

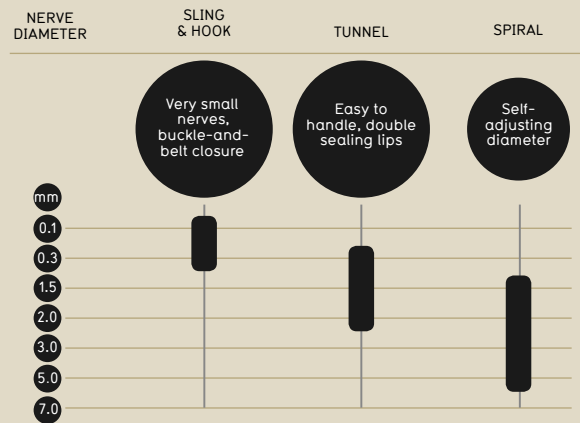
Dear Customer,

please create your ^oAirRay research Cuff from the following types:

- Sling Cuff
- Tunnel Cuff
- 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 offer a selection of standard configurations. For other product configurations might apply a design fee.



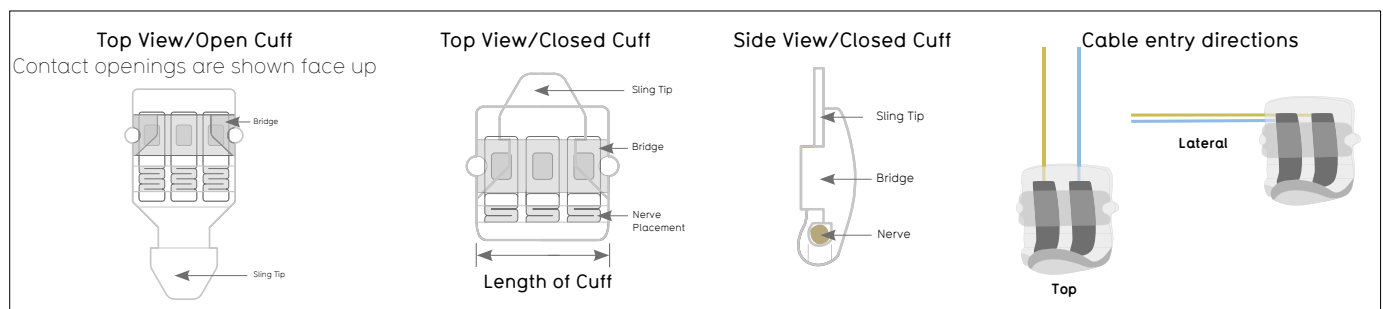
Sling Cuff

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	2	3	
Contact Material	Pt-Ir		
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	Non-Human Application	
	Chronic	Acute	

Options for chronic Use (see 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 μm .

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!



Typical Configurations	Bi-polar	Inner Diameter	Length			Tri-polar	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	<input type="checkbox"/> 0.2 mm	<input type="checkbox"/> 0.3 mm	<input type="checkbox"/> 0.4 mm
	<input type="checkbox"/> 0.5 mm	<input type="checkbox"/> 0.6 mm	<input type="checkbox"/> 0.8 mm
	<input type="checkbox"/> 1.0 mm	<input type="checkbox"/> 1.2 mm	<input type="checkbox"/> 1.5 mm
	<input type="checkbox"/> 2.0 mm	<input type="checkbox"/> 2.5 mm	<input type="checkbox"/> 3.0 mm
Cuff Length	<input type="checkbox"/> 2.0 mm*	<input type="checkbox"/> 6.0 mm	<input type="checkbox"/> 10.0 mm
Number of Contacts	<input type="checkbox"/> 2	<input type="checkbox"/> 3	
Contact Material	<input type="checkbox"/> Pt-Ir		
Surface Texture	<input type="checkbox"/> coatable	<input type="checkbox"/> roughened	<input type="checkbox"/> other
Cable Entry	<input type="checkbox"/> lateral	<input type="checkbox"/> tangential	
Cable length	<input type="checkbox"/> 20 cm		
Type of Wires	<input type="checkbox"/> DFT (silver core 35N)		
Sterilization	<input type="checkbox"/> planned		
Quantity	<input type="checkbox"/>		
Your Application	<input type="checkbox"/>		
	<input type="checkbox"/> Human Application	<input type="checkbox"/> Non-Human Application	
	<input type="checkbox"/> Chronic	<input type="checkbox"/> Acute	

Options for chronic Use (see page 4)		
Mechanical Testing	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Impedance measurement	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Tubing around Wires	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Cable Type	<input type="checkbox"/>	
Connector Type	<input type="checkbox"/>	

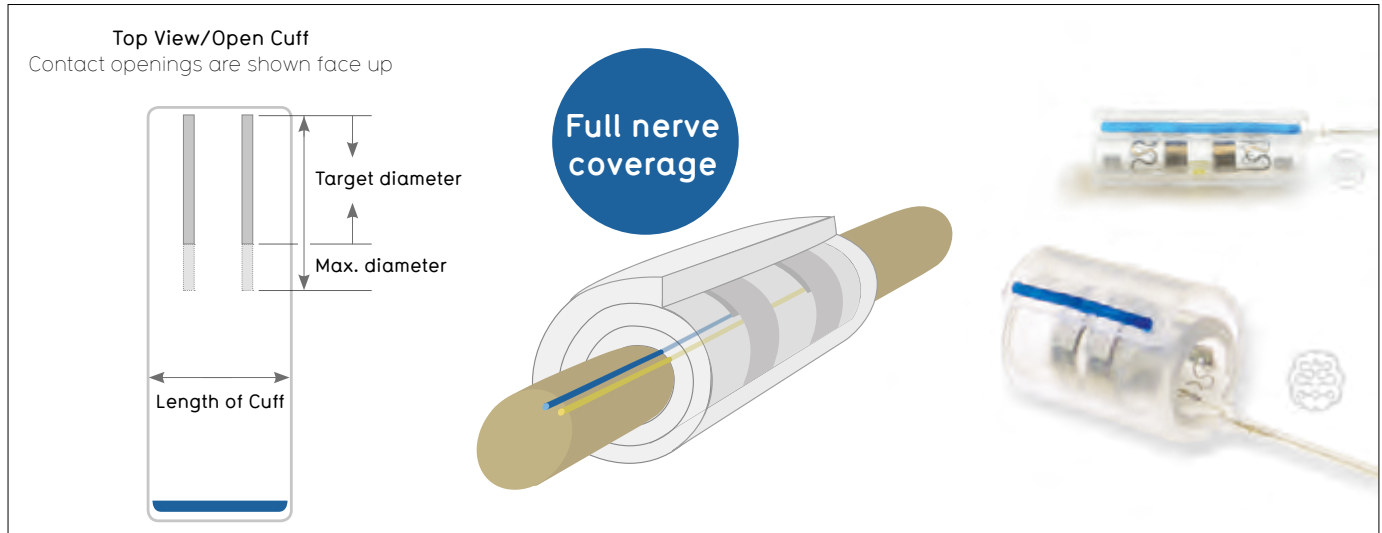
* bi-polar only

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 in chronic applications 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 2 3

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	Non-Human Application
	Chronic	Acute

Options for chronic Use (see 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

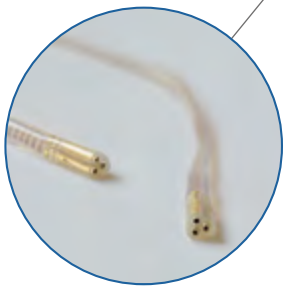
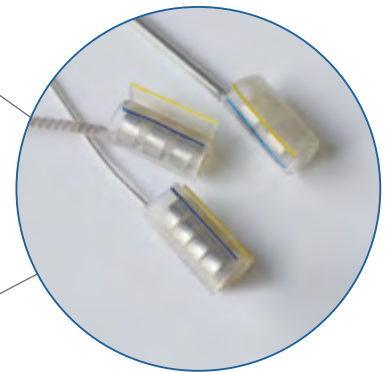
Determining electrode features like electrical or mechanical properties helps to plan experiments as it allows for precisely classifying the results.

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

- 75µm Pt-Ir or MP35N
- Highly Flexible 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 Pt-Ir wire (xxx Ohm/m)
- Ø 2.0 mm | max. 4 channels, 70µm Pt-Ir wire (xxx Ohm/m)

Connectors

Extracorporeal

- Omnetics: circular or linear
max. 32 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.



Contact Information

Shipping Address (if different)

Name

Name

Company Name

Company Name

Street

Street

City

City

State

Zip

State

Zip

Country

Country

Phone

Email

Any other information; e.g. desired delivery date

Please fax or email your request to:



Fax: +1 (801) 582-1509



Email: sales@blackrockneuro.com



**Blackrock
Neurotech**