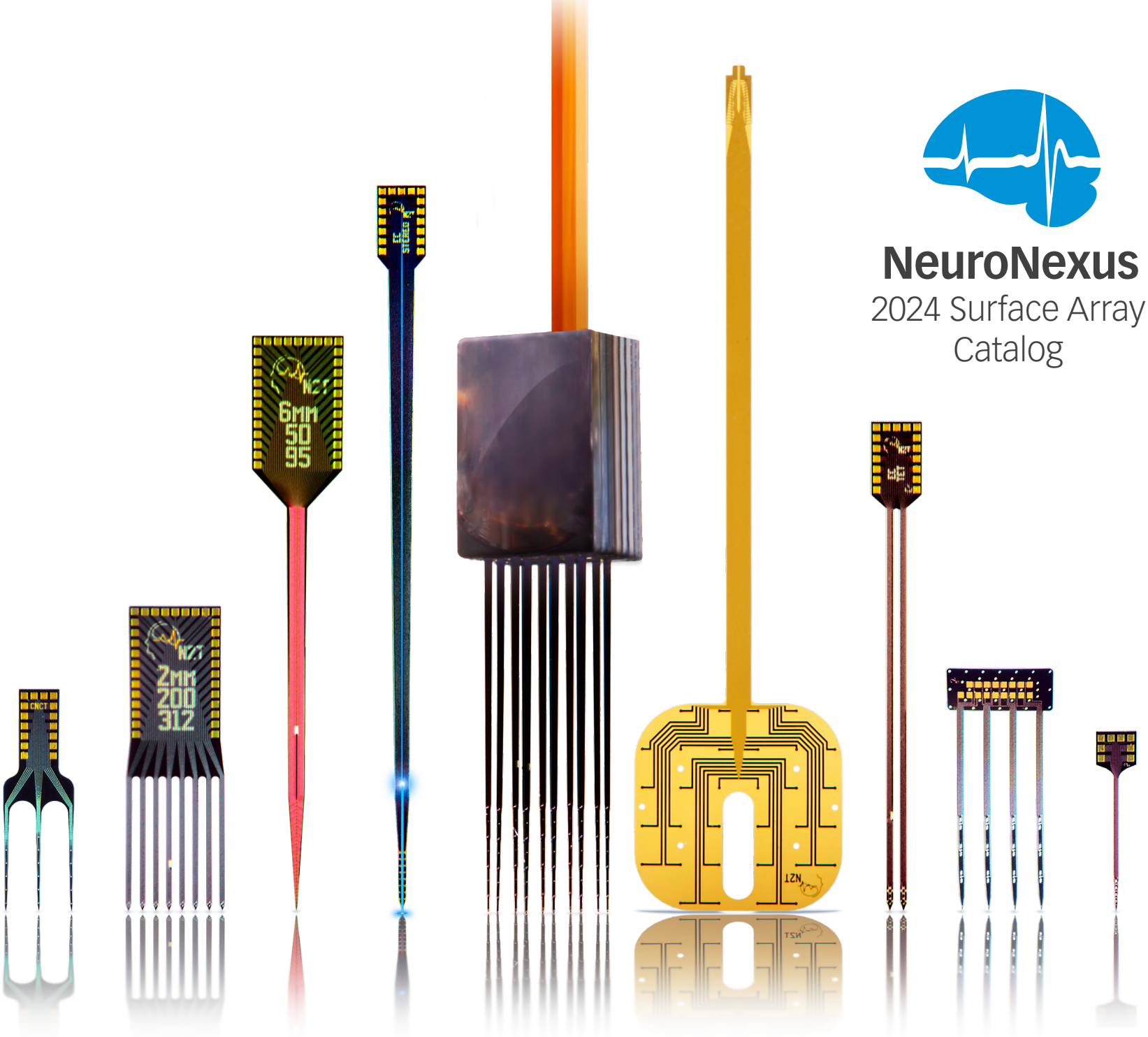


# NeuroNexus

## 2024 Surface Array Catalog

# Contents

# EEG

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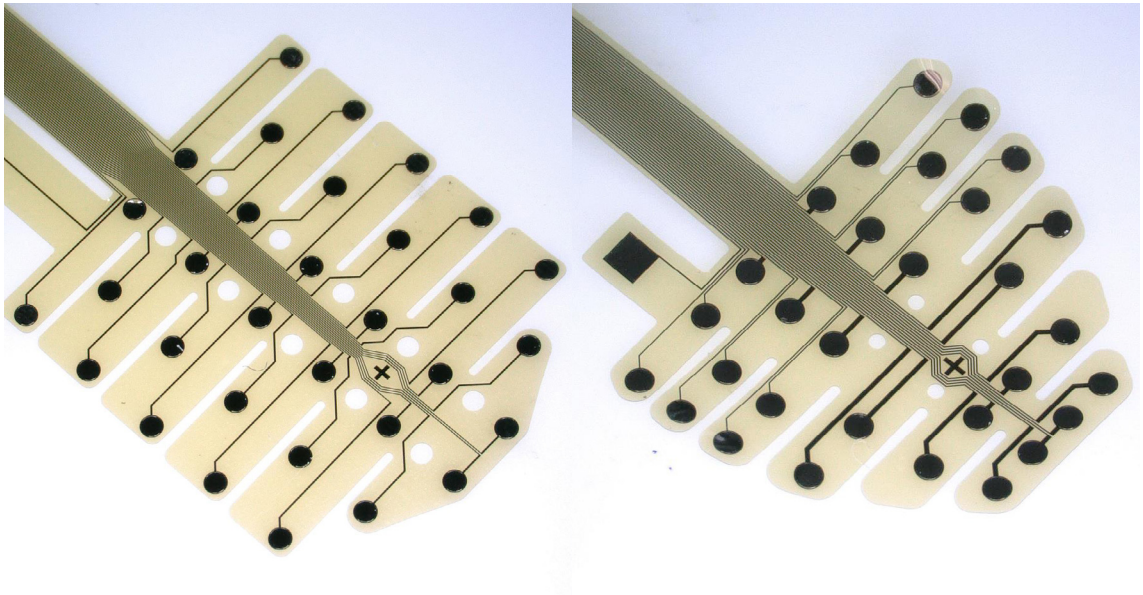

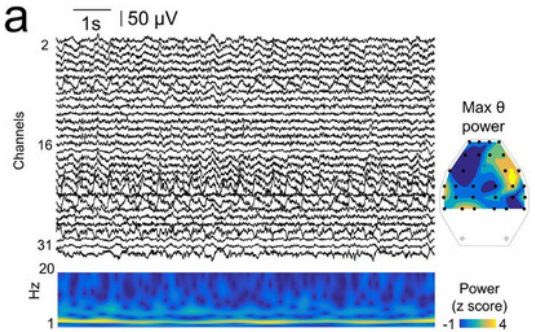


*ABOVE: EEG grids allow assessment natural brain rhythms such as exploratory and REM theta (4-12 Hz) during periods free of epileptiform activities. Image courtesy of Dr. Liset de la Prida, Instituto Cajal - CSIC. https://hippo-circuitlab.com/2017/03/eeg-grids/*

NeuroNexus **EEG probes** are ultra-flexible surface grids optimized for electroencephalography.

**Flexible and Durable** – Fabricated with our polymer MEMS technology, our EEG probes easily conform to the skull. Use a drop of water to adhere the probe to the skull.
**Stable** – High quality EEG recordings have been obtained over months.
**Optimized array designs** – Select from a variety of EEG array designs featuring different recording site placements, for different applications or animal models.

## SPECIFICATIONS

| | |
|---|---|
| **Substrate Material** | Polyimide |
| **Electrode Site Material** | Platinum |
| **Array Thickness** | 15 µm |
| **Cable Length** | 7, 8, and 10 mm |
| **Channel Count** | 16, 30, and 32 Custom options available. |
| **Available Packages** | H16, HC16, HZ16, X3-H16H32, HC32, HZ32 X3-H32 |

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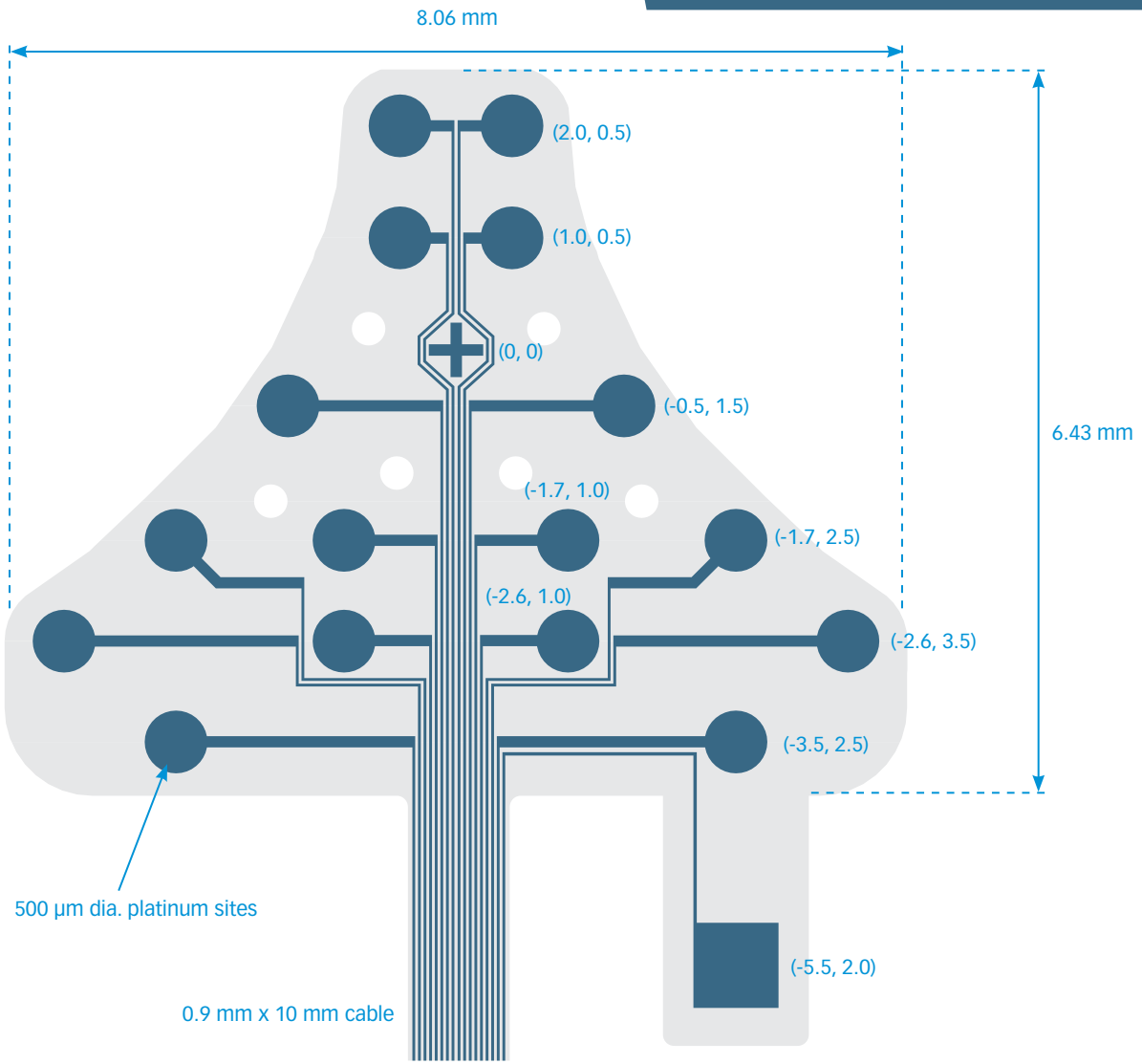
# EEG-mouse-16-10



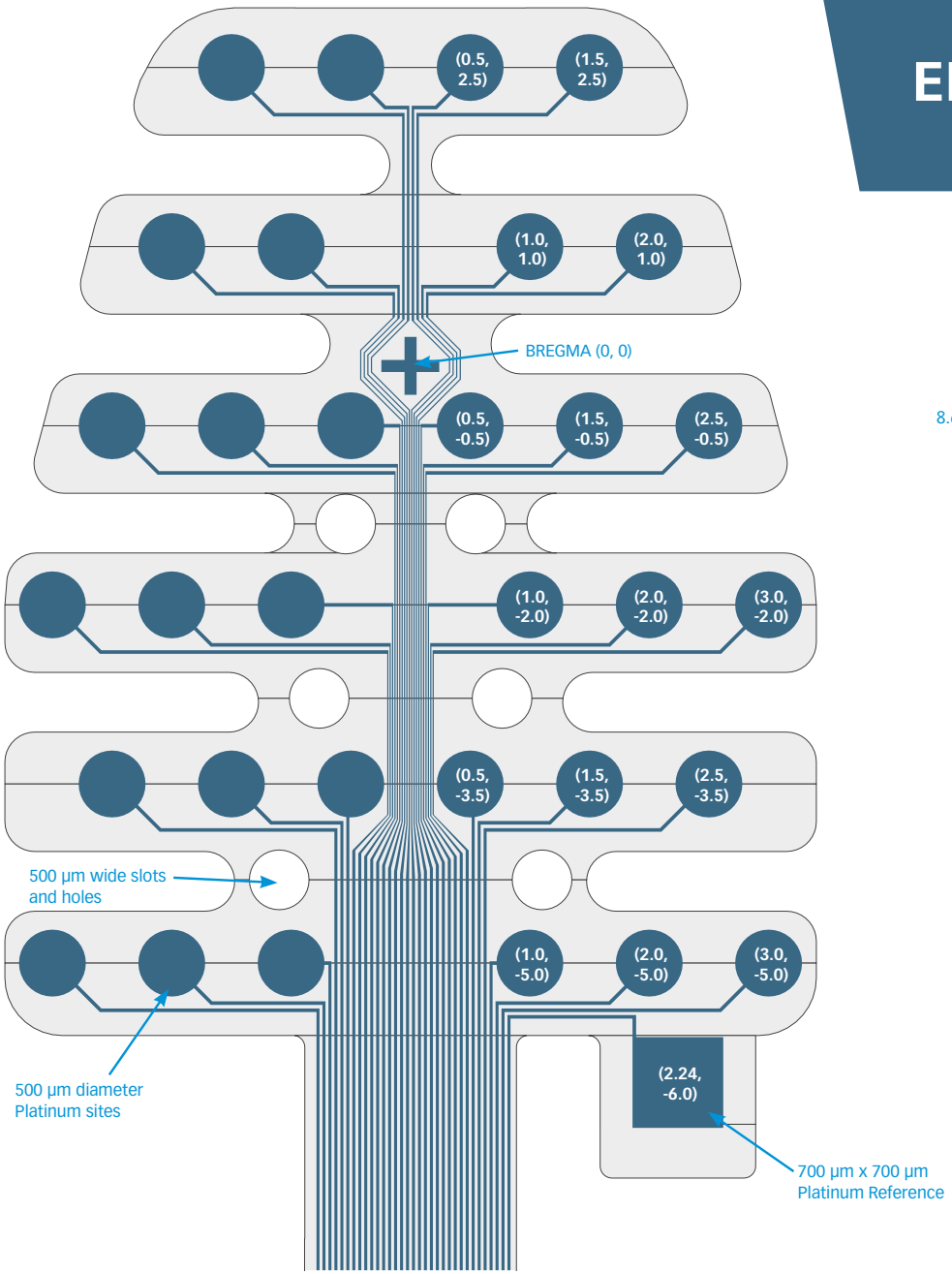

## Available packages

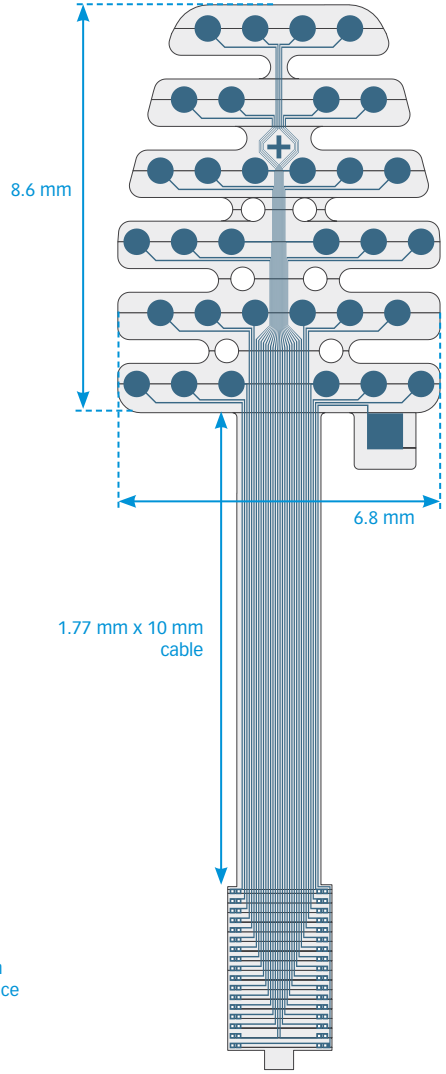
**CHRONIC**
H16
HC16
HZ16
X3-H16

## Thickness

**15 µm**

# EEG-mouse-32-B-10-reticular




## Available packages

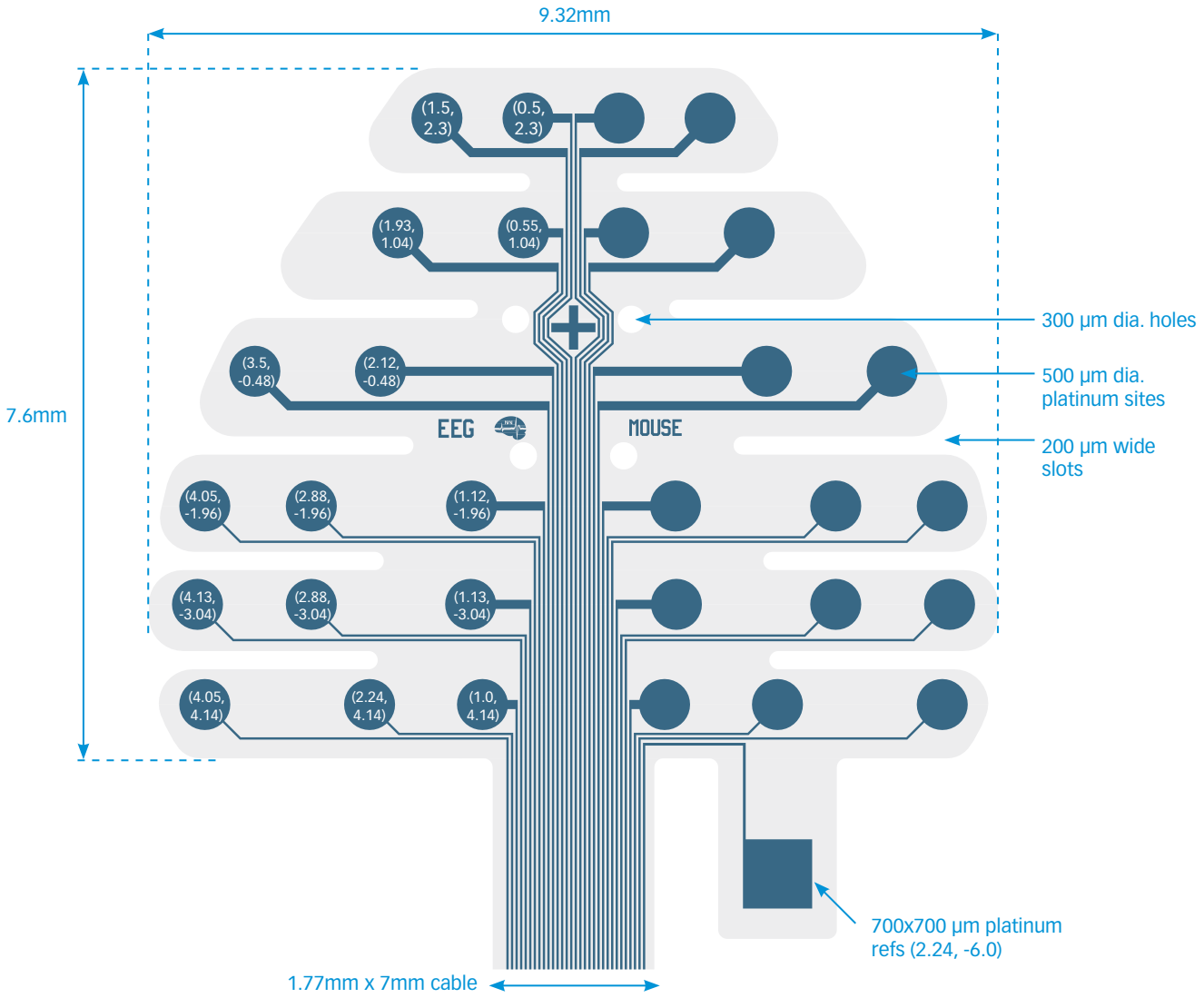
**CHRONIC**

H32
HC32
HZ32
X3-H32

## Thickness

**15 µm**

# EEG-mouse-30-A-7




## Available packages

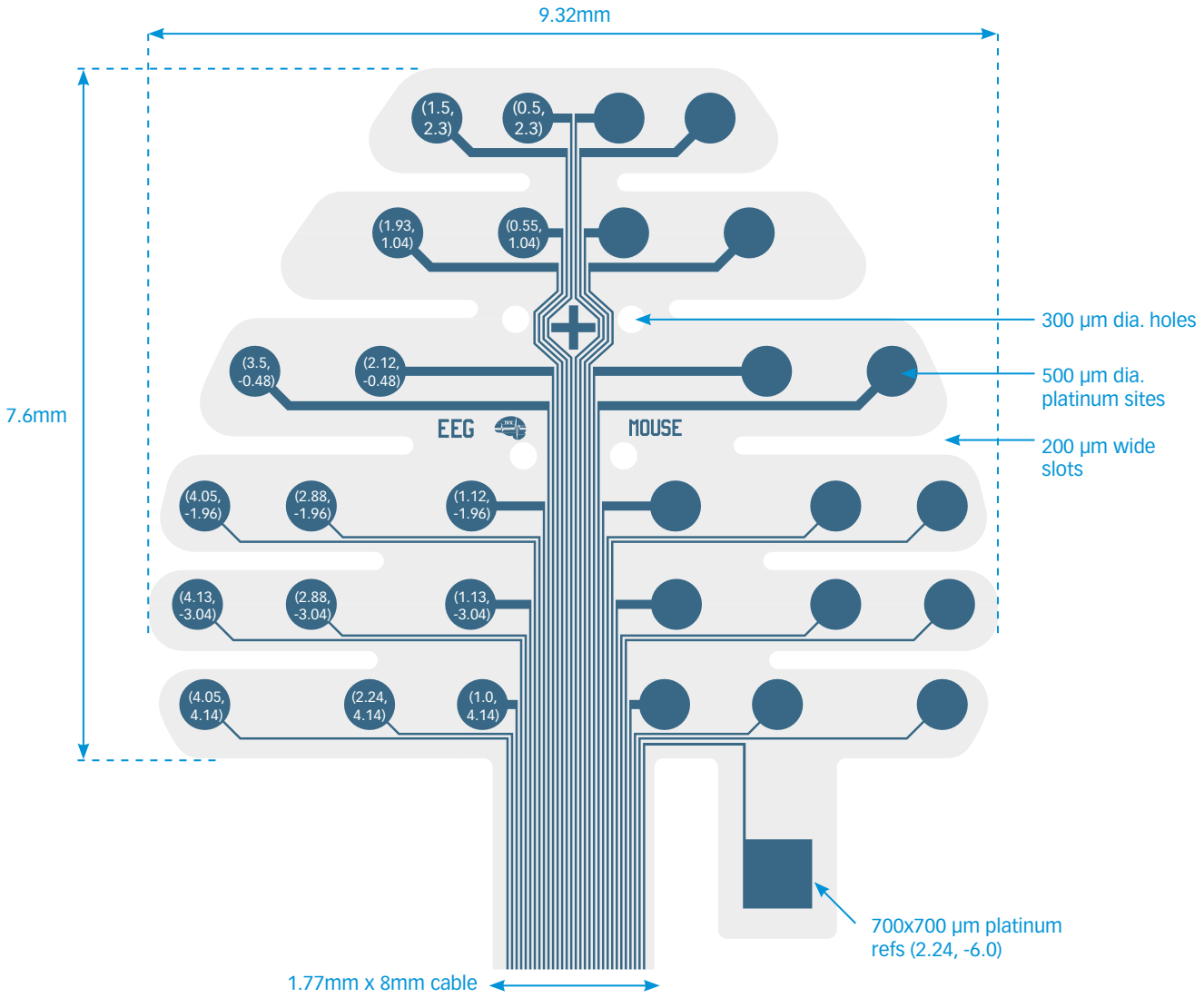
**CHRONIC**

H32
HC32
HZ32
X3-H32

## Thickness

**15 µm**

# EEG-mouse-30-A-8




## Available packages

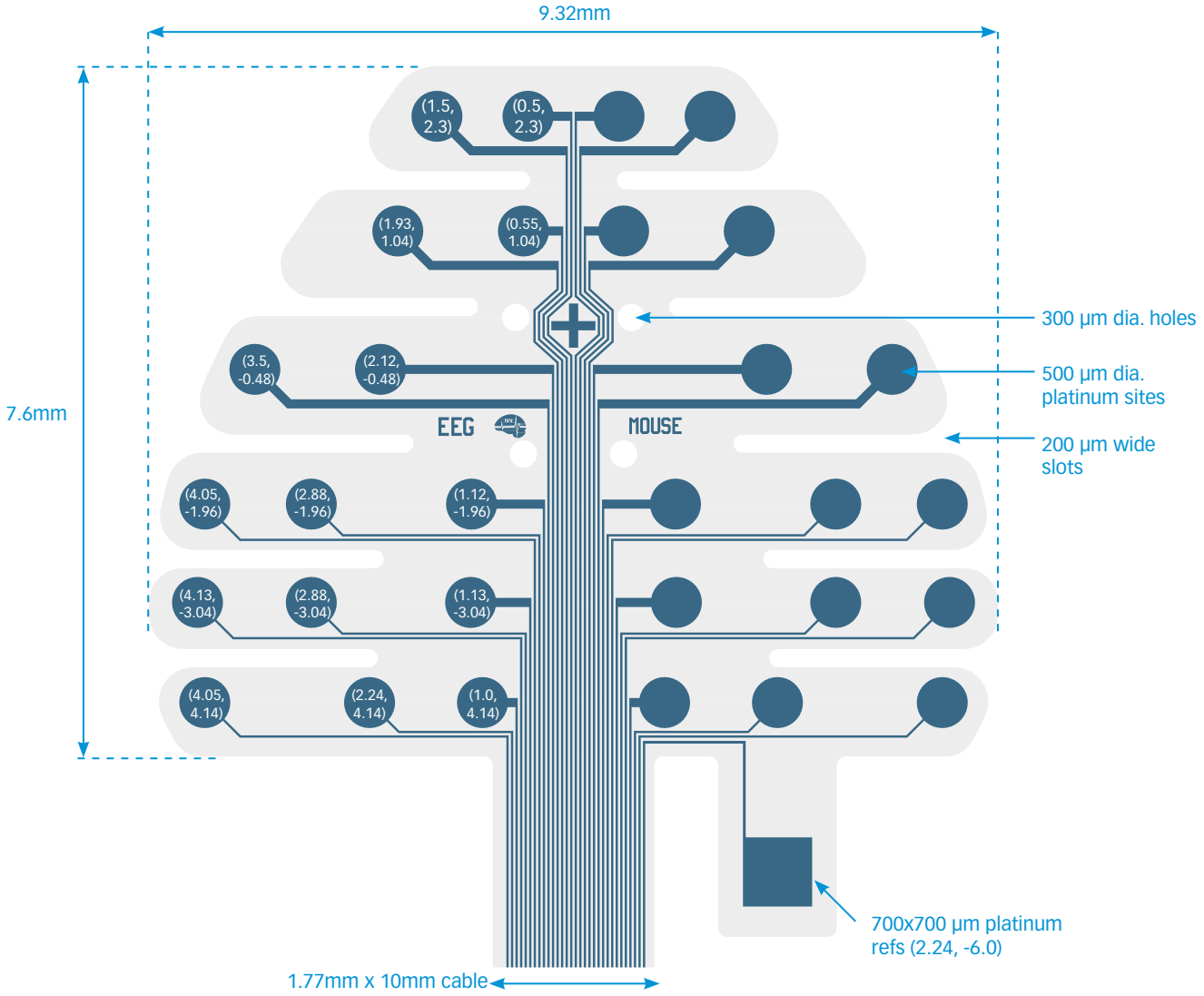
**CHRONIC**

H32
HC32
HZ32
X3-H32

## Thickness

**15 µm**

# EEG-mouse-30-A-10




## Available packages

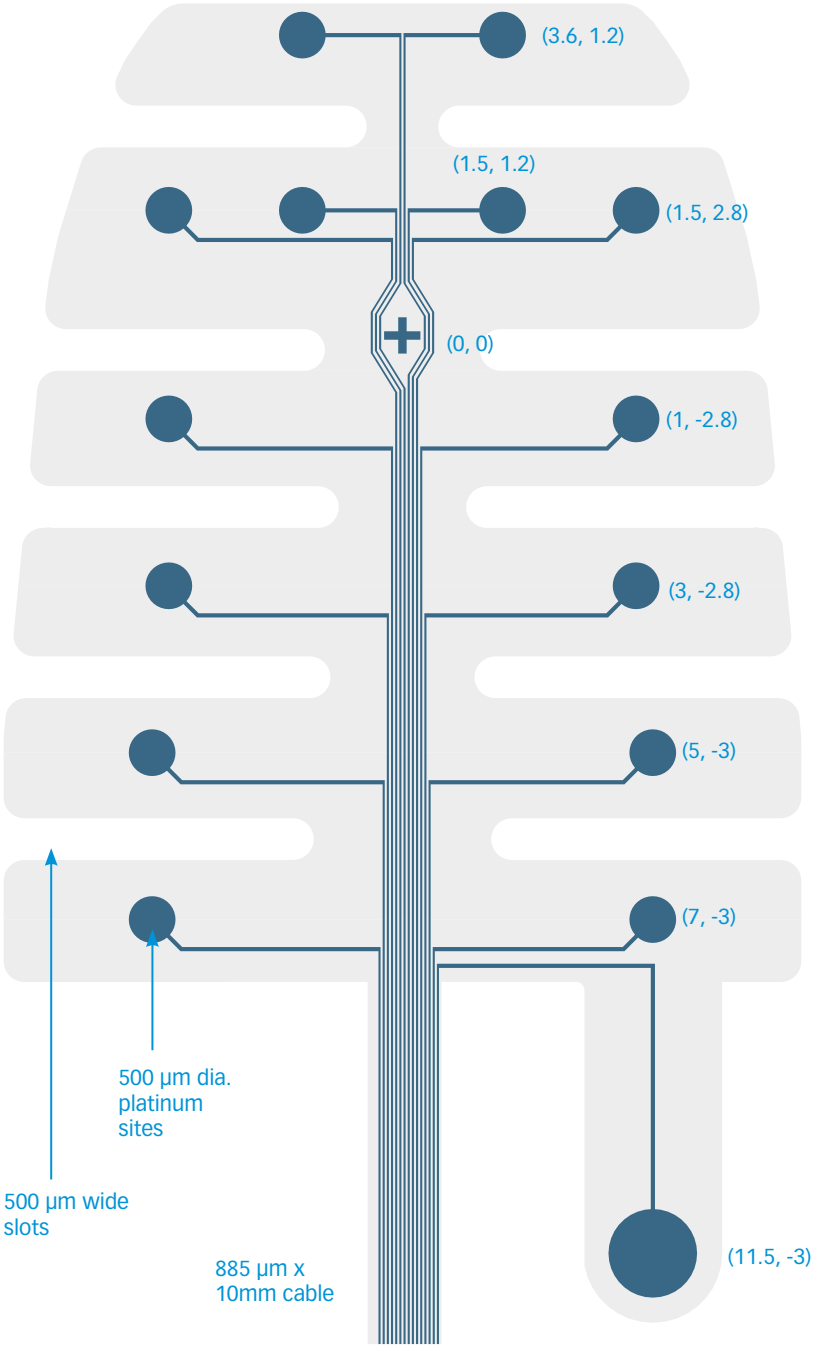
**CHRONIC**

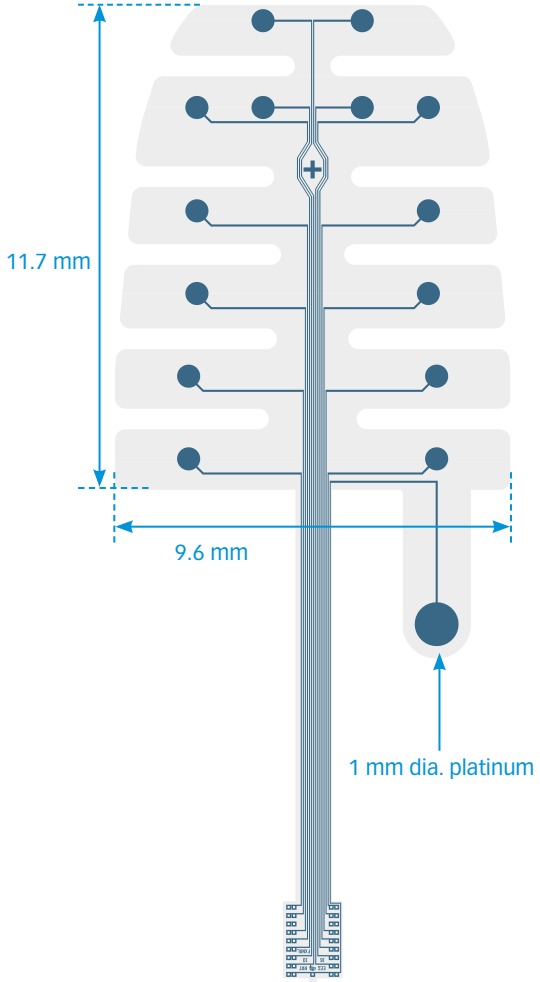
H32
HC32
HZ32
X3-H32

## Thickness

**15 µm**

# EEG-rat-16-10-functional




## Available packages

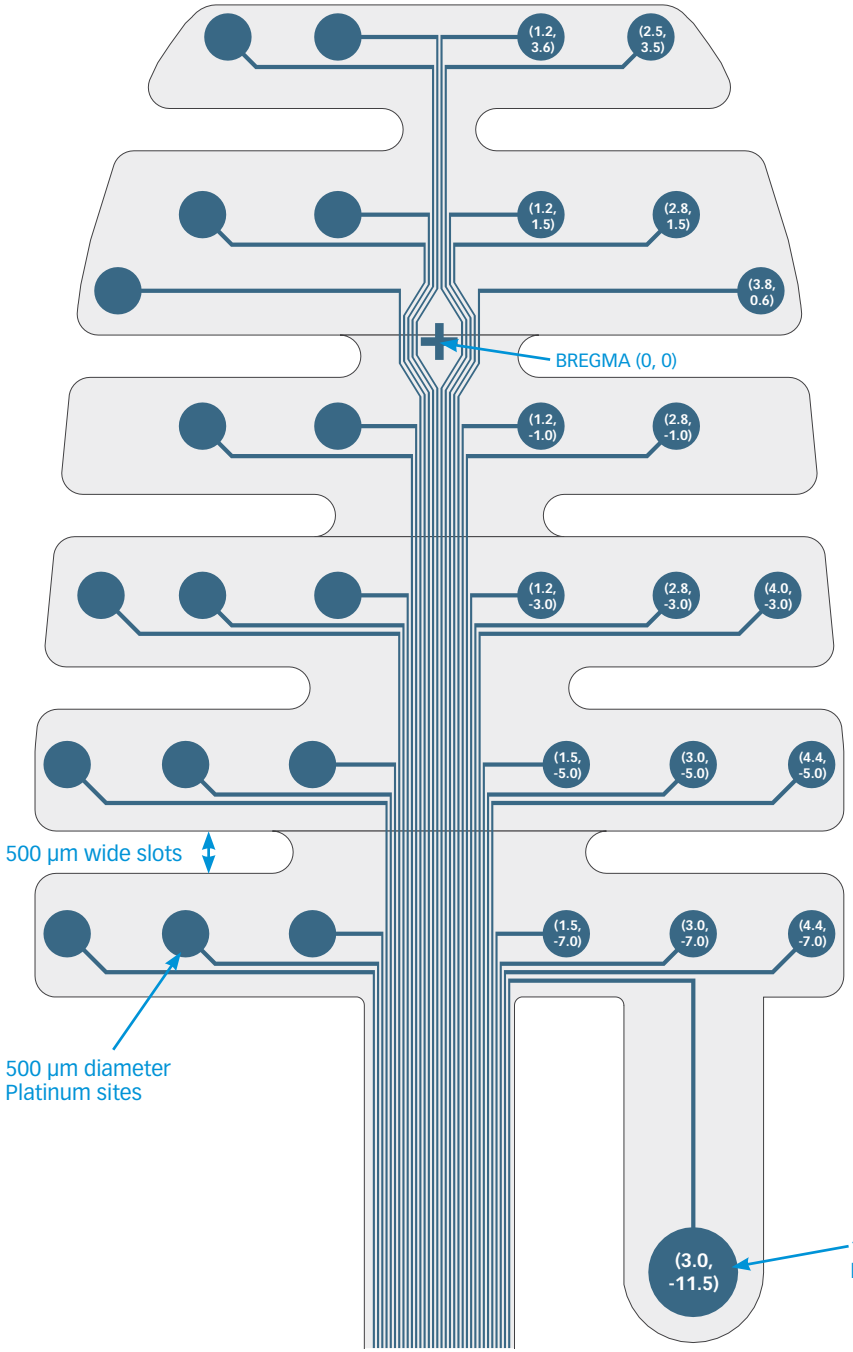
**CHRONIC**
H16
HC16
HZ16
X3-H16

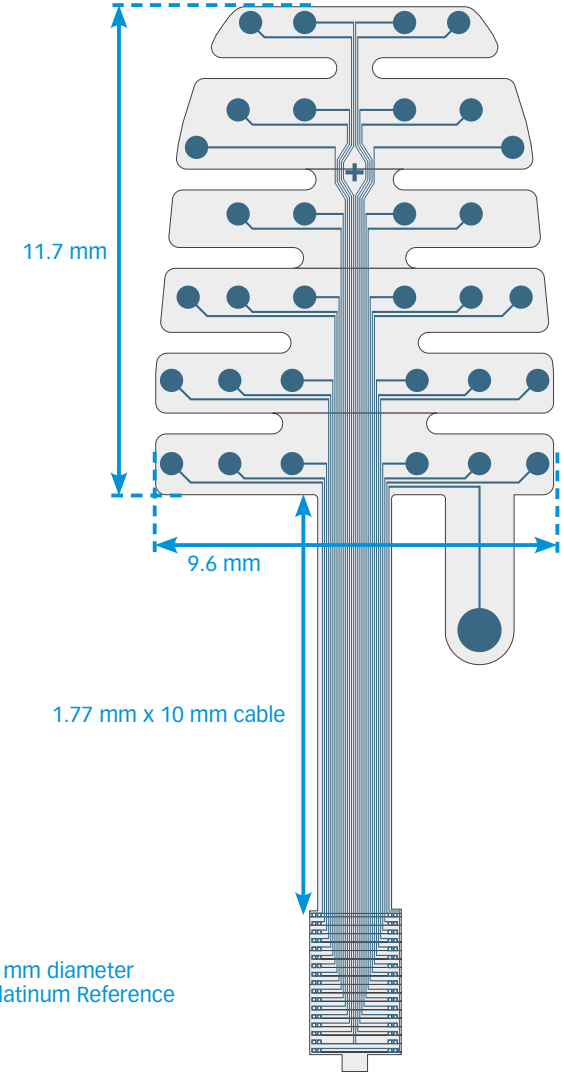
## Thickness

**15 µm**

# EEG-rat-32-A-10-functional

*Designed in collaboration with Dr. Anthony Hudetz*




## Available packages

**CHRONIC**

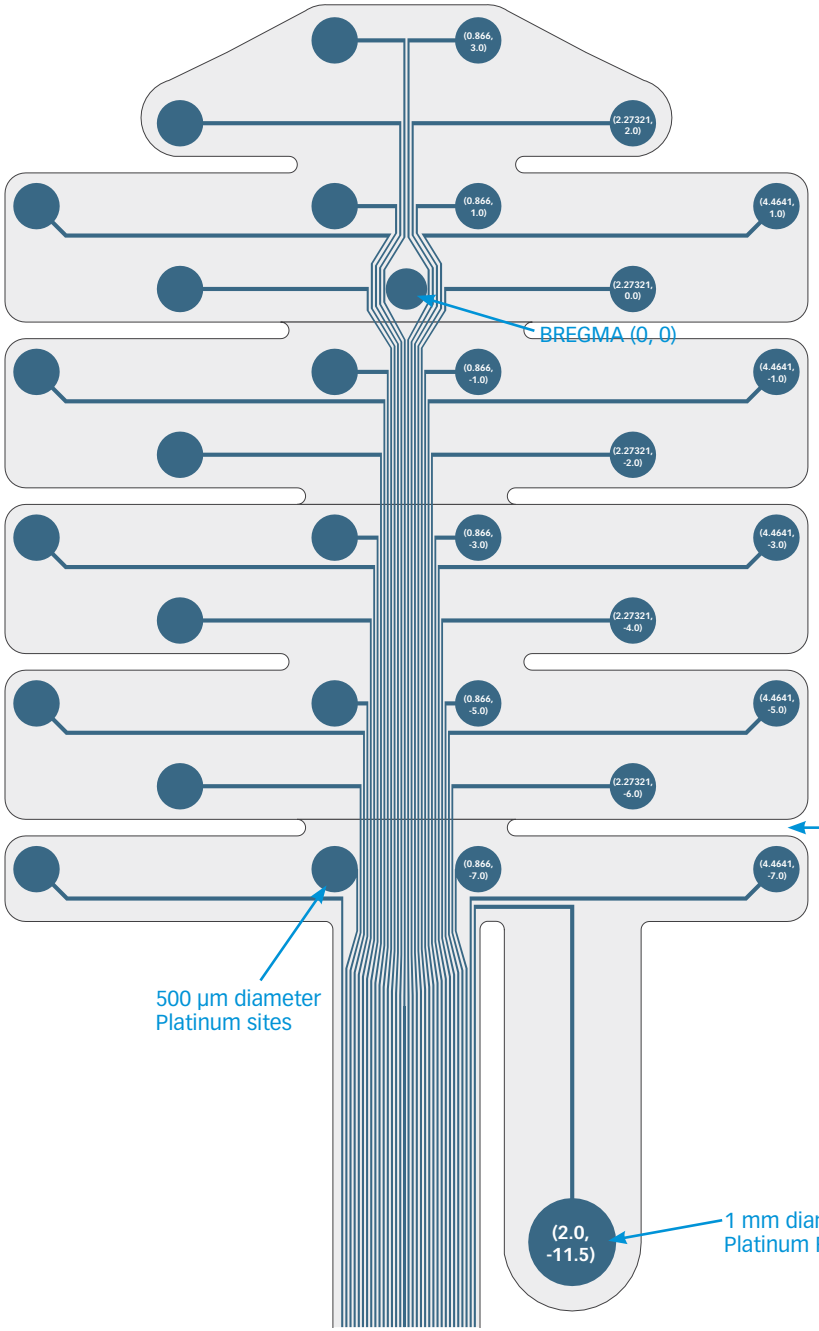
H32
HC32
HZ32
X3-H32

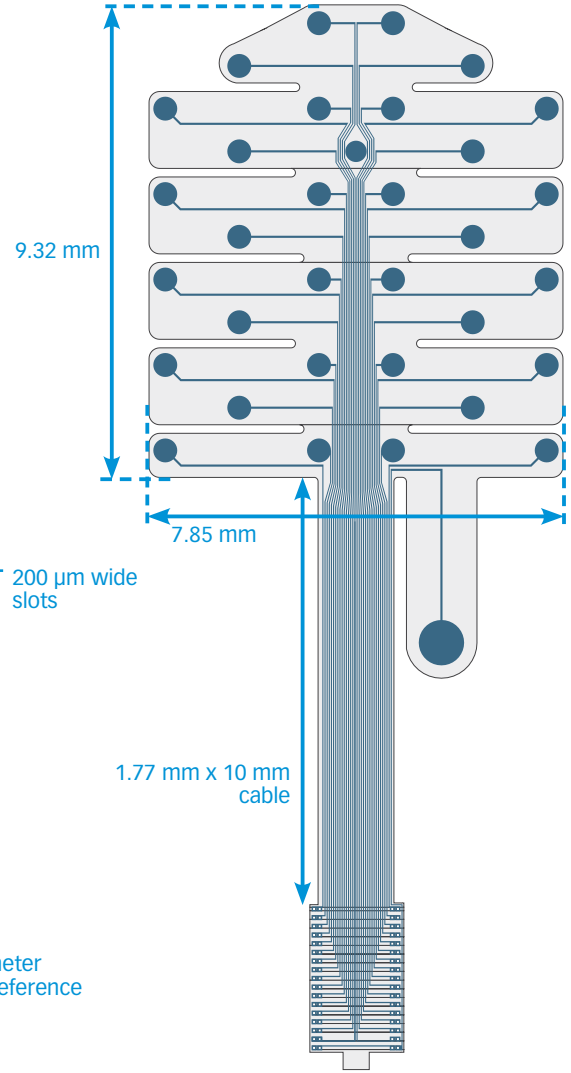
## Thickness

**15 µm**

# EEG-rat-32-B-10-triangular

*Designed in collaboration with Dr. Anthony Hudetz*




## Available packages

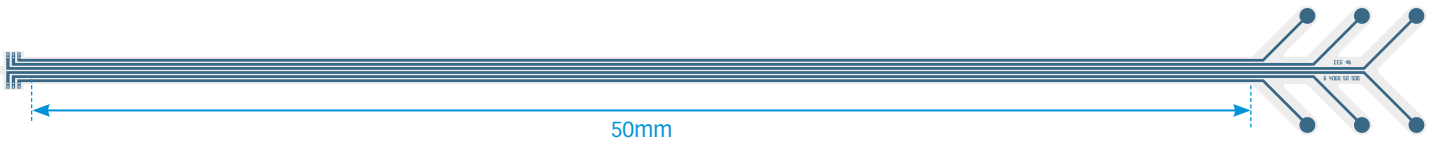
**CHRONIC**

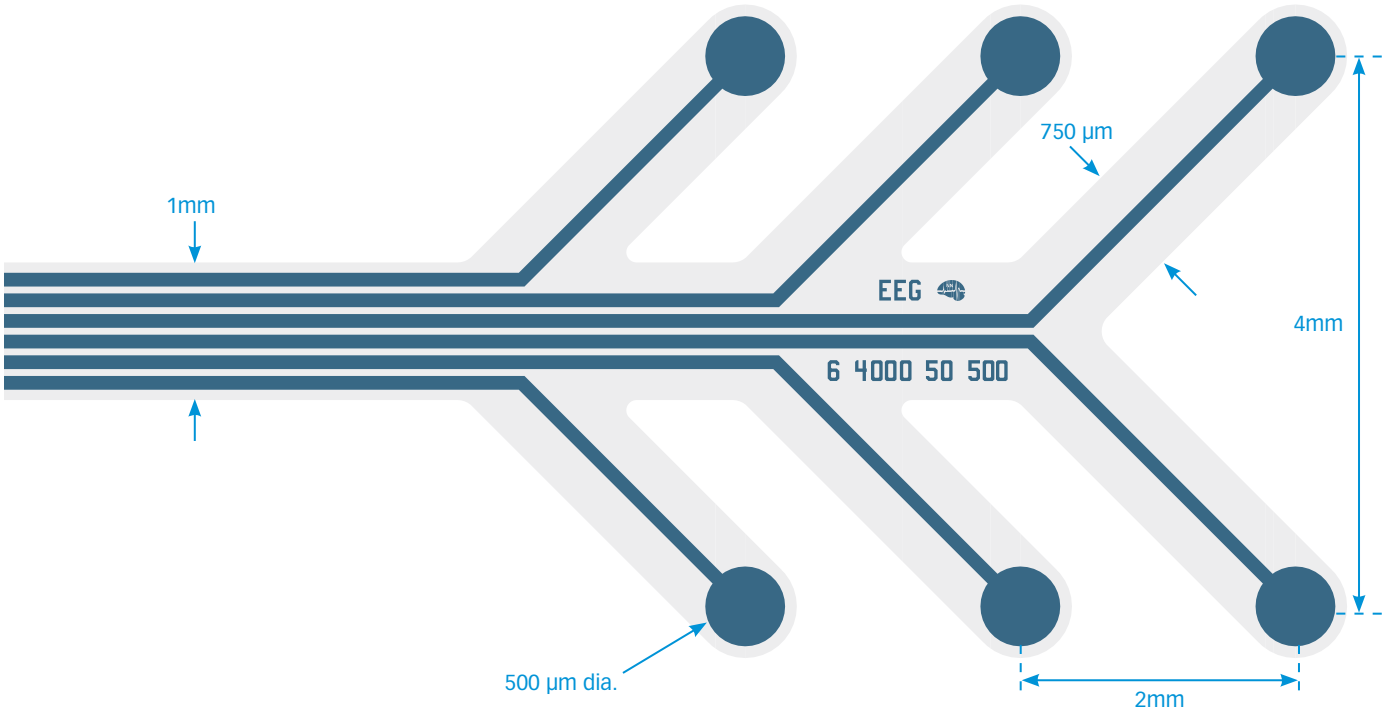
H32
HC32
HZ32
X3-H32

## Thickness

**15 µm**

# EEG-6-4000-50-500




## Available packages

**CHRONIC**
H16
HC16
HZ16
X3-H16

## Thickness

**15 µm**

# ECoG

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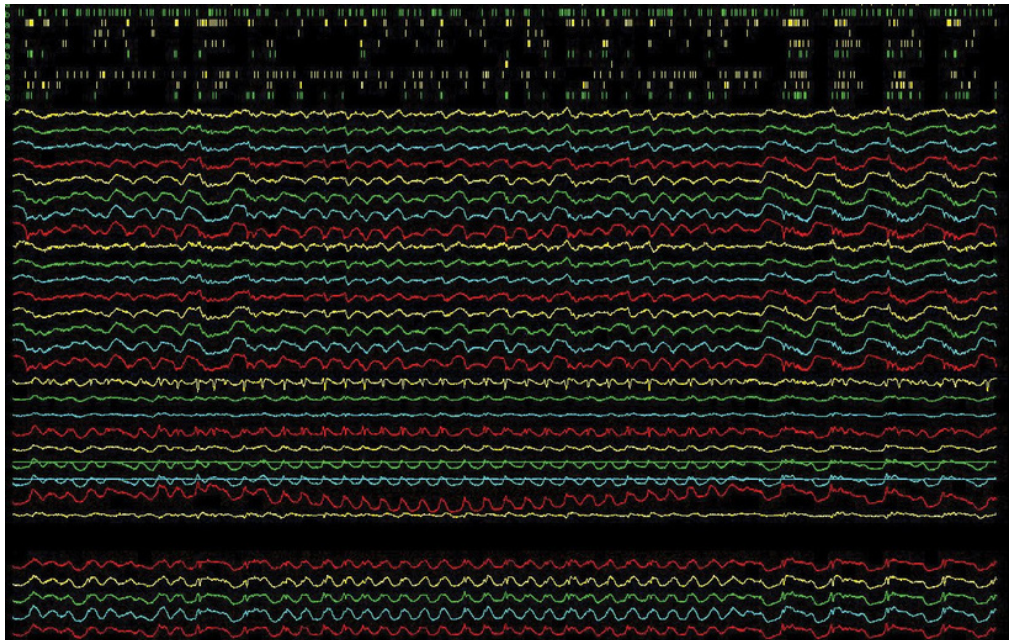

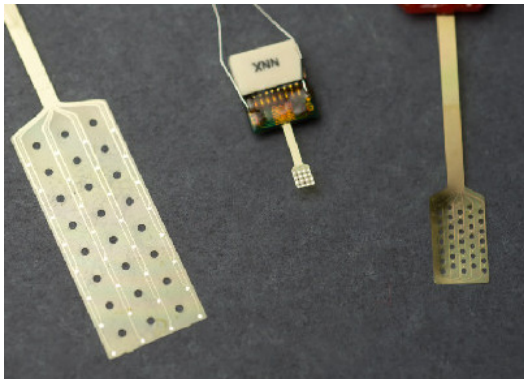

*ABOVE: ECoG probes are available in different sizes and site configurations for different applications.*

NeuroNexus **ECoG probes** are ultra-flexible surface grids with high recording resolution, designed to conform closely to the brain surface for electrocorticography.

**Flexible and Durable** – Fabricated with our polymer MEMS technology, our ECoG probes conform to the brain surface.
**Optimized array designs** – Select from a variety of ECoG array designs featuring different site spacings, for different applications or animal models.
**Versatile** – Combine an ECoG probe with a NeuroNexus penetrating array to establish concurrent surface and intracortical interfaces.

## SPECIFICATIONS

| | |
|---|---|
| **Substrate Material** | Polyimide |
| **Electrode Site Material** | Platinum |
| **Array Thickness** | 15 µm |
| **Cable Length** | 5 - 100 mm (varies by design) |
| **Channel Count** | 16, 32, 64, 128, 256 (varies by design) |
| **Available Packages** | H16, HC16, HZ16, X3-H16, H32, HC32, HZ32, X3-H32, H64, H64LP, HC64, HZ64, X3-H64, H128, H128LP, IH128, AVH128, AVIH128, H256, IH256, AVH256, AVIH256 |

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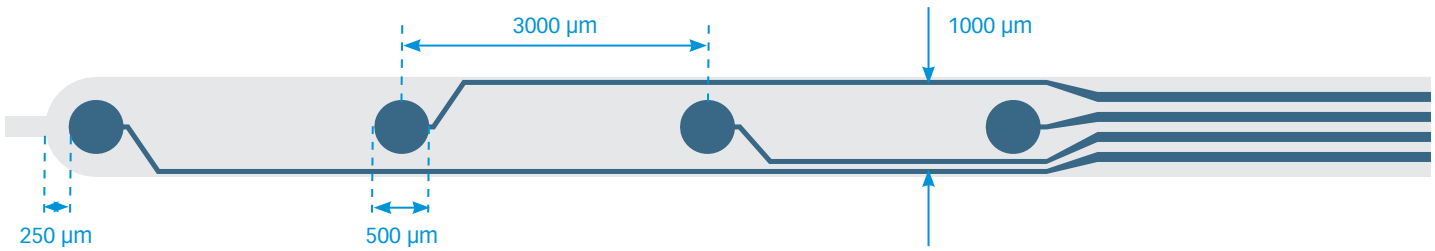
# E4-3000-40-500

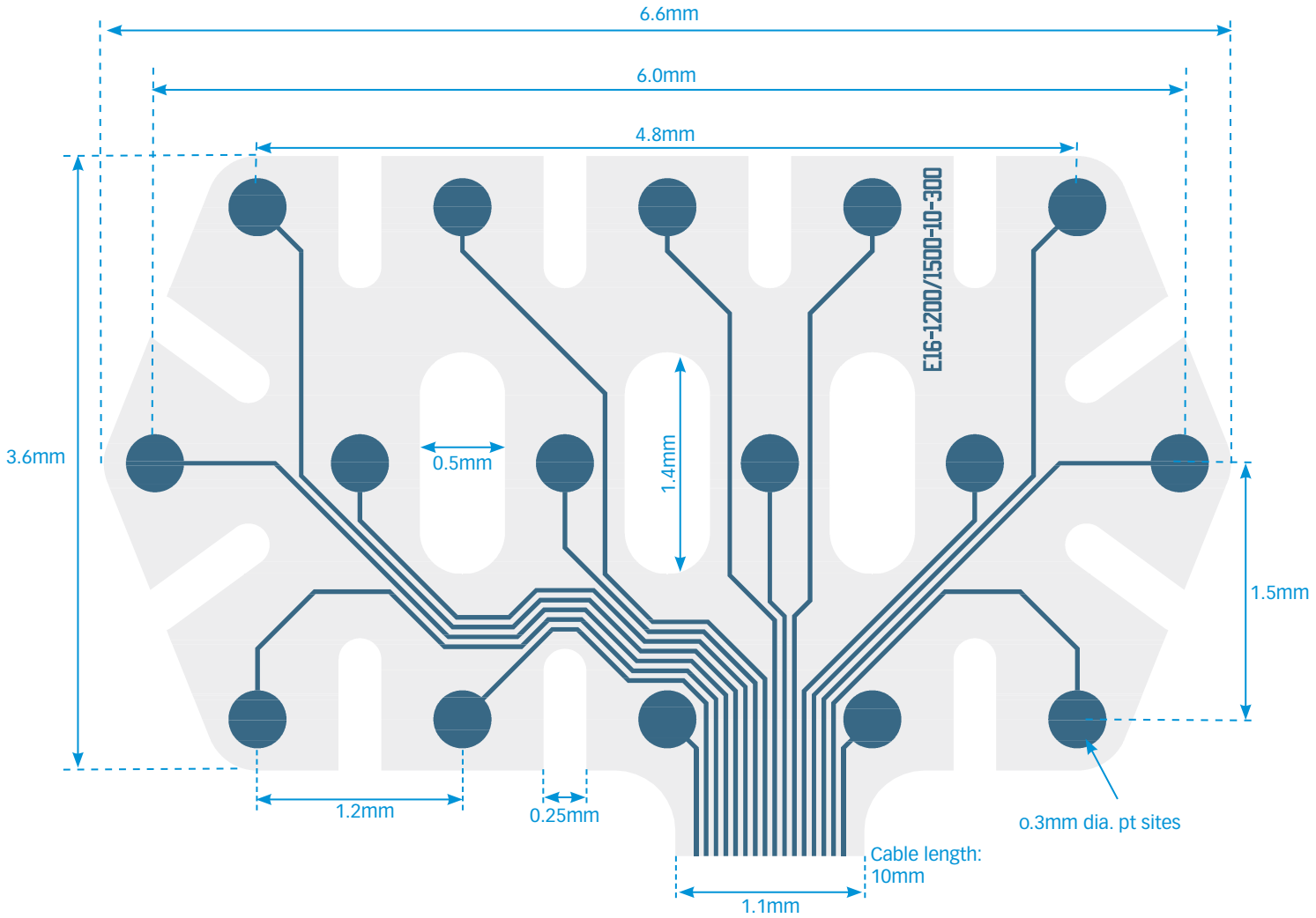

## Available packages

**CHRONIC**
H16
HC16
HZ16
X3-H16

## Thickness

**15 µm**

# E16-1200-1500-10-300



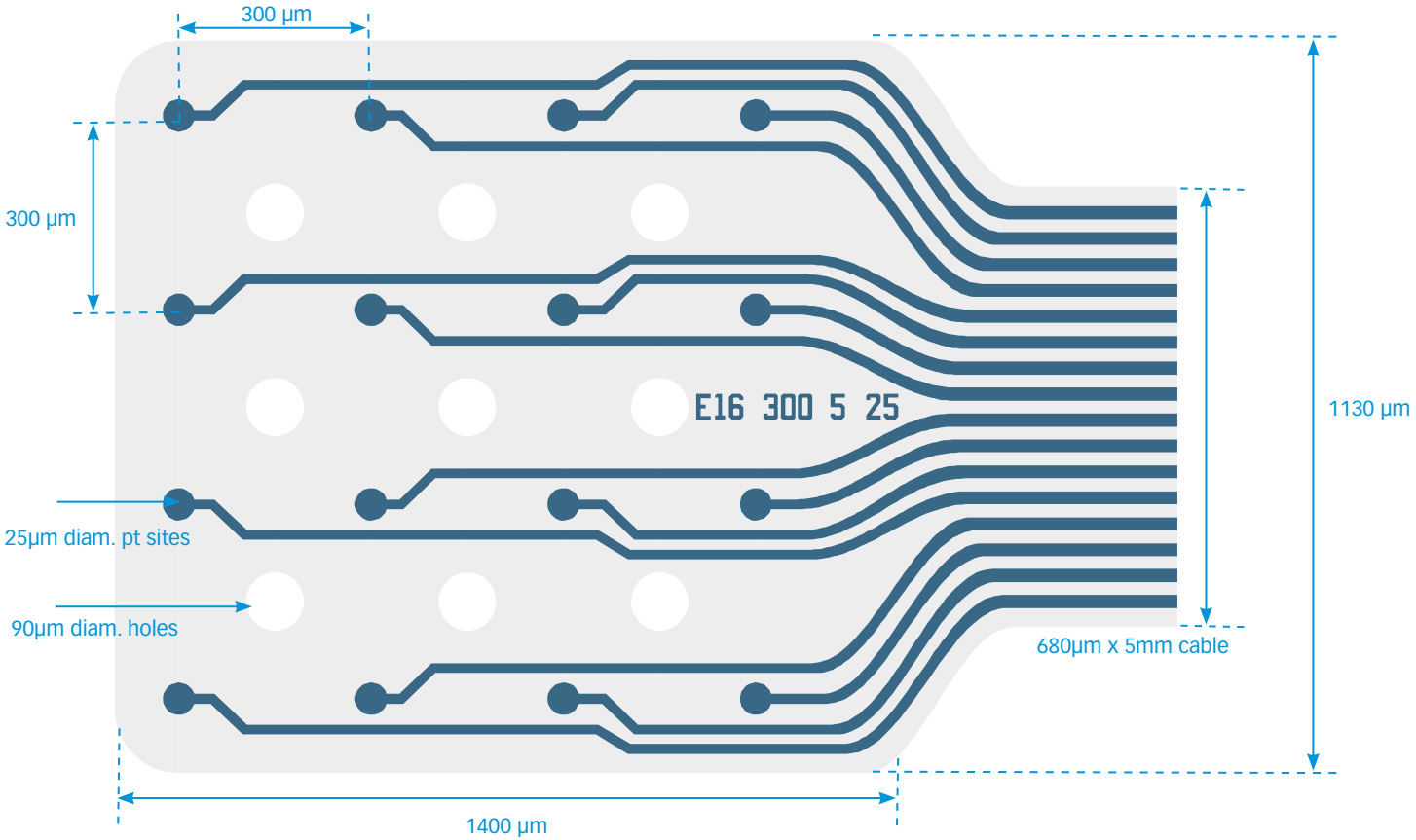

## Available packages

**CHRONIC**
H16
HC16
HZ16
X3-H16

## Thickness

**15 µm**

# E16-300-5-25



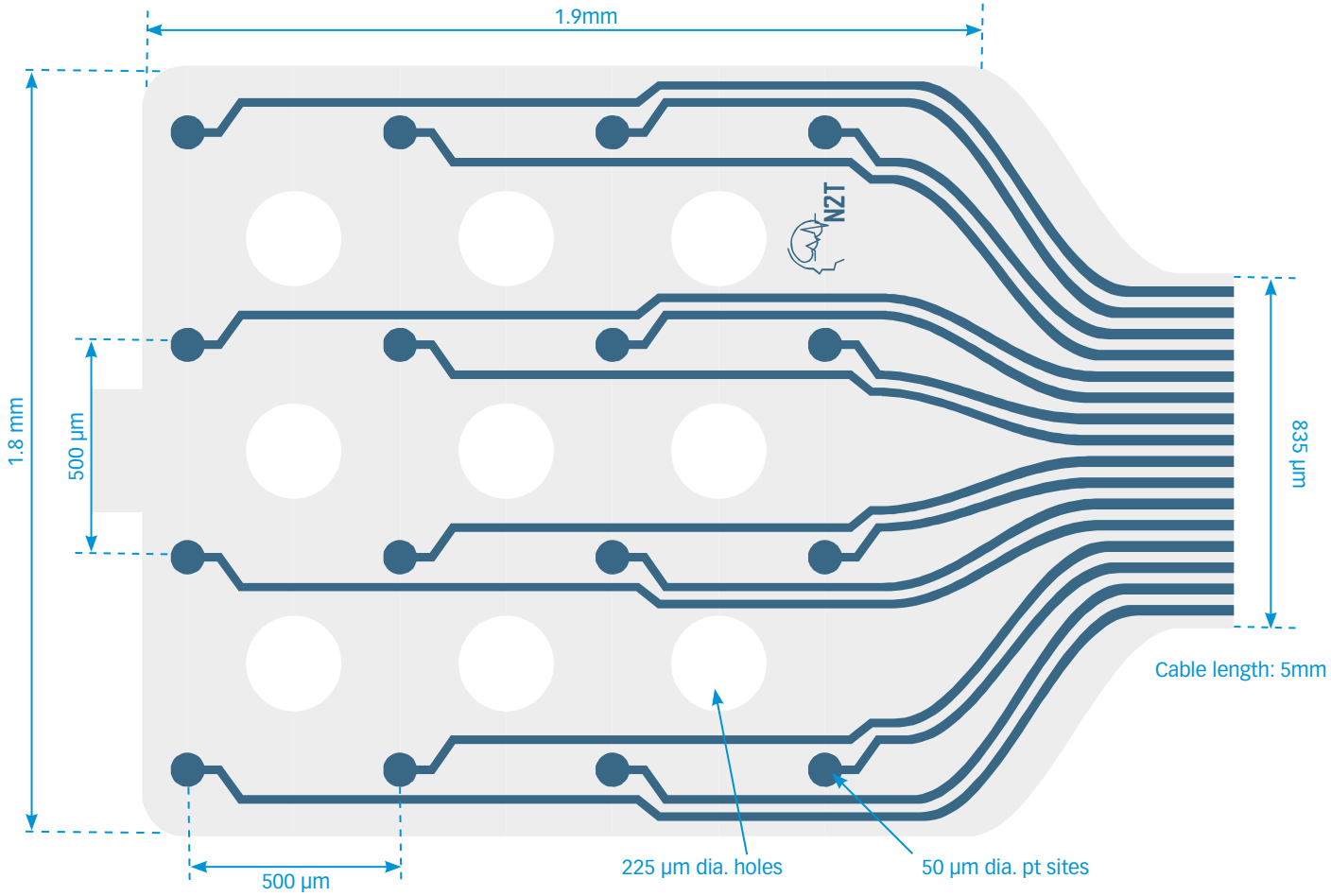

## Available packages

**CHRONIC**
H16
HC16
HZ16
X3-H16

## Thickness

**15 µm**

# E16-500-5-50



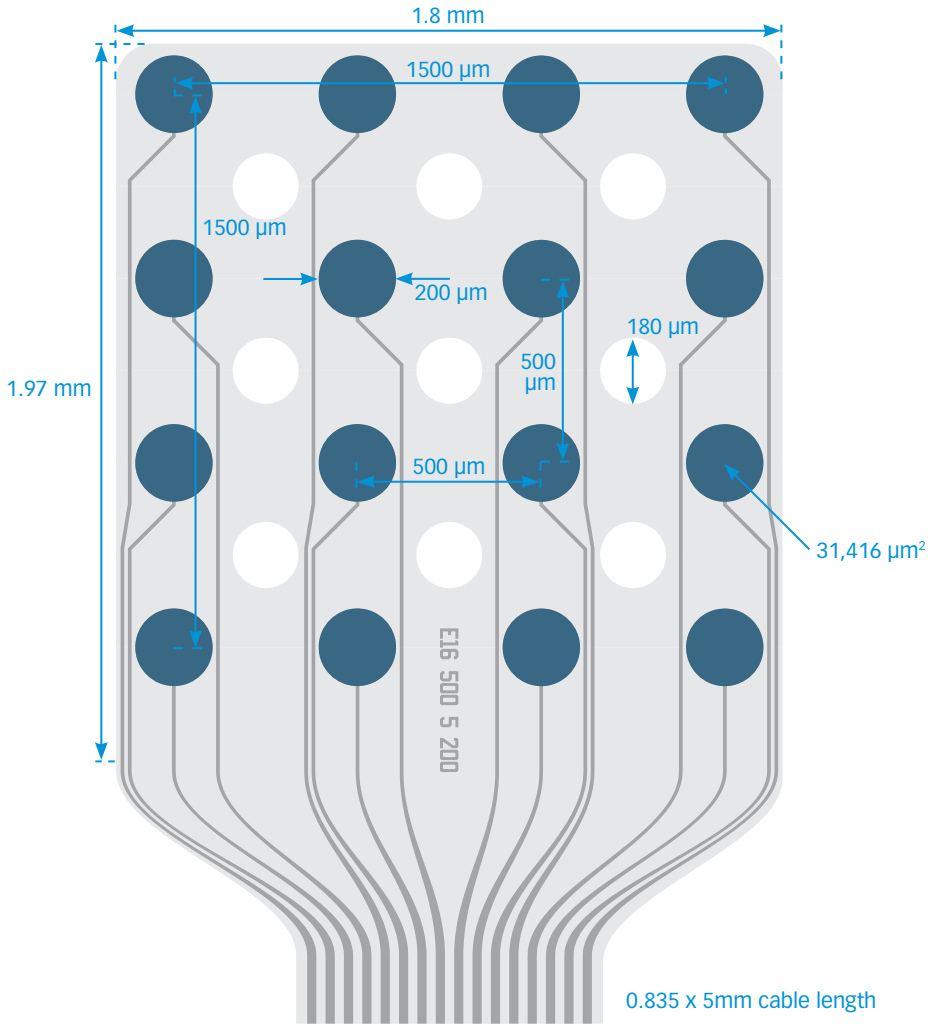

## Available packages

**CHRONIC**
H16
HC16
HZ16
X3-H16

## Thickness

**15 µm**

# E16-500-5-200



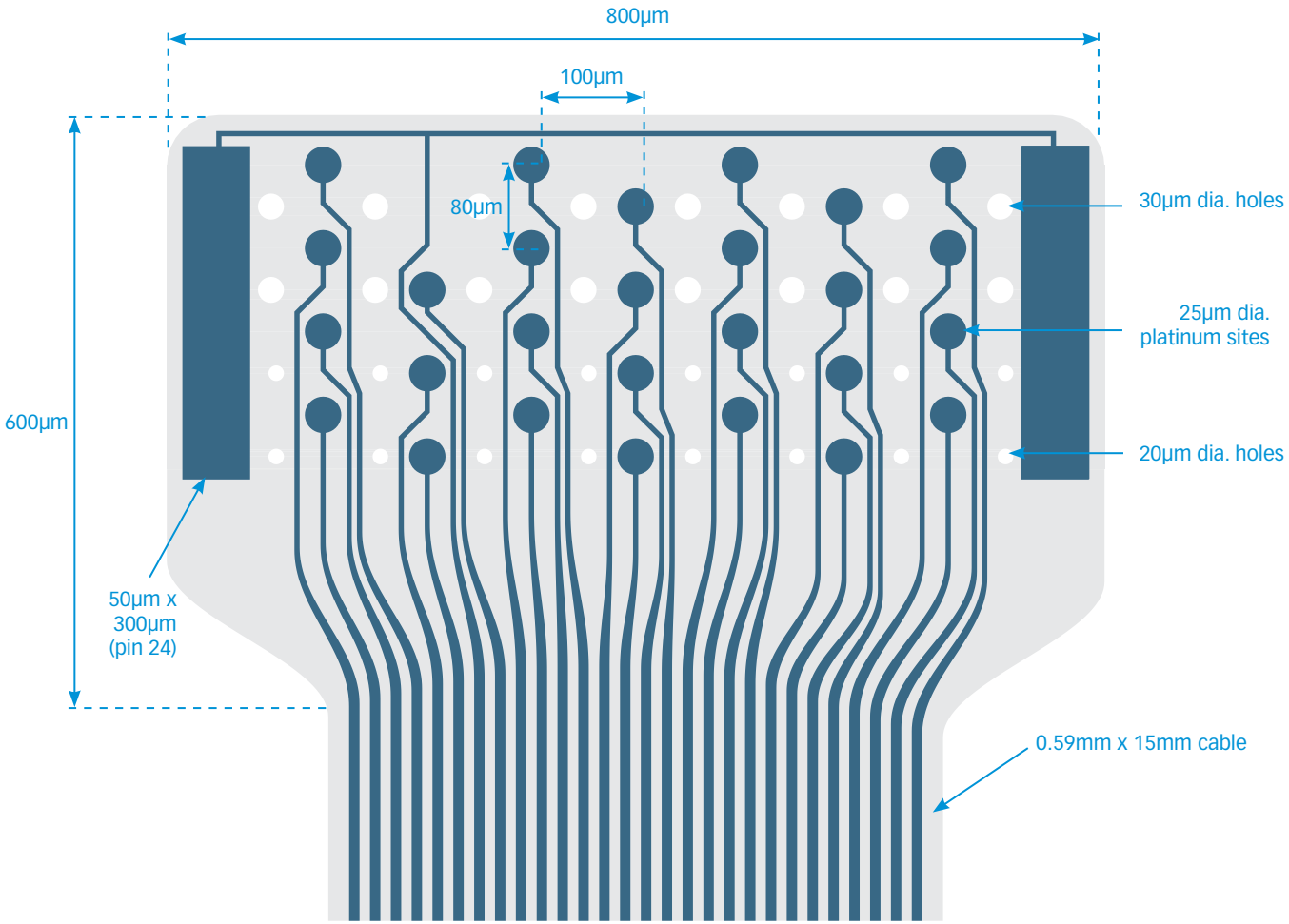

## Available packages

**CHRONIC**
H16
HC16
HZ16
X3-H16

## Thickness

**15 µm**

# E29-80s-25-15



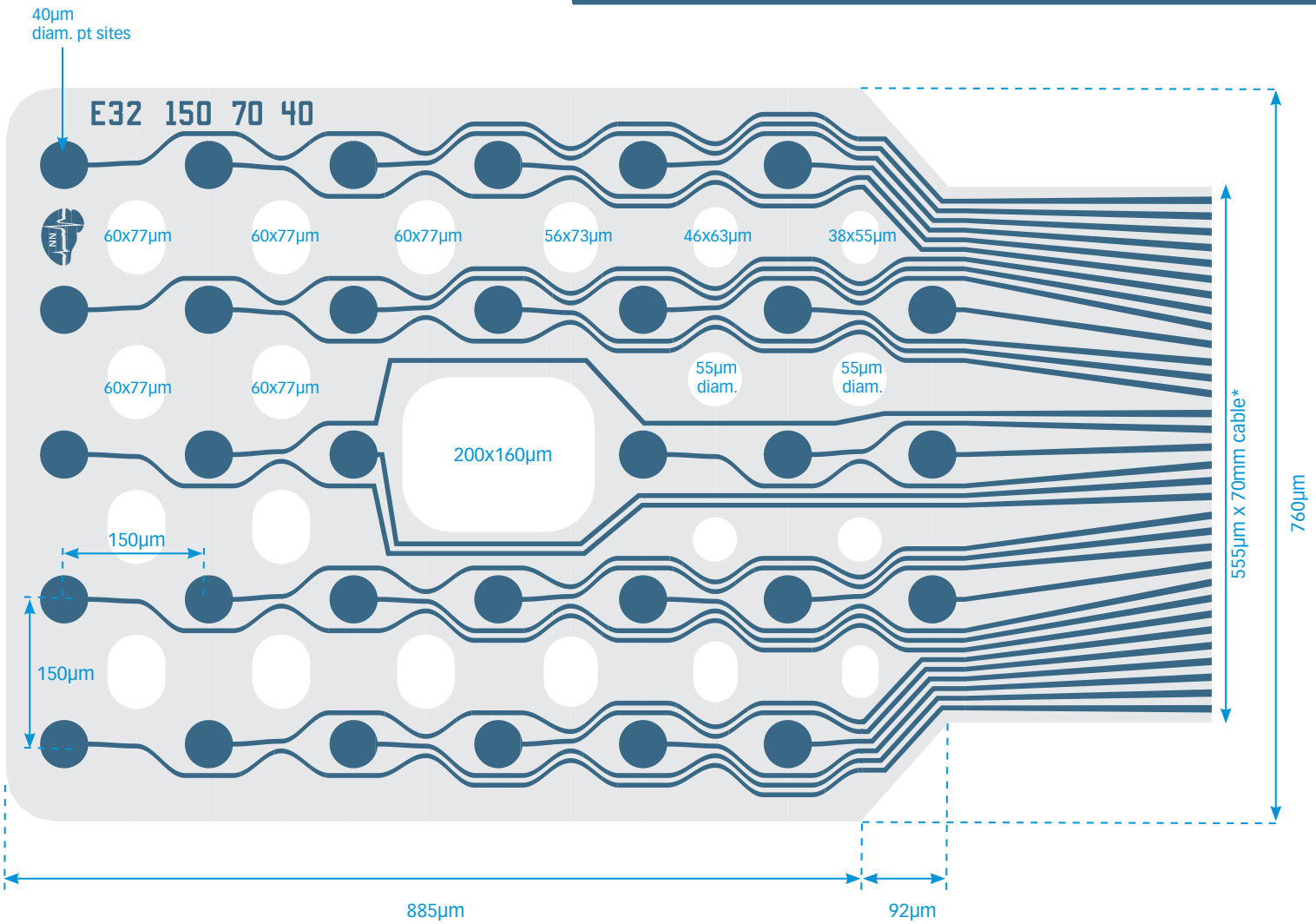

## Available packages

**CHRONIC**
H16
HC16
HZ16
X3-H16

## Thickness

**15 µm**

# E32-150-70-40



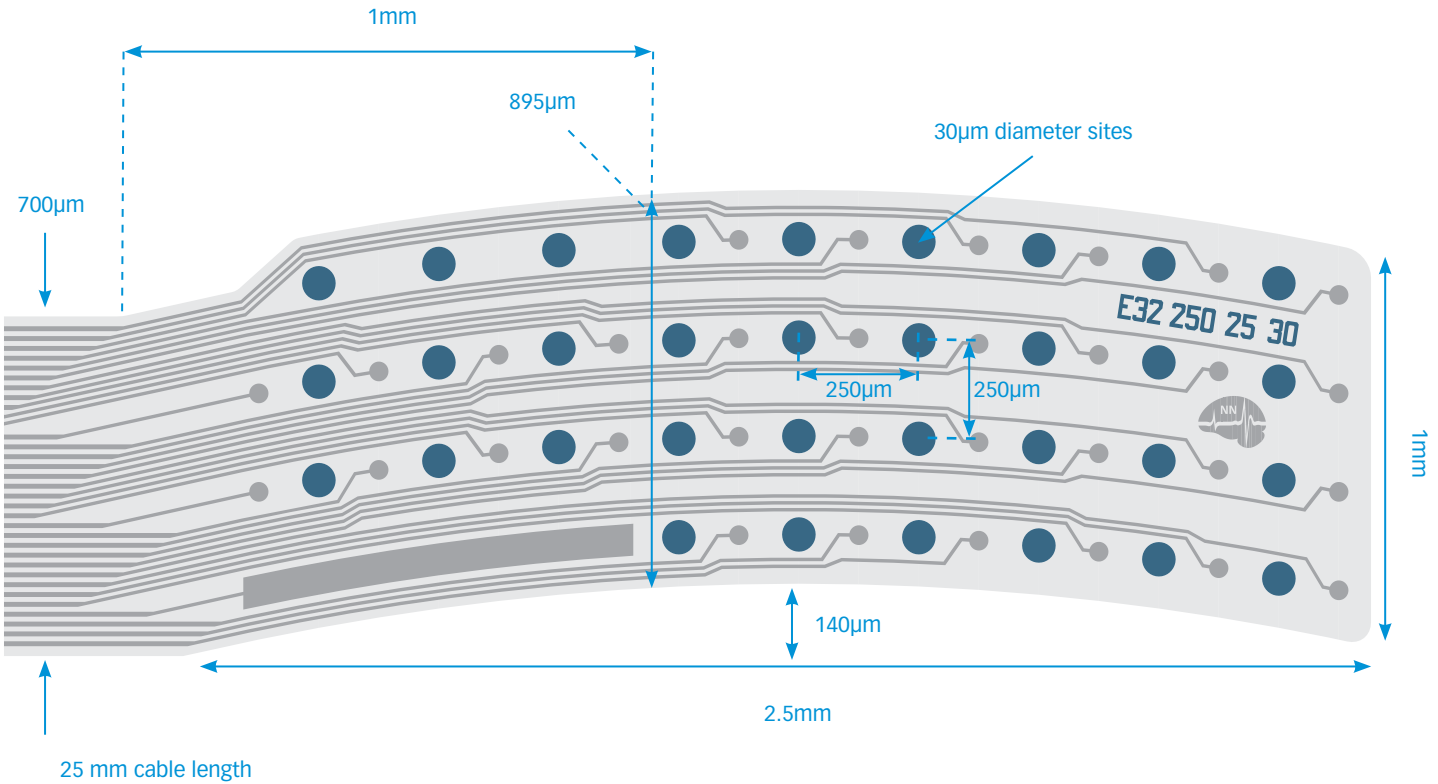

## Available packages

**CHRONIC**
H32
HC32
HZ32
X3-H32

## Thickness

**15 µm**

# E32-250-25-30-PML



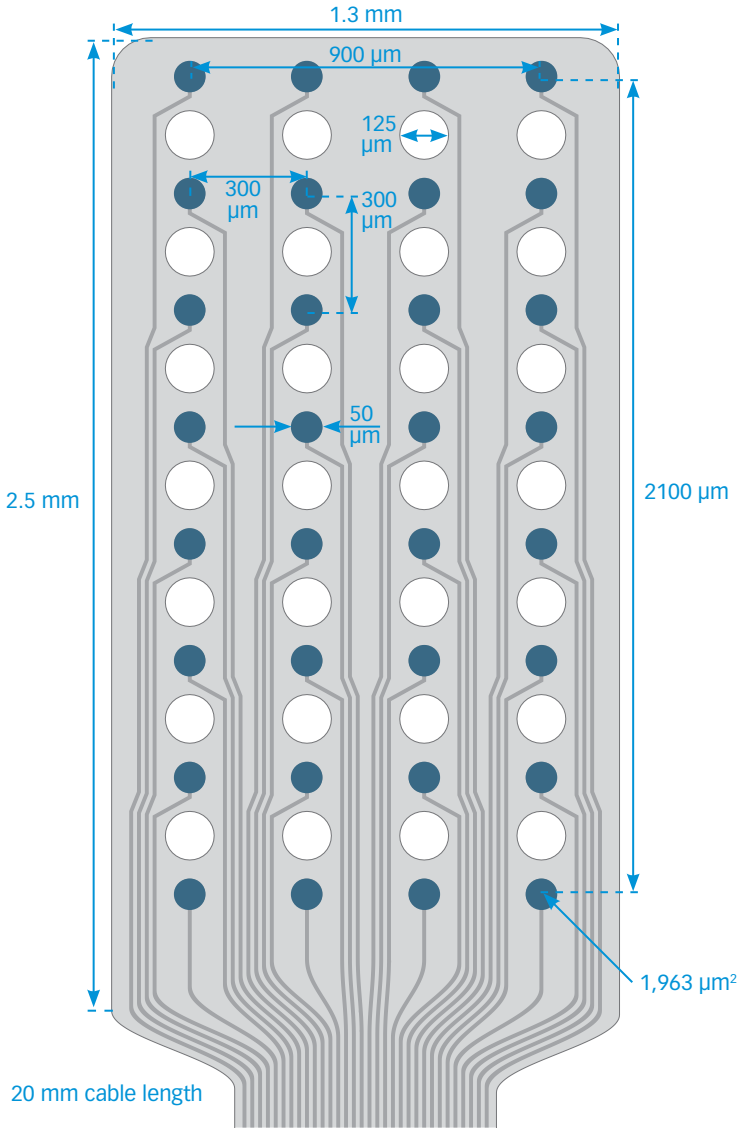

## Available packages

**CHRONIC**
H32
HC32
HZ32
X3-H32

## Thickness

**15 µm**

# E32-300-20-50



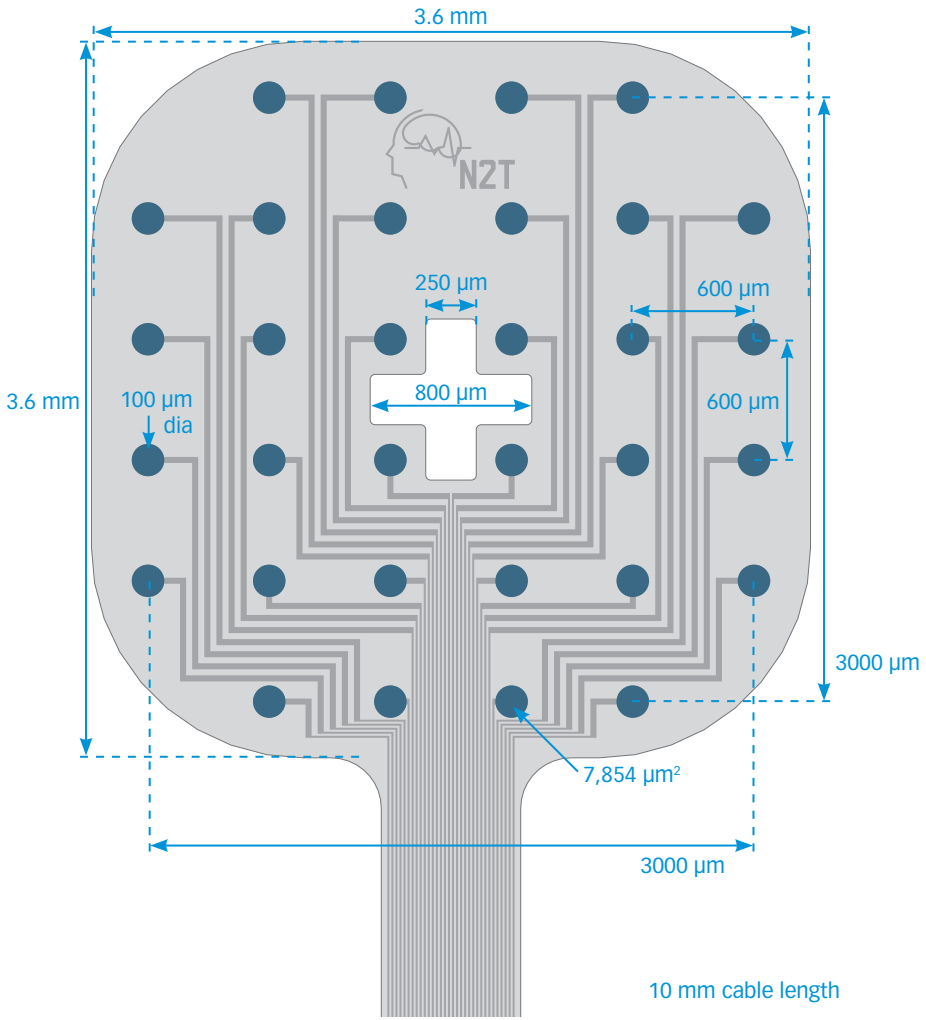

## Available packages

**CHRONIC**
H32
HC32
HZ32
X3-H32

## Thickness

**15 µm**

# E32-600-10-100



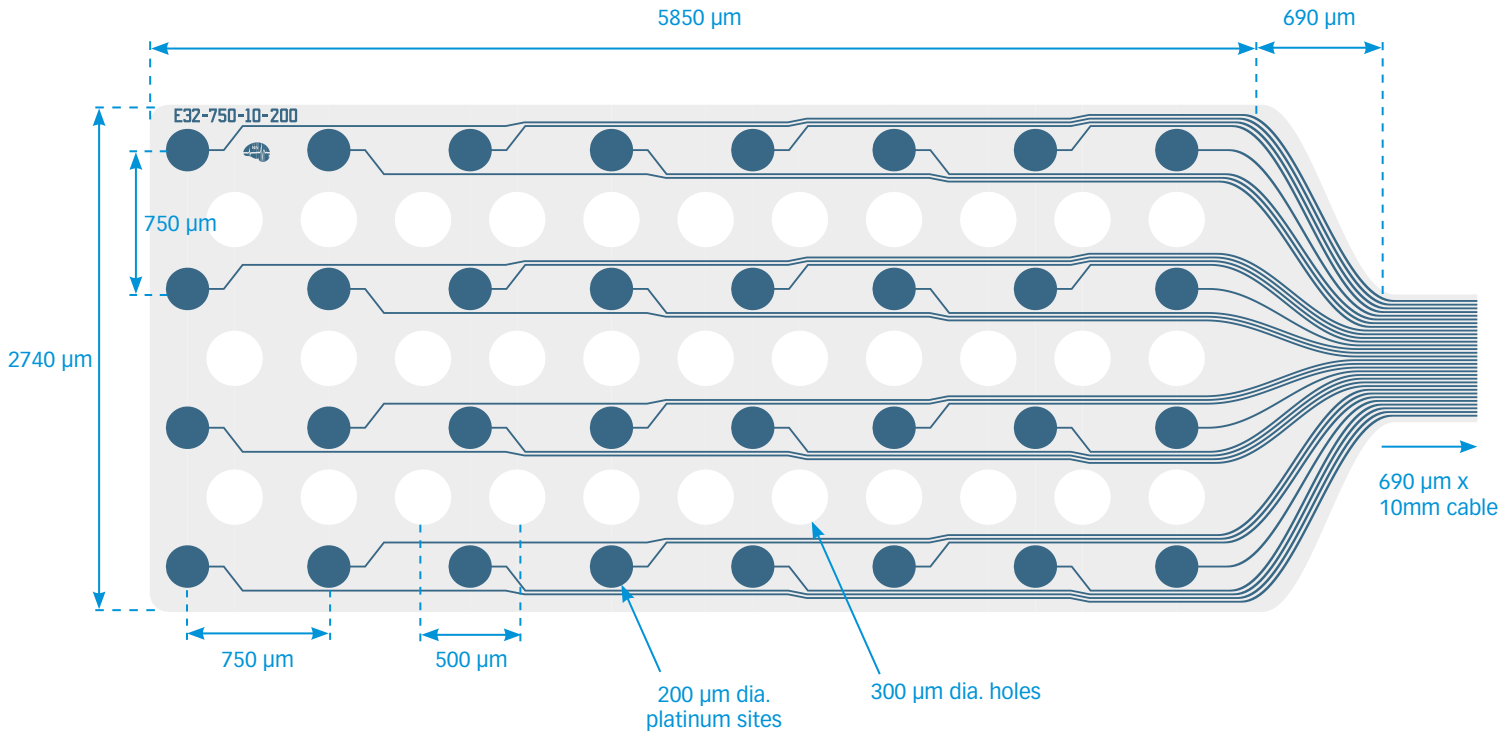

## Available packages

**CHRONIC**
H32
HC32
HZ32
X3-H32

## Thickness

**15 µm**

# E32-750-10-200




## Available packages

**CHRONIC**
H32
HC32
HZ32
X3-H32

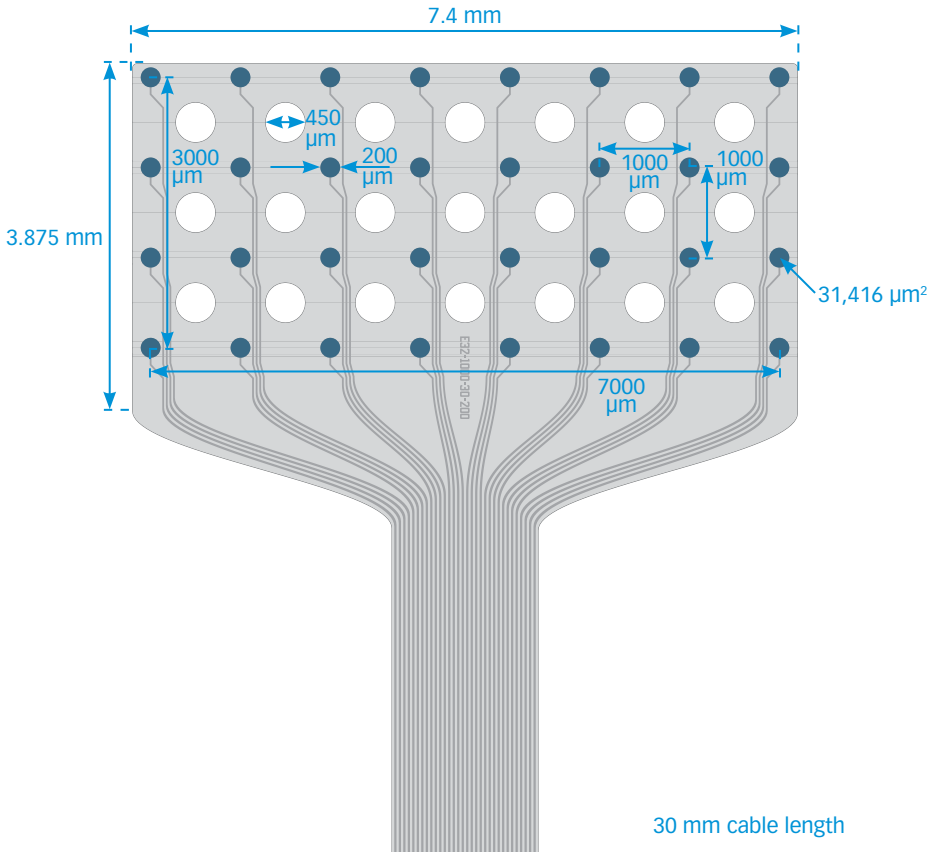
## Thickness

**15 µm**

# E32-1000-30-200

## Available packages

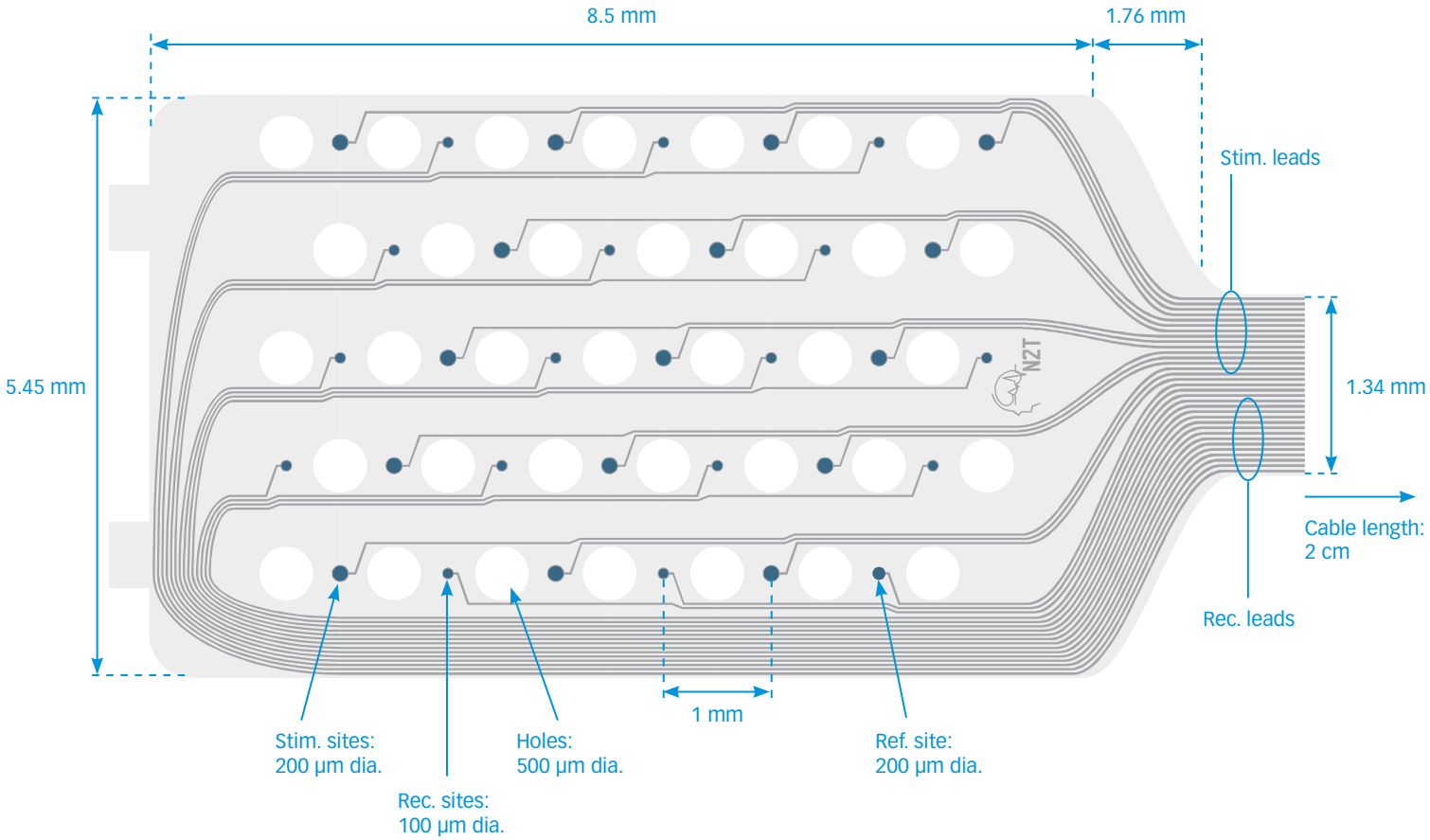
**CHRONIC**
H32
HC32
HZ32
X3-H32




## Thickness

**15 µm**

# E32-1000-20-50/100



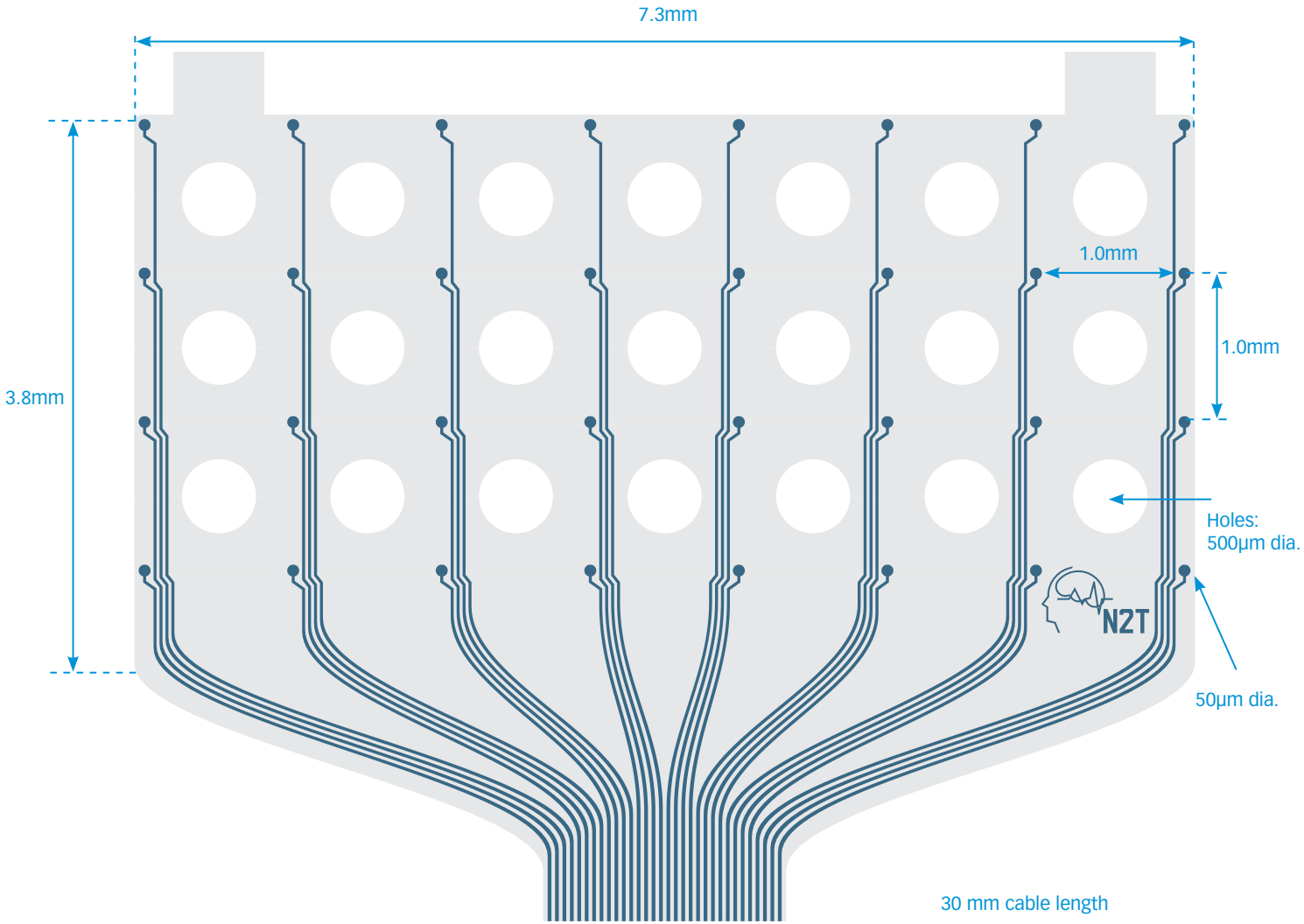

## Available packages

**CHRONIC**
H32
HC32
HZ32
X3-H32

## Thickness

**15 µm**

# E32-1000-30-50



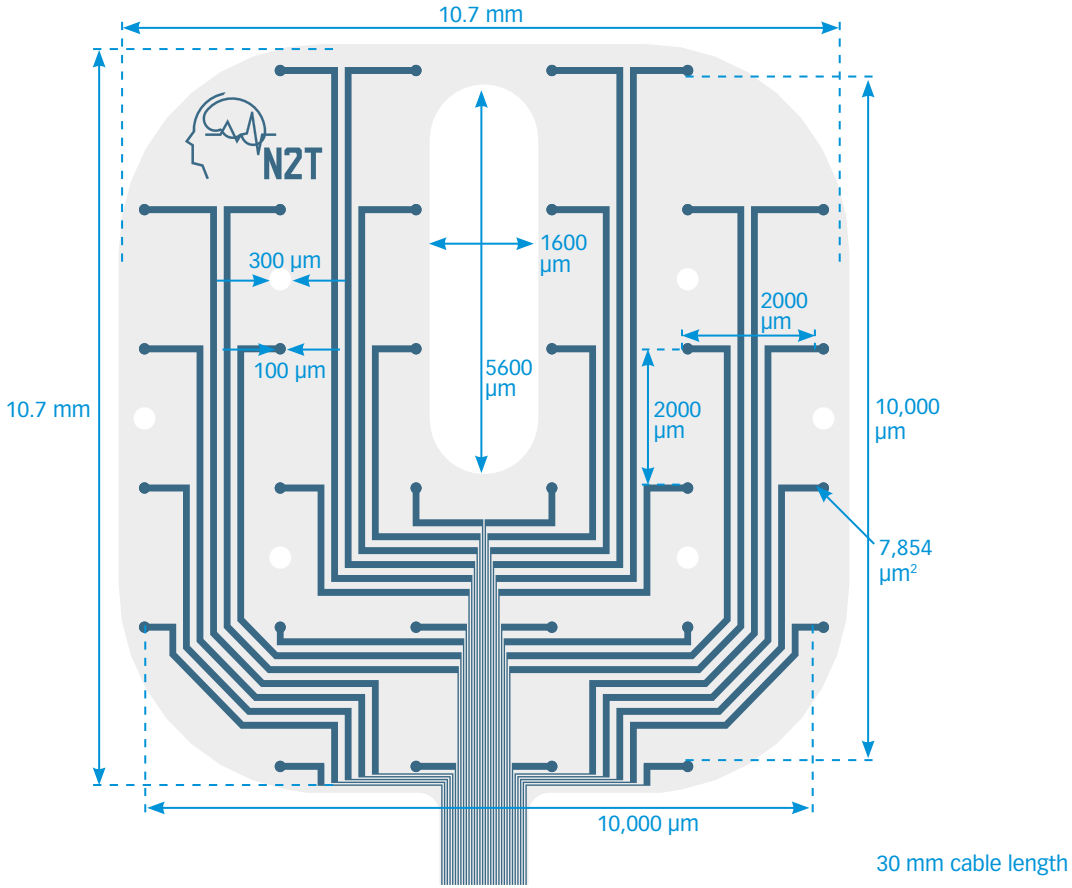

## Available packages

**CHRONIC**
H32
HC32
HZ32
X3-H32

## Thickness

**15 µm**

# E32-2000-30-100



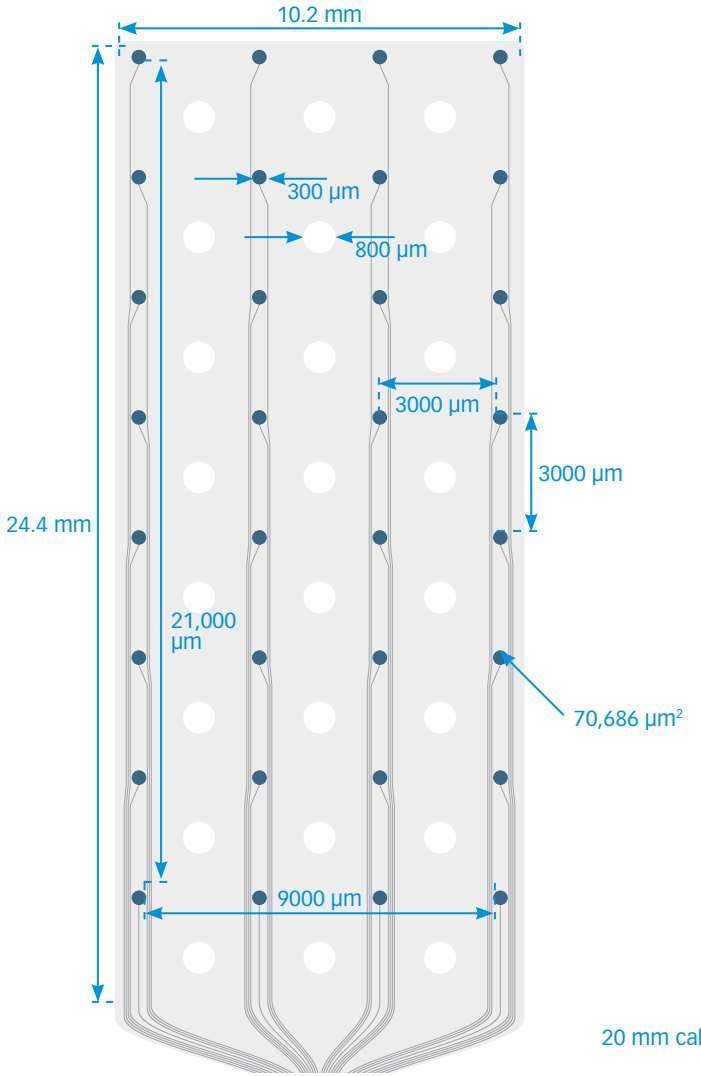

## Available packages

**CHRONIC**
H32
HC32
HZ32
X3-H32

## Thickness

**15 µm**

# E32-3000-20-300



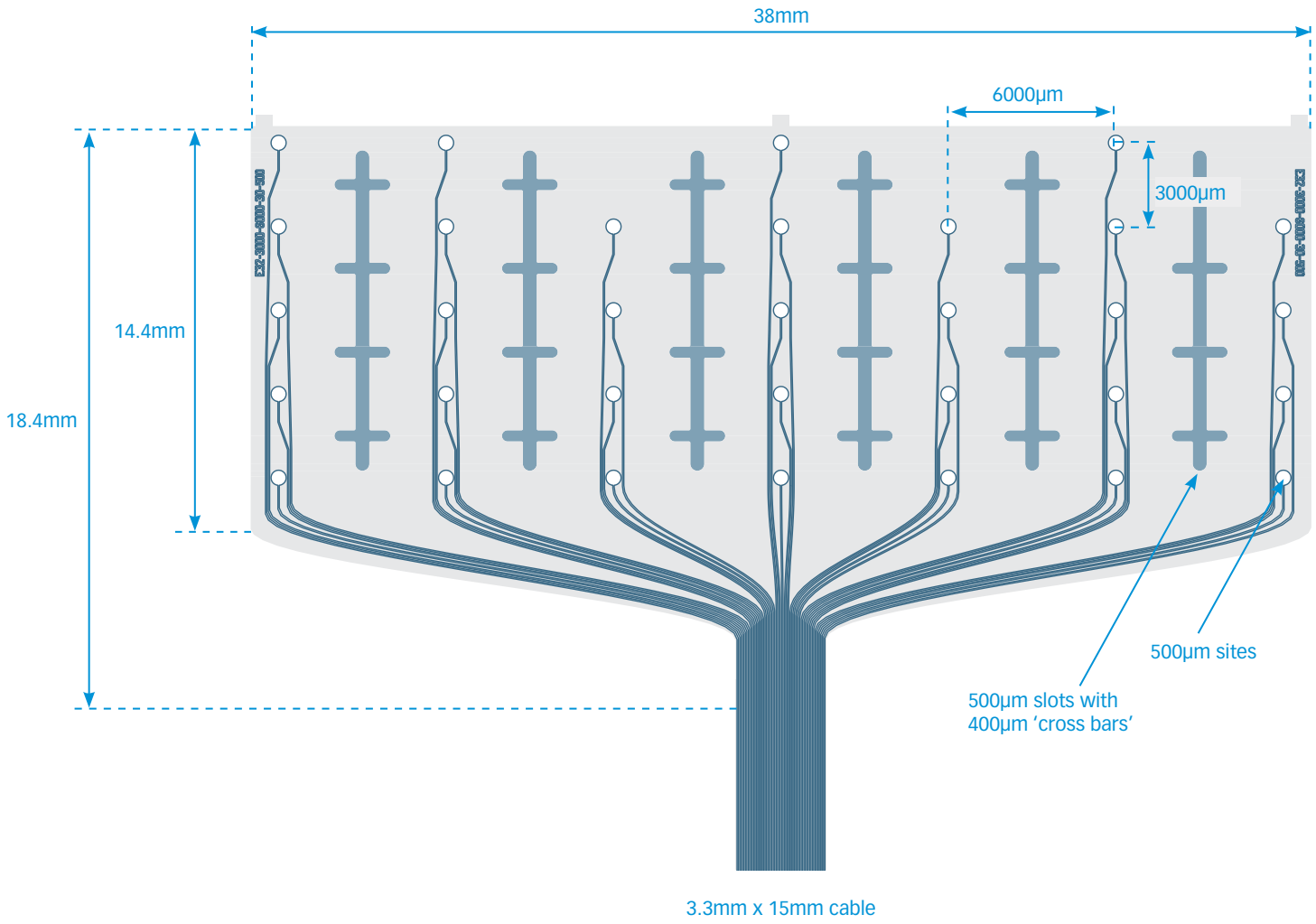

## Available packages

**CHRONIC**
H32
HC32
HZ32
X3-H32

## Thickness

**15 µm**

# E32-3000-6000-30-500



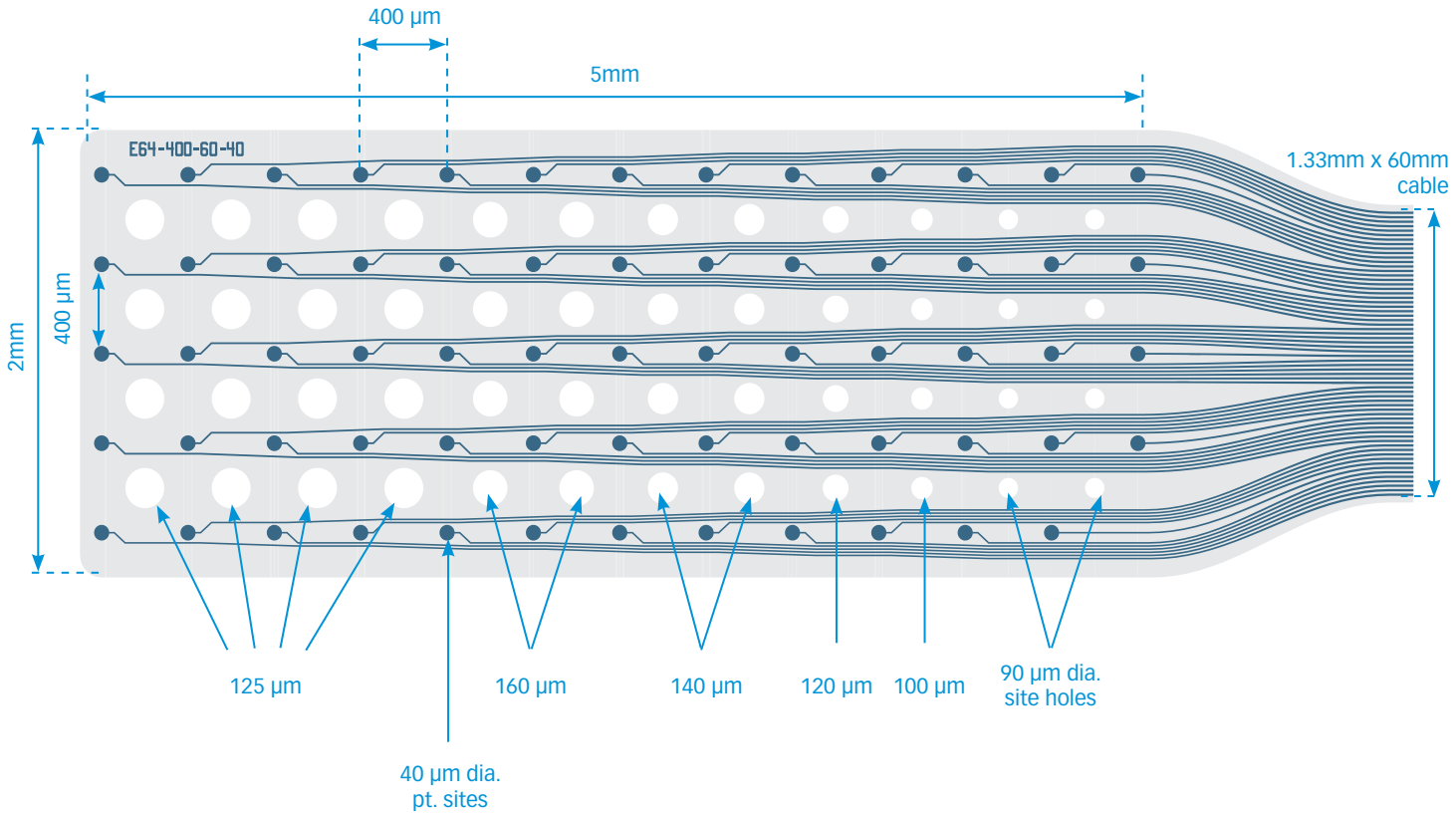

## Available packages

**CHRONIC**
H32
HC32
HZ32
X3-H32

## Thickness

**15 µm**

# E64-400-60-40



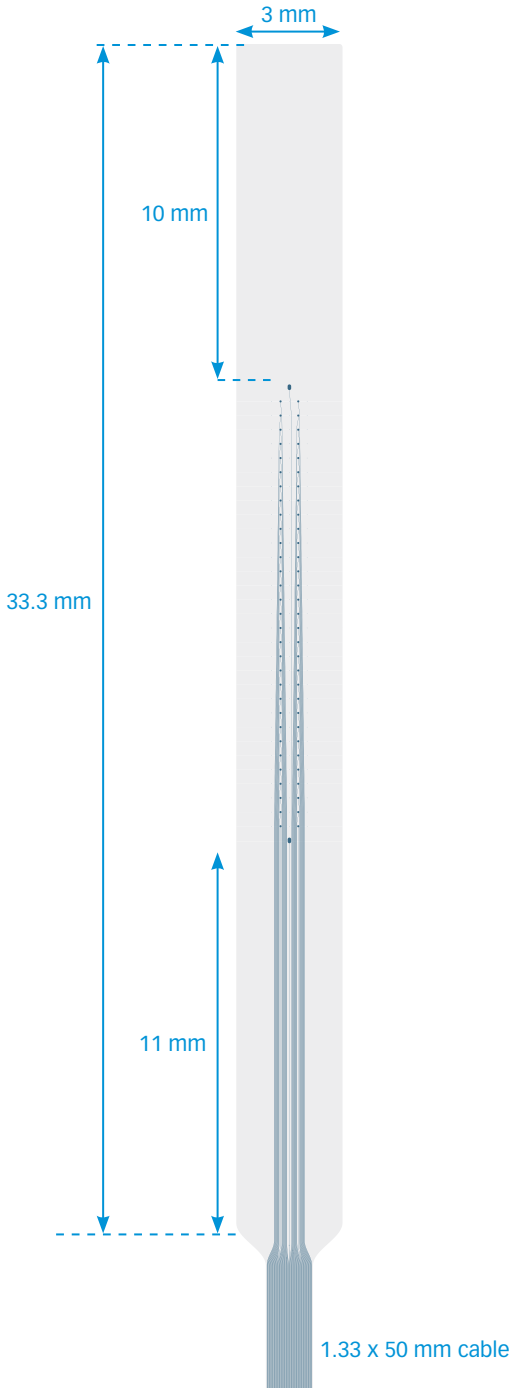

## Available packages

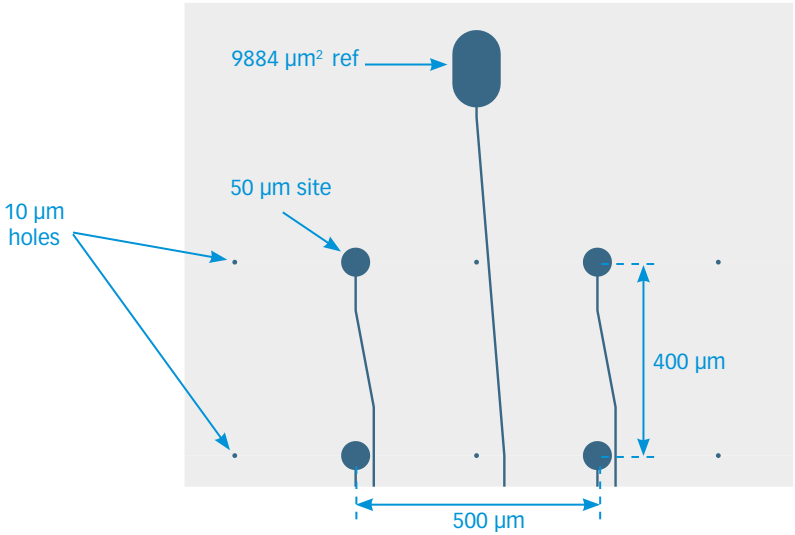
**CHRONIC**
H64
H64LP
HC64
HZ64
X3-H64

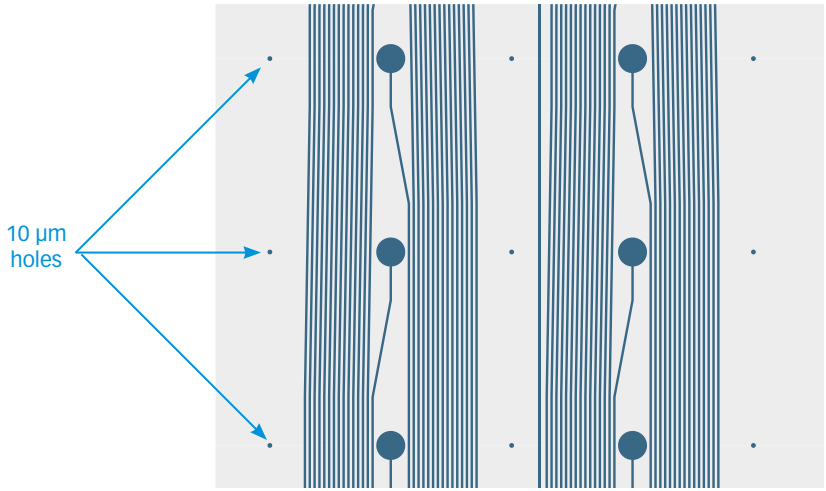
## Thickness

**15 µm**

# E64-400-500-50-50



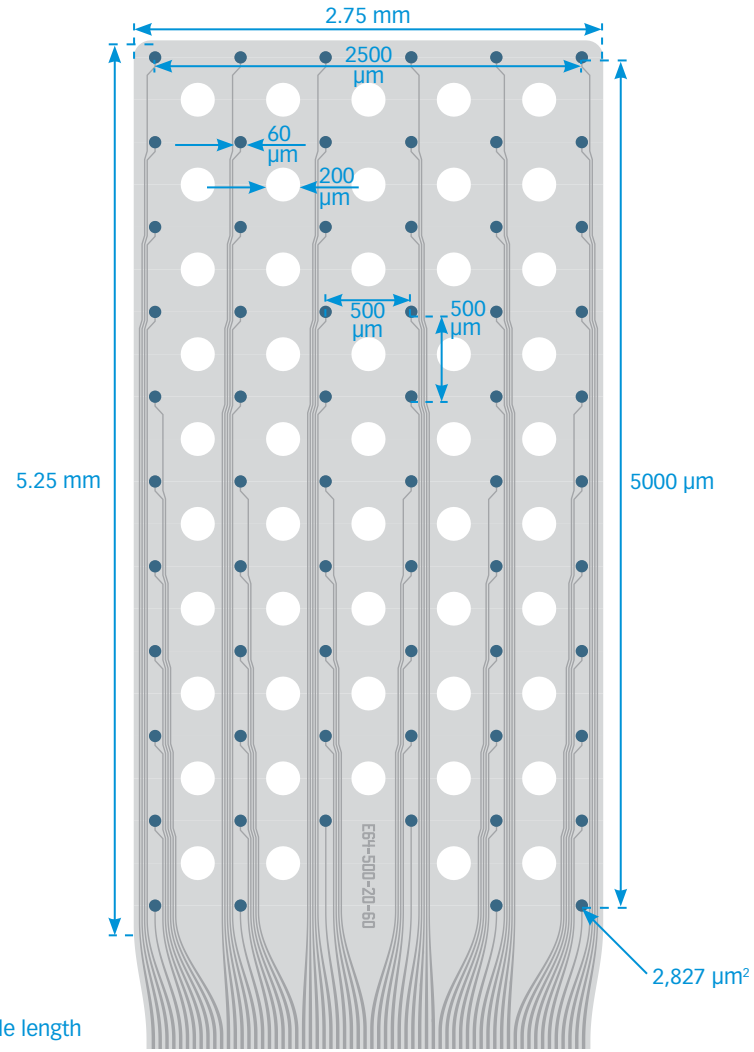

## Available packages

**CHRONIC**
H64
H64LP
HC64
HZ64
X3-H64

## Thickness

**15 µm**

# E64-500-20-60



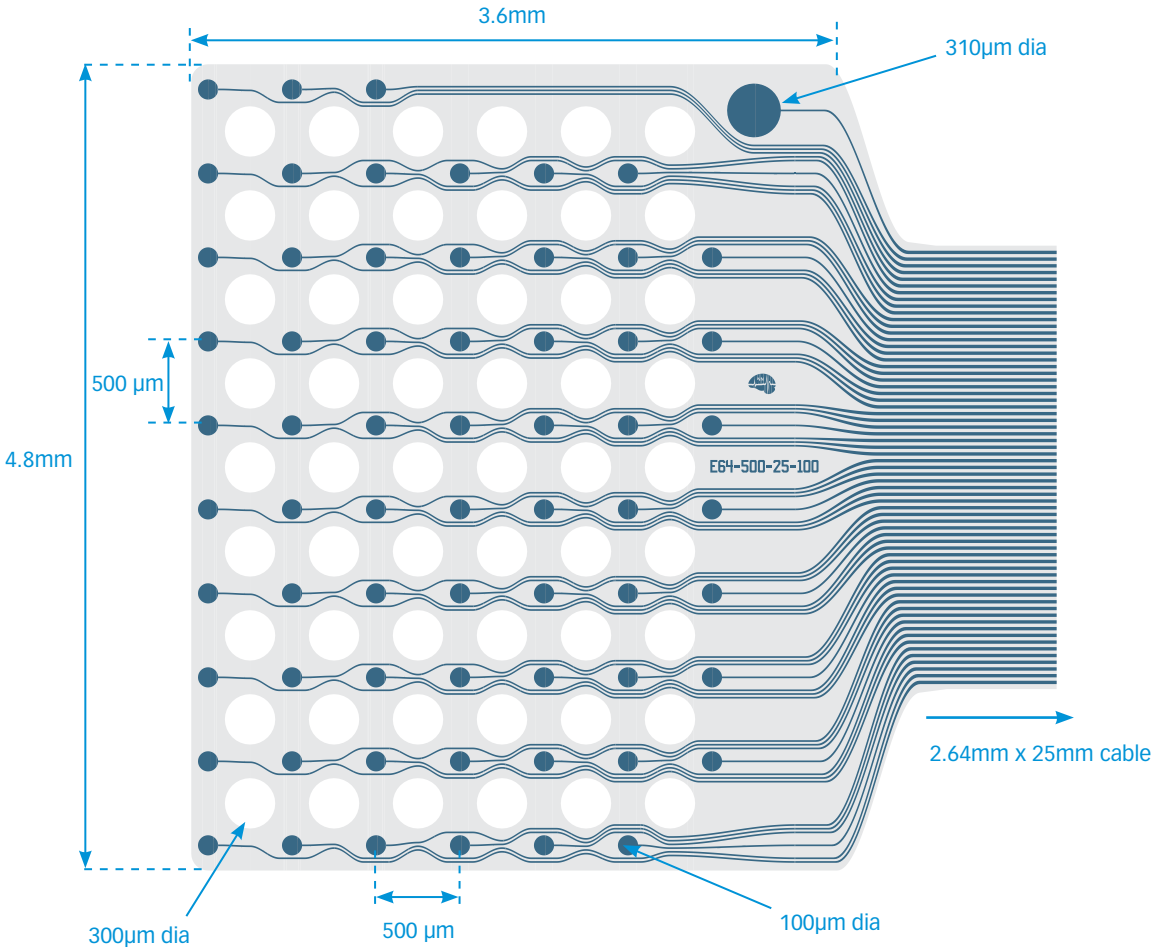

## Available packages

**CHRONIC**
H64
H64LP
HC64
HZ64
X3-H64

## Thickness

**15 µm**

# E64-500-25-100




## Available packages

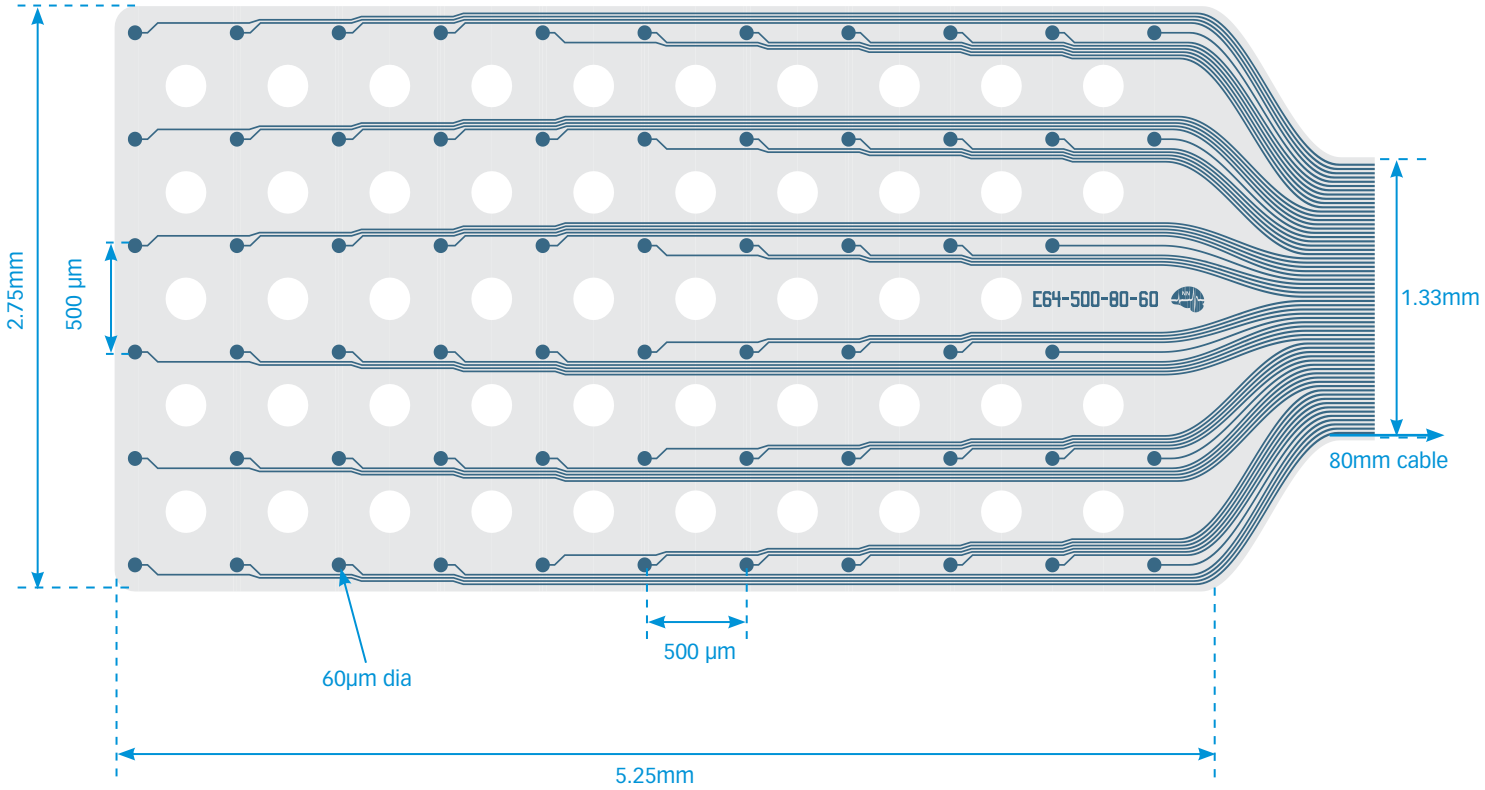
**CHRONIC**

H64
H64LP
HC64
HZ64
X3-H64

## Thickness

**15 µm**

# E64-500-80-60



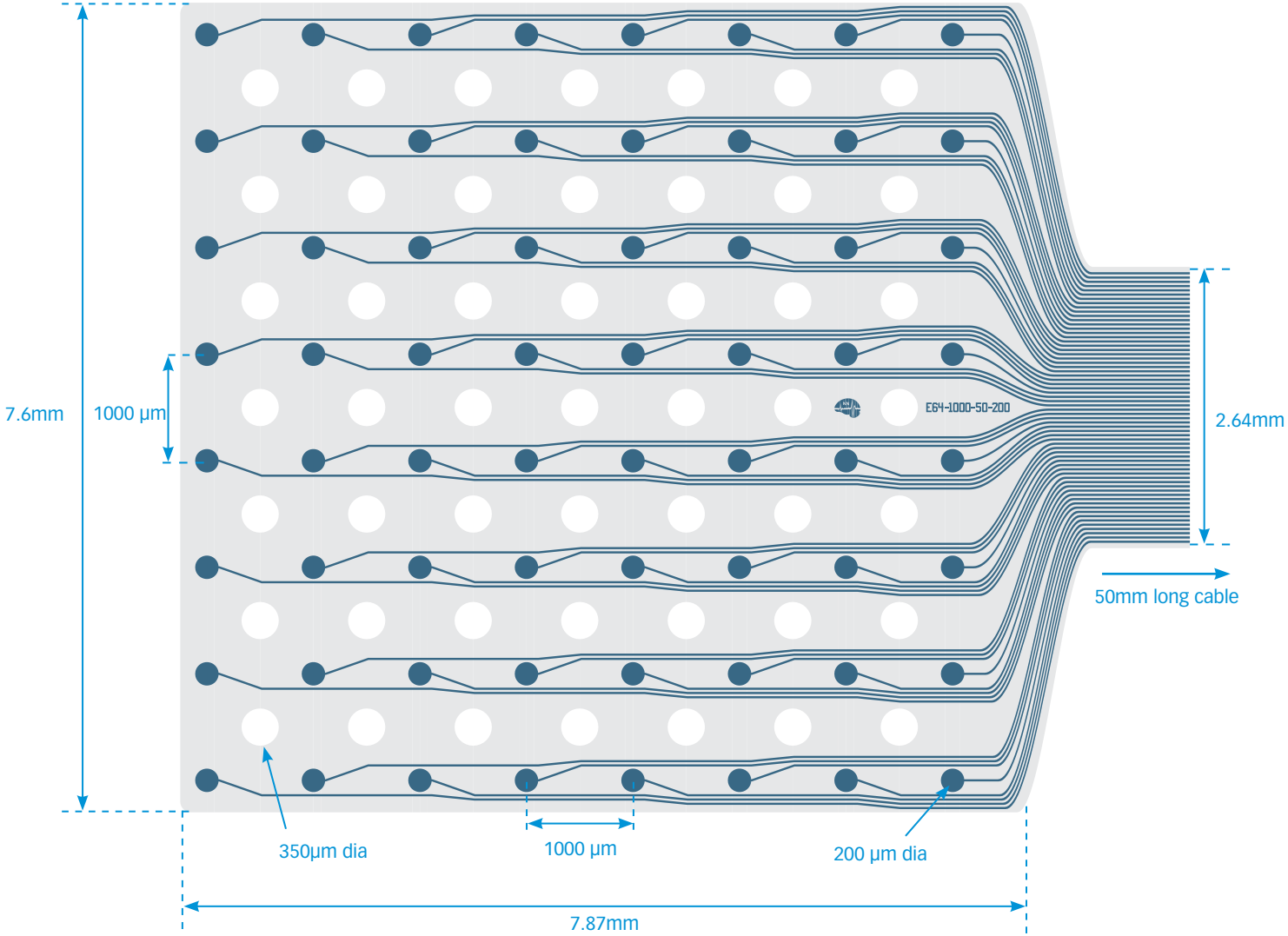

## Available packages

**CHRONIC**
H64
H64LP
HC64
HZ64
X3-H64

## Thickness

**15 µm**

# E64-1000-50-200



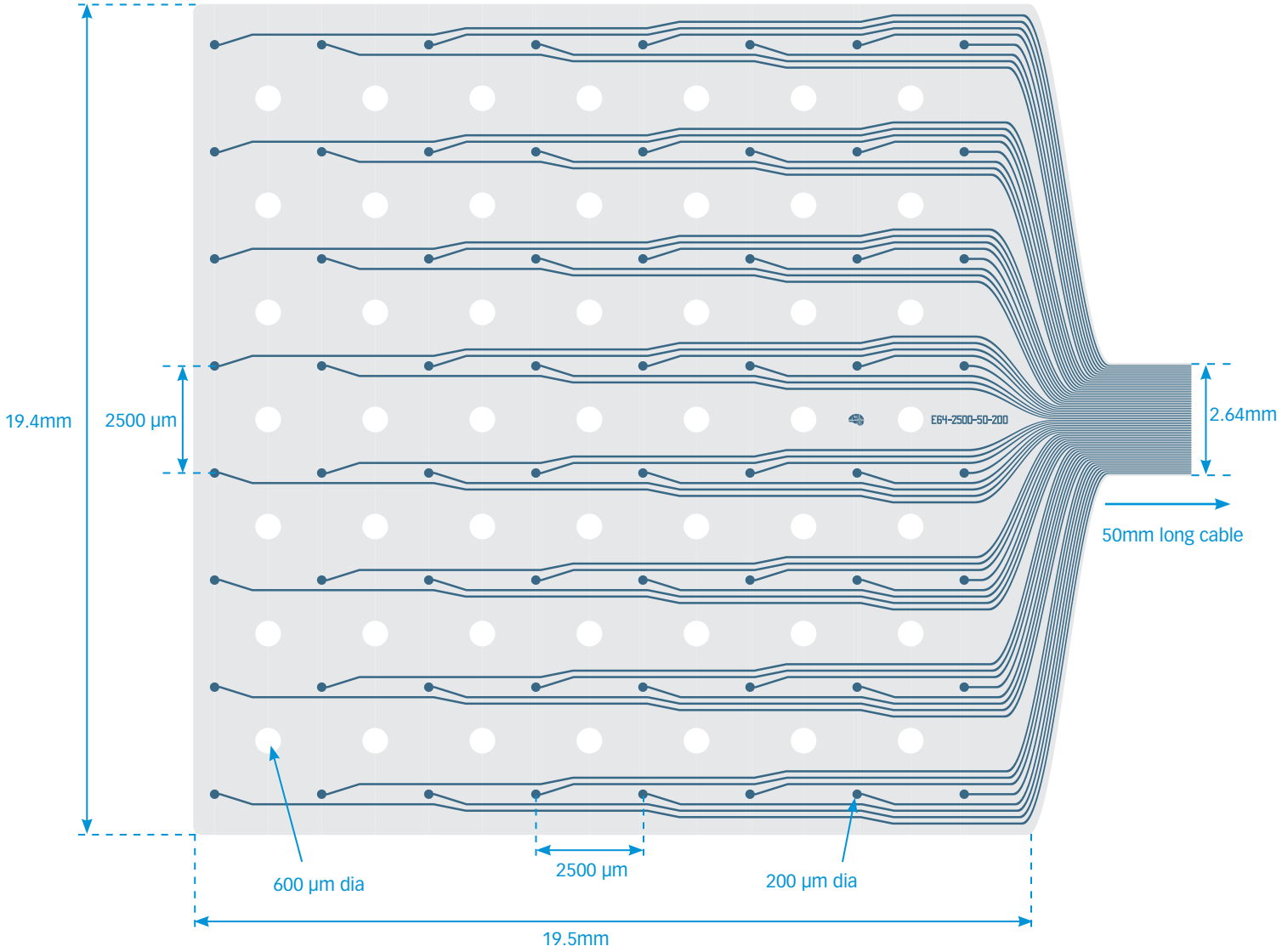

## Available packages

**CHRONIC**
H64
H64LP
HC64
HZ64
X3-H64

## Thickness

**15 µm**

# E64-2500-50-200



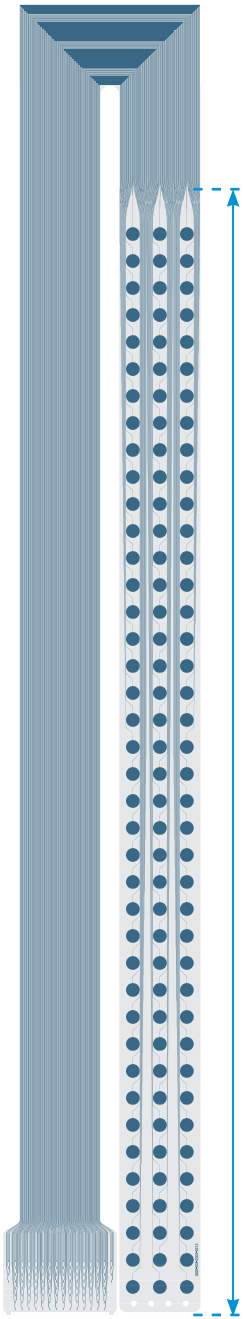

## Available packages

**CHRONIC**
H64
H64LP
HC64
HZ64
X3-H64

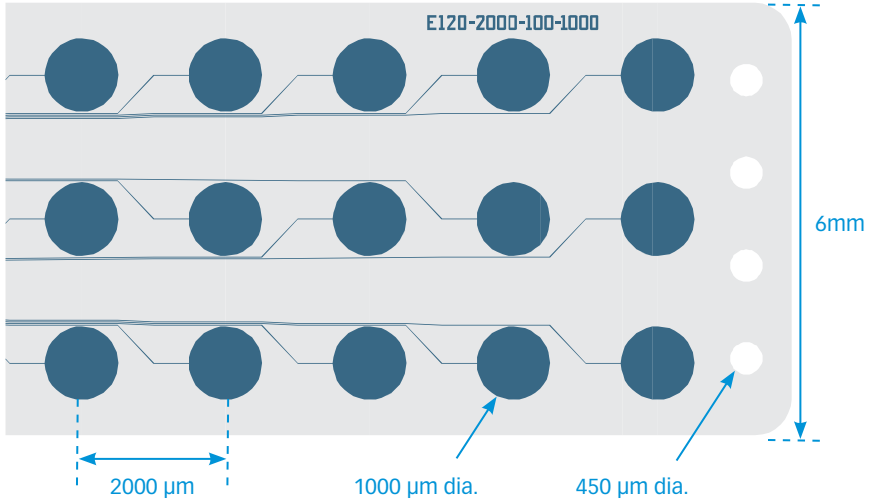
## Thickness

**15 µm**

# E120-2000-100-1000




Cable will be folded to achieve 100mm length, leading to overall device length of 180mm (includes distal area with holes)



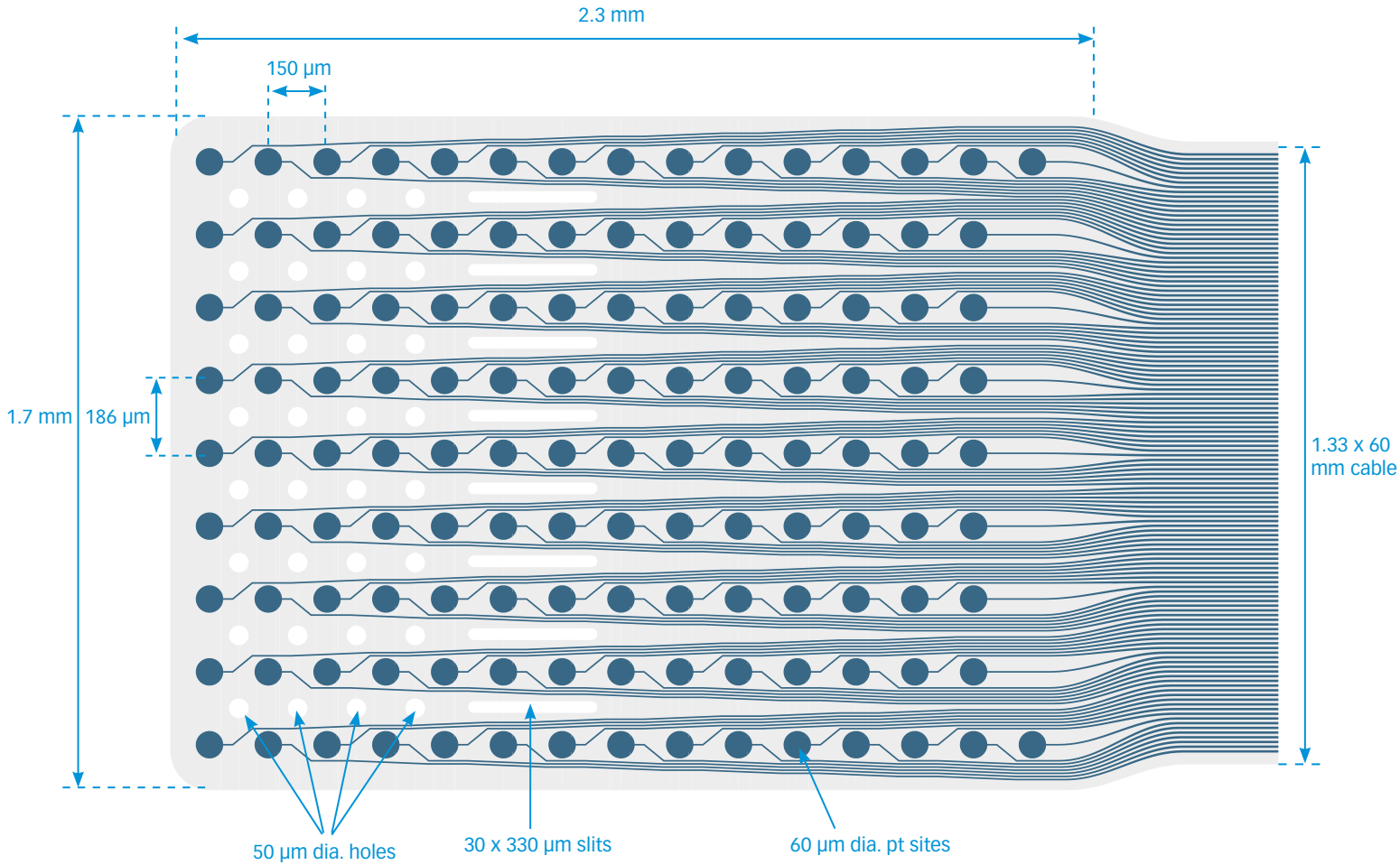

## Available packages

**CHRONIC**
H128
H128LP
IH128
AVH128
AVIH128

## Thickness

**15 µm**

# E128-150-186-20-60



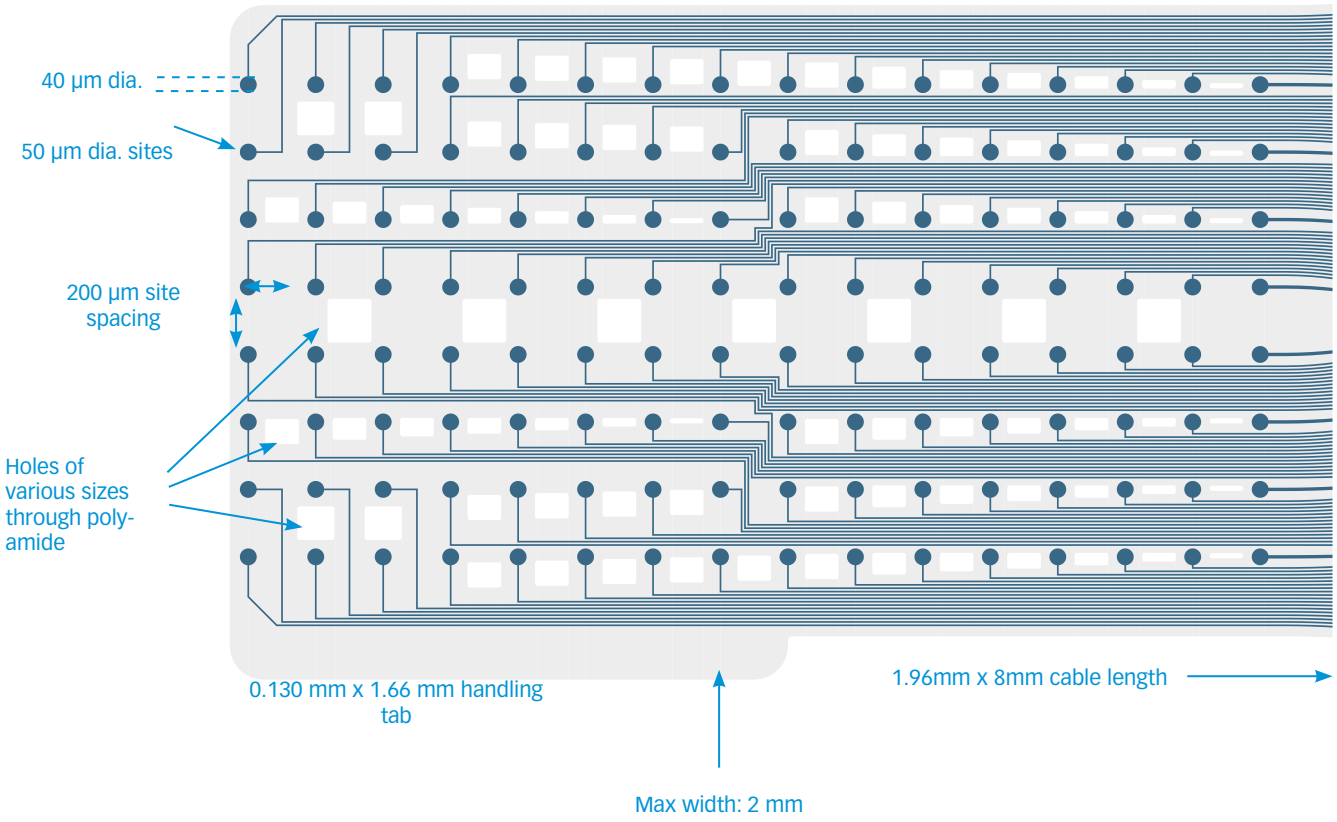

## Available packages

**CHRONIC**
H128
H128LP
IH128
AVH128
AVIH128

## Thickness

**15 µm**

# E128-200-8-40



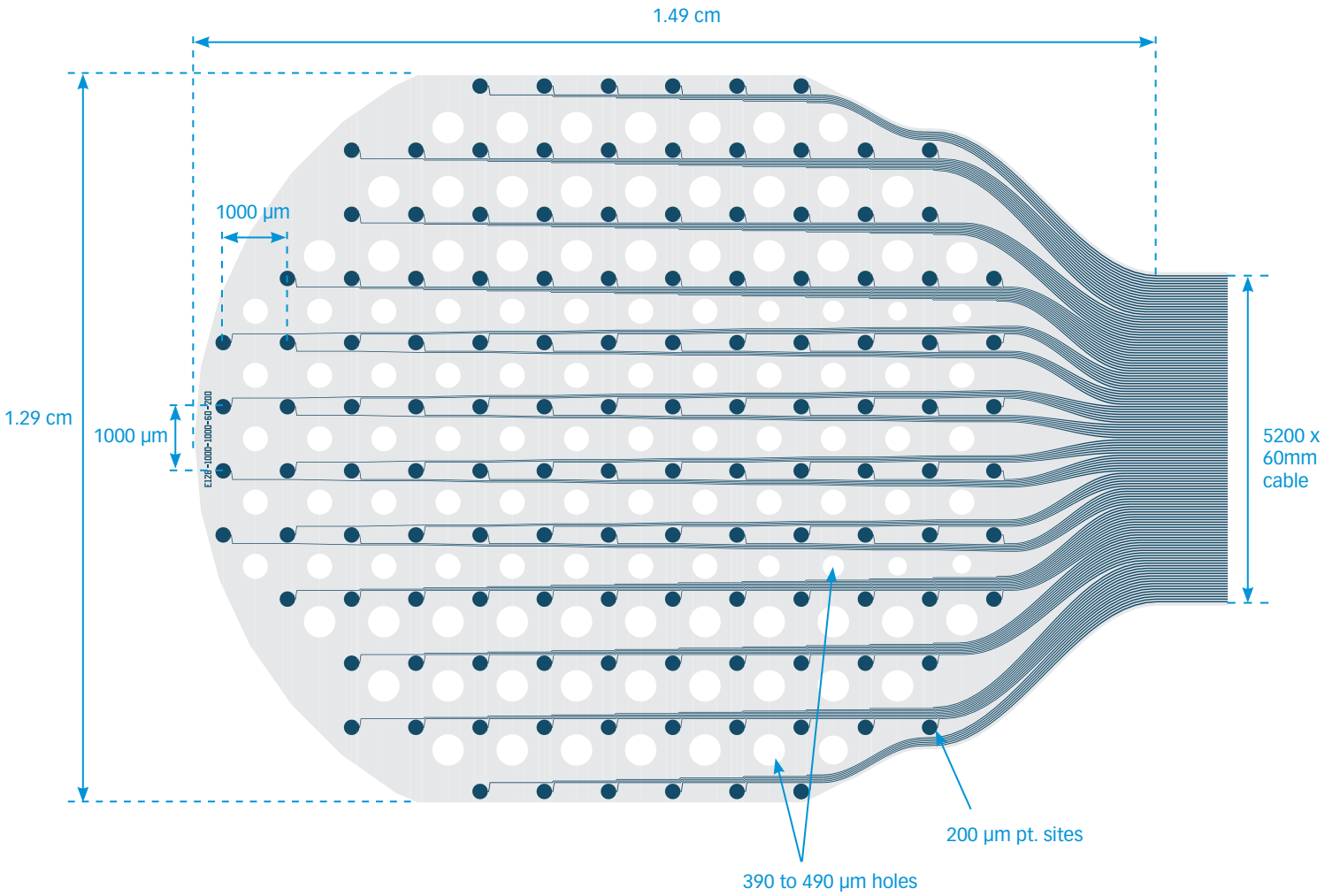

## Available packages

**CHRONIC**
H128
H128LP
IH128
AVH128
AVIH128

## Thickness

**15 µm**

# E128-1000-1000-60-200



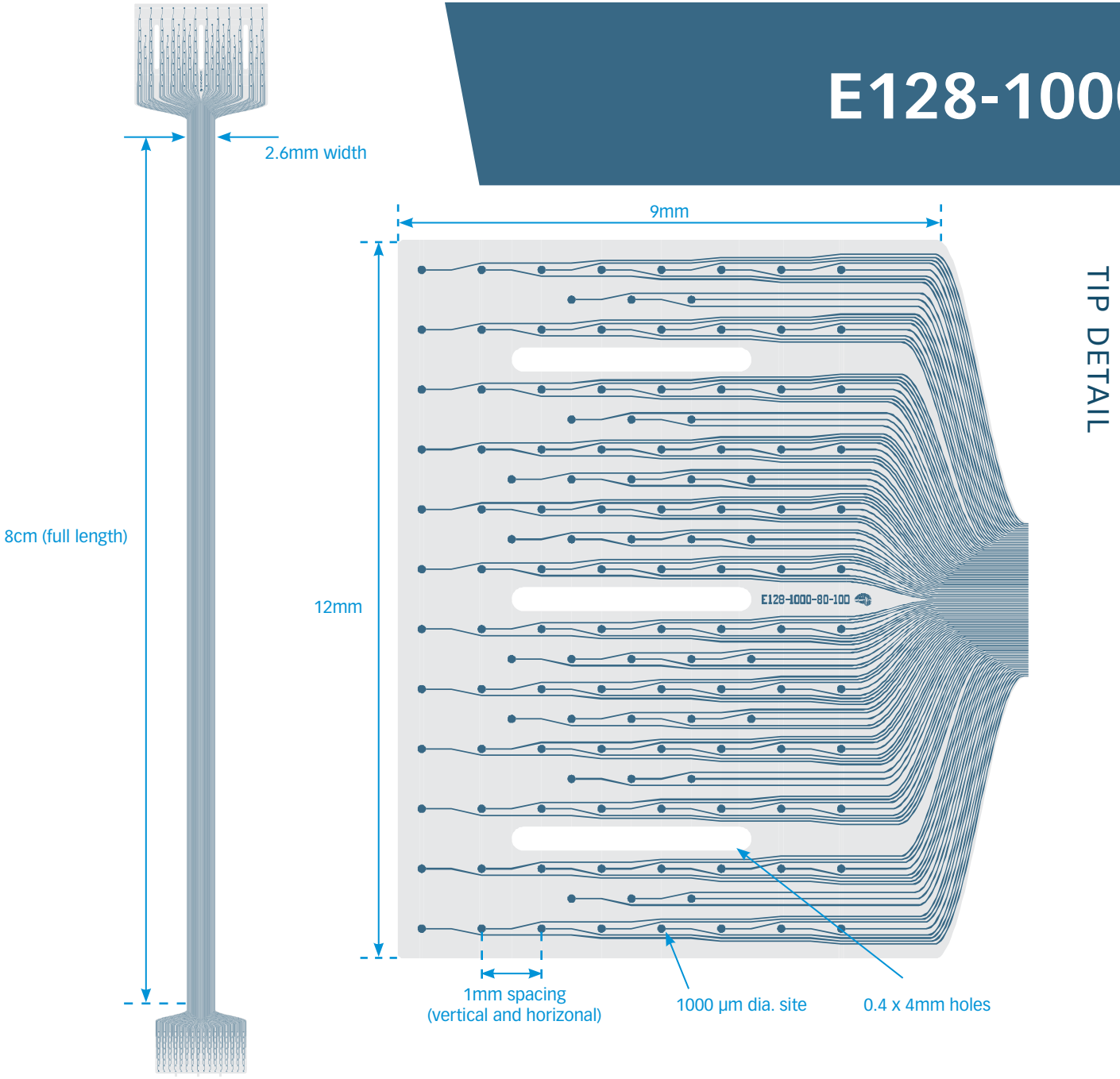

## Available packages

**CHRONIC**
H128
H128LP
IH128
AVH128
AVIH128

## Thickness

**15 µm**

# E128-1000-80-100



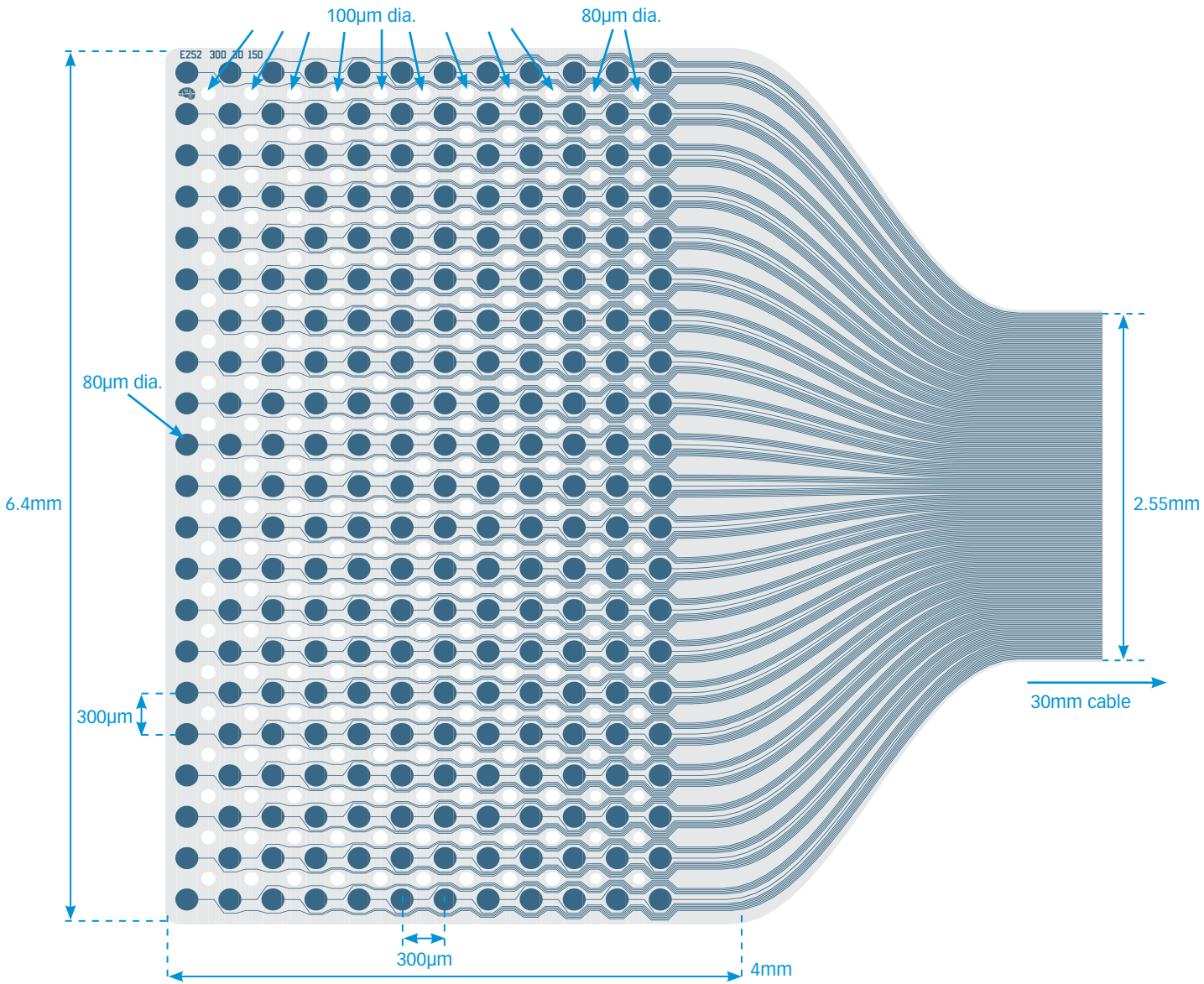

## Available packages

**CHRONIC**
H128
H128LP
IH128
AVH128
AVIH128

## Thickness

**15 µm**

# E252-300-30-150



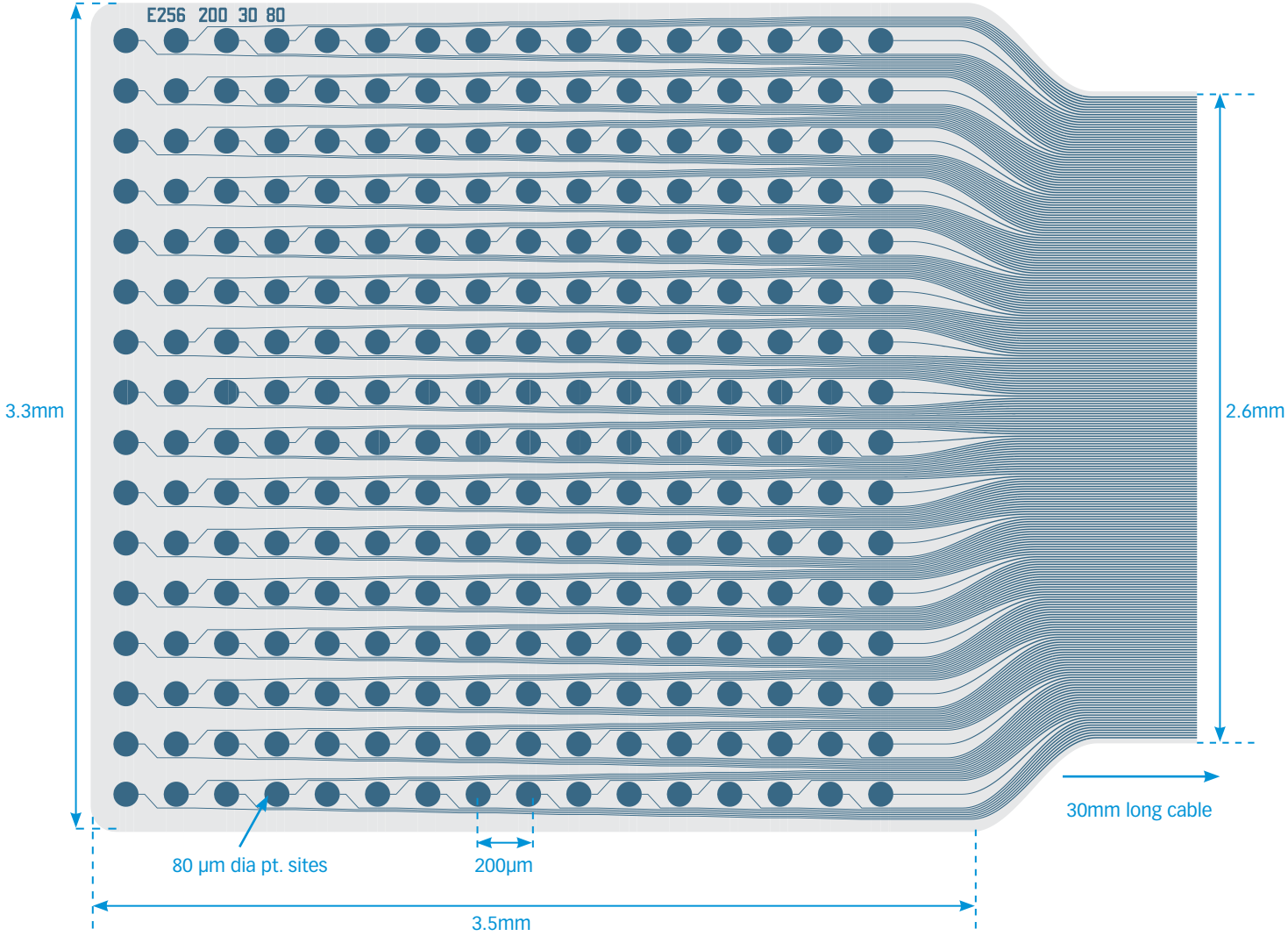

## Available packages

**CHRONIC**
AVIH128
H256
IH256
AVH256
AVIH256

## Thickness

**15 µm**

# E256-200-30-80




## Available packages

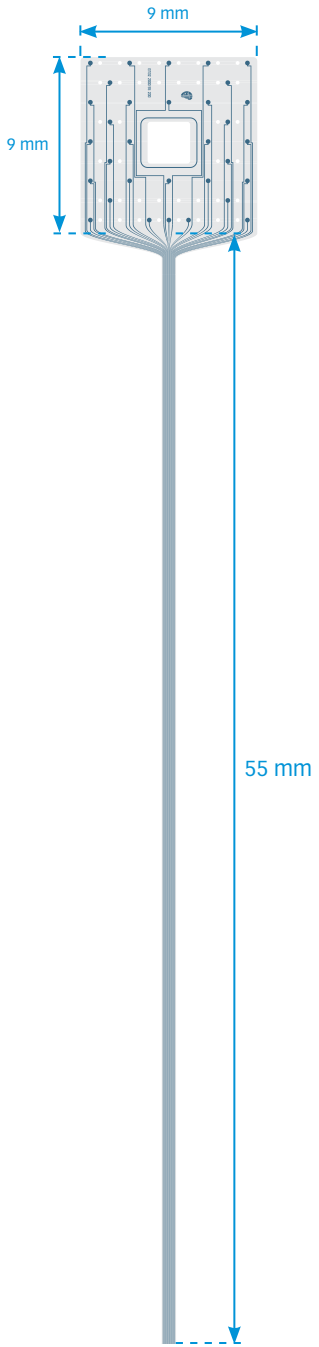
**CHRONIC**
AVIH128
H256
IH256
AVH256
AVIH256

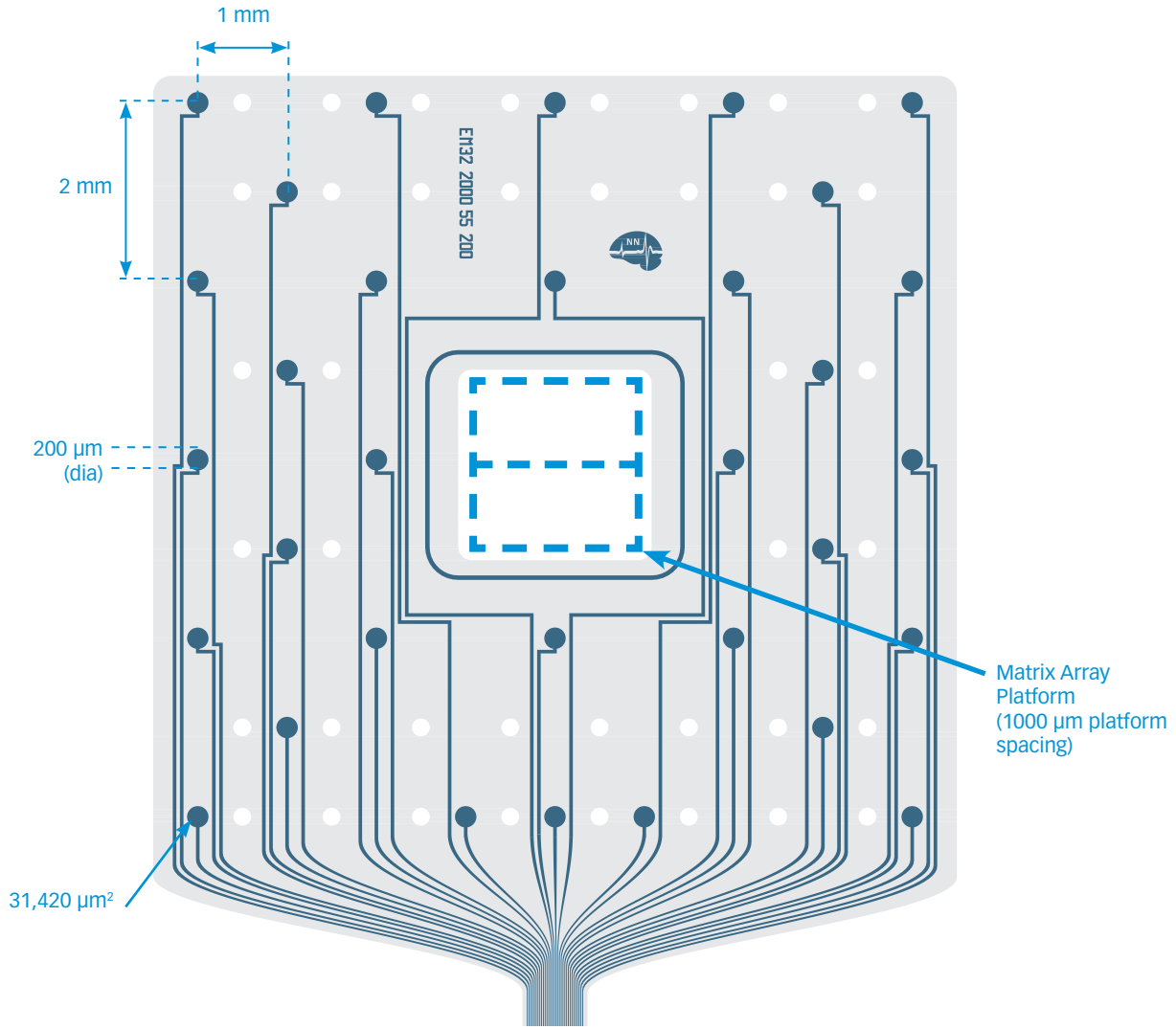
## Thickness

**15 µm**

# EM32-2000-55-200

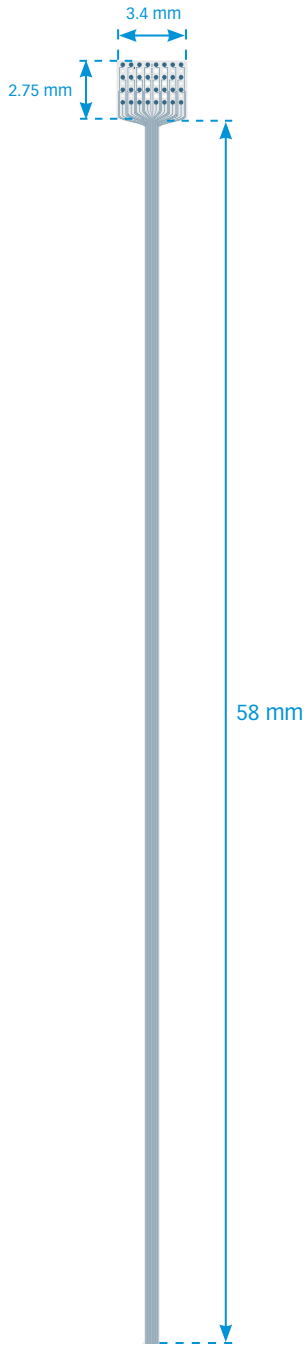
ECoG can take the place of one of the four matrix probes.

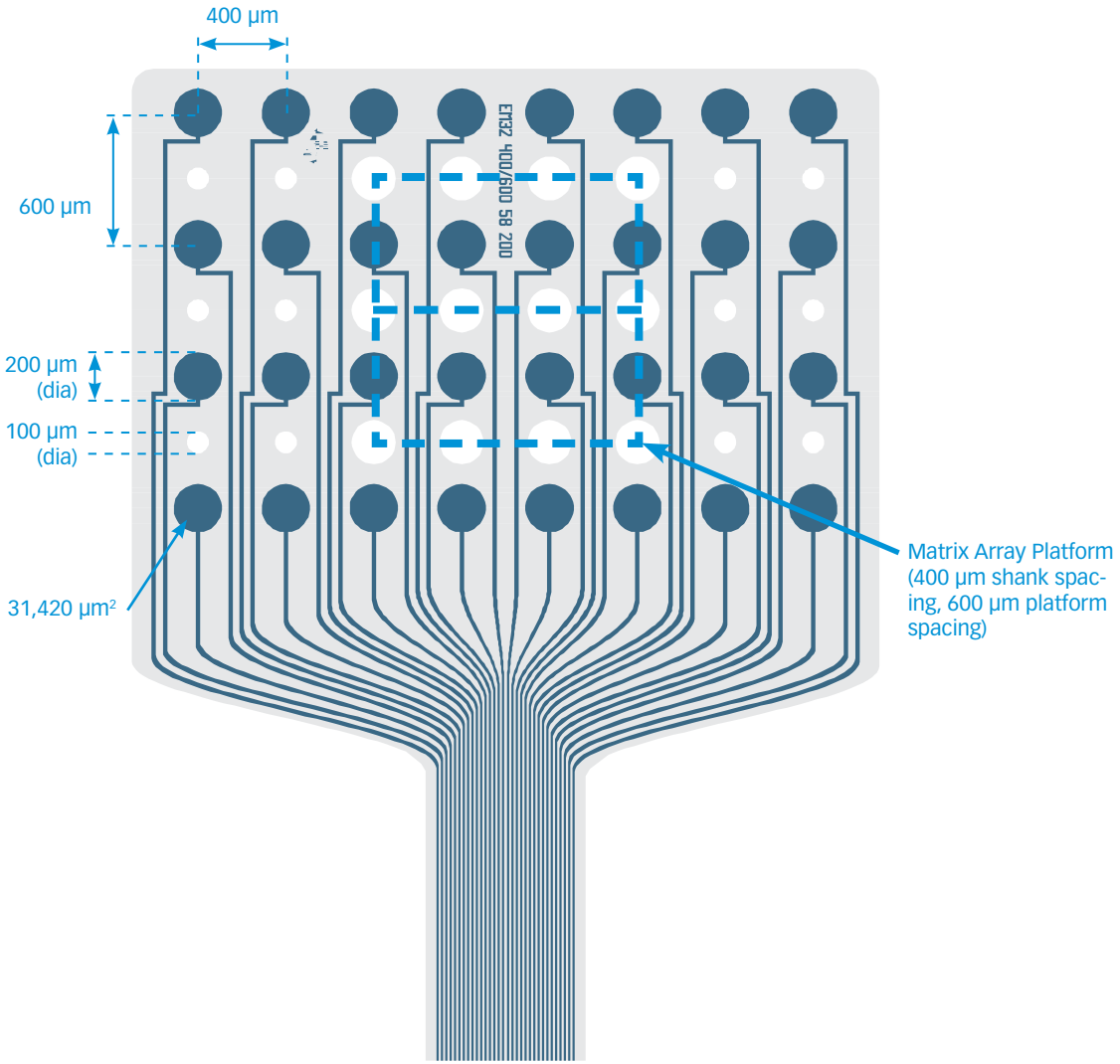


# EM32-400-600-58-200

ECoG can take the place of one of the four matrix probes.



# Cardiac Surface Grids

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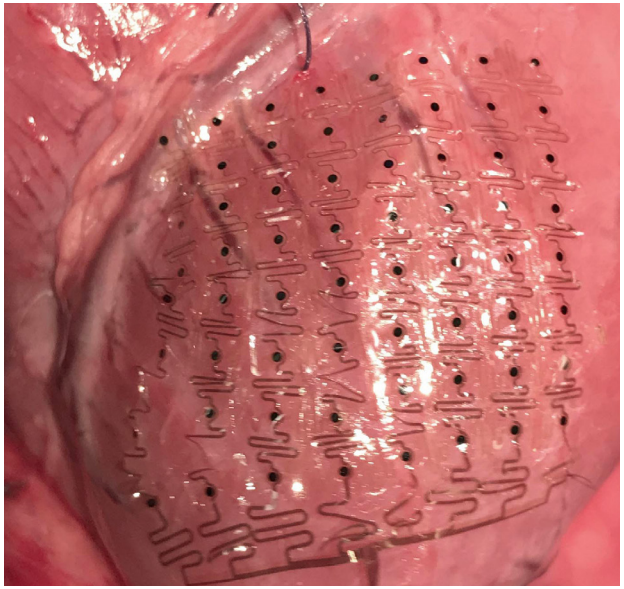
*ABOVE: EKG recordings with NeuroNexus Cardiac Surface Grid using the SmartBox*



*ABOVE: NeuroNexus Cardiac Surface Grid on heart surface*

NeuroNexus **Cardiac Surface Grids** are fabricated using our polymer MEMS technology, resulting in an ultra-flexible substrate designed to conform to the cardiac surface. Cardiac Surface Grids can be combined with penetrating probes.

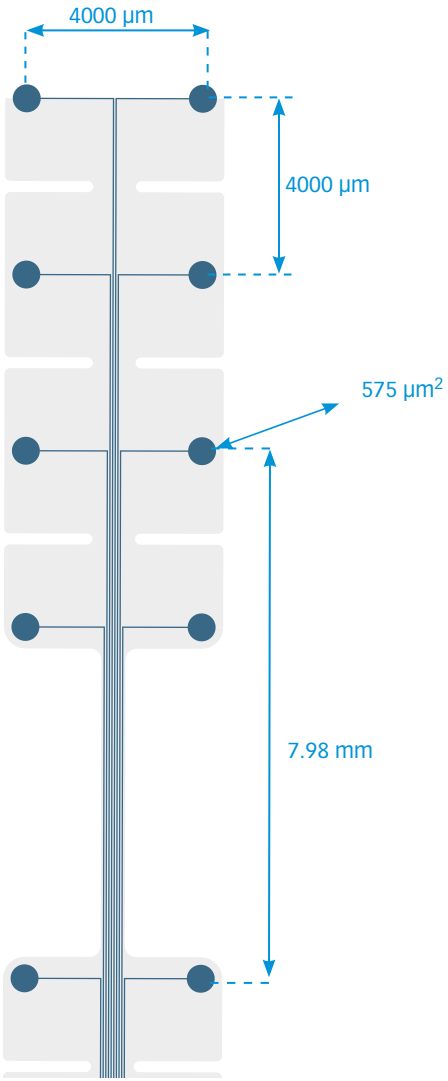
**High Recording Resolution** – Discover fine detail with our unique high-resolution cardiac grids.
**Vast design space** – Grids can be customized to your specific needs. Adjust size, channel count, contact density, and more. Special features can be integrated to cope with the particular demands of neurocardiology.
**Low noise from tissue movement** – Our cardiac grids have been engineered and tested to minimize noise from tissue movement.

## SPECIFICATIONS

| | |
|---|---|
| **Substrate Material** | Polyimide |
| **Electrode Site Material** | Platinum |
| **Array Thickness** | 15 µm |
| **Channel Count** | 16, 32, 64, 128 (varies by design) |
| **Available Packages** | H16, HC16, HZ16, X3-H16, H64, H64LP, HZ64, X3-H64, AVH128, AVIH128, X6-H128 |

# CS2x2x4-accord-4000-150-575


TIP DETAIL



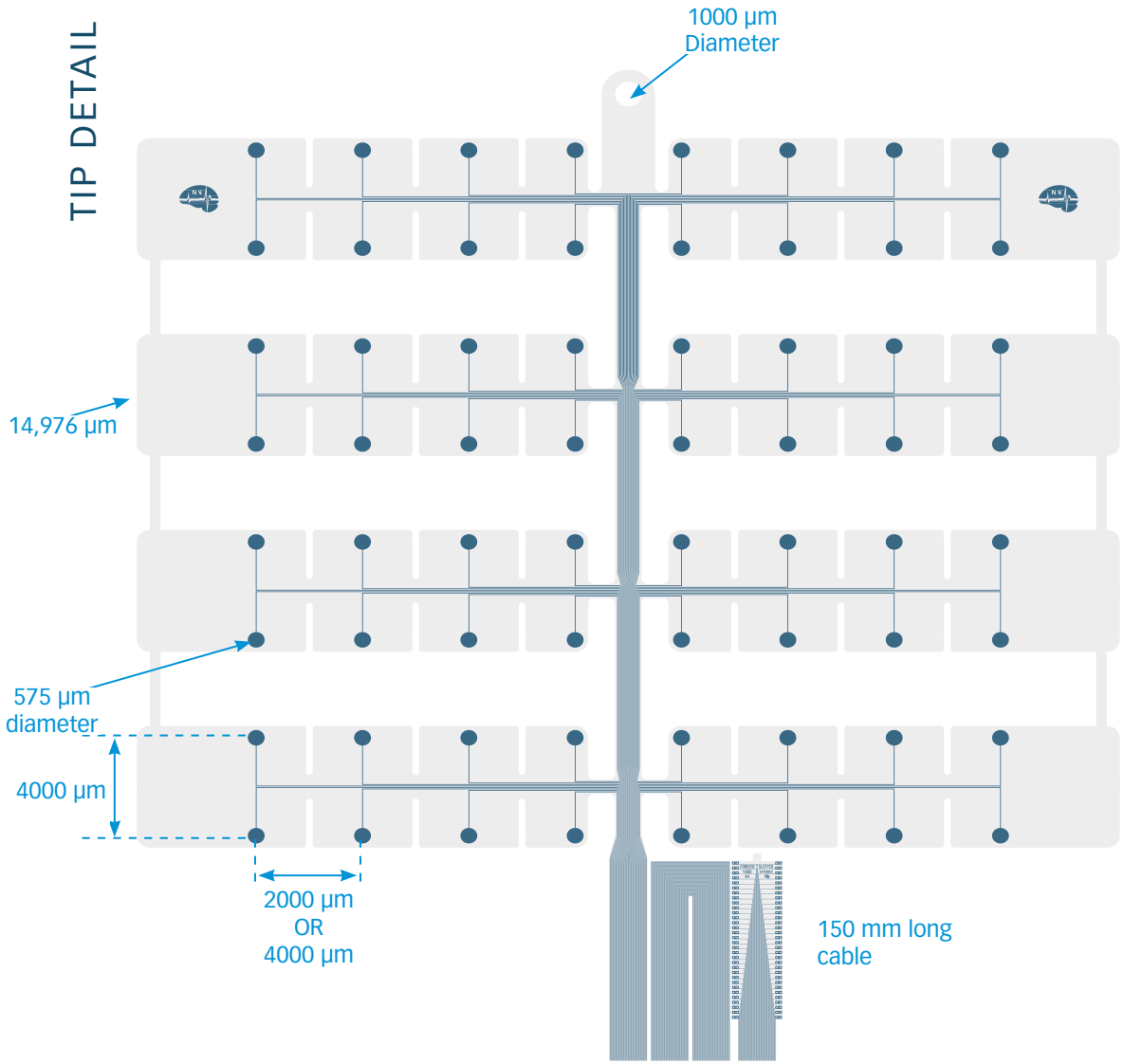

## Available packages

**CHRONIC**
H16
HC16
HZ16
X3-H16

## Thickness

**15 µm**

# CS8x8-seg-2000-150-575
# CS8x8-seg-4000-150-575



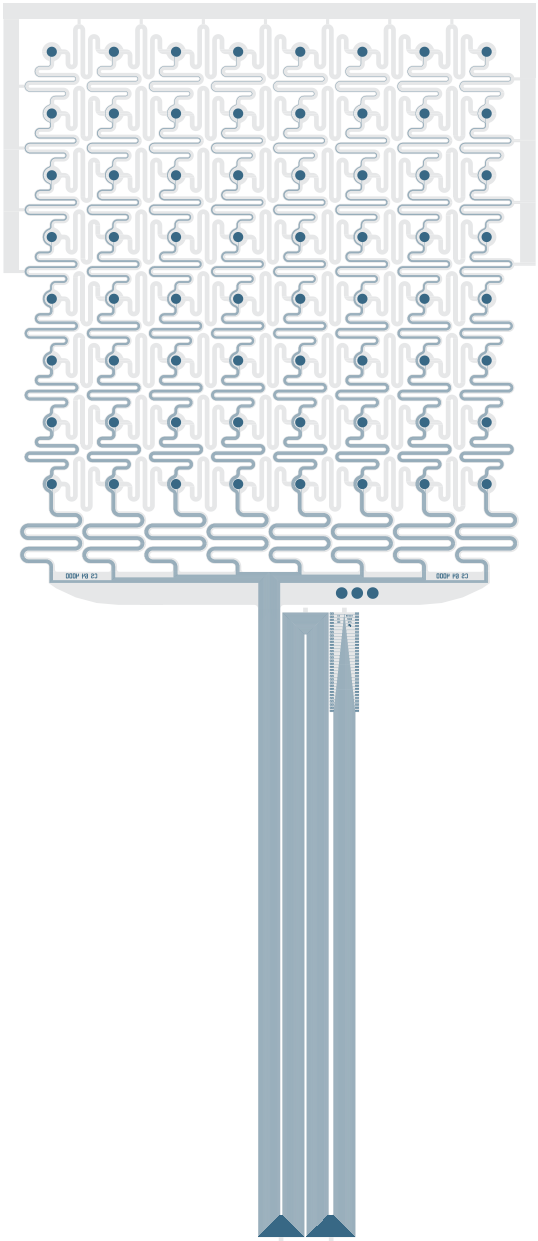

## Available packages

**CHRONIC**
H64
H64LP
HZ64
X3-H64

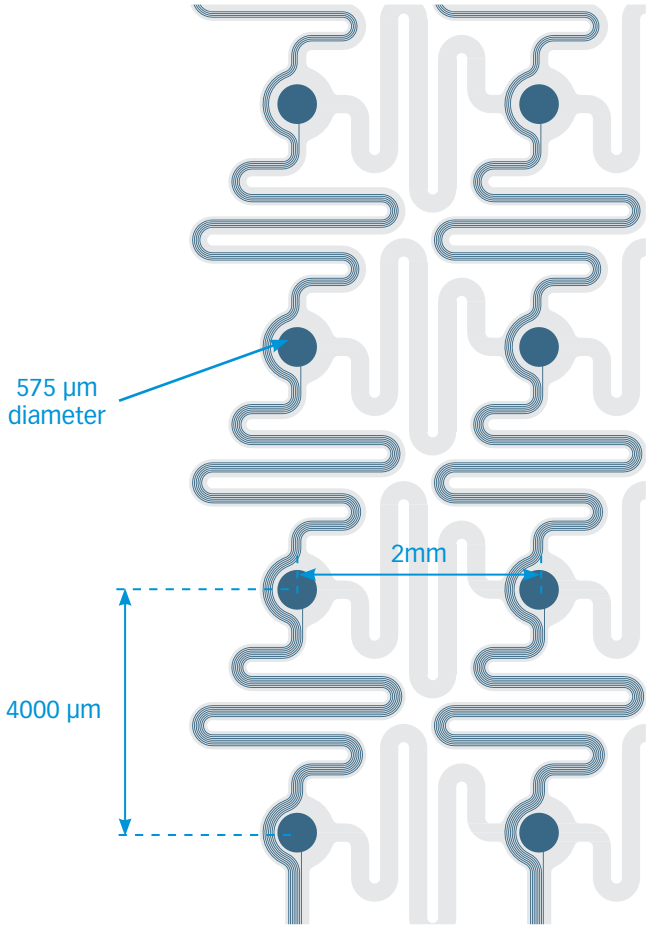
## Thickness

**15 µm**

# CS8x8-mesoA-4000-150-575




TIP DETAIL



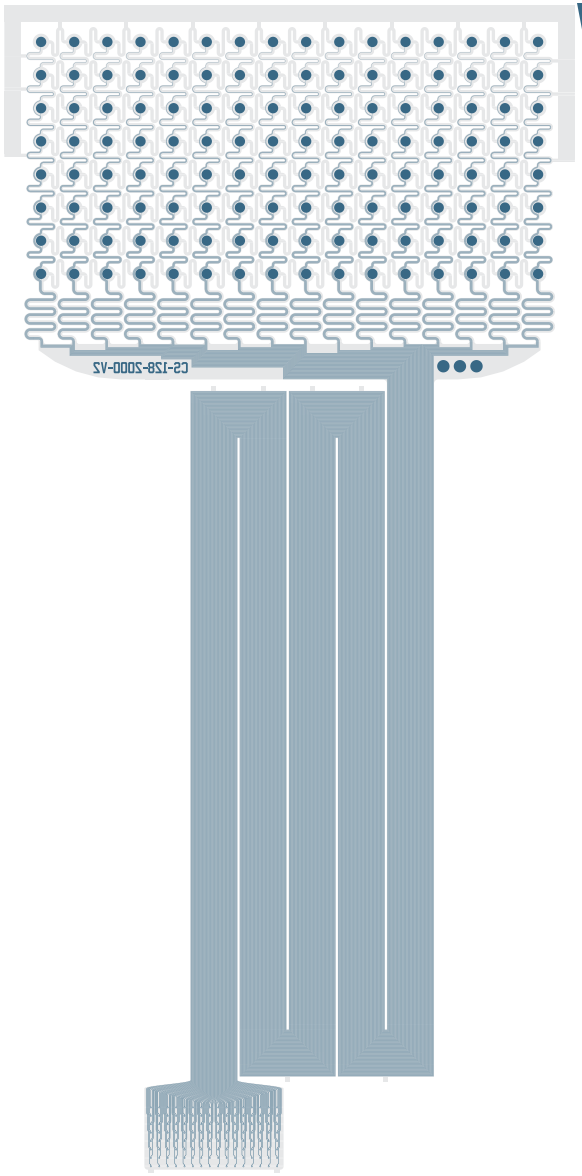

## Available packages

**CHRONIC**
H64
H64LP
HZ64
X3-H64

## Thickness

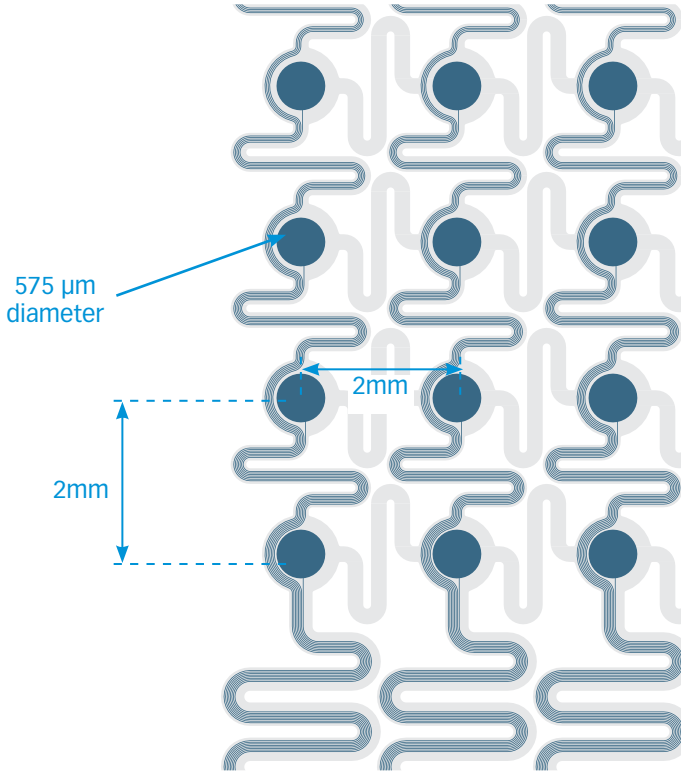
**15 µm**

# CS8x16-mesoA-2000-150-575



Cable is 15cm full length when folded

TIP DETAIL




## Available packages

**CHRONIC**
AVH128
AVIH128
X6-H128

## Thickness

**15 µm**

# Peripheral Nerve Cuffs

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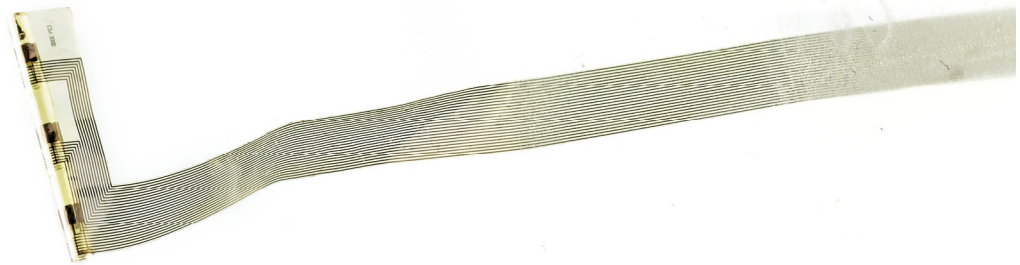
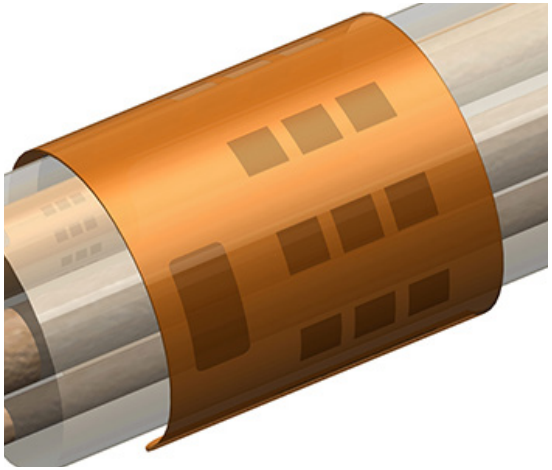




*ABOVE: NeuroNexus Nerve Cuffs can be pre-curved to fit any diameter.*

NeuroNexus **Nerve Cuffs** enable high-resolution recording and stimulation in peripheral nerve applications. Nerve Cuffs can be custom designed and pre-curved to interface with a variety of nerves.

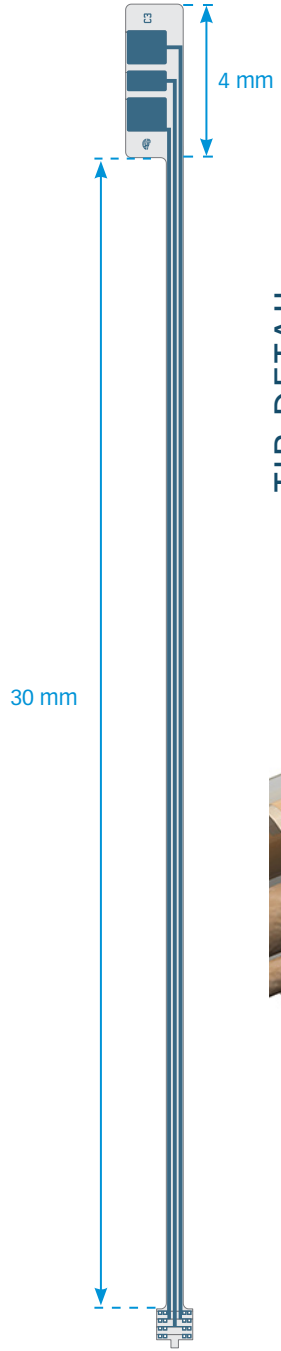
With a thickness of merely 20 µm, the Nerve Cuff is extremely flexible, allowing it to be wrapped around a nerve. Our versatile MEMS process lets you design recording and stimulation sites in almost any configuration to meet your experimental needs.

Alternatively, a sieve-type microelectrode array can be realized by designing arrays with holes, which can be seeded with neural growth factor to promote axonal growth through the microelectrode sites.

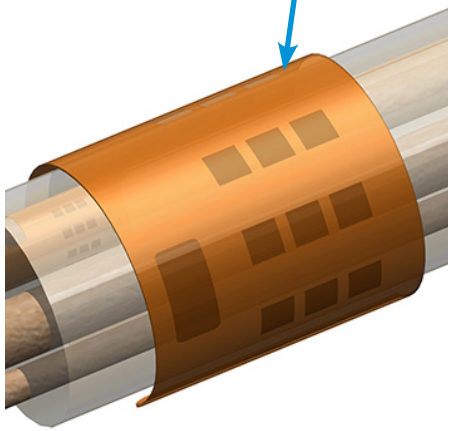
## SPECIFICATIONS

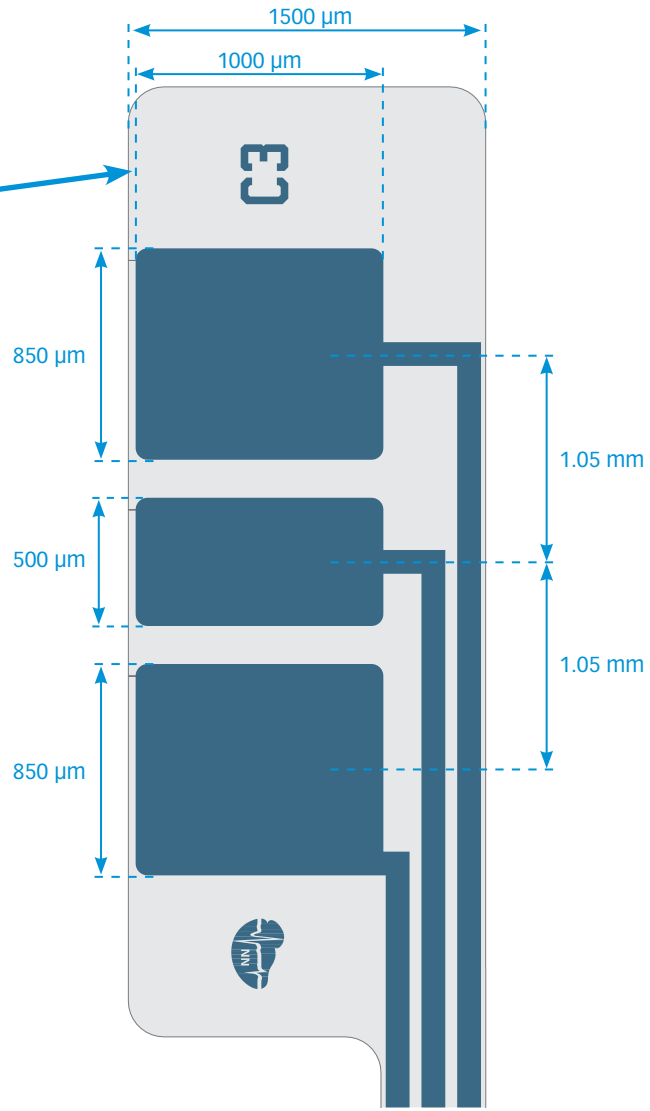
| | |
|---|---|
| **Substrate Material** | Polyimide |
| **Electrode Site Material** | Platinum |
| **Array Thickness** | 15 µm |
| **Channel Count** | 3, 24 (varies by design) |
| **Available Packages** | H16, H32 |

# C3




TIP DETAIL




C3 Cuff designed for 350 µm
diameter nerve (customizable)

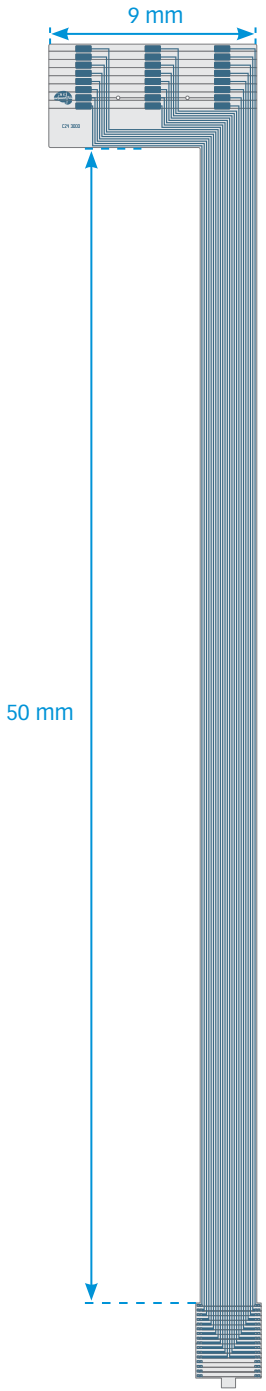
## Available packages

**CHRONIC**
H16

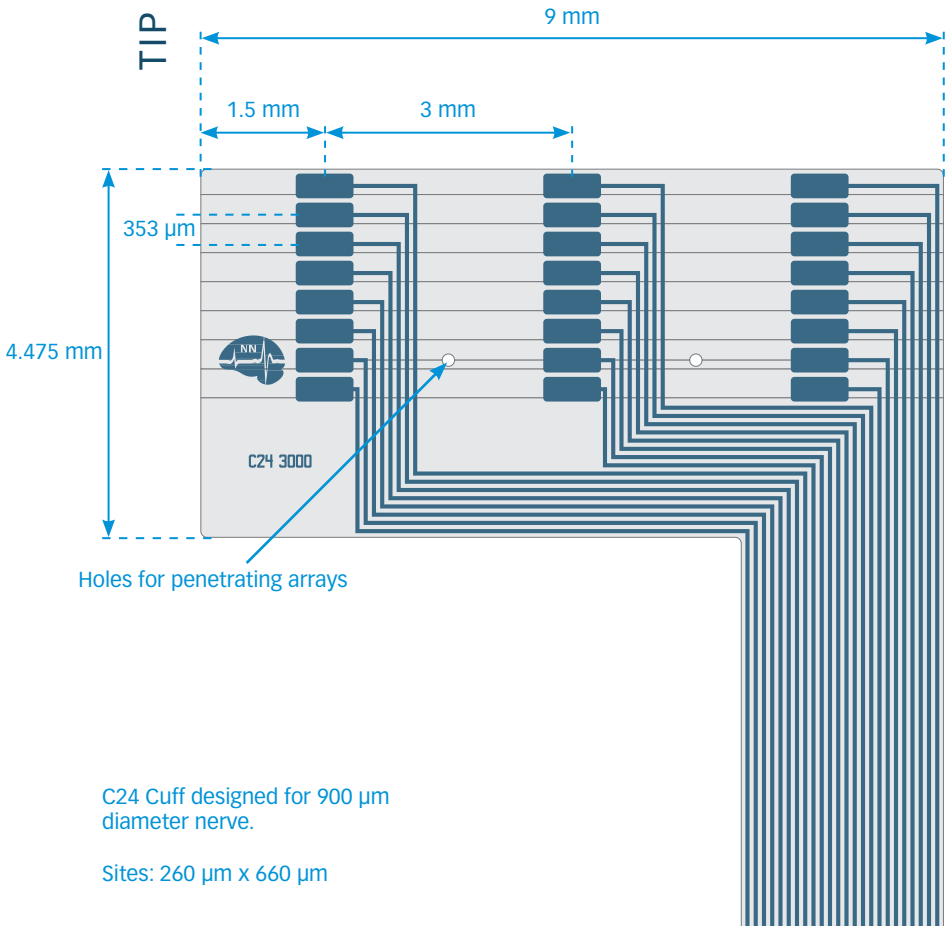
## Thickness

**15 µm**

# C24




TIP DETAIL




C24 Cuff designed for 900 µm diameter nerve.

Sites: 260 µm x 660 µm

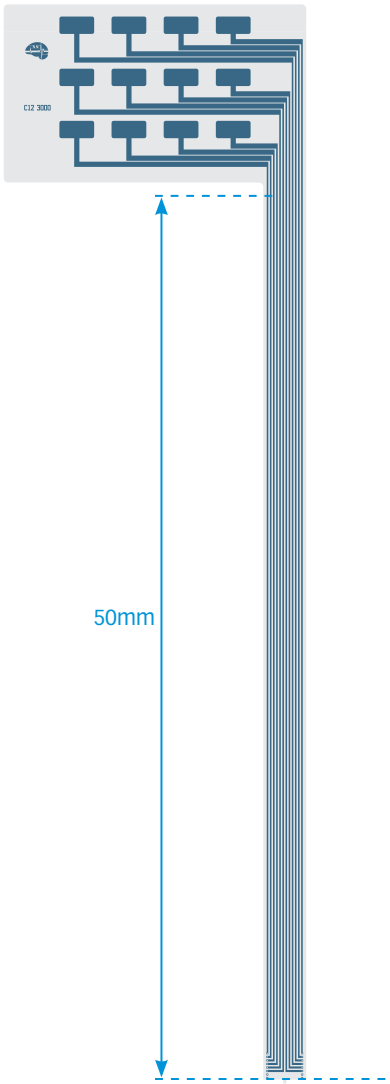
## Available packages

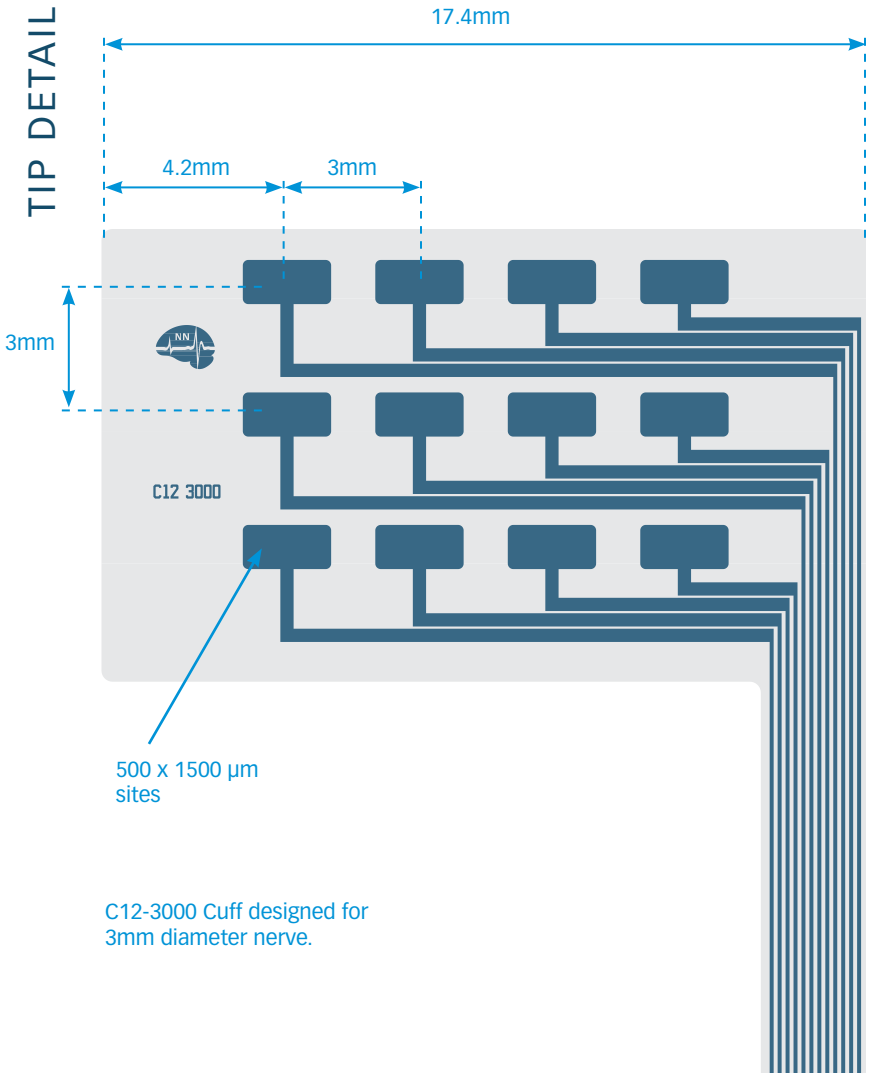
**CHRONIC**
H32

## Thickness

**15 µm**

# C12-3000




C12-3000 Cuff designed for 3mm diameter nerve.

## Available packages

**CHRONIC**
H32

## Thickness

**15 µm**

# Drug Delivery

COMBINED DRUG DELIVERY AND ELECTROPHYSIOLOGY

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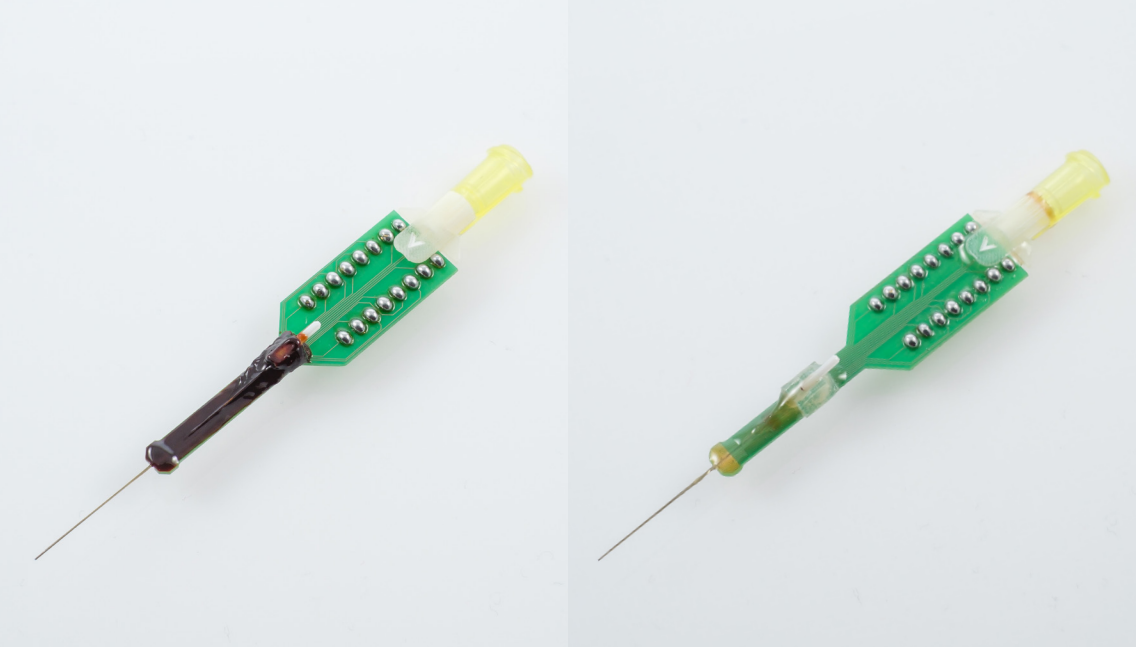


The E16-20mm-100-177 electrode array can be mounted on a fluidic tube to combine drug delivery and electrophysiological recording.

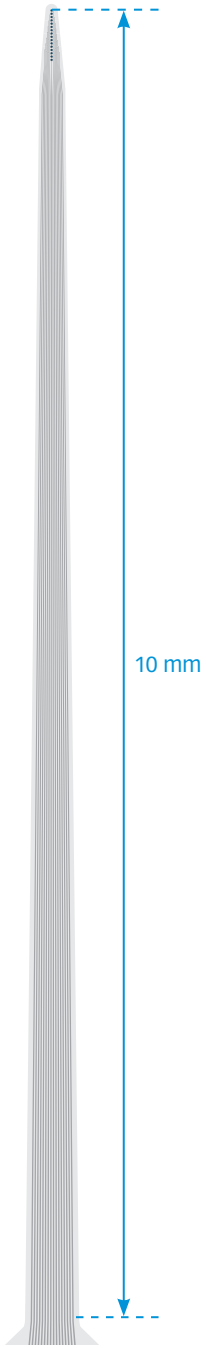
The fluidic tube is mounted on the lower side of the microelectrode array, and the delivery port is at the distal end of the fluidic tube. The fluidic interface is compatible with standard **Luer taper** fittings for interfacing with external injection pumps. Typically, a pressure-based delivery mechanism is used.

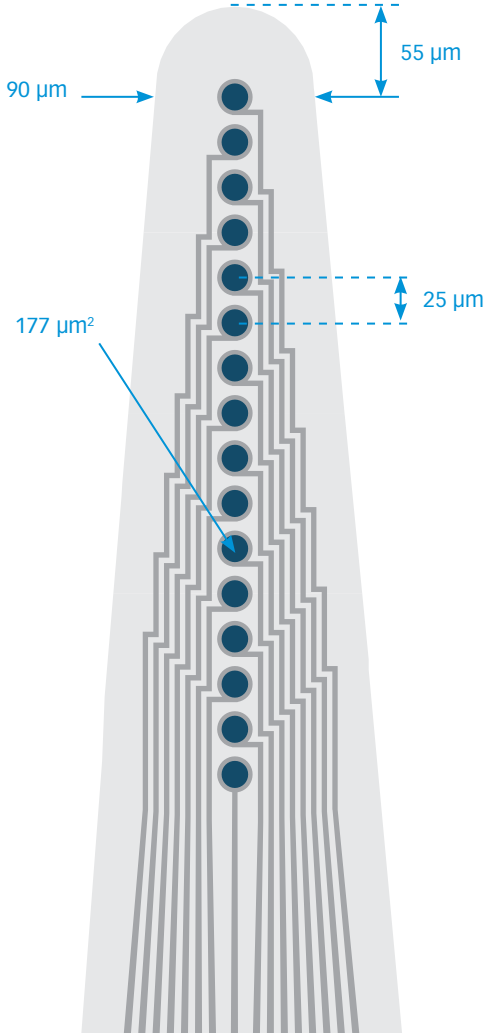
**Add optical stimulation capabilities,** with an optical fiber laminated onto the probe. As with many of our products, the fluidic probe can be customized. Contact us for your customization needs.

## SPECIFICATIONS

| | |
|---|---|
| **Electrode Site Material** | Platinum |
| **Total Probe Thickness** | ≈185 µm |
| **Coupling Conduit** | Luer taper (polypropylene) |
| **Fluidic Tube** | 32 gauge / 0.241 mm Stainless steel |
| **Fluidic Port Tip Angle** | 90° (standard), 45° |
| **Implantable Length** | 15 - 18 mm |
| **Electrode Coverage** | 1.5 mm |
| **Channel Count** | 16 |
| **Available Packages** | D16, DM16, OD16LP |

# E16-10mm-25-177




## Available packages

**ACUTE**
D16

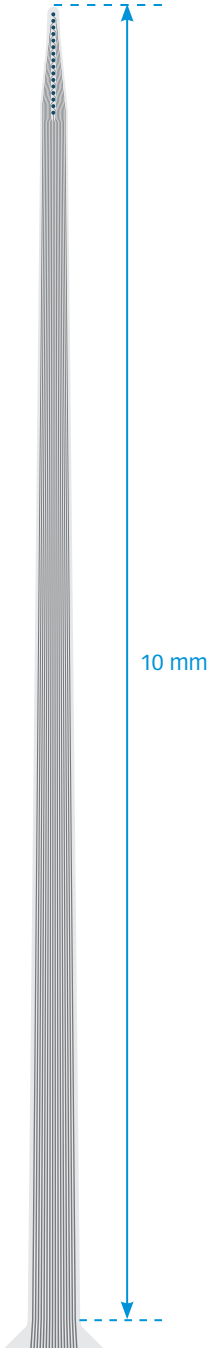
**CHRONIC**
DM16

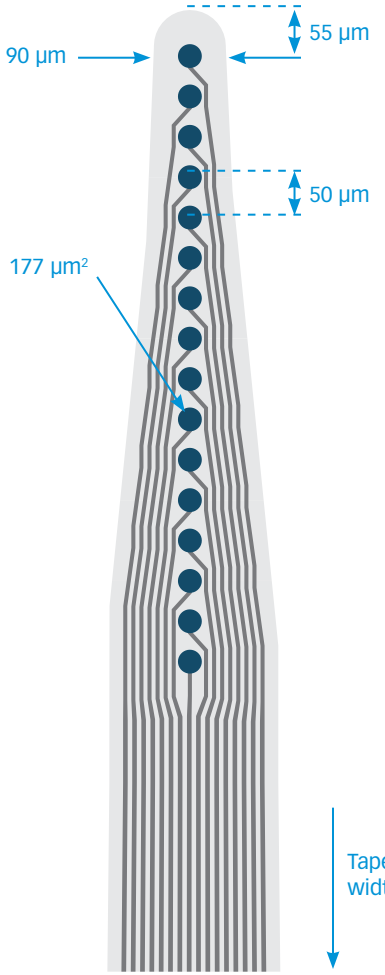
**OPTOGENETICS**
OD16

## Thickness

**15 µm**

# E16-10mm-50-177




## Available packages

**ACUTE**
D16

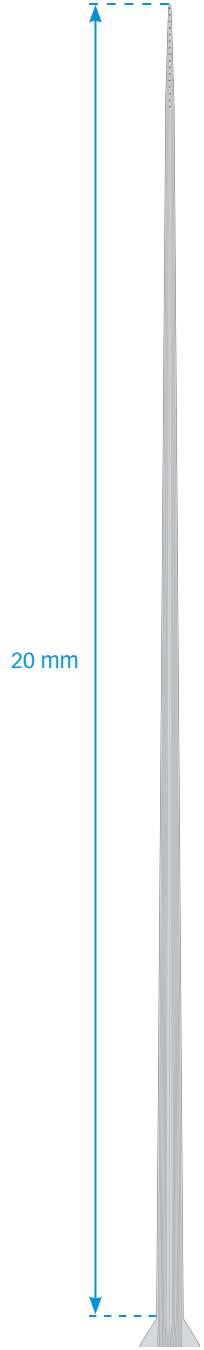
**CHRONIC**
DM16

**OPTOGENETICS**
OD16

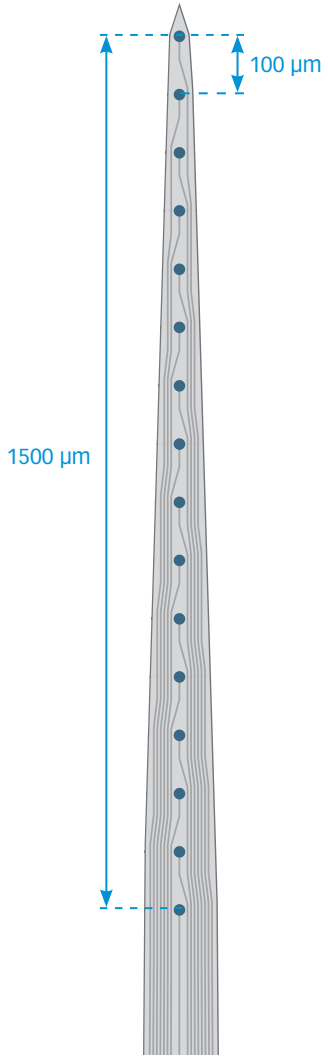
## Thickness

**15 µm**

# E16-20mm-100-177




TIP DETAIL




## Available packages

**ACUTE**
D16

**CHRONIC**
DM16

**OPTOGENETICS**
OD16

## Thickness

**15 µm**