PLANER Benchtop Incubator BT37
Replacement: 6 bottles and 6 filters

pH Online Preparation
OCTAX Log & Guard monitoring and alarming device
OCTAX pH online sensor unit
pH Online sensor dish with four wells, sterile

Tri Gas Controller

Stable Table for 4X Planer BT37 Incubators
Stable Table for 6X Planer BT37 Incubators

About Planer

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.