

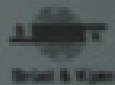
# HEARING PROTECTION SOLUTION

CATALOGUE





Head and Torso Simulator  
Type 4128C



Briel & Kjaer

# ***HEARING PROTECTION***

# // About us

With decades of experience in developing hearing protection, ZeroPlus efficiently select original protective products of high quality based on customer needs. Our advanced engineering technology and R&D capabilities ensure continuous iteration and evolution of our products.

ZeroPlus has a dedicated team formed by hearing technology professionals and testing experts. We employed digitized and intelligent production processes, supervising production throughout the entire process in accordance with medical-grade product regulations. Following PPE rules, our experts conduct comprehensive sampling tests for SNR, NRR, IPL as well as wearing and other tests, we've developed the ZeroPlus Hearfit Binaural Validation System to be swift, precise, and user-friendly. We also provide on line technical training, technical manuals, and other support based on customer requirements.

ZeroPlus has always been committed to the harmonious and friendly coexistence of humans and nature. Our products are designed for multiple reuses and feature Eco-friendly recycled packaging materials. Additionally, we have developed a range of hearing protection products for animals such as horses and dogs.



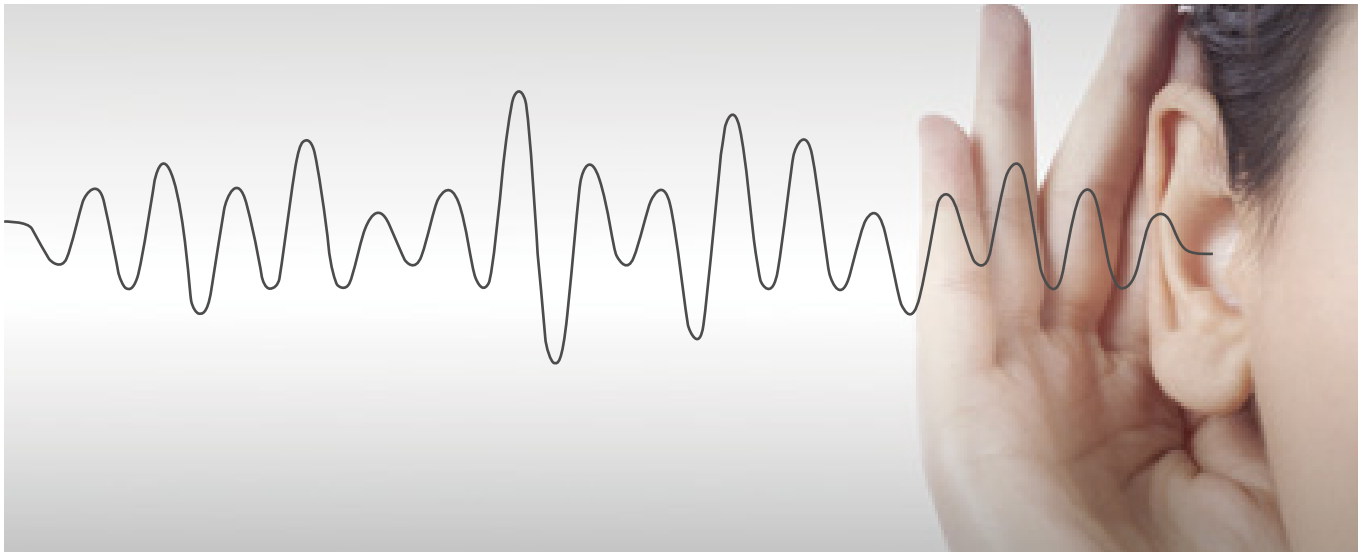


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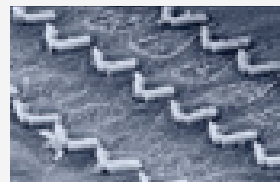
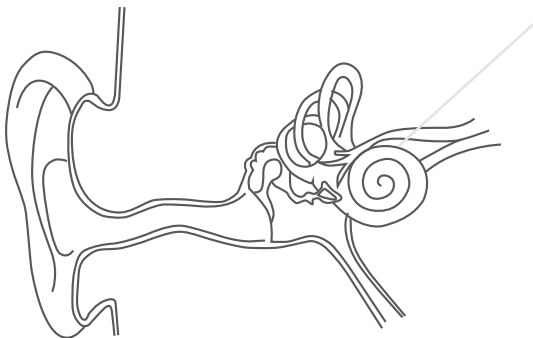
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# The Importance of Hearing Protection

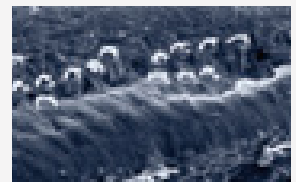
Easy To Damage- Always To Protect



Human ears are designed to pick up low levels of natural sounds. In an uninjured ear, the hair cells with their fine stereocilia can receive acoustic signal normally. All of our exciting machines and inventions have created a whole range of unnatural sounds that the ear isn't designed to handle. When the stereocilia are repeatedly exposed to excessive doses of noise over 85dB, the noise can significantly damage the ear-stereocilia. Damaged ears cannot be repaired, resulting in permanent hearing loss.



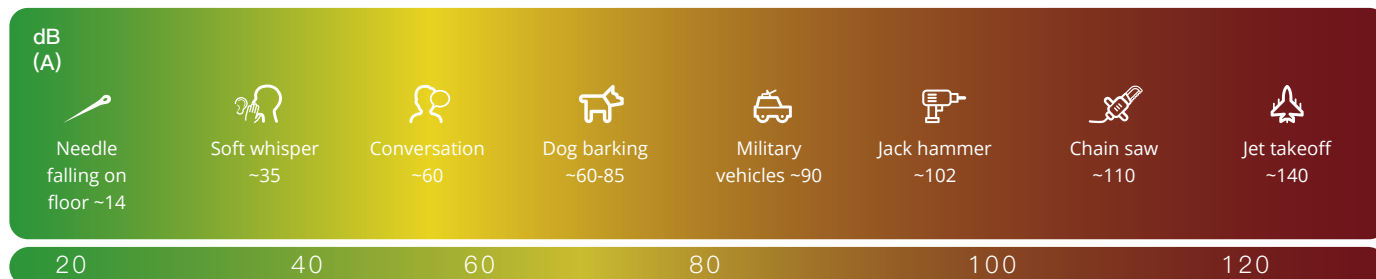
Normal, uninjured ear. An electron microscope shows the hair cells with their fine stereocilia, which are put into motion by sound waves.



Noise damaged ear. The stereocilia have been repeatedly exposed to loud noise and eventually broken. Permanent hearing loss has occurred.

## Continuous noise

**Continuous noise** Prolonged unprotected exposure above 85dB(A) may cause hearing loss. Wear hearing protection to help reduce exposure. Wear dual hearing protection, such as earplugs & earmuffs together, for extreme noise exposure.



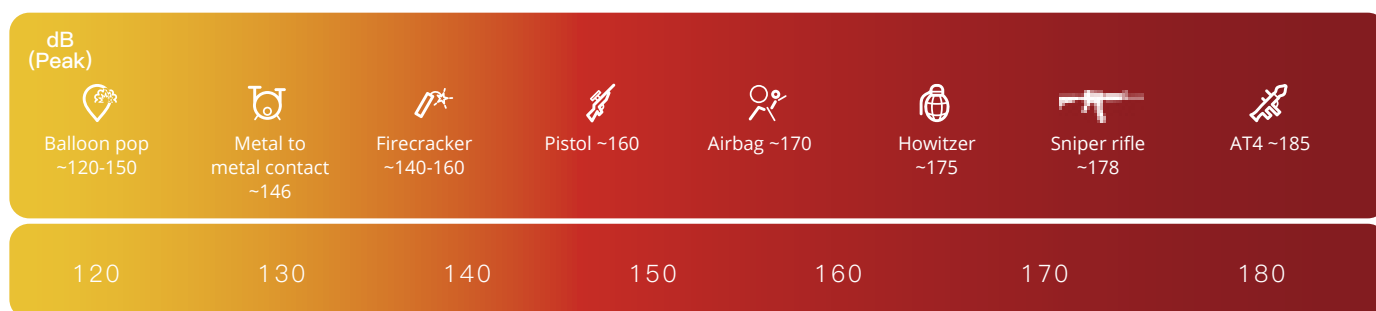
These examples are representative of typical sound levels dB(A) for these events and are used here for illustration purposes only.

\*Verify hearing protection requirements with local regulatory bodies.

## Impulse noise

**Impulsive sounds** are very short (less than 1 second) such as gunfire, explosions, machine or the “pop” of a pneumatic nail gun. These sounds typically have extremely fast onset and often reach very high sound pressure levels (SPL).

Unprotected exposures greater than 135 dB peak may cause permanent hearing loss. Wear hearing protection equipment to help reduce exposure.



These examples are representative of typical peak sound pressure levels (dB peak) for these events and are used here for illustration purposes only.

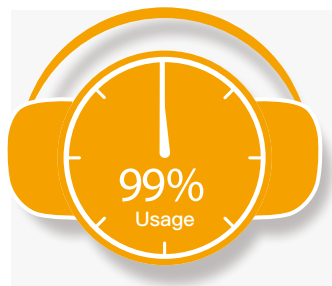
\*Verify hearing protection requirements with local regulatory bodies.



We can only tolerate a limited daily dosage of noise. The damage to the ear caused by noise depends on the duration of exposure and sound level. For worker, the machine, alarm, communication to be heard is critical. For soldiers and hunters, they must be able to hear incoming radio signals, a snapping twig, foot-steps on the other side of a wall or approaching vehicles and aircraft. Communication over the radio must be possible, even in deafening combat situations. In some specific scenarios, hearing loss will occur rapidly without hearing protection. Therefore, wearing hearing protection all the time is the only guarantee to protect hearing.



100% usage gives the expected protection



99% usage just few minutes of unprotected exposure to hazardous noise per day, significantly increases the risk of hearing damage



Significantly limited



# The Hearing Protection Application

ZeroPlus products are developed for a variety of scenarios where it is critical to balance work safety and communication. Industrial environments, construction sites, agriculture and forestry are a few examples.

We have developed a wide range of products to ensure there is a ZeroPlus earplugs or headset to fit every need. Headband models for all round use, and models with helmet attachments for people who wear safety helmets at work.

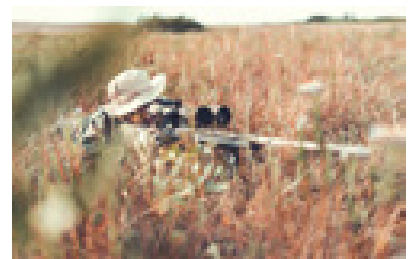
To ensure easy use of our products and good functions for all environments we use advance technology such as Safety Listening Technology (SLT), Ambient-Dependent Technology (ADT), Acoustic Meta-Materials (AMM), AM/FM Radio Technology, Mobile Application (APP), Multi-Radio Technology (MRT) and Bluetooth.



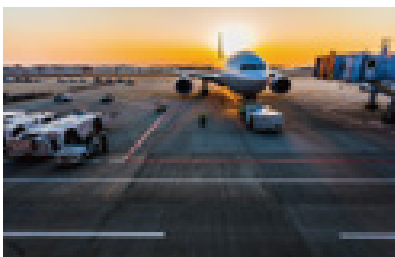
Oil and gas



Mining



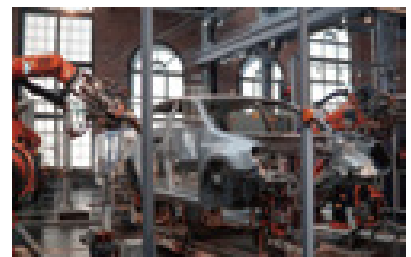
Hunting and sport shooting



Airport ground handling



Rocket launching



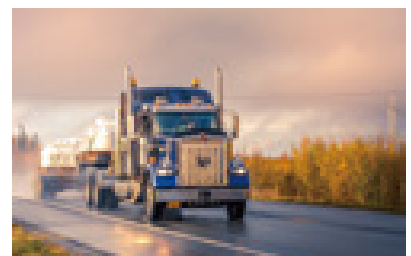
Industry



Energy and utilities



Construction



Transportation

# Functions And Features

## New Advanced Safety Listening Technology ( SLT )

The Safety Listening Technology helps the users to listen to ambient sounds while wearing hearing protection. Listening to the ambient sound includes natural listening and auditory strengthening listening. Sound reproduction output is limited to a maximum of 82 dB to prevent damage to hearing.

## Ambient-Dependent Technology ( ADT )

Ambient-Dependent Technology introduces an advanced listening feature: It allows the user to adapt and optimize the environmental listening function to different scenarios by switching mode.

- **Mode 1: Observation**

Highest volume and widest frequency response to maximize hearing. To be used when the user is still over watch, hide spot, stop to listen, etc.

- **Mode 2: Vigilance**

High volume with reduced high frequencies to limit sounds such as footsteps on gravel, grass moving under feet, equipment moving on body.

- **Mode 3: Conversation**

Maximizes the frequencies important for face-to-face communications for the natural speech while lowering the frequencies outside of the average speech band.

- **Mode 4: Comfort**

Low volume and narrow frequency response to be used when in noise for long periods of time (vehicle, air transport) where environmental listening is not prioritized over communications and overall comfort.

## Acoustic Metamaterials ( AMM )

To meet customer's high attenuation requirement, ZeroPlus engineer worked several years on material. Acoustic Metamaterials is a new material discovered by ZeroPlus team and applied on hearing protection products. Acoustic Metamaterials can manipulate and control sound waves in ways that are not possible in conventional materials. It could not just achieve high attenuation, it could also be adjusted the noise reduction frequency according to difference use environment. Especially with good performance on low frequency noise reduction.

## Control Via Mobile Application ( APP )

With the APP, users can adjust the volume, customize the equalization, change listening modes, and adjust noise reduction according to their needs.

# Functions And Features

## Multi-Radio Technology ( MRT )

### Multi-Channel Communication System

- Supports up to 8 devices simultaneously transmitting data and voice.
- Unlimited number of receiving devices can participate.
- Ideal for complex communication environments due to its efficiency, reliability, and flexibility.
- Enhances multitasking and advanced communication strategies.

### Multi-Stage Relay Technology

- Extends signal transmission distance and improves coverage.
- Devices act as relays to progressively forward the signal.
- Overcomes limitations caused by distance and physical barriers.
- Expands the overall signal coverage area.

### Full Duplex Radio

- Simultaneous sending and receiving of data.
- No need to switch between modes.
- Reduced delays and waiting times.
- Analogy to natural conversation.



# Function Symbols

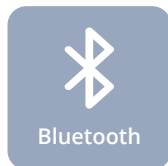
To help you to understand the functionality of the products you will find below symbols on each product page.



Hearing protection with Safety Listening Technology (SLT).



Hearing protection with Ambient-Dependent Technology (ADT).



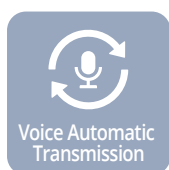
Hearing protection with Bluetooth technology, for wireless connection to devices.



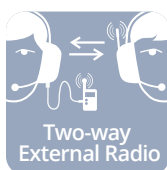
APP control the volume, adjust EQ, personalize noised reduction, switch mode.



Acoustic Metamaterials for low frequency noise reduction (AMM).



Hearing protection with Voice Automatic Transmission (VOX).



Hearing protection for communication with Two-way External Radio.



Hearing protection with Built-in Multi Radio.



Hearing protection with built in AM/FM-Radio receiver



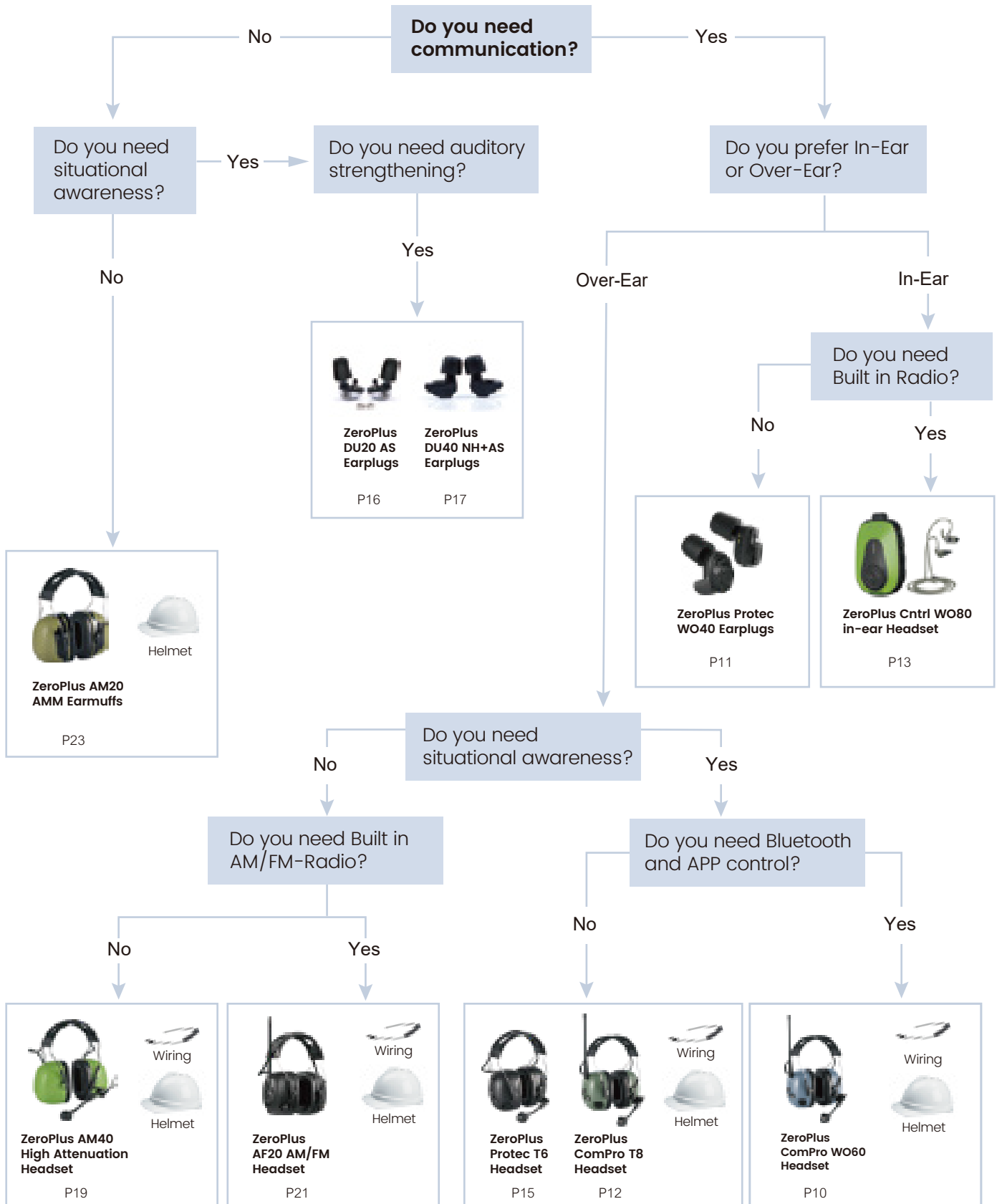
Testable with ZeroPlus Hearfit-V1 to validate if the hearing protection equipment fit well.

## Essential products and functions

					
ComPro WO60	ComPro T8	Cntrl WO80	AM40 High Attenuation	AF20 AM/FM	Protec WO40
					
					
					
					
					
					
					
					
					
					

# Selection Guide

Help you find the right hearing protection for your needs



# Ambient-Dependent Range

# Ambient-Dependent Range

## ZeroPlus ComPro WO60 Headset

ZeroPlus ComPro WO60 Headset provides a protective communication solution with Multi-Radio Technology, Bluetooth connectivity Technology, safety listening Technology, and Ambient-Dependent Technology for safe ambient listening and communicate, with the option to connect external equipment. In addition to protecting you from dangerous noise, it makes communication easy. ZeroPlus ComPro WO60 Headset offers wireless communication in noisy environments. Suitable for work in industrial, construction and ground handling applications, where hands-free communication and hearing protection are needed.



### Features And Benefits

- Safety listening hearing protector
- With Ambient-Dependent Technology (ADT), it allows users to adjust the amplitude and frequency for specific conditions by button
- Built-in Multi Radio communication 16 channels in the PMR 446 MHz band
- A separate audio input enables connecting equipment such as mobilephones or external Two-way Radios
- IP54
- Connects devices up to 30 feet, with audio input, Wireless Bluetooth dual mode
- Voice Automatic Transmission (VOX)
- Voice guided menu system
- Dynamic noise canceling microphone
- Battery-saving mode 2xAA batteries, lasting for approx 18 hours of use. The headset will turn off after 4 hrs of non-use to save batteries
- APP-control the volume, adjust EQ, personalize noised reduction, switch mode
- Compatible with ZeroPlus Hearfit Binaural Validation System



### Connects With

- Bluetooth compatible devices
- Two-way External Radio

### Laboratory Attenuation Values

According to EN 352-1: 2020

Frequency ( Hz )	63	125	250	500	1000	2000	4000	8000
Mean Attenuation ( dB )	13.6	15.7	23.3	35.6	44	35.5	31.1	36.2
Standard Deviation ( dB )	3.3	1.5	2.6	3.4	3.3	2.5	2.4	2.2
APV ( dB )	10.3	14.2	20.7	32.2	40.7	33	28.7	34

SNR=30dB H=29dB M=28dB L=19dB

According to ANSI S3.19-1974

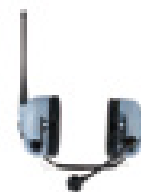
Frequency ( Hz )	125	250	500	1000	2000	3150	4000	6300	8000
Average Attenuation ( dB )	14.4	21.5	26.2	33.1	30.1	36.2	34.5	31.8	30.3
Standard Deviation ( dB )	3.3	2.4	2.1	2.2	3.8	0.8	2.2	2.3	2.2

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### ZEROPLUS COMPRO WO60 HEADSET

SNR: 30dB

#### Other ZEROPLUS COMPRO WO60 HEADSET options



#### ZEROPLUS COMPRO WO60

Neck fitting  
SNR: 30dB



#### ZEROPLUS COMPRO WO60

Helmet attachment  
SNR: 31dB

#### Operating

**Frequency Range:** PMR 420 MHz to LPD 510 MHz

#### Customizable

**Frequency Range:** PMR 150 MHz to LPD 960 MHz

#### Default Shipment

**Frequency:** PMR 440.125 MHz to LPD 455.125 MHz

#### Bluetooth

**Version:** 5.3

#### Battery Type:

Rechargeable battery

#### Operating Time:

Up to 18 hours ( 90 stby / 5 tx / 5 rx )

#### Net Weight

**(incl. batteries):**

Approx.449g ( Headband )  
Approx.472g ( Helmet att )  
Approx.434g ( Neckband )

#### Operating

**Temperature:**

-20°C to +55°C  
( Battery dependent )

#### ZEROPLUS COMPRO WO60 HEADSET Accessories

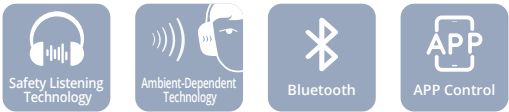
AT10	Antenna
MC10	Microphone
BT10	Rechargeable battery
MT10	Mic tape
EC10	Ear cushion
PB10	Portable bag



# Ambient-Dependent Range

## ZeroPlus Protec WO40 Earplugs

ZeroPlus Protec WO40 Earplugs help protect your hearing and improve situational awareness and communication in challenging environments. It comes with Bluetooth, and the app can connect with a mobile phone or other electronic devices to control the volume, switch modes, and answer phone calls, etc. The earplugs can be charged via the USB jack on the charging case. The case also provides a convenient way to store the earplugs when not in use. The small and lightweight design helps improve the overall comfort and user experience and makes them compatible with most head-mounted ZeroPlus personal safety equipment (PPE), such as helmets and earmuffs.



### Features And Benefits

- Safety listening hearing protector
- Connects devices up to 30 feet, with audio input, wireless Bluetooth dual mode
- Complies with IP54 with cover and USB port close
- With Ambient-Dependent Technology (ADT), it allows users to adjust the amplitude and frequency for specific conditions by button
- Set-in microphone
- Up to 16 hours of battery life with recharged case
- APP-Control the volume, adjust EQ, personalize noised
- True wireless design
- Compatible with ZeroPlus Hearfit Binaural Validation System

#### Connects With

- Bluetooth compatible devices



### Laboratory Attenuation Values

According to EN 352-1: 2020

Frequency ( Hz )	63	125	250	500	1000	2000	4000	8000
Mean Attenuation ( dB )	26.5	29.1	24	23.7	29.4	30.5	50	49.4
Standard Deviation ( dB )	2.4	1	2.8	1.2	1.1	1.9	2.3	2.1
APV ( dB )	24.1	28.1	21.2	22.5	28.3	28.6	47.7	47.3

SNR=30dB H=31dB M=26dB L=24dB

Storage Temperature ( Complete Kit )	-20 to +55°C
Earplugs Operating Temperature	-20 to +55°C
Charging Case Operating Temperature	-20 to +55°C

### ZEROPLUS PROTEC WO40 EARPLUGS

SNR: 30dB



ZEROPLUS PROTEC WO40  
EARPLUGS Charging Case

<b>SNR:</b>	Personal protective equipment directive 89/686/EEC
<b>Bluetooth Version:</b>	5.3
<b>Battery Type:</b>	Earplugs (50mAh X 2) Charging case (Standard AAA batteries or DC5V input)
<b>Microphone Type:</b>	Omni-directional
<b>Net Weight:</b>	USB cable weight: 33g Charging case weight: 110g 1 Pair of earplugs weight: 9g

### ZEROPLUS PROTEC WO40 EARPLUGS Accessories

F10	Comply foam eartips ( S, M, L )
US01	Universal silicone eartips
SW10	Seal wings ( S, M, L )
UC10	USB-C
SC10	Black silicone cord
BT20	Standard AA batteries
CC10	Charging case



# Ambient-Dependent Range ZeroPlus ComPro T8 Headset

ZeroPlus ComPro T8 Headset offers a protective communication solution with Multi-Radio Technology, a safety listening Technology, and Ambient-Dependent Technology to ensure safe ambient listening and communication. This headset is designed to provide clear communication in noisy work environments while protecting users from harmful noise. It is suitable for use in industrial, construction, and ground handling applications where hands-free communication and hearing protection are needed, without reliance on Bluetooth or mobile phone connectivity.

## Features And Benefits

- Safety listening hearing protector
- With Ambient-Dependent Technology (ADT), it allows users to adjust the amplitude and frequency for specific conditions by button
- Built-in Multi Radio communication
- A separate audio input enables connecting equipment such as mobile phones or external Two-way Radios
- IP54
- Voice Automatic Transmission (VOX)
- Auto power off function
- Voice guided menu system
- Dynamic noise canceling microphone
- Battery-saving mode, 2xAA lasting for approx 18 hours of use. The headset will turn off after 4 hrs of non-use to save batteries
- Compatible with ZeroPlus Hearfit Binaural Validation System

### Connects with

- Two-way External Radio



## Laboratory Attenuation Values

According to EN 352-1: 2020

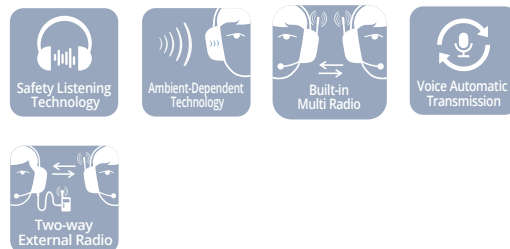
Frequency (Hz)	63	125	250	500	1000	2000	4000	8000
Mean Attenuation (dB)	13.6	15.7	23.3	35.6	44	35.5	31.1	36.2
Standard Deviation (dB)	3.3	1.5	2.6	3.4	3.3	2.5	2.4	2.2
APV (dB)	10.3	14.2	20.7	32.2	40.7	33	28.7	34

SNR=30dB H=31dB M=26dB L=24dB

According to ANSI S3.19-1974

Frequency (Hz)	125	250	500	1000	2000	3150	4000	6300	8000
Average Attenuation (dB)	14.4	21.5	26.2	33.1	30.1	36.2	34.5	31.8	30.3
Standard Deviation (dB)	3.3	2.4	2.1	2.2	3.8	0.8	2.2	2.3	2.2

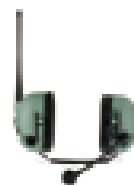
NRR 24



## ZEROPLUS COMPRO T8 HEADSET

SNR: 30dB

### Other ZEROPLUS COMPRO T8 HEADSET Options



#### ZEROPLUS COMPRO T8

Neck fitting  
SNR: 30dB



#### ZEROPLUS COMPRO T8

Helmet attachment  
SNR: 31dB

### Operating

**Frequency Range:** PMR 420 MHz to LPD 510 MHz

### Customizable

**Frequency Range:** PMR 150 MHz to LPD 960 MHz

### Default Shipment

**Frequency:** PMR 440.125 MHz to LPD 455.125 MHz

### Bluetooth

**Version:** 5.3

### Battery Type:

Rechargeable battery pack included or 2x standard AA batteries

**Operating Time:** 18 hours of use

### Net Weight

**(incl. batteries):** Approx 449g (Headband)  
Approx 472g (Helmet att)  
Approx 434g (Neckband)

### Operating

**Temperature:** -20°C to +55°C  
(Battery dependent)

### ZEROPLUS COMPRO T8 HEADSET Accessories

AT10	Antenna
MC10	Microphone
BT10	Rechargeable battery
MT10	Mic tape
EC10	Ear cushion
PB10	Portable bag

# Ambient-Dependent Range ZeroPlus Cntrl WO80 in-ear Headset

## SAFEGUARDING COMMUNICATION SOLUTION

WO80 is introducing multiple innovative technologies to help workers stay protected and productive. With the WO80 central control unit headset, you can hear environment safely. It include Multi-Radio Technology and Ambient-Dependent Technology to ensure safe ambient listening and communication. you can also use Bluetooth for mobile phone connectivity.

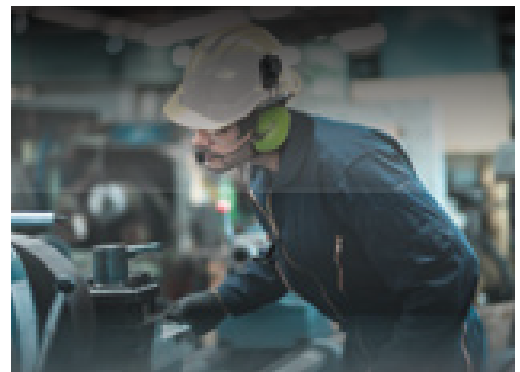


## Features And Benefits

- Safety listening hearing protector
- With Ambient- Dependent Technology(ADT) , it allows users to adjust the amplitude and frequency for specific conditions by button
- Water and dust resistant ( IP54 )
- Removable battery with USB-C charging port
- Close-connect push-to-talk
- Bluetooth Management
- Push-To-Talk & Call management
- Channel select & Fit test
- Secure headset connection
- Volume & Menu controls
- Removable clip
- LED indicator



- Headset connector
- In-ear speech microphone
- Environmental listening microphone
- Replacable eartips in multiple types and sizes
- Earhook for personalized and secure wearing



## Earmuff Compatibility. ( Coming soon )

The WO80 central control unit can also be connected to the CW-10 for an over-the-ear configuration( Headset and CW-10 available separately ).

\* No environmental listening function or real-time fit test.



WO80 Central Control Unit



CW-10



AM40 High Attenuation Headset

# Protec Headset Solutions



# Protec Headset Solutions

## ZeroPlus Protec T6 Headset

ZeroPlus Protec T6 Headset is specially crafted for shooting sports, providing a protective communication solution that enhances the shooting experience. It is equipped with Two-way External Radio and a safety listening microphone to ensure clear communication among participants while maintaining the integrity of the auditory environment. The headset is designed to protect users from the loud noises associated with shooting activities, ensuring their hearing is safeguarded without compromising the ability to communicate effectively. This headset is ideal for shooting ranges and competitive shooting events, where the need for clear communication and hearing protection is essential. It offers a straightforward and reliable solution without the need for complex features, focusing on the core requirements of a shooting sport environment.



### Features And Benefits

- Safety listening hearing protector
- A separate audio input enables connecting equipment such as mobile phones or external Two-way Radios
- IP54
- Voice Automatic Transmission(VOX)
- Auto power off function
- Voice guided menu system
- Dynamic noise canceling microphone
- Battery-saving mode 2xAA batteries, lasting for approx 50 hours of use
- Compatible with ZeroPlus Hearfit Binaural Validation System



### Connects With

- Two-way External Radio

### Laboratory Attenuation Values

According to EN 352-1: 2020

Frequency ( Hz )	63	125	250	500	1000	2000	4000	8000
Mean Attenuation ( dB )	13.6	15.7	23.3	35.6	44	35.5	31.1	36.2
Standard Deviation ( dB )	3.3	1.5	2.6	3.4	3.3	2.5	2.4	2.2
APV ( dB )	10.3	14.2	20.7	32.2	40.7	33	28.7	34

SNR=30dB H=29dB M=28dB L=19dB

According to ANSI S3.19-1974

Frequency ( Hz )	125	250	500	1000	2000	3150	4000	6300	8000
Average Attenuation ( dB )	14.4	21.5	26.2	33.1	30.1	36.2	34.5	31.8	30.3
Standard Deviation ( dB )	3.3	2.4	2.1	2.2	3.8	0.8	2.2	2.3	2.2

NRR 24

### ZEROPLUS PROTEC T6 HEADSET

NR: 30dB

### Other ZEROPLUS PROTEC T6 HEADSET Options



**ZEROPLUS PROTEC T6**  
Neck fitting  
SNR: 30dB



**ZEROPLUS PROTEC T6**  
Helmet attachment  
SNR: 31dB

**Battery Type:** Rechargeable battery pack included or 2x standard AA batteries

**Operating Time:** 50 hours of use

**Net Weight (incl. batteries):** Approx.430g ( Headband )  
Approx.453g ( Helmet att )  
Approx.416g ( Neckband )

**Operating Temperature:** -20°C to +55°C  
( Battery dependent )

### ZEROPLUS PROTEC T6 HEADSET Accessories

MC10	Microphone
BT10	Rechargeable battery
MT10	Mic tape
EC10	Ear cushion
PB10	Portable bag

# Protec Headset Solutions

## ZeroPlus DU20 AS Earplugs

ZeroPlus DU20 AS Earplugs , universal hearing protection earplugs, are designed for impulse noise environment. They can highly identify environmental sound, distinguish sound signals, and instantly defend against impulse and instantaneous noise, giving a good hearing protection. For example, when shooting and collision happen, DU20 electronic earplugs could quickly perceive sound signals and attenuate the noise to a comfortable and natural listening level.

DU20 electronic earplugs use DSP digital chips, hypersensitive microphone and unique wide-dynamic compression signal processor to provide high fidelity and flexibility. They improve language identification under noisy environment.

### Features And Benefits

- Auditory strengthening
- Continuous + Impulse noise hearing protection
- Various functional earbuds, silicone reusable and durable earbuds, soft and comfortable foam earbuds are provided.
- A10 battery
- Intuitive one - button operation turns unit on and off



### ZEROPLUS DU20 AS EARPLUGS

Battery Type:	A10 Battery
Operating Time:	Up to 112 hours continuous use
Net Weight (incl. batteries):	3.54g
Operating Temperature:	-20°C to +55°C ( Battery dependent )

Item	Test Program	Maximum Gain (Measured value allowable deviation ± 5dB)	Maximum Output (The measured value should be no bigger than the nominal value. ± 3dB)	Harmonic Distortion	Battery Model	Rated Current(mA)	Battery Voltage(V)
DU20	Program 1	9	85	< 5%	A10	0.95	1.4

# Protec Headset Solutions

## ZeroPlus DU40 NH+ AS Earplugs

ZeroPlus DU40 NH+ AS Earplugs, universal hearing protection earplugs, are designed for impulse noise environment. They can highly identify environmental sound, distinguish sound signals, and instantly defend against impulse and instantaneous noise, giving a good hearing protection. It includes 2 programs. Natural hearing+Noise reduction & Auditory strengthen +Noise reduction. You can adjust according to ambient by switch the button.

DU40 electronic earplugs use DSP digital chips, hypersensitive microphone and unique wide-dynamic compression signal processor to provide high fidelity and flexibility. They improve language identification under noisy environment.

### Features And Benefits

- Natural hearing + Noise reduction
- Auditory strengthen + Noise reduction
- Various functional earbuds, silicone reusable and durable earbuds, soft and comfortable foam earbuds are provided.
- A10 battery
- Intuitive one - button operation turns unit on and off



### ZEROPLUS DU40 NH+ AS EARPLUGS

Battery Type:	A10 Battery
Operating Time:	Up to 112 hours continuous use
Net Weight (incl. batteries):	3.56g
Operating Temperature:	-20°C to +55°C ( Battery dependent )

Item	Test Program	Maximum Gain (Measured value allowable deviation ± 5dB)	Maximum Output (The measured value should be no bigger than the nominal value. ± 3dB)	Harmonic Distortion	Battery Model	Rated Current(mA)	Battery Voltage(V)
DU40	Program 1	0	85	< 5%	A10	0.95	1.4
	Program 2	9	85				

# High Attenuation Headset





# High Attenuation Headset

## ZeroPlus AM40 High Attenuation Headset

ZeroPlus AM40 High Attenuation Headset is engineered for superior noise reduction, crucial in high-decibel settings. It significantly attenuates ambient noise, safeguarding wearers from potential hearing damage. With its comfortable design and effective insulation, the headset enhances focus and productivity in noisy work environments, making it an indispensable tool for professionals seeking top-notch hearing protection.



### Features And Benefits

- IP54
- Hearing protector
- Acoustic Metamaterials (AMM)
- Noise cancelling waterproof

#### Connects With

- Two-way External Radio



### Laboratory Attenuation Values

According to EN 352-1: 2020

Frequency ( Hz )	63	125	250	500	1000	2000	4000	8000
Mean Attenuation ( dB )	16.4	19.9	24.3	36.4	44.8	37.7	37	37.4
Standard Deviation ( dB )	1.1	1.4	2.3	3.4	3.9	0.9	1.5	1.7
APV ( dB )	15.3	18.5	22	33	40.9	36.8	35.5	35.7

SNR=35dB H=37dB M=32dB L=21dB

According to ANSI S3.19-1974

Frequency ( Hz )	125	250	500	1000	2000	3150	4000	6300	8000
Average Attenuation ( dB )	17.1	21.9	24.8	35.8	34.6	31.8	32.2	33	30.8
Standard Deviation ( dB )	0.7	0.7	0.4	1.4	1.6	1.8	1.3	2.8	1.2

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### ZEROPLUS AM40 HIGH ATTENUATION HEADSET

SNR:35dB

#### Other ZEROPLUS AM40 HIGH ATTENUATION HEADSET Options



#### ZEROPLUS AM40 HIGH ATTENUATION HEADSET

Neck fitting  
SNR:35dB



#### ZEROPLUS AM40 HIGH ATTENUATION HEADSET

Helmet attachment  
SNR:36dB

#### Net Weight

(incl. batteries):

Approx.355g ( Headband )  
Approx.378g ( Helmet att )  
Approx.340g ( Neckband )

#### Operating

Temperature:

-20°C to +55°C

#### ZEROPLUS AM40 HIGH ATTENUATION HEADSET Accessories

MC10	Microphone
MT10	Mic tape
EC10	Ear cushion
PB10	Portable bag



# AM/FM Headset



# AM/FM Headset

## ZeroPlus AF20 AM/FM Headset

ZeroPlus AF20 AM/FM Headset is a premium noise-cancelling device tailored for high-noise environments. It offers superior sound insulation to protect hearing and enhance focus, making it ideal for professionals. Equipped with AM/FM Radio Technology, it allows users to scan, save, and recall their favorite stations effortlessly. The headset also features wireless Bluetooth connectivity, extending its reach up to 30 feet for a seamless audio experience without the need for cables.



### Features And Benefits

- Hearing protector
- AM/FM Radio Technology
- IP54
- Noise cancelling waterproof

#### Connects With

- Bluetooth compatible devices
- Two-way External Radio



#### Laboratory Attenuation Values

According to EN 352-1: 2020

Frequency ( Hz )	63	125	250	500	1000	2000	4000	8000
Mean Attenuation ( dB )	13.6	15.7	23.3	35.6	44	35.5	31.1	36.2
Standard Deviation ( dB )	3.3	1.5	2.6	3.4	3.3	2.5	2.4	2.2
APV (dB)	10.3	14.2	20.7	32.2	40.7	33	28.7	34

SNR=30dB H=29dB M=28dB L=19dB

According to ANSI S3.19-1974

Frequency ( Hz )	125	250	500	1000	2000	3150	4000	6300	8000
Average Attenuation ( dB )	14.4	21.5	26.2	33.1	30.1	36.2	34.5	31.8	30.3
Standard Deviation ( dB )	3.3	2.4	2.1	2.2	3.8	0.8	2.2	2.3	2.2

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### ZEROPLUS AF20 AM/FM HEADSET

SNR: 30dB

#### Other ZEROPLUS AF20 AM/FM HEADSET Options



#### ZEROPLUS AF20 AM/FM HEADSET

Neck fitting  
SNR: 30dB



#### ZEROPLUS AF20 AM/FM HEADSET

Helmet attachment  
SNR: 31dB

#### Bluetooth Version:

5.3

#### Battery Type:

Rechargeable battery pack included or 2x standard AA batteries

#### Operating Time:

50 hours of use

#### Net Weight (incl. batteries):

Approx.425g ( Headband )  
Approx.448g ( Helmet att )  
Approx.410g ( Neckband )

#### Operating Temperature:

-20°C to +55°C  
( Battery dependent )

#### ZEROPLUS AF20 AM/FM HEADSET Accessories

AT10	Antenna
MC10	Microphone
MT10	Mic tape
EC10	Ear cushion
PB10	Portable bag

# Earmuffs



# Earmuffs

## ZeroPlus AM20 AMM Earmuffs

ZeroPlus AM20 AMM Earmuffs are sleek noise-canceling ear muffs designed for professionals working in high-noise environments. These earmuffs with our new acoustic meta-material provide excellent sound insulation, safeguarding the user's hearing while improving concentration and productivity. What sets the AM20 apart is its high attenuation for low frequency, offering greater comfort and ease of wear. Additionally, the wider headband ensures a more comfortable fit compared to other high-attenuation earmuffs, making it the preferred choice for those seeking a balance of protection and comfort.

### Features And Benefits

- Hearing protector
- Acoustic metamaterials (AMM)
- Widen headband & Wire headband
- IP54
- Battery free



#### Laboratory Attenuation Values

According to EN 352-1: 2020

Frequency ( Hz )	63	125	250	500	1000	2000	4000	8000
Mean Attenuation ( dB )	16.4	19.9	24.3	36.4	44.8	37.7	37	37.4
Standard Deviation ( dB )	1.1	1.4	2.3	3.4	3.9	0.9	1.5	1.7
APV ( dB )	15.3	18.5	22	33	40.9	36.8	35.5	35.7

SNR=35dB H=37dB M=32dB L=21dB

According to ANSI S3.19-1974

Frequency ( Hz )	125	250	500	1000	2000	3150	4000	6300	8000
Average Attenuation ( dB )	17.1	21.9	24.8	35.8	34.6	31.8	32.2	33	30.8
Standard Deviation ( dB )	0.7	0.7	0.4	1.4	1.6	1.8	1.3	2.8	1.2

NRR 24



### ZEROPLUS AM20 AMM EARMUFFS

SNR: 35 dB

#### Other ZEROPLUS AM20 AMM EARMUFFS Options



#### ZEROPLUS AM20 AMM EARMUFFS

Neck fitting  
SNR: 35 dB



#### ZEROPLUS AM20 AMM EARMUFFS

Helmet attachment  
SNR: 36 dB

#### Net Weight With AMM:

Approx.396g ( Headband )  
Approx.419g ( Helmet att )  
Approx.381g ( Neckband )

#### Without AMM:

Approx.306g ( Headband )  
Approx.329g ( Helmet att )  
Approx.291g ( Neckband )

#### Operating Temperature:

-20°C to +55°C

### ZEROPLUS AM20 AMM EARMUFFS Accessories

EC10	Ear cushion
PB10	Portable bag

# ZeroPlus Hearfit Binaural Validation System

# ZeroPlus Hearfit Binaural Validation System

## Is your hearing protection fit for purpose?

Harmful noise ranks among the top three occupational health hazards, and it is now formally acknowledged as an irreversible health risk under the PPE Regulation (EU) 2016/425. It is categorized at the highest risk level, alongside other critical safety measures such as respiratory and fall protection.

### Implication of the change in categorisation.

#### Your supplier of hearing protection products

Producers of hearing protection devices are now required to adhere to more rigorous ongoing quality control measures. This includes comprehensive product quality checks as well as site-wide quality assurance protocols for the manufacturing process.

#### Your users of hearing protection products

Taking precautions against harmful noise is of utmost importance, and it is crucial to utilize the appropriate protective equipment and wear it properly. The PPE Regulation acknowledges this necessity, providing users with the assurance that the products they rely on are subject to continuous, rigorous oversight to ensure compliance.

#### As a Safety Officer what should you be aware of?

- ▶ It is essential to verify that the hearing protection equipment fully meets the relevant standards and complies with the PPE Regulation.
- ▶ With the reclassification of hearing protectors, the significance of training employees in the accurate selection of personal protective equipment has become even more critical.



#### ZeroPlus has R&D People with 10 years of hearing protection experience work in our company

At ZeroPlus we recognise the importance of providing the appropriate level of support for our customers. We are committed to assisting you in selecting the most suitable products for specific hazards and work environments, as well as keeping you informed about evolving legislation and its impact on your workplace.



## ZeroPlus is here to help

Our goal is to ensure that you have the knowledge and tools to make the best choices for your hearing protection needs.



### **ZeroPlus has a team of dedicated hearing technical and regulatory experts around Japan**

At ZeroPlus, our manufacturing processes adhere to the rigorous quality monitoring principles mandated by the PPE Regulation.

### **ZeroPlus can help you fulfil your essential training requirement**

In high-risk environments, it's crucial to have complete confidence in the selection of the right hearing protection equipment tailored to your workplace requirements. ZeroPlus is here to assist you. We provide a comprehensive suite of training services, which includes:

- Presentations
- Seminars
- Face to face demonstrations
- User training videos
- Webinars
- Fit testing

# ZeroPlus Hearfit Binaural Validation System

## It starts with PAR

### How do you decide what hearing protection you will offer to your workers?

Relying solely on the SNR (Single Number Rating) indicated on hearing protection packaging might not ensure precise protection levels for every individual worker. Given the variability in ear shapes and sizes, it's essential to determine each worker's Personal Attenuation Rating (PAR) to guarantee they receive the necessary level of protection.

**Noise-induced hearing loss is 100% preventable.**

#### ✓ 29dB pass.

A "pass" outcome signifies that the hearing protection has been correctly fitted, ensuring adequate protection for the worker's specific occupational requirements.

#### ✗ 10dB fail.

A "fail" result indicates that the hearing protection may not have been inserted correctly or that it is not the appropriate type or size for the worker's ear canal.

### What's your PAR?

Each individual is unique, as is every job and every set of ears. Determining the Personal Attenuation Rating (PAR) for each employee is crucial to ensure their hearing is safeguarded and that legal compliance is maintained. That's why we've developed the ZeroPlus Hearfit Binaural Validation System to be swift, precise, and user-friendly.

### Validate test is indispensable?

Achieve reliable outcomes with the ZeroPlus Hearfit Binaural Validation System. This system assesses the actual performance of earplugs or earmuffs within the employee's ear, delivering precise, numerical data. By testing both ears simultaneously, you can concentrate more on educating employees about the significance of proper fit and the level of protection it offers.

### Why ZeroPlus?

As a frontrunner in the field of hearing protection, ZeroPlus provides a comprehensive solution that includes binaural and earmuff testing features, along with an intuitive interface. The ZeroPlus Hearfit Binaural Validation System is designed for quick and straightforward identification of your employees' Personal Attenuation Rating (PAR). We understand the significance of integrating your hearing conservation program seamlessly into your operational workflow.





# ZeroPlus Hearfit Binaural Validation System

Ensuring a proper fit is crucial, so it's essential to obtain reliable results. The ZeroPlus Hearfit Binaural Validation System assesses the earplug's effectiveness directly within the ear, delivering precise, numerical data. Testing both ears at once allows you to allocate more time to educating your workforce on the significance of a correct fit and the necessity of adhering to compliance standards.

## Features

- ▶ Binaural testing
- ▶ Fast, clear accurate results
- ▶ Earmuff testing capability
- ▶ Tests all 8 frequencies
- ▶ Seamless software integration
- ▶ Science-based, quantitative testing
- ▶ Compact design



# ZeroPlus Hearfit Binaural Validation System

## Validation

### 1 Fit



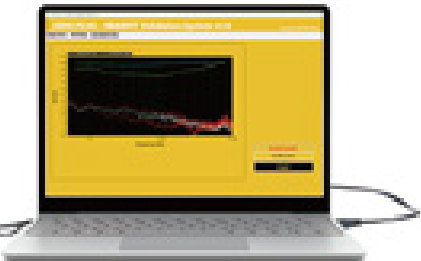
Instruct the employee to properly fit their hearing protection.

### 2 Test



Attach the microphones and initiate the speaker for the test sound.

### 3 Assess



Utilize the Personal Attenuation Rating (PAR) to tailor the selection of hearing protectors.



10 dB Right

## Not Met

"Not Met" means that when the test results of the immediate-wear hearing protector are below your PAR, it indicates that the hearing protector is not providing effective protection at that moment, and adjustments to the wearing method or a replacement of the hearing protector may be necessary.

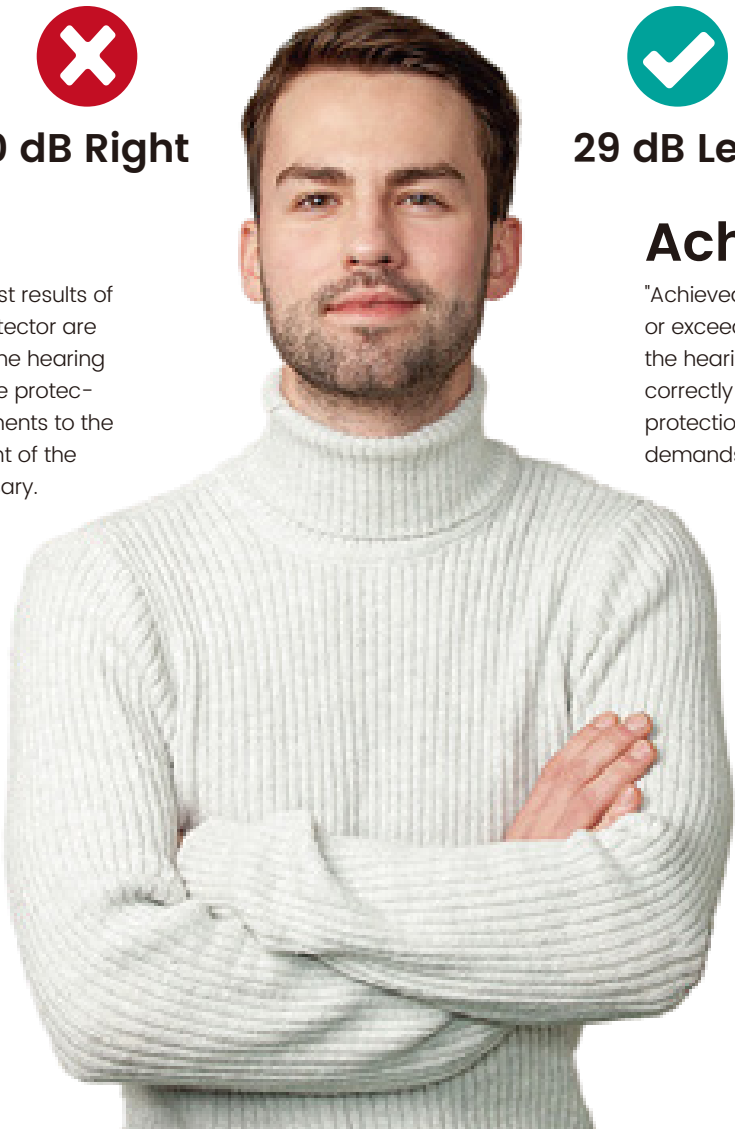
**Important Note:** Establishing each employee's Personal Attenuation Rating (PAR) is fundamental to a successful hearing conservation initiative. Once an employee's PAR is ascertained, you can confirm the suitability of their hearing protection and ensure they receive proper training on its correct use.



29 dB Left

## Achieved

"Achieved" means the data is equal or exceed PAR, which signifies that the hearing protection has been correctly fitted and offers adequate protection tailored to the specific demands of the worker's job.







# PROFESSIONAL HEARING PROTECTION MANUFACTURER

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