

**English**

**HD-15<sup>®</sup>**

**High-Fidelity  
Electronic Earplugs**

ACCU Technology<sup>®</sup>



**User Manual**

## **Caution**

Failure to follow these recommendations may severely reduce the amount of hearing protection provided by the earplugs.

- Earplugs comply with EN-352 standard of measurement.
- At very high SPLs (above 125 dB SPL, where the limit to attenuation is the eartip itself), the foam eartips provide the most protection.
- Eartips fit ear canal diameters of 6-13 mm. See Eartip section for details.
- The following applies when the device is turned off or the battery is drained:

The level of noise entering a person's ear, when a hearing protector is worn as directed, is closely approximated by the difference between the A-weighted environmental noise level and the NRR.

### **Example**

1. The environmental noise level as measured at the ear is 92 dBA.
2. The NRR is 25 decibels (dB).
3. The level of noise entering the ear is approximately equal to 67 dBA.

**Caution:** For noise environments dominated by frequencies below 500 Hz the C-weighted environmental noise level should be used. Although hearing protectors can be recommended for protection against the harmful effects of impulsive noise, the Noise Reduction Rating (NRR) is based on the attenuation of *continuous* noise and may not be an accurate indicator



## Caution (continued)

of the protection attainable against *impulsive* noise such as gunfire.

- Earplugs must be fitted, adjusted and maintained to the manufacturer's instructions to achieve the expected attenuation and hearing protection.
- Use earplugs at all times in noisy surroundings.
- Make certain that the earplugs provide adequate protection for the noisy environment.
- Earplugs are reusable. Regularly inspect the earplugs to assure their continued serviceability.
- Connecting cord should not be used where there is a risk that the connecting cord can be caught up during use.
- This product may be adversely affected by certain chemical substances. Further information should be sought from the manufacturer.
- This earplug is provided with level-dependent attenuation. The wearer should check correct operation before use. If distortion or failure is detected, the wearer should refer to the manufacturer's advice for maintenance and replacement of the battery.

**Warning:** The output of the level-dependent circuit of the hearing protector may exceed the daily limit sound level.

- To determine if the device is working, insert a battery, cup the device in your hand and listen for acoustic feedback (squeal). If feedback is present, the battery is working.

# Identification



← Eartip



2-Position  
Switch →

← Battery  
Door



Flexible  
Neck Cord



Protective Case



Filter Tool and  
Extra ACCU•Filters™



Cleaning Tool



#10  
Batteries

# Selecting an Eartip

## ACCU•Fit™ Eartips



SM  
Frost  
3-flange  
7-11mm



LRG  
Gray  
3-flange  
8-13 mm



SM  
Long Stem  
Frost 3-flange  
7-11mm



LRG  
Long Stem  
White 3-flange  
8-13 mm



SM  
Beige  
Foam  
6-9 mm



LRG  
Black  
Foam  
8-13 mm



Glider  
8-11mm



*Greatest sound reduction is achieved with deeply-sealed foam eartips*

## Selecting an eartip:

No two ears are exactly alike. The eartip that is most comfortable is the best choice, but it must seal well to prevent feedback (whistling) and provide proper protection.

**When changing eartips make sure the eartip fits securely on the stem of the device.**



correct

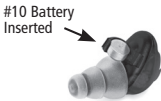
5



incorrect

# Battery Insertion

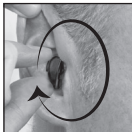
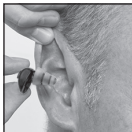
1. The battery compartment is located on the underside of the device.
2. Open the battery door.
3. Remove the yellow tab from the battery.
4. Insert the battery with the flat side facing up.
5. Do not force the battery into the door.



# Insertion & Removal

## Insertion

- Make sure the eartip is clean.
- Pull the ear up and out while inserting.
- Twist and push gently until the eartip seals in the ear canal.
- When using 3-flange eartips, moistening may ease insertion.
- When using foam eartips: Roll down or compress the foam eartip before inserting. Hold the eartip in place for about 5 seconds while foam expands to create a tight seal in the ear canal.
- When using glider eartips no compression is needed; simply push into the ear.



## Removal

- Remove the device with a slow *twisting* motion.
- After removal, place earplugs in a clean, protective case.



# Operation

## ON/OFF

Earplugs turn on and off by opening and closing the battery door. **Note:** It is not necessary to remove the battery as long as the door is open wide enough to disable the circuit.

Battery Door  
ON = Closed  
OFF = Open



Flip toward front  
= LO position



Flip toward back  
= HI position

## Dual-Mode Switch

### Automatic Protection + Blast Protection Mode (LO)

- No interference with natural hearing; soft and loud sounds are heard naturally
- Automatically delivers 15-dB protection when steady-state noise exceeds safe exposure limits
- Blast protection

### Enhancement + Blast Protection Mode (HI)

- Amplifies soft and conversational sounds for improved communication and increased awareness of surroundings
- No amplification of loud sounds
- Automatic 15-dB hearing protection is not present in HI mode
- Blast protection



# Batteries

## Zinc-Air Batteries

Use commonly-available #10 zinc-air hearing aid batteries. They are easy to find in pharmacies, online, and at various retail locations.

- Zinc-air batteries have a long shelf life, but once the tab is removed, battery life is about 9 days for continuous operation.
- Battery life is about 2 weeks if the devices are turned off after each use.
- Once the tab is removed, zinc-air batteries may self-discharge in about 4 weeks whether used or not.
- The discharge rate varies with temperature and humidity.
- It is sometimes possible to prolong the life of a battery by replacing the tab over the air holes, but results vary.

## Low Battery Warning

**LOBAT™**: A ticking sound becomes faster and louder, like the sound of a motorboat when the battery is about to die. After the warning sound first becomes audible, it may be a few hours before the battery dies. Performance and protection do not change while LOBAT is sounding.

# Changing Filters

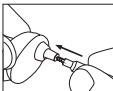
Each device has a special filter that enhances sound quality and prevents earwax from entering the device. A filter should be changed if the volume decreases or sound quality declines.

## Filter Removal

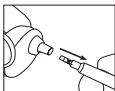
**Note:** Use the tool to remove the filter.



1. Remove eartip.



2. Insert tool into the filter.



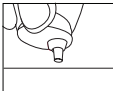
3. Remove filter.

## Filter Replacement

**Note:** Do not use the tool to replace the filter.



1. Insert a new filter.



2. Press gently against a hard surface to secure it in place.



3. Re-attach eartip.

## Maintenance

Simple cleaning with the tool provided will keep the eartips clean and the devices working properly.


- Clean after each use. Wipe clean with a damp cloth.
- Do not immerse earplugs in water.
- Do not clean with harsh chemicals. Alcohol is not recommended.
- Use the cleaning tool to pick out or brush off debris.
- 3-flange eartips can be removed and cleaned in mild detergent. Dry eartips thoroughly.
- Replace 3-flange eartips every 60-90 days.
- Replace foam and glider eartips frequently, as needed.
- Remove the devices before using hair products.
- Do not expose to extreme heat or moisture.
- Avoid dropping or hitting on a hard surface.
- Use only accessories and spare parts from Etymotic Research, Inc. to ensure continued performance to specification.

## Storage

- Always store earplugs in a clean, protective case.
- Do not store other objects, except a neck cord, in the earplug case.

# Warranty

Etymotic will repair or replace defective product at its option if returned within one year of purchase to our designated service facility. This warranty is in lieu of all other warranties, expressed or implied, including, but not limited to, any implied warranty of merchantability or fitness for a particular purpose.

Noise Reduction Rating	<b>25</b> DECIBELS (WHEN USED AS DIRECTED)
THE RANGE OF NOISE REDUCTION RATINGS FOR EXISTING HEARING PROTECTORS IS APPROXIMATELY 0 TO 30 (HIGHER NUMBERS DENOTE GREATER EFFECTIVENESS)	
ETYMOTIC RESEARCH, INC. ELK GROVE VILLAGE, IL 60007	HD15-BN
Federal law prohibits removal of this label prior to purchase.	 LABEL REQUIRED BY U.S. E.P.A. REGULATION 40 CFR Part 211, Subpart B.

## Passive Attenuation

Frequency (Hz)	125	250	500	1000	2000	4000	8000
Mean Attenuation (dB)	25.3	24.0	24.3	25.6	29.6	32.5	34.8
Standard Deviation (dB)	5.9	4.6	5.6	4.8	3.3	3.8	4.0
APV (dB)	19.4	19.5	18.8	20.9	26.3	28.7	30.8

H = 26 dB   M = 21 dB   L = 20 dB   SNR = 25 dB

## Active Attenuation - Criterion Levels

Switch position	H-noise	M-noise	L-noise
LO	102	97	88
HI	88	89	86

H: Average attenuation characteristics in the high frequency spectrum (> 2 kHz)

M: Average attenuation characteristics in the mid frequency spectrum (0.5-2 kHz)

L: Average attenuation characteristics in the low frequency spectrum (< 0.5 kHz)

SNR (Single Number Rating): Average attenuation characteristics in the standard frequency spectrum

The European Union testing was conducted by:

Central Institute for Labour Protection—National Research Institute (CIOP-PIB)  
ul Czerniakowska 16, 00-701 Warsaw, Poland. Notified Body No. 1437.

This product is in compliance with EN 352-2:2002 and EN 352-7:2002.



ER098629-B ETYMOTIC RESEARCH INC. 61 Martin Lane • Elk Grove Village, IL 60007

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