

Dear Customer,

please create your <sup>o</sup> AirRay research Micro Cuff from the following types:

- Sling Cuff
- Tunnel Cuff
- Micro Spiral Cuff

All Cuff designs are by default supplied with tinned wire ends that can be individually connected to amplifiers and stimulators. All electrodes are made from medical grade Silicone, the contact material is Pt-Ir by default. Please contact us if you are interested in other connection options (page 4).

Please note that we are not able to offer standard configurations and that there might apply a design fee for individual product configurations.

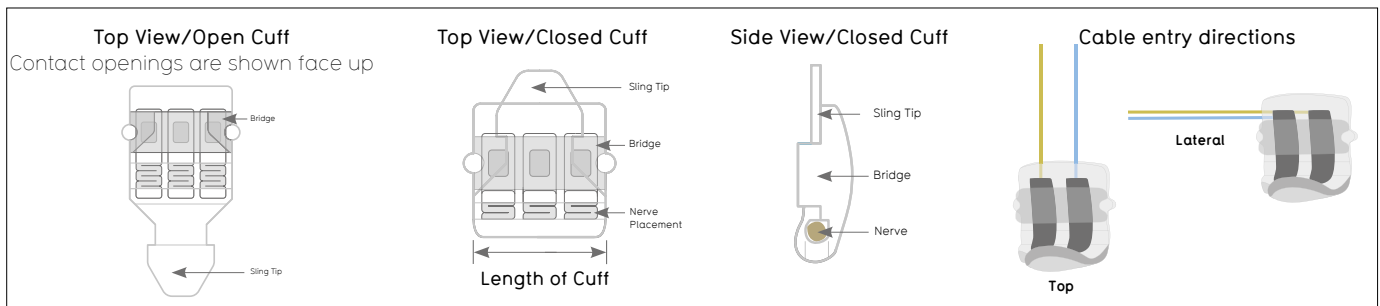
## Sling Cuff

The solution for smallest diameters.

The nerve is positioned in the center of the electrode surface. The cuff is closed by pulling the sling tip through the bridge, where it locks. The inside of the electrode forms a tube that holds the nerve in place. According to the buckle and belt principle the cuff can be re-opened and removed. The below listed configurations represent typical arrangements of this type of electrode.



We are happy to provide you with a customized solution!



### Parameters (please tick your desired configuration)

### Other

Inner Diameter	0.1 mm	0.2 mm	0.3 mm
Cuff Length	1.0 mm*	2.0 mm	2.5 mm
Number of Contacts	bi-polar	tri-polar	
Surface Texture	coatable	roughened	other
Cable Entry	lateral	top	
Cable Length	20 cm		
Type of Wires	DFT (silver core 35N)		
Sterilization	planned		
Quantity			
Your Application	Human Application		

### Options for chronic Use (page 4)

Mechanical Testing	Yes	No
Impedance Measurement	Yes	No
Tubing around Wires	Yes	No
Cable Type		
Connector Type		

\* bi-polar only



# Tunnel Cuff

The solution for larger diameters starting from 200  $\mu\text{m}$ .

The Tunnel Cuff is very easy to apply: Just grab the two colored flaps and let the nerve slide inside. The electrode closes itself after you release the flaps. The below listed configurations represent typical arrangements of this type of electrode.

We are happy to supply you with a customized solution!



Technical Possibilities	Bi-polar				Tri-polar			
	Inner Diameter	Length			Inner Diameter	Length		
		2	6	10		6	10	
	0.2	x	-	-	0.5	x	-	
	0.3	x	-	-	0.6	x	-	
	0.4	x	-	-	0.8	x	-	
	0.5	x	x	-	1.0	x	x	
	0.6	x	x	-	1.2	x	x	
	0.8	x	x	-	1.5	x	x	
	1.0	-	x	x	2.0	x	x	
	1.2	-	x	x	2.5	x	x	
	1.5	-	x	x	3.0	x	x	
	2.0	-	x	x				
	2.5	-	x	x				
	3.0	-	x	x				

Parameters (please tick your desired configuration)	Other		
Inner Diameter	0.2 mm	0.3 mm	0.4 mm
	0.5 mm	0.6 mm	0.8 mm
	1.0 mm	1.2 mm	1.5 mm
	2.0 mm	2.5 mm	3.0 mm
Cuff Length	2.0 mm*	6.0 mm	10.0 mm
Number of Contacts	bi-polar	tri-polar	
Surface Texture	coatable	roughened	other
Cable Entry	lateral	tangential	
Cable length	20 cm		
Type of Wires	DFT (silver core 35N)		
Sterilization	planned		
Quantity			
Your Application	Human Application		

### Options for chronic Use (page 4)

Mechanical Testing	Yes	No
Impedance measurement	Yes	No
Tubing around Wires	Yes	No
Cable Type		
Connector Type		

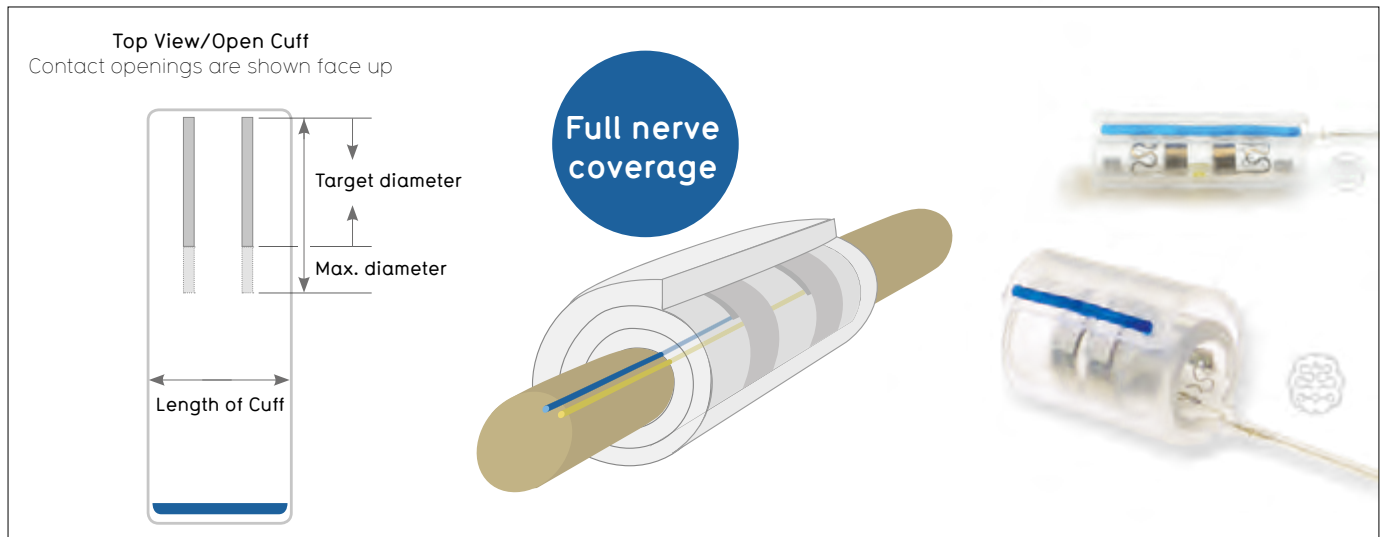
\* bi-polar only

# Spiral Cuff

## Spiral Cuffs – the self-adjusting solution for changing diameters.

Self-adjusting diameter cuffs can compensate for nerve swelling to some extent. They also balance the differences in nerve diameters from individual to individual. To ensure that the nerve will not escape the electrode we suggest to design Spiral Cuffs with at least 2.5 turns around the targeted nerve diameter. This will also help to avoid electrical insulation issues for example caused by connective tissue growing into the electrode.

We are happy to supply you with a customized solution!



Typical arrangements of Spiral Cuffs range within the following diameters:

### Product Features

Number of contacts  
Inner diameter  
Wall thickness

### Product Configuration

Starting from 2  
1.5 - 5.0 mm  
0.2 - 0.8 mm

### Parameters (please tick your desired configuration)

### Other

Targeted Diameter			
Maximum Diameter			
Cuff Length	3.0 mm	6.0 mm	10.0 mm
Number of Contacts	bi-polar	tri-polar	
Contact Material	Pt-Ir		
Surface Texture	coatable	roughened	other
Cable Entry	lateral		
Cable length	20 cm		
Material of Wires	DFT (silver core 35N)		
Sterilization	planned		
Quantity			
Your Application	Human Application		

### Options for chronic Use (page 4)

Mechanical Testing	Yes	No
Impedance measurement	Yes	No
Tubing around Wires	Yes	No
Cable Type		
Connector Type		

## Options for Chronic Use

### CABLE PROTECTION

Routing the electrode cables to apply some strain relief is advisable for chronic applications. To optimize the handling of cables we are offering flexible tubing which bundles up separate straight or coiled wires while serving as well as a protection against bending and stretching loads.

We supply our electrodes with your preferred cable type.

### TRANSCUTANEOUS CONNECTORS

Connecting the electrode to headstages or other transmitting systems is common practice in chronic scenarios.

For cuff electrodes very small connector systems like Craggs connectors are required which can be easily routed away from the nerve.

We equip our electrode with the connectors of your choice.

### TESTING

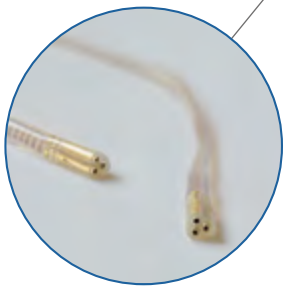
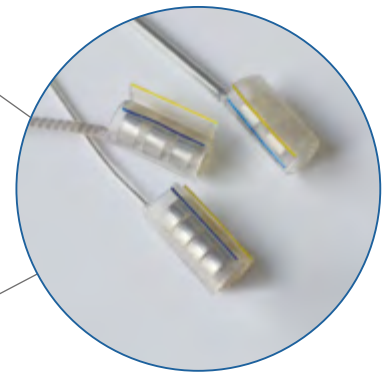
Determining electrode features like electrical or mechanical properties helps to plan experiments as it allows for precisely classifying the results.

We offer different electrode-specific tests such as impedance spectroscopies, cyclic voltammograms, mechanical loads etc.

### CLEANING & STERILIZATION

Long-term tolerability of the electrodes can be enhanced by intense cleaning and subsequent sterilization of the electrodes.

We offer clean room cleaning, sterile packaging and sterilization. Upon request we can also validate the sterilization and packaging process of the individual electrode design.



## Cables

### Straight Wire Cable

- 40µm or 75µm PtIr or MP35N solid wire,
- Highly Flexible Litz wire (MP-DFT)

### Wire can be bundled in silicone tubing, e.g.

- Ø 1.3 mm
- Ø 1.8 mm

### Coiled Cable (solid wires embedded in silicone)

- Ø 1.0 mm | max. 2 channels, 70µm MP35N (xxx Ohm/m)
- Ø 1.0 mm | max. 3 channels, 50µm PtIr wire (xxx Ohm/m)
- Ø 2.0 mm | max. 4 channels, 70µm PtIr wire (xxx Ohm/m)

## Connectors

### Extracorporeal

- Omnetics: circular or linear  
max. 34 channels (design dependent)
- Pig tail
- Touch-Proof connectors
- Open Wire

### Percutaneous

- Plastics One: max. 6 channels

### Implanted

- Craggs: max. 4 channels
- IS-1: max. 2 channels
- Bal Seal: max. 8 channels

° **AirRay** research Micro Cuffs  
are fully biocompatible and suited for recording  
as well as for stimulation applications.

**Personal Data**

**Shipping Address (if different)**

Name

Name

Institution

Institution

Street

Street

City

City

State

Zip

State

Zip

Country

Country

Phone

E-Mail

Any other information; e.g. desired delivery date

**Please fax or email your order to**

 Fax: +49 (0)761 70 888 399

 E-Mail: [sales@cortec-neuro.com](mailto:sales@cortec-neuro.com)

Contact us for  
additional  
information



**CorTec**

Neuer Messplatz 3  
79108 Freiburg | Germany  
Fon: +49 761 70 888 222  
Fax: +49 761 70 888 399  
[sales@cortec-neuro.com](mailto:sales@cortec-neuro.com)  
[www.cortec-neuro.com](http://www.cortec-neuro.com)