

OTICON | Opn

Product Guide

2016/2017



oticon PEOPLE FIRST

Welcome to the Oticon Opn™ product guide

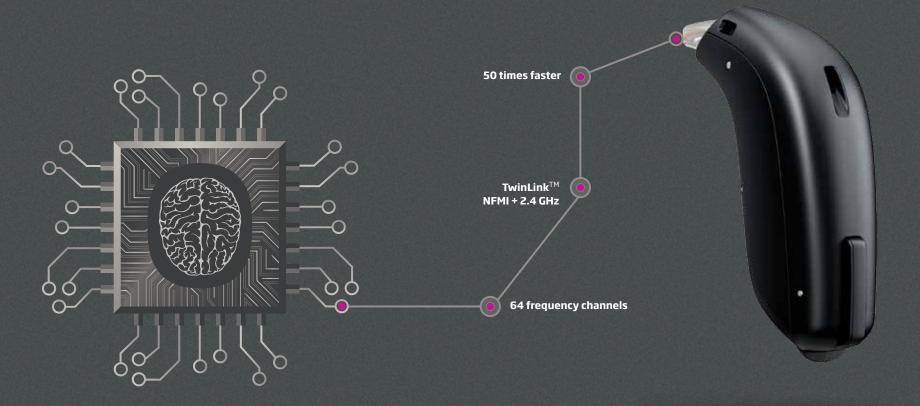
"I've not had this much fun fitting hearing aids in 34 years."*

That's a spontaneous reaction to the launch of Oticon Opn™ from an experienced audiologist. Since the launch, we've received many positive reactions from end-users who tell us that Oticon Opn greatly improves their ability to listen and follow conversations.

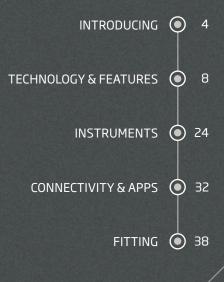
Feedback from hearing care professionals has also been enthusiastic. They report that Oticon Opn is easy to explain, and clients are overwhelmed with the sound quality and the improvement in hearing ability. When clients trial Oticon Opn and experience its groundbreaking technology, the response is overwhelmingly positive.

"People who we put demos on are calling back the SAME DAY and ordering."*

In addition to the groundbreaking Oticon Opn 1, Oticon introduces two new performance levels, Oticon Opn 2 and Oticon Opn 3. Now many more patients can experience the open sound experience and enjoy the BrainHearing™ benefits of better recall, less effort and better speech understanding. The Opn product family fitting range is also expanding to include two power speakers covering hearing losses ranging from mild to severe-to-profound.



Contents



^{*} These testimonials represent the opinion of the concerned individual only and may not be representative of the experience of others. The testimonial is not paid and may not be indicative of the future performance or success of any other individuals.

Introducing

Open up to the world

Oticon Opn™ - proven to make it easier on the brain.

At dinner with multiple conversations going on, I was able to participate in whichever one I wanted to, even more than one at a time.

focus on particular conversations while ignoring other conversations and sounds.

I am much more aware - 360° around me - what is going on.

f I am now able to pinpoint sound origin almost instantly.

I feel my energy level has increased because I enjoy my surroundings with clear, amplified sounds.

You hear the fine details of sound. It opens up your world! • •

My ability to remember what was said to me during the day has improved because I can be involved in the conversations instead of avoiding them.

With lots of people and a hockey game on TV and several guys standing around talking about sports, I could join in. 3



they find important.

Less listening effort - reducing the load on the brain in noisy environments*

Oticon Opn introduces groundbreaking

users are provided with more accurate

to more easily locate and separate sound

The result is a significant improvement in

the ability to understand speech in complex environments while, at the same time, preserving mental energy - ultimately

empowering users to **Open up to the world**.

sources, i.e. they can maintain access to the sounds of their life so they can focus on what

technology that is fast enough to support

the brain and precise enough to monitor the

soundscape and differentiate between sounds.

With the extreme speed of this new technology

information about the soundscape, and enabled

20%

More capacity to remember - freeing up mental resources, enabling the user to recall more in noisy environments*

30%

Better speech understanding - in noisy environments, without suppressing surrounding sounds through narrow directionality*

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* Le Goff et al.2016, Opn Clinical Evidence, White Paper, Oticon, Inc.

Fast enough to support the brain

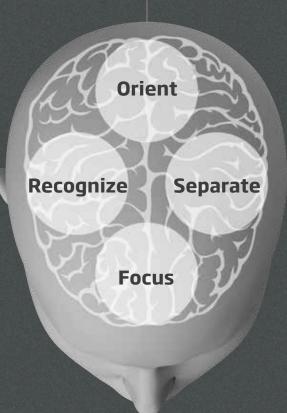
Hearing is a cognitive process - it happens in the brain.

Hearing loss limits the amount of acoustic detail the brain receives. The fewer details the harder the brain has to work to decode sound. Oticon delivers better hearing with less effort by supporting the way the brain makes sense of sound. We call this approach BrainHearing™.

Learn more at www.oticon.com

Rebalancing the sounds makes them distinct and easier to recognize. This frees up capacity in the brain to store and recall information.

With access to sounds and detailed spatial information available, the brain can naturally orient itself in the sound environment.



The enhanced contrast between the elements of the open sound experience helps the brain separate relevant sounds from competing noise.

With constant access to all sounds, even in complex environments, the brain can choose where to focus and re-focus.

WHAT'S NEW!

Now, the open sound experience can be introduced to even more of your clients

Expanding the Oticon Opn[™] family with additional performance levels and speakers will allow even more people to enjoy listening to multiple speakers in noisy environments, giving the brain its natural freedom to decide what to focus on, and when to switch attention.



Introducing Oticon Opn 2 & Opn 3

Oticon Opn 2 and Opn 3 expand the Oticon Opn family with two new performance levels. Like Oticon Opn 1, the new additions are built on the powerful Velox™ platform, offering Oticon's ground-breaking open sound experience and access to multiple speakers in noisy environments.

All three solutions - Oticon Opn 1, Opn 2 and Opn 3 - feature BrainHearing™ technology that supports the brain's natural ability to make sense of sound. With three levels of BrainHearing support, you can find the right Oticon Opn for even more of your clients.

Read more on page 26/27

Covering more severe hearing loss

In addition to miniFit 60 and miniFit 85 receivers, Oticon Opn can now be used with the miniFit 100 and miniFit 105 receivers to reach a broader range of hearing losses.

Learn more on page 28/29

Oticon Firmware Updater

Add improved and new features to Velox-based hearing aids and connectivity solutions with just one click. Updates are ongoing so you always have access to the latest version. The Restore Settings feature preserves original settings in the updated solution.

Learn more on page 37

REM AutoFit

The intuitive, streamlined workflow allows you to complete the REM process in under six minutes by automatically matching targets. REM AutoFit communicates with the REM system so that you can run tube calibration and unaided and aided measurements all within Genie 2.

Read more on page 40

Sound studio

With increased flexibility and easy customization, the updated Sound Studio lets you achieve better "real life" fittings. Choose from a large selection of soundscapes to simulate complex listening - add or remove sounds to create a unique sound scene.

Learn more on page 41



Technology & Features INTRODUCING 0 4 TECHNOLOGY & FEATURES | 8 INSTRUMENTS 🔘 24 CONNECTIVITY & APPS 🌖 32 FITTING 🌖 38

Inside Oticon Opn™

High resolution and advanced digital signal processing for a clear and balanced sound picture

The Velox™ platform represents a completely new signal processing strategy that takes Oticon BrainHearing™ technologies and user benefits to the next level. We introduce new functionalities and improved performance in each area of modern hearing care technology:

Calibrate & adapt: More precise calibration of the hearing aid to optimize for placement on the head and improving our ability to handle the wide level dynamics of listening environments.

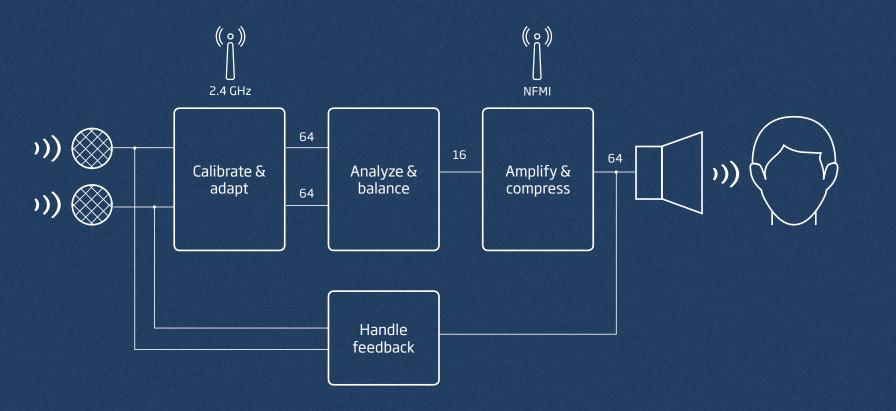
Analyze & balance: Introducing a completely new solution for the number one problem experienced by people with hearing loss, improving on the ability to understand speech in noisy environments.

Amplify & compress: Amplifying and compressing sounds so they become audible, comfortable and at the same time preserve the acoustic details.

Handle feedback: Prevent feedback from occurring and maximizing the amount of amplification possible.

Connect & communicate: New wireless technologies to provide a direct interface to digital devices with improved sound quality.





Calibrate & adapt:

- Extended input range, Clear
 Dynamics allows a full range of dynamic input to enter the system.
- Each input path has its own 64-channel filter bank. The filters in linear phase keep the interaural time differences from all four microphones intact.
- 24 bit A/D converters.
- Input calibration precisely compensates for head acoustics and preserves sound quality.

Analyze & balance:

- OpenSound Navigator™ analyzes the environment, balances sounds and noises and cleans the signal from each microphone before the signal is amplified and compressed.
- YouMatic™ LX matches instrument settings to user preferences.
- Wind Noise Management removes annoying wind noise, even between words.

Amplify & compress:

- Speech Guard[™] LX, VAC+, Soft Speech Booster LX determine gain and compression.
- Spatial Sound[™] LX uses binaural processing to keep spatial cues from interaural level differences intact for more natural sound orientation.
- Transient Noise Management ensures that the signal is not too loud for the system or for the user.

Handle feedback:

 Feedback shield LX is a sub-system to counteract the acoustical feedback from receiver to microphone to prevent whistling from occurring. Feedback is handled independently for each of the two microphones.

 ${\bf 10}$

1,200 MOPS

High resolution 24 bit DSP

11 DSP Cores
High processing power

64
Frequency channels

Analyzing more than 100 times/second

113 dB SPL

DID YOU KNOW?

The chipset in Velox™ includes 76 meters of wiring 64 million transistors

Introducing the Velox™ platform

The best in resolution and speed

Oticon

BrainHearing^{*}

Technology

Powered by **Velox**™

The groundbreaking Velox™ platform enables a paradigm shift.

Eleven-core processor, 8 cores for processing sound signals and 3 cores for managing wireless communication, give the instrument extremely fast processing capabilities. The high speed Network on Chip (NoC) architecture with finer engraving (65 nM) in 9 layers delivers impressive performance with the capacity to execute 500 million instructions per second (MIPS) and 1,200 million operations per second (MOPS). It all runs at a maximum of 3.3 mA, when all processes and streaming capabilities are in use. With the Velox platform, a tiny instrument powered by a 1.4V battery can deliver 50 times more processing power than the previous generation.

The digital signal processing uses 24 bit block-floating point representation across 64 frequency channels for higher signal and frequency resolution, fundamental to providing superior sound fidelity.

The Velox platform offers extended linear processing of sound levels to an upper input limit of 113 dB SPL thanks to 24 bit A/D converters on each microphone and the auxiliary input.

Fully programmable with updatable firmware, the Velox platform is ready for the future.

TwinLink™

Wireless connectivity and binaural processing in a small, energy-efficient solution

New TwinLink[™] technology uses two dedicated radio systems to meet distinct communication needs.

TwinLink technology supports seamless, energyefficient communication between two hearing aids and streamer free connectivity with external electronic and digital devices.

Near-Field Magnetic Induction (NFMI) enables a continuous exchange of data and audio between two hearing aids to provide advanced binaural processing. This communication is done at minimal power consumption.

With new NFMI, data and audio information is exchanged 21 times per second between the two hearing aids, 4 times more compared to previous generations.

Stereo Bluetooth low energy (BLE) 2.4 GHz connects Oticon Opn™ directly to mobile phones and other digital devices for easy, seamless wireless connectivity. This technology also allows for true wireless fitting.





DID YOU KNOW?

NFMI travels easily around the human body and the head, while 2.4 GHz travels well through air and holds its strength over longer distances.

On Velox, wireless connectivity is fully integrated into the chip for lower power consumption, smaller size and better performance.

Enjoy 30% better speech understanding in complex listening environments. Enjoy 20% less listening effort and remember 20% more.*



OpenSound Navigator™

DID YOU KNOW?

Conventional technology switches slowly between a few fixed directionality modes. OpenSound Navigator operates fluidly and extremely fast between an infinite number of states which makes it suitable for all acoustical environments.

Rapid, continuous updates ensure that noise is even reduced between words.

OpenSound Navigator™



Less stress. Better recall. Better understanding.

OpenSound Navigator™ is a new integrated speech-enhancement algorithm that preserves speech and reduces noise in complex environments. This is enabled by the new revolutionary Multiple Speaker Access Technology (MSAT), which ensures access to all

OpenSound Navigator employs an extremely fast three-step process;

- Scans the full 360° sound environment more than 100 times per second to identify noise and separate it from speech.
- Rapidly reduces the levels of loud noise coming from specific directions, while preserving speech.

speakers in a dynamic environment.

• Rapidly attenuates remaining diffuse noise, even between individual words.

OpenSound Navigator ensures a full, more balanced soundscape and lets users enjoy improved speech understanding even in complex and dynamic environments, while at the same time preserving mental energy.

OpenSound Navigator is personalized in Genie 2 and can be further fine-tuned in YouMatic™ LX controls.

Noise Removal

Spatial Sound™ LX



Locate, follow and shift focus to the speakers you want to hear

Spatial Sound™ LX combines a number of advanced technologies to provide a more precise spatial awareness to help users identify where sound is coming from.

Using the energy efficient and fast binaural communication offered by NFMI, Spatial Sound LX preserves interaural level differences in four frequency bands. This maintains the sense of location and direction naturally provided by the head shadow effect.

The multi-band analysis prevents low frequencies from masking higher frequencies. This ensures that interaural differences are preserved over the entire frequency spectrum.

As part of Spatial Sound LX, Spatial Noise Management emphasizes sounds on the better ear in asymmetrical noise situations.

TELL YOUR CLIENT

Provides a richer, more realistic sound picture so you perceive the location and direction of sounds with greater ease.

Head shadow effect



DID YOU KNOW?

Interaural level differences (ILDs) are important factors to make speech and noise appear distinctly and separately (and not muddled together) and help improve speech understanding in noise.

Four estimators enable precise, frequencyspecific ILDs which remain intact across the frequency spectrum. This is important because the head shadow effect is greater at high frequencies.

Lets you hear sound, personalized to the way you like to hear it.

YouMatic™ LX



Tailors OpenSound Navigator™ to individual needs and preferences YouMatic™ LX is the personalization

feature in Oticon Opn that intelligently controls the level of performance and response of the OpenSound Navigator across listening environments.

YouMatic LX ensures that the OpenSound Navigator delivers the optimized open sound experience to individual users, and at the same time, provides the best possible speech understanding in difficult, noisy situations.

YouMatic LX is automatically configured during the fitting process based on the user's personal sound and listening preferences.

The YouMatic LX control is an integral part of the OpenSound Navigator screen in Genie 2 and enables you to fine-tune the OpenSound Navigator response to better serve individual

DID YOU KNOW?

Research shows that people have different preferences for how much the hearing aid should help in complex situations.

Personalization is an integral part of client-centered care. Client-centered care increases satisfaction, adherence to treatment, and the feeling of being in control.

Speech Guard™ LX

Improves speech understanding in noisy environments

Speech Guard™ LX preserves clear, transparent sound quality and speech details for better speech understanding with less effort even in complex environments.

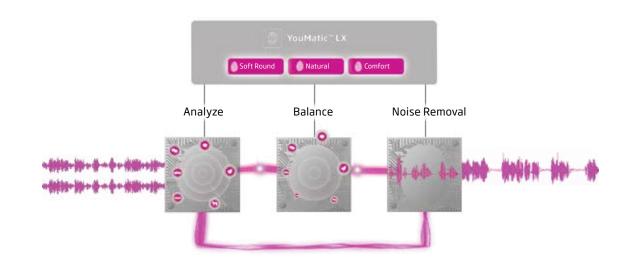
Speech Guard LX uses adaptive compression and is the only amplification technology that combines the benefit of linear amplification and fast compression. Linear amplification is applied in a 12dB dynamic range window to preserve amplitude modulation cues in speech signals.

When large changes in level occur, Speech Guard LX quickly adapts gain to maintain audibility and fits all sound in the reduced dynamic range of hearing-impaired listeners.

Speech Guard LX takes advantage of the new extended dynamic input range provided by Clear Dynamics to preserve the clear, transparent quality of loud sounds.

TELL YOUR CLIENT

Improves speech understanding in noise and makes it easier for you to follow conversations in many situations - from soft to loud environments and even those with multiple speakers.



Too loud Too soft

DID YOU KNOW?

The benefits of the adaptive compression in Speech Guard LX have been documented in a number of studies. Amongst those, a study by Pitmann et al. (2014) where Speech Guard proved superior to fast and slow compression strategies.

Increases access to soft sounds so that you can enjoy up to 20% improved soft speech understanding without turning up the volume.

DID YOU KNOW?

More than 75% of normal speech has soft sounds.

Soft Speech Booster LX



Improves soft speech understanding up to 20%

Soft Speech Booster LX makes soft sounds audible to people with hearing loss. By increasing access to the soft sounds that occur in most situations and conversations, Soft Speech Booster LX improves soft speech understanding by up to 20%.

Oticon's proprietary fitting rationale, VAC+, uses multiple kneepoints to provide a clear focus on soft to moderate speech information while preserving comfortable perception of louder sounds.

Soft Speech Booster LX can be personalized using questions and sound files in Genie 2 to ensure a fitting matched to each user's unique perception of soft sound for the best possible balance between details and comfort.

Soft Sound Perception

Clear Dynamics



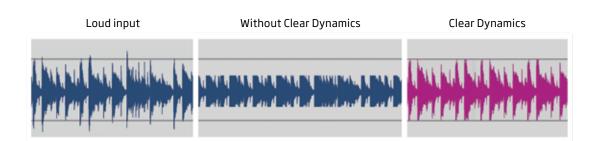
Better sound quality in the full dynamic range of life

Clear Dynamics expands the input dynamic range, processing input sounds up to 113 dB SPL, to provide better sound quality without distortion and artifact at loud input levels, while still keeping the sound quality of soft input levels intact. Clear Dynamics has an operating range from 5 to 113 dB SPL.

With speech cues preserved at high input levels, users enjoy a better listening experience without distortion even in loud environments. Clear Dynamics is especially valuable for users when listening to music or in conversations in busy, dynamic environments, where peaks can often be louder than the available input dynamic range.

TELL YOUR CLIENT

Experience superior sound quality especially when you are enjoying music or engaging in conversations in noisy environments.



DID YOU KNOW?

Peaks of speech are usually around 12 dB above and 18 dB below the average speech level. In contrast, music is much more dynamic with peaks of up to 30 dB.

Total Harmonic Distortion (THD) is a measure of the distortion within the hearing aid. Clear Dynamics ensures less than 5% distortion up to 113 dB SPL.

Effectively suppresses annoying wind noise, even between the words in a conversation.

DID YOU KNOW?

Wind fluctuates and is highly modulated, and may result in a very harsh and uncomfortable sound in hearing aids. As a result, many users reject using hearing aids even at moderate wind speed.

Wind Noise Management also suppresses the noise created when brushing against the hearing aid.

Wind Noise Management



Better access to speech in situations with wind noise

With the powerful Velox™ platform,

Wind Noise Management offers innovative and highly efficient wind noise suppression. High speed estimators analyze the presence of wind noise 500 times per second in 16 frequency channels for fast and precise application of up to 30 dB wind noise reduction. Wind Noise Management attenuates wind bursts in less than 50ms, making it fast enough to precisely attenuate wind noise between words.

Wind Noise Management off

The purpose of Wind Noise Management is to attenuate the wind noise and quickly ensure a stable and comfortable loudness level for the hearing aid user, so they can focus on the speech that's important to them.

When speech is present, the signal-to-noise ratio is preserved because wind noise is suppressed when it is louder than speech. When no speech is present, the system will aggressively suppress wind noise to ensure comfort in windy situations.

Wind Noise Management on

Feedback shield LX

Dual-microphone feedback system eliminates feedback rapidly and effectively

Feedback is uncomfortable and annoying. With Feedback shield LX, Oticon Opn™ delivers ultrafast and effective feedback management without compromising audibility or sound quality.

In order to improve efficiency and accuracy Feedback shield LX operates in two separate paths - one for each microphone. In each path three distinct technologies work together to instantly suppress potential feedback. It features a permanent 10 Hz frequency shift, optimized phase inversion, and gain control in 24 frequency channels.

The frequency shift implemented above 1,600 Hz ensures the most accurate estimate of the feedback path. This effective strategy for de-correlating input from output allows higher precision in phase inversion. Phase inversion is applied to the optimized signal to deliver an intact signal free of feedback.

In situations where the risk of feedback rises dramatically, e.g. a tight hug or a big yawn, it may be necessary to strategically reduce gain at a rapid rate of up to 40dB/s. Gain is rapidly restored once the feedback risk is gone.

Feedback shield LX allows more gain to be added before any intervention is necessary and this allows for higher flexibility in the fitting process.

TELL YOUR CLIENT

Enjoy clearer sound without worrying about annoying whistling or squealing, even in challenging everyday situations like greeting someone with a hug.

DID YOU KNOW?

There are two types of consequences of feedback. The audible feedback materializes as a whistling sound, while the inaudible feedback affects sound quality and occurs when the hearing aid is operating close to the feedback margin.

Feedback shield LX prevents both audible and inaudible feedback.

Feature overview

Acoustic notifications	Provides notifications and warnings to assist and support confidence in daily use, e.g., start-up jingle, low battery warnings, etc.	
Adaptation Management	Adapts in 3 steps for gradual user acclimatization to a new hearing aid	
App & Remote Control	Discreetly adjusts volume, switches between programs or controls connectivity sources with Remote Control 3.0 or the Oticon ON App	Page 32 Page 33
AutoPhone	Automatically activates a phone program in the hearing aid for telephones with a dedicated magnet	
Bass Boost	Controls compensation for bass leakage in open fittings when streaming audio	
Binaural Coordination	Coordinates program and volume settings between the two hearing aids	
Binaural Processing	Continuous data exchange between two hearing aids about the sound level at each ear to better maintain the difference in input between the ears	
Clear Dynamics	Expands the dynamic input range, processing sounds up to 113dB SPL, to preserve sound quality even at loud input levels	Page 19
Data Logging	Logs volume control usage, program usage and total use time	
Feedback Analyzer	Analyzes the risk of feedback with the prescribed gain and chosen acoustics in Genie 2	Page 39
Feedback shield LX	Employs an ultra-fast and effective feedback management system that prevents feedback without compromising sound quality or audibility	Page 21
Fitting Channels	16 fitting bands for a precise fit and more fine-tuning options for client fittings	
Fitting Formulas	Include VAC+, NAL-NL1, NAL-NL2	
Made for iPhone®	Indicates compatibility. 'Made for iPhone' means that the hearing aid and accessories have been designed to connect to iPhone, and have been certified by the developer to meet Apple™ performance standards.	Page 32
Multiple Directionality Options	Enables conventional directionality settings in addition to OpenSound Navigator™ transition settings	

NFMI	Near-Field Magnetic Induction - Improves speed of communication and bandwidth between two hearing aids with very low power consumption	Page 13
OpenSound Navigator™	Provides listening support by continuously analyzing the environment, balancing sound sources so focus sound is clear and competing sounds are not too disturbing. Finally, it attenuates remaining noise to provide a more accessible sound environment.	Page 14
Oticon Firmware Updater	Enables you to update Velox™-based hearing aids and connectivity solutions, adding new and improved features quickly in your office.	Page 38
Phone Program	Optimizes hearing aid for telephone conversations using the hearing aid microphone	
Processing Channels	Data is analyzed and processed in 64 channels, 100 times per second	Page 12
REM AutoFit	Enables more personalized fittings by taking individual ear acoustics into consideration	Page 39
Soft Speech Booster LX	Applies an individual amount of soft gain to increase soft speech understanding	Page 18
Binaural Noise Management	Optimizes listening in asymmetrical, noisy situations	
Spatial Sound™ LX	Uses binaural compression to provide precise spatial awareness that helps users identify where sounds are coming from	Page 15
Speech Guard™ LX	Preserves the dynamics of speech by combining the benefits of linear and non-linear compression	Page 17
Stereo Streaming	Streams audio input in stereo	Page 30
Transient Noise Management	Protects against sudden loud sounds with fast recovery to preserve audibility; offers four different levels for fine tuning, including 'off'	
TwinLink™	Combines two distinct radio technologies in an innovative wireless communication system; features one technology to support seamless, energy-efficient binaural communication between two hearing aids (NFMI) and one to support communication with external electronic and digital devices (2.4 GHz)	Page 13
Wind Noise Management	Protects against the discomfort of wind noise	Page 20
YouMatic™ LX	Accommodates personal listening preferences and sound perceptions in the prescription of gain and automatics	Page 16



Oticon Opn[™] familythree 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.

features:

Spatial Sound™ LX



• Soft Speech Booster LX

Configuration options

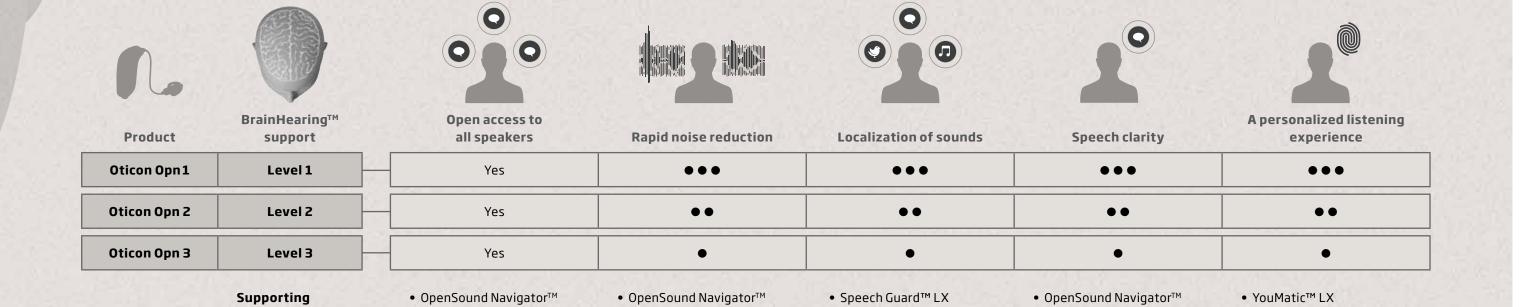
Fitting bands

Speech Guard LX

Frequency bands

Clear Dynamics

Bandwidth



Frequency bands



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^{TM} is optimized by making adjustments based on individual needs and personal preferences.

Spatial Sound™ LX

Clear Dynamics

Bandwidth

Oticon Opn™ significantly reduces listening effortfrom simple to complex listening situations

With hearing loss, the brain must work harder to make sense of sounds. New research shows a significant increase in listening effort, even in relatively simple listening environments where noise is somewhat guieter than speech.* But with the speed and precision of Multiple Speaker Access Technology (MSAT), the OpenSound

Navigator[™] can reduce noise enough to significantly reduce listening effort in everyday listening environments,** while at the same time delivering an open sound experience.

OpenSound Navigator significantly narrows the gap experienced between those with hearing

loss and those with normal hearing in everyday listening environments. Consequently, across different listening environments Oticon Opn™ 1 will provide the most support.***

> Background noise from all directions

> speakers from specific directions

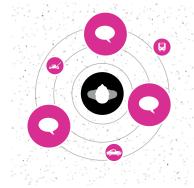
Distinct speech

Old technology



Traditional directionality focusing on one speaker, while suppressing all other sounds.

Oticon Opn 1



The easiest listening experience with maximum reduction of background noise and rapid reduction of loud noise coming from specific directions while

preserving speech.

* Ohlenforst et al. "Impact of stimulus related factors and hearing impairment on listening effort as indicated by pupil dilation." Poster, 2016 International Hearing conference Tahoe City CA. ** Wendt et al. 2016, "Impact of noise and noise reduction on processing effort: A pupillometry study".

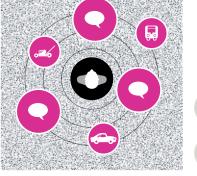
Oticon Opn 2



An easier listening experience with moderate reduction of background noise, and reduction of loud noise coming from specific directions while preserving speech.

Oticon Opn 3





An improved listening experience with basic reduction of background noise, and reduction of loud noise coming from specific directions while preserving speech.

Oticon Opn™ product comparison

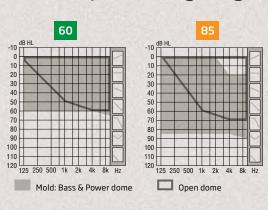
	Oticon Opn 1	Oticon Opn 2	Oticon Opn 3
Speech Understanding			
OpenSound Navigator™	Level 1	Level 2	Level 3
Balancing power effect	100%	50%	50%
Max. noise removal	9 dB	5 dB	3 dB
Speech Guard™ LX	Level 1	Level 2	Level 3
Spatial Sound™ LX	4 estimators	2 estimators	2 estimators
Soft Speech Booster LX	•	•	•
Sound Quality			
Clear Dynamics	•	•	-
Binaural Noise Management	•	•	-
Fitting Bandwidth	10 kHz	8 kHz	8 kHz
Processing Channels	64	48	48
Bass Boost (streaming)	•	•	•
Listening Comfort			
Transient Noise Management	4 configurations	On/Off	On/Off
Feedback shield LX	•	•	•
Wind Noise Management	•	•	•
Binaural Coordination	•	•	•
Personalization & Optimizing Fitting			
YouMatic™ LX	3 configurations	2 configurations	1 configuration
Fitting Bands	16	14	12
Multiple Directionality Options	•	•	•
Adaptation Management	•	•	•
Oticon Firmware Updater	•	•	•
Fitting Formulas	VAC+, NAL-NL1 + 2	VAC+, NAL-NL1 + 2	VAC+, NAL-NL1 + 2
Acoustic Notifications	•	•	•
Connecting to the World			
Stereo streaming (2.4 GHz)	•	•	•
Made for iPhone®	•	•	•
Oticon ON App	•	•	•
ConnectClip (Coming in 2017)	•	•	•
Remote Control 3.0	•	•	•
TV Adapter 3.0	•	•	•
AutoPhone	•	•	•





*** Only Oticon Opn 1 has the full effect of OpenSound Navigator™.

Oticon Opn™ fitting range*



OSPL90 (peak)

Ear simulator 116 dB SPL

Ear simulator 2cc coupler 105 dB SPL 2cc coupler

Full-on gain (peak) Ear simulator

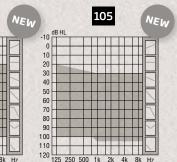
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2cc coupler 35 dB

Full-on gain (peak)

Ear simulator





OSPL90 (peak)

127 dB SPL

116 dB SPL

66 dB

54 dB

Mold: Bass & Power dome

OSPL90 (peak) Ear simulator 132 dB SPL 2cc coupler 122 dB SPL

Full-on gain (peak)

Ear simulator 66 dB 2cc coupler 57 dB

127 dB SPL 2cc coupler

OSPL90 (peak)

135 dB SPL

Full-on gain (peak) 72 dB

Ear simulator

Ear simulator 2cc coupler 64 dB

Small, discreet miniRITE



Oticon Opn™ miniRITE has a new, discreet design with a smart single push button for easy operation of volume and programs.

Oticon Opn miniRITE offers clients a discreet hearing aid with a wealth of new features

and functionalities including 2.4 GHz wireless technology and Made for iPhone® functionality.

Oticon Opn miniRITE uses the proven miniFit receivers and ear pieces, fits up to 105 dB HL and is powered by a 312 battery.

miniFit receivers and Power Receiver Mold

Select between three receivers with different output performance, with lengths 0-5 for non power speakers and 1-5 for power. The 105 receiver requires a custom Power Receiver Mold.











Accessories for miniFit receivers:

- Different ear grips for receiver 60 and 85
- Use ProWax miniFit filter
- Measuring tool

IP68 - water and dust resistant Oticon Opn is robust and reliable, and has a certified rating of IP68 for dust and water resistance. All vital components are nano-coated inside and out.

* Fitting range is based on Oticon Opn™1. Details for Oticon 30 Opn 2 & Oticon Opn 3 are available in Technical data sheets.

Standard ear pieces

miniFit domes 5 mm¹ 6 mm 8 mm 10 mm 12 mm

Open dome	(3)	•	•	•	•	
Bass dome, single vent (0.8 mm)	C.		•	•	•	•
Bass dome, double vent (1.4 mm)	C		•	•	•	•
Power dome			•	•	•	•

All domes:

- Made of silicone
- Compatible only with miniFit receivers
- Have built-in wax protection

Grip Tip

Select between two different Grip Tip types, in two different sizes (small & large) for both left and right ear.



60



100

Grip Tip:

- Tacky texture to help prevent slippage

Customized ear pieces²

MicroMold ³	•	•		
LiteTip³	•	•		
Power Receiver Mold ^{4,5}			•	•
MicroMold, VarioTherm®	•	•		
LiteTip, VarioTherm®	•	•		

Please note:

Gently warm the VarioTherm® mold with a hair dryer before attaching or detaching from the receiver.

- Thermoplastic
- Remains hard at room temperature for easy insertion
- 70. 70 is standard for LiteTip.

C068

Royal Blue

C090

Chroma Beige

Steel Grey

Battery size

Wireless

Directional

Battery life (h)*

Program control

Volume control

TV Adapter 3.0

Wireless fitting

AutoPhone

Cable fitting

Made for iPhone®

Remote Control 3.0

C094

Terracotta

Silver Grey

312

Speaker 60: 60-65

Speaker 85: 55-65

FittingLINK

Cable #3

FlexConnect and

C093

Chestnut

Brown

C044

Silver

- Tinted pink
- More durable than domes

Micro mold and LiteTip:

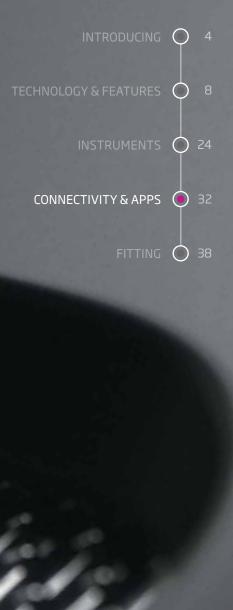
- Made of acrylic

VarioTherm®:

- Softens at body temperature for increased comfort and optimum sealing
- Available in two hardnesses 50 and

1) Only for receiver 60. 2) Requires taking an ear impression. 3) Uses ProWax filter. 4) Power Receiver Mold 100 not supported in Genie 2 before early 2017. 5) 105 speaker only with power mold. * Real usage battery life is shown as an estimated interval based on mixed use cases with variable amplification settings and variable input levels, incl. direct stereo streaming from a TV (25% of the time) and streaming from a mobile phone (6% of the time). Interval is shown for miniFit 60. Details for other speakers can be found in Technical Data sheets

Connectivity & Apps



Enjoy audio streamed directly from your iPhone®, iPad® and iPod touch® to your hearing aids.



TELL YOUR CLIENT

Connects your iPhone® or Android™ mobile directly to your hearing aids so you can control volume, switch programs, or adjust settings with just a tap of your finger.

DID YOU KNOW?

Made for iPhone means that you have basic control over your hearing aids directly from your iPhone, such as volume control and battery status.

Learn more at oticon.com

Made for iPhone®

Oticon Opn™ is a Made for iPhone® hearing aid. Directly connected to iPhone, the hearing aid doubles as a pair of wireless headphones - without the need for an intermediary device. The Bluetooth technology in Oticon Opn supports stereo streaming of music and produces sound with high fidelity and bandwidth. When making

calls, the user's voice is picked up by the iPhone microphone. iPhone also doubles as a basic remote control for the hearing aids.



Oticon ON App

The Oticon ON App makes it easy for Oticon Opn hearing aid users to have additional control of their hearing aids with just a touch of their fingertips. iPhone or the Android™ smartphone connect directly to the hearing aids using Bluetooth 4.0/Bluetooth SMART.

The ON App allows users to adjust volume levels, switch between programs, settings and more.

The app also offers a "find my hearing aid" search feature, counseling advice, links to user instructions and low battery notification.

Please note that direct audio streaming is currently not supported by Android.

Oticon Opn is compatible with iPhone 7 Plus, iPhone 7, iPhone SE, iPhone 6s Plus, iPhone 6s, iPhone 6s, iPhone 6s, iPhone 5s, iPhone 5s, iPhone 5s, 9.7 -inch iPad Pro, 12.9- inch iPad Pro, iPad Air 2, iPad Air (4th generation), iPad mini 4, iPad mini 3, IPad mini 2, iPad mini, and iPod touch 5th and 6th generation. Devices must be running iOS 9.3 or later. The app also supports Apple Watch. When downloading the Oticon ON App on iPad, search for iPhone





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apps on the App Store. Oticon ON App is compatible with devices powered by Android™ 6.0, Marshmallow or above. Please visit www.oticon.com for more details on compatibility, or see the description for Oticon ON App on the App Store and Google Play.

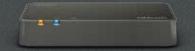
Toslink RCA L+R SCART Mini Jack up to 15 m range (line of sight)

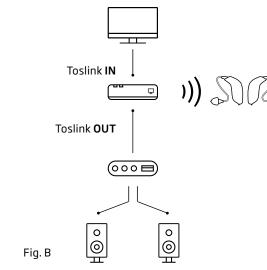
TV Adapter 3.0

TV Adapter 3.0 wirelessly transmits real-time stereo audio from a TV or home entertainment system directly to Oticon Opn™ hearing aids at a distance of up to 15 meters. Users can set the volume to their preferred level for a listening experience free from the distraction of surrounding noise. The TV Adapter is installed and placed at the TV. Practically any audio source can be connected to the TV Adapter including digital stereo (PCM) and Dolby Digital® (Optical Toslink input) (Fig. A).

As a unique feature the TV Adapter can be installed in most existing home entertainment systems (Fig. B).

TELL YOUR CLIENT With the TV Adapter you can enjoy TV sound directly in your hearing aids, at the volume you prefer without the distraction of surrounding noise.





Remote Control 3.0

The Remote Control, roughly the size of a modern car key, gives users discreet control over Oticon Opn™ hearing aids. Users can easily adjust volume, switch between programs or control connectivity sources. Simple and easy to use, the Remote Control is especially beneficial for users with dexterity challenges.

TELL YOUR CLIENT
Gives you discreet and easy control over your Oticon Opn hearing aids - adjust volume or switch between programs with this small device, roughly the size of a modern car key.



Turns your Oticon Opn™ hearing aids into virtual wireless headphones by streaming conversation from practically any mobile phone directly to your hearing aids.

ConnectClip

ConnectClip is used with mobile phones and other audio devices not supporting direct wireless connectivity (or streaming) to the hearing aids (Fig. C). The hearing aids function as a wireless headset and the user's conversation is picked up by the ConnectClip's built-in directional microphones.

Audio from the mobile phone streams to ConnectClip using standard Bluetooth technology. The audio is then streamed directly to the user's hearing aids using 2.4 GHz technology. ConnectClip works with almost any mobile phone produced since 2010. The availability of the ConnectClip is to be announced at a future date.

Phone Adapter

Phone Adapter 2.0 connects wirelessly to the ConnectClip – allowing for hassle-free daily use of traditional phones.

USB Adapter

The USB Adapter (BTD 800) is a "plug and play" solution which wirelessly connects the ConnectClip to practically any computer for Skype, Messenger, Lync and other softphones.

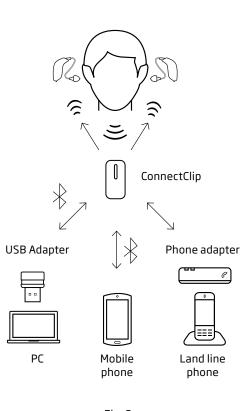


Fig. C

The world's first Internet-connected hearing aid Connect to your smart devices Connect to your home security system Connect to electricity and thermostat controllers kitchen devi

Open up to a world of endless connectivity possibilities

Through a unique Oticon cloud solution, Oticon Opn™ can be linked to the If This Then That (IFTTT) network. This allows users to connect to and control an endless range of devices used in everyday life.

Imagine for instance, that hearing aids are able to notify users when an email is received, turn

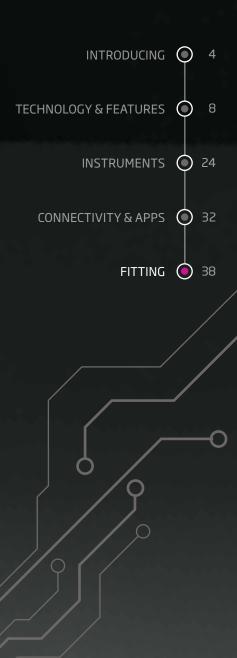
the home alarm system on and off or inform when someone is at the front door - all of this is possible with Oticon Opn.

Explore the endless possibilities available when connecting Oticon Opn to the internet. Visit IFTTT.com and www.oticon.com.

Ideas for inspiration:

- Turn off lights when you leave home
- Get a voice alert when doorbell rings
- Send text when battery is low
- Switch to a special home listening program when entering front door

Fitting



Something New -What you should know about Firmware updater

Oticon Firmware Updater lets you add improved and new features

The new Oticon Firmware Updater in Genie 2 enables you to add improved as well as new features to Velox™-based hearing aids conveniently in your own office. Updates available through Oticon Firmware Updater are online and made available as needed so you'll always have access to the latest firmware version. For example, when an Oticon Opn™ 1 with firmware (FW) 1.0 is connected to Genie 2, the Oticon Firmware Updater notifies you to the availability of the new FW 2.0 package and gives you simple instructions how to update the hearing aid. Existing settings are removed during the update. When the update is complete, you can easily re-load the original settings from Genie 2, saving time and ensuring that the client's personalized gain and sound preferences are preserved in the updated solution.

For more information go to oticon.com

BE INFORMED

New instruments you receive may have a new FW version that is not compatible with your old Genie 2 installation. Therefore you must always install the newest Genie 2 software when you receive it from Oticon.

Oticon Genie 2 - New Features

Complete REMs in under 6 minutes in Genie 2

Fitting hearing aids using real ear measurements (REMs) personalizes the fitting to the individual's ear acoustics, improving hearing aid benefit and reducing the need for return visits. The new, improved REM AutoFit is an intuitive tool in Oticon Genie 2 that allows you to complete the REM process in under six minutes by automatically matching targets. This makes the fitting more efficient. Using REM AutoFit's streamlined workflow gives your client a more comfortable fitting experience and, in most cases, reduces the need for return visits.

You don't need to run Genie 2 and the REM software in parallel. REM AutoFit communicates with the REM system so that you can run tube calibration and unaided and aided measurements all within the fitting software. Based on the aided measurements, Genie 2 automatically adjusts the hearing aid gain to match target, enabling you to further personalize the settings by manually finetuning and verifying the fitting.

REM AutoFit incorporates some key updates with an intuitive guided workflow, live traces, binaural measurements and International Speech Test Signal (ISTS).

ACCOMMENT ACCOMMENT

Feedback Analyzer

The new Feedback Analyzer offers a quick, comfortable, more precise way to determine each user's risk of feedback within the acoustic options you have chosen. You can then adjust the gain as needed.

With a new smarter functionality, the Feedback Analyzer has a more prominent placement in Genie 2. It is an option which can be used as part of the fitting flow, especially when feedback is a potential concern.

Feedback Analyzer is the perfect optional tool for assessing the risk of feedback for each client. Once analyzed, you will have an overview of how much gain you can provide with your chosen style, coupling and venting.

The feedback analysis takes about 10 seconds and is presented at a comfortable loudness level which is based on the user's hearing loss. A step-by-step guide takes you through the measurement from start to finish. A noise level indicator lets you know if background noise levels are acceptable for a valid and true measurement. This ensures a high quality analysis.

Gain can be adjusted up or down for each ear individually or both together. The measured feedback margin will remain in place, but it is possible to trim above or below it as desired. Once a feedback margin is measured, it will be shown in the Fine-tuning screen by default, but can easily be deactivated.

Sound Studio in Genie 2 offers flexibility and easy customization

The new, updated Sound Studio in Genie 2 lets you actively engage clients in the fitting process for a better first fit experience. Using Sound Studio will support the process of achieving higher client satisfaction. A large selection of soundscapes simulate complex listening situations. This ability to add or remove sounds to create customized sound scenes allows you to achieve better "real life" fittings. Select Express mode for quick access to a selection of pre-defined everyday sound scenes or create new ones by adding background and directional sounds. With increased flexibility and easy customization, Sound Studio makes it easier for your client to experience the benefits of Opn in complex listening situations right in your office.



Creating an open sound experience

A simple two-step procedure creates an open sound experience. With the innovative OpenSound Navigator™ and YouMatic™ LX in Genie 2, you can easily build a personalized sound experience with access to the details of your patients' environments.

Users are proactively engaged in the fitting process with questions and sound demos that make it easy for them to express what they like to hear without the need to describe their preferences.



Step 1

Establish your client's listening preferences in the 'Personalization' menu to take individual preferences into account when prescribing gain and automatics.

(A) Genie 2 features a personalization process that includes a few simple questions to better capture the variations in sound preferences. In addition to listening preferences, age, gender, hearing aid experience and sometimes language will influence the prescribed gain and automatics.

B For best results, present the sound sample for each question while clients are wearing their hearing aids, through headphones, or via loudspeakers, depending on each client's hearing loss and your clinical setup.

Once the personalization has been completed, it will impact the prescription and settings for:

- OpenSound Navigator™
- Soft sound perception trimmer
- Brightness trimmer
- Gain prescription

Each can be fine-tuned to more accurately meet client preferences in the Fitting step.

The personalization screen should be revisited when experience level changes or greater audiometric changes occur.

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Step 2

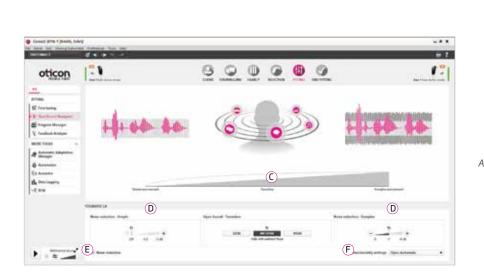
Go to OpenSound Navigator™ to adjust further with YouMatic™ LX.

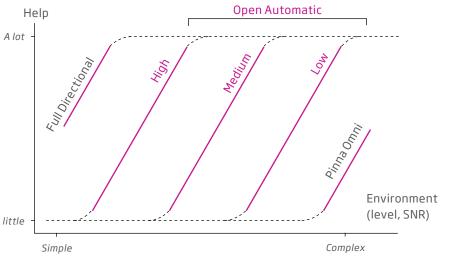
C OpenSound - Transition: The control lets you choose how much help is needed in the stage between simple and complex environments. In other words, how early in this transition will your client want the hearing aid to help more? You can choose between a Low, Medium, and High amount of help. As an example, when choosing High, the hearing aid will step in more aggressively to reduce unwanted sounds, even if the environment is not yet complex. OpenSound Navigator transition choices are displayed visually on the Transition Bar above the control panel and in the illustration with the head. Background sounds (illustrated by icons) are reduced in size as more help is applied.

(D) Noise reduction controls: Adjustments to noise reduction are divided into Noise Reduction Simple and Noise Reduction Complex. Default settings are based on the client's answers to the questions in 'Personalization/Listening preference' or will default to a Medium profile. Adjustments are made by clicking the +/- buttons. Noise reduction choices are displayed visually in the speech waveforms.

E Noise reduction on/off: By default, noise reduction is on because it is an integral part of the open sound experience, but it can easily be deactivated if needed by unchecking the box on the lower left.

F **Directionality setting:** In addition to the three transition settings you have two conventional directionality settings available. See the transition settings overview below.





OSN directionality settings. In Pinna Omni, the hearing aid mimics sound as received by the human ear. In Full Directional, the focus is on sounds coming from the front. In Open Automatics, the hearing aid automatically adapts to the acoustical conditions, based on one of the three help profiles, High, Medium, or Low.



