

AXION PLATES

INDUSTRY-LEADING 768 ELECTRODES AT THE THROUGHPUT YOU NEED

Your research requires insightful, high-quality data from microelectrode array (MEA) experiments. Axion BioSystems' Maestro MEA plates meet that need with breakthrough MEA technology providing the highest electrode count per well. More electrodes means more recording sites and access to enhanced network-level signaling to make the most out of every assay.

MEA plates also bring flexibility to your cellular analysis. Due to the non-invasive nature of MEA recordings, cultured cells in any plate can be re-analyzed at any time for additional data on the same cell population. Axion's MEA plates are perfectly suited for time courses or chronic exposure studies. Additionally, each electrode on the plate is capable of recording or stimulation.

AXION MEA PLATES

- 768 low-noise electrodes
- 12-, 48-, or 96-well formats
- Recording or stimulation capability for each electrode
- Integrated, independent ground electrodes
- Conical shaped wells
- Evaporation-reducing lids
- Built-in humidity chambers

CLASSIC MEA

Axion's pioneering multiwell MEA plate

The Classic MEA plates deliver high-quality results together with industry-leading throughput for every MEA assay. With 768 low-noise recording electrodes shared equally across the wells of the plate, the Classic MEA plate is available in 48- and 96-well formats (i.e. 16 and 8 electrodes per well, respectively).



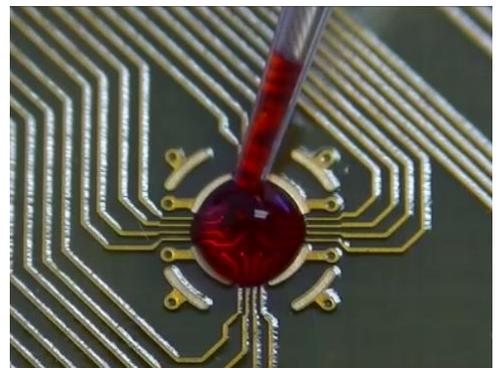
Classic MEA 48 plate (M768-KAP-48).

ACCUSPOT CLASSIC MEA

Superior cell droplet placement

Axion recommends plating cells in a small droplet centered over the electrode array (cell spotting), to conserve cells and ensure robust electrical activity near the recording electrodes. To make MEA plate preparation quicker and easier than ever before, Axion developed the AccuSpot Classic MEA 48 plate.

The AccuSpot Classic MEA 48 plate has on-plate spotting guides in the bottom of each well that guide the droplet over the recording electrodes. This enables more precise cell plating with less effort. Provided the droplet is released from the pipette between the AccuSpot features, the droplet is attracted over the recording electrodes, ensuring a perfectly centered droplet in every well.



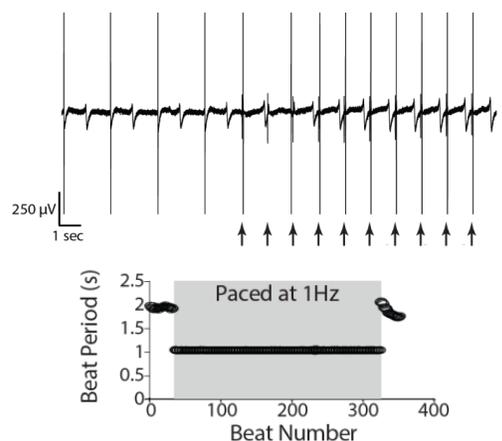
Base of the AccuSpot Classic MEA 48 plate (M768-KAP-48A) with the wells removed. On-plate spotting guides center the droplet over the recording electrode array, increasing plate preparation speed and accuracy.

E-STIM+ CLASSIC MEA

Improved electrical stimulation capacity

Cardiomyocytes cultured on MEA plates create an accessible platform for studying heart beats in a dish. Cardiomyocyte assays rely on evaluation of parameters, such as repolarization timing, that are tightly coupled to beat rate. Controlling beat rate allows the user to increase physiological relevance and reduce well-to-well variability.

The E-Stim+ Classic MEA 48 plate delivers high-quality MEA results with superior stimulation capacity. The large dedicated stimulation electrode ensures reliable stimulation capture. Seamless integration with AxIS software makes stimulation simple yet customizable, while optimized artifact elimination and automated detection of electrophysiological features make analysis easy, efficient, and reproducible.



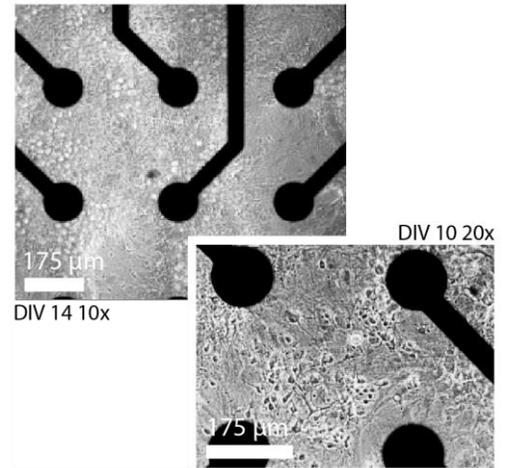
Pacing stimuli set beat rate at 1Hz (top, arrows) in an E-Stim+ Classic MEA 48 plate (M768-KAP-48S). Beat period quickly adapts to set pacing rate (bottom).

CYTOVIEW MEA

Cell visualization and assay multiplexing

CytoView MEA plates for the Maestro MEA platform combine unparalleled access to cellular electrical network information with a thin, transparent plate bottom for culture visualization and assay multiplexing. Similar to Axion's Classic MEAs, CytoView plates contain the same industry-leading electrode count per well, deliver the same low-noise signal, and retain the ability to be read over days, weeks, or months.

The innovative, transparent plate bottom enables confirmation of cell spotting accuracy, and correlation of cell culture health and connectivity with MEA results using bright field imaging. Available with black- or white-walls, the CytoView MEA 48 plate allows users to multiplex their MEA studies with fluorescence- or luminescence-based assays to probe complementary end points.



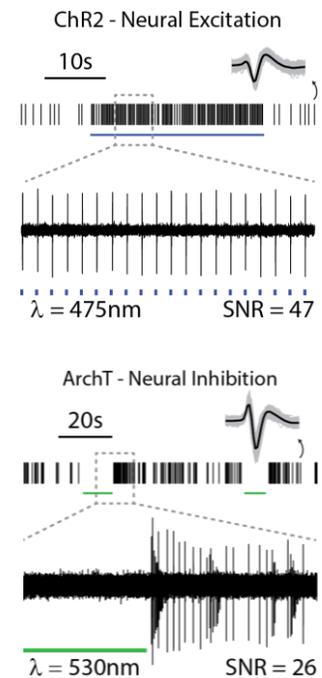
Bright field images of primary rodent cortical neurons at DIV14 (10x magnification) and DIV10 (20x) in a CytoView MEA 48 - Black plate (M768-tMEA-48B).

LUMOS MEA

Designed for optical stimulation

Optogenetics enables the expression of light-sensitive channels (e.g. channelrhodopsin-2, ChR2) for light-induced control of cellular function. Optogenetics is a powerful and versatile research tool. However, *in vitro* applications have been limited by low throughput light stimulation devices with rudimentary controls. Axion's award winning Lumos 48-well optical stimulator system, provides flexible, powerful light delivery for *in vitro* applications at a high throughput scale. The Lumos allows for independent and simultaneous activation of 192 LEDs across 48 wells with user-defined control over wavelength, intensity, and microsecond duration.

Axion's Lumos MEA 48 plates combine high-quality MEA results with highly optimized optical performance. The custom-formulated plate walls provide high reflectance to maximize light delivery to your culture and minimize well-to-well crosstalk. The custom-molded lid mates to the Lumos array and contains integrated optical lenses. Finally, the transparent bottom allows for cell visualization and assay multiplexing with fluorescence, luminescence, and other reporter-based assays.



When expressed in neurons, ChR2 can be used to activate neurons *in vitro* in response to blue light, whereas ArchT suppresses neural activity upon incident green light.

CLASSIC MEA

The Classic MEA plates deliver high-quality results together with industry-leading throughput for every MEA assay

Plate	Cat No.	Wells	Electrodes/ well	Electrode layout*	Bottom	Walls
Classic MEA 48	M768-KAP-48	48	16 Gold		Opaque	Clear
AccuSpot Classic MEA 48	M768-KAP-48A	48	16 Gold		Opaque	Clear
E-Stim+ Classic MEA 48	M768-KAP-48S	48	16 Gold		Opaque	Clear
Classic MEA 96	M768-KAP-96	96	8 Gold		Opaque	Clear

CYTOVIEW MEA

The CytoView MEA plates combine robust data collection with a transparent well bottom for cell visualization and assay multiplexing

Plate	Cat No.	Wells	Electrodes/ well	Electrode layout*	Bottom	Walls
CytoView MEA 12	M768-GL1-30Pt200	12	64 Nano-Porous Platinum		Transparent	Clear
CytoView MEA 12	M768-GL1-30Au200	12	64 Gold		Transparent	Clear
CytoView MEA 48 - White	M768-iMEA-48W	48	16 PEDOT		Transparent	White
CytoView MEA 48 - Black	M768-iMEA-48B	48	16 PEDOT		Transparent	Black

LUMOS MEA

The Lumos MEA plates combine the robustness and assay flexibility of a CytoView MEA plate with white walls and a custom optical lid for optimal light delivery in each well

Plate	Cat No.	Wells	Electrodes/ well	Electrode layout*	Bottom	Walls
Lumos MEA 48	M768-iMEA-48OPT	48	16 PEDOT		Transparent	White

* Schematic of well illustrating recording electrodes (blue), grounds (orange), and where present, a large dedicated stimulation (blue, i.e. E-Stim+), and on-plate spotting guides (gray, i.e. AccuSpot and E-Stim+).