IONFLUX SYSTEM

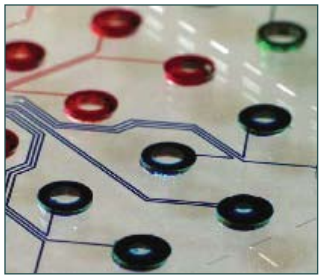
IonFlux Product Specifications

IonFlux Reader

Amplifiers: Integrated 16 or 64 channel amplifiers, sampling adjustable to 20 kHz ; includes capacitance (Cfast and Cslow), leak, and series resistance compensation
Dimensions: App. 20" (50 cm) X 20" (50 cm) X 10" (25 cm)
Temperature control: ambient to 40 °C
Integrated plate/liquid handler available

IonFlux Plate

Plate formats: SBS-standard 96 and 384 well
Recording format: Parallel-cell ensemble recording, 20 cells per group
Experimental zone: Each zone contains 8 compound wells, 2 cell groups, and 2 cell suspension wells
Compounds: 8 compounds or concentrations applied to 2 cell groups per experimental zone
Data points per plate:
96-well plate: 8 experimental zones per plate, each w/ 2 recordings from 8 compounds (128 data points)
384-well plate: 32 experimental zones per plate, each w/ 2 recordings from 8 compounds (512 data points)



Automated ion channel drug discovery on an academic budget

IonFlux™ high throughput automated patch clamping system

Ion channels represent an important yet under-represented drug target class due to the lack of available high-throughput screening approaches. Manual patch-clamping, the "gold standard" for performing cell electrophysiology, is a labor-intensive technique that is too slow to be used for drug screening, while first-generation automated electrophysiology systems are expensive and performance-challenged.

Fluxion has addressed these limitations with the IonFlux Automated Electrophysiology System. The IonFlux system eliminates the need for intermediate pipetting steps during the recording protocol and allows the system to be configured like a plate reader, simplifying workflow and increasing throughput. The IonFlux system delivers these advantages:

- The highest level of throughput (to 10,000 data points per day)
- Suitable for use with all ion channels including ligand-gated (compound exchange <50ms)
- The lowest cost per data point (as low as $0.30 per data point)

Lateral-patch technology optimizes performance and throughput

The IonFlux system utilizes a unique microfluidic design to provide automated cell introduction, trapping, sealing, whole-cell formation and precise current

recording protocols. IonFlux plates are available in 96-well and 384-well formats. The plates look and handle just like standard well plates. However, the bottom of the plate has been replaced with a channel network that connects the wells with a series of tiny channels for cell and compound introduction. The instrument includes an interface that mates to the plates and provides pneumatic flow control. Integrated electrodes are inserted into the wells for voltage clamping. Recordings are taken from 20-cell ensembles to increase robustness and throughput. Pharmacology is improved by recording the full range of concentrations from the same group of cells.

IonFlux System Configurations

IonFlux HT- Highest throughput, plate reader simplicity

A fully integrated ion channel recording system that delivers unrivaled throughput, performance and economy. The IonFlux HT is a fully automated electrophysiology system with 64 amplifiers, 20-cell ensemble recording from 384-well IonFlux plates, and throughputs of 10,000 data points per day (2-3 plates per hour). The system is ideal for high throughput screening of ligand- and voltage-gated ion channels.

IonFlux 16 - The most economical automated patch clamp system available

The system includes 16 amplifiers and can run 2-3 96-well plates per hour. Throughput of 2,500 data points per can be achieved. The system's economical price makes it suitable for individual labs that have until now been limited to manual systems.

IonFlux Software

Operating modules: Protocol editor, run table manager, assay development mode, recording visualization, analysis, and data export

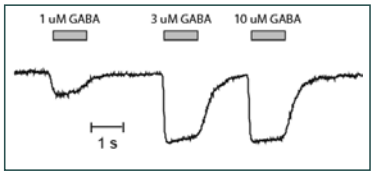
Operating system: Windows XP, Vista

Performance

Throughput:
96-well plate: 250 data points /hr
384-well plate: 1000 data points per hour

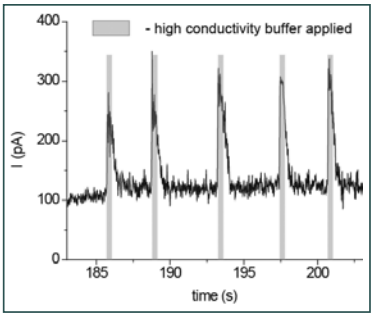
Compound application time:
<50 ms

GABA-A channel recording.
Continuous recording from an ensemble of CHO cells expressing GABA-A receptors during successive application of increasing GABA concentrations is shown.



This data illustrates the ability to exchange compounds rapidly for a cell ensemble with continuous recording.

Rapid compound exchange.
Repeated application of high conductivity K+ buffer to the extracellular solution of Kv2.1 CHO cells illustrates the rapid on- and off-times for compound application.



Compound on-time for 0-90% response is <50 ms, and removal time is 500 ms.

IonFlux Ordering Information

Please call or email AutoMate Scientific for more information and pricing on the IonFlux.