World’s Largest Selection of Electrodes for a Variety of Cochlear Duct Lengths (CDLs)

Cochlear may differ significantly in size and shape from one another as can individual cochlear duct lengths. MED-EL offers the largest selection of electrode arrays. Each implant recipient can be sure to receive the best possible electrode array for their unique cochlear anatomy.

Selecting the Right Electrode Array for Each CDL

The graphs at right may assist in selecting the appropriate electrode array.

To choose the appropriate electrode array with the avoidance of radiological imaging, the diameter of the basilar turn is used. This value, labeled ‘W’, is measured from the Round Window to the opposite lateral wall, using the midbulla as the center point (see Figure 1).

The ‘W’ value may then be used for pre-operative assessment of the appropriate electrode variant by using the graphs at right (See Figure 2). Please use the appropriate graph depending on whether a Round Window or Cochleostomy approach is used.

The ‘W’ value is only applicable for patients with normal cochlear anatomy.

Complete Cochlear Coverage (CCC)*

Complete Cochlear Coverage means stimulating the cochlea from the base to the apical region in order to stimulate a maximum number of nerve fibres. Stimulation of the entire frequency range provides the implant user with the best possible outcomes in speech perception and sound quality.

* The diameter of the basilar turn, or height of the cochlear duct, may be used as a guide for selecting the appropriate array.
**Electrode Arrays**

**Designed for Atraumatic Implantation**

Providing Superior Hearing Performance

**Wave-Shaped Wires**

The electrode arrays feature ultraflexible wave-shaped platinum iridium wires. Wave-shaped wires significantly reduce rigidity in comparison to straight-wire designs. This unique design is the key to making a MED-EL electrode array the world’s most flexible and atraumatic.

Optimal Number of Contacts

MED-EL’s electrode design philosophy dictates a careful balance between the maximum number of electrode contacts and maximal channel interaction. Channel interaction negatively impacts performance. Each electrode array contains the optimal number of contacts for stimulation of nerve fibres leading to best performance. Optimal number and spacing of electrode contacts also significantly reduce rigidity, allowing for gentle insertion without damaging the delicate cochlear structures.

**Optimised for Insertion**

MED-EL’s softest and most flexible electrode arrays are designed for the majority of patients and optimised for Structure Preservation and the preservation of medical hearing.

**FLEX Series**

FLEX-series electrodes are designed specifically for malformed cochleae. Each FLEX array features the SEAL designed for better control of cisternal fluid (CSF) leakage.

**CLASSIC Series**

CLASSIC Series were the first MED-EL electrode arrays to feature wave-shaped wires. They reflect MED-EL’s commitment to creating soft, flexible electrodes for over 20 years. Each CLASSIC array also features double electrode contacts throughout as well as optimal number of contacts.

**ABI Array**

The ABI electrode array features 12 active contacts on a soft pro-shaped silicone paddle, with shaping arms fixed to a polyester mesh.

**Active Stimulation Range (ASR):**

- **CLASSIC Series:**
  - FLEX SOFT: 0.8 mm
  - FLEX 28: 0.8 mm
  - FLEX 24: 0.8 mm

- **Flexible Contacts:**
  - FLEX SOFT: 0.8 mm
  - FLEX 28: 0.8 mm
  - FLEX 24: 0.8 mm

**Reference Contact:**

- **DOUBLE EDGE:**
  - Diameter at basal end: 0.8 mm
  - Diameter at apical end: 0.8 mm

**Reference Contact (PREMIUM)**

- Diameter at basal end: 1.5 mm
- Diameter at apical end: 1.0 mm

**ABI Array (Paddle Size):**

- Diameter at basal end: 5.5 mm x 3 mm
- Diameter at apical end: 3.0 mm x 1.5 mm

**FLEX-Tip**

- Diameter at basal end: 0.8 mm
- Diameter at apical end: 0.8 mm

**Contact Diameter:**

- Ø 1.5 mm
- Ø 1.0 mm

**Stimulation Contacts:**

- Ø 1.0 mm
- Ø 0.8 mm

**Fluid (CSF) is expected. Each FORM array features an integrated SEAL designed to close off the cochlear opening making it easier for surgeons to apply additional tissue for sealing the area once the electrode array has been inserted."**

**FORM Series**

**NEW**

- FORM24™
  - A 24-mm electrode array featuring a paddle designed to supply (no deformation or simplification) of malformed cochleae. Also for cases where CSF leakage is expected.
  - Diameter at basal end: 1.5 mm
  - Diameter at apical end: 1.0 mm
  - Diameter of seal at basal end: 1.5 mm
  - Diameter of seal at apical end: 1.0 mm

**FORM19™**

A 19-mm electrode array featuring a paddle designed to be used in combination with rotation, abduction, or otoimplants. Also for cases where CSF leakage is expected.

**Reference**

- **DOUBLE EDGE:**
  - Diameter at basal end: 0.8 mm
  - Diameter at apical end: 0.8 mm

**Reference Contact (PREMIUM)**

- Diameter at basal end: 1.5 mm
- Diameter at apical end: 1.0 mm

**ABI Array**

The ABI electrode array features 12 active contacts on a soft pro-shaped silicone paddle, with shaping arms fixed to a polyester mesh.

**Active Stimulation Range (ASR):**

- **CLASSIC Series:**
  - FLEX SOFT: 0.8 mm
  - FLEX 28: 0.8 mm
  - FLEX 24: 0.8 mm

- **Flexible Contacts:**
  - FLEX SOFT: 0.8 mm
  - FLEX 28: 0.8 mm
  - FLEX 24: 0.8 mm

**Reference Contact:**

- **DOUBLE EDGE:**
  - Diameter at basal end: 0.8 mm
  - Diameter at apical end: 0.8 mm

**Reference Contact (PREMIUM)**

- Diameter at basal end: 1.5 mm
- Diameter at apical end: 1.0 mm

**Ready-to-use (RTU)™**

- Diameter at basal end: 0.8 mm
- Diameter at apical end: 3.0 mm

**Active Stimulation Contacts**

- Ø 1.5 mm
- Ø 1.0 mm

**Fluid (CSF) is expected. Each FORM array features an integrated SEAL designed to close off the cochlear opening making it easier for surgeons to apply additional tissue for sealing the area once the electrode array has been inserted."**

**FLEXSOFT™**

- A 3-mm electrode array featuring FLEX-Tip technology, for increased mechanical flexibility and enabling CCC.

**FLEX28™**

- A 28-mm electrode array suitable for total or near-total cochlear ablation/featuring FLEX-Tip technology (optimised for insertion into the apical region (CCC).

**FLEX24™**

- A 24-mm electrode array featuring FLEX-Tip technology and designed for total (electric) ablation (SA) with minimal invasive hearing loss and/or 1.5 turns. FLEX-Tip is patent pending as the FLEX-Tip.

**FLEX20™**

- A 20-mm electrode array featuring FLEX-Tip technology and designed to be used in cases of partial deafness or other specific needs or surgical preference.

**Active Stimulation Contacts**

- Ø 1.5 mm
- Ø 1.0 mm

**Fluid (CSF) is expected. Each FORM array features an integrated SEAL designed to close off the cochlear opening making it easier for surgeons to apply additional tissue for sealing the area once the electrode array has been inserted."**

**Reference**

- **DOUBLE EDGE:**
  - Diameter at basal end: 0.8 mm
  - Diameter at apical end: 0.8 mm

**Reference Contact (PREMIUM)**

- Diameter at basal end: 1.5 mm
- Diameter at apical end: 1.0 mm

**ABI Array**

The ABI electrode array features 12 active contacts on a soft pro-shaped silicone paddle, with shaping arms fixed to a polyester mesh.