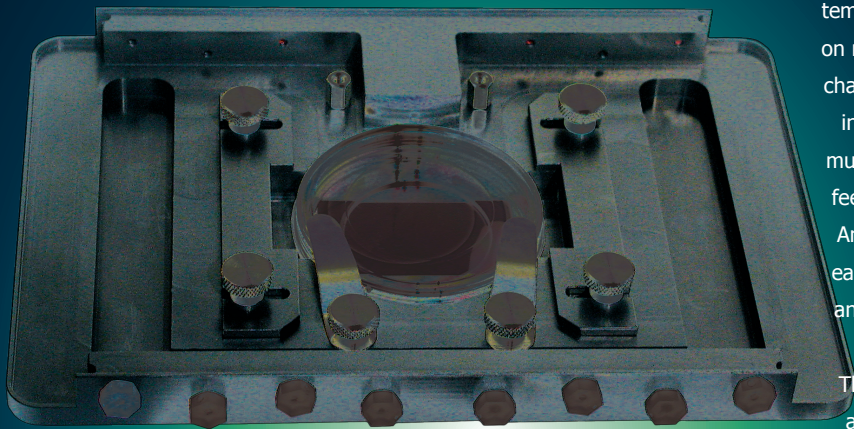


Temperature Control



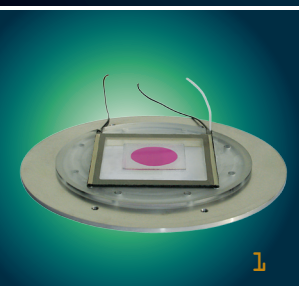
1. Uniformly heated glass plates to form ultra-small volume chambers for live imaging
2. Cooling units down to 0°C
3. Miniature heating elements for piezo stages
4. Perfusion accessories for continuous media exchange & test solution applications

Bioscience Tools produces an array of devices to control temperature of your sample: from miniature incubators to fit on microscope stages to heaters for coverslips and perfusion chambers. Precision controllers keep or change temperature in a range from 0 to 100°C with 0.1°C resolution. Use of multiple temperature sensors not only gives you a choice of feedback but makes temperature control extremely stable. Analog inputs and outputs are built in every controller for easy integration into data acquisition setups. Digital inputs and outputs are also provided to link to imaging software.

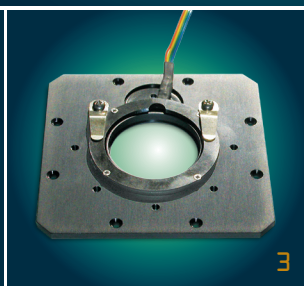
The temperature control systems incorporate microscope adapters for easy installation. Modular design facilitates upgrades and custom modifications to accommodate most applications: from long term imaging to electrophysiological recordings from single cells. Built-in solution pre-heaters and miniature adjustable holders provide a set of flexible tools to configure continuous media exchange or test solution applications.



4527 52nd Street
San Diego CA 92115
Ph: 877.853.9755
Fax: 619.582.0919



1



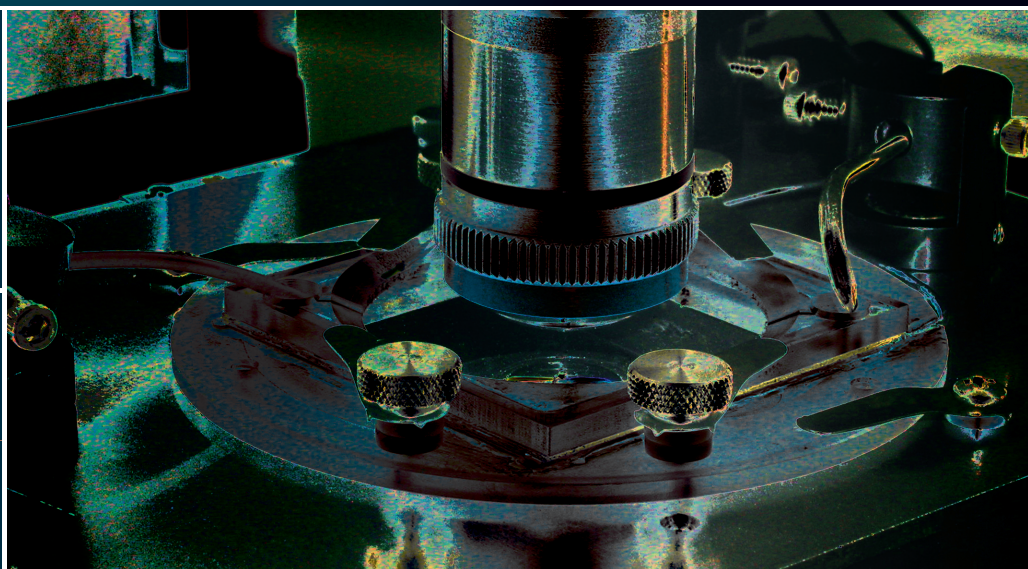
3



2



4



Heated Microscope Stages

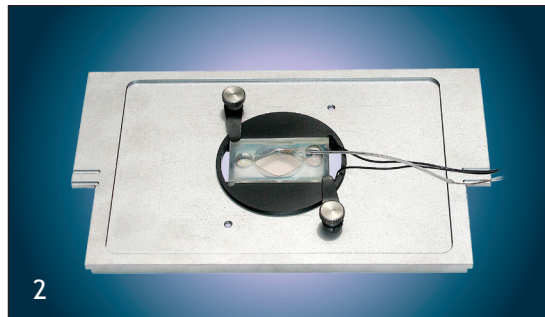
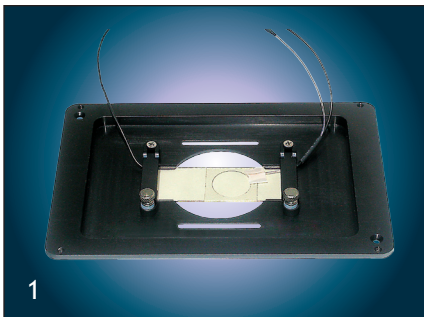


Sample configuration of perfusion accessories around miniature heater for petri dishes and coverslip holders.

The temperature control systems include precision controllers for variety of applications. TC-2D is a 2-channel universal controller. It incorporates digital controls and can be linked to similar units, including solution switches and flow controllers, to built a robust software controlled system. The second channel can be used with an objective heater or other accessories. TC-1 and BTC-100 are low noise controllers suitable for electrophysiological experiments.

The controllers use multiple temperature sensors and advanced circuitry to minimize temperature fluctuations. Every controller offers 0.1°C resolution, analog inputs to set reference temperature, and analog monitoring outputs.

| Controller | Features: |
|-------------|--|
| TC-2D/2-100 | two independent channels, temperature range to 100°C, multiple temperature sensors and flexible controls for enhanced stability. |
| TC-1 | low electrical noise, range up to 50°C |
| BTC-100 | cooling/heating from 0 to 100°C, low electrical noise |
| | 0.1°C resolution, analog inputs and outputs |



1. Uniformly heated glass slide allows you to make high resolution live imaging heated chambers fast. Use with any thickness glass coverslip. Chambers are formed by attaching the coverslip to the bottom of the slide. Ultra-small volume.
2. Uniformly heated perfusion chamber. Low profile to access your sample with recording or injection tools. Separate inflow and outflow compartments prevent bubbles from entering the working compartment, and provide smooth perfusion. Includes perfusion accessories: suction and inflow tubing holders.
3. Petri dish heater with silicone insert to facilitate test solution application. Built-in inline preheater for perfusion solution. Includes adjustable holders temperature sensor, inflow and stainless steel tubing. All systems can be used with an objective heater TC-HLS.