°AirRay® Cortical Electrode

PRODUCT CATALOGUE
Electrode for Clinical Diagnostics and Research
AirRay Cortical Electrode – High Quality Electrode

AirRay Cortical Electrode is our foil electrode for invasive neuromonitoring. It supports brain mapping as well as the monitoring of electrical brain signals, e.g. for the localization of epileptogenic foci for a short implantation period of < 30 days.

Thanks to CorTec’s unique laser manufacturing process, AirRay electrodes are very soft, thin, and therefore flexible. The electrodes adapt well to the brain’s curvature. AirRay Cortical Electrode also provides increased patient safety due to the interlocking structure of its materials that prevents separation of electrode contacts.

CorTec – Thinking ahead

As a young medical engineering company, CorTec focuses on innovations in the fields of neurotherapy and diagnostics.

Thinking ahead, we are developing the neurotechnology of tomorrow already today. On the following pages we would like to introduce you to CorTec’s portfolio of AirRay Cortical Electrode strip and grid electrodes.

We are happy to support your work with our AirRay Cortical Electrodes. Please use the information on page 23 to request information on our current prices and to submit your order.

Reach out to our sales team if you are interested in an electrode configuration that is not in our catalogue.

We are happy to assist you!
### 1 X 4 STRIP ELECTRODE

**THE 4-CONTACT STRIP IN ITS CLASSIC DESIGN. PLEASE CONTACT US FOR OTHER ELECTRODE CONFIGURATIONS OR DESIGNS.**

**AIRay Cortical Electrode – Configuration Options**

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
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</tbody>
</table>

**Product Configuration**

<table>
<thead>
<tr>
<th>Color Code</th>
<th>Catalogue No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black-green</td>
<td>2011.1023.01</td>
</tr>
<tr>
<td>Black-orange</td>
<td>2011.1023.02</td>
</tr>
<tr>
<td>Black-blue</td>
<td>2011.1023.03</td>
</tr>
<tr>
<td>Black-red</td>
<td>2011.1023.04</td>
</tr>
<tr>
<td>Black-yellow</td>
<td>2011.1023.05</td>
</tr>
</tbody>
</table>

**Accessory | Connection Cable**

<table>
<thead>
<tr>
<th>Catalogue No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>4031.1051.01</td>
</tr>
</tbody>
</table>

For more information on the connection system please see page 8.

**General Information:**

- R-indicator on the electrode to identify top and bottom sides.
- Product is intended for single-use.
- Connectors for the connection cable are included.
- Product is supplied sterile.
- Product is intended for single-use.
- Contact opening is 2.7 mm in total (contact opening 2.7 mm).
- Learn more about our material properties on page 7.

**View:** Contact openings facing upwards.

**Product Information:**

- View: Contact openings facing upwards.
- General Information:
  - R-indicator on the electrode to identify top and bottom sides.
  - Product is intended for single-use.
  - Connectors for the connection cable are included.
  - Product is supplied sterile.
  - Contact opening is 2.7 mm in total (contact opening 2.7 mm).
  - Learn more about our material properties on page 7.

**Contact Dimensions:**

- Ø1.8
- Ø2.7
- Ø1.8
- Ø2.7

**FDA Cleared**

Copyright on all information and drawings is held by CorTec GmbH. Drawings represent the product in an abstract way and are not necessarily to scale. All dimensions are in mm. For pricing please request a quotation.
THE 6-CONTACT STRIP IN ITS CLASSIC DESIGN. PLEASE CONTACT US FOR OTHER ELECTRODE CONFIGURATIONS OR DESIGNS.

1 X 6 STRIP ELECTRODE

**PRODUCT CONFIGURATION** | **COLOR CODE** | **CATALOGUE NO.**
--- | --- | ---
Platinum-Iridium | black-blue | 1011.1022.01
 | black-green | 1011.1022.02
 | black-orange | 1011.1022.03
 | black-red | 1011.1022.04
 | black-yellow | 1011.1022.05

For more information on the connection system please see page 21.

General Information:
- R-Indicator on the electrode to identify top and bottom sides.
- Product is intended for single use.
- Connectors for the connection cable are included.
- Product is supplied sterile.
- Contact diameter is 4 mm in total (contact opening 2.7 mm).
- Learn more about our material properties on page 21.

THE 8-CONTACT STRIP IN ITS CLASSIC DESIGN. PLEASE CONTACT US FOR OTHER ELECTRODE CONFIGURATIONS OR DESIGNS.

1 X 8 STRIP ELECTRODE

**PRODUCT CONFIGURATION** | **COLOR CODE** | **CATALOGUE NO.**
--- | --- | ---
Platinum-Iridium | black-red | 1011.1021.01
 | black-blue | 1011.1021.02
 | black-green | 1011.1021.03
 | black-orange | 1011.1021.04
 | black-yellow | 1011.1021.05

For more information on the connection system please see page 21.

General Information:
- R-Indicator on the electrode to identify top and bottom sides.
- Product is intended for single use.
- Connectors for the connection cable are included.
- Product is supplied sterile.
- Contact diameter is 4 mm in total (contact opening 2.7 mm).
- Learn more about our material properties on page 21.

For more information on the connection system please see page 21.

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**SOFT AND THIN STRUCTURES FOR INCREASED FLEXIBILITY AND ADAPTABILITY: 10 CONTACTS.**
**PLEASE CONTACT US FOR OTHER ELECTRODE CONFIGURATIONS OR DESIGNS.**

**Accessories**

<table>
<thead>
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<th>Product Configuration</th>
<th>Color Code</th>
<th>Catalogue No.</th>
</tr>
</thead>
<tbody>
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<td>Platinum-Iridium</td>
<td>red-blue</td>
<td>2011.1033.01</td>
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<tr>
<td></td>
<td>red-yellow</td>
<td>2011.1033.02</td>
</tr>
<tr>
<td></td>
<td>red-green</td>
<td>2011.1033.03</td>
</tr>
<tr>
<td></td>
<td>red-orange</td>
<td>2011.1033.04</td>
</tr>
<tr>
<td></td>
<td>red-black</td>
<td>2011.1033.05</td>
</tr>
</tbody>
</table>

**For more information on the connection system please see page 4.**

**General Information:**
- R-Indicator on the electrode to identify top and bottom sides.
- Product is intended for single use.
- Connectors for the connection cable are included.
- Product is supplied sterile.
- Contact diameter is 4 mm (total contact opening 2.7 mm).
- Learn more about our material properties on [page 3].

**For more information on the connection system please see page 4.**
### 2 x 6 GRID ELECTRODE

**SOFT AND THIN STRUCTURES FOR INCREASED FLEXIBILITY AND ADAPTABILITY: 12 CONTACTS.**

**PLEASE CONTACT US FOR OTHER ELECTRODE CONFIGURATIONS OR DESIGNS.**

- **PRODUCT CONFIGURATION:** 2 x 6
- **COLOR CODE:**
  - Platinum-Iridium: green-blue, green-black, green-red
  - Platinum: green-orange, green-yellow, green-red
- **CATALOGUE NO.:**
- **ACCESSORY:** Connection cable
- **CABLE CATALOGUE NO.:** 4031.1052.01
- **16 Channels**

**General Information:**
- R-Indicator on the electrode to identify top and bottom sides.
- Product is intended for single use.
- Connectors for the connection cable are included.
- Product is supplied sterile.
- Contact diameter is 4 mm in total (contact opening 2.7 mm).
- Learn more about our material properties on [page 21](#).

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### 2 x 8 GRID ELECTRODE

**SOFT AND THIN STRUCTURES FOR INCREASED FLEXIBILITY AND ADAPTABILITY: 16 CONTACTS.**

**PLEASE CONTACT US FOR OTHER ELECTRODE CONFIGURATIONS OR DESIGNS.**

- **PRODUCT CONFIGURATION:** 2 x 8
- **COLOR CODE:**
  - Platinum-Iridium: orange-black, orange-red, orange-yellow, orange-blue
  - Platinum: orange-black, orange-red, orange-green
- **CATALOGUE NO.:**
- **ACCESSORY:** Connection cable
- **CABLE CATALOGUE NO.:** 4031.1052.01
- **16 Channels**

**General Information:**
- R-Indicator on the electrode to identify top and bottom sides.
- Product is intended for single use.
- Connectors for the connection cable are included.
- Product is supplied sterile.
- Contact diameter is 4 mm in total (contact opening 2.7 mm).
- Learn more about our material properties on [page 21](#).

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**FDA CLEARED**

For more information on the connection system please see [page 19](#).

General Information:
- R-Indicator on the electrode to identify top and bottom sides.
- Product is intended for single use.
- Connectors for the connection cable are included.
- Product is supplied sterile.
- Contact diameter is 4 mm in total (contact opening 2.7 mm).
- Learn more about our material properties on [page 21](#).

For more information on the connection system please see [page 19](#).
SOFT AND THIN STRUCTURES FOR INCREASED FLEXIBILITY AND ADAPTABILITY: 16 CONTACTS. PLEASE CONTACT US FOR OTHER ELECTRODE CONFIGURATIONS OR DESIGNS.

4 X 4 GRID ELECTRODE

<table>
<thead>
<tr>
<th>PRODUCT CONFIGURATION</th>
<th>COLOR CODE</th>
<th>CATALOGUE NO.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platinum-Iridium</td>
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<td>2011.1018.01</td>
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<tr>
<td></td>
<td>orange-black</td>
<td>2011.1018.02</td>
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<td>orange-blue</td>
<td>2011.1018.03</td>
</tr>
<tr>
<td></td>
<td>orange-yellow</td>
<td>2011.1018.04</td>
</tr>
<tr>
<td></td>
<td>orange-red</td>
<td>2011.1018.05</td>
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</tbody>
</table>

40 Channels

For more information on the connection system please see page 67.

SOFT AND THIN STRUCTURES FOR INCREASED FLEXIBILITY AND ADAPTABILITY: 20 CONTACTS. PLEASE CONTACT US FOR OTHER ELECTRODE CONFIGURATIONS OR DESIGNS.

4 X 5 GRID ELECTRODE

<table>
<thead>
<tr>
<th>PRODUCT CONFIGURATION</th>
<th>COLOR CODE</th>
<th>CATALOGUE NO.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platinum-Iridium</td>
<td>yellow-black</td>
<td>2011.1037.01</td>
</tr>
<tr>
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<td>yellow-orange</td>
<td>2011.1037.02</td>
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<td>yellow-green</td>
<td>2011.1037.03</td>
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<tr>
<td></td>
<td>yellow-taupe</td>
<td>2011.1037.04</td>
</tr>
<tr>
<td></td>
<td>yellow-red</td>
<td>2011.1037.05</td>
</tr>
</tbody>
</table>

24 Channels

For more information on the connection system please see page 67.

General Information:
- R-Indicator on the electrode to identify top and bottom sides.
- Product is intended for single use.
- Connectors for the connection cable are included.
- Product is supplied sterile.
- Contact diameter is 4 mm in total (contact opening 2.7 mm).
- Learn more about our material properties on page 66.

FDA CLEARED

FDA CLEARED

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<table>
<thead>
<tr>
<th>PRODUCT CONFIGURATION</th>
<th>COLOR CODE</th>
<th>CATALOGUE NO.</th>
<th>ACCESSORY</th>
<th>CONNECTION CABLE</th>
<th>CATALOGUE NO.</th>
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<tbody>
<tr>
<td>Platinum-Iridium</td>
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<td></td>
<td>32 Channels</td>
<td>4031.1056.01</td>
<td></td>
</tr>
<tr>
<td>red-yellow</td>
<td>2011.1017.01</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>red-black</td>
<td>2011.1017.02</td>
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</tr>
<tr>
<td>red-orange</td>
<td>2011.1017.03</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>red-yellow</td>
<td>2011.1017.04</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>red-yellow</td>
<td>2011.1017.05</td>
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</table>

For more information on the connection system please see pages 27 ff.

General Information:
- R-Indicator on the electrode to identify top and bottom sides.
- Product is intended for single use.
- Connectors for the connection cable are included.
- Product is supplied sterile.
- Contact diameter is 4 mm in total (contact opening 2.7 mm).
  - Learn more about our materials properties on page 38.

FDA CLEARED

SOFT AND THIN STRUCTURES FOR INCREASED FLEXIBILITY AND ADAPTABILITY: 32 CONTACTS.

PLEASE CONTACT US FOR OTHER ElectroDE CONFIGURATIONS OR DESIGNS.

SOFT AND THIN STRUCTURES FOR INCREASED FLEXIBILITY AND ADAPTABILITY: 48 CONTACTS.

PLEASE CONTACT US FOR OTHER ElectroDE CONFIGURATIONS OR DESIGNS.

For more information on the connection system please see pages 27 ff.
**8 X 8 GRID ELECTRODE**

**PRODUCT CONFIGURATION** | **COLOR CODE** | **CATALOGUE NO.**
--- | --- | ---
Platinum-Iridium | yellow/red-blue | 2011.1016.01
 | blue/green-orange | 2011.1016.02
 | yellow/black-orange | 2011.1016.03
 | blue/red-yellow | 2011.1016.04

**ACCESSORY | CONNECTION CABLE** | **CATALOGUE NO.**
--- | --- | ---
32 Channels (2x) | 4031.1054.01

For more information on the connection system please see page 464.

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**FLEXIBILITY AND ADAPTABILITY: 64 CONTACTS.**

**PLEASE CONTACT US FOR OTHER ELECTRODE CONFIGURATIONS OR DESIGNS.**

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**GENERAL INFORMATION:**
- R-indicator on the electrode to identify top and bottom sides.
- Product is intended for single use.
- Connectors for the connection cable are included.
- Product is supplied sterile.
- Contact diameter is 4 mm in total (contact opening 2.7 mm).

- Learn more about our material properties on [page 464].

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**CONTACT OPENINGS**

- For more information on the connection system please see [page 464].

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**ACCESSORY & SERVICES**

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**SOFT AND THIN STRUCTURES FOR INCREASED FLEXIBILITY AND ADAPTABILITY: 64 CONTACTS.**
Our connection system allows you to connect "AirRay" to neuromonitoring systems for recording and stimulation. Connection sizes with 8, 16, 24 and 32 contacts are available.

Example: 32 contacts

Connection to the neuromonitoring system. For the connection of the electrode you require one connection cable for each electrode. The required sizes and numbers are stated for each electrode as part of the order information.

More details on the usage of the connection system are provided in the Instructions for Use (IFU).

Non-Sterilizable | Color Rings

In case of using more than one Connection Cable at once, please use Color Rings to distinguish the Electrodes and to prevent a mix-up.

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For pricing please request a quotation.
Platinum-Iridium is one of the standard materials commonly used for implants. The addition of Iridium provides the Platinum with additional stability. Platinum-Iridium is especially well suited for stimulation.

Per default the contact openings of our *AirRay Cortical Electrode* have a diameter of 2.7 mm. The following tables provide information on the typical impedances and maximum stimulation parameters of our products:

### Impedances (measured in physiological saline)

<table>
<thead>
<tr>
<th>Contact Ø 2.7 mm</th>
<th>1 kHz</th>
<th>1 kHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platinum-Iridium</td>
<td>60 – 90 kΩ</td>
<td>0.2 – 0.5 kΩ</td>
</tr>
</tbody>
</table>

### Stimulation Parameters (maximum intensity):`

<table>
<thead>
<tr>
<th>Pulse width (ms)</th>
<th>0.25</th>
<th>0.5</th>
<th>0.75</th>
<th>1.0</th>
<th>1.25</th>
<th>1.5</th>
<th>1.75</th>
<th>2.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amplitude (mA)</td>
<td>24.9</td>
<td>12.5</td>
<td>8.31</td>
<td>6.23</td>
<td>4.99</td>
<td>4.15</td>
<td>3.56</td>
<td>3.12</td>
</tr>
</tbody>
</table>

Values refer to symmetrical two-phase square pulses (with charge balancing) at a repetition rate of 100 Hz over a one minute period, for contacts with a diameter of 2.7 mm in Platinum-Iridium at 6.23µC/phase/pulse.

**APPLICATION:** BRAIN MAPPING

* Catalogue Numbers with the ending ‘.01’ refer to products for clinical research within the EU. Catalogue Numbers with the ending ‘.02’ refer to products with FDA clearance.
COLOR-CODING KEY

<table>
<thead>
<tr>
<th>Color Code</th>
<th>Color</th>
<th>Assignment of contacts of one electrode. Different colors for all associated electrode cables.</th>
</tr>
</thead>
<tbody>
<tr>
<td>YEL</td>
<td>yellow</td>
<td>the association of the cable to a specific electrode, as well as</td>
</tr>
<tr>
<td>RED</td>
<td>red</td>
<td>the assignment of contacts of the same electrode. Color codes are explained in a code chart included</td>
</tr>
<tr>
<td>BLU</td>
<td>blue</td>
<td>in the accompanying documents of a product.</td>
</tr>
<tr>
<td>GRN</td>
<td>green</td>
<td></td>
</tr>
<tr>
<td>ORG</td>
<td>orange</td>
<td></td>
</tr>
<tr>
<td>BLK</td>
<td>black</td>
<td></td>
</tr>
</tbody>
</table>

All our electrodes are supplied with color-coded electrode cables. At the end of the electrode cable there are two color markers that indicate:

- the association of the cable to a specific electrode, as well as
- the assignment of contacts of the same electrode. Color codes are explained in a code chart included in the accompanying documents of a product.

The color code of each electrode first identifies the basic color of the product, then the color of the single electrode cable(s) following this example:

**Catalogue No. 2011.1016.01:**
°AirRay Cortical Electrode 8x8 Grid | YEL/RED-BLU

- Base color to identify the electrode as a whole is yellow.
- Color to identify the single electrode cables are red for the first numbers of channels, in the example from channel 1 to 32, and blue for the remaining channels, here from number 33 to 64.

All products can be ordered by referring to their catalogue number. Please make sure to indicate the color coding of your choice for electrode cables in your order.

Every electrode requires accessories. The Connection System has to be ordered separately.

PLEASE REFER TO PAGE 18f.

Please contact us directly, if you are interested in specific electrode designs not in our catalogue.

WE ARE HAPPY TO ASSIST YOU!