25 February 2019

Oticon Velox™

- now in custom styles

Carsten Ahlbom
Senior International Trainer

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Opn has introduced a paradigm shift in hearing care

"In the past 20 years, I've worked in this field, I never encountered such a big breakthrough."

Roland Zweers, hearing care professional and Oticon Opn user

"I feel like I'm alive again. I can participate in all the discussions that I previously wasn't a part of."

Eugène Goetz, Oticon Opn user

" I feel that listening is effortless. I hear naturally without thinking about it."

Valérie Leperchois, Oticon Opn user

" I can't remember that I was ever so enthusiastic. Oticon Opn is a revelation."

Henkjan Bosch, hearing care professional and Oticon Opn user

Testimonials represent the opinion of the concerned individuals only and may not be the experience of others. Testimonials are not paid and may not be indicative of future performance or success of any other individuals

Traditional directionality closes down sounds

When you close down sounds, you close down life

OLD WORLD

NEW WORLD

The Oticon Opn family

Continues to Expand

Open up to the world

- for even more users

Highlights of launch

OpenSound Navigator™

The key to the open sound experience

in all styles

Introducing

Oticon Opn and Siya custom styles

IIC
(Invisible-in-Canal)

CIC
(Completely-in-Canal)

ITC
(In-The-Canal)

ITE HS
(In-The-Ear Half Shell)

ITE FS
(In-The-Ear Full Shell)

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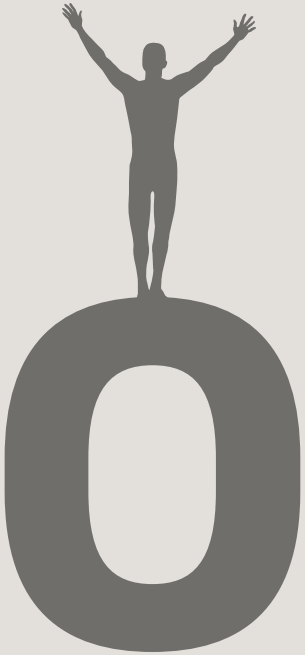
Oticon Opn Invisible-In-Canal

The smallest hearing aid Oticon has ever made



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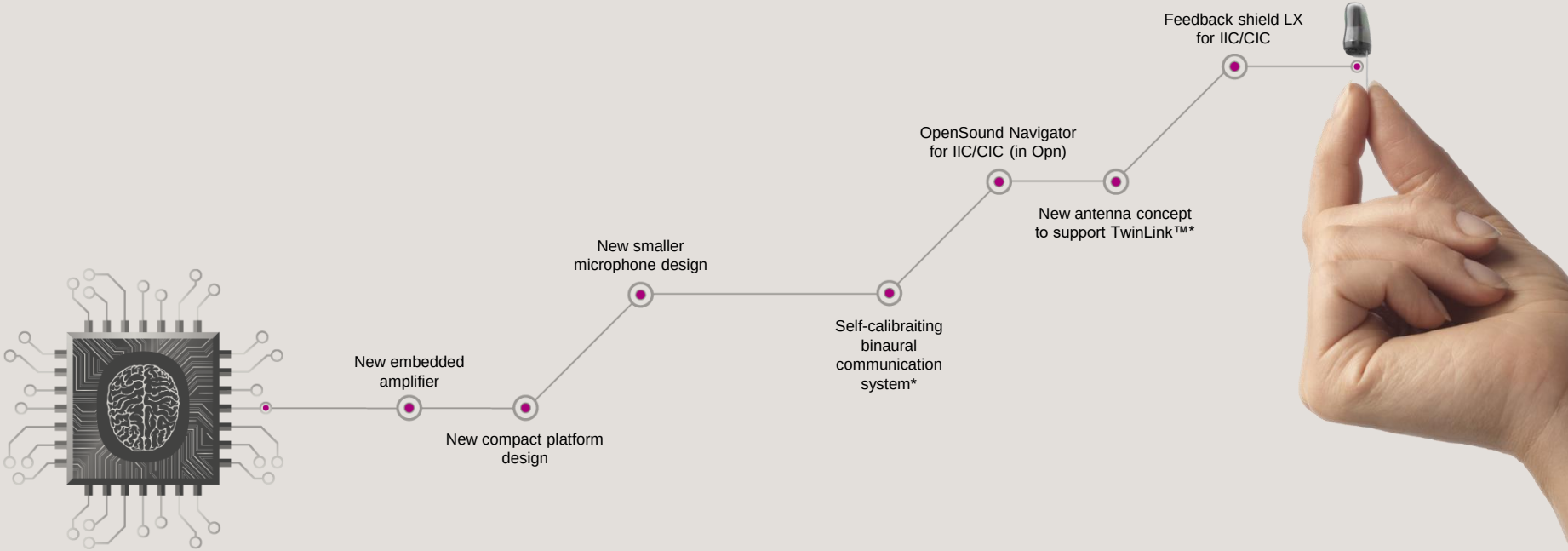
Powered by Velox™

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



*For styles with wireless technology

Outstanding Connectivity

Wireless possibilities with 2.4 GHz

- Remote microphone
- Computer
- Remote controlling
- TV
- Music
- Oticon ON App
- IFTTT Internet connectivity

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Oticon’s smallest ever hearing aid

Progression over time

Alta2 Pro
2015.1

Alta2 Pro
2016.2

Opn
2018.2

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Completely invisible

8

out of

10

users

What is an invisible instrument?

Defining Invisibility:

- Viewed at 90 ° the device can not be seen

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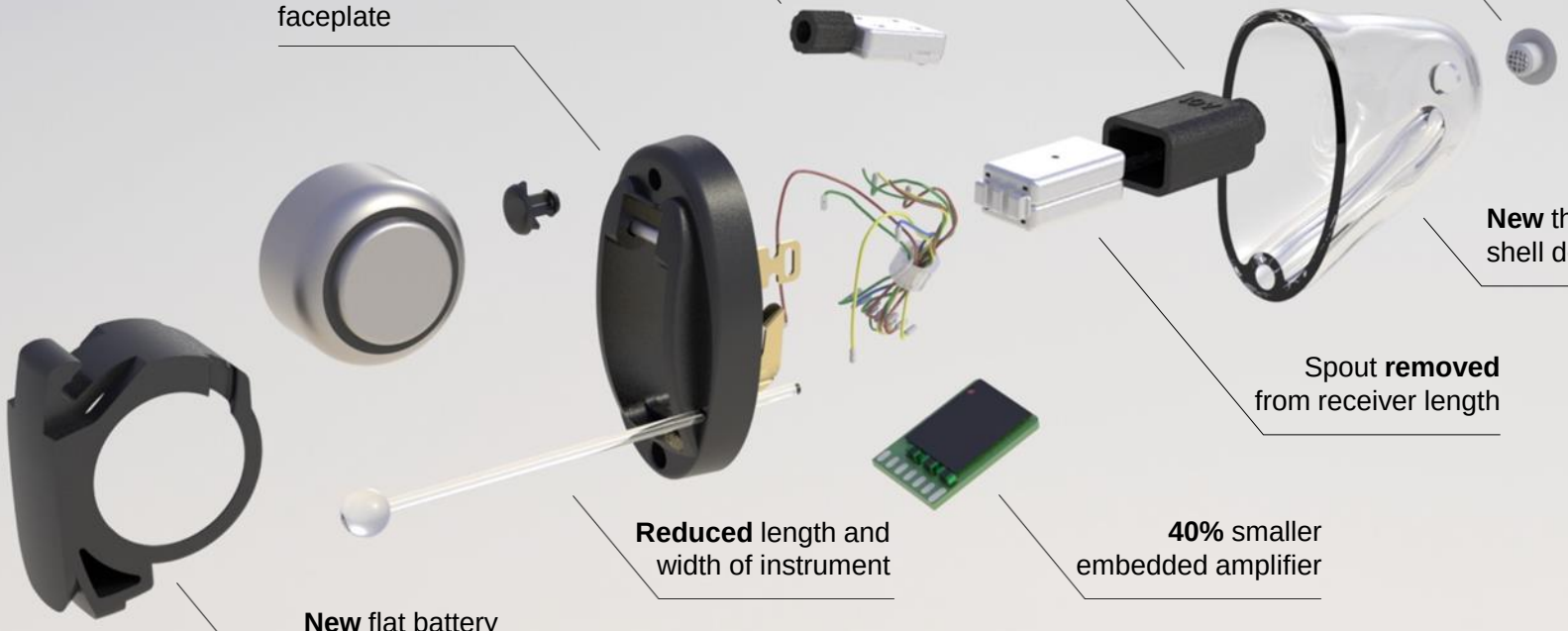
Oticon Opn IIC



Improvements are in comparison to the Inium Sense platform (since 2015.1)

Reduction of components

Equals smaller hearing aids

- IIC Completely invisible in 8 out of 10 ears
- Oticon CIC, the smallest CIC we have ever made
- ITC, ITE HS, ITE FS also benefits from size reduction of components

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Unique open sound quality

Across the whole Opn family

YouMatic LX

Soft Speech Booster LX

Speech Rescue™ LX

OpenSound Navigator

Binaural Coordination*

Tinnitus SoundSupport**

Speech Guard LX

Feedback shield LX

Clear Dynamics

Spatial Sound LX*

Spatial Noise Management*

Wind Noise Management***

* NFMI **If NFMI + push button are selected *** Dual microphone styles

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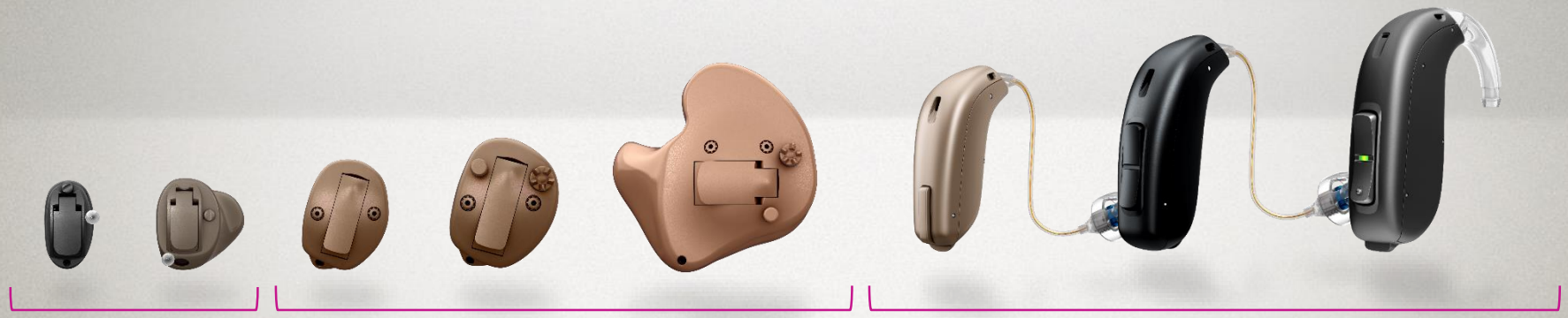
Oticon Opn Portfolio



One microphone
In the ear

Two microphones
In the ear

Two microphones
behind the ear

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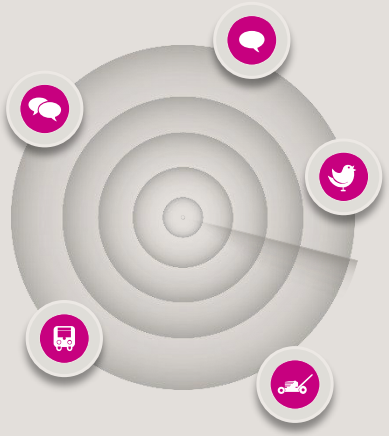
OpenSound Navigator in custom styles

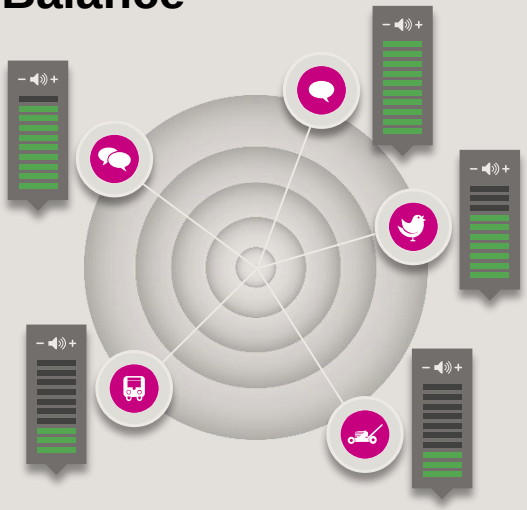
OpenSound Navigator in ITC, ITE HS, ITE FS

Dual microphone hearing aids

Analyse



Balance



Noise removal

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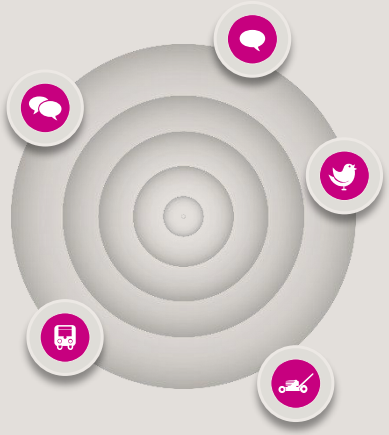
OpenSound Navigator in IIC and CIC

One microphone deeper in the ear canal

OpenSound Navigator

Balance via pinna effect

Analyse



Noise removal

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Evidence

Speech intelligibility & localisation across Opn family

Background of study

Purpose:

- Compare the localisation performance across styles
- Establish which listening situation hearing aid styles provide optimal speech intelligibility performance

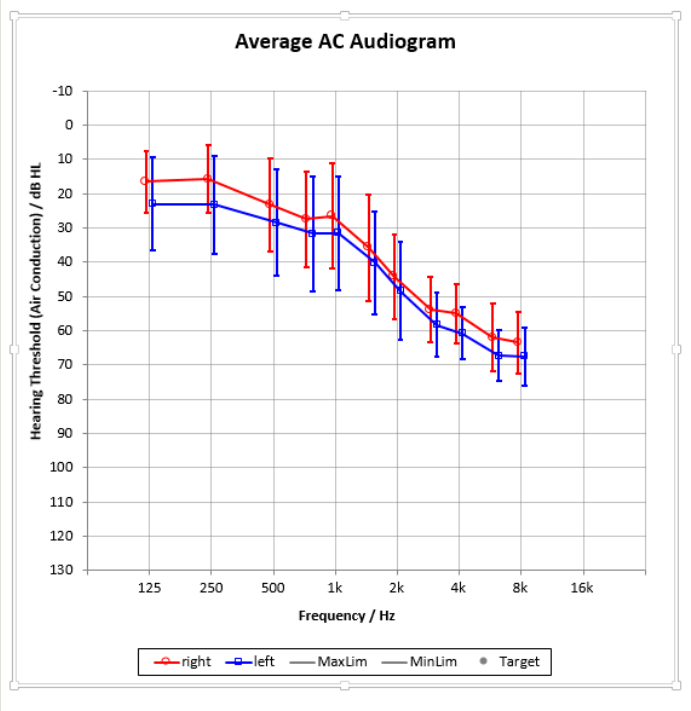
Doran 2018, Oticon Whitepaper

Test Set Up

Hearing aids & settings

- Opn 1: IIC, ITC and miniRITE
- Rationale: VAC+
- OSN setting: default
- Feedback manager: on
- Equivalent vent (1.6 mm) for all styles

Participants 17, 48-84 years



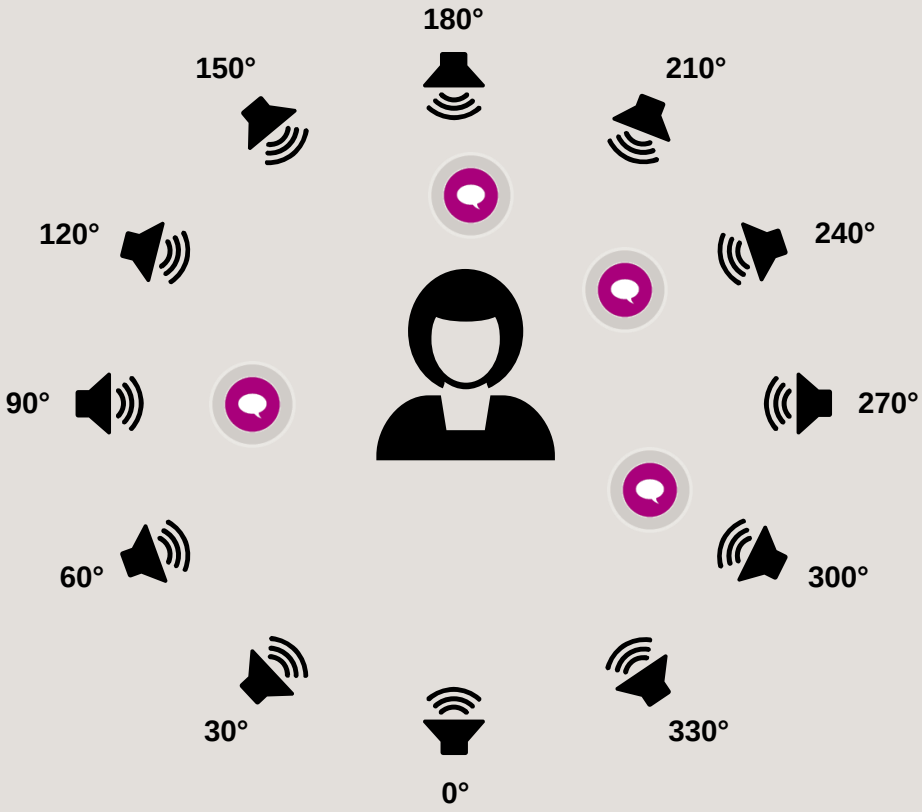
Part 1: Localisation study

Localisation Study

Purpose: investigate localisation performance between single & dual microphone hearing aids

Setup:

- Opn IIC & miniRITE used
- Speakers – visually hidden
- Random speech presentation at 60 dBSPL (no background noise)
- 36 presentations in total



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Study: Speech Intelligibility

Methods

Hearing aids:

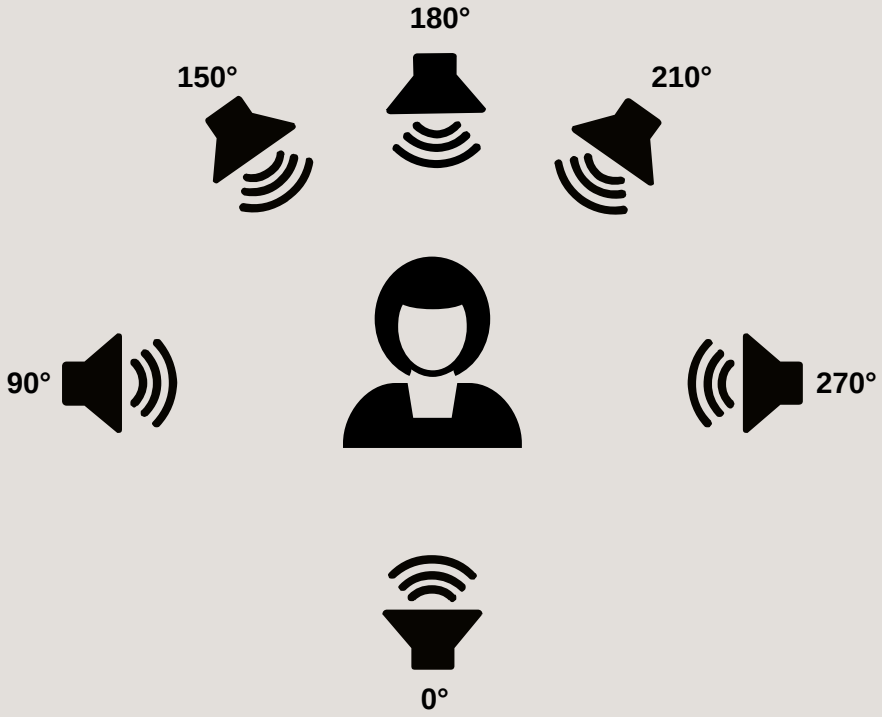
- IIC, ITC, miniRITE
- OpenSound Navigator: medium transition

Test conditions:

1. 60 dBSPL (lower noise)
2. 75 dB SPL (high noise)

Stimuli in free field:

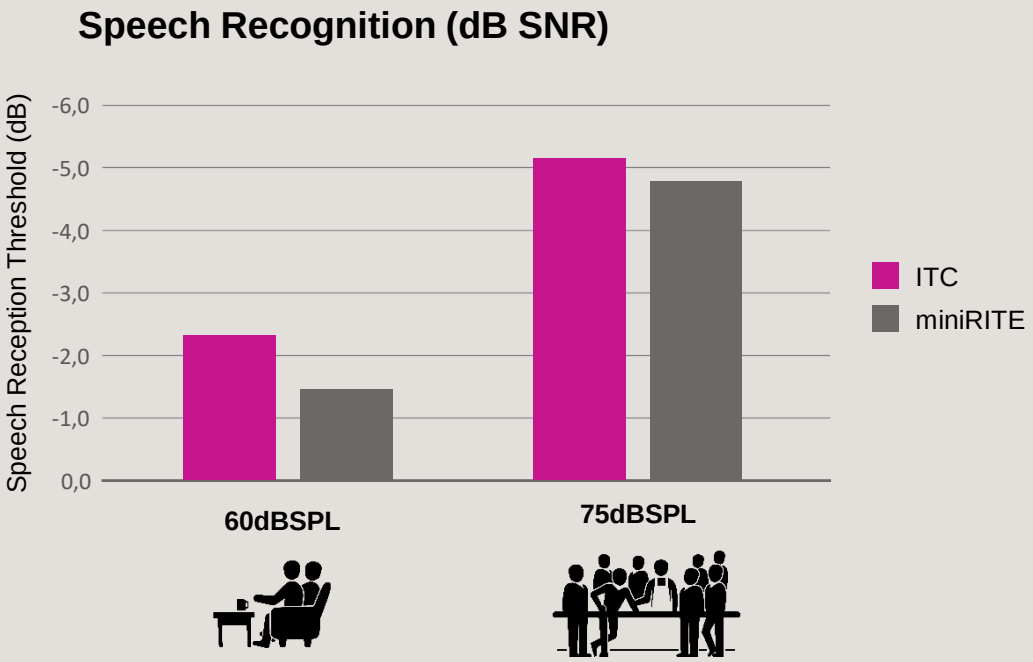
- Oldenburg sentence test (OLSA)
- Masking & speech noise: OL noise at 90°,150°, 210°, 270°, ISTS 180°



Target speech (OLSA)

Results: Opn ITC and Opn miniRITE

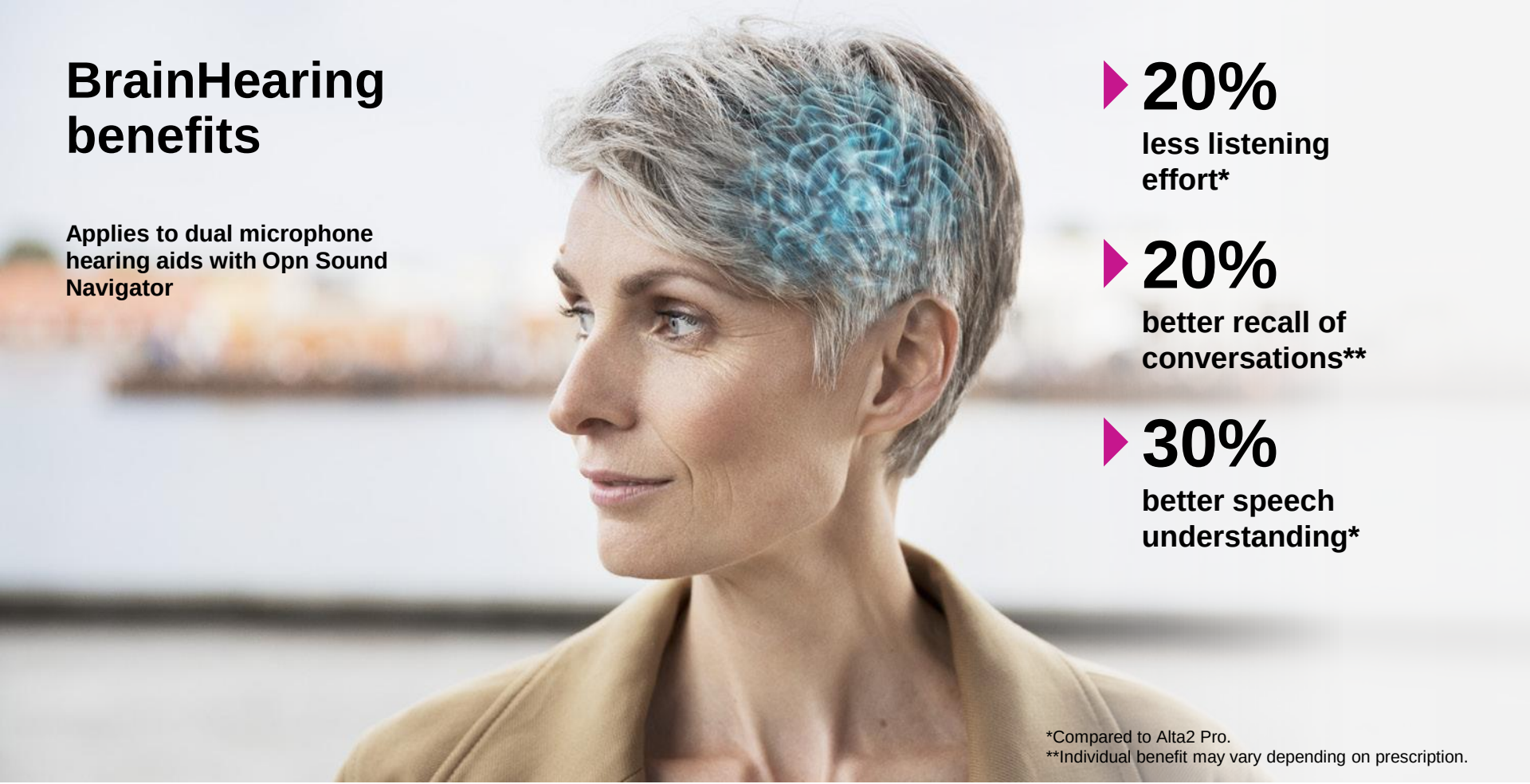
Same audiological benefits for all Opn with dual microphones



Source: Doran 2018, Oticon Whitepaper

BrainHearing benefits

Applies to dual microphone hearing aids with Opn Sound Navigator



20%
less listening effort*

20%
better recall of conversations**

30%
better speech understanding*

*Compared to Alta2 Pro.
**Individual benefit may vary depending on prescription.

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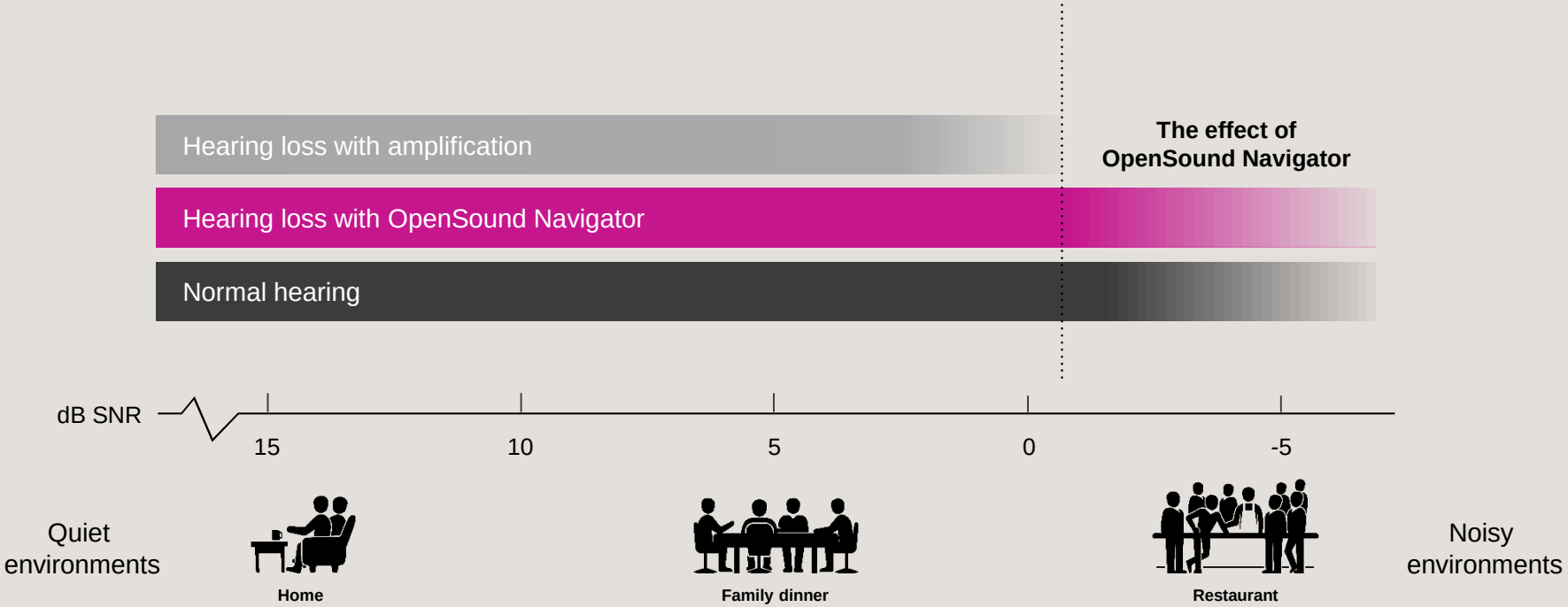
Closing a gap to normal hearing with BrainHearing benefit

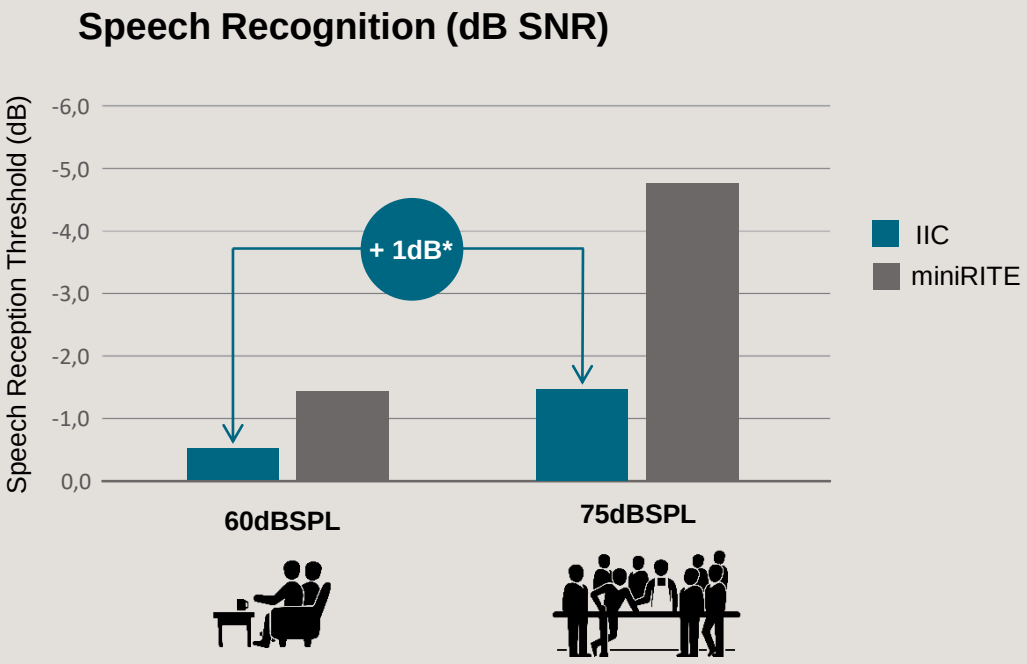
Research evidence 2017



Le Goff and Beck 2017, Oticon whitepaper, Juul Jensen 2018, Oticon whitepaper*

*Applies to dual microphones hearing aids with OpenSound Navigator

Evidence: Open Sound Navigator IIC performance



Source: Doran 2018, Oticon Whitepaper

Summary of evidence

What does this tell us?

- All styles deliver the unique open sound experience
- Same audiological benefits for all Opn dual microphone hearing aids
- Rapid and effective support in noise for single microphone hearing aids
- Spatial hearing benefits for all styles
  - from Spatial Sound LX and/or Pinna effect when present

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Opn custom white paper

Read more: http://www.oticon.global/professionals/evidence

WHITEPAPER
2016

Opn Clinical Evidence

INTRODUCTION
Nicolas Le Goff, Oticon A/S

This whitepaper presents a summary of the clinical studies investigating the end-user benefits of the new signal processing introduced in Oticon Opn on cognitive effort, memory recall, and speech recognition performance. Among the new signal processing, a new noise reduction algorithm named OpenSound Navigator (OSN), is introduced. It belongs to a new technology class of its own, the Multiple Speaker Access Technology (MSAT), as it uses different principles than current directionality and noise reduction systems (Le Goff et al. 2016).

Speech recognition performance is a well-established measure of the performance of hearing-aids and it was therefore part of the investigations on the performance of Opn. In a traditional speech-recognition test, the task of the participants is however only partly representing the complex interactions of daily conversations and recognition thresholds are often negative signal-to-noise ratios (SNRs) that are much lower than those found in daily environments (Smeds et al. 2015). To overcome these limitations, two studies on cognitive effort and memory recall were conducted to assess the cognitive benefits of OSN in acoustical environments with positive SNRs (Lunner et al. 2016). Each study is presented in a separate section authored by its respective main investigator and an interpretation of the findings is proposed in the last section.

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Nicolas Le Goff, *Ph.D., Senior Researcher, Oticon A/S*
Dorothea Wendt, *Ph.D., Scientist, Eriksholm Research Center*
Thomas Lunner, *Ph.D., Senior Scientist, Eriksholm Research Center*
Elaine Ng, *Ph.D., Postdoctoral Fellow, Linkoping University*

Placeholder – change for Custom

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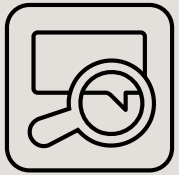
Product details

Features

Across the whole Opn family

YouMatic LX

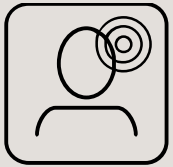


Soft Speech Booster LX

Speech Rescue™ LX

OpenSound Navigator

Binaural Coordination*



Tinnitus SoundSupport**

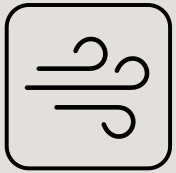
Speech Guard LX

Feedback shield LX

Clear Dynamics

Spatial Sound LX*

Spatial Noise Management*



Wind Noise Management***

* NFMI **If NFMI + push button are selected *** Dual microphone styles

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NFMI

Near Field Magnetic Induction

- Advanced binaural processing

Spatial Sound LX

Spatial Noise Management

Binaural Coordination

Tinnitus SoundSupport*

* If NFMI + push button are selected

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Bluetooth® Low Energy

Stereo Streaming (2.4 GHz)

- Effective 2.4 GHz direct streaming
- Hands-fre m any modern smartpho
- High-qual to both hearing aids
- Available in Opn ITC, ITE HS & ITE FS

Made for iPod iPhone iPad

Works with any modern smartphone

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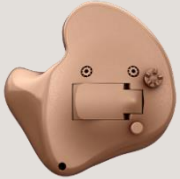
Opn custom portfolio



	IIC	CIC	ITC	ITE HS, ITE FS	ITE HS, ITE FS
Battery	10	10	312	312	13
Fitting levels	75 85	75 85	75 85 90 100	75 85 90 100	75 85 90 100
NFMI	-	o	●	●	●
2.4GHz	-	-	o*	o*	o
Microphones	1	1	2	2	2
Pushbutton	-	o	o	o	o
Volume wheel	-	-	o	o	o
Telecoil	-	-	o^	o^	o
AutoPhone	-	-	o	o	o

● Standard o Option - Not available * Not possible with telecoil ^ Not possible with 2.4 GHz

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IIC

Size is king!

	IIC
Battery	10
Fitting levels	75 85
NFMI	-
2.4GHz	-
Microphones	1
Pushbutton	-
Volume wheel	-
Telecoil	-
AutoPhone	-

● Standard o Option - Not available

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Completely-in-canal
(CIC)

	IIC	CIC
Battery	10	10
Fitting levels	75 85	75 85
NFMI	-	o
2.4GHz	-	-
Microphones	1	1
Pushbutton	-	o
Volume wheel	-	-
Telecoil	-	-
AutoPhone	-	-

Optional

Spatial Sound LX

Spatial Noise Management

P1 P2 P3 P4

Binaural Coordination

Tinnitus SoundSupport*

● Standard o Option - Not available

* If NFMI + push button are selected

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In-the-canal
(ITC)

	IIC	CIC	ITC
Battery	10	10	312
Fitting levels	75 85	75 85	75 85 90 100
NFMI	-	o	●
2.4GHz	-	-	o*
Microphones	1	1	2
Pushbutton	-	o	o
Volume wheel	-	-	o
Telecoil	-	-	o^
AutoPhone	-	-	o

Optional

OR

Cannot coexist

● Standard o Option - Not available * Not possible with telecoil ^ Not possible with 2.4 GHz

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ITE HS, ITE FS

Size 312 battery

	ITE HS, ITE FS
Battery	312
Fitting levels	75 85 90 100
NFMI	●
2.4GHz	o*
Microphones	2
Pushbutton	o
Volume wheel	o
Telecoil	o^
AutoPhone	o

Optional

OR

Cannot coexist

● Standard o Option - Not available * Not possible with telecoil ^ Not possible with 2.4 GHz

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ITE HS, ITE FS

Size 13 battery

	ITE HS, ITE FS
Battery	13
Fitting levels	75 85 90 100
NFMI	●
2.4GHz	o
Microphones	2
Pushbutton	o
Volume wheel	o
Telecoil	o
AutoPhone	o

Optional

OR

Cannot coexist

● Standard o Option

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Dexterity options

Available at all sites

Nail grip

Large ball removal line

Clothing loop

Raised push button

Raised volume wheel (high knob)

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Custom instrument colours

C005	C004	C003	C002	C001
Black*	Dark Brown	Medium Brown	Light Brown	Beige

*Oticon Opn IIC only

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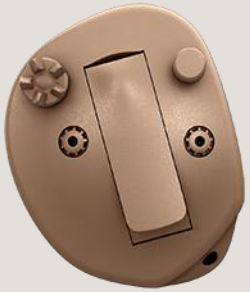
New vents in customs

CIC and larger styles



- Accuracy of vents improved
- More individualised choices
- Streamlined process across production sites

Round	0.8	**1.2**	1.4	**1.6**	**1.8**	**2.0**	2.4	3.0	4.0
Collection	1.0	**1.2**	1.4	**1.6**	**1.8**	**2.0**	2.4	3.0*	-

*N/A for CIC

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Programming options

Wireless

Cable

A custom style for everyone: Opn 1, 2 ,3

Open up to more people

OTICON | **Opn**

Opn 1 **Opn 2** **Opn 3**

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Feature overview: ITC, ITE HS, ITE FS

		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	5dB	3dB
	Speech Guard™ LX	Level 1	Level 2	Level 3
	Spatial Sound™ LX	4 estimators	2 estimators	2 estimators
	Soft Speech Booster LX	●	●	●
	Speech Rescue™ LX	●	●	●
Sound Quality	Clear Dynamics	●	●	-
	Spatial 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	●	●	●
	YouMatic™ LX	3 configurations	3 configurations	1 configuration

● Standard
o Option
- Not available

* Bandwidth accessible for gain adjustments during fitting

** If push button is chosen

Optional

Feature Overview: CIC

		Oticon Opn 1	Oticon Opn 2	Oticon Opn 3
Speech Understanding	OpenSound Navigator™	Level 1	Level 2	Level 3
	- Max. noise removal	9 dB	5dB	3dB
	Speech Guard™ LX	Level 1	Level 2	Level 3
	Spatial Sound™ LX**	4 estimators	2 estimators	2 estimators
	Soft Speech Booster LX	●	●	●
	Speech Rescue™ LX	●	●	●
Sound Quality	Clear Dynamics	●	●	-
	Spatial Noise Management**	o	o	-
	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	●	●	●
	Binaural Coordination**	o	o	o
Fitting	YouMatic™ LX	3 configurations	2 configurations	1 configuration
	Fitting Bands	16	14	12
	Adaptation Management			

● Standard
o Option
- Not available

* Bandwidth accessible for gain adjustments during fitting

** If NFMI is chosen

*** If NFMI and push button is chosen

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Feature overview: IIC

		Oticon Opn 1	Oticon Opn 2	Oticon Opn 3
Speech Understanding	OpenSound Navigator™	Level 1	Level 2	Level 3
	- Max. noise removal	9 dB	5dB	3dB
	Speech Guard™ LX	Level 1	Level 2	Level 3
	Soft Speech Booster LX	●	●	●
	Speech Rescue™ LX	●	●	●
Sound Quality	Clear Dynamics	●	●	-
	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	●	●	●
ersonalisation ptimising Fitting	YouMatic™ LX	3 configurations	2 configurations	1 configuration
	Fitting Bands	16	14	12
	Adaptation Management	●	●	●
	Oticon Firmware Updater	●	●	●
	Fitting Formulas	VAC+, NAL-NL1+2,	VAC+, NAL-NL1+2,	VAC+, NAL-NL1+2,

● Standard
o Option
- Not available

* Bandwidth accessible for gain adjustments during fitting

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Technical data sheets

Performance levels

Considerations & Expectation Management

Expectation management

Counselling is key in guiding clients

What are their listening needs?

How do they want their hearing aids to look and feel?

What do they want to connect to?

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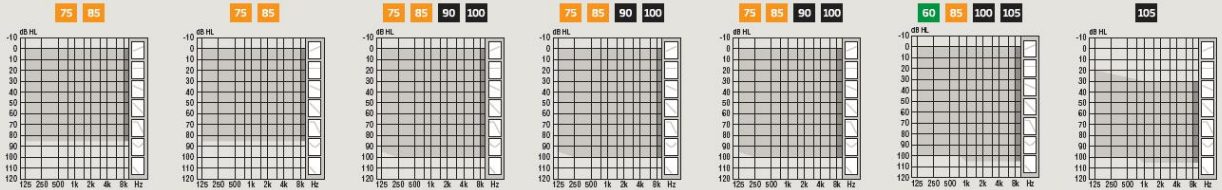
Custom counselling tool

Page 1

Oticon hearing aid styles and benefits

The Oticon Opn™ and Oticon Siya product families offer a wide selection of styles to choose from



IIC

- Custom made with a focus on size.
- Invisible style small enough to hide in the ear.

CIC

- Custom made with a focus on size.
- Very discreet and comfortable.
- Offering push button for manual control.

ITC

- The most discreet in-the-ear style with all feature options available.
- Offering wireless connectivity as an option.
- Giving maximum support in noisy environments.

ITE HS

- Fully featured, including wireless connectivity.
- Extra easy to handle, control, and adjust.
- Giving maximum support in noisy environments.

ITE FS

- Fully featured, including wireless connectivity.
- Extra easy to handle, control, and adjust.
- Giving maximum support in noisy environments.

miniRITE**

- The smallest and most discreet behind-the-ear style.
- Fully featured, including wireless connectivity.
- Comes with rechargeable option.
- Giving maximum support in noisy environments.

BTE PP***

- Larger style covering more severe hearing loss.
- Bigger button and LED status light for easier handling.
- Fully featured, including wireless connectivity.
- Giving maximum support in noisy environments.

*** This style also comes in a miniRITE T version which contains telecoil* **** This style also comes in a Siya BTE (85)*

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Custom counselling tool

Page 2

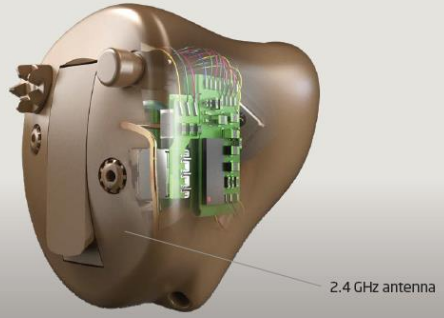
2.4 GHz connectivity

Now available in Oticon Opn and Oticon Siya in-the-ear styles

2.4 GHz connectivity is available in ITC, ITE HS and ITE FS

Benefit from:

- Wireless streaming to hearing aids from smartphones, TVs, tablets and more
- Clear, safe and hands-free calls from any modern smartphone
- Discreet control of hearing aids from your smartphone with the Oticon ON App
- Easier listening over distance via 2.4 GHz connection to a remote microphone



Just like a hearing aid needs a battery and an amplifier to work, a 2.4 GHz antenna needs to be added to enable 2.4 GHz connectivity. This is optional and when chosen adds to size.

The smallest in-the-ear instrument offering 2.4GHz connectivity is the ITC

The actual size and shape of the ear defines how much space is available to fit in the extra antenna needed to enable 2.4 GHz connectivity.

All ears are unique

Here you can see an example of how an ITC with 2.4 GHz looks like in 3 different ears that vary in shape and size. Next to it you can also see an example of how an ITE HS and ITE FS with 2.4 GHz look like.

ITC with 2.4 GHz | ITC with 2.4 GHz | ITC with 2.4 GHz | ITE HS with 2.4 GHz | ITE FS with 2.4 GHz

In case the shape of the ear does not allow for an ITC with 2.4 GHz it is recommended to either choose an ITE HS, ITE FS, miniRITE with 2.4 GHz or an ITC without 2.4 GHz.

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2.4 GHz in ITC

Ordering

- Bluetooth antenna, and its required positioning, adds size

- ITC with 2.4 GHz - in some cases end users will not be able to get a true ITC

*ITC 312 2.4 GHz Depending on ear shape	☐ If ITC not possible do ITE
	☐ If ITC not possible remove 2.4 GHz

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Specific user needs

Selection

Flight mode
➔ pushbutton

Tinnitus SoundSupport
➔ pushbutton + NFMI

Cannot co-exist
in ITC or ITE styles

OR

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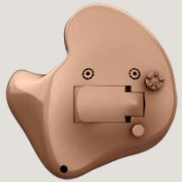
Summary

Opn and Siya custom portfolio with full flexibility



	IIC	CIC	ITC	ITE HS, ITE FS	ITE HS, ITE FS
Battery	10	10	312	312	13
Fitting levels	75 85	75 85	75 85 90 100	75 85 90 100	75 85 90 100
NFMI	-	o	●	●	●
2.4GHz	-	-	o*	o*	o
Microphones	1	1	2	2	2
Pushbutton	-	o	o	o	o
Volume wheel	-	-	o	o	o
Telecoil	-	-	o^	o^	o
AutoPhone	-	-	o	o	o

● Standard o Option - Not available * Not possible with telecoil ^ Not possible with 2.4 GHz

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Opn customs in essence

Comprehensive family and functionality

- Open sound experience in all custom styles
- Performance proven by new evidence
- Oticon’ s smallest ever IIC & CIC
- Outstanding Connectivity options available
  - in ITC, ITE HS & ITE FS

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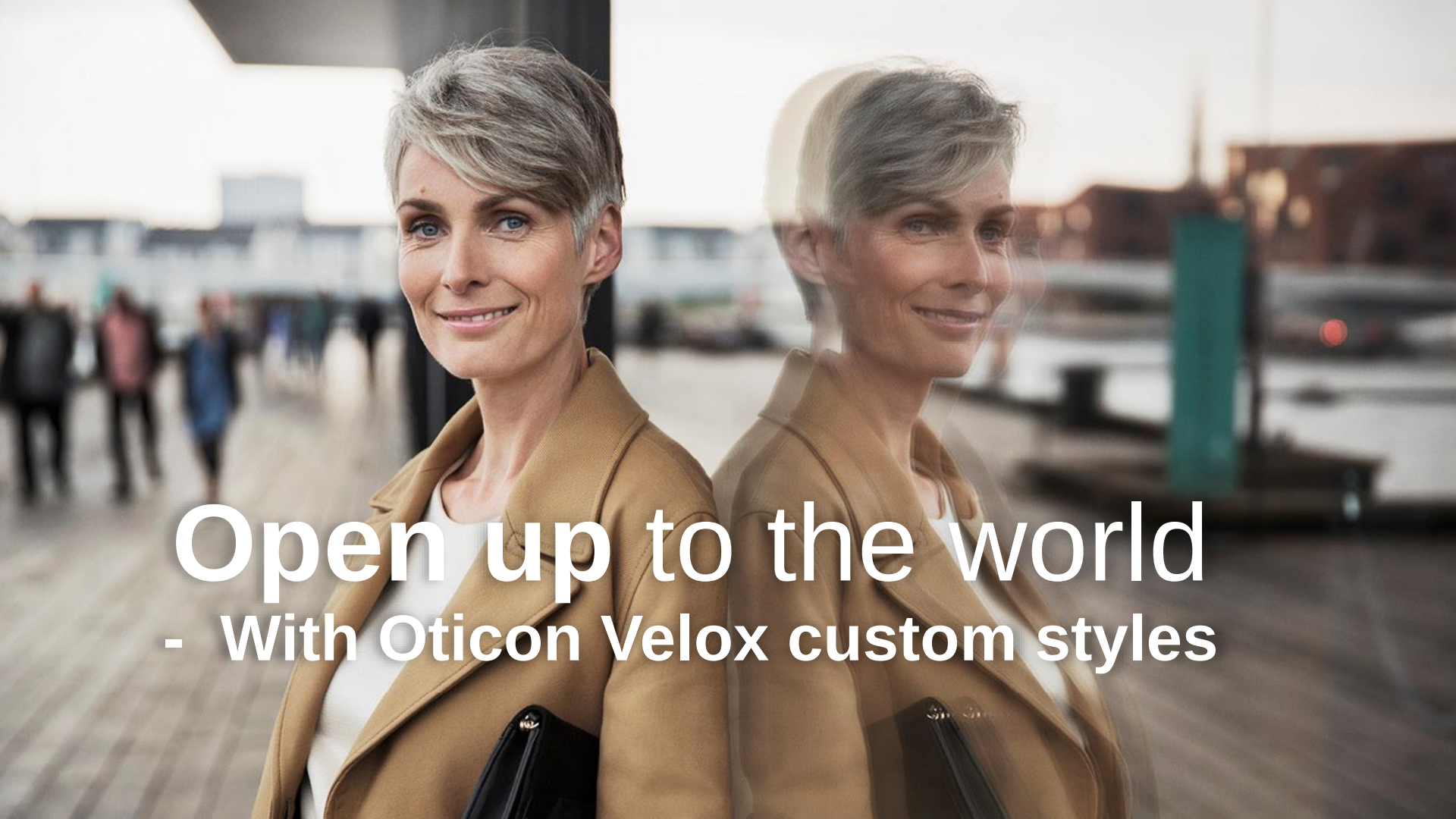
Find more information

- Sales Detailer
- Opn Customs Sales presentation
- Sales and training presentation
- Core feature library (update)
- Instructional videos (user-focused)
- News in Genie 2 presentation
- Campaign videos

More inspiration in the Marketing Catalogue


Open up to the world
- With Oticon Velox custom styles

Thank You!