



Product Catalog

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Fall 2023 Revision 3

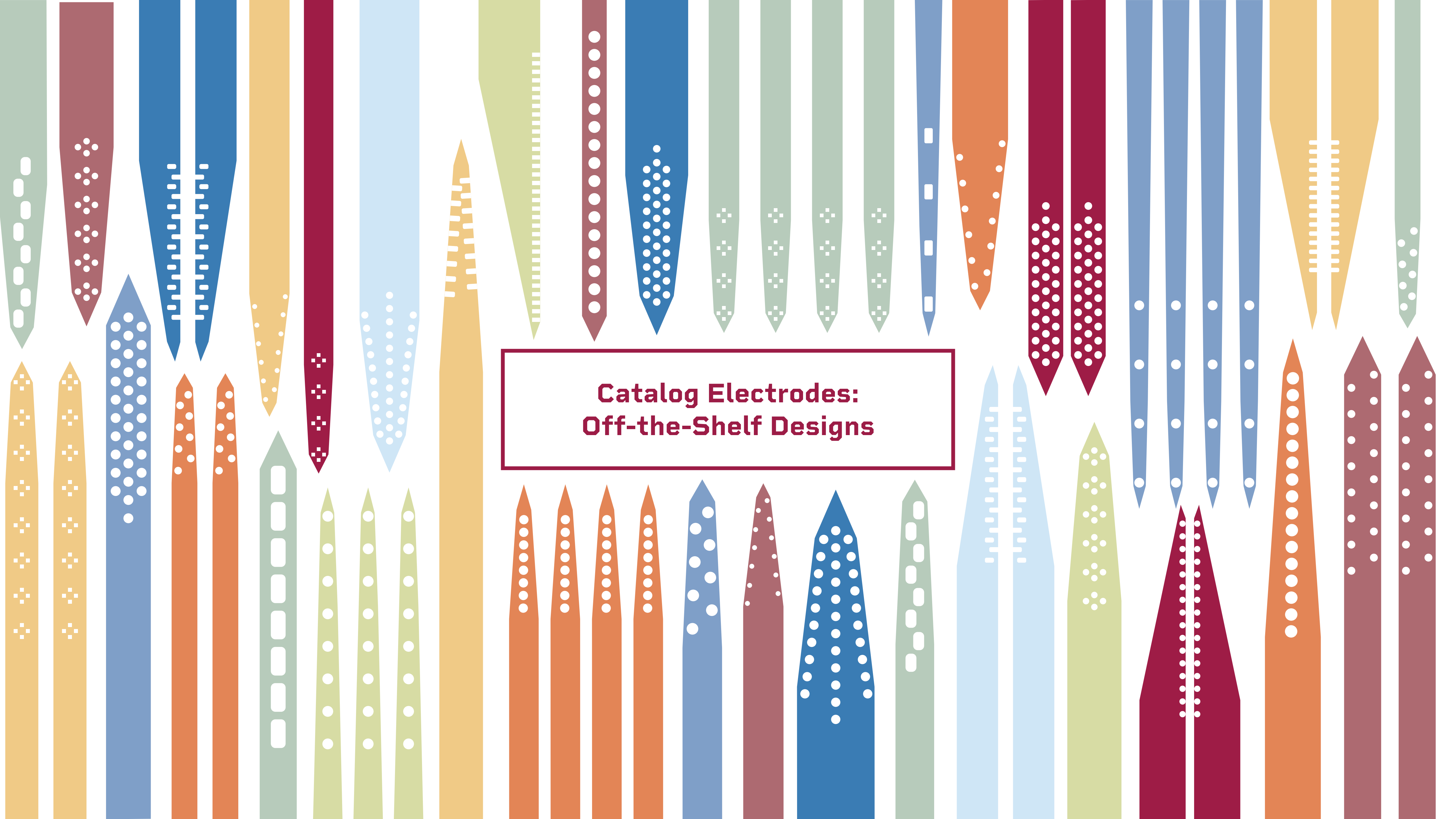
spikeneuro.com
330 E Liberty St.
Lower Level
Ann Arbor, MI 48104 USA



Propel your research

It's not rocket science, finding neuroscience tools based on the latest research should be easy. Spike Neuro provides you with the latest in neural probe and surface array technology along with accessories to support your research. Our Rubide™ 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. Our unique polyimide layering process produces flexible surface arrays with an industry-best thickness of only 8 μm . 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.

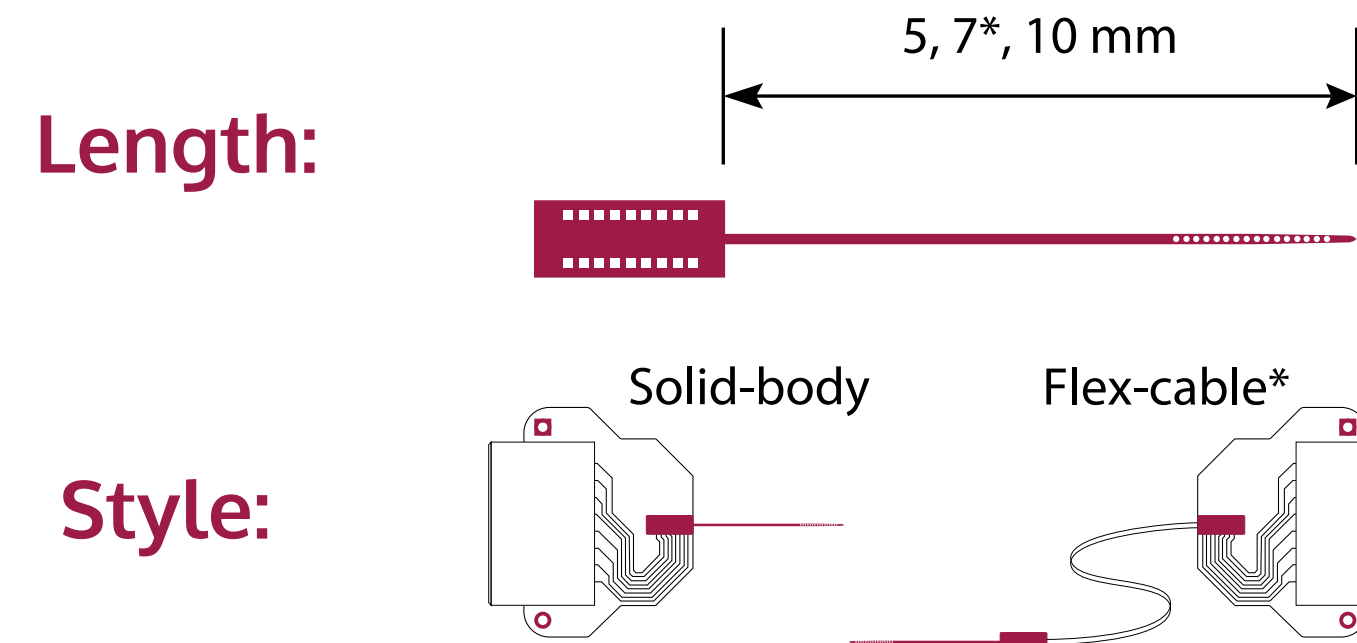




**Catalog Electrodes:
Off-the-Shelf Designs**

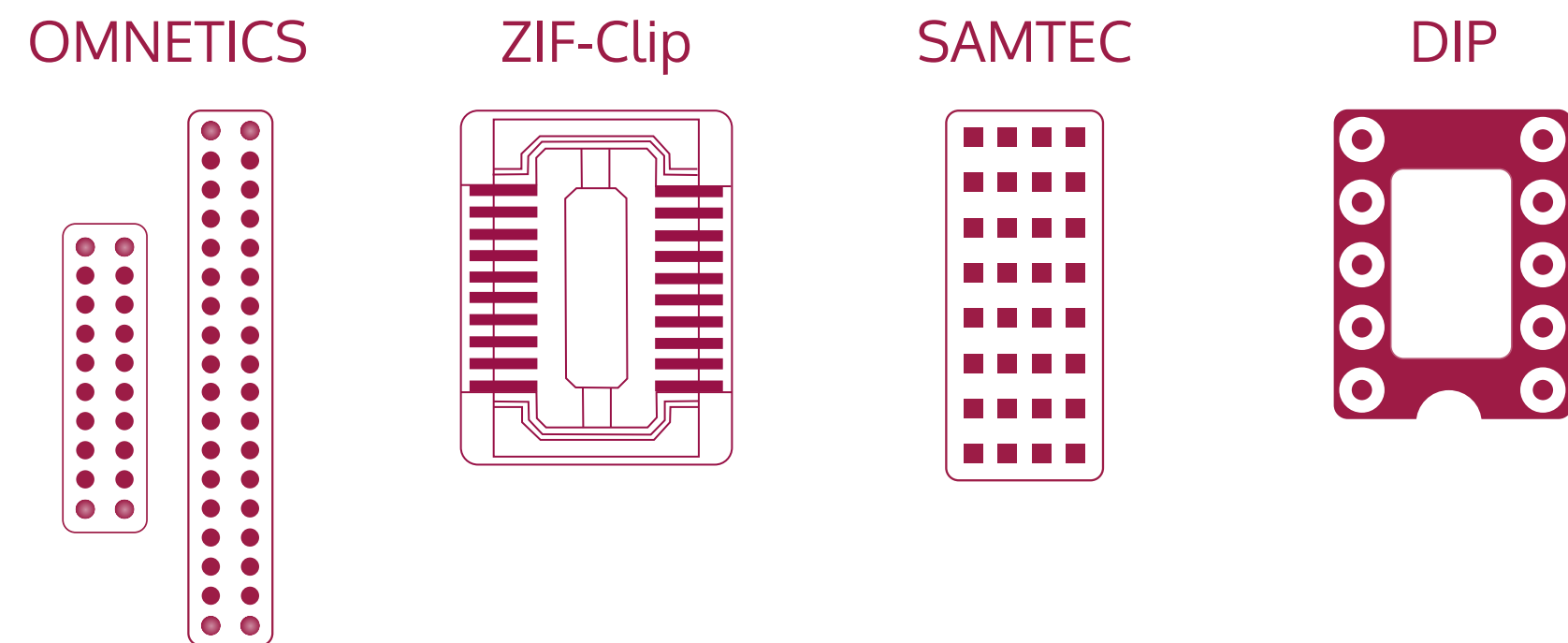
Linear Probe Designs

CONFIGURATION OPTIONS

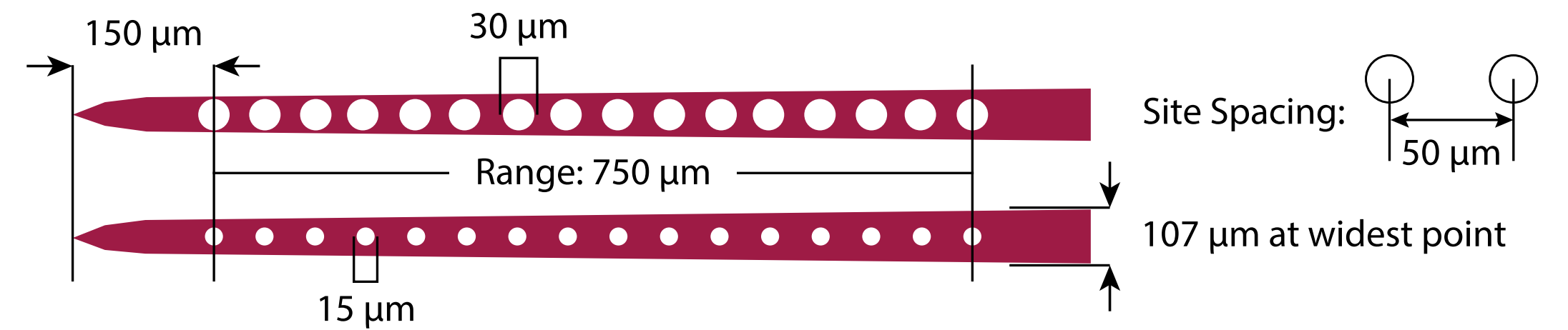


*Currently available for 16 & 32-ch only

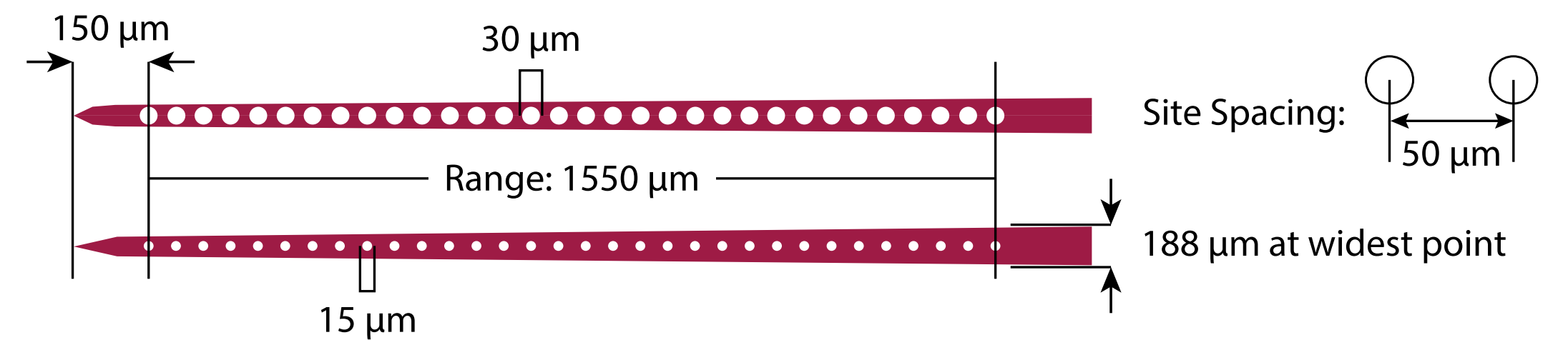
CONNECTOR OPTIONS



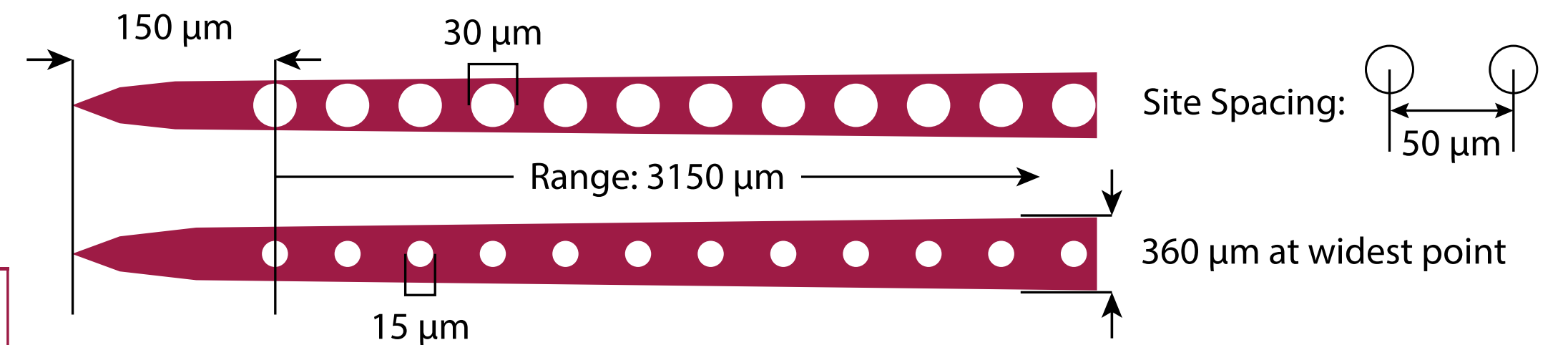
16-CHANNEL



32-CHANNEL

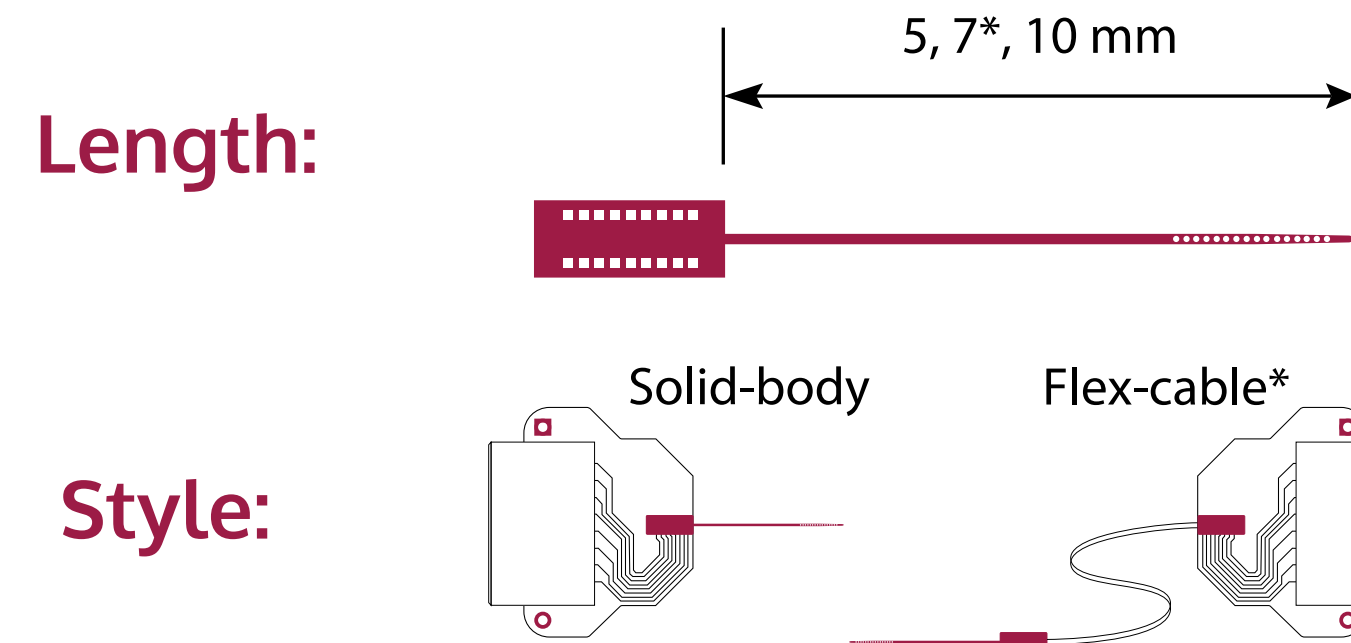


64-CHANNEL



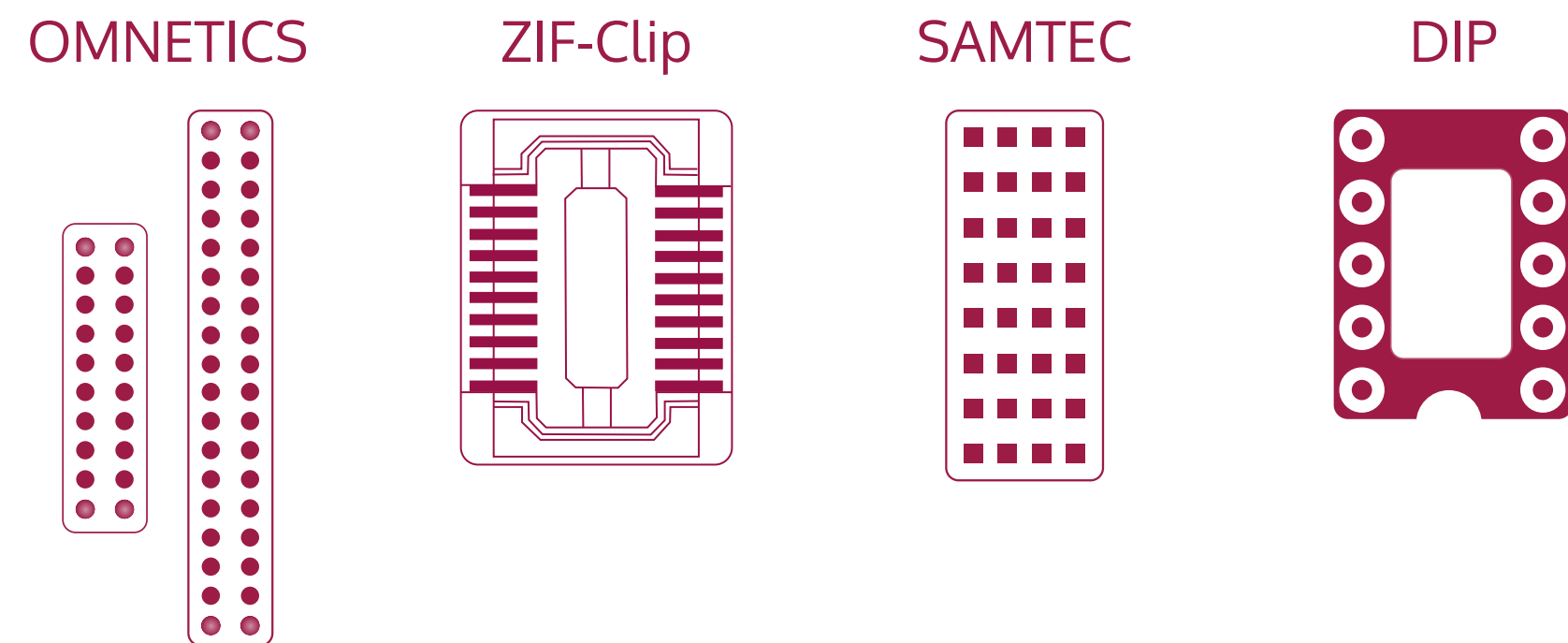
Edge Probe Designs

CONFIGURATION OPTIONS

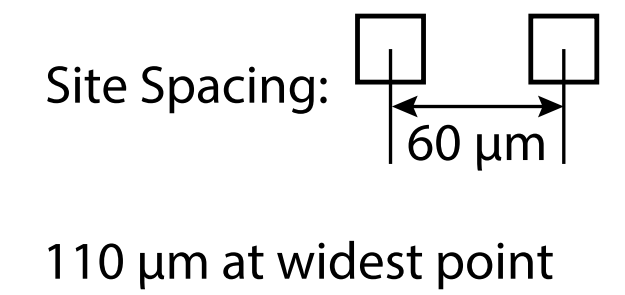
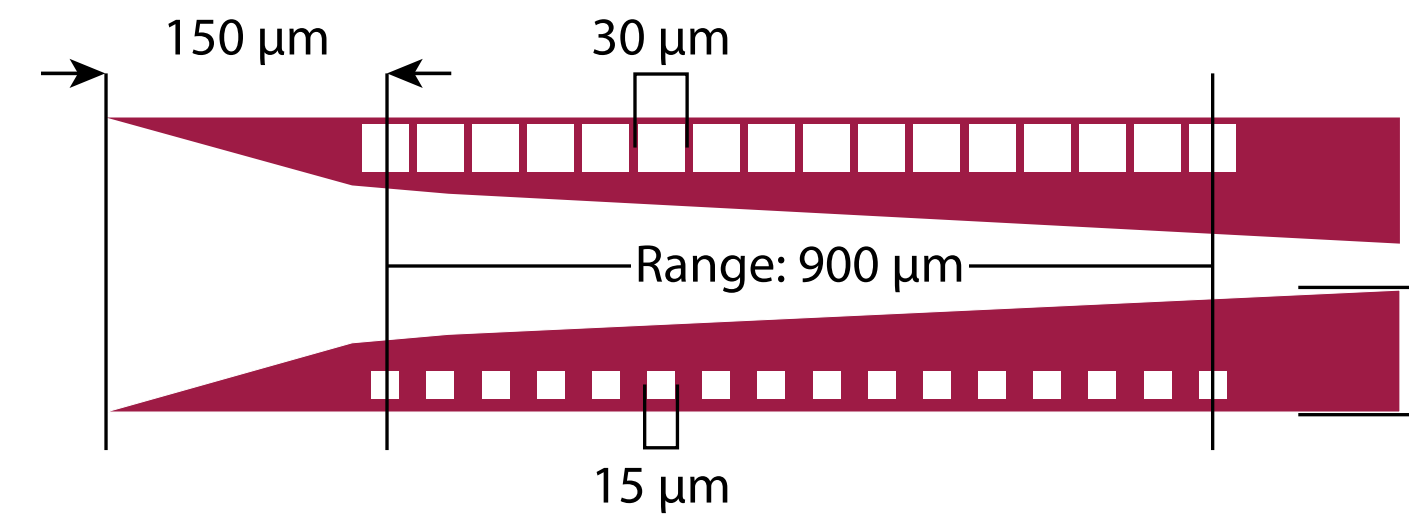


*Currently available for 16 & 32-ch only

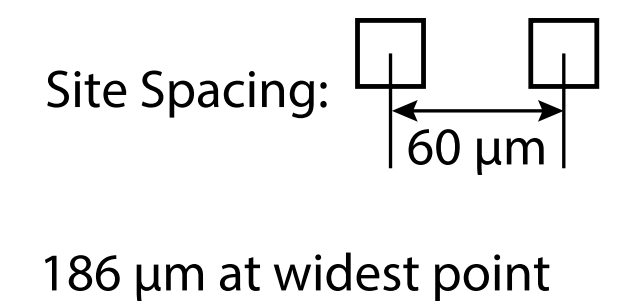
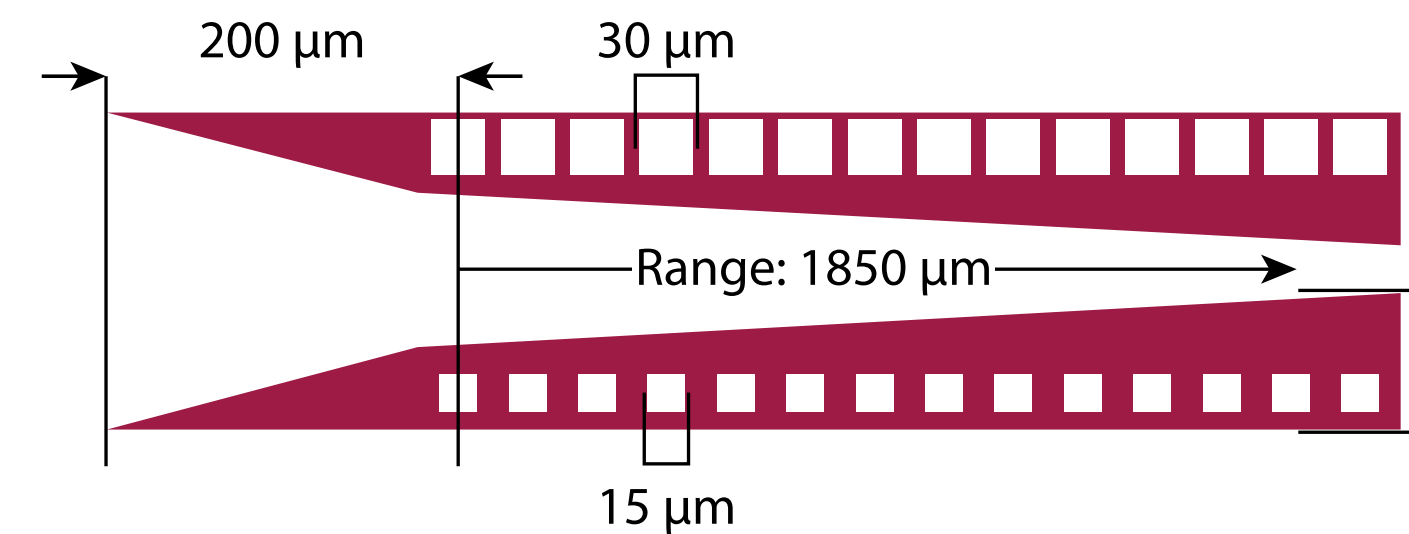
CONNECTOR OPTIONS



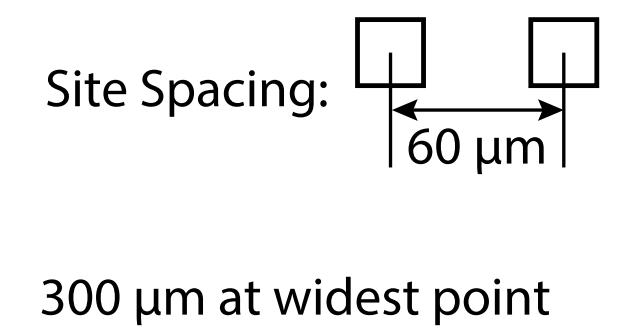
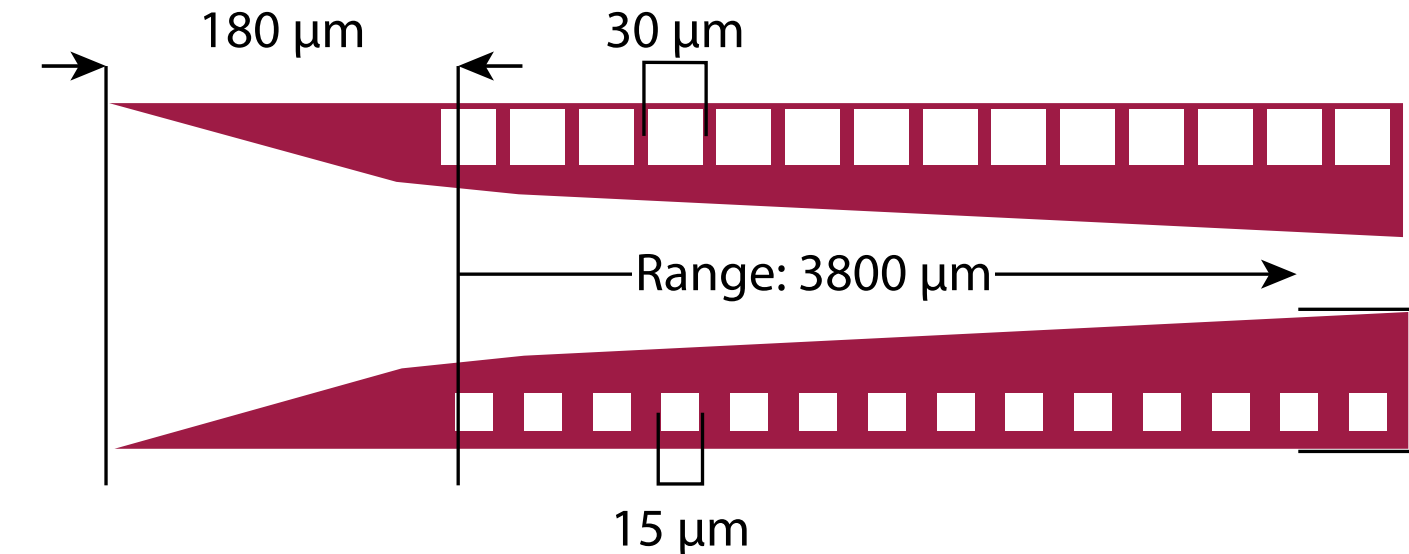
16-CHANNEL



32-CHANNEL

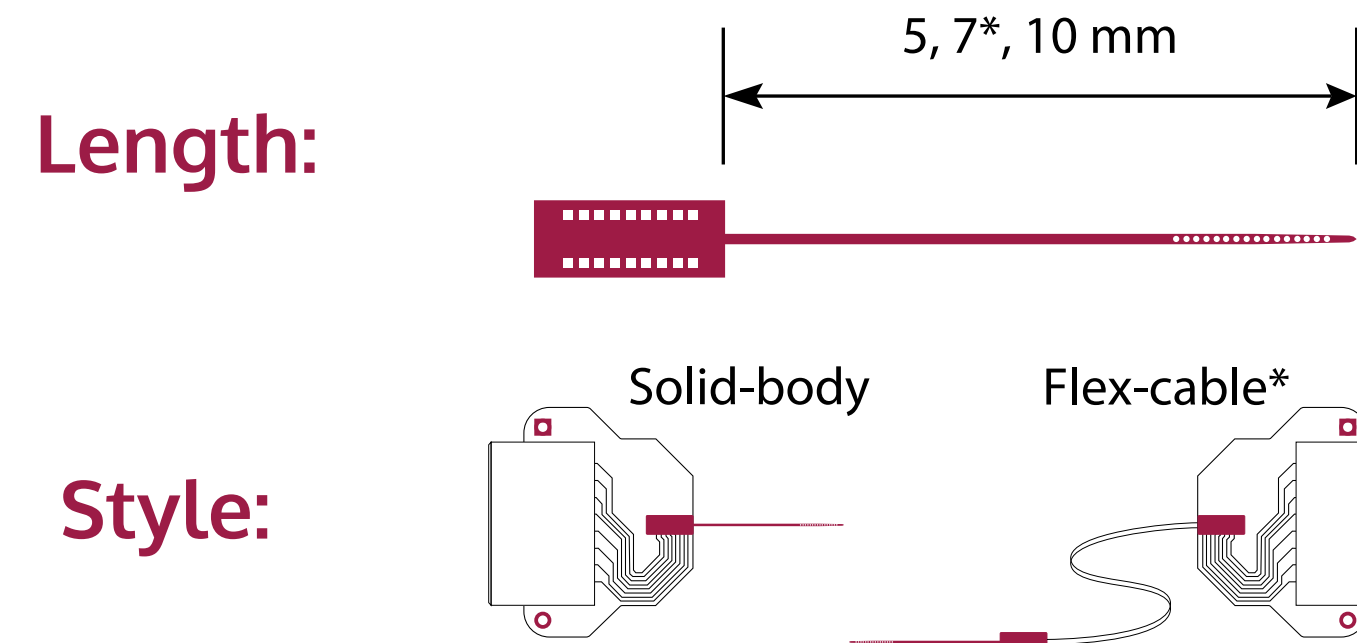


64-CHANNEL



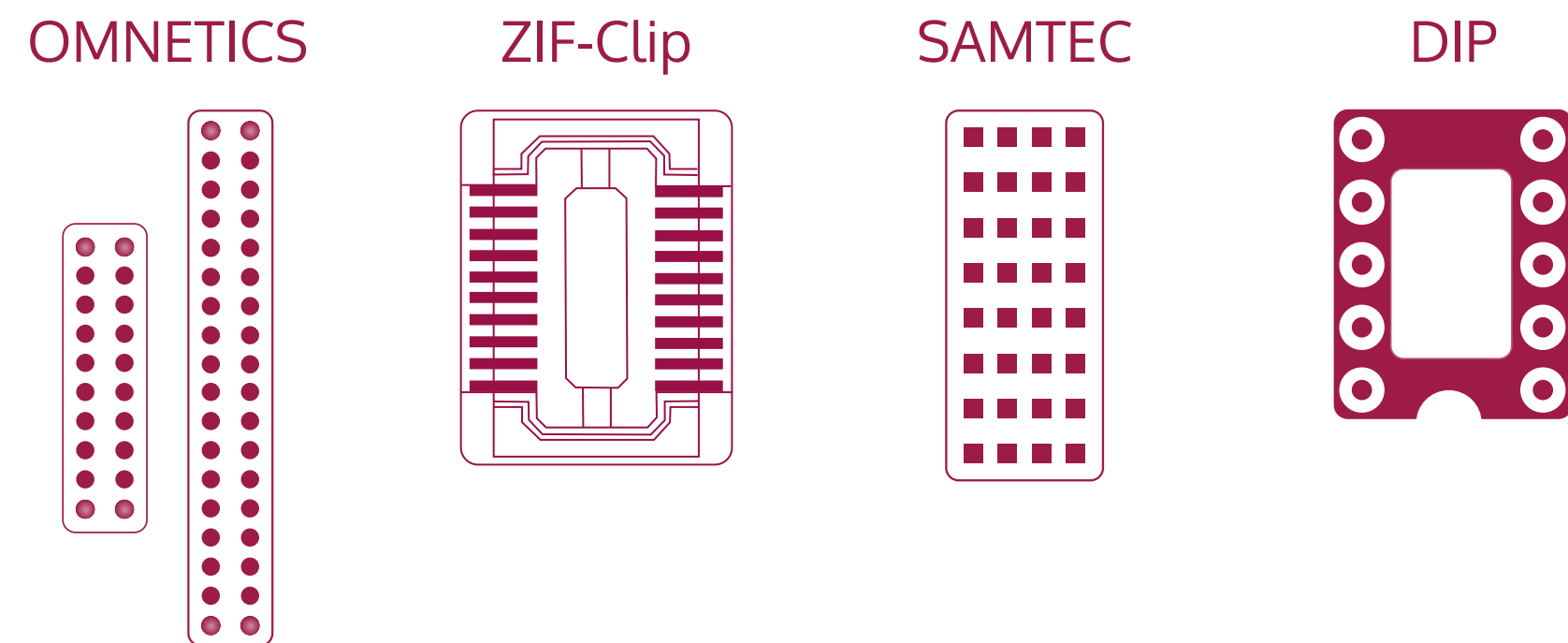
Offset Probe Designs

CONFIGURATION OPTIONS

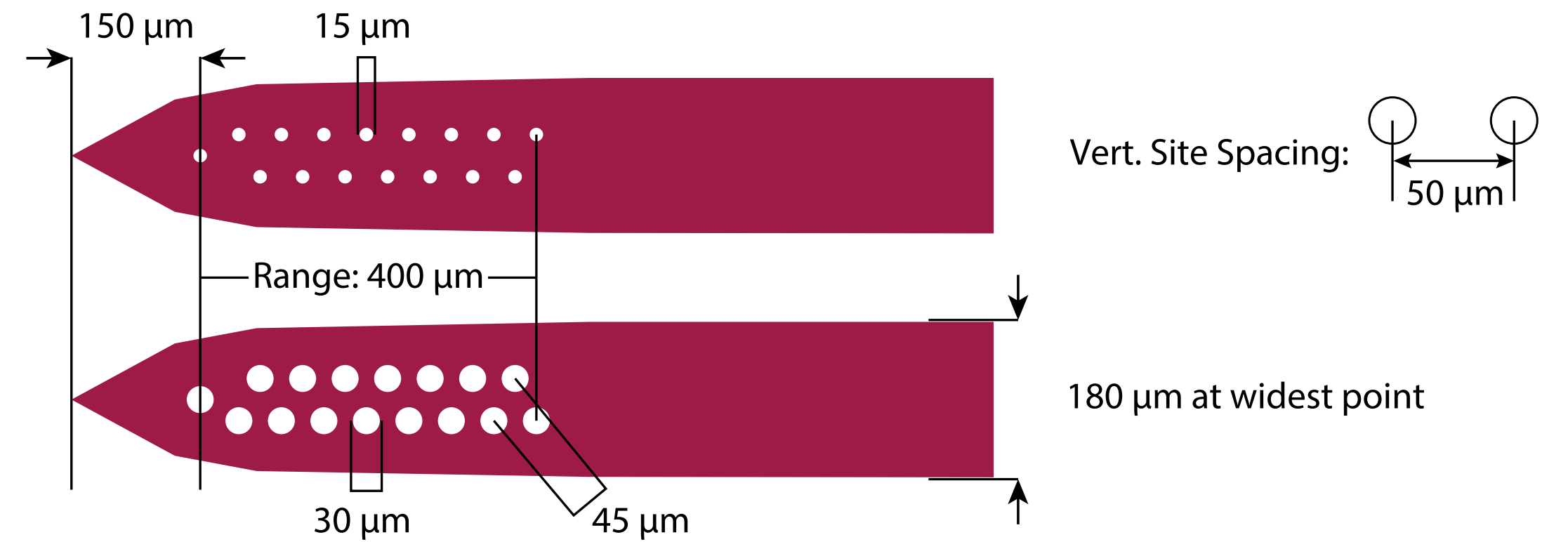


*Currently available for 16 & 32-ch only

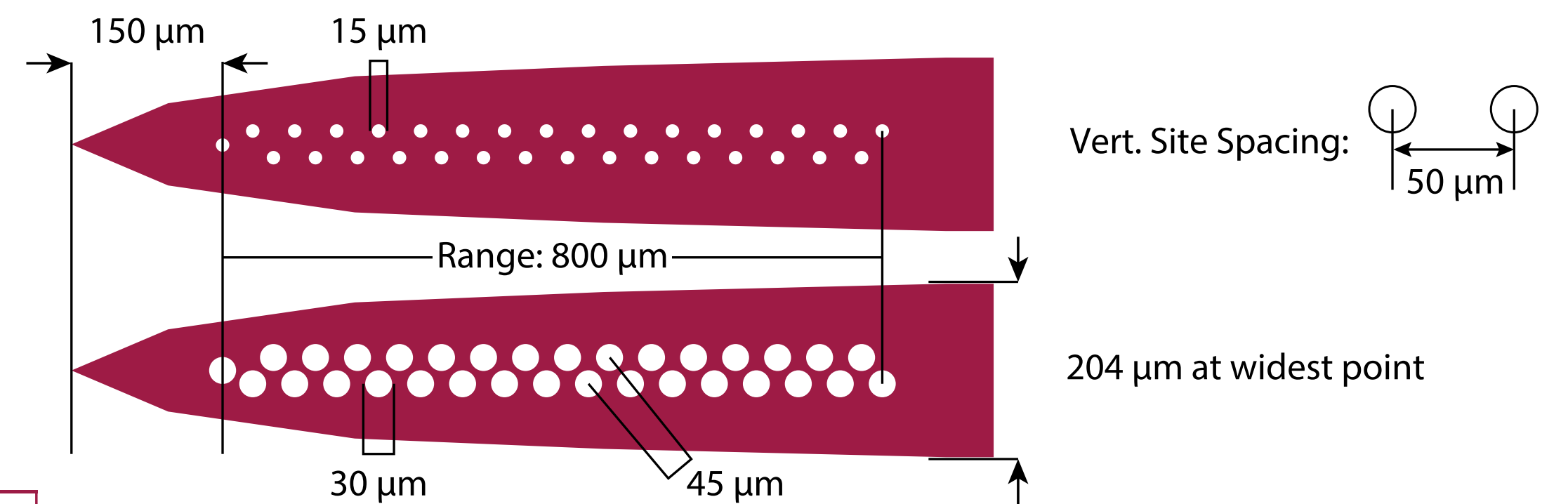
CONNECTOR OPTIONS



16-CHANNEL

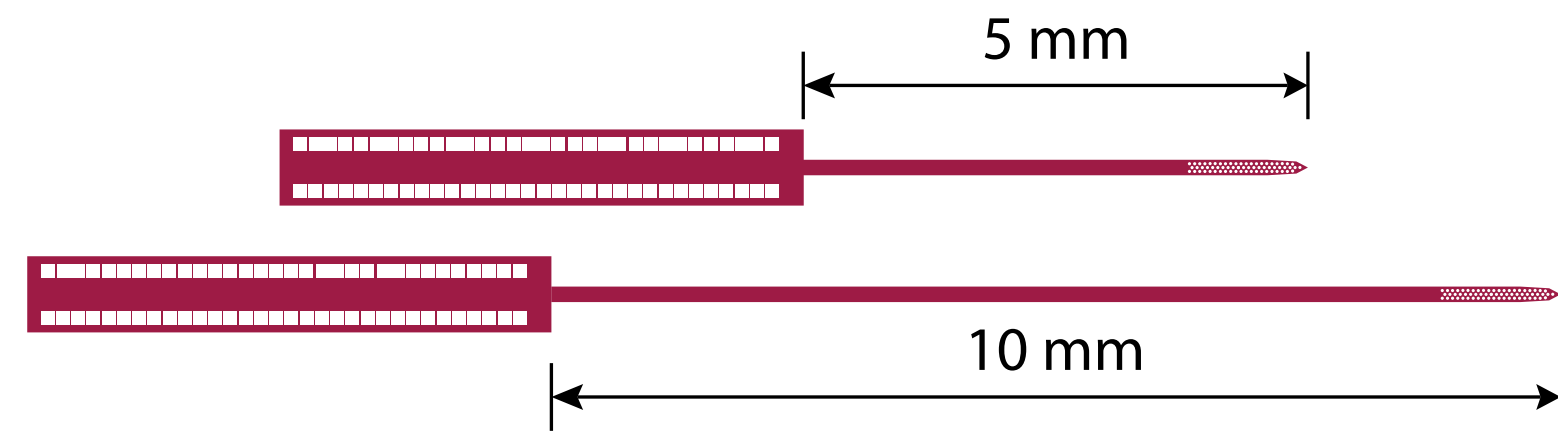


32-CHANNEL



Honeycomb & Tetrode Probe Designs

LENGTH OPTIONS (64-CH ONLY)

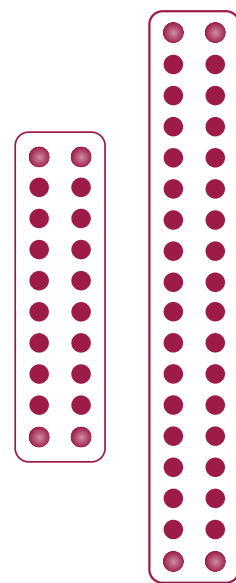


TETRODE LENGTH:

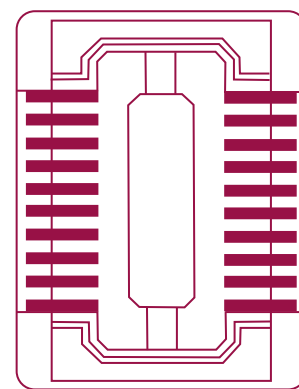


CONNECTOR OPTIONS

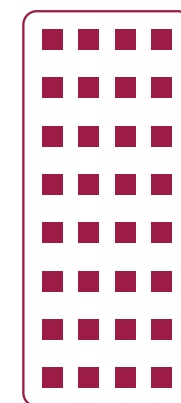
OMNETICS



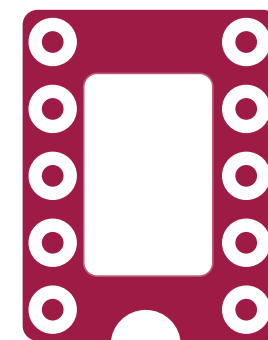
ZIF-Clip



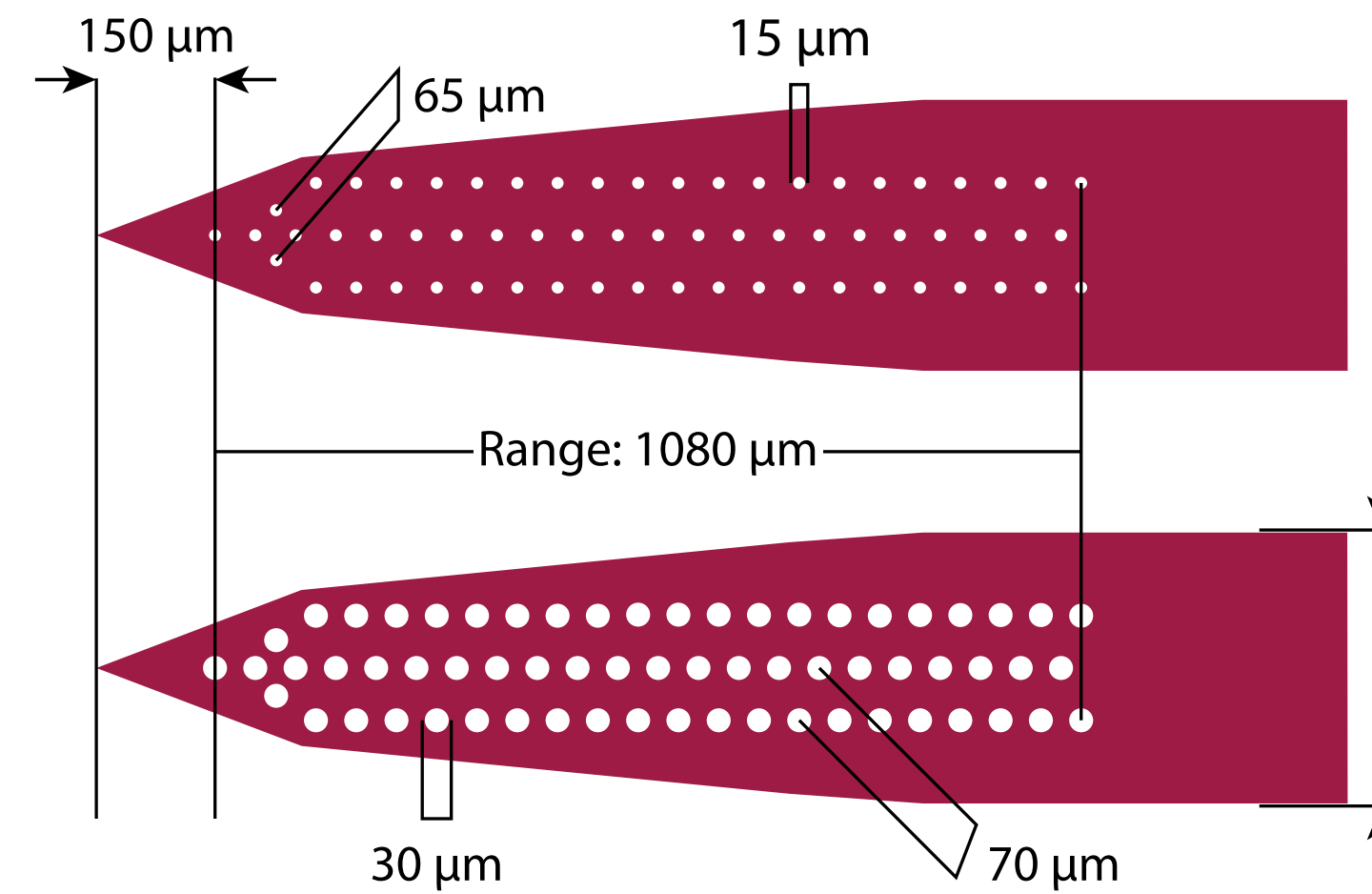
SAMTEC



DIP



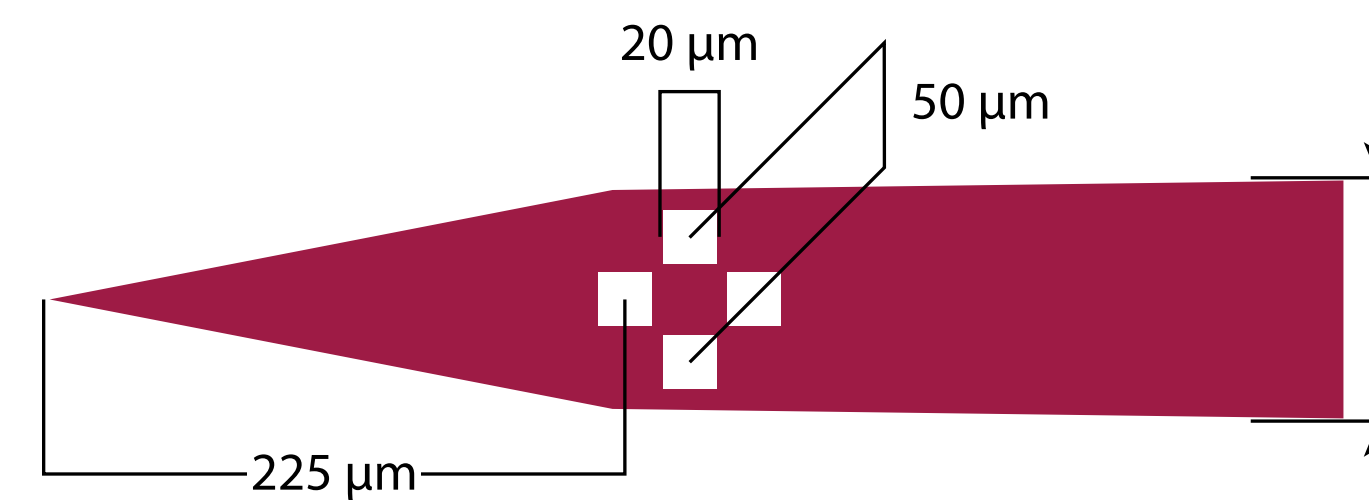
HONEYCOMB (64-CH)



Vert. Site Spacing: 50 μm

330 μm at widest point

TETRODE (4-CH)



Vert. Site Spacing: 50 μm

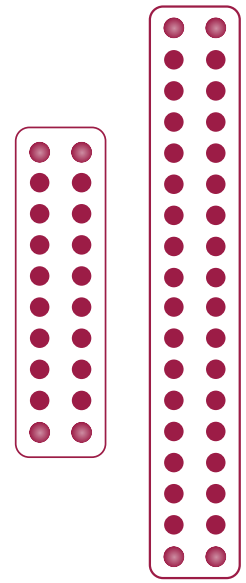
130 μm at widest point



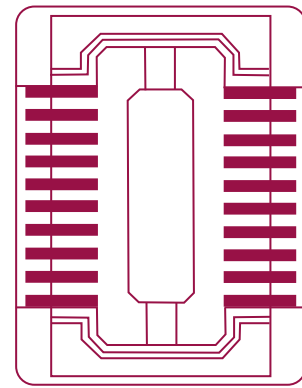
ECoG Designs

CONNECTOR OPTIONS

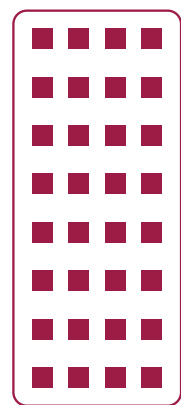
OMNETICS



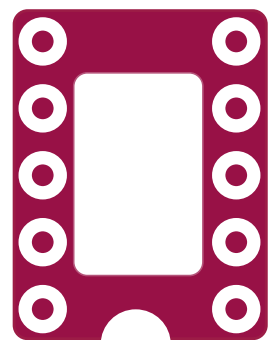
ZIF-Clip



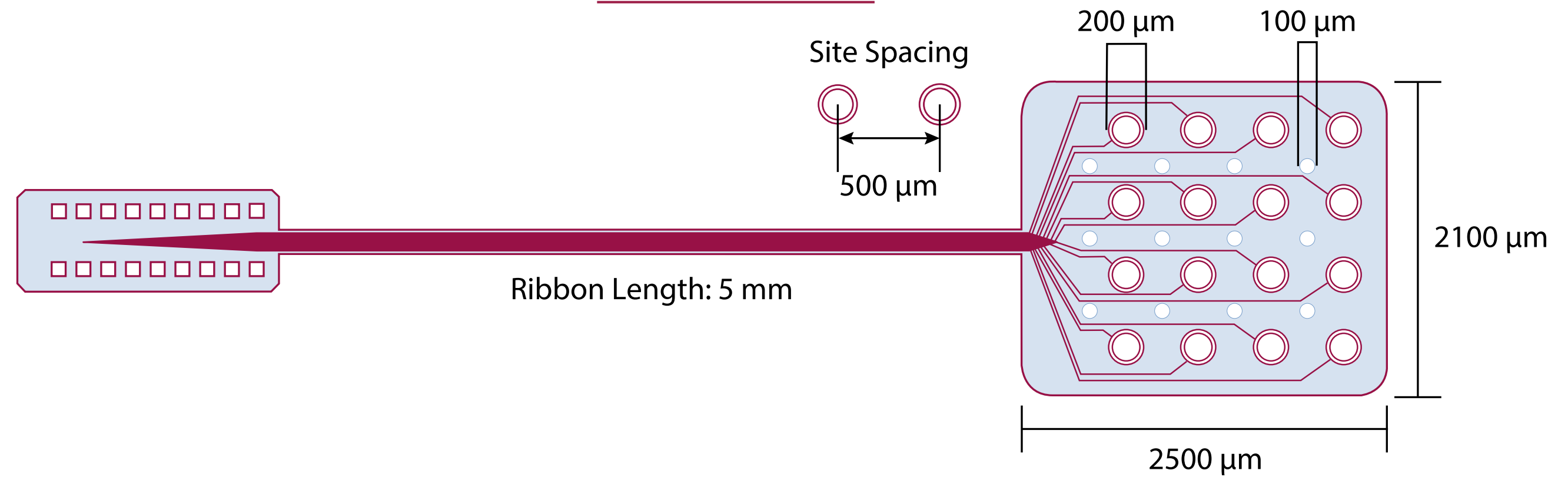
SAMTEC



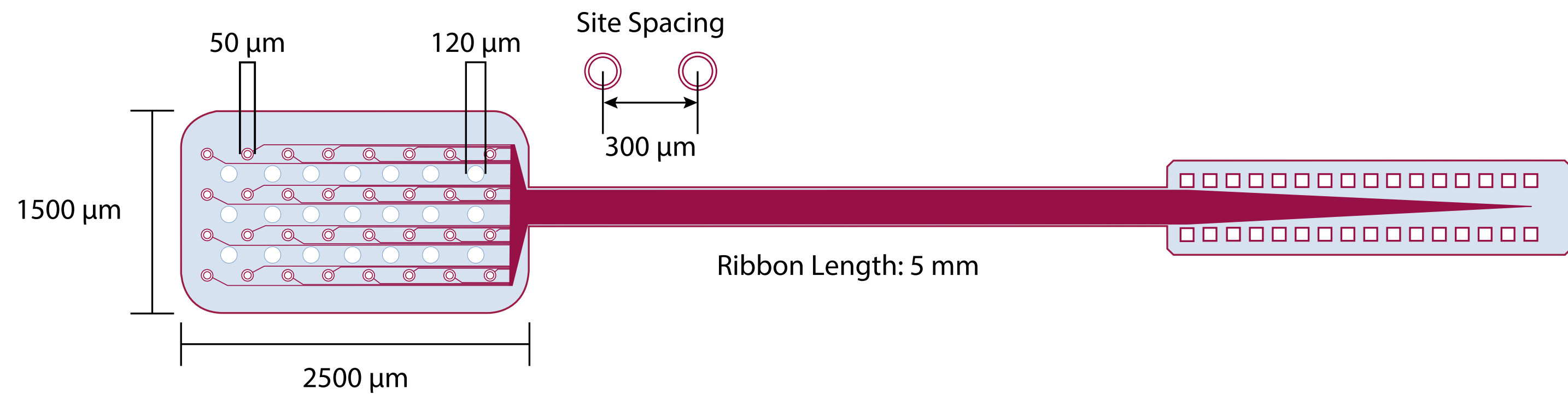
DIP



16-CHANNEL



32-CHANNEL

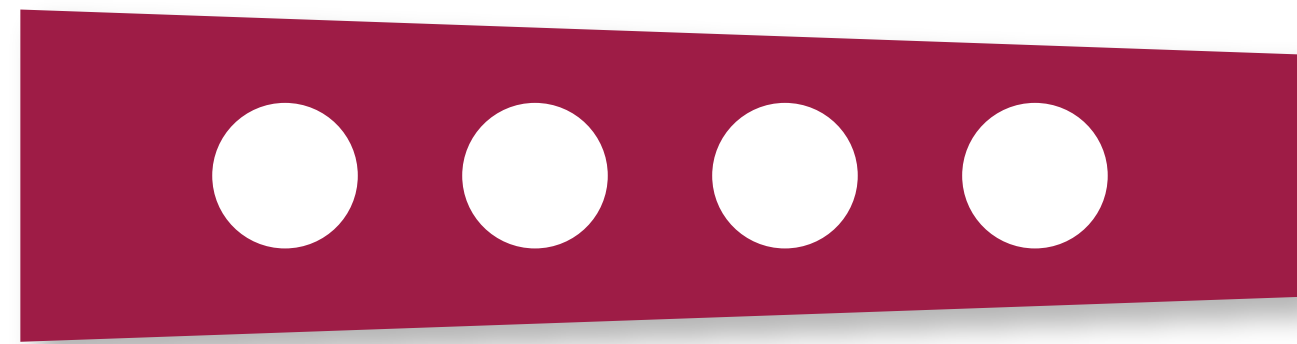




**Custom Electrodes:
Endless Design Possibilities**

Choose your: Electrodes

Shape



circles

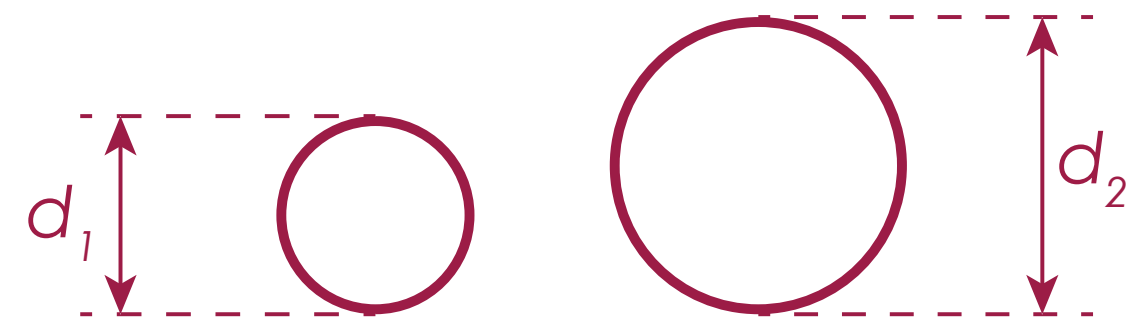


rectangles

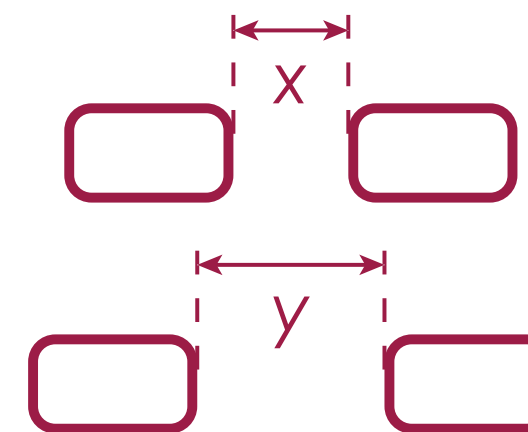


ticks

Size

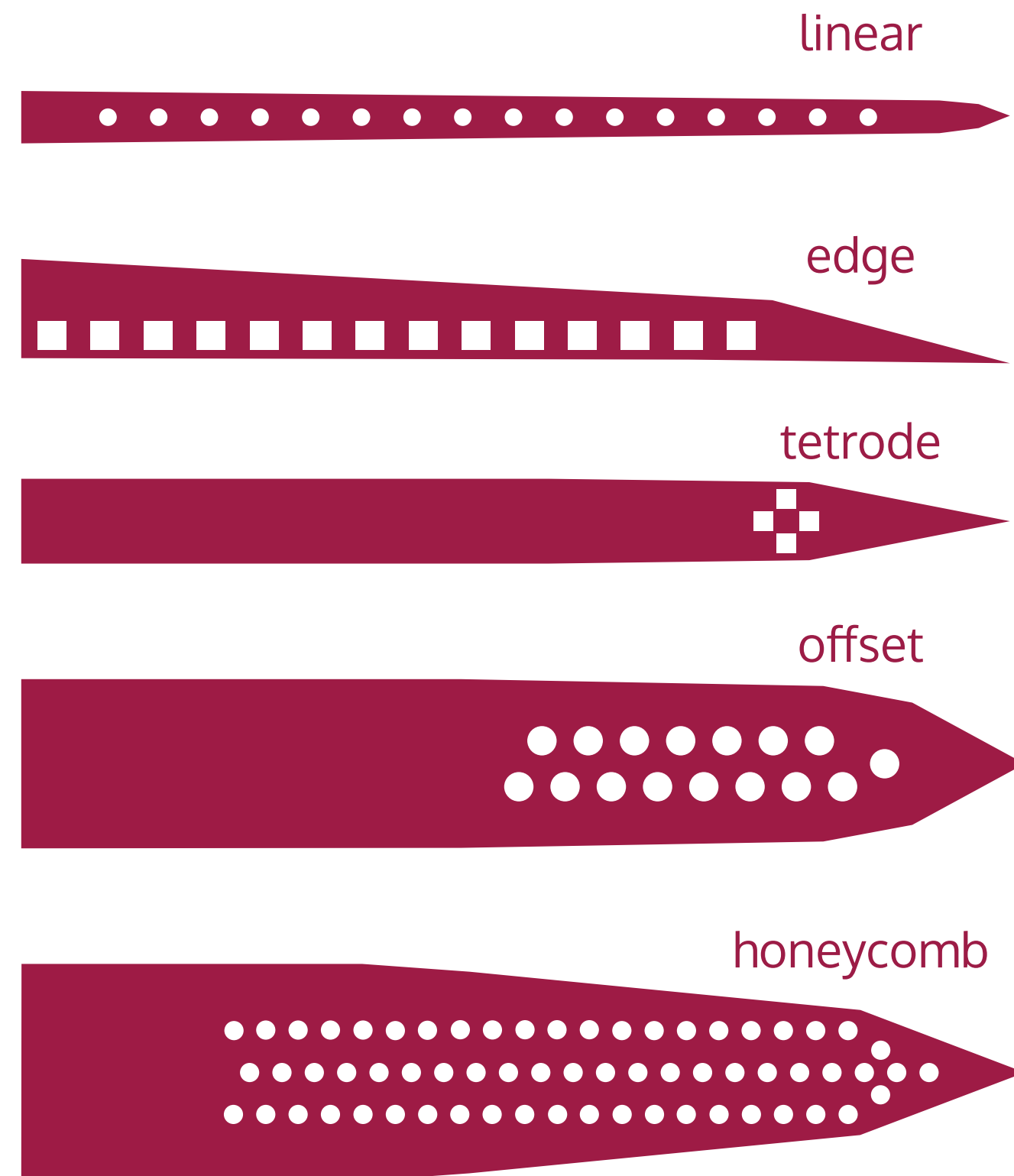


Spacing



Choose your: Shanks

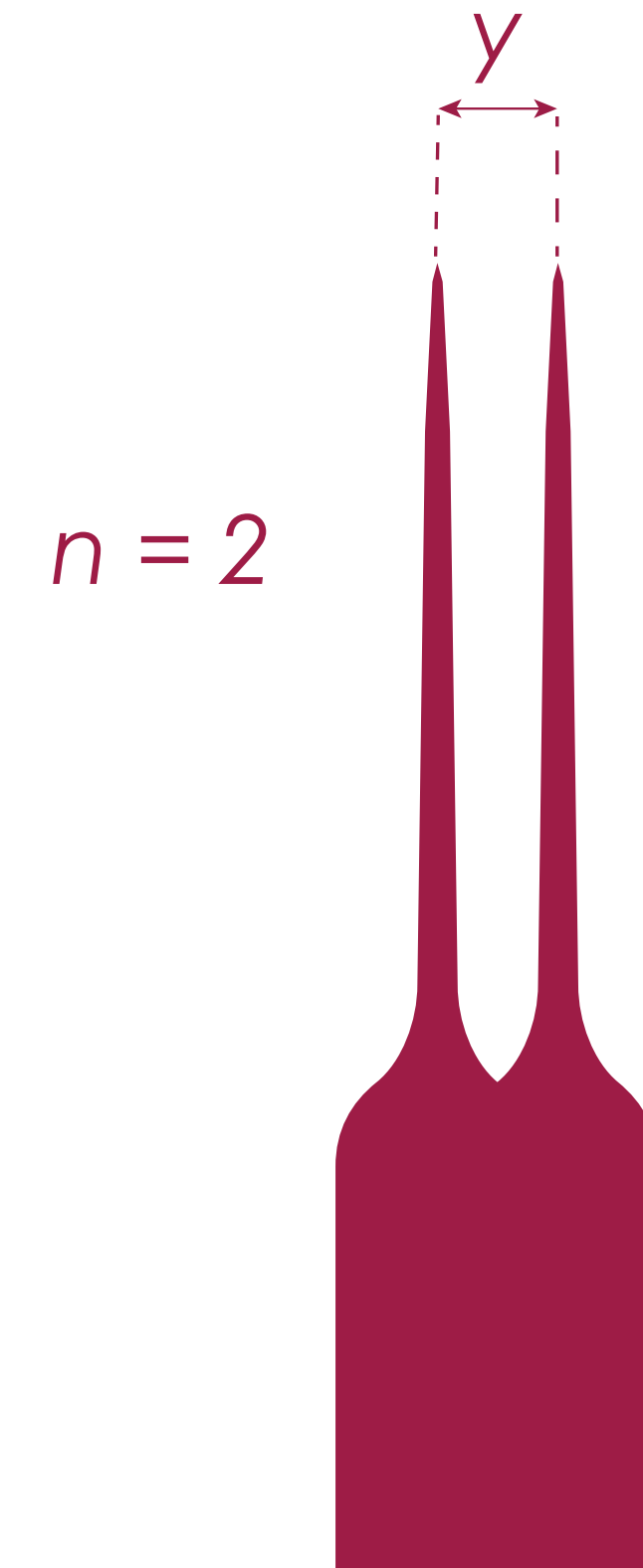
Contact Pattern



Length



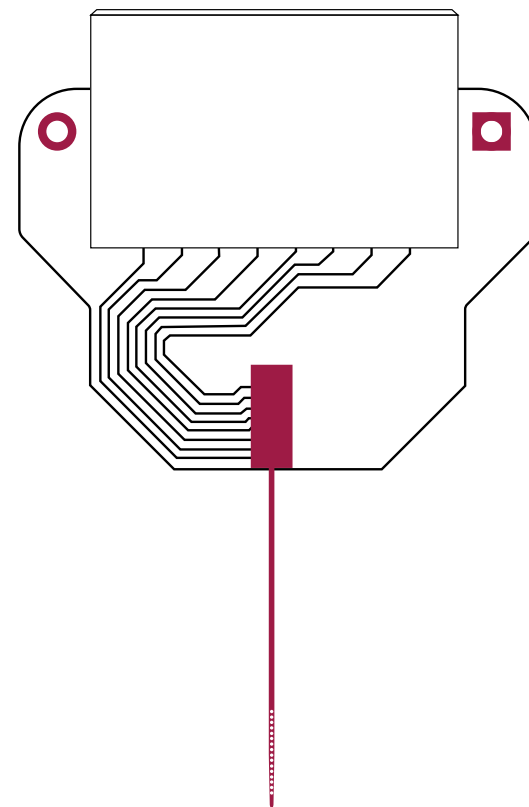
Number & Spacing



Choose Your: Probe Configuration

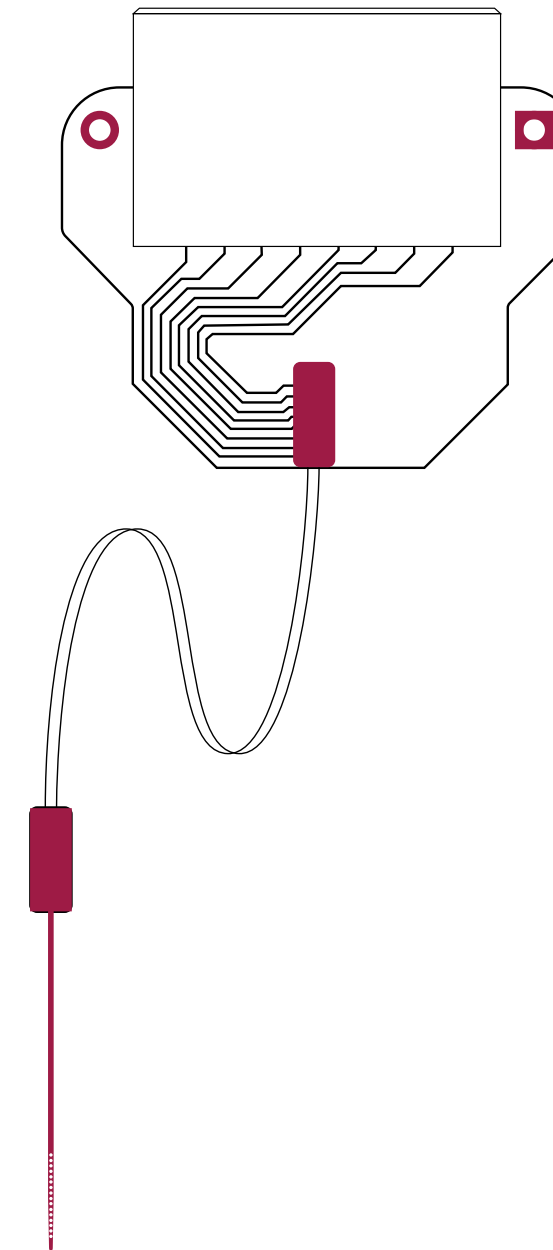
Solid-Body

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

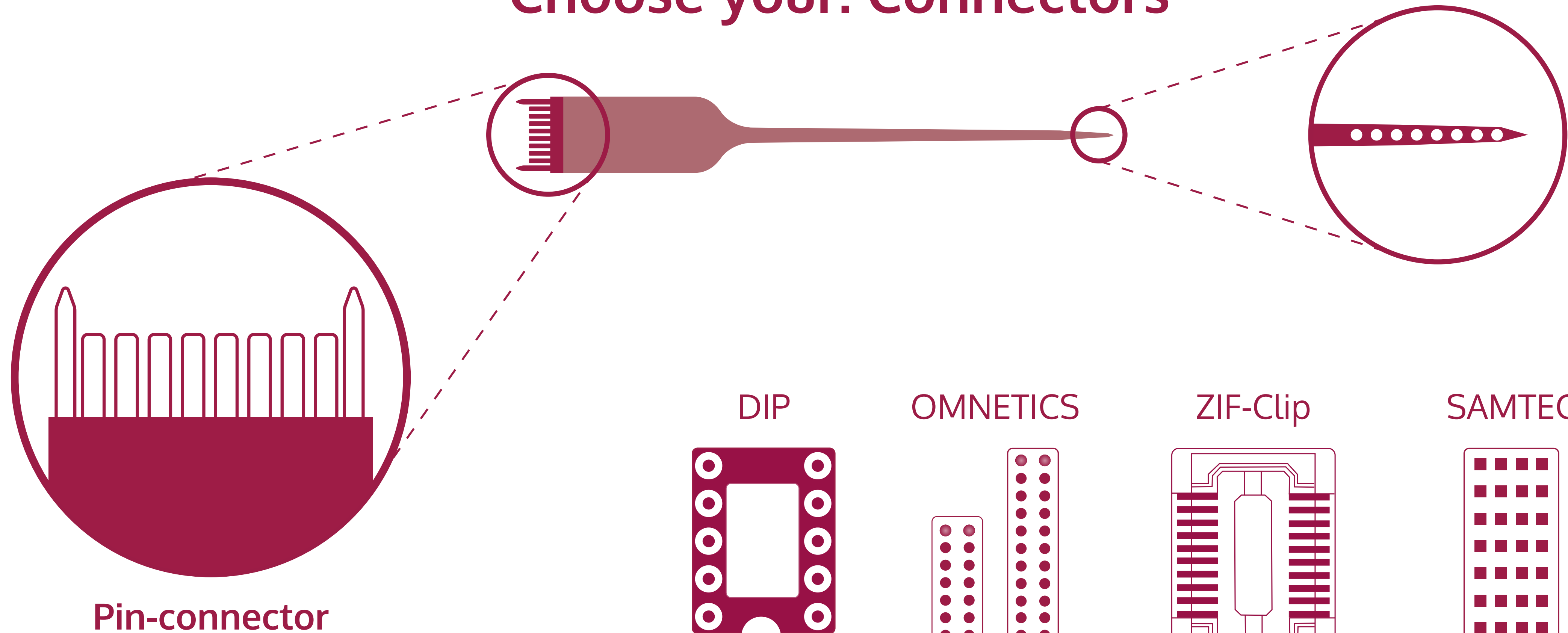


Flex-Cable

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



Choose your: Connectors



Pin-connector

DIP

OMNETICS

ZIF-Clip

SAMTEC

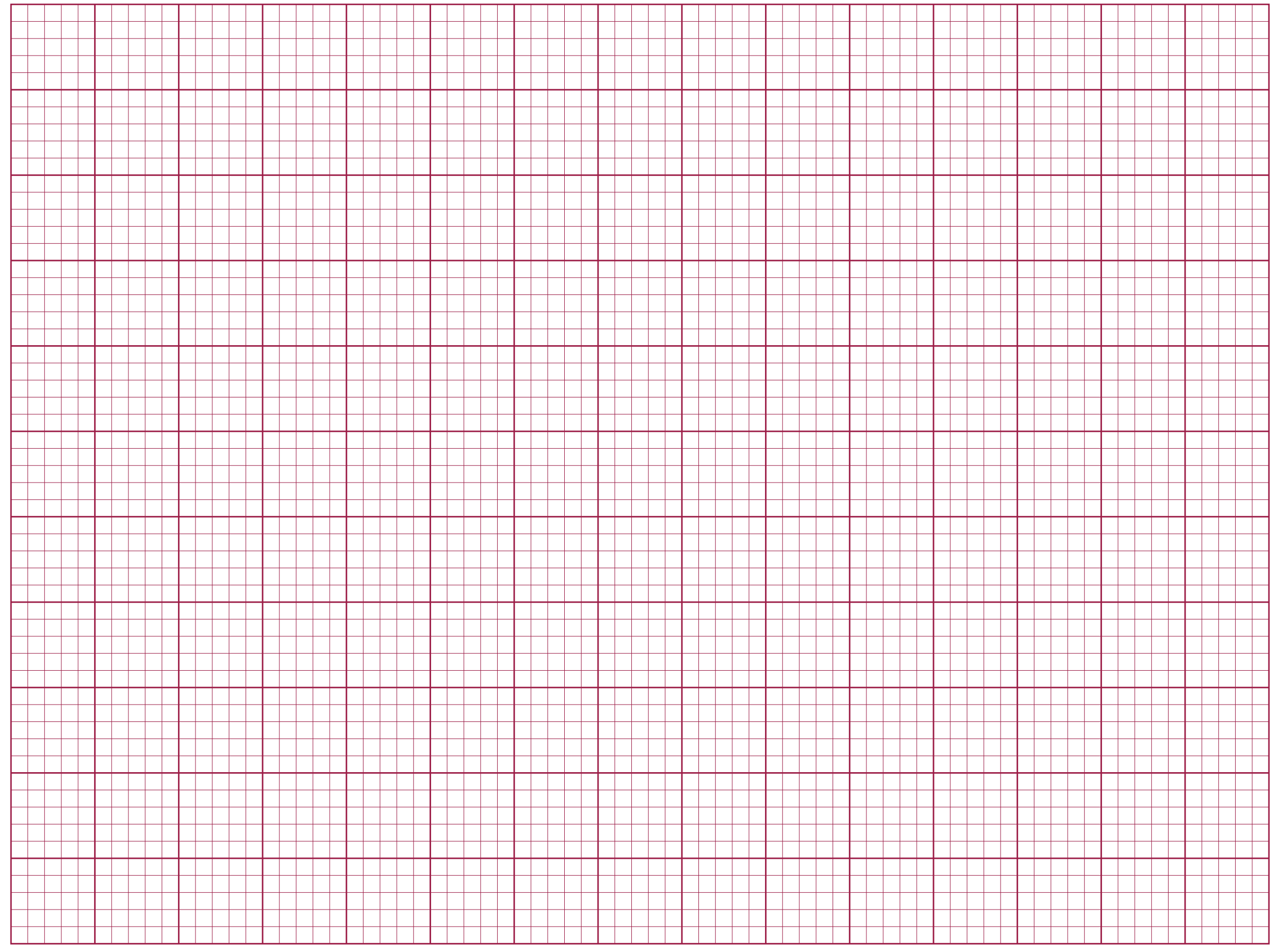
Customization Form

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): _____ Site shape (select one): _____ Contact pattern: _____
Shank quantity (1 - 4): _____ **circ. / rect. / tick / custom** Shank length (≤ 150 mm): _____
Sites per shank: _____ Site dia/dim (μm): _____ Shank spacing (< 5 mm): _____
Probe thickness (μm): **15 / 50** Site spacing ($\geq 15\mu\text{m}$): _____ Shank reference: **Y / N**
Polyimide cable: **Y / N** Cable length (mm): **22 / 44 / 66 / 88 / 110 / custom**

Further details:



_____ mm





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

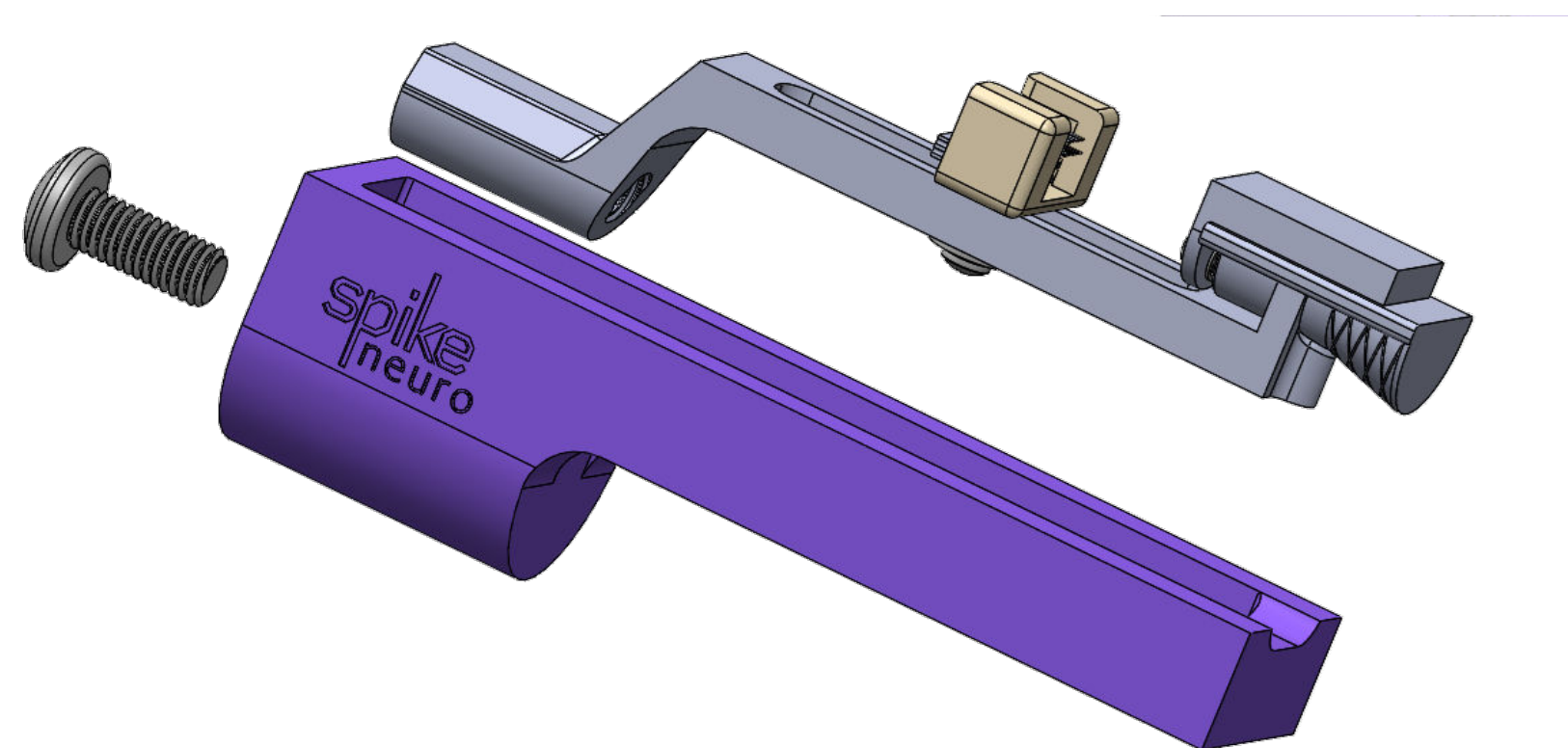
Providing precise probe depth control for probe implantation and chronic experiments in freely behaving animals

Fine Turn Resolution
~100 micron per 1/4 turn

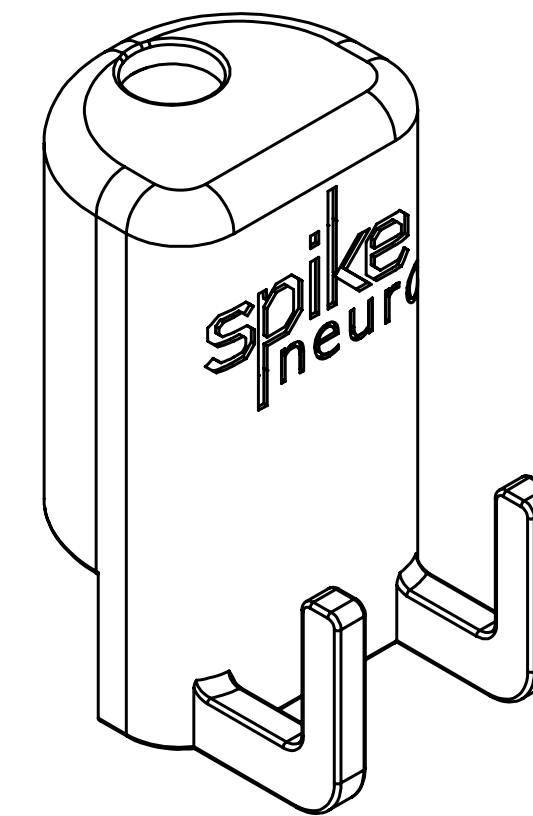
Sized For Your Research
The miDrive has 3 size options to best fit your animal model. The 3 mm miDrive is recommended for mice with larger sizes appropriate for larger animal models.

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



The nanoZ™

Automatic impedance testing and electroplating

Verify the integrity of your neural probes. Testing 64 channels takes just 30 seconds.

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.

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
- Installation CD



Technical Specifications

Channels	64
Measurement Range	10kΩ – 100MΩ
Z Test Accuracy	± 1% (10kΩ – 15MΩ)
Z Test Frequency	1Hz – 5Hz
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



Please note: nanoZ is a trademark of the manufacturer White Matter LLC.

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

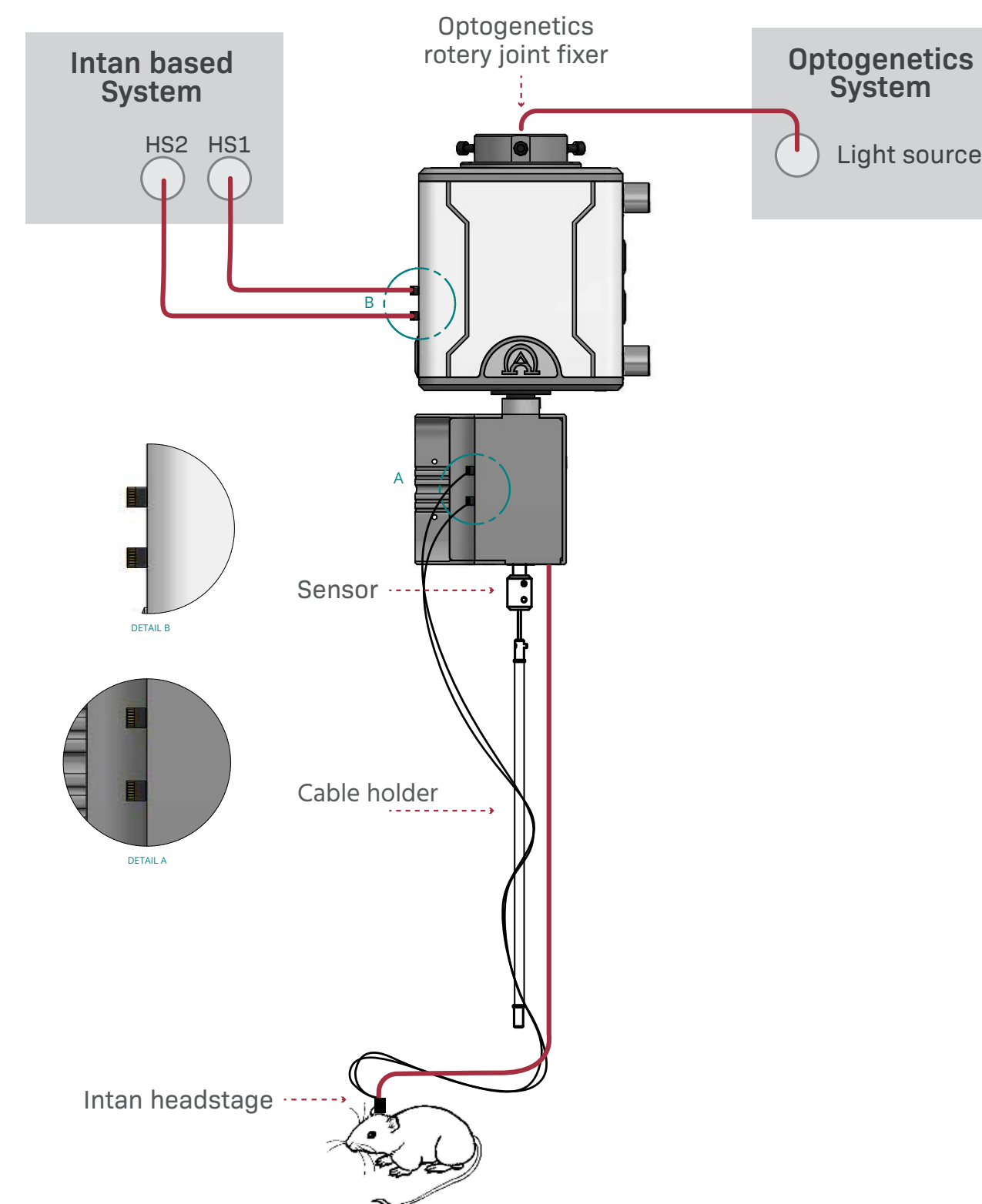
AlphaComm-I allows full personal adaptation to the animal's movement and size, therefore producing a high-quality signal. This is attributed to the ability to fully control the sensitivity and velocity of the motor, and to eliminate signal noises that are caused by undesired animal movements.

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)



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