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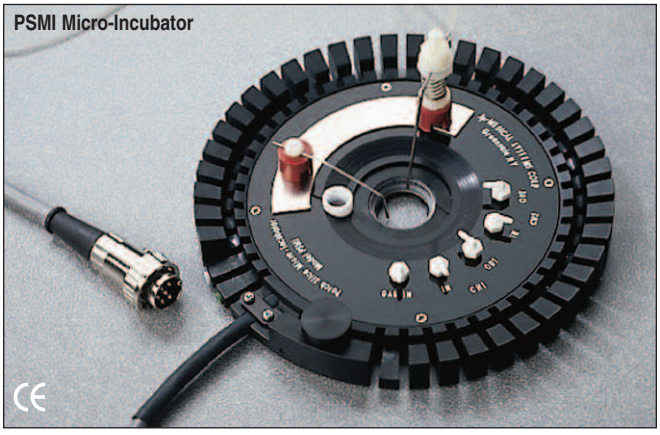
PSMI

Patch Slice Micro-Incubator

Complete micro-environment for patch clamp on the microscope



- Small entry angles ideal for patch slice recordings
- Shallow fluid level minimizes pipette capacitance
- Heats and cools from ~5° below ambient to 50°C
- Peltier heat pump maintains cell conditions for hours

The Patch Slice Micro-Incubator System provides a complete solution to the challenge of electrophysiological study of synaptic connections at physiological temperatures. Low noise whole cell patch recording, with or without water immersion of the microscope objective in the recording medium, are possible with the PSMI.

This Micro-Incubator is a shallow, annular assembly which surrounds the central slice holding dish. Room temperature perfusant is delivered to the incubator which in turn delivers it to the dish at a precisely controlled temperature you select. The perfusant is removed (via user supplied suction) by an included, height adjustable aspirator (LU-ASP). Two independent perfusant channels flow through the PSMI into the chamber via replaceable plastic tubing (of low volumes <100 µl) to allow rapid switching of media via an upstream valve for pharmacological studies. A separate inlet provides temperature controlled gas delivery across the dish.

The TC-202A provides temperature control (~5° below ambient to 50°C) using the Micro-Incubator warming/cooling plate as the control point. Lower temperatures (approximately 10°C below ambient) may be obtained by using an optional cooling tube. The cover slip dish (PS-CSD) consists of two 22 mm diameter cover slips held in a circular frame. The slice sits on the top cover slip with the immersion objective reaching the fluid surface. The bottom cover slip prevents condensation for optimal illumination and viewing. To enable placement of the patch electrode, entry angles as small as 15° can be achieved for slice access.

Specifications

Chamber Type	PS-CSD Cover Slip Dish
Temperature Stability	±0.2°C with TC-202A, at 37°C with 1 ml/min perfusion
Temperature Gradient	Across chamber: 2°C with 1.5 ml media volume, 1 ml/min
Temperature Range	5-10°C below ambient to 50°C
Built In Temp. Sensor	Thermistor type: 100 kΩ at 25°C
Peltier Device	Current rating: 6 A max
Media Perfusion Rates	Up to 3.0 ml/min
Dimensions, H x Dia	17 x 152 mm (0.67 x 6.0 in), overall
Weight	0.5 kg (17.9 oz)

Order #	Model	Product
W3 65-0044	PSMI	Patch Slice Micro-Incubator with PS-CSD
W3 65-0109		Copper Cooling Tube for PSMI
W3 65-0053	PS-CSD	Patch Slice Cover Slip Dish for PSMI
W3 65-0052	MI-M	Mini Magnets for Top Surface of Micro-Incubators (LU-CB-1, PDMI-2 or PSMI), set of 4