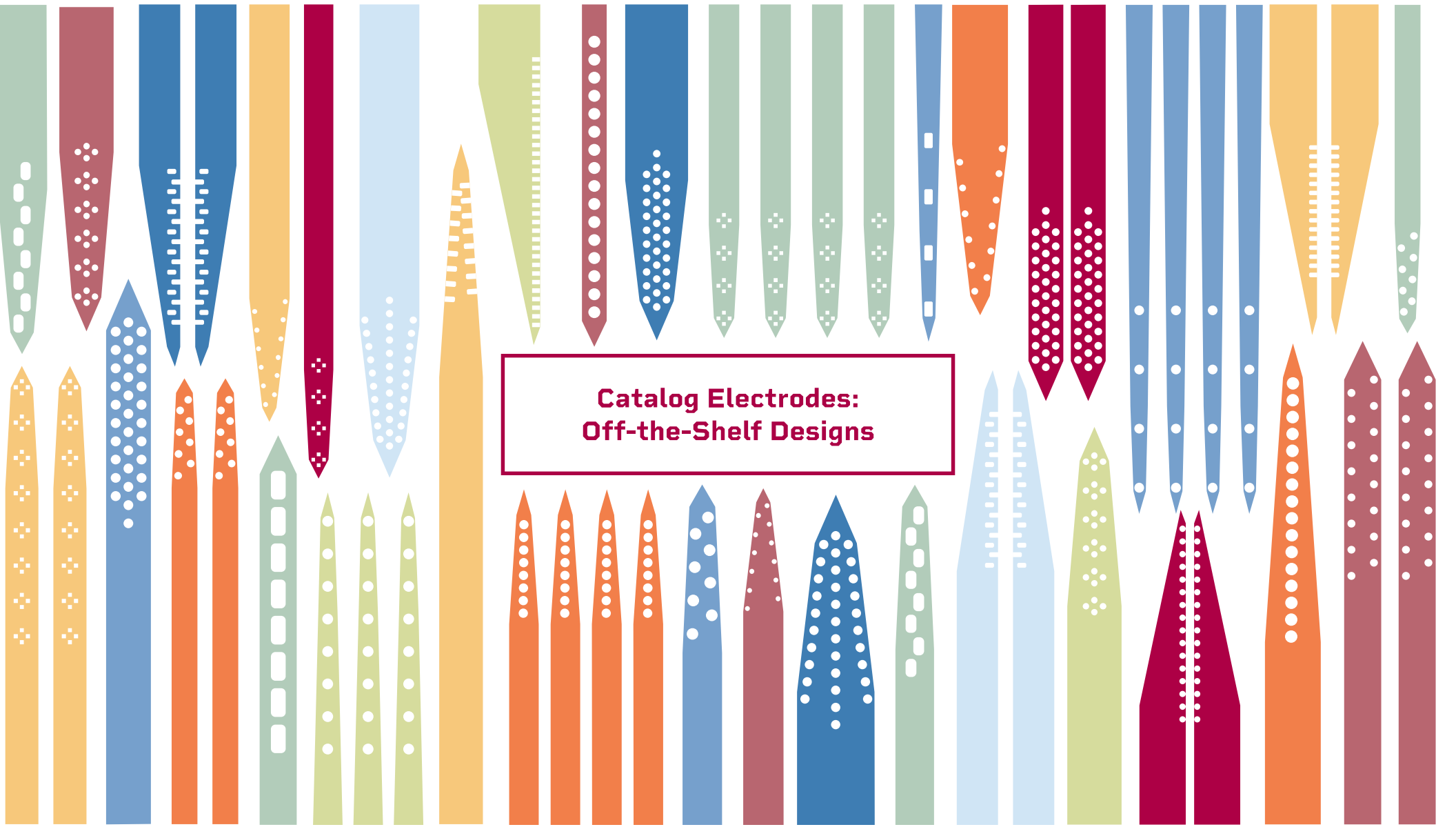
Product Catalog

sales: sales@spikeneuro.com
support: support@spikeneuro.com
phone: +1.734.234.3076
Summer 2025 Revision 5.1

spikeneuro.com
315 E Eisenhower Pkwy.
Suite B09
Ann Arbor, MI 48108 USA

Propel your research

It's not rocket science, finding neuroscience tools to expand your research capabilities should be easy. Spike Neuro provides you with the latest technology in neural probes, multichannel carbon fiber arrays, and surface arrays, along with accessories to support your research. Our Rubide^{tm} Neural Probes combine state-of-the-art MEMS manufacturing with our own proprietary dielectric surface engineering to produce a more durable and reliable neural probe for your electrophysiology research. With years of academic development and validation, we are the first to provide commercial multichannel carbon fiber arrays for electrophysiology and neurochemistry applications. Our flexible surface arrays offer an industry-best thickness and conformity thanks to our unique polyimide layering process. With a wide variety of configurations and connector options, you can incorporate our probes and arrays into your research with plug-and-play ease. Our catalog is constantly growing with new products and configurations, so check in often and do not hesitate to get in touch with us to learn more about the new research tools we are developing.

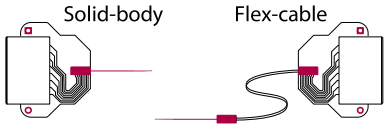

Catalog Electrodes:
Off-the-Shelf Designs

Linear Probe Designs

CONFIGURATION OPTIONS

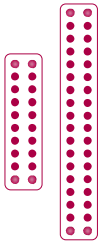
Length:

Style:

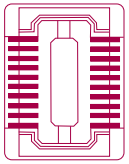


CONNECTOR OPTIONS

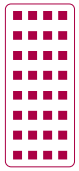
OMNETICS



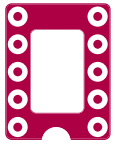
ZIF-Clip



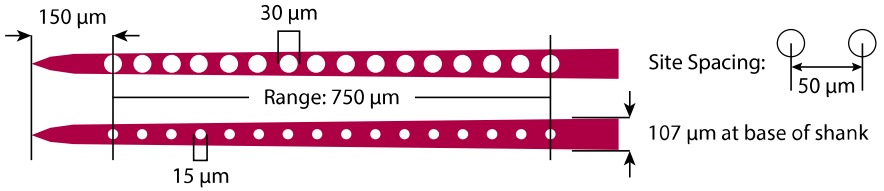
SAMTEC



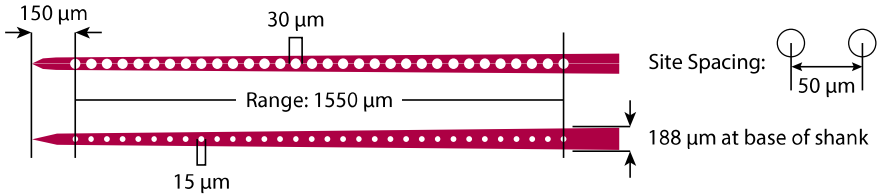
DIP



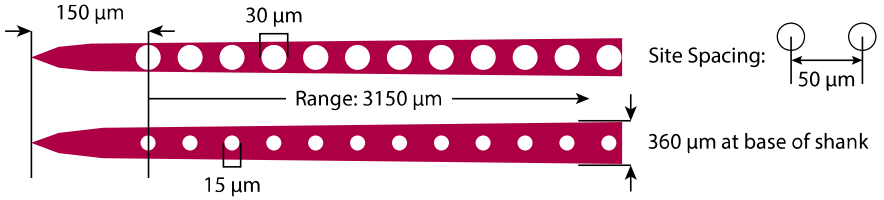
16-CHANNEL



32-CHANNEL



64-CHANNEL



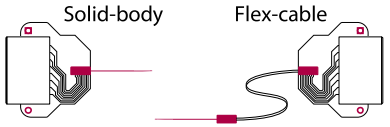
spike neuro

Edge Probe Designs

CONFIGURATION OPTIONS

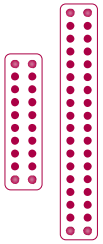
Length:

Style:

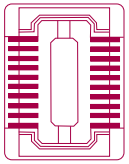


CONNECTOR OPTIONS

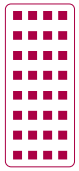
OMNETICS



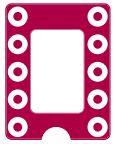
ZIF-Clip



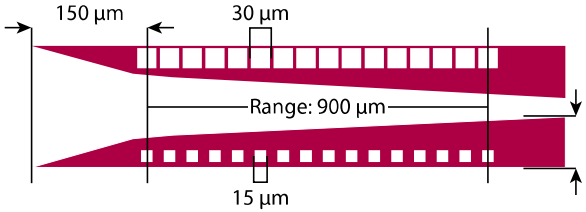
SAMTEC



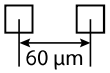
DIP



16-CHANNEL

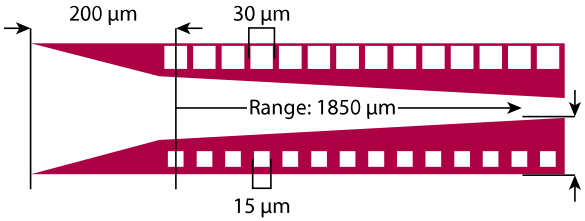


Site Spacing:

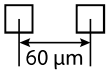


110 µm at base of shank

32-CHANNEL

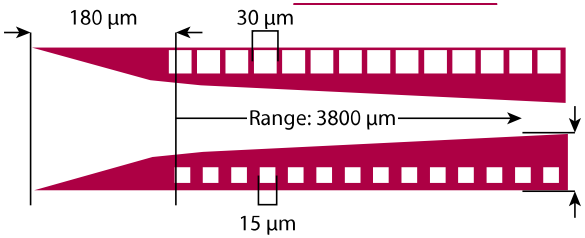


Site Spacing:

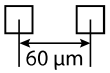


186 µm at base of shank

64-CHANNEL



Site Spacing:



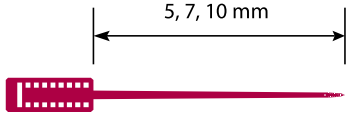
300 µm at base of shank

spike neuro

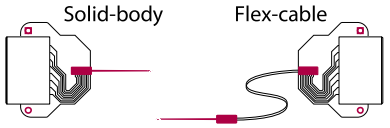
Dual Edge Probe Designs

CONFIGURATION OPTIONS

Length:

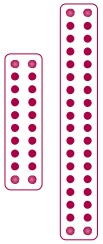


Style:

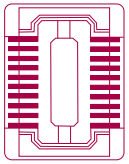


CONNECTOR OPTIONS

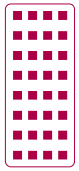
OMNETICS



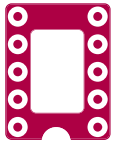
ZIF-Clip



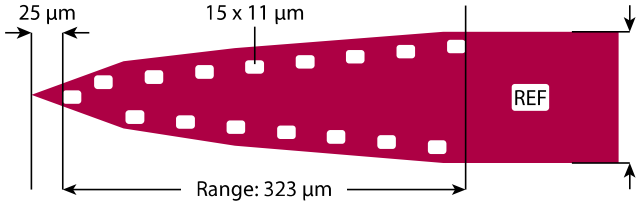
SAMTEC



DIP



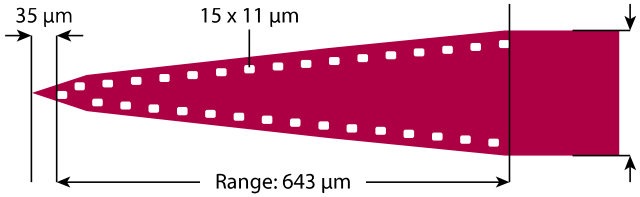
16-CHANNEL



Site Spacing: 40 µm

168 µm at base of shank

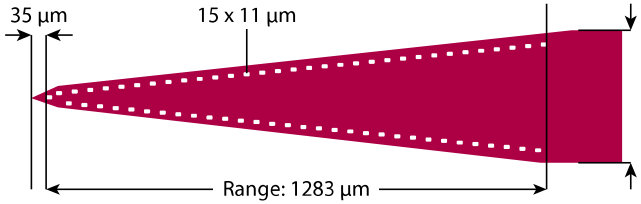
32-CHANNEL



Site Spacing: 40 µm

188 µm at base of shank

64-CHANNEL



Site Spacing: 40 µm

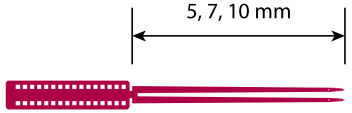
385 µm at base of shank

spike neuro

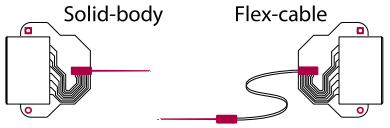
Multi-Shank Dual Edge Probe Designs

CONFIGURATION OPTIONS

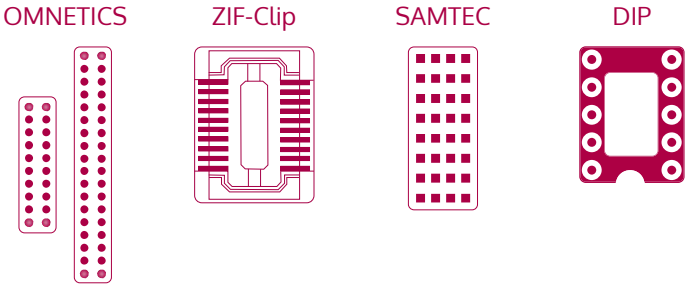
Length:



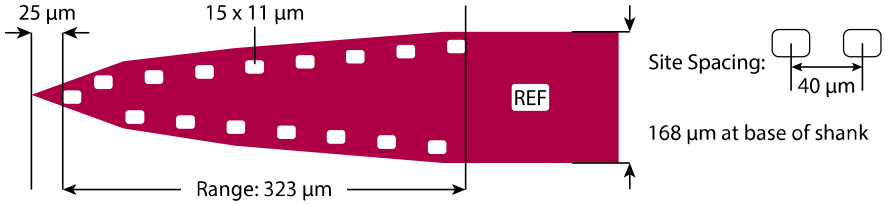
Style:



CONNECTOR OPTIONS

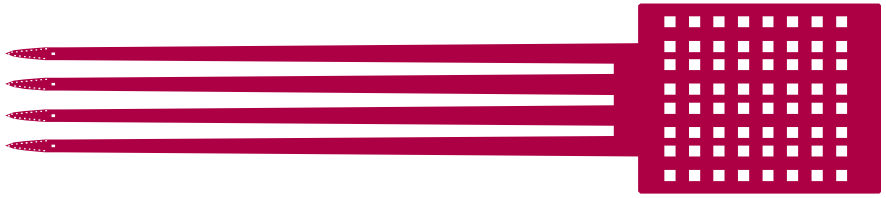


TIP DETAIL



32-CHANNEL (2x16)

64-CHANNEL (4x16)



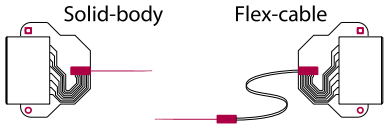
spike neuro

Offset Probe Designs

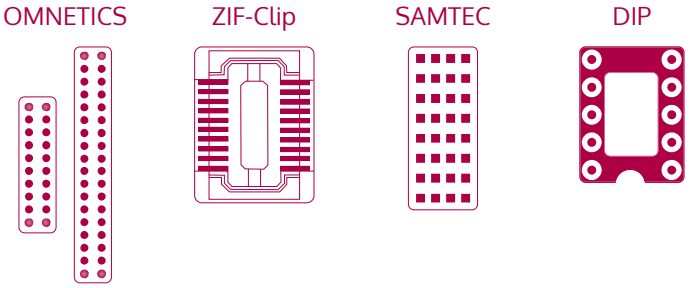
CONFIGURATION OPTIONS

Length:

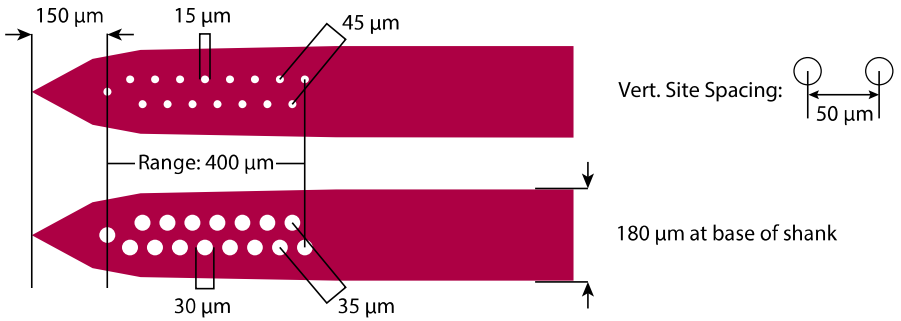
Style:



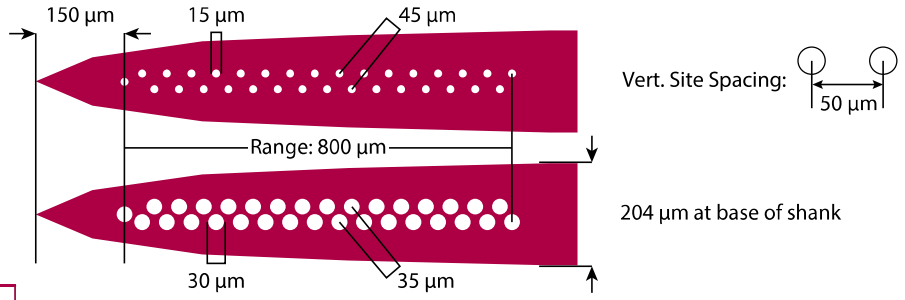
CONNECTOR OPTIONS



16-CHANNEL



32-CHANNEL

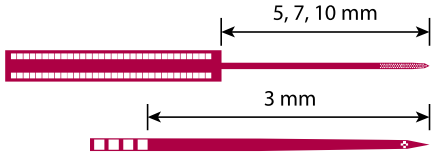


spike neuro

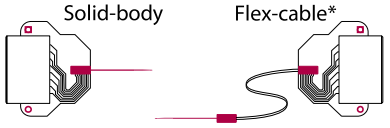
Offset (64) & Tetrode Probe Designs

CONFIGURATION OPTIONS

Length:



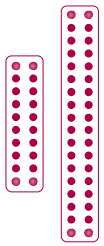
Style:



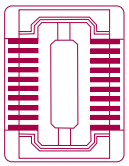
*Not Available for Tetrodes

CONNECTOR OPTIONS

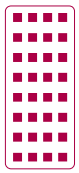
OMNETICS



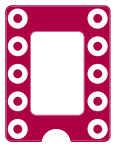
ZIF-Clip



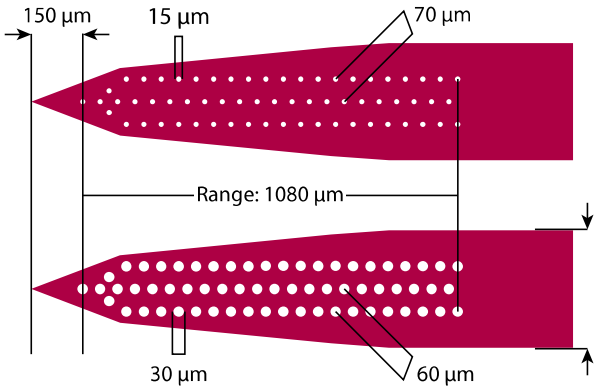
SAMTEC



DIP



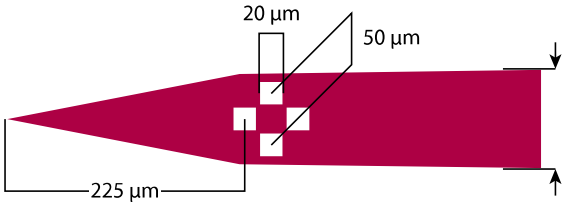
OFFSET (64-CH)



Vert. Site Spacing: 50 µm

330 µm at base of shank

TETRODE (4-CH)



Vert. Site Spacing: 50 µm

130 µm at base of shank

spike neuro


New in 2025!
Carbon Fiber Arrays

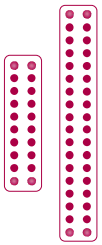
High-Density Carbon Fiber Arrays

For Electrophysiology and FSCV

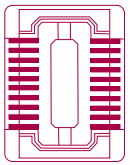
Originally developed in the Chestek Lab at the University of Michigan, these 16-channel high-density carbon fiber (HDCF) arrays are now available from Spike Neuro!

CONNECTOR OPTIONS

OMNETICS

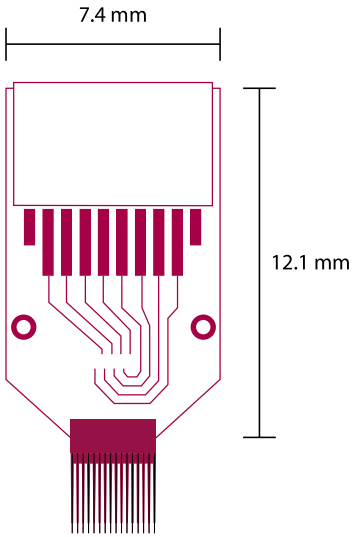


ZIF-Clip

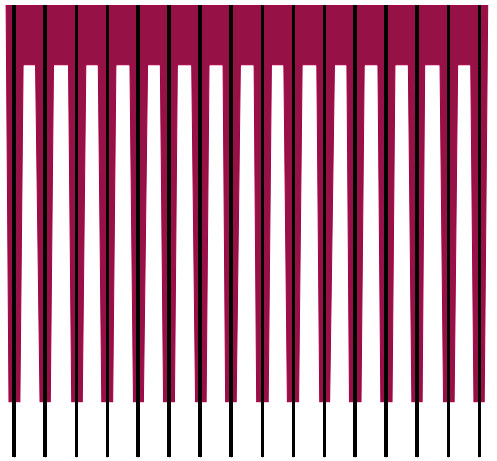


OPTIONS FOR TIP FUNCTIONALIZATION

- Laser Cut
- Laser Ablation
- PtIr Coating



ARRAY DETAIL



Silicon Supports
Permanent mechanical support during insertion.

Available in 3, 6, and 9 mm.

Carbon Fiber Tips
Fiber diameter: 6.8 µm
Cut to length: 100-300 µm

Silicon Length	Array Pitch
3 mm	80 um
6 mm	100 um
9 mm	120 um

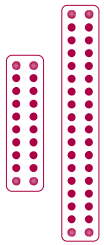
spike neuro

Carbon Fiber Arrays

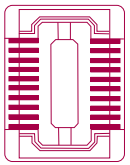
16-channel carbon fiber arrays for electrophysiology and FSCV applications.

CONNECTOR OPTIONS

OMNETICS

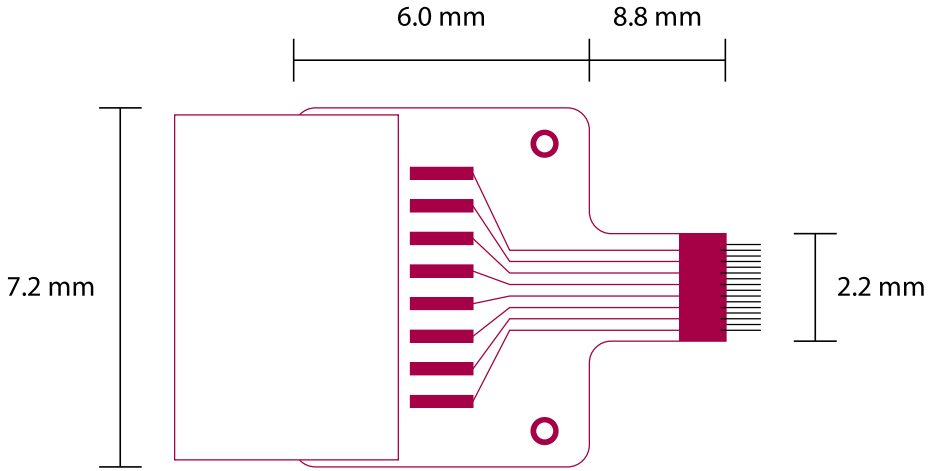


ZIF-Clip



OPTIONS FOR TIP FUNCTIONALIZATION

- Laser Cut
- Laser Ablation
- PtIr Coating



Carbon Fibers

Mounted directly to PCB

- Odd channels on the front
- Even channels on the back

Fiber diameter: 6.8 µm
Cut to length: up to 100 µm

Array Pitch

200 µm

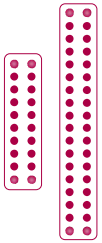
spike neuro


ECoG Surface Arrays

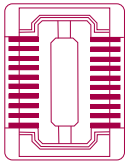
ECoG Designs

CONNECTOR OPTIONS

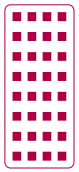
OMNETICS



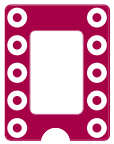
ZIF-Clip



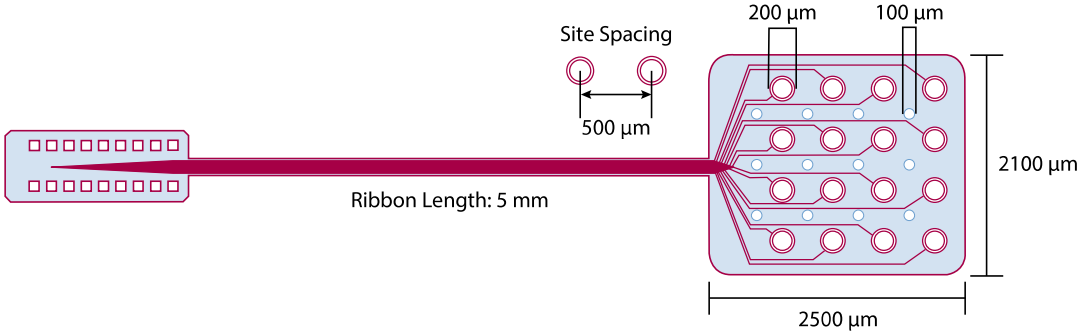
SAMTEC



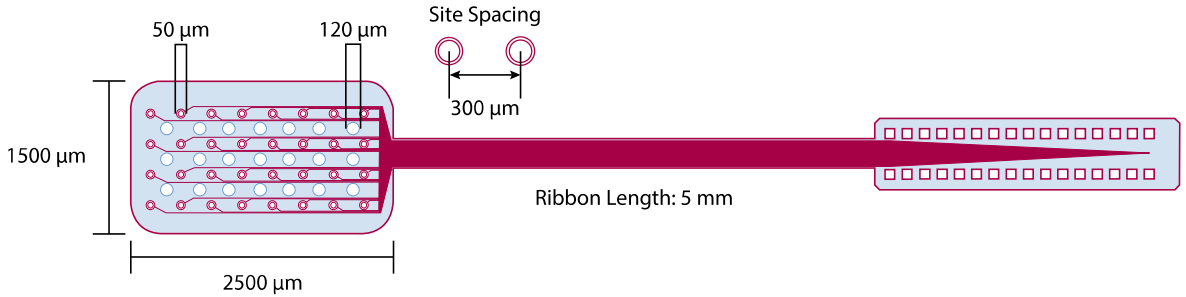
DIP



16-CHANNEL



32-CHANNEL



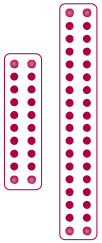
spike neuro

Depth ECoG

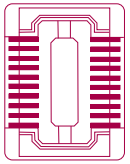
Specially designed for simultaneous recording of surface and deep neural activity. Featuring radial contacts and a 500 um central opening for insertion of a penetrating probe.

CONNECTOR OPTIONS

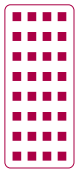
OMNETICS



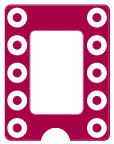
ZIF-Clip



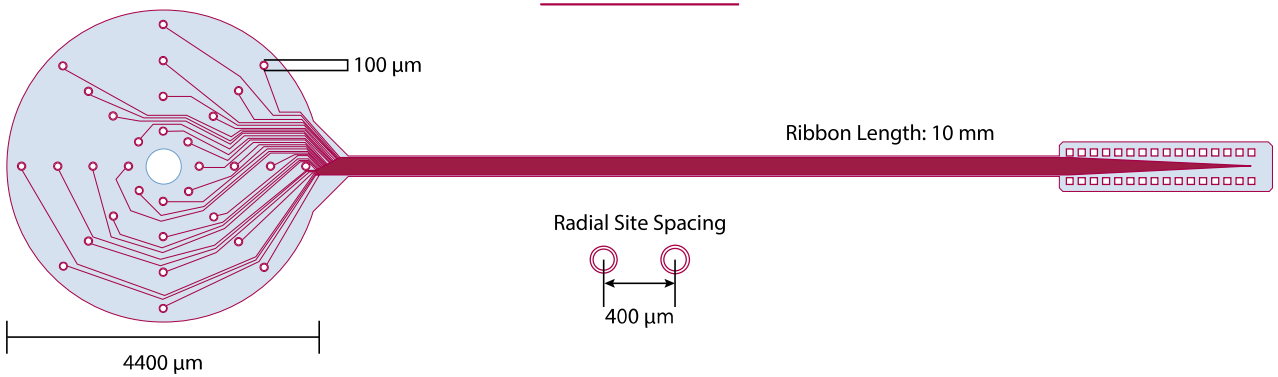
SAMTEC



DIP



32-CHANNEL

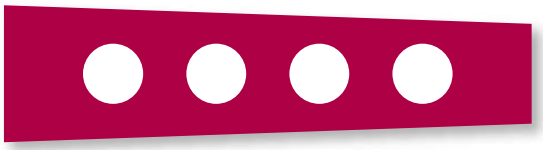


spike neuro


Custom Electrodes:
Endless Design Possibilities

Choose your: Electrodes

Shape



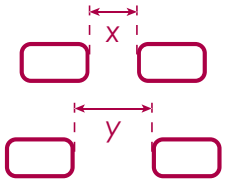
circles

rectangles

ticks

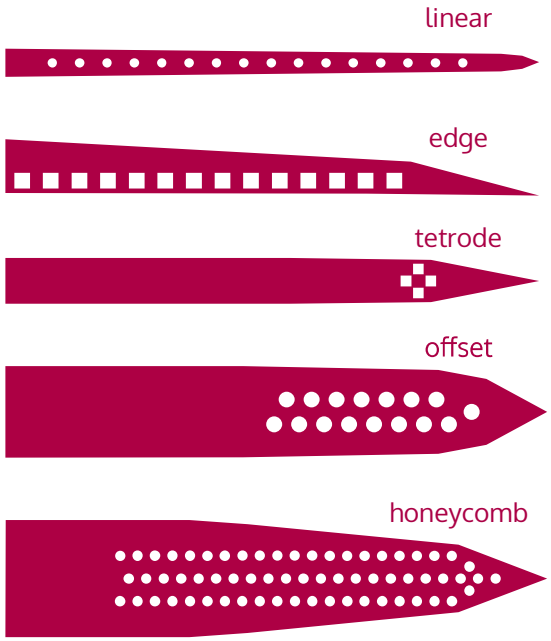
Size

Spacing

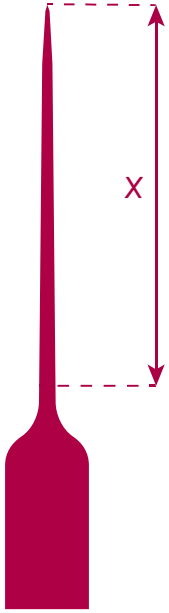


Choose your: Shanks

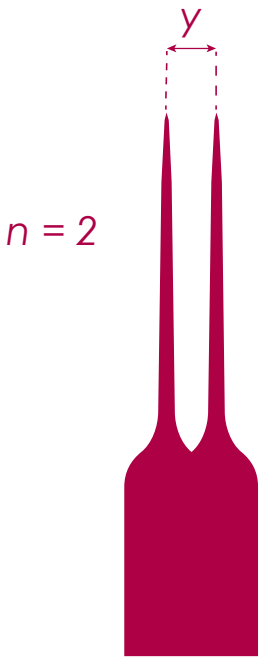
Contact Pattern



Length



Number & Spacing

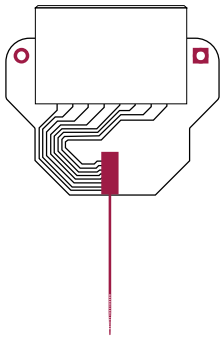


spike neuro

Choose Your: Probe Configuration

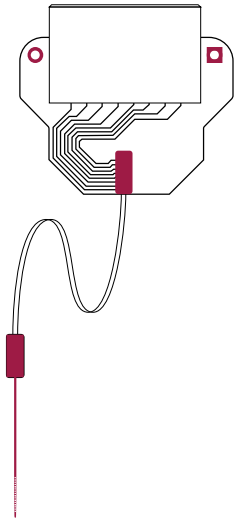
Solid-Body

Probe and connector are bonded directly to the electrode interface board.



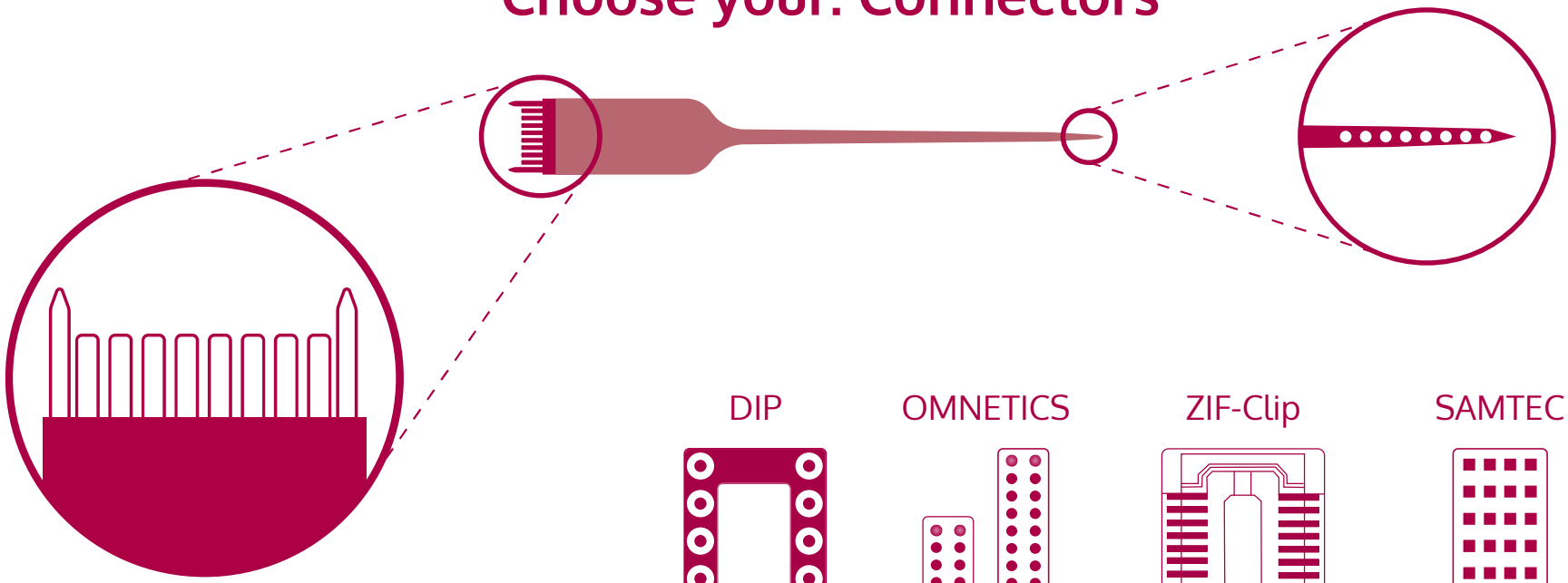
Flex-Cable

Probe and connector are separated by a flexible polyimide cable (22, 44, 66, 88, or 110 mm)



spike neuro

Choose your: Connectors



spike neuro

Customization Form

Customer Name _____
Lab Name _____
Institution _____
Animal Model _____
Experiment Duration _____

Use the space below to tell us more about your neurotech needs. Feel free to sketch out the electrodes you would like to commission too!

Site quantity (≤ 128): _____
Shank quantity (1 - 4): _____
Sites per shank: _____
Probe thickness (µm): **15 / 50**
Polyimide cable: **Y / N**

Site shape (select one):
circ. / rect. / tick / custom
Site dia/dim (µm): _____
Site spacing (≥ 15µm): _____
Cable length (mm): **22 / 44 / 66 / 88 / 110 / custom**

Contact pattern: _____
Shank length (≤ 150 mm): _____
Shank spacing (< 5 mm): _____
Shank reference: **Y / N**

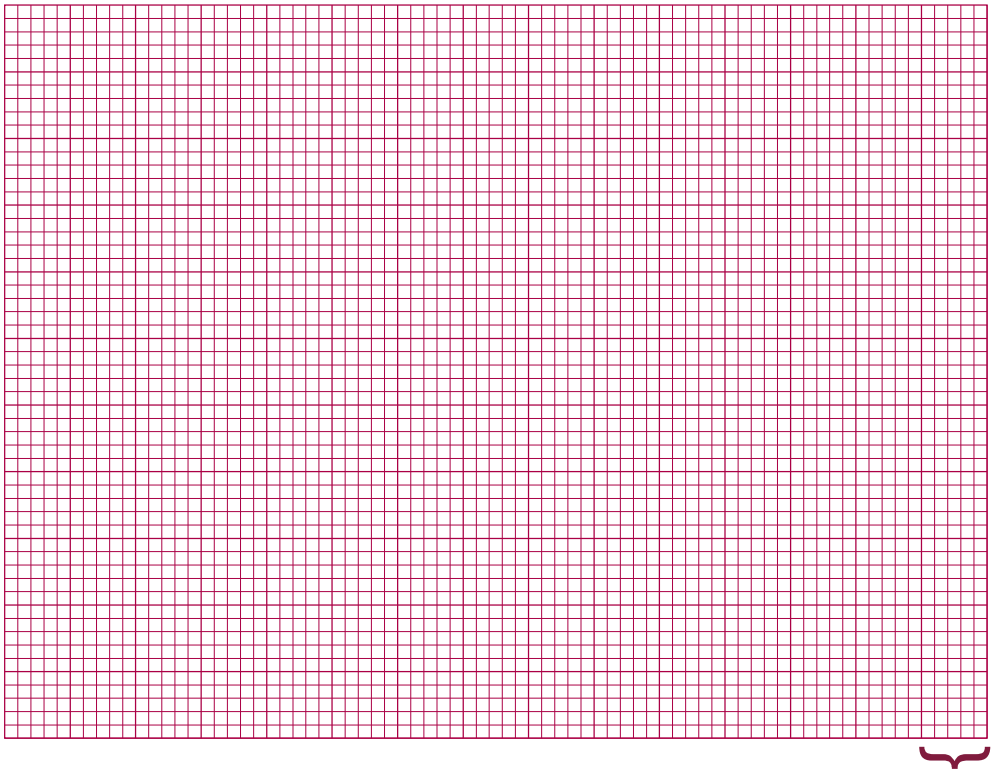
Further details:

_____

_____

_____

_____



_____ mm

spike neuro

Probe Accessories:

Spike Neuro has a range of probe and ephys accessories to support your research. For experiments requiring the accuracy and chronic stabilization only a microdrive can provide, look no further than the Spike Neuro miDrive.

For one stop shopping for your other research needs, we are proud to partner with industry leaders to distribute the White Matter NanoZ impedance tester and the AlphaComm-I line of commutators from Alpha Omega.

The miDrive

Providing precise probe depth control for probe implantation and chronic experiments in freely behaving animals

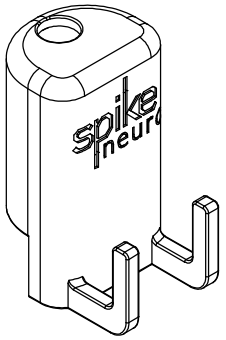
Fine Turn Resolution
~100 micron per 1/4 turn

Sized For Your Research
The miDrive has 3 size options to best fit your animal model. The 3 mm miDrive is recommended for mice with larger sizes appropriate for larger animal models.

Protect Your Probe
The miDrive enhances stability and protects your implant site throughout the course of your experiment.

User Friendly Implantation
The miDrive can come preloaded with our Rubide Neural Probes to simplify your implant procedure and ensure precise placement

5-in-1 Bundle
- 5x miDrive bases (choice of sizes)
- 5x Electrode mounts
- 5x Frames
- 5x Basket connectors
- 1x Screwdriver
- Discount on Rubide™ probes



Training Kit
- Choice of miDrive base
- Electrode mount
- Frame
- Basket connector
- Practice probe
- Screwdriver

Technical Specifications

miDrive Size	Small	Medium	Large
Drive Range	3 mm	6 mm	9 mm
Base Dim. (W x D x H)	13 x 6.1 x 19 mm	13 x 7 x 19 mm	13 x 8 x 19 mm
Turn Resolution	100 µm per 1/4 turn	100 µm per 1/4 turn	100 µm per 1/4 turn
Drive Mechanism	Screw	Screw	Screw

spike neuro

The nanoZ™

Automatic impedance testing and electroplating

Verify the integrity of your neural probes. Testing 64 channels takes just 30 seconds. Effortlessly electroplate your electrode array to a precise target impedance.

Compatible with any electrode array

The nanoZ tests the impedance and quality of any electrode, including high impedance single unit electrodes, tetrodes and silicon electrode arrays with up to 64 channels.
Adaptors available for Omnetics, Millmax, Molex and ZIF connectors.

Ready to use straight from the box

Simply plug the nanoZ into the computer, install the software suite, and you're ready to go.

What's in the Box?

- nanoZ device
- USB 2.0 cable
- NZA-DIP16 adaptor
- NZ-CAL test adaptor
- 3-pin to alligator clip cable
- Retort stand adaptor and clamp

Technical Specifications

Channels	64
Measurement Range	10kΩ – 100MΩ
Z Test Accuracy	± 1% (10kΩ – 15MΩ)
Z Test Frequency	1Hz – 5kHz
Z Test Current	< 1.4 nA RMS (50pA max bias)
Z Test Signals	Sinusoid, m-sequence for impedance spectra
Electroplate Modes	Galvanostatic or Potentiostatic, DC and AC
Electroplate Range	±12uA, ±5V
Electroplate Resolution	5nA, 10mV
PC Interface	USB 2.0 mini-B
Dimensions	3.2 × 2.8 × 0.47 inches (81 × 70 × 12 mm), anodized aluminum

spike neuro

AlphaComm-I Commutators

The AlphaComm-I line of motorized commutators are compatible with Intan-based acquisition systems and offer a solution for neural modulation in freely moving animal experiments.

Tangles Tackled

AlphaComm-I is a motorized slip ring commutator that detects the torque from the cable connected to the subject and induces an opposite one to eliminate the tangling while the animal moves in the arena.

Full Control

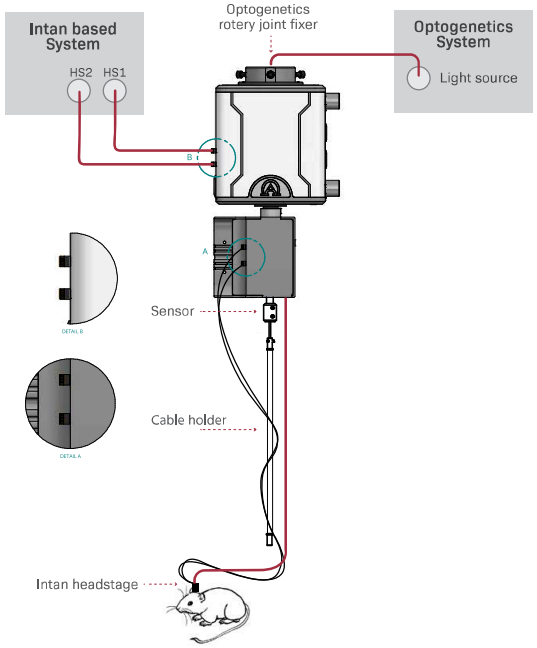
AlphaComm-I allows full personal adaptation to the animal's movement and size, therefore producing a high-quality signal. This is attributed to the ability to fully control the sensitivity and velocity of the motor, and to eliminate signal noises that are caused by undesired animal movements.

Stim-Ready

AlphaComm-I supports both neural recording and electrical stimulation. It's also compatible with a wide range of optogenetics third party systems.

Ultra-Quiet

AlphaComm-I ensures an ultra-quiet environment for recording due to superior electrical shielding. The commutator is powered by a Lithium-ion battery that lasts at least 6 hours on one charge. It charges by DC 5V power. No computer interface is required for operation.



Features and benefits

- Supports 16-256 channel
- High resolution sensing - Suitable for small animals with very low torque such as mice
- Controllable speed and sensitivity
- Compatible with optogenetics & liquid tubes
- Compatible with variety of arena sizes and shapes
- Compatible with all Intan Headstages
- Additional 10 general purpose wires (sensors/external stimulator)
- Flexible mounting option suitable for any electrophysiology setup

Commutator is ideal for:

- Free moving rodents
- Long session experiments
- Recording and stimulation (electrical/optical)
- Advanced electrophysiology setups with external connections (liquid tubes/sensors)

spike neuro

Contact

sales:	sales@spikeneuro.com
support:	support@spikeneuro.com
phone:	+1.734.234.3076

sales@spikeneuro.com | www.spikeneuro.com | +1.734.234.3076