Cochlear™

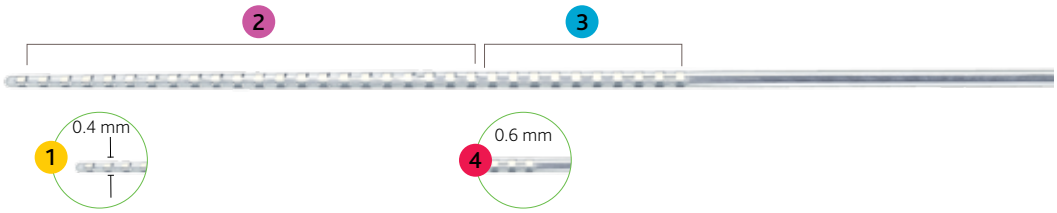
Nucleus® CI24RE(ST) Cochlear Implant

Technical Specifications

From the company that is setting the standard for implant reliability and performance, Cochlear™ presents the full-band straight electrode on the proven Nucleus® CI24RE receiver/stimulator.

The first generation straight electrode has been successfully used in patients with abnormal cochlea, such as partial ossification, incomplete partitions, hypoplasia and common cavities[1].

Full-Band Straight Electrode in detail



1. Diameter at apical end: 0.4 mm.
2. 22 full-band platinum electrode contacts spread over 16.4 mm active array.
3. 10 stiffening rings to aid insertion.
4. Diameter at basal end: 0.6 mm.

Components of the Nucleus CI24RE(ST) Cochlear Implant

1. Receiver/stimulator in titanium casing for high impact resistance.
2. Removable magnet for MRI safety (star on magnet indicates the side that should be away from the bone; sterilised replacement available from Cochlear – Z50501). MRI safe at 3.0 Tesla with magnet removed (for further details refer to the Surgeon's Guide N94680)[2]. Non-magnetic plug to assist MRI procedures available from Cochlear (Z50100).
3. Implant coil, enabling telemetry.
4. Two extracochlear electrodes for different stimulation modes, and high performance telemetry.

Specifications are nominal and accurate at the time of printing, subject to change without notification.

Hear now. And always

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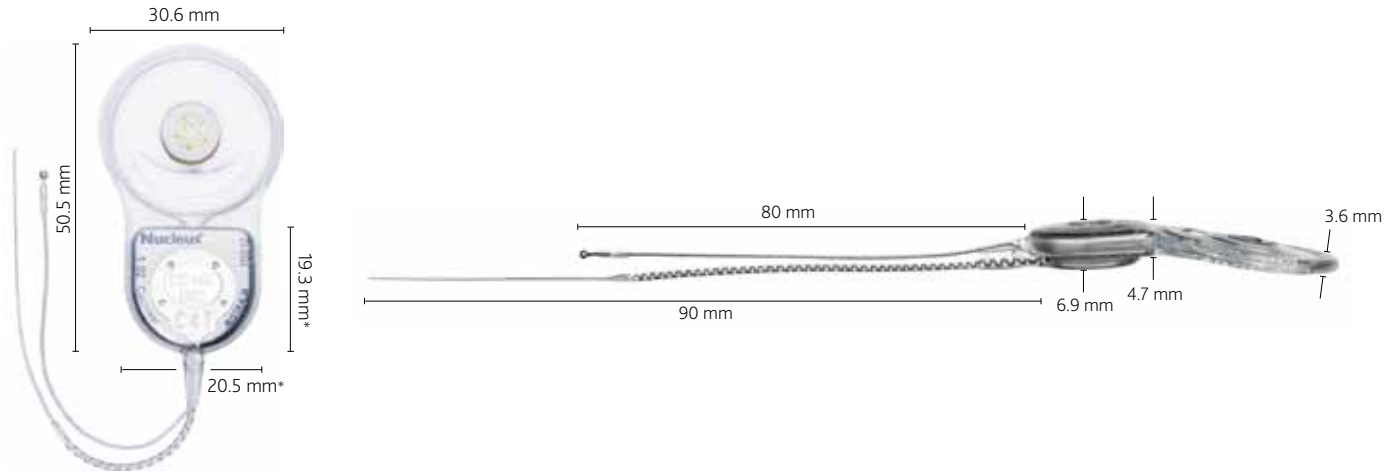
Dimensions of the Nucleus CI24RE(ST) Cochlear Implant



* Specified dimensions for receiver/stimulator titanium casing.

ELECTRODE

Contacts

- 22 full-band platinum electrodes spaced over a 16.4 mm active array.
- Compressed electrode spacing of 0.75 mm.

General features

- 10 stiffening rings to aid insertion.
- Full-band electrodes and high density spacing is well suited to hypoplastic and common cavity cochlear anatomies.[1]
- Two extracochlear electrodes – one platinum plate attached to the implant receiver/stimulator package and a separate 1.5 mm (typical) diameter ball electrode on an 80 mm lead.

Dimensions

- 23.9 mm intracochlear length.

RECEIVER/STIMULATOR

General features

- Weight – 9.5 g.

MRI

- MRI safe up to 1.5 Tesla with magnet in place.
- MRI safe at 3 Tesla with magnet removed (for further details refer to the Surgeon's Guide N94680)[1].

RELIABILITY

The CI24RE series implant is the industry's most reliable implant.

- 61,000 registered CI24RE series implants worldwide (as at AUG 2011).
- Cummulative Survival Percentage (CSP) of 99% after 7 years (as at AUG 2011).

MICROELECTRONIC PLATFORM

General features

- Power efficient, custom design.
- Stimulus amplitude range: 0 µA to 1.75 mA.
- Stimulation rates up to 31.5 kHz.
- Pulse width: 9.6 µs to 400 µs per phase.
- Implant ID to uniquely identify implants.

Stimulation modes

- Monopolar, bipolar mode and common ground stimulation, biphasic current pulses.

Telemetry capability

- Ultra-low-noise floor (~1 µV) – enabling advanced AutoNRT™ telemetry capabilities.
- Includes fully integrated telemetry modes – NRT, AutoNRT and intraoperative NRT.
- Supports electrophysiology – ESRT, ABR and CEP.

1 Sennaroglu L. Cochlear implantation in inner ear malformations – a review article. Cochlear Implants Int. 2009 Apr 8.

2 MRI field strength approval varies by country, check the warnings and precautions document.

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