



The only atmospheric chamber purpose built for cell culture research.

[www.HypOxygen.us](http://www.HypOxygen.us)

**HYP**O<sub>2</sub>**XY**station



HypOxystation™ is the only atmospheric chamber purpose built for physiological cell culture research. Specifically designed to create normoxic, hypoxic and anoxic conditions within a controlled and sustained workstation environment, this chamber is ideal for research requiring the ability to accurately control oxygen, carbon dioxide, temperature and humidity. With such accurate control and the ability to manipulate cells *in situ* without altering the incubation environment, research into cell biology can be performed over a comprehensive range of oxygen tensions with precision.

The application possibilities for the HypOxystation are endless; it is currently being used for research

in the following areas: tumor microenvironment, targeting the hypoxia inducible factor (HIF), *in vitro* modeling of *in situ* environments, influence of hypoxia in cancer cell metastasis and the role of hypoxia in tumor angiogenesis.

This chamber has been designed in conjunction with cell biology researchers for ultimate performance combined with user comfort, convenience and reliability.

**HYP**O<sub>2</sub>**XY**GEN  
Define your environment



# HYP<sub>O</sub>XYstation H35 - It's a control freak



**Letterbox**  
15 cm letterbox option for quickly introducing plates or small flasks in chamber.



**Removable Front**  
Easily remove the entire front panel for cleaning or to place large objects in the chamber.



**Touch screen Interface**  
All system parameters are accessed, controlled, and viewed via the touch screen. Control O<sub>2</sub>, CO<sub>2</sub>, temperature and humidity. Set user controls and O<sub>2</sub> profiling.



**Oxygen Sensor**  
Control O<sub>2</sub> in 0.1% increments from 0.1% - 20%. CO<sub>2</sub> monitoring is optional (otherwise set at constant 5%). Real time feedback system monitors and adjusts O<sub>2</sub> levels to insure accuracy. Calibration is easy, sensor never leaves the workstation and is located inside the actual incubation environment.



**Humidification**  
This option allows users to control relative humidity up to 85% without risk of contamination.



**O<sub>2</sub> Profiling**  
Allows users to select a range of oxygen tensions for a defined increment of time. HypOxystation will automatically adjust oxygen settings.



**USB Drive**  
For Data-logging and data transfer (optional). Data-logging will record 30 days of system settings and graphs which can be downloaded to a PC.



**Transfer Airlock**  
Rapid-cycle transfer airlock allows users to transfer items into the chamber. Total cycle time takes less than one minute and is controlled via the touch screen. Touch screen also indicates if airlock has been commissioned and inner door position. Internal dimensions: 7.75 x 7.75 x 7.5 (w x d x h inches)

Every aspect of system functionality has been considered - environmental control systems, touch screen layout, workspace visibility, design dimensions, fabrication quality and our unique port system for gloved or bare-hand working. The touch screen interface allows users to monitor all settings and easily make changes to atmospheric variables. The integrated oxygen sensor is easily and quickly calibrated - no remote sensing or bulky external gas mixer. Provides accurate readings with minimal gas consumption.

## Available Options/Accessories:

- CO<sub>2</sub> monitoring/control
- Removable front panel
- Humidification system
- Data logging
- Vacuum take-off port
- Custom Trolley
- Spare cable gland
- Instant access ports, no sleeve-gassing!
- 15 cm letterbox
- Automatic sleeve gassing system
- Blackout cover
- O<sub>2</sub> profiling
- Auto switching gas regulator
- Custom shelving
- Gas sample port



Instant access ports allow bare-hand working without sleeves



# Integrated O<sub>2</sub> Sensing vs Remote O<sub>2</sub> Sensing

O<sub>2</sub> sensing, monitoring and control are key components to accurate atmosphere control in a hypoxia workstation. The HypOxystation has an integrated O<sub>2</sub> sensor located in the incubation chamber, under the exact environmental conditions as your cell cultures and other samples. This allows for a precise real-time feedback system which constantly monitors the internal atmosphere. HypOxystation can quickly respond to any changes to ensure user settings are accurate and reproducible. Having an integrated O<sub>2</sub> sensor eliminates the need to extract a gas sample and pump it to an external or remote monitoring system for evaluation.



O<sub>2</sub> Sensor located inside the HypOxystation H35

Remote O<sub>2</sub> monitoring systems present several problems for maintaining accurate oxygen levels, minimizing gas consumption, and maintaining real-time feedback. The atmosphere being pumped out of the chamber is very humid and at incubation temperature.

As soon as this humid air leaves the incubated environment into the cooler sampling line and separate analyzing component, condensation is created. This condensation build up creates a contamination concern in the sampling line and is destructive to the O<sub>2</sub> sensor, leading to premature failure and inaccurate readings.

Also, to maintain a constantly monitored atmosphere, the chamber will have to be regularly pumping gas to the remote monitoring system for analysis. This additional flow of gas, to attempt to accurately control the workstation atmosphere, results in excessive gas consumption. Having a remote sensor also means there is a delay in correcting any atmospheric deviations from the user defined settings. This delay can result in poor experimental results due to inaccurate maintenance of user defined O<sub>2</sub> levels, especially when working below 1% O<sub>2</sub>.

The engineering and design of HypOxystation, with integrated O<sub>2</sub> and CO<sub>2</sub> monitoring, translates into highly accurate control with efficient use of gas to ensure user defined experimental conditions are precise and reproducible. The real-time plotting of the gases on the functional display delivers accurate charts of the atmospheric conditions inside the workstation throughout the course of the experiment. These charts can be accessed via the USB connection below the display to permit inclusion in reports and publications.

## Calibrating HypOxystation's O<sub>2</sub> Sensor



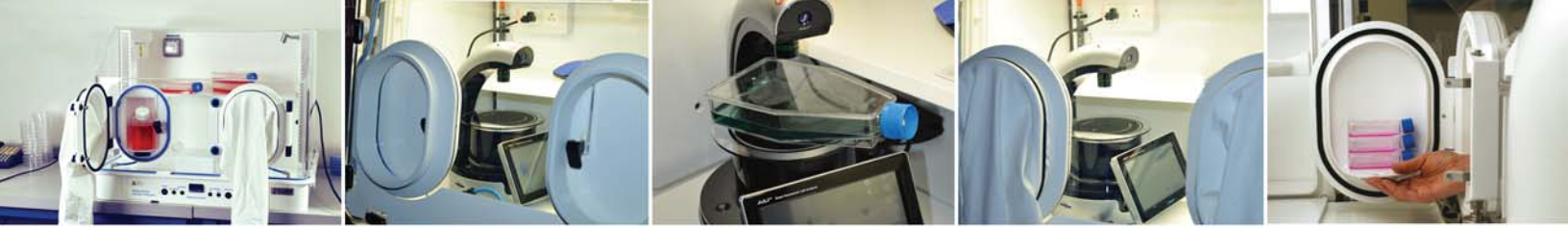
Calibrating the oxygen sensor inside the HypOxystation is straightforward and fast. When in use, the sensor is unscrewed in an unsealed position.



For calibration, twist the oxygen sensor up into the sealed position. The sensor will be flushed with nitrogen and then air to establish low and high point settings.



After the O<sub>2</sub> sensor is sealed, follow the prompts on the touch screen to initiate the calibration sequence, which is completed within minutes.



# Three Hypoxia Chambers to Meet Your Needs



**HypOxystation H35**



**H85**



**H20A**

<b>External Dimensions</b>	48.5 x 28.5 x 28 inches W x D x H	62 x 33 x 30 inches W x D x H	32 x 25 x 30 inches W x D x H
<b>O<sub>2</sub> Control</b>	<b>Standard</b> - control O <sub>2</sub> in 0.1% increments from 0.1% - 20%	<b>Standard</b> - control O <sub>2</sub> in 0.1% increments from 0.1% - 20%	<b>N/A</b> - O <sub>2</sub> settings are constant based on user gas tank mixture
<b>CO<sub>2</sub> Control</b>	<b>Optional</b> - control CO <sub>2</sub> in 0.1% increments from 0.1% - 15%	<b>Optional</b> - control CO <sub>2</sub> in 0.1% increments from 0.1% - 15%	<b>N/A</b> - CO <sub>2</sub> settings are constant based on user gas tank mixture
<b>Airlock</b>	<b>Standard</b> - 12 L airlock 7.75 x 7.75 x 7.5 inches W x D x H internal dimensions	<b>Standard</b> - 30 L airlock 11.8 x 11.8 x 13.4 inches W x D x H internal dimensions	<b>N/A</b> - Porthole doors operate as miniature transfer airlocks
<b>Temperature Control</b>	<b>Standard</b> - 5°C above ambient to 45°C	<b>Standard</b> - 5°C above ambient to 45°C	<b>Standard</b> - 5°C above ambient to 42°C
<b>Gas Supply</b>	<b>3 tanks</b> - Nitrogen, CO <sub>2</sub> , air	<b>3 tanks</b> - Nitrogen, CO <sub>2</sub> , air	<b>1 tank</b> - User defined gas concentration
<b>Humidity</b>	<b>Optional</b> - Control relative humidity up to 85%	<b>Optional</b> - Control relative humidity up to 85%	<b>N/A</b> - Dehumidification capability is standard
<b>Gloveless entry</b>	<b>Standard</b> - via footswitch; automatic sleeve gassing is optional, or instant access ports are optional	<b>Standard</b> - via footswitch; automatic sleeve gassing is optional	<b>Standard</b> - via footswitch; automatic sleeve gassing is optional

“ We have used two HypOxystations for about two years now to investigate the role of hypoxia in tumor micro-environments. They are running constantly without any problems. With the results being generated, and the demand for their use, we have now purchased a third unit.

Dr. Bradley Wouters  
Senior Scientist  
Ontario Cancer Institute, Canada ”

Exclusively at:

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Define your environment

877-HypOxygen (497-6994)

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