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HiClamp Main Device

Dimensions 640 mm x 465 mm x 440 mm (WxDxH)  
Weight 27 kg  
Supply voltage 115 VAC @ 60 Hz  
230 VAC @ 50 Hz

Amplifier

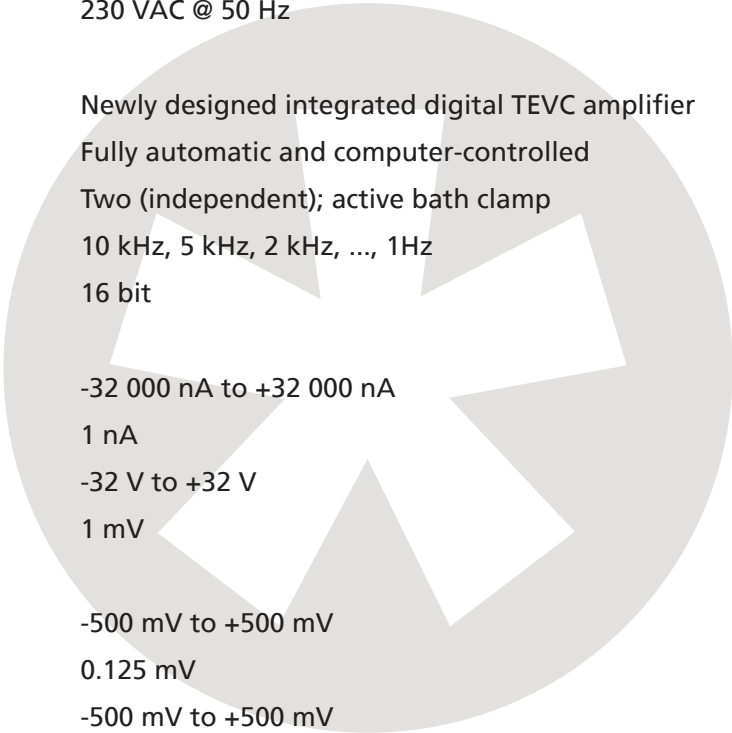
Type Newly designed integrated digital TEVC amplifier  
Operation Fully automatic and computer-controlled  
Reference electrodes Two (independent); active bath clamp  
Sampling rate 10 kHz, 5 kHz, 2 kHz, ..., 1Hz  
Data resolution 16 bit

Current electrode output

Output range -32 000 nA to +32 000 nA  
Current resolution 1 nA  
Voltage range -32 V to +32 V  
Voltage resolution 1 mV

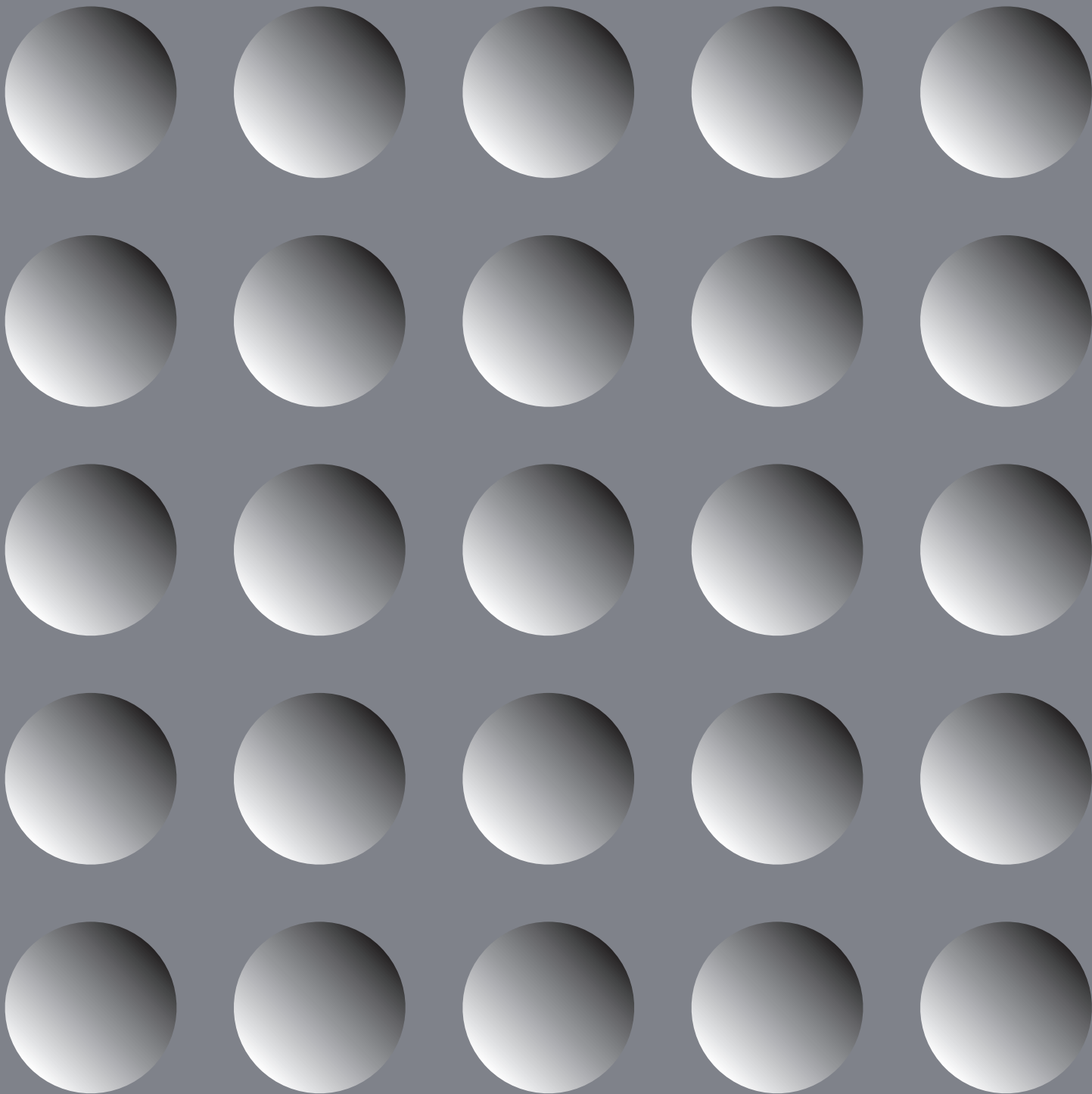
Voltage electrode input

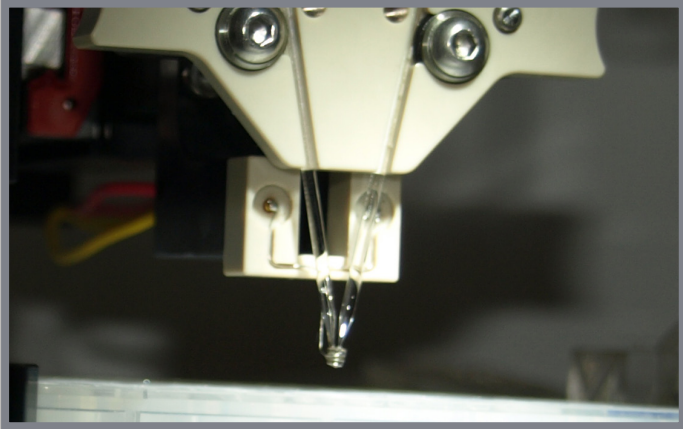
Input range -500 mV to +500 mV  
Voltage resolution 0.125 mV  
Clamp voltage setpoint range -500 mV to +500 mV  
Clamp voltage setpoint resolution 1 mV  
Typical rise time in voltage clamp mode <1 ms



# HiClamp\*

Automated Voltage-Clamp Screening for *Xenopus* Oocytes



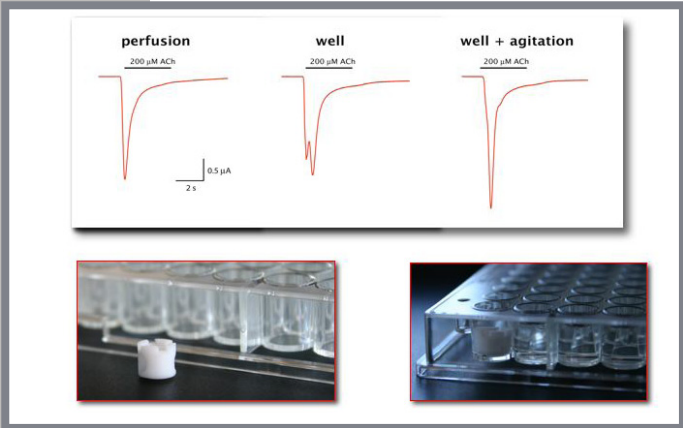


Turning electrophysiology upside down

HiClamp is built around an entirely new concept: Instead of applying solutions to the oocytes, the HiClamp carries the cells from one compound to the other.

The advantages of the HiClamp are:

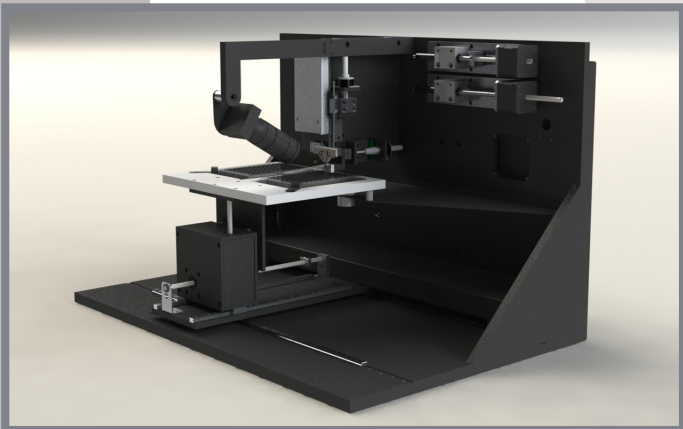
- **Very fast drug application.**
- **Minimal compound usage.**
- **Non-destructive usage of compounds.**
- **Fully-automated system.**



Fast and reliable drug application

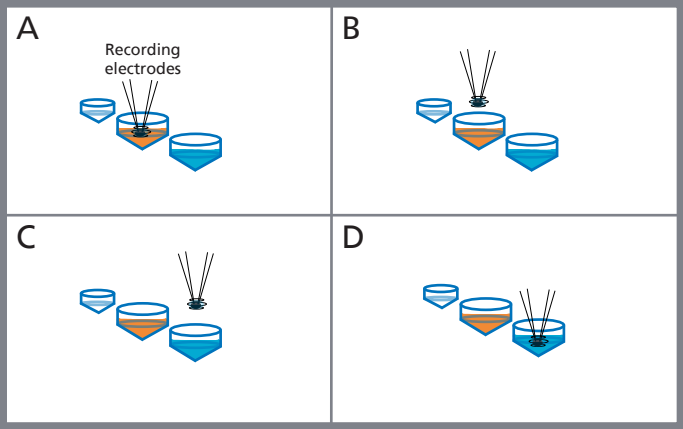
The unique design of the HiClamp allows to smoothly move the oocyte from one solution to another while performing continuous recording, thus optimizing drug application while minimizing contamination. The unique and patent-protected micro-stirrers were designed to provide you with the fastest and most reliable drug application.

The graph on the left hand side shows that the agitation of the well contents facilitates a rapid solution exchange. The pictures below show the micro-stirrer in front of and in a well plate.



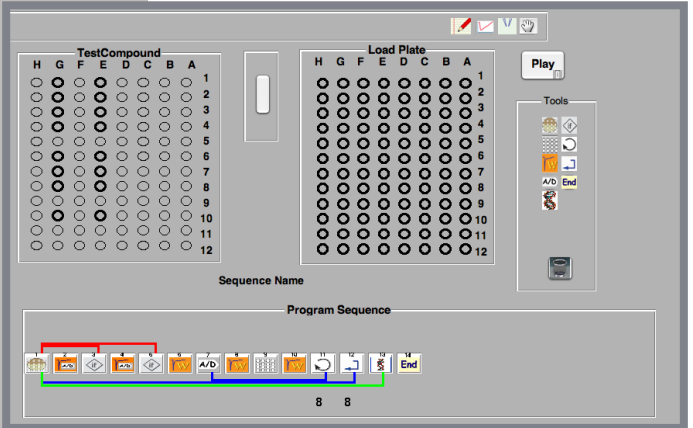
Works with 200 µl sample volumes

Designed to work with 96-well microtiter plates, HiClamp allows you to use up to 96 compounds per plate. Moreover, the volume in each well is minimized by the patent-protected micro-stirrer allowing you to perform multiple tests in only 200 µl of your precious sample. As the oocyte is physically moved in and out of the well, the compound can be kept for multiple measurements. Just freeze-dry the well plate with the substance and perform another test with the same sample later. To avoid contamination the oocyte can be moved to a perfusion system allowing thorough washing between measurements.



Principle of functioning

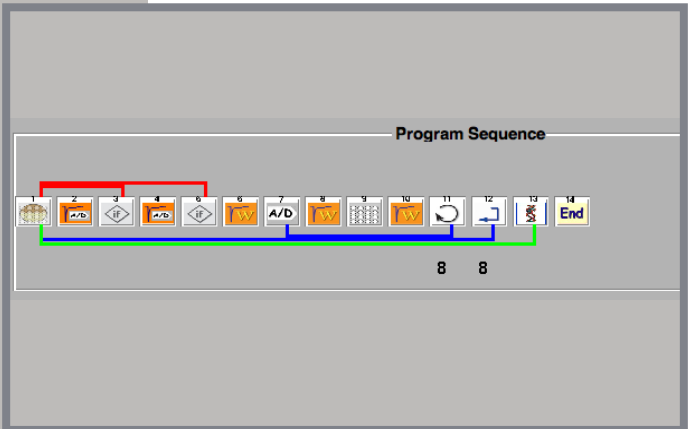
Oocytes are transferred automatically one after the other from a 96-well plate into a silver wire basket serving as reference electrode. After automatic impalement of the intracellular glass microelectrodes, the basket is moved together with the oocyte from one compound-containing well to the other. Programmable washing steps effectively prevent cross contamination between different compounds. The built-in digital amplifier guarantees a stable and accurate voltage-clamp resulting in precise and reproducible current recordings.



Fully automated system that even runs over-night

You will benefit from the first automate that you will run day and night. Everything works automatically; you just place the two 96-well plates with oocytes and compounds, respectively and start the whole run with a mouse click.

HiClamp is precisely built with the most error-proof programming and allows you to focus on your experiments while forgetting technological complexities.



Extremely simple programming of experimental paradigms

HiClamp was designed with a unique user interface allowing you to establish your experimental paradigm without the help of a programmer. Using "lego" like building blocks, you just have to click on the icons and thereby define the sequence of your experiment. The icons will soon become self speaking and will open possibilities that you have not yet even thought of.