ADDRESSING THE NEEDS OF SEVERE PROFOUND HEARING LOSSES

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WIDEX®
HIGH DEFINITION HEARING

ADDRESSING THE NEEDS OF PEOPLE WITH SEVERE AND PROFOUND HEARING LOSSES

- Providing High Gain with Minimal Distortion
- Maximizing the Use of Residual Neurons
- Compensating for Poorer Signal to Noise Ratio
- Considerations for Previous Linear Experience

INTRODUCING SUPER

Small size design

- RITE solution
- Size **675** battery

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WIDEX **SUPER**™

THE POWER TO HEAR

THE SUPER CLEAR HEARING AID

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INDUSTRY-LEADING TECHNOLOGY

C-ISP

InterEar

SUPER DESIGN

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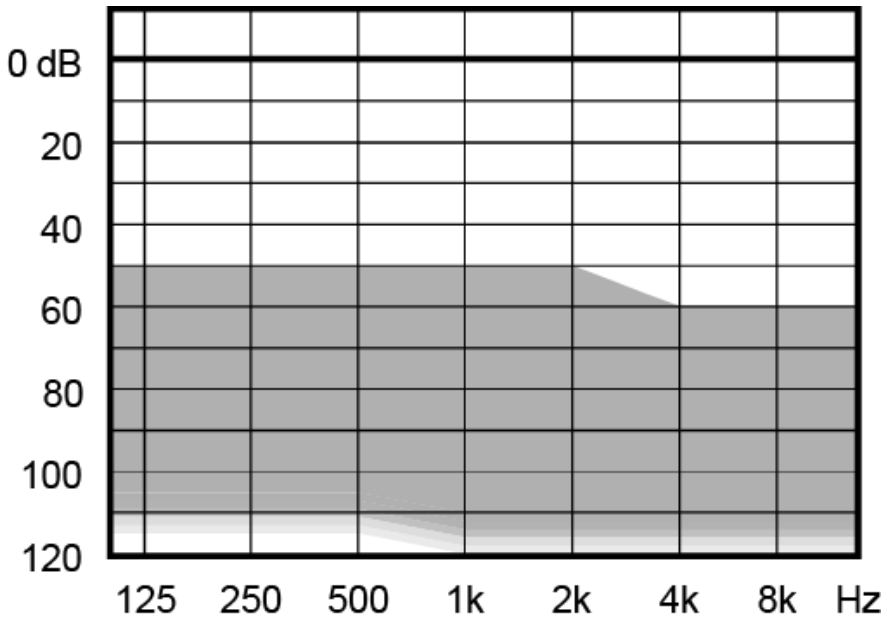
SUPER - FITTING RANGE

Suggested fitting range



Max output:
138 dB SPL

Max gain:
78 dB SPL

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CONSIDERATION 1:
PROVIDING HIGH GAIN WITH MINIMAL DISTORTION

THE POWER TO HEAR MORE

AUDIBILITY

ABOVE

ALL

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FEATURES TO HELP HEAR MORE

- Slow-acting wide dynamic range compression
  - More gain for low input
  - Less gain for high input
  - Maintain the temporal waveform
- Low compression threshold
- Multiple channels

INTEREAR FEEDBACK CANCELLING

INTEREAR COORDINATION
More precise detection of feedback in the system
Data exchange over WidexLink
Double check system:
-Is a feedback-like signal detected? -Is it mainly audible at one side?

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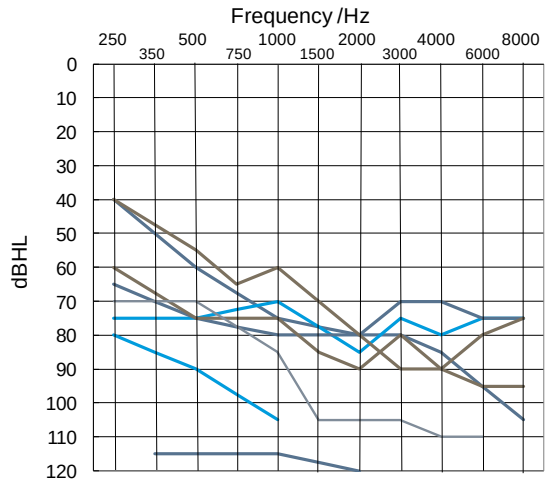
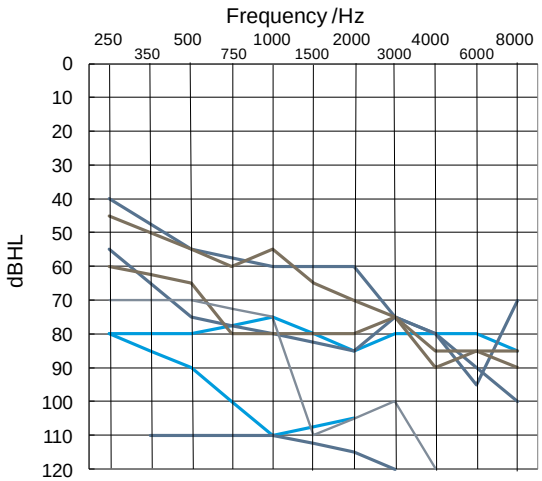
PRELIMINARY DOUBLE-BLIND STUDY

- 8 hearing impaired adults
  - Age range from 33 years to 78 years with an average age of 57 years
  - Four males; four females
  - All experienced hearing aid wearers [2 years to 51 years experience]
  - 7 use BTE instruments and one uses RIC



Right Ear



Left Ear

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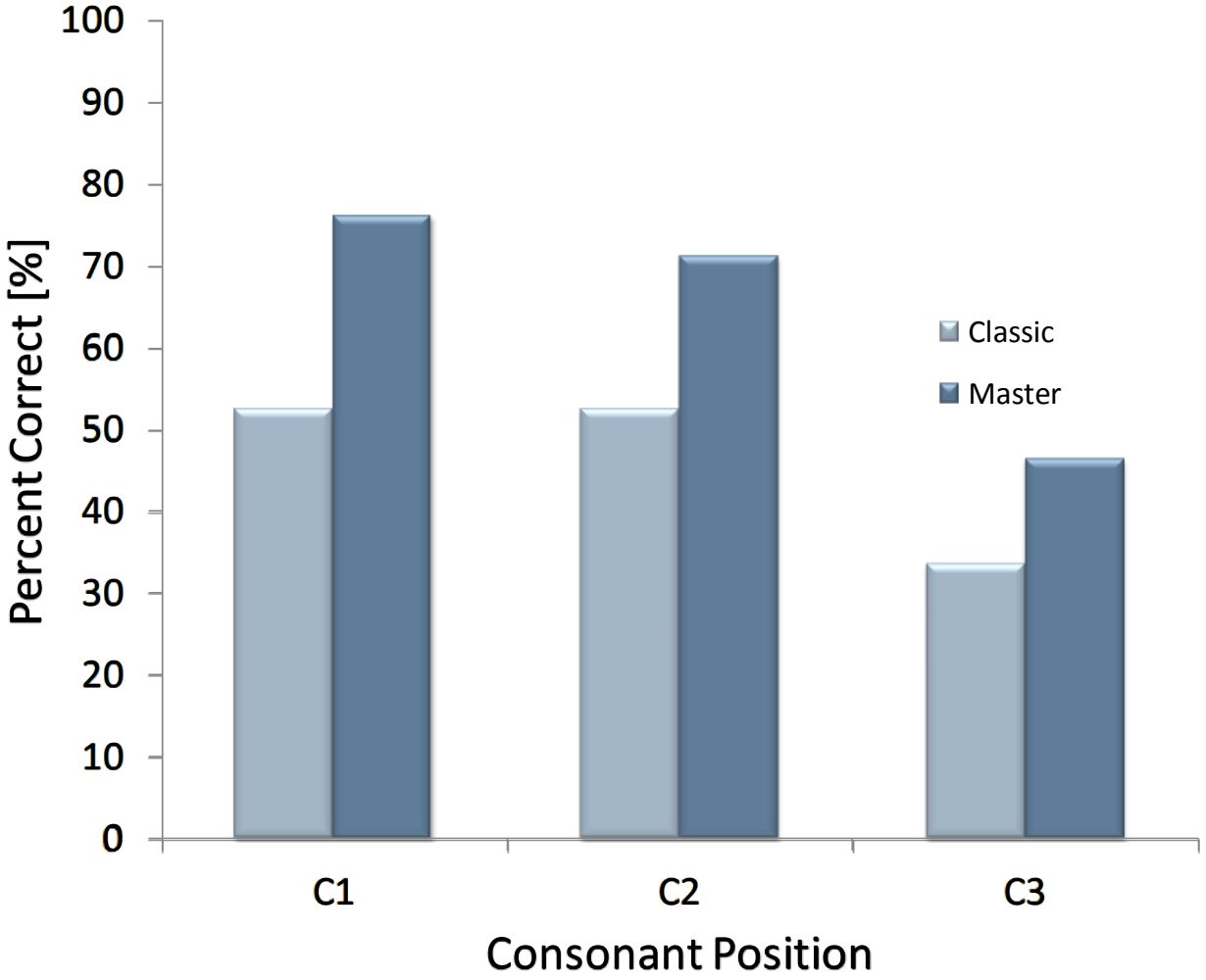
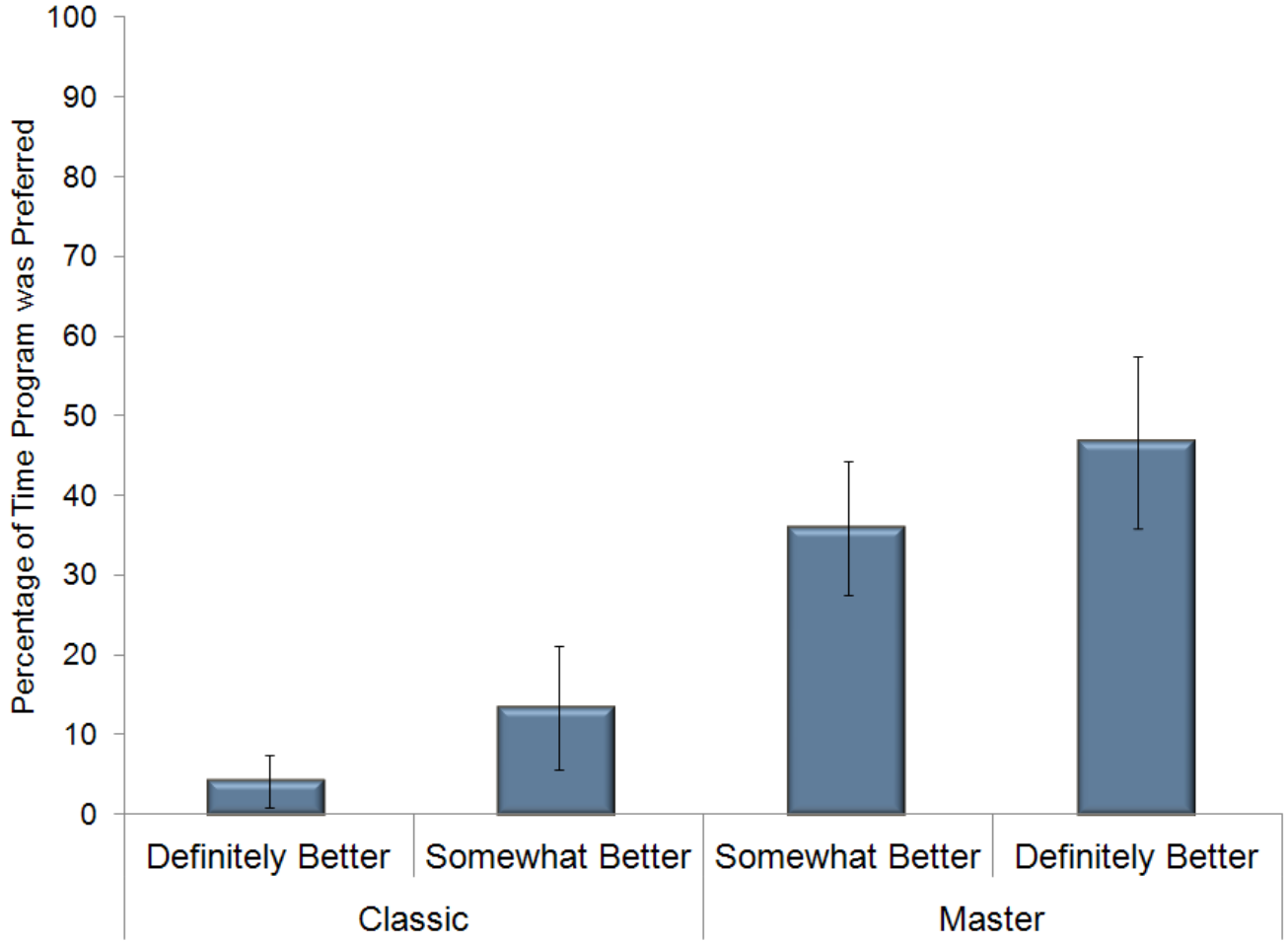
PRELIMINARY DOUBLE-BLIND STUDY

- All testing conducted in a double-walled sound treated test booth
- The ORCA nonsense syllable test was presented from zero degree azimuth at 50 dB SPL and 68 dB SPL presentation levels with visual cues. [C-V-C-V-C]
- The test administrator and the participant did not know the setting of the instrument during testing. Second tester adjusted the settings.
- The settings were presented in a counter-balanced manner across participants and sessions.
- Two settings were evaluated
  - A “classic” setting with more linear characteristics, no noise reduction, and an omni directional microphone
  - The default “master setting” with non-linear characteristics, Speech Enhancer noise management, and automatic adaptive directional microphone

AUDIBILITY FOR SOFT SPEECH



PROGRAM PREFERENCE



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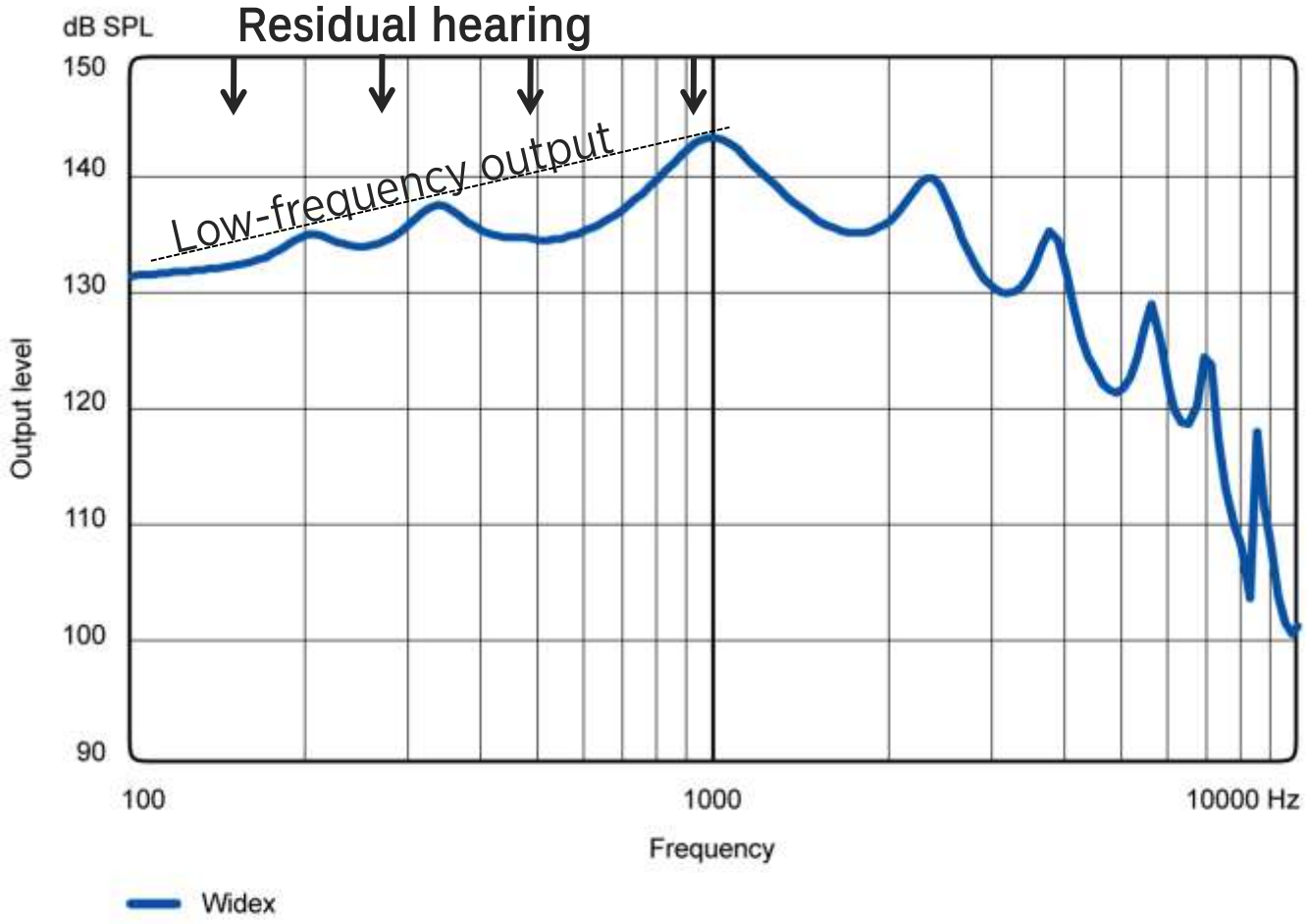
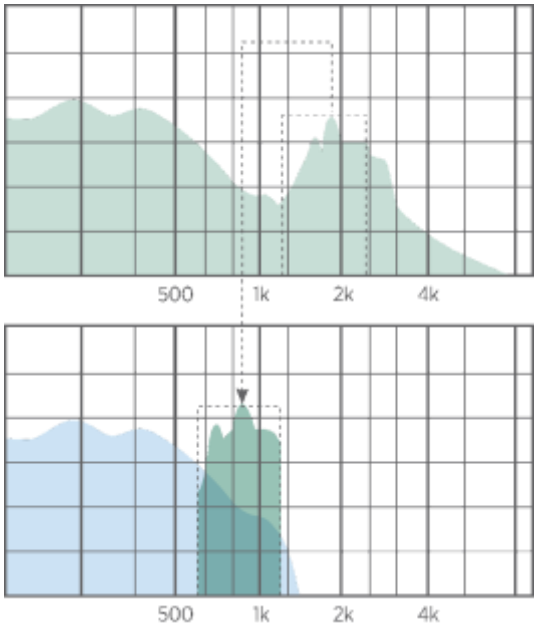
CONSIDERATION 2:
MAXIMIZING THE USE OF RESIDUAL NEURONS

First in Terms of Low-frequency Output



THE AUDIBILITY EXTENDER

With SUPER440 those users will have both AE and sufficient gain in the lower frequency regions.



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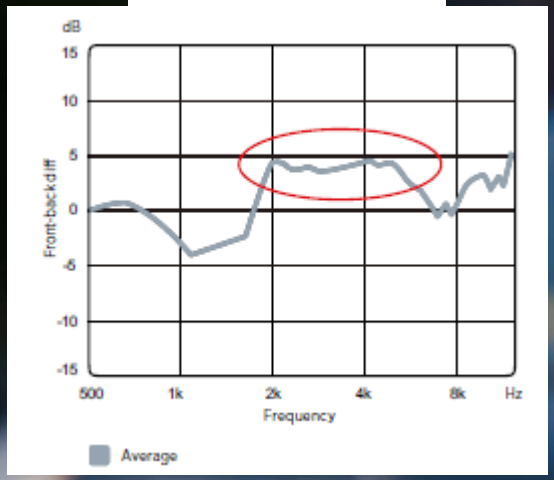
ORIENTATION OF SOUND

Digital Pinna



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THE POWER TO HEAR MORE – CONNECTIVITY

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THE POWER TO HEAR MORE

Connectivity

- **Telecoil**
- **FM**

Model with FM receiver option

- Design integrated SCOLA*Flex*-i
- Connector for standard 3-pin euro plug

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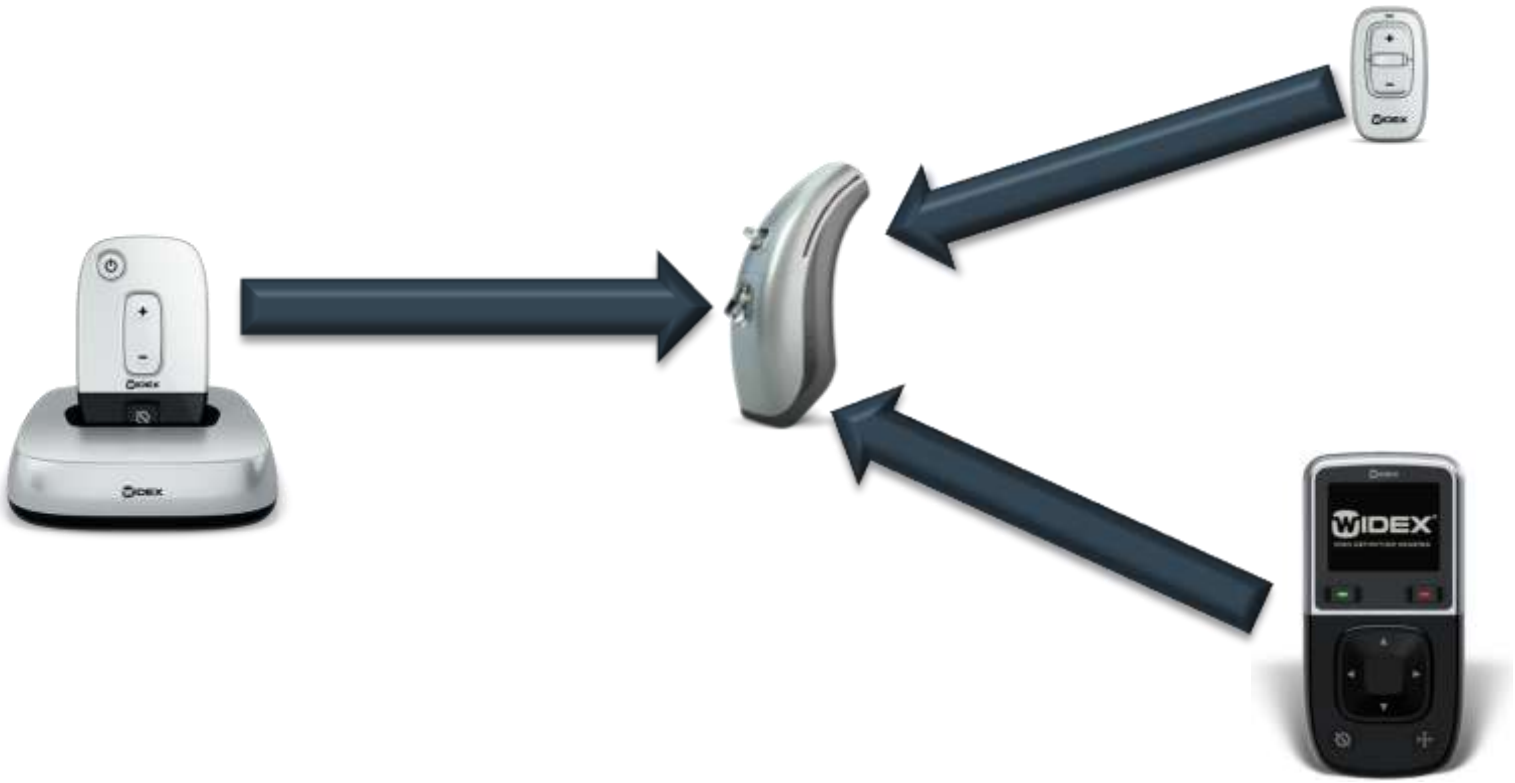
THE POWER TO HEAR MORE

- Full DEX connectivity



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PRELIMINARY STUDY

M-Dex experience

TV-Dex experience

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CONSIDERATION 3:
COMPENSATING FOR POORER TEMPORAL AND FREQUENCY RESOLUTION

DIRECTIONAL MICROPHONE

- Multi-channel fully adaptive directional microphone
- Digital Pinna – compensation for pinna effect due to location of microphones behind the ear

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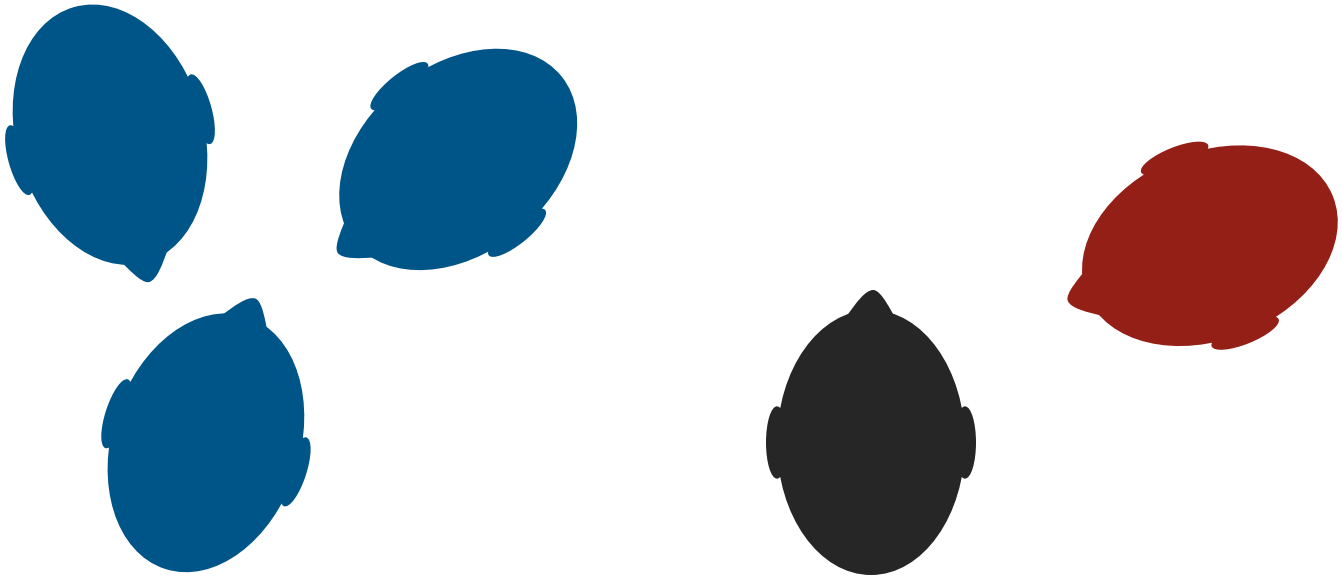
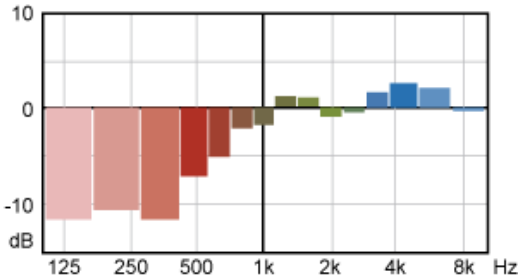
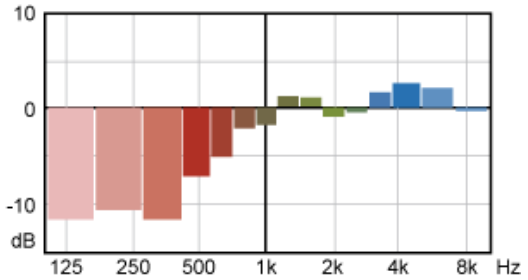
SPEECH ENHANCER







Peeters et al 2009

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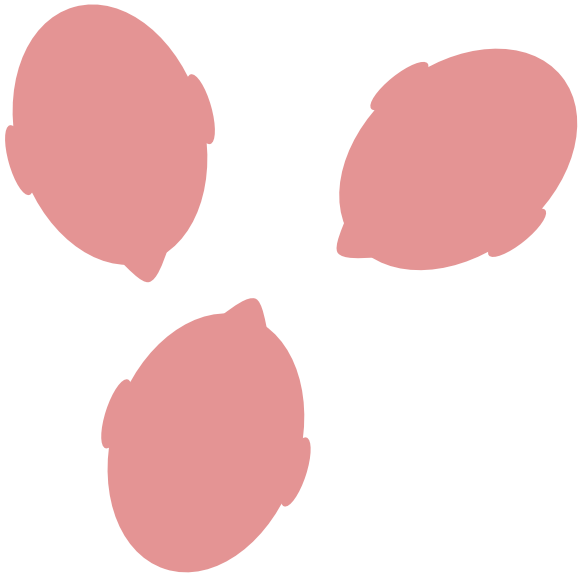
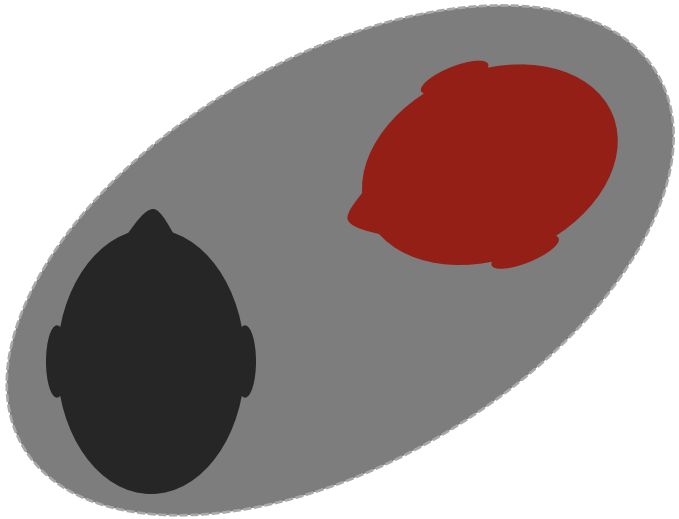
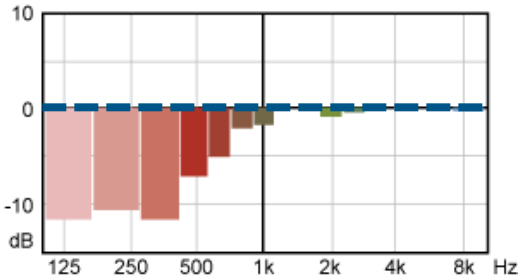
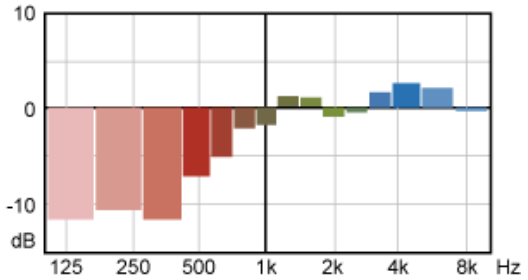
INTEREAR SPEECH ENHANCER







InterEar



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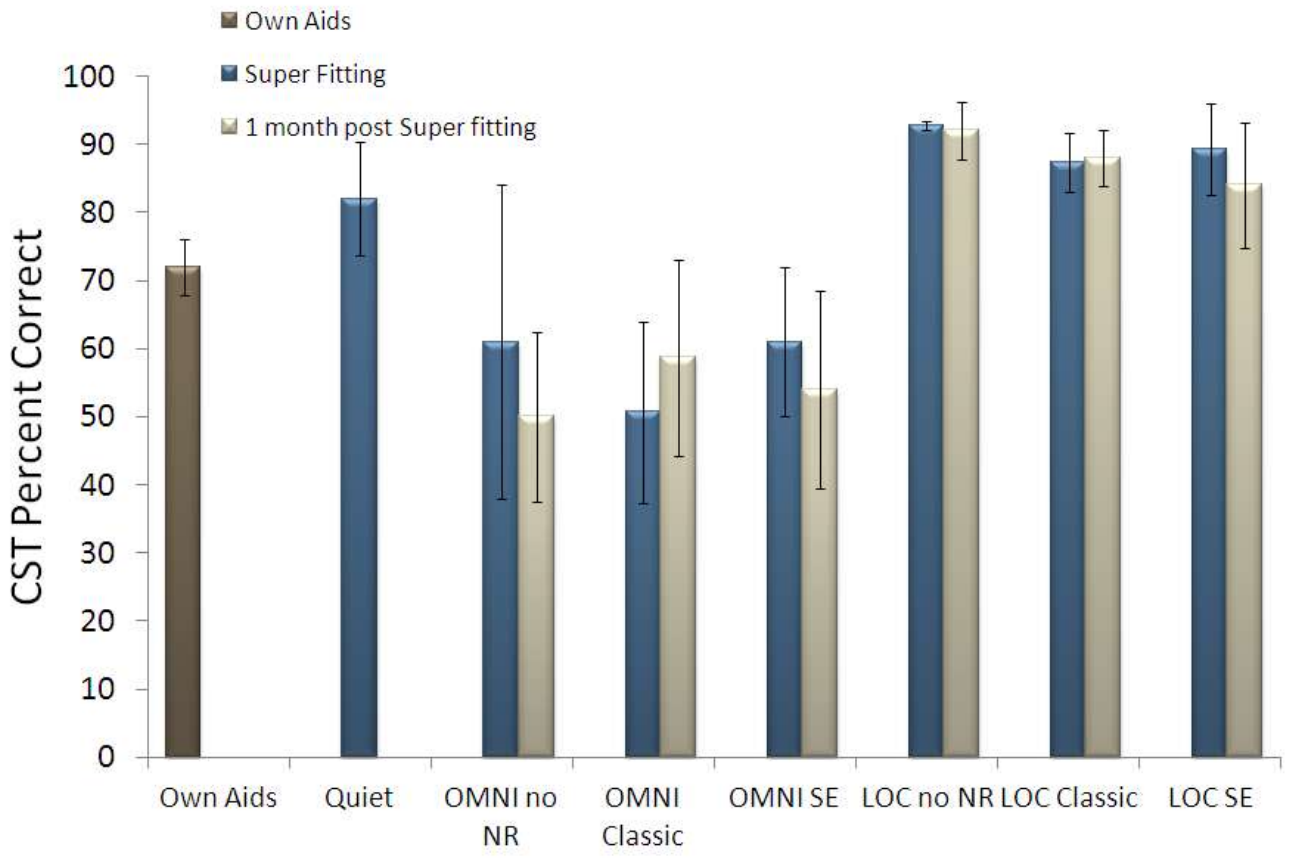
PRELIMINARY RESULTS WITH CST IN NOISE



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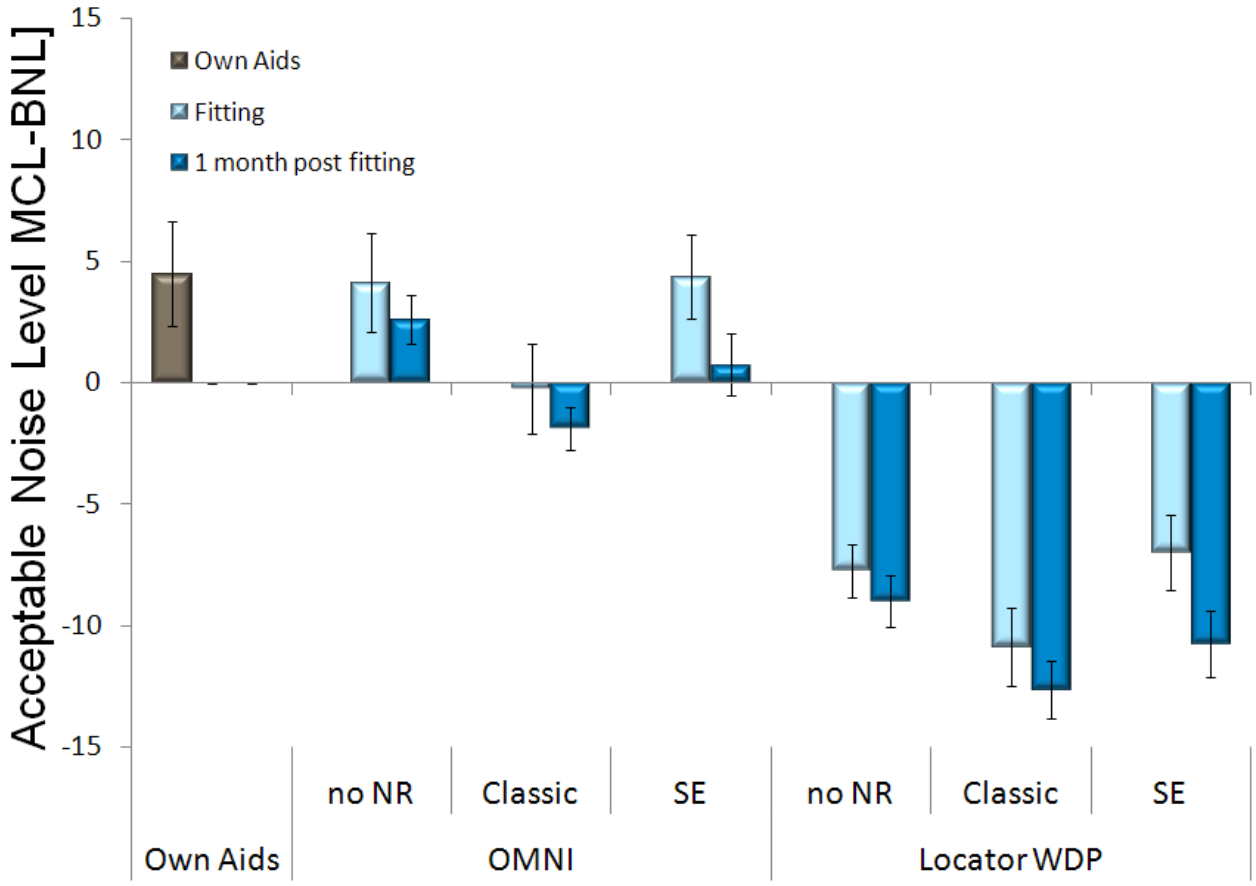
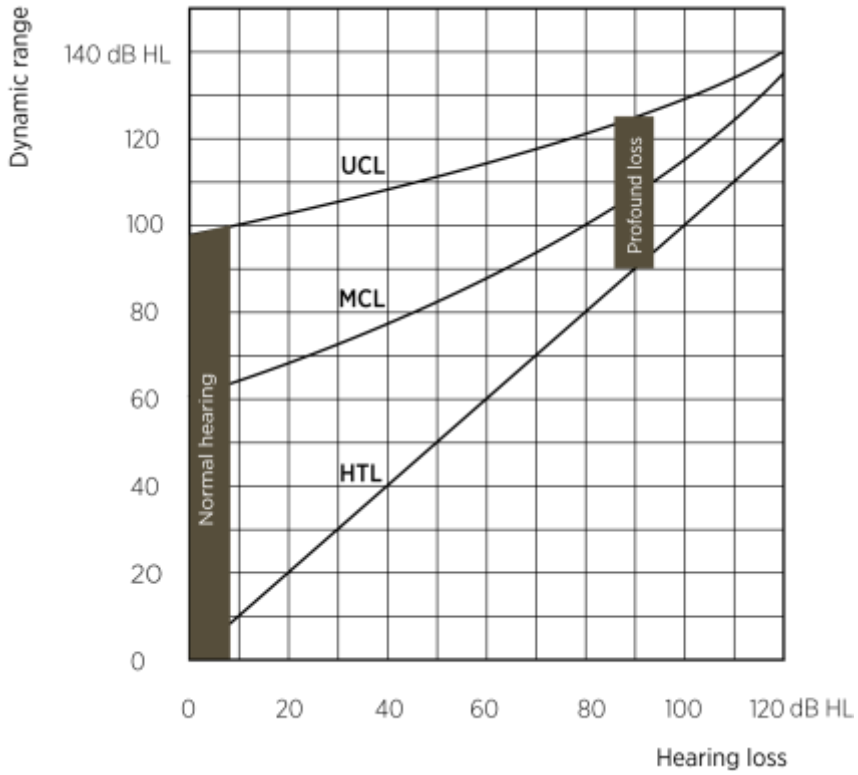
ACCEPTABLE NOISE LEVEL



TRUSOUND SOFTENER – FOR OPTIMAL COMFORT



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A REALISTIC LISTENING EXPERIENCE

TruSound Softener

- Detects sudden sound bursts
- Immediate and effective handling
- Dampens without removing
- Takes the individual hearing loss into consideration
- No dampening of speech

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CONSIDERATION 4:
PREVIOUS LINEAR EXPERIENCE

INTRODUCING THE OUTPUT EXTENDER

- An 60 mm extended sound bore in the RITE earmould
- Gives extra output at relevant frequencies
- Restores tube-like resonance for experienced hearing aid users – i.e, generates ”BTE-like” sound quality

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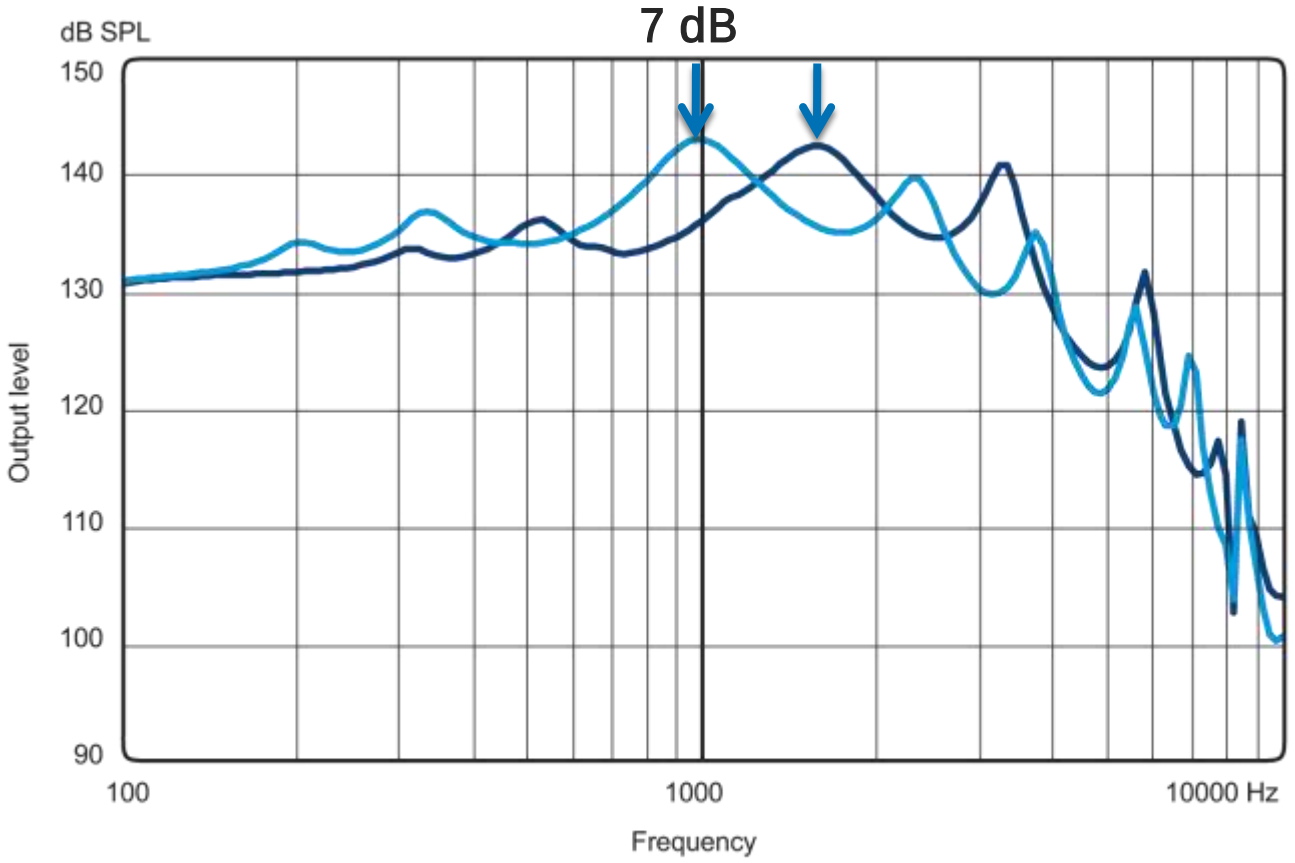
THE OUTPUT EXTENDER

Maximum output response with Output Extender and Regular sound bore



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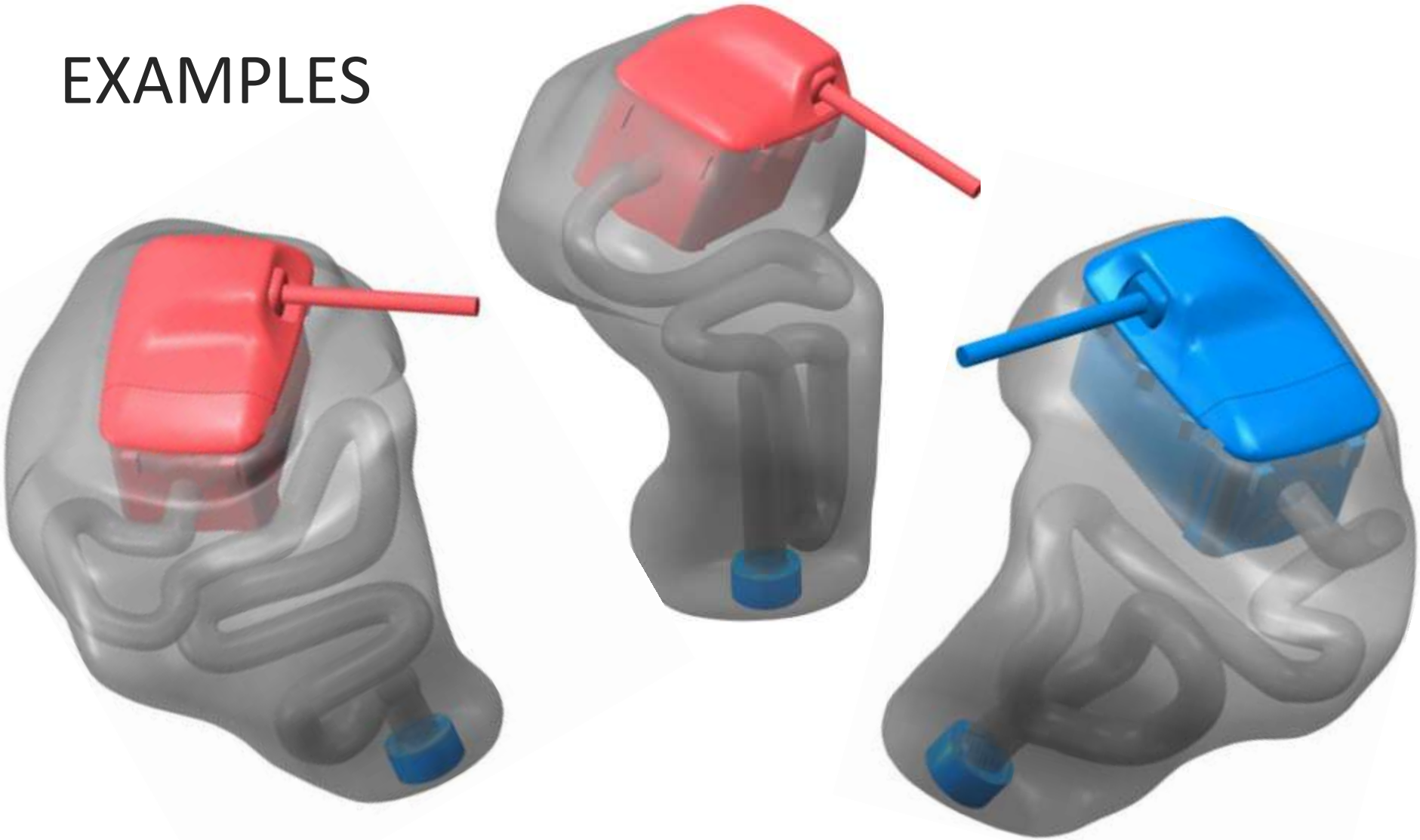
EXAMPLES



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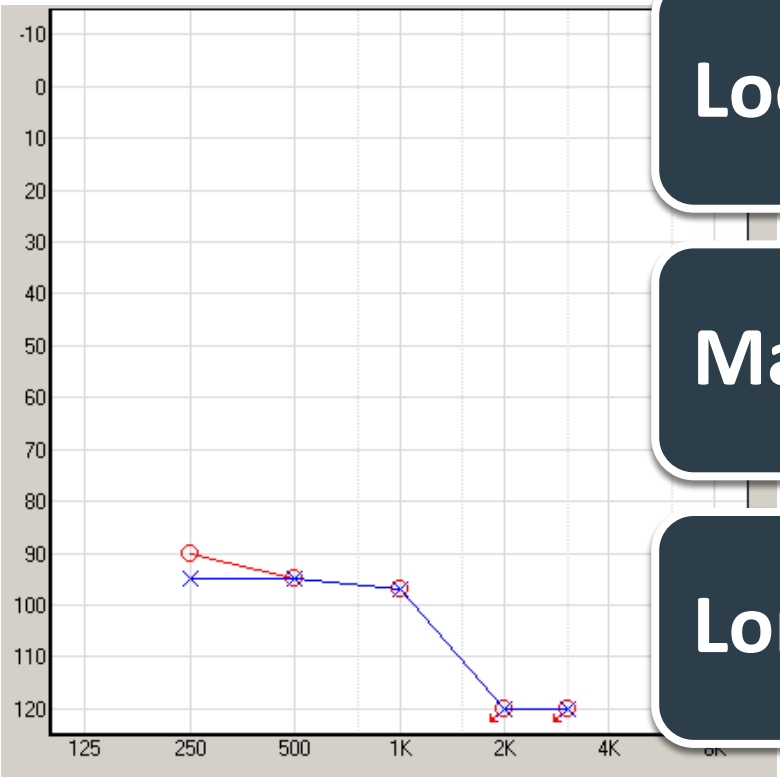
THE OUTPUT EXTENDER

Important considerations when choosing the earmould



Location of residual hearing

Magnitude of hearing loss

Long-term user of BTE

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INTRODUCING THE CLASSIC PROGRAM

- For long-term super power users who find the transition to modern digital hearing aids difficult
- Fixed omni-directional mode
- Noise reduction switched off
- Default Gain settings are

  ”Max audibility for loud sounds” ”Limited audibility for soft sounds”

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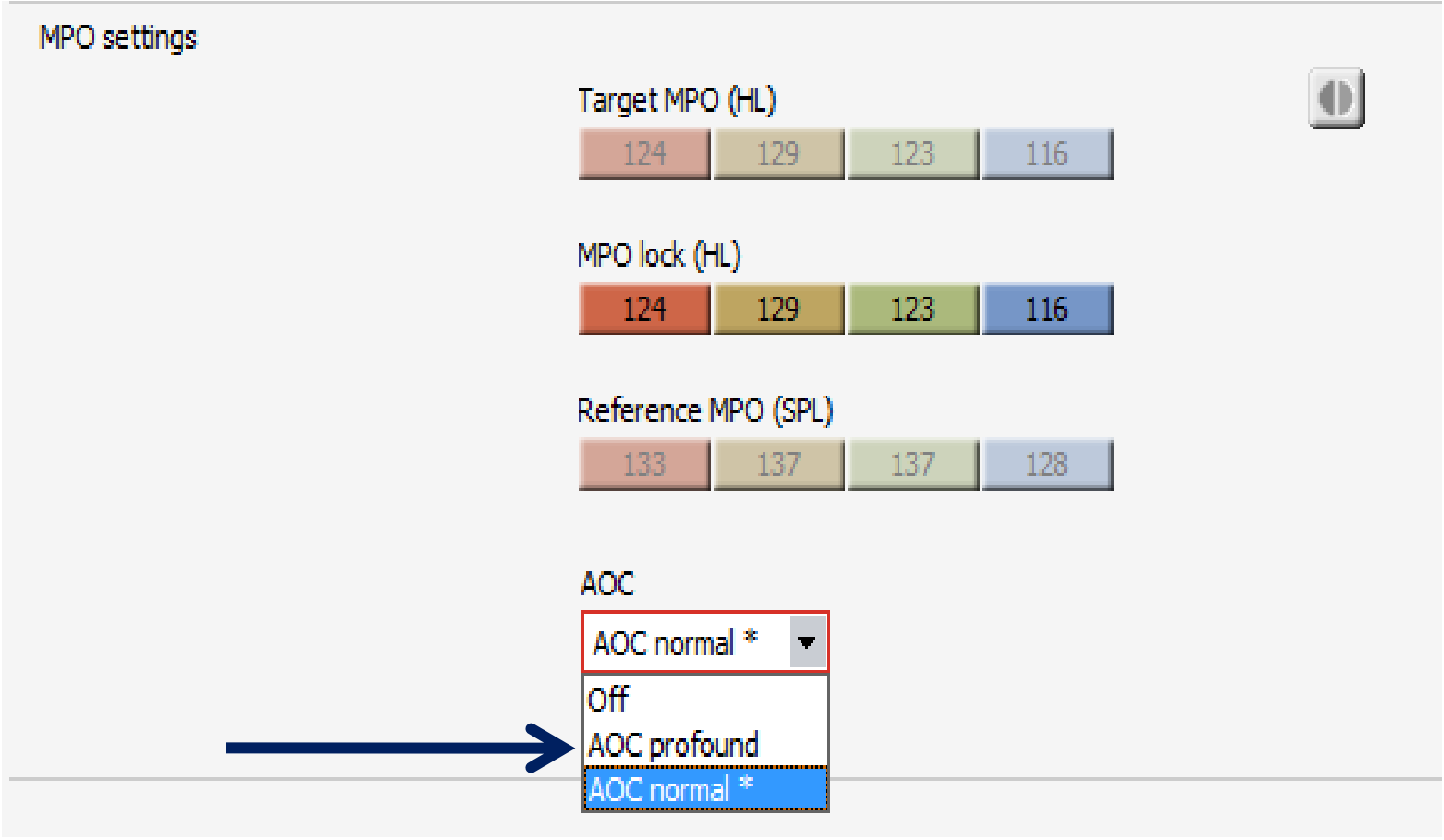
AOC


MPO settings
Target MPO (HL)
124
129
123
116
MPO lock (HL)
124
129
123
116
Reference MPO (SPL)
133
137
137
128
AOC
AOC normal *
Off
AOC profound
AOC normal *


ALL DAY, ALL WEATHER
For use in all situations
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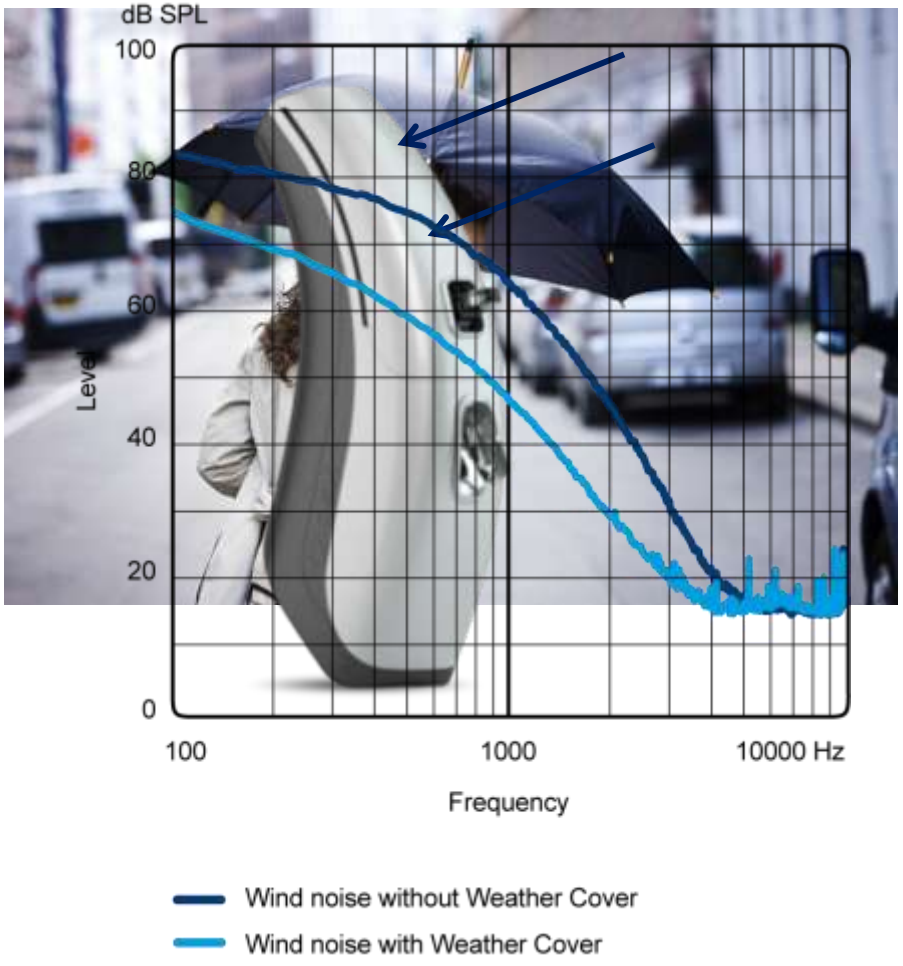
WEATHER RESISTANT

NEW Patent-pending Weather Cover

- Protects microphones from wind and rain
- Reduces wind noise by up to 18 dB



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FITTING SUPER

Highlights

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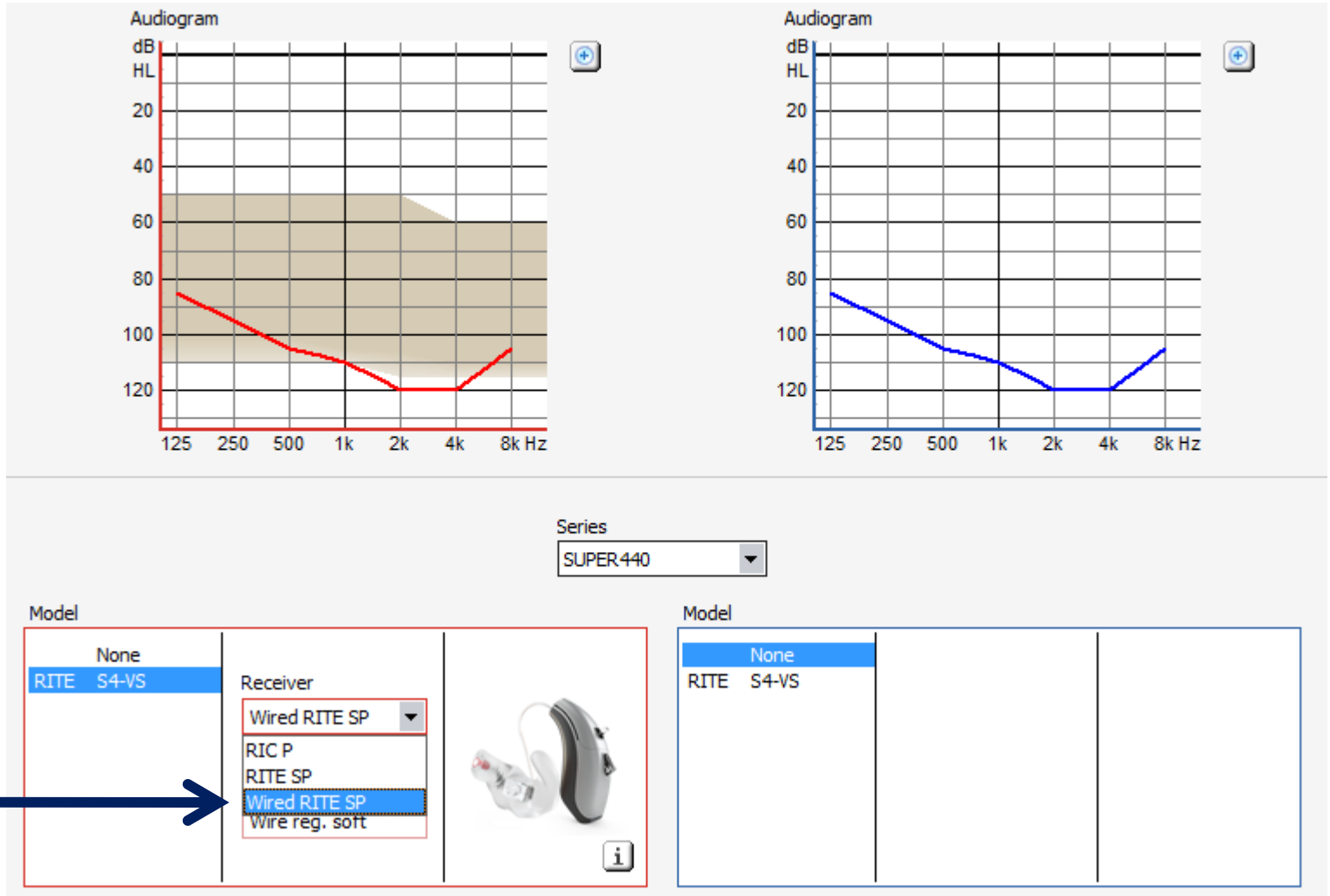
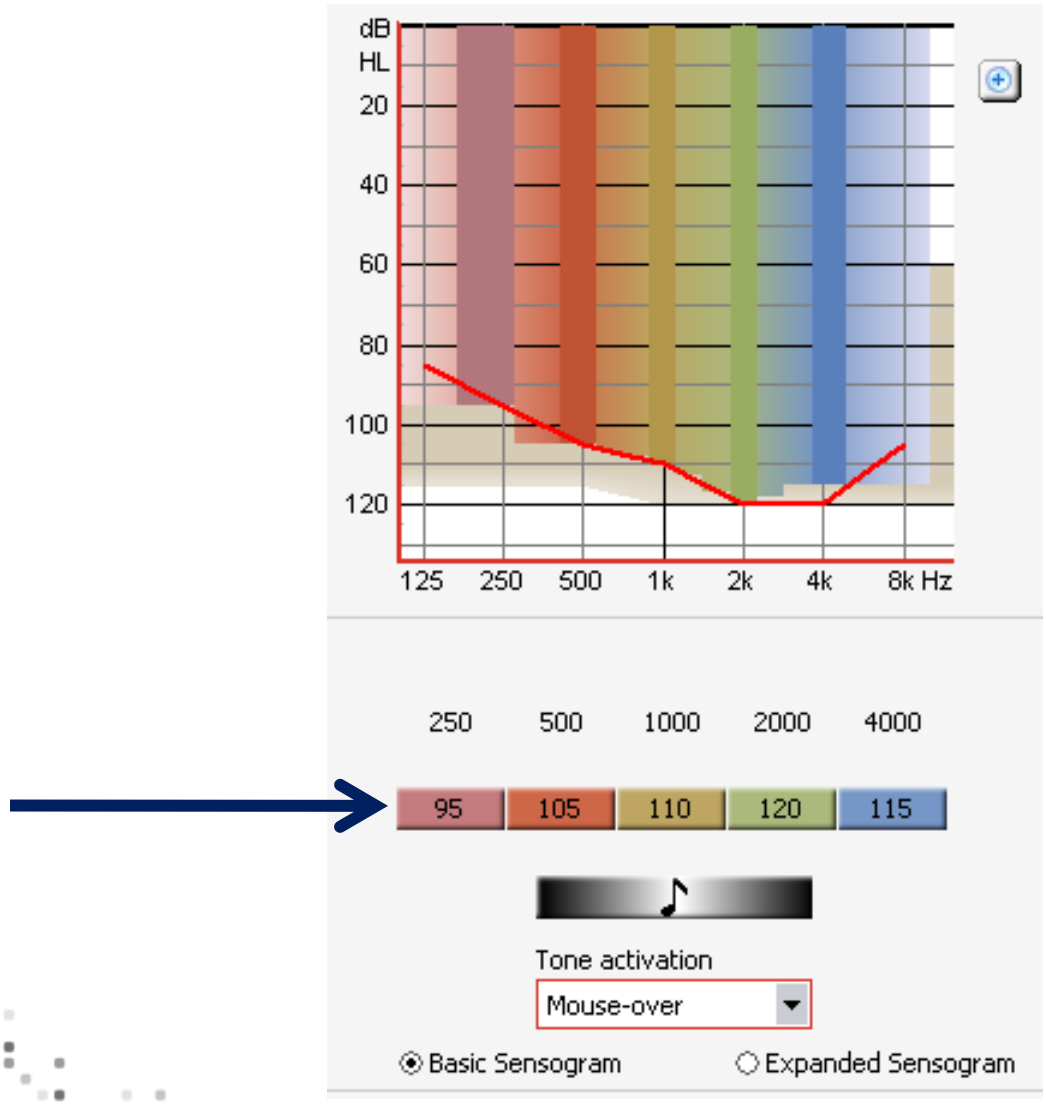
CHOOSING THE ACOUSTIC IDENTITY



250 HZ HANDLE



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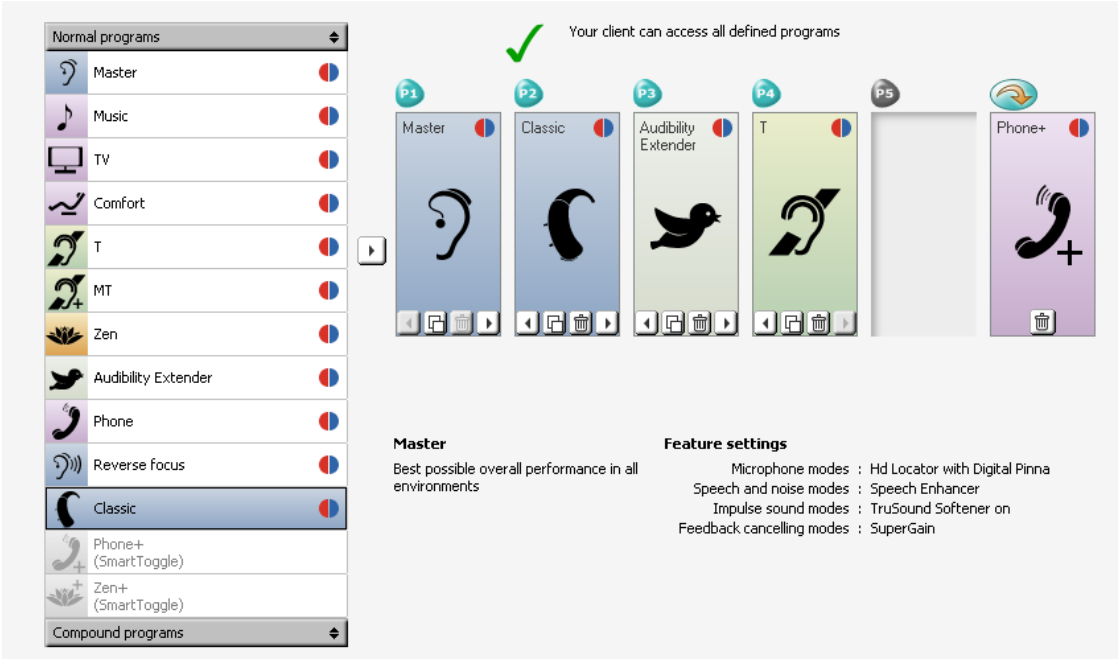
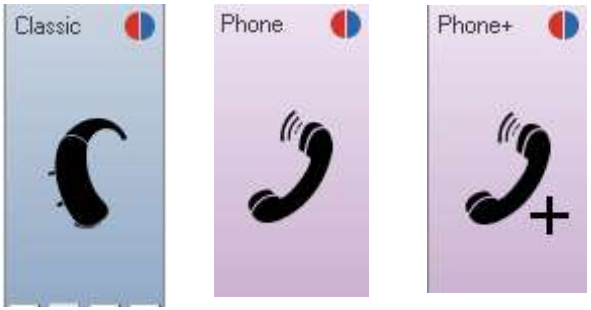
FITTING SUPER - PROGRAMS

- Compound programs
- Phone and Phone+
- Classic program (new)





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PHONE+

- Real time audio transmission between hearing aids
- Battery efficient
- For better signal-to-noise ratio

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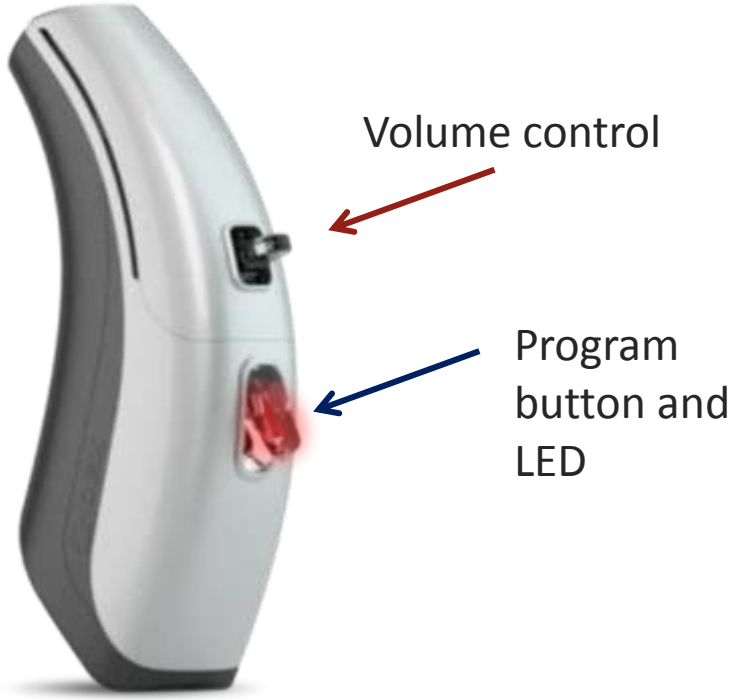
USER-FRIENDLY

- **SmartTones (default)**
- **Volume control button**
- **Combined Visual Indicator and program button**

  Light-emitting diode (LED)

  Flashes when
  - Hearing aid is in use
  - Signal is received from RC-DEX
  - A particular listening program is in use
  - Connection is established to hearing aid in the fitting process



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USER-FRIENDLY

- Size 675 battery
- Long battery life

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VERSATILITY

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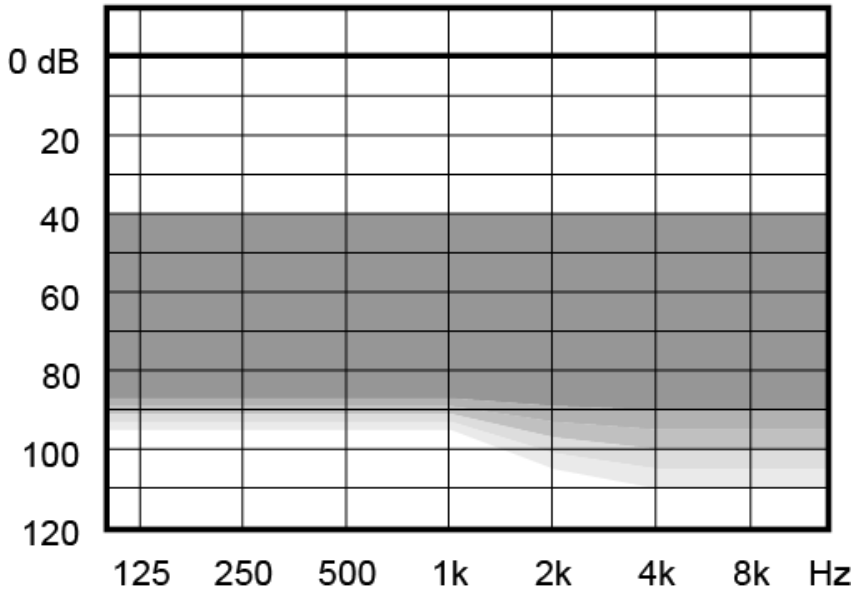
VERSATILITY

SUPER440 – FM option for moderate hearing loss

- Power P-receiver (RIC)
- For moderate to severe hearing loss
- Small hearing aid with long battery life
- FM
- Instant and custom ear tip solutions

Suggested fitting range



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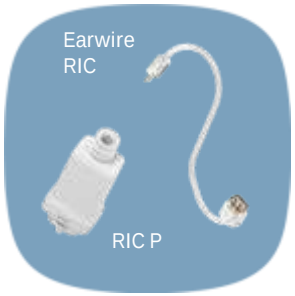
RECEIVER AND EARWARE



Custom receiver
Soft ear tip

Custom receiver
Hard ear tip

Instant receiver
Double ear tip

Instant receiver
Tulip ear tip

Moderate to severe hearing loss

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RECEIVER AND EARWARE

Custom hard earmould (output extender)

Custom hard earmould (regular sound bore)

Custom soft earmould (regular sound bore)

Severe to profound hearing loss

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MODELS & COLOURS

Brown		Warm beige
		Tan silk
		Cappucino brown
Grey		Titan grey
		Winter Silver
		Midnight black

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PERFORMANCE

	SUPER440
Max. peak output	138 dB SPL
Max. gain	78 dB SPL
Bandwidth	6100 Hz
Battery size	675
Battery life	375 hours

OTHER FEATURES

	SUPER440
Frequency shifting	Audibility Extender (linear frequency transposition)
Transient noise handling	TruSound Softener
Transmission of phone signal between hearing aids	Phone+
Focus	FreeFocus

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INTEREAR AND DIRECTIONALITY FEATURES

	SUPER440
IE synchronisation of volume and program shift	√
IE coordination of compression	√
IE coordination of noise reduction	√
Digital pinna	√
IE coordination of feedback cancelling	√
IE Zen	√

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SUPER - SUMMARY

Supports the overall need for audibility

- Audibility Extender
- Output Extender
- Connectivity (DEX, FM, Telecoil)

Small size design

- RITE-solution
- 675 battery

All day – all weather

- Weather Cover to protect microphones and minimise wind noise

User-friendly

- Long battery life
- Easy to change battery
- Combined visual indicator (LED) and program button

Flexibility

- Two receivers

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FUSION DESIGN AND USABILITY

NEW microphone cover with nano-coating

NEW telecoil

NEW program button

312 battery

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FUSION FLEXIBILITY

M-receiver
Mild-moderate loss

P-receiver
Moderate-severe loss

HP-receiver
Severe-profound loss

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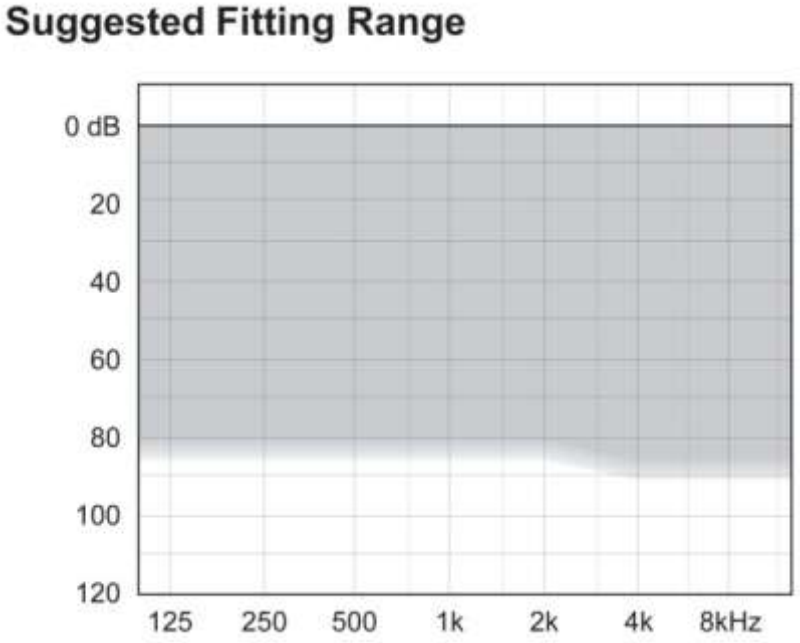
FUSION FLEXIBILITY – FITTING RANGES

M-receiver

Max output = 112 dB SPL

Max gain = 60 dB



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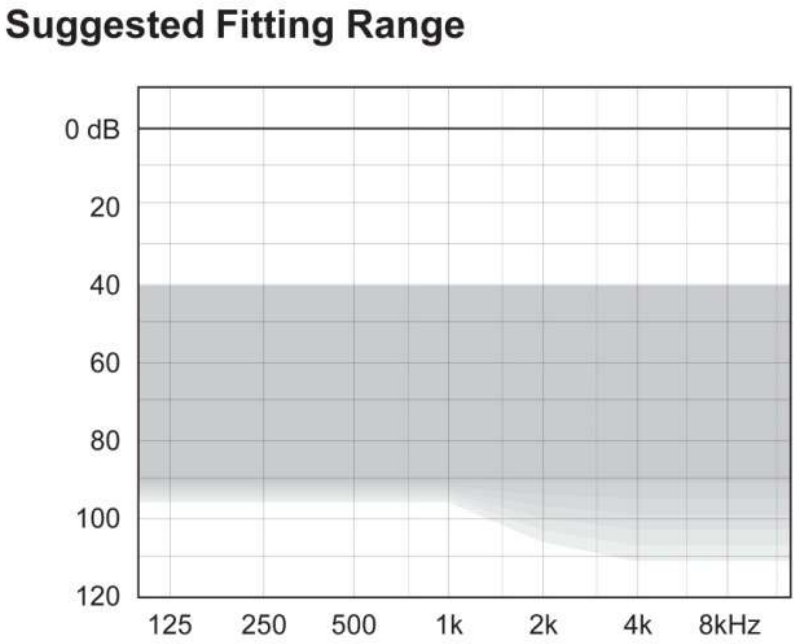
FUSION FLEXIBILITY – FITTING RANGES

P-receiver

Max output = 120 dB SPL

Max gain = 63 dB



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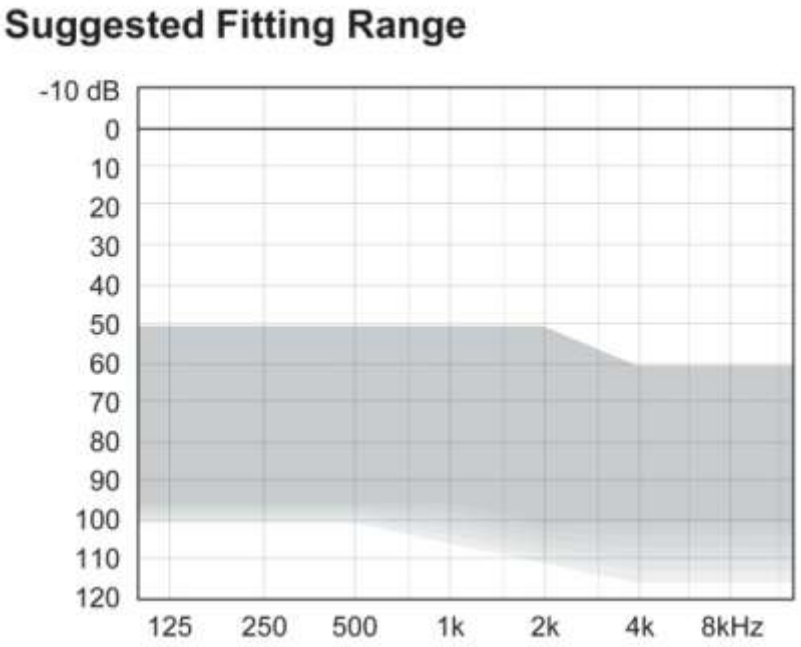
FUSION FLEXIBILITY – FITTING RANGES

HP-receiver

Max output = 132 dB SPL

Max gain = 74 dB



Have a SUPER Day!

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