The HiFocus™ Electrode Family

HiResolution™ Bionic Ear System
by Advanced Bionics

Most flexible options for Surgeons
Most advanced technology for Patients
The HiRes 90K™ ADVANTAGE Implant

The HiRes 90K™ Advantage implant features pioneering innovations designed to deliver the ultimate hearing performance and industry-leading Built Kid Tough™ durability. Featuring the world’s most advanced sound processing circuitry, the Advantage Implant also offers three unique electrode options to suit individual patient anatomy and surgical preferences.

fully upgradeable
without the need for surgery
The Advantage for Your Patients

- **Unmatched programming flexibility** and nearly unlimited ways to deliver sound, including technologies not yet invented
- The only device with 16 independent current sources that enable current steering to increase the number of potential distinct pitches heard
- Fully upgradeable for access to future innovations without the need for surgery
- Low-profile design conforms to the shape of the head
- Removable magnet for **MRI compatibility** (safe for scans at 0.3T & 1.5T with magnet removed)
- Built Kid Tough™ with the **industry’s highest case impact resistance**—able to withstand 6 joules
- **Reliable & durable:** Mechanical improvements on the HiRes 90K implant that leads the industry with a 99.8% one-year cumulative survival rate (CSR)

The Advantage for You

- Three unique electrode-array designs to choose from for optimal cochlear placement and focused stimulation to suit individual patient anatomy as well as surgical preferences and needs
- Easy-to-use, reloadable insertion tools
- Low-profile, surgery-friendly implant design for less-intrusive implantation
- High durability & reliability mean fewer additional surgeries required
The HiFocus Electrode Family

The HiFocus™ electrode family has been developed to accommodate individual patient anatomy, their etiology and the surgeon’s preferences. Each of the three unique electrode options enable focused stimulation with patented HiFocus electrode contacts—the perfect platform to deliver AB’s superior sound processing strategies for the best hearing outcome.
HiFocus™ Mid-Scala Electrode
Optimal Cochlear Placement, Designed for Hearing Preservation

AB’s new HiFocus Mid-Scala electrode is the *industry’s latest innovation in electrode design*. Featuring the world’s only mid-scala placement, this new electrode has been designed for *minimally atraumatic insertion* to preserve the delicate structures of the cochlea and any residual hearing. This precise placement provides recipients with the opportunity to enjoy the best possible hearing now and improved hearing in the future as new technology is introduced. Featuring the *industry’s smallest pre-curved array*, the HiFocus Mid-Scala is also the industry’s first electrode developed for a *variety of surgical approaches*, whether round window or cochleostomy, freehand or insertion tool techniques are preferred.

**The HiFocus Mid-Scala electrode is designed for...**

- Minimally atraumatic insertion to preserve the delicate structures of the cochlea
- Optimized cochlear placement for full-spectrum hearing
- Precise control of the angle and speed of insertion
- Ability to be reloaded in the Operative Room
- Focused stimulation through current steering for hearing that is the most like normal hearing
- Full upgradeability for future innovations in sound processing technology
HiFocus™ 1j Electrode  
Lateral Placement, Ease of Use

AB's HiFocus 1j electrode has been developed for easy implantation and highly effective lateral wall placement. Featuring a robust design and easy-to-use tool to allow seamless insertion and reloading in the Operative Room, the HiFocus 1j is the electrode of choice for many surgeons worldwide. With an insertion depth of approximately 25 mm and an active length of 17 mm, the HiFocus 1j electrode is designed to avoid the added risk of trauma with deep-insertion electrodes. Studies have shown cases where residual hearing is preserved with this electrode.4,5

HiFocus Helix™ Electrode  
Peri-Modiolar Placement, Reduced Channel Interaction

AB's HiFocus Helix electrode is designed to provide an insertion depth of over one turn and conform to the cochlea's natural contour with a peri-modiolar placement for reduced channel interaction. Featuring a dedicated insertion tool included in every implant package, the HiFocus Helix offers the ability to reload the electrode providing peace of mind to the surgeon.
## HiFocus Electrode Specifications

<table>
<thead>
<tr>
<th>Specifications</th>
<th>Mid-Scala</th>
<th>Tj (lateral wall)</th>
<th>Helix (peri-modiolar)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Construction</strong></td>
<td>16 platinum contacts, integrated ground on lead, platinum iridium wires, flexible silicone carrier</td>
<td>16 platinum contacts, integrated ground on lead, platinum iridium wires, flexible silicone carrier</td>
<td>16 platinum contacts, integrated ground on lead, platinum iridium wires, flexible silicone carrier</td>
</tr>
<tr>
<td><strong>Contact Spacing</strong></td>
<td>1 mm</td>
<td>1.1 mm</td>
<td>0.85 mm</td>
</tr>
<tr>
<td><strong>Insertion Depth</strong></td>
<td>18.5 mm</td>
<td>25 mm</td>
<td>18.5 to 21.5 mm</td>
</tr>
<tr>
<td><strong>Active Length</strong></td>
<td>15 mm</td>
<td>17 mm</td>
<td>13.25 mm</td>
</tr>
<tr>
<td><strong>Surgical Approach</strong></td>
<td>Round window or cochleostomy, freehand or with insertion tool</td>
<td>Cochleostomy</td>
<td>Cochleostomy</td>
</tr>
<tr>
<td><strong>Recommended Cochleostomy</strong></td>
<td>0.8 mm</td>
<td>1.5 mm when using metallic tube</td>
<td>1.2 mm * 1.6 mm</td>
</tr>
<tr>
<td><strong>Markers</strong></td>
<td>Blue indicators to ensure proper technique for tool/freehand insertion and proper insertion depth</td>
<td>Non-stimulating to indicate insertion depth</td>
<td>Non-stimulating to indicate insertion depth</td>
</tr>
<tr>
<td><strong>Insertion Tool</strong></td>
<td>Yes</td>
<td>Available</td>
<td>Included in implant sterile package</td>
</tr>
<tr>
<td><strong>Reloadable</strong></td>
<td>Up to 2 times</td>
<td>Up to 2 times</td>
<td>Up to 1 time</td>
</tr>
</tbody>
</table>
For more information, visit AdvancedBionics.com

References:


2. Cochlear Nucleus CI512 Cochlear Implant Technical Specifications. N33741F Iss.1 Jun09.

