



CytoCentric Products

OxyStreamer

O₂ and CO₂ Controller for Live Cell Microscopy

- Full Range O₂ and CO₂
- Real Time Control
- Dual Stream - Control Gas and Liquid Phase
- Eliminates Inflexibility of Premixed Gas
- Eliminates High Cost of Premixed Gas
- Eliminates Gas Stratification Inaccuracy
- Vertical Footprint Saves Bench Space



Dual Stream 0.1-99.9% O₂ and 0.1-20.0% CO₂

LIVE CELL MICROSCOPY OPTIMIZATION

The OxyStreamer provides two identical streams of any mix of oxygen and carbon dioxide gas without the use of premixed gas cylinders. The two output streams can be used to simultaneously condition the atmosphere in microscope stage mount cell culture incubators/chambers and the dissolved O₂ and CO₂ levels in media or perfusate.

AVOID HASSLES & EXPENSE OF PRE-MIXED GAS

By independently monitoring and controlling O₂ and CO₂ concentrations of the streams, the OxyStreamer can monitor and proportionally mix (blend) oxygen, carbon dioxide and nitrogen gases into any O₂ and CO₂ concentration in real time.

FULL RANGE O₂/CO₂ OPTIMIZATION

The OxyStreamer is easy to use. After calibrating the sensors, the desired concentrations for O₂ (0.1-99.9%) and CO₂ (0.1-20.0%) are simply entered into their respective controllers. The closed-loop dynamic gas control system will then automatically monitor and adjust the output stream of gas to the pre-programmed gas ratios in the controllers. This technique will maintain the output mixed gas concentration to within 0.2% of the selected setpoint levels.

LIQUID & GAS PHASE SIMULTANEOUSLY

The flow rate for each stream is independently controlled for gas efficiency to provide a reproducible rate at which the gas is delivered to the cell culture chamber and/or diffused into the cell culture media or perfusate.



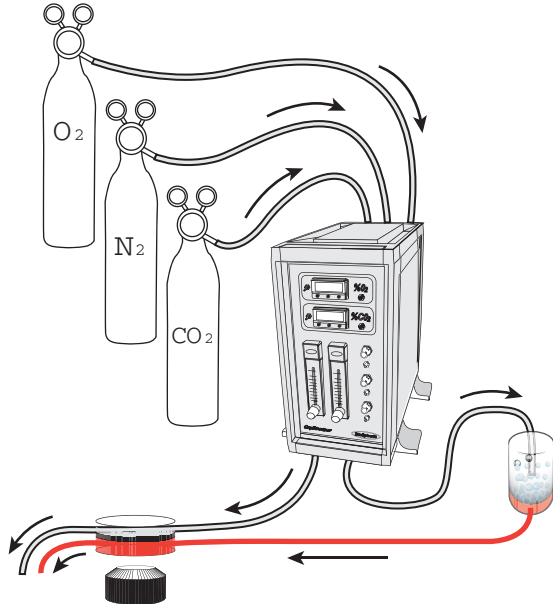
Works with 3rd party live cell microscopy stage chambers, such as the DH-35iL Culture Dish Incubator shown above.

Specs

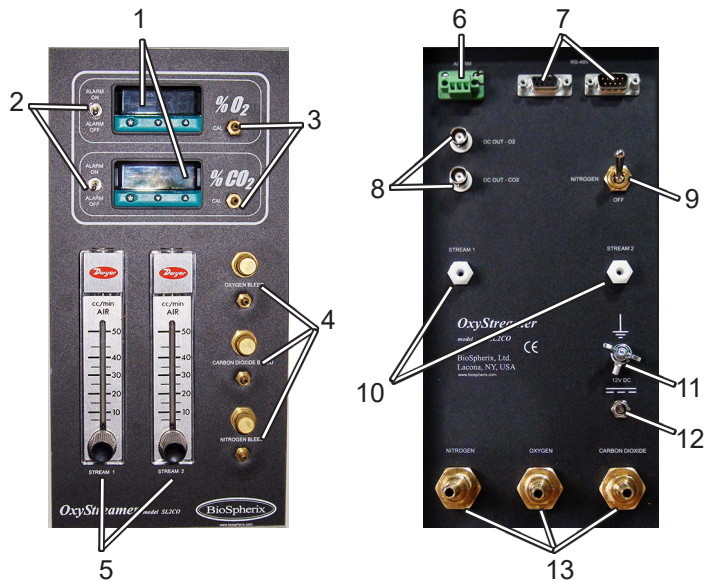
ELECTRICAL POWER: 12VDC, 6.6AMP
O₂ RANGE: 0.1% to 99.9%
CO₂ RANGE: 0.1% to 20.0%
ACCURACY: +/- 5% of reading; 2% full scale
O₂ SENSOR: Fuel Cell
CO₂ SENSOR: Infrared
INLET GAS SUPPLY CONNECTORS: 1/4" Hose Barb
OUTLET GAS STREAM CONNECTORS: Plastic quick disconnects for 1/16" and 1/8" ID tubing
FLOW CONTROL: Independent channel flow control: Model SL2CO = 5 to 50 mL/min. Model SH2CO = 30 to 200 mL/min Custom – please call
SERIAL COMMUNICATION: RS-232/RS485
O₂ ANALOG OUTPUT: 0-100 mVDC linear
CO₂ ANALOG OUTPUT: 0-1 VDC linear
WEIGHT: 10 lb. (controller only)
OVERALL DIMENSIONS: 13.0"L x 9.3"W x 14.2"H

Options include a Windows® based software package that provides trend plotting, data logging, and remote operation via RS connection to your PC. Multiple OxyStreamers can be daisy-chained via optional RS-485 interface.

Installation Schematic



Front and Back Panels



- 1. Controller:** Bright digits display process values and provides manual user interface to control gas infusion.
- 2. Alarm Switch:** Toggles the alarm function on and off.
- 3. Calibration Bleed Barbs:** Used to calibrate sensors.
- 4. Bleed Valves and Barbs:** Bleeds gas.
- 5. Stream Flowmeters:** Adjusts flow rate of streams.
- 6. Alarm Receptacle:** Connect an appropriate alarm of your choosing to this jack.
- 7. RS232/RS485 Connections:** One cable attaches to a computer and the other cable attaches to another unit, to allow communication with the computer (if applicable).
- 8. DC Outlets:** This port allows optional reading of sensor output voltages through a strip chart recorder.
- 9. Gas Switch:** Toggles gas flow on and off.
- 10. Control Gas Outlet:** Infusion gas supply tubing connects here for streams 1 and 2.
- 11. Ground Stud:** Grounds the unit to prevent electric damage.
- 12. Power Receptacle:** Plug from 12VDC wall mount power supply connects here.
- 13. Supply Gas Hose Barbs:** 1/4" tubing from gas supply connects here.

◀ OxyStreamer eliminates the need for pre-mixed gas. Controller is used primarily to pre-condition perfusion media while simultaneously conditioning headspace above culture.



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cell incubation and processing
systems

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