

The open sound paradigm **continues to expand**

Oticon Opn™ - Now with new styles and features



Open up
to the world

The open sound paradigm that **continues to open up the world**

Building on Opn's revolutionary benefits, Oticon is expanding the portfolio with more styles and new features. Now there are even more reasons to choose Oticon Opn.

“It has **actually changed my life**”
Barry Streetman, hearing aid user

“We're finally able to offer our patients **a truly life-changing experience**”
Paula Schwartz, hearing care professional

“Rather than just hearing what's right in front, I **can now hear everything going on around me**”
Camilla Terkildsen, hearing aid user



Oticon Opn captures two CES 2017 awards:

- Tech for a Better World
- Wearable Technologies

These testimonials represent the opinion of the concerned individual only and may not be representative of the experience of others. The testimonials are not paid and may not be indicative of the future performance or success of any other individuals.



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Open up to the world

Old world

In complex listening environments where sound sources are many, dynamic and unpredictable, the limitations of traditional hearing aid technology has led to the use of narrow directionality to make speech coming from the front clear. All other sounds - speech and noise alike - are reduced, leaving the user with a narrowed, artificial listening experience.

This restricts the acoustical information to the brain and deprives it of context, making it harder for it to focus naturally and switch attention to something else when needed. This prevents the user from following conversations with multiple speakers in a natural way.



New world

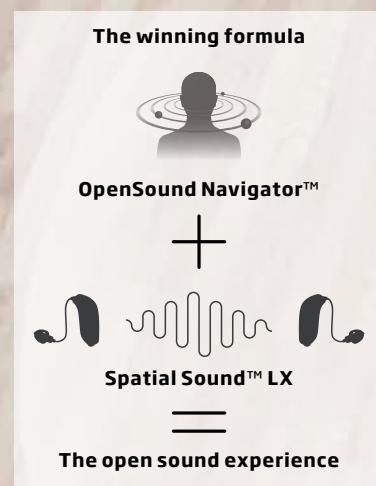
Groundbreaking technology in Oticon Opn literally opens up the world. Fast and precise enough to support the brain, it can analyze and follow the dynamics of the soundscape and differentiate between speech and noise. By rapidly and precisely reducing disturbing noise, it allows users to access and handle multiple speakers simultaneously, even in complex environments.

This groundbreaking approach empowers the brain to choose what to focus on and to change focus readily - leaving users in better control.

Access all sounds in an open sound experience

The result of a winning formula of Oticon technology

Extremely fast and precise technology provides users with more accurate information about their 360° soundscape, even in difficult listening environments. This open sound experience lets them more easily locate and separate sound sources including multiple speakers, so they can focus on what they find important. Two groundbreaking features makes this possible.



OpenSound Navigator™ scans the sound environment more than 100 times per second, rapidly and precisely attenuating disturbing noise, even between individual words, making distinct speech stand out clearly.

Spatial Sound™ LX ensures precise localization of sounds. Data exchange at streaming speed gives the brain the cues it needs to pinpoint the position of all distinct sounds. Powered by TwinLink™, Spatial Sound LX enables more than a 200% increase in binaural communication capacity.*



Powered by the Velox™ platform

Fast and precise enough to support the brain in making sense of sound.

Market-leading performance

- 50 times faster data processing than ever before*
- Market-leading resolution with 64 frequency channels
- Full environment analysis more than 100 times per second
- Capacity to handle more than 1,200 million operations per second
- World's first TwinLink communication system

The world's first TwinLink communication system

As we never compromise on delivering the best audiology, Oticon Opn is the first hearing aid to feature two dedicated communication systems.

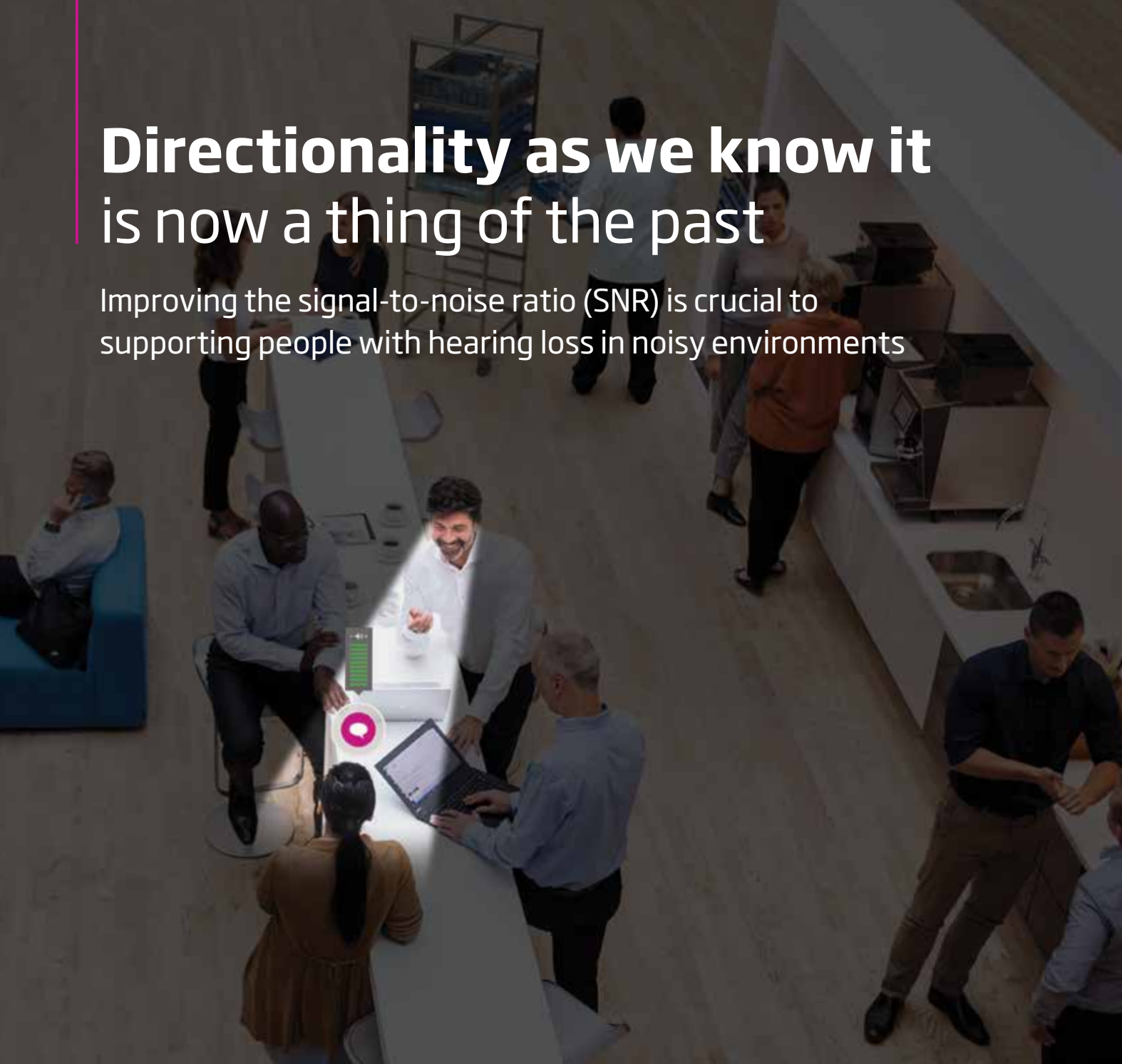
- One for outstanding binaural processing (NFMI)
- One for streamer-free connectivity with devices (2.4 GHz)

TwinLink communication is delivered without compromising binaural capabilities, battery consumption and size, and is enabled by Oticon's own, purpose-built platform technology.



Directionality as we know it is now a thing of the past

Improving the signal-to-noise ratio (SNR) is crucial to supporting people with hearing loss in noisy environments



Old world

In difficult listening environments with multiple speakers and many unpredictable sound sources, the traditional technique to improve SNR has been limited due to insufficient processing power.

This has led to a simplistic approach, where fixed and narrow directionality enhances the speaker in front. All other sounds including speech are reduced, becoming inaudible to the hearing aid user.

$$\text{Old world SNR} \uparrow = \frac{\text{Primary speech}}{\text{Other speech} \downarrow + \text{Noise} \downarrow}$$



New world

With the speed and precision of the new Velox platform and the advanced MSAT* sound processing algorithm, Oticon has created a new open sound paradigm. In effect, sounds are handled individually, so that the user gets access to all distinct speech and that noise signals are attenuated rapidly and precisely.

This gives the user the ability to engage in conversations with multiple speakers, and to decide where to focus and when to switch attention when something more interesting occurs.

$$\text{New world SNR} \uparrow = \frac{\text{Primary speech} + \text{Other speech}}{\text{Noise} \downarrow}$$



Oticon Opn reduces the load on the brain

Oticon Opn makes it easier to listen in challenging environments. This helps to reduce the cognitive load on the brain, resulting in outstanding user benefits.

Oticon Opn 1 delivers:

20%

less listening effort
reducing the load on the brain in noisy environments*

20%

more capacity to remember
freeing up mental resources, enabling users to recall more in noisy environments*

30%

better speech understanding
in noisy environments without suppressing surrounding sounds through narrow directionality*

Proven to make it easier on the brain

By giving the brain access to all important sounds, Oticon Opn supports the way the brain naturally makes sense of sound. This reduces the cognitive load on the brain, leaving users with more energy.

Providing the brain with substantial help in noisy environments

Oticon Opn provides the brain with better conditions to perform in, enabling it to access multiple speakers and more easily focus on the most interesting sounds.

This approach opens up the sound environment to make sure all elements that matter are continuously accessible. In doing so, users are able to switch attention if something important or interesting occurs, giving them more control.

* Le Goff et al. 2016, Oticon Whitepaper, <http://www.oticon.com/support/downloads>

NEW RESEARCH SHOWS:

Even easy listening environments require significant listening effort



Testing people's ability to understand speech in noisy environments has become a benchmark in hearing research. But when it comes to understanding how people with hearing loss handle typical daily listening situations, simple speech-in-noise testing is not enough*.

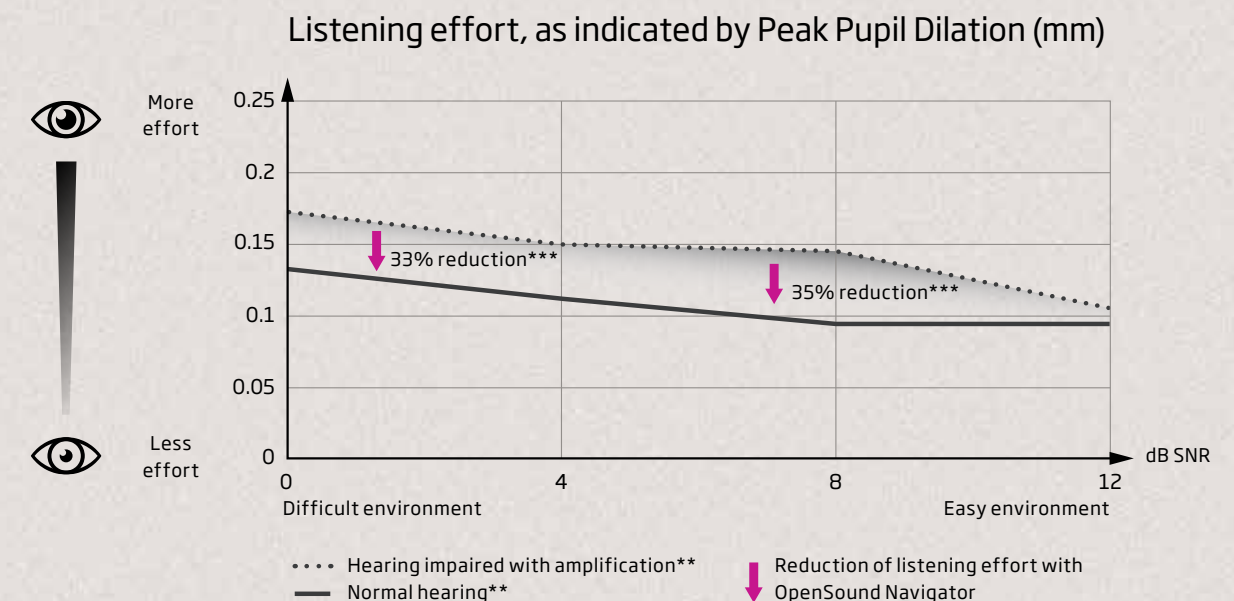
Using pupillometry as an objective measure for listening effort, new research shows a significant increase in the load on the brain for people with hearing loss, even in

easy communication conditions where noise is quieter than speech, and speech understanding is high**.

This means that in typical everyday situations for people with hearing loss such as being outdoors, visiting a department store or taking public transport, the brain must work harder to make sense of sound, even when speech understanding is close to 100%.

NOW PROVEN:

Oticon Opn significantly reduces listening effort in both easy and difficult environments



Because of the speed and precision of the OpenSound Navigator, Oticon Opn can reduce noise to significantly decrease listening effort, even in easy listening situations. In doing so, it significantly narrows the gap in listening effort between people with normal hearing and people with hearing loss. Oticon Opn 1 provides the most support across different listening environments****.

* Keidser, "Introduction to Special Issue: Towards Ecologically Valid Protocols for the Assessment of Hearing and Hearing Devices", JAAA 2016
** "Impact of stimulus related factors and hearing impairment on listening effort as indicated by pupil dilation... with amplification" Poster, 2016 International Hearing Conference Tahoe City CA. Persons with hearing loss had audibility compensated with amplification.

*** Wendt et al. 2016, Lunner et al. 2016. Data indicates a 33% and a 35% reduction in Peak Pupil Dilation at SNRs of 1.3 dB and 7.1 dB, respectively. Individual benefits may depend on prescription.
**** Only Oticon Opn 1 has the full effect of OpenSound Navigator™.

All you need to stay connected

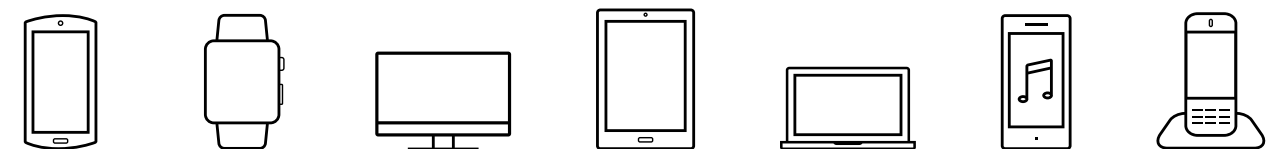


Made for
iPod iPhone iPad

Oticon Opn is a Made for iPhone® hearing aid and transforms into superior quality headphones. Via 2.4 GHz direct streaming, users can connect with devices such as iPhone, TVs, radios, laptops and many more - wherever they are. Users can also control the hearing aids with the intuitive Oticon ON App.



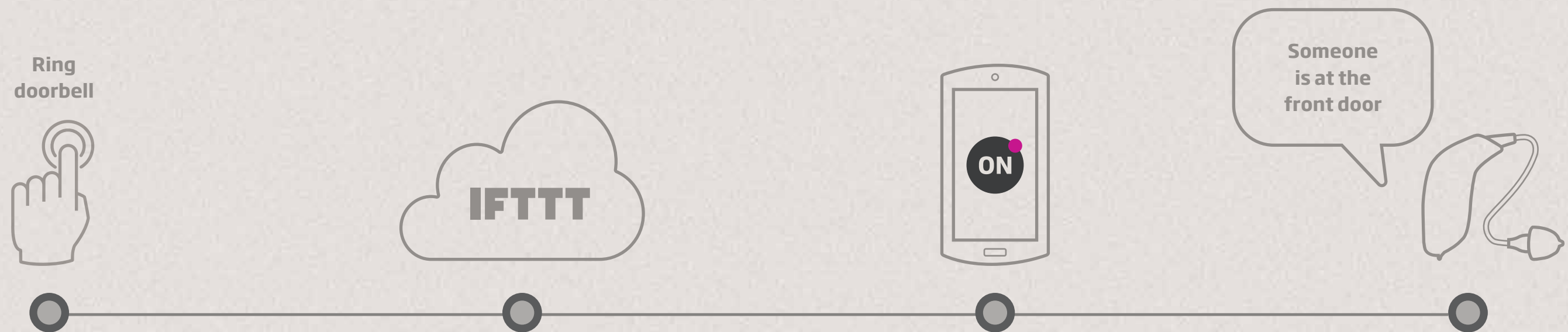
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Some functionalities require the ConnectClip, which will be available in the second half of 2017. For more information, please see the Oticon Opn Product Guide or visit www.oticon.com

Oticon Opn – the world’s first Internet-connected hearing aid

Not just a revolution in hearing care technology,
it also turns your hearing aid into a smart device



Gain access to the endless possibilities of Internet-connected hearing

Oticon Opn is the world’s first Internet-connected hearing aid. With the Oticon ON App, users can interact with other Internet-connected devices and services as part of the If This Then That (IFTTT.com) service.

The growth of IFTTT and its integration into hearing care provides you with excellent opportunities to differentiate and grow your practice. And, since Oticon Opn was first launched, users have already created and activated a wide range of ways to benefit from an Internet-connected hearing aid.

-   Change hearing aid settings when arriving at work
-   Receive notification when it’s time to go to sleep
-   Receive notification when hearing aid battery is low
-   Receive notification when an SMS text message arrives
-   Automatically start TV streaming
-   Receive calendar notifications
-   Receive a spoken notification when someone is at the door
-   Turn lights off when leaving home

 Oticon invites all Opn users to go to oticon.com to explore the endless possibilities available when connecting Oticon Opn.

Open up to **more styles**

With the addition of two new styles, we continue to expand the open sound paradigm. As with our miniRITE, the Oticon Opn miniRITE-T and BTE13 PP come in three performance levels and a full set of Opn features, making the groundbreaking technology and benefits of the Oticon Opn family available to even more users.



miniRITE-T **NEW**
(Telecoil)

The new Oticon Opn miniRITE-T follows the same sleek design line as the miniRITE and covers hearing loss ranging from mild to severe-to-profound. Discreet yet packed with functionality, it comes with a telecoil and a double push-button.



miniRITE

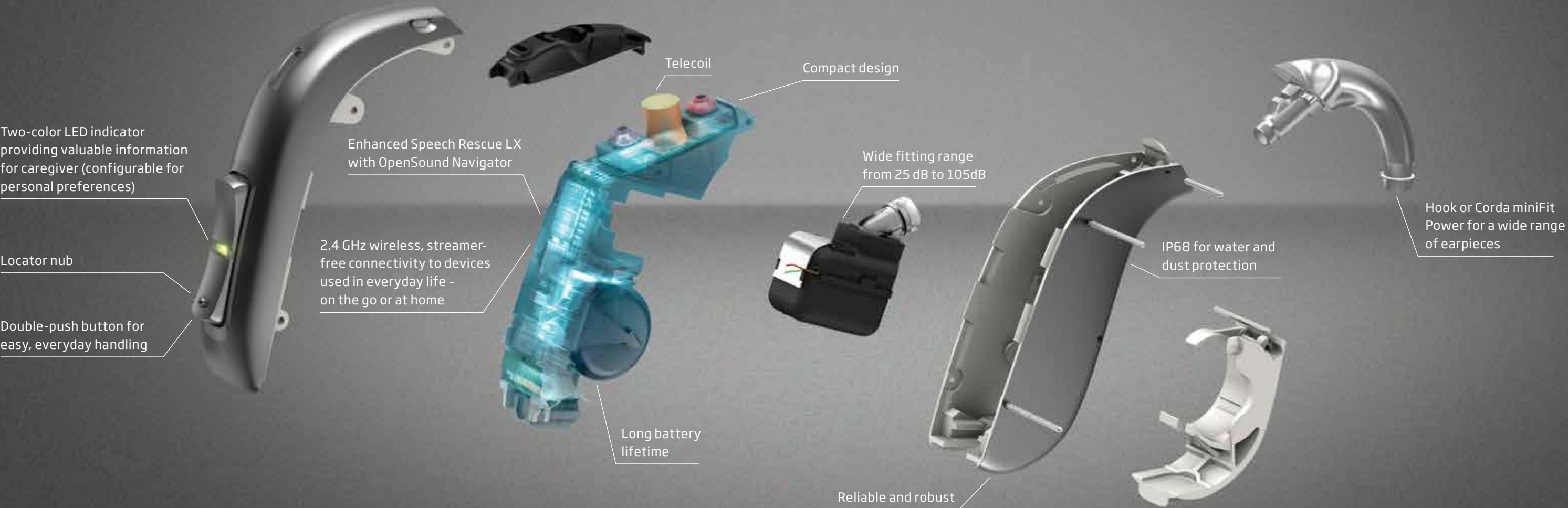
The style that introduced the open sound paradigm; sleek and modern, it sits discreetly behind the ear, offering new features and functionalities. Our miniRITE is available in all performance levels and covers hearing loss ranging from mild to severe-to-profound.

BTE13 PP **NEW**
(Plus Power)

An optimal balance between size, user friendliness and power, the new Oticon Opn BTE13 PP offers an output level up to 138 dB SPL. Feature highlights include telecoil, a double push-button and LED indicator.

For the first time ever – **open sound in a power instrument**

People with severe-to-profound hearing loss look at their hearing aids as trusted partners, and the new Oticon Opn BTE13 PP is a truly powerful solution designed to meet their everyday needs. Featuring the groundbreaking technology synonymous with Oticon Opn and the unique benefits of the open sound paradigm, this power version is a perfect balance of size, user friendliness and power.

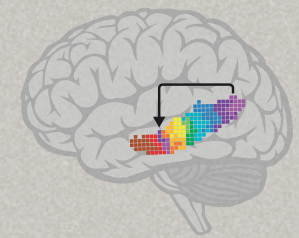


Speech Rescue™ LX – open sound with high-frequency audibility



New insights into frequency lowering has led to an innovative approach

Sounds of different frequencies activate different regions in the brain in an organized manner. Through Speech Rescue LX technology, high frequency sounds (shown in purple) are moved to lower frequency regions, which allows the brain to respond to the copied sounds (shown by the arrow) in a different area.



Traditional frequency lowering strategy

Some hearing solutions press sound together along the frequency axis, compiling a lot of information into a small area, while leaving the high frequency region unstimulated.



Oticon's innovative frequency composition

Oticon's precise approach to frequency composition keeps the high frequencies and copies them to the mid frequency regions.



More speech details than ever before

Missing high frequency sounds such as 's' or 'sh' can negatively impact the flow and understanding of conversation. Speech Rescue LX, Oticon's innovative and precise approach to frequency lowering, increases access to speech by rescuing speech cues that would otherwise be inaudible.

Together with the OpenSound Navigator and Speech Guard™ LX, Speech Rescue LX is now able to deliver high-frequency audibility like never before.

Speech Rescue LX is now available in all Oticon Opn styles, performance levels and speaker options, and covers hearing losses ranging from moderate to severe-to-profound.

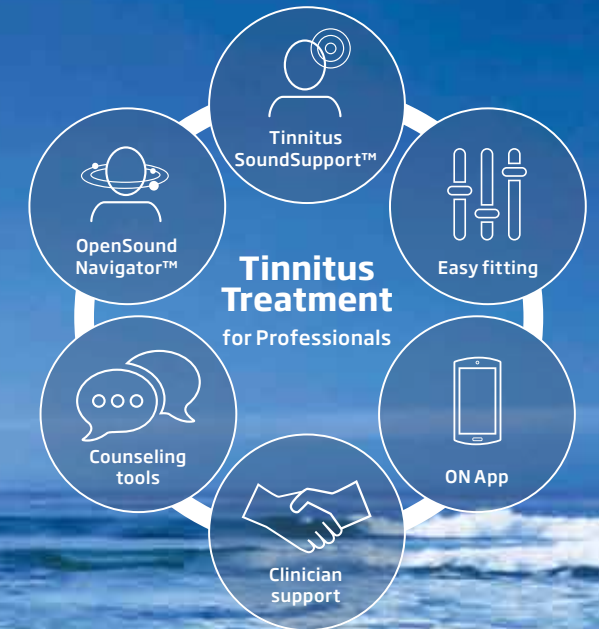
A three-step approach to improved speech access

This unique three step approach is designed with one goal in mind: to increase speech understanding.

- 1 The OpenSound Navigator rapidly and precisely attenuates disturbing noise to present Speech Rescue LX with clear speech signals to process further.
- 2 Speech Rescue LX then performs precise frequency composition by copying the high frequencies and lowering them to mid-frequencies, ensuring clearer access to inaudible sounds. Fueled by the speed and precision of the Velox platform, Speech Rescue LX in Oticon Opn is now able to deliver even more speech details.
- 3 Finally, the superior adaptive compression of Speech Guard LX preserves the important speech details.

Oticon Opn with Tinnitus SoundSupport™

A winning combination of tinnitus relief and open sound



Oticon's proven sound generator, Tinnitus SoundSupport, is now available in Oticon Opn hearing aids in all styles and performance levels. Tinnitus SoundSupport comes with a variety of relief sounds, including popular ocean-like sounds, that can be customized to individual patient needs.

Oticon Opn's ultra-fast signal processing, with OpenSound Navigator as the key element, delivers a balanced and rich sound environment to maintain access to a range of environmental sounds without overloading the brain with information. This may positively influence the clients' level of stress in otherwise challenging situations and allow them to focus on other things, such as the people they are

together with. Focusing the patient's attention away from the tinnitus can have a positive affect on their perception of the tinnitus.

With OpenSound Navigator, Oticon Opn adds an important element to the tinnitus toolbox, especially when treating people with hearing loss and tinnitus who need extra support in both easy and difficult everyday listening environments.

Whether you are new to tinnitus treatment or have years of experience, Oticon gives you great support with a guided and easy fitting flow and a completely updated tinnitus training and counseling package.



Tinnitus SoundSupport can be adjusted via the Oticon ON App for flexible and easy handling.

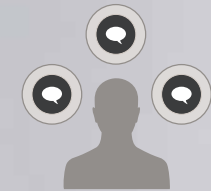
OpenSound Navigator benefit:

OpenSound Navigator analyzes all incoming sound to determine what is speech and what is noise. Then it rapidly reduces loud noise coming from specific directions as well as remaining diffuse noise. This helps to preserve a rich sound environment regardless of noise level while minimizing disturbing sounds.

With OpenSound Navigator you can adapt the noise reduction to deliver the help your patients need, in the environments they need it.

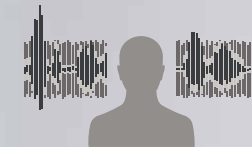
The Oticon Opn family offers **BrainHearing™** support in five key areas

Oticon Opn provides access to all of the important sounds in everyday listening environments, including multiple speakers. Its ability to support the brain in these conditions is made possible by outstanding performance in five key areas, which result in groundbreaking benefits for the user.



1. Open access to all speakers

The open sound experience is built on the foundation of ensuring open access to multiple speakers, even in noisy environments.



2. Rapid noise reduction

Intruding noise puts extra load on the brain, so a rapid and precise reduction of noise coming from specific directions, as well as diffuse background noise, is essential to make distinct speech stand out.



3. Localization of sounds

With the open sound experience bringing access to all sounds, it's important that users receive precise sound localization information, so they can decide where to focus.



4. Speech clarity

To ensure maximal speech understanding with less effort, and a richer listening experience, all speech sources in any location are enhanced and clarified.



5. A personalized listening experience

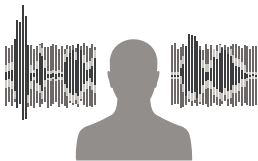
The performance of Oticon Opn is optimized by making adjustments based on individual needs and personal preferences.

One open sound experience - three levels of BrainHearing support

BrainHearing support is delivered by a unique combination of technologies working together to reduce listening effort and provide the brain with better conditions to perform in. All three members of the Opn family provide the unique open sound experience with access to multiple speakers. However, they differ in the amount of support they give the brain in terms of rapid noise reduction, localization of sounds, speech clarity, and the personalization of the listening experience - **i.e. they differ in the level of BrainHearing support they deliver.**

Regardless of end-user age and lifestyle, Oticon always recommends Opn 1 for maximum support across different listening environments.



 Product		 BrainHearing support	 Open access to all speakers	 Rapid noise reduction	 Localization of sounds	 Speech clarity	 A personalized listening experience
Oticon Opn 1	Level 1		Yes	• • •	• • •	• • •	• • •
Oticon Opn 2	Level 2		Yes	• •	• •	• •	• •
Oticon Opn 3	Level 3		Yes	•	•	•	•
Supporting features:			• OpenSound Navigator™ • Spatial Sound LX™	• OpenSound Navigator™ • Frequency bands	• Speech Guard™ LX • Spatial Sound™ LX • Clear Dynamics • Bandwidth	• OpenSound Navigator™ • Speech Guard™ LX • Clear Dynamics • Bandwidth • Frequency bands	• Fitting bands • YouMatic™ LX • Soft Speech Booster LX

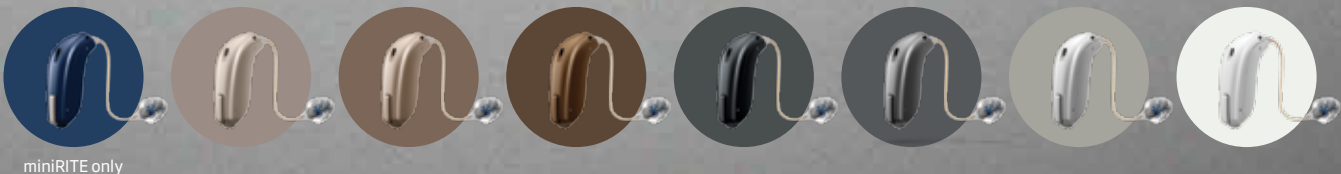
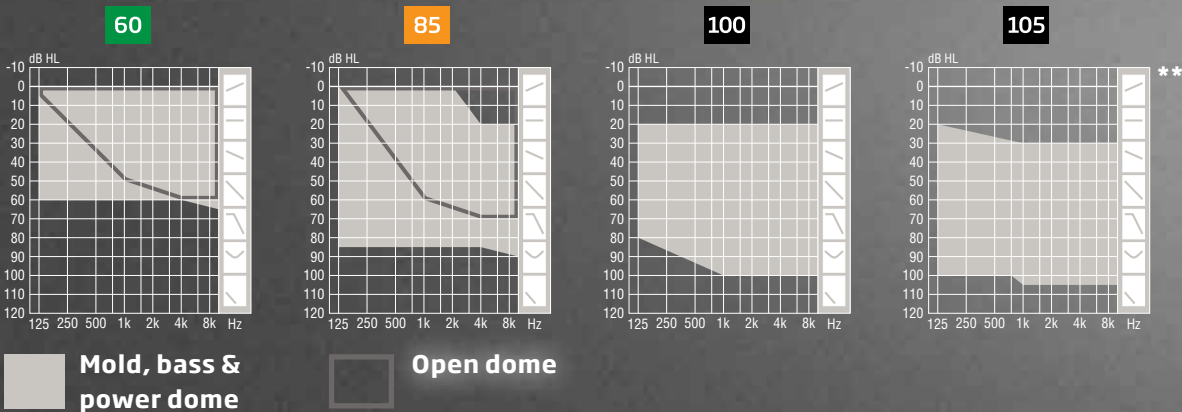
Open up to an **extensive range** of open sound opportunities

Three attractive and high performing styles:

- **Available in three performance levels**
Oticon Opn 1, Opn 2 and Opn 3
 - **All performance levels available with** speaker 60, 85, 100 and 105 - covering hearing loss from mild to severe-to-profound (miniRITE and miniRITE-T)
 - **Powered by the Velox platform**
Fast enough to support the brain
 - **Delivering the open sound experience**
OpenSound Navigator + Spatial Sound LX
 - **Proven to make it easier on the brain**
20% less listening effort, 20% more capacity to remember, 30% better speech understanding*
- **Featuring TwinLink**
The world's first dual radio communication system
 - **Made for iPhone® hearing aid**
2.4 GHz direct streaming from iPhone, TVs, radios, laptops and many more
 - **The world's first Internet-connected hearing aid**
With the Oticon ON App, users can interact with other Internet-connected devices and services as part of the If This Then That (IFTTT.com) service
 - **Open up possibilities for younger clients**
By adding the DSL fitting rationale, the open paradigm has now been expanded to fit young adults***

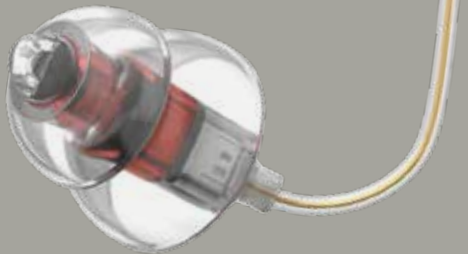


Fitting ranges across styles



* Oticon Opn 1
 ** Applicable for both miniRITE, miniRITE-T and BTE13 PP.
 Fitting range details for Oticon Opn 2 & Oticon Opn 3 are available in the technical data sheets.
 *** Oticon Opn with the DSL rationale is intended for the young adult. It is not for use in young children. It fulfills the necessary criteria relating to audiological candidacy, routing of signal processing and features, and hearing aid fitting and verification (AAA Guidelines 2013).

Oticon Opn - new features and functions for more people



OpenSound Navigator™
Less effort. Remember more. Better hearing.



Spatial Sound™ LX
Locate, follow and shift focus to the most interesting sounds



YouMatic™ LX
Tailors OpenSound Navigator to individual needs and preferences



Speech Guard™ LX
Improves speech understanding in noisy environments, making it easier to follow and engage in conversations



Speech Rescue™ LX
Makes high frequency sounds more audible

NEW



Soft Speech Booster LX
Improves soft speech understanding up to 20% - without turning up the volume



Clear Dynamics
Better sound quality with less distortion in loud environments



Wind Noise Management
Improves access to speech in situations with wind noise



Feedback shield LX
With the new dual-microphone feedback system, feedback is eliminated rapidly and effectively



Tinnitus SoundSupport™
Relief sounds for tinnitus clients

NEW



www.oticon.com

oticon
PEOPLE FIRST