



LIVECELL™

STAGE TOP INCUBATION

- > Imagine Unlimited Time Lapse
- > Fully Controlled Temperature, CO₂, and Humidity
- > 5 Day Walkaway Time
- > Integrated and Convenient

LiveCell™ Stage Top Incubation System : °C : %CO₂ : %RH

With the optional addition of humidity control, the LiveCell™ is the first completely integrated, easy to use, stage top incubation system for time lapse live cell imaging. At the push of a button you have adjustable, precise, and stable control over the temperature, CO₂ concentration, or humidity without the need for expensive pre-mixed gas, flow rate adjustments, or excessive evaporative loss of media during long observations. Now, extended time lapse observations are possible with one system.

Key Features

- 5 day worry free walk away time.
- Uses inexpensive CO₂ gas.
- No tools required to install and run.
- Chamber is small enough to set on the stage top yet is large enough for nearly all sample configurations such as slides, plates, dishes, and flasks.
- Visual alarms to indicate instability
- Fail safe heating.
- Controllers are individually disabled for maximum flexibility.
- Interlocked chamber keeps CO₂ from filling your workspace.
- Controller can be located up to 6 ft from the chamber.
- Easily transported to other labs.
- Optional RS-232 communications allows you to read current values, change the control set points, and read current set points with a remote computer.
- Fits most inverted microscopes such as: NIKON, OLYMPUS, LEICA, and ZEISS.
- Accommodates most condensers.
- Optional humidity control

Temperature, %CO₂, and %RH are all fully adjustable through the front panel or optional RS-232 interface. A simple change of the target "set point" and the controllers will react and begin to maintain the environment at the new set point value. Since all of the sensors are located inside the chamber, there is no question about the environment surrounding the cells. Thermal gradients are a fact of life with all systems and to reduce the effects we provide you with the ability to locate the temperature sensor close to the sample for even more accuracy. Fine control of humidity and temperature eliminates the worry of condensation on the optical surfaces.

The LiveCell™ system was designed with simplicity, stability, and flexibility in mind. Depending on the application, any of the three controllers may be enabled or disabled at the touch of a button. The optional humidification unit is integrated into the housing and is released by simply pushing in on the front panel. All air and electrical connections to the system are made when the bottle assembly is pushed and latched back in place. CO₂, which is used to control sample pH, is added by connecting a 1/4" tube to a generic 100% CO₂ supply. Since the system is a closed circuit the usage of gas is minimal at a fraction of a liter per hour.

To operate the system you only need to connect two air hoses and two signal cables between the controller and the chamber, supply CO₂ to the unit, set the chamber on the microscope stage, and turn the power on.

Green enable switches light when the function enabled and red Alarm indicators have been provided to alert you when the performance of the system falls outside of normal stability. In a glance you can see that everything is functioning properly. The sensor displays are easy to read in all lighting conditions and display the actual process values in the chamber.

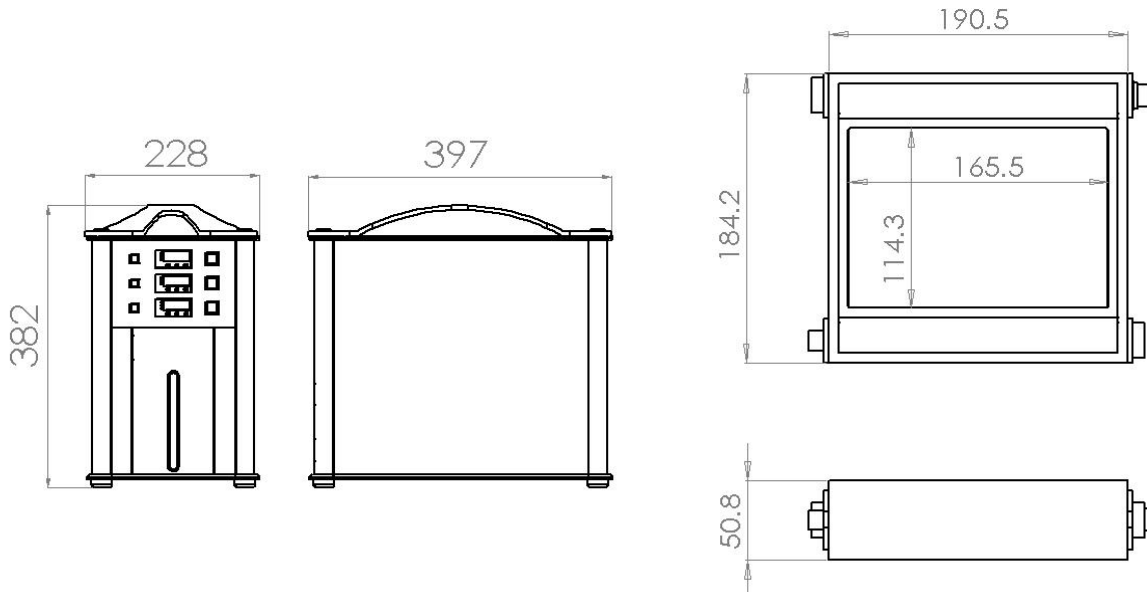
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The chamber design is small enough to fit most inverted microscopes with flat stage tops, yet large enough to accommodate a broad range of sample vessels such as: slides, dishes, multi-well plates, and even some incubation flasks. Installation is as simple as setting the chamber on top of the stage and connecting the hoses and sensor cables. Currently the chamber is designed to fit on NIKON, OLYMPUS, LEICA, and ZEISS microscopes and several motorized stages with flat tops.

Chamber designs also exist for older irregular top motorized stage designs and custom design is available on a case by case basis. The chamber and its lid lens have no effect on (DIC) Differential Interference Contrast imaging, fluorescence, or Phase Contrast imaging. All are possible through the chamber. Different lid lenses allow you to configure the chamber for the largest sample vessel limited by the working distance of microscope's illumination condenser.

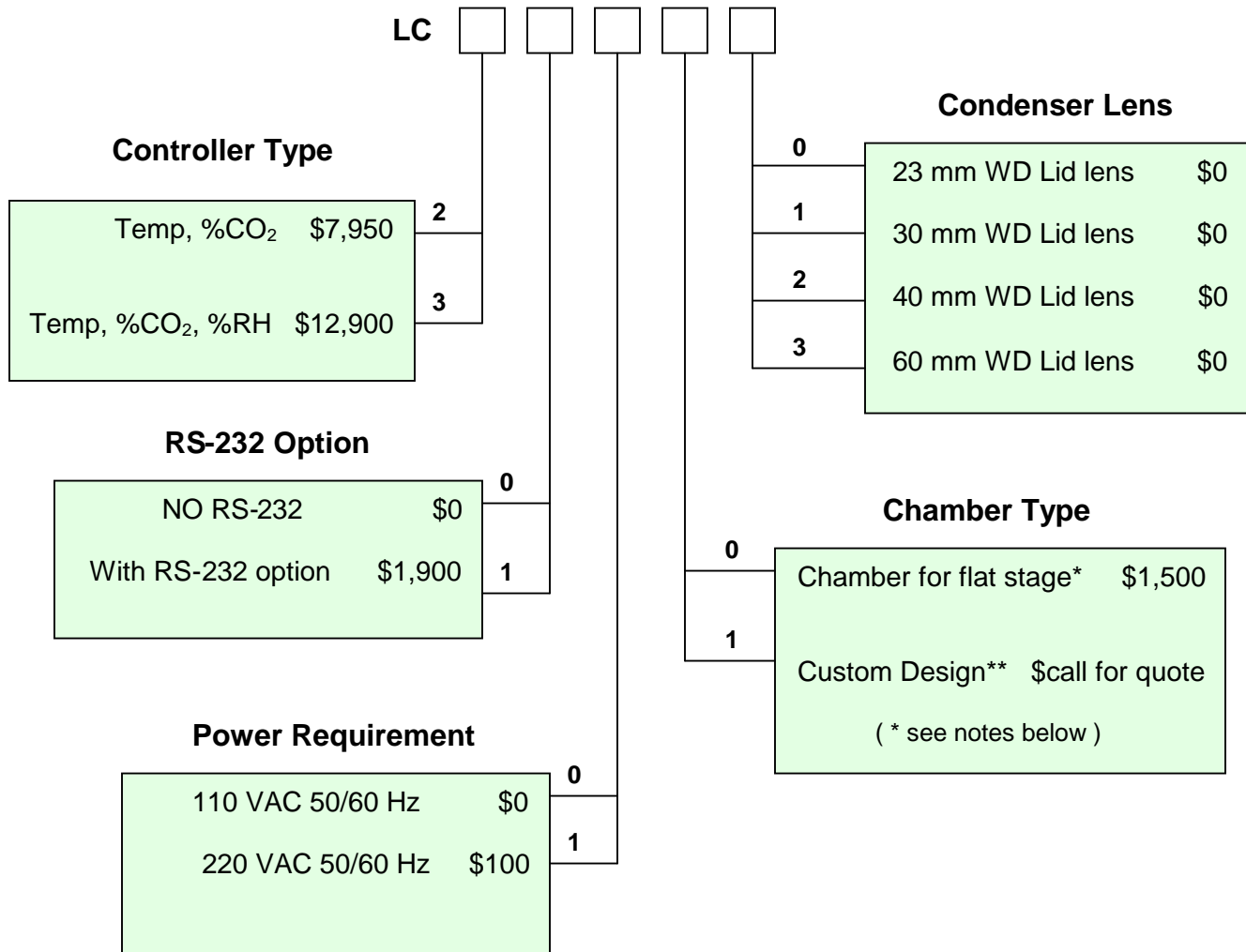
Specifications

- Temperature control to 50.0 +/- 0.1°C.
- Temperature stability +/- 0.1°C.
- Temperature accuracy < 0.2°C @ 37°C.
- Temperature response time 5 sec.
- %CO₂ control to 10.0% +/- 0.1%.
- %CO₂ stability +/- 0.1%.
- %CO₂ accuracy +/- 2% of reading max.
- %CO₂ response time 20 sec.
- %RH control to 100% +/- 1%.
- %RH stability +/- 2%.
- %RH accuracy +/- 2% max.
- %RH response time 120 sec.
- Power 110 VAC-50/60 Hz @ 2.36 A.
- Optionally 220 VAC-50/60 Hz @ 1.3 A.
- Weight 20 lbs. chamber and controller.
- Warm up and stabilization time < 45 min.
- CO₂ usage is <1 liter / hr
- Minimum Operational room temperature 25°C



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Configuration and Ordering Information / Price List \$USD



Example: Part number LC20103 would be a Temperature and CO₂ controlled incubator running on 220VAC power and fitting a flat top manual stage microscope with a working condenser distance of 60mm. The retail cost would be: \$7,950 + \$0 + \$100 + \$1,500 + \$0 = \$9,550

Notes: * Stage top must be flat such as: manual stages on Nikon TE2000-TE200, Olympus ix70/71 ix80/81, Leica DMI 4000-DMI 6000, Zeiss Axiovert 200, and automated flat top stages such as proscan H117, Ludl, and ASI.

**Any stage not specifically called out may require modification. In order to ensure a proper fit, the stage must be sent in.

All prices in USD and subject to change.

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