



## 220L MODEL, 630(W) x 490(D) x 685(H)MM CHAMBER

**High Temperature Decontamination Cycle** This option takes the internal temperature to 120°C and maintains this temperature for 4hrs before natural cooling to allow normal function.

**4-Inner Door Option** 4 Inner doors allow chamber conditions to be more readily maintained when frequent entry is required to the chamber.

**Oxygen Control** 2 Oxygen control options are available: 1-19% & 0.1-19%

**Humidity Tray Warning** An optical level sensor that monitors humidity tray water level

Range	4°C above ambient to 50°C	Humidity	Up to 95% @ 37°C
Control	± 0.1°C	Solid Shelves	4 Shelves
Stability	± 0.1°C	Dimensions	605(W) x 470(D)mm
Uniformity	± 0.3°C	Chamber	630(W) x 490(D) x 685(H)mm
Range	0.2% - 20%	External	760(W) x 635(D) x 880(H)
Control	± 0.1°C	Crated	885(W) x 810(D) x 1115(H)mm
Stability	± 0.1°C	Unit Weight	78kg
Uniformity	± 0.2°C	Crated Weight	103kg
Recovery Rate	> 0.7% per minute	Voltage	220/240V 50/60Hz
Connection	6mm tubing	Power	500W (STD)
Gas Pressure	0.35 BAR (5PSI)		1000W (HT)
Tray Capacity	2.0 Litres	Hold Energy	< 0.1kWh @ 37°C

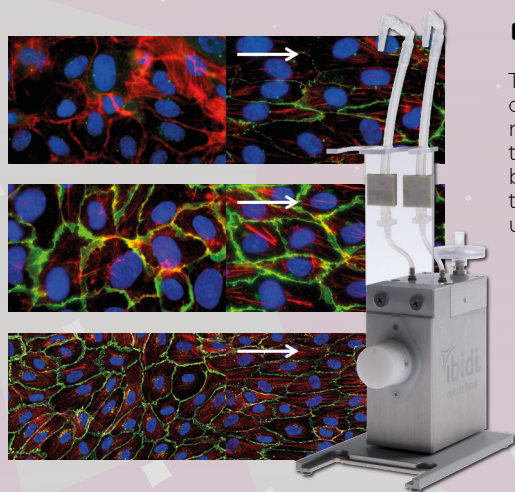
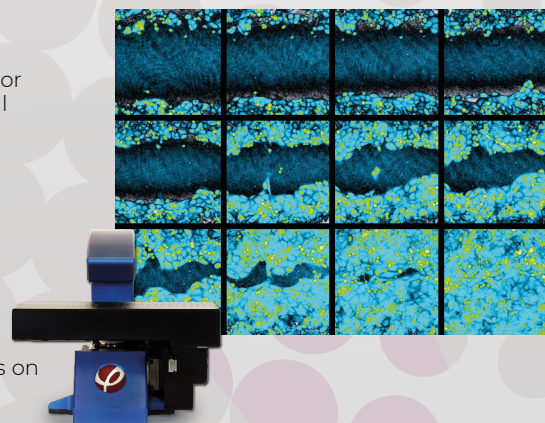
## APPLICATION EXAMPLES

### WOUND HEALING WITH THE HOLOMONITOR M4

The assay is based on a cell-friendly method to create the gap and easily reveals repetitive data and movies showing the details of gap closure. As with all HoloMonitor applications the wound healing assay is cell-friendly and based on label-free live-cell imaging. The assay produces:

- ▶ Time-lapse images and videos illustrating how cells migrate into the gap
- ▶ Automatic and kinetic calculation of gap closure over time
- ▶ Cell front velocity

To get single cell data and movement patterns, cells of interest can be tracked using cell tracking. Detailed, non-biased data on migration into the wound area is then easily achieved. When preferred, further analyses can be undertaken for details on cell morphology changes, cell proliferation and cell division.



### CELL CULTIVATION UNDER FLOW WITH THE IBIDI PUMP

The ibidi Pump System consists of two main components: The ibidi Pump (computer controlled air pump, placed outside the incubator) and the Fluidic Unit (holder for cell media reservoirs and  $\mu$ -Slide, tubing, and electrically controlled valve set, placed inside the incubator). By using this "split" approach, the closed circulation of the medium can be assembled separately in the laminar flow hood and transferred to the microscope or the incubator, without compromising the sterility of the system. The open architecture using the Luer connectors allows the use of any kind of flow devices.

- ▶ Ideal simulation of various physiological conditions - continuous unidirectional, oscillating, and pulsatile flow
- ▶ Minimal mechanical stress, minimal amount of medium and supplement needed
- ▶ Flow rate using ibidi  $\mu$ -Slides: 0.1 – 40 ml/min
- ▶ Shear stress using ibidi  $\mu$ -Slides: 0.2 – 80 dyn s/cm<sup>2</sup>



To View the full range of Ibidi labware for wound healing, cell culture under flow and more applications, visit our website at [thistlescientific.co.uk](http://thistlescientific.co.uk).

Or to meet one of our team, email us at [enquiries@thistlescientific.co.uk](mailto:enquiries@thistlescientific.co.uk) to set up an appointment.



## CO<sub>2</sub> INCUBATORS FOR CELL CULTURE AND IMAGING

14 - 220L CO<sub>2</sub> Incubators perfect for culturing mammalian cells

Ideal for use with the *Holomonitor M4*, *EzScope 101* and *Ibidi pump system* for environmental control





# 14L, 48L, 170L AND 220L MODELS

## SCALABLE DESIGN WITH ADVANCED FEATURES AS STANDARD

Thistle Scientific supplies GS Biotech CO<sub>2</sub> incubators to complement our range of live cell imaging products designed to be used in physiological environments. These incubators include a range of advanced features as standard including profiled heating, seamless chambers and sealed inner doors. Each incubator controls temperature from 4°C above ambient up to 50°C and CO<sub>2</sub> in a programmable range of 0.2 to 20% . All incoming gases are HEPA filtered and O<sub>2</sub> control options are also available. A range of customisation options allows you to configure the incubator to perfectly suit your application.

### STANDARD FEATURES

- Seamless chamber, with rounded interior corners makes cleaning easy

► Removable shelves are non-tip

► Sealed inner glass door allows chamber viewing

► CO<sub>2</sub> range programmable from 0.2 to 20 %.
- Infrared CO<sub>2</sub> Sensor, with auto self-referencing function.

► Large, easy to read LCD display with LED backlight.

► 25mm access port for cable pass-through etc.

► 3 Year Warranty (extendable).

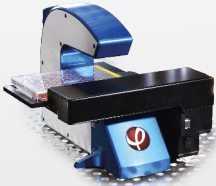
Features & Options	170L Gold	48L Gold	14L Gold	220L Gold
Seamless Chamber With Fully Rounded Corners	●	●	●	●
Dry Walled Chamber With No Condensate Spot	●	●	●	●
Infrared Hermetically Sealed CO <sub>2</sub> Sensor	●	●	●	●
CO <sub>2</sub> Auto Reference System	●	●	●	●
Sealed Inner Glass Door	●	●	●	●
Large Lcd Display With Led Backlight	●	●	●	●
25mm Access Port With Sealing Plugs	●	●	●	●
RS232 Output Socket	●	●	●	●
On Board Datalogger	●	●	●	●
O <sub>2</sub> Control (1-19%)	○	○	○	○
O <sub>2</sub> Control (1-19%) or (0.1-19%)	○	○	N/A	○
High Temperature Decontamination	○	○	N/A	○
Humidity Tray Warning	○	○	N/A	○
4 Inner Door Option	○	N/A	N/A	○
2 Inner Door Option	N/A	○	N/A	N/A

● Standard Feature    ○ Optional Feature

### DID YOU KNOW?



The Ibidi pump system, for culturing cells under defined shear stress conditions, can be used in our CO<sub>2</sub> incubators to better simulate physiological environments. Choose the 14L model for up to 2 fluidic units.



The Holomonitor M4 holographic microscope can be placed inside a cell culture incubator for time-lapse analysis of growing cells. This system is perfect for time dependant imaging studies such as wound healing and angiogenesis and removes the danger of phototoxicity from fluorescent imaging.



For simpler imaging requirements, the EzScope 101 uses basic white light for time lapse imaging. Fits in the 14L model.



Thistle Scientific is a leading UK supplier of Laboratory Equipment and Consumables. We distribute many brands in the UK including GS Biotech incubators.

Our philosophy is straightforward. Reliable products give trouble free use. Satisfied customers maintain a long term relationship and this, in turn, ensures we know how to respond to all varieties of requests at all times.

We believe our customers are our most valuable assets



### 14L MODEL, 238(W) x 201(D) x 298(H)MM CHAMBER

The 14L CO<sub>2</sub> incubator is perfect for small scale cell cultivation and can be used as an application specific incubator to isolate experiments from your main cell cultures. The inner chamber can fit up to **2 ibidi fluidic units**, allowing parallel shear stress cultivations. The chamber is also large enough to fit a **Holomonitor M4**, making it the perfect choice as a dedicated imaging incubator.

The 14L model offers an optional **oxygen control module** that uses nitrogen injection to accurately control oxygen to the desired level below ambient.

Range	4°C above ambient to 50°C	Humidity	Up to 95% @ 37°C
Control	± 0.1°C	Solid Shelves	2 Shelves
Stability	± 0.1°C	Dimensions	215(W) x 192(D)mm
Uniformity	± 0.3°C	Chamber	238(W) x 201(D) x 298(H)mm
Range	0.2% - 20%	External	336(W) x 322(D) x 481(H)mm
Control	± 0.1°C	Crated	461(W) x 497(D) x 716(H)mm
Stability	± 0.1°C	Unit Weight	22kg
Uniformity	± 0.2°C	Crated Weight	38kg
Recovery Rate	> 1.5% per minute	Voltage	100/120V 50/60Hz
Connection	6mm tubing		220/240V 50/60Hz
Gas Pressure	0.35 BAR (5PSI)	Power	700W
Tray Capacity	0.3 Litres	Hold Energy	< 0.1kWh @ 37°C

### 48L MODEL, 400(W) x 301(D) x 400(H)MM CHAMBER

**High Temperature Decontamination Cycle** This option takes the internal temperature to 120°C and maintains this temperature for 4hrs before natural cooling to allow normal function.

**2-Inner Door Option** 2 Inner doors allow chamber conditions to be more readily maintained when frequent entry is required to the chamber.

**Oxygen Control** 2 Oxygen control options are available: 1-19% & 0.1-19%

**Humidity Tray Warning** An optical level sensor that monitors humidity tray water level

Range	4°C above ambient to 50°C	Humidity	Up to 95% @ 37°C
Control	± 0.1°C	Solid Shelves	3 Shelves
Stability	± 0.1°C	Dimensions	378(W) x 281(D)mm
Uniformity	± 0.3°C	Chamber	400(W) x 301(D) x 400(H)mm
Range	0.2% - 20%	External	529(W) x 442(D) x 589(H)
Control	± 0.1°C	Crated	654(W) x 617(D) x 824(H)mm
Stability	± 0.1°C	Unit Weight	38kg
Uniformity	± 0.2°C	Crated Weight	60kg
Recovery Rate	> 0.7% per minute	Voltage	220/240V 50/60Hz
Connection	6mm tubing	Power	500W (STD)
Gas Pressure	0.35 BAR (5PSI)		1000W (HT)
Tray Capacity	0.8 Litres	Hold Energy	< 0.1kWh @ 37°C

### 170L MODEL, 540(W) x 480(D) x 633(H)MM CHAMBER

**High Temperature Decontamination Cycle** This option takes the internal temperature to 120°C and maintains this temperature for 4hrs before natural cooling to allow normal function.

**4-Inner Door Option** 4 Inner doors allow chamber conditions to be more readily maintained when frequent entry is required to the chamber.

**Oxygen Control** 2 Oxygen control options are available: 1-19% & 0.1-19%

**Humidity Tray Warning** An optical level sensor that monitors humidity tray water level

Range	4°C above ambient to 50°C	Humidity	Up to 95% @ 37°C
Control	± 0.1°C	Solid Shelves	4 Shelves
Stability	± 0.1°C	Dimensions	518(W) x 475(D)mm
Uniformity	± 0.3°C	Chamber	540(W) x 480(D) x 633(H)mm
Range	0.2% - 20%	External	669(W) x 631(D) x 822(H)
Control	± 0.1°C	Crated	794(W) x 806(D) x 1057(H)mm
Stability	± 0.1°C	Unit Weight	75kg
Uniformity	± 0.2°C	Crated Weight	100kg
Recovery Rate	> 0.7% per minute	Voltage	220/240V 50/60Hz
Connection	6mm tubing	Power	500W (STD)
Gas Pressure	0.35 BAR (5PSI)		1000W (HT)
Tray Capacity	2.0 Litres	Hold Energy	< 0.1kWh @ 37°C