



**THADHANI<sup>®</sup>**  
The Experts in Safety... Since 1947

# 3M<sup>™</sup> PELTOR<sup>™</sup> X Series Earmuffs

## Technical datasheet



### Product description

The 3M<sup>™</sup> PELTOR<sup>™</sup> X Series Earmuffs are available in multiple design styles, including headband and neckband. When correctly selected and worn these products can help to reduce exposure to hazardous levels of noise.

Offering a colour coding system to quickly and simply visually identify the level of protection being worn. The attenuation values in the headband and neckband models ranges from SNR 27 dB to SNR 37 dB, to meet the needs of a wide range of environments and applications.

#### Electrically insulated (dielectric) properties:

- ▶ The metal wire of the headband version is covered in a non conductive material
- ▶ The headband versions were found to be electrically insulated, withstanding a voltage up to 1.2 kV, at an external laboratory against a modified test method based on EN 397:2012 under dry conditions
- ▶ The user must determine the overall suitability of this product for the intended application taking into account any hazards other than noise for which this product is tested and approved

NOTE: The neckband versions of the X Series are not electrically insulated and replicate the well known 3M<sup>™</sup> PELTOR<sup>™</sup> Optime<sup>™</sup> steel design.

### Key features

- ▶ Lightweight design (lightest version 149g)
- ▶ Twin headband designed to optimise weight distribution and comfort with reduced heat build up
- ▶ Protected wire headband for constant headband force during extended use providing reliable protection
- ▶ Electrically insulated headband with no exposed wires helps protect against electrical voltage hazards
- ▶ Neckband version available in all five base models
- ▶ Soft wide foam cushions helps reduce pressure around the ears and improves comfort and wearability
- ▶ Innovative damping pads and spacer that helps improve attenuation (X3, X4, X5)
- ▶ 3M designed cushion foam technology helps provide an effective acoustic seal and reliable protection
- ▶ Replaceable cushions and inserts are available separately to extend the life of your earmuffs
- ▶ Easy to understand different colour coding for attenuation values to help select appropriate product for specific application
- ▶ Modern sleek design to help encourage wear whilst ABS plastic cups provide rigid strength and high impact resistance



Colour code and attenuation values

| Model                             | Cup colour band | SNR (dB)         |                  |
|-----------------------------------|-----------------|------------------|------------------|
|                                   |                 | Headband version | Neckband version |
| 3M™ PELTOR™ Earmuff X1 (X1A, X1B) | Green           | 27               | 26               |
| 3M™ PELTOR™ Earmuff X2 (X2A, X2B) | Yellow          | 31               | 30               |
| 3M™ PELTOR™ Earmuff X3 (X3A, X3B) | Red             | 33               | 32               |
| 3M™ PELTOR™ Earmuff X4 (X4A, X4B) | Bright Green    | 32               | 33               |
| 3M™ PELTOR™ Earmuff X4 (X4A-OR)   | Orange          | 32               | N/A              |
| 3M™ PELTOR™ Earmuff X5 (X5A, X5B) | Black           | 37               | 37               |

Material listing

| Component                   | Headband version                                                           | Neckband version                              |
|-----------------------------|----------------------------------------------------------------------------|-----------------------------------------------|
| Headband                    | TPE (Thermoplastic Elastomer), PP, POM (Polyoxymethylene), Stainless steel | N/A                                           |
| Neckband                    | N/A                                                                        | Stainless steel, PO                           |
| Headstrap                   | N/A                                                                        | Polyester, PP (Polypropylene), PA (Polyamide) |
| Cups                        | ABS, TPU (Thermoplastic Polyurethane)                                      | ABS, TPU                                      |
| Insert (liner)              | PU (Polyurethane) foam                                                     | PU foam                                       |
| Cushions and cushion covers | PVC (Polyvinyl chloride), PU foam                                          | PVC, PU foam                                  |
| X3, X4, X5 Spacer           | ABS (Acrylonitrile butadiene styrene)                                      | ABS                                           |

Standards and approvals

Hereby, 3M Svenska AB declares that the product is in compliance with appropriate Directives or Regulations to fulfill the requirements for the CE and/or UKCA marking.

The full text of the Declaration of Conformity is available at the following internet address:

A copy of the Declaration of Conformity and additional information required in the Directives or Regulations can also be obtained by contacting 3M in the country of purchase.

3M strongly recommends personal fit testing of hearing protectors. Research suggests that users may receive less noise reduction than indicated by the attenuation label value(s) on the packaging due to variation in fit, fitting skill, and motivation of the user. Refer to applicable regulations and guidance on how to adjust attenuation label value(s). In the absence of applicable regulations, it is recommended that the attenuation label value(s) be reduced to better estimate typical protection.

Accessories/replacement

The cushions and inserts on the 3M™ PELTOR™ X Series earmuffs can be replaced with the hygiene kits listed below to maintain consistent protection, hygiene, and comfort.

Hygiene kits:

| Earmuff model          | Hygiene kit |
|------------------------|-------------|
| 3M™ PELTOR™ Earmuff X1 | HYX1        |
| 3M™ PELTOR™ Earmuff X2 | HYX2        |
| 3M™ PELTOR™ Earmuff X3 | HYX3        |
| 3M™ PELTOR™ Earmuff X4 | HYX4        |
| 3M™ PELTOR™ Earmuff X5 | HYX5        |

In addition, HY100 sweat pads are also available that can be placed on the cushions to help absorb moisture and sweat.

3M™ PELTOR™ X1A Earmuff

|           | Frequency (Hz) <i>f</i> |      |      |      |      |      |      | H    | M    | L    | SNR  |  |
|-----------|-------------------------|------|------|------|------|------|------|------|------|------|------|-------------------------------------------------------------------------------------|
|           | 125                     | 250  | 500  | 1000 | 2000 | 4000 | 8000 |      |      |      |      |                                                                                     |
| Mf (dB)   | 11.9                    | 15.4 | 24.5 | 34.3 | 32.8 | 37.4 | 37.4 | 34.3 | 25.8 | 17.8 | 28.2 | 184 g                                                                               |
| SD (dB)   | 2.0                     | 2.6  | 2.6  | 2.3  | 3.3  | 2.5  | 3.8  | 2.1  | 1.8  | 1.9  | 1.7  |                                                                                     |
| APVf (dB) | 9.9                     | 12.8 | 22.0 | 31.9 | 29.5 | 34.9 | 33.5 | 32   | 24   | 16   | 27   |                                                                                     |

3M™ PELTOR™ X2A Earmuff EN 352-1:2020

|           | Frequency (Hz) <i>f</i> |      |      |      |      |      |      | H    | M    | L    | SNR  |  |
|-----------|-------------------------|------|------|------|------|------|------|------|------|------|------|-------------------------------------------------------------------------------------|
|           | 125                     | 250  | 500  | 1000 | 2000 | 4000 | 8000 |      |      |      |      |                                                                                     |
| Mf (dB)   | 14.1                    | 22.2 | 31.1 | 39.7 | 36.6 | 37.0 | 37.9 | 37.4 | 31.3 | 22.2 | 33.0 | 220 g                                                                               |
| SD (dB)   | 2.2                     | 2.1  | 2.7  | 3.2  | 3.2  | 3.7  | 3.4  | 2.6  | 1.8  | 1.9  | 1.8  |                                                                                     |
| APVf (dB) | 11.9                    | 20.1 | 28.4 | 36.6 | 33.5 | 33.3 | 34.5 | 35   | 30   | 20   | 31   |                                                                                     |

3M™ PELTOR™ X3A Earmuff EN 352-1:2020

|           | Frequency (Hz) <i>f</i> |      |      |      |      |      |      | H    | M    | L    | SNR  |  |
|-----------|-------------------------|------|------|------|------|------|------|------|------|------|------|-------------------------------------------------------------------------------------|
|           | 125                     | 250  | 500  | 1000 | 2000 | 4000 | 8000 |      |      |      |      |                                                                                     |
| Mf (dB)   | 22.8                    | 25.1 | 27.0 | 40.0 | 35.8 | 38.5 | 38.9 | 37.0 | 31.9 | 27.0 | 34.2 | 245 g                                                                               |
| SD (dB)   | 2.1                     | 3.1  | 1.7  | 2.8  | 2.2  | 2.7  | 2.9  | 1.8  | 1.6  | 1.9  | 1.5  |                                                                                     |
| APVf (dB) | 20.7                    | 22.0 | 25.4 | 37.2 | 33.6 | 35.8 | 35.9 | 35   | 30   | 25   | 33   |                                                                                     |

3M™ PELTOR™ X4A Earmuffs EN 352-1:2020

|           | Frequency (Hz) <i>f</i> |      |      |      |      |      |      | H    | M    | L    | SNR  |  |
|-----------|-------------------------|------|------|------|------|------|------|------|------|------|------|---------------------------------------------------------------------------------------|
|           | 125                     | 250  | 500  | 1000 | 2000 | 4000 | 8000 |      |      |      |      |                                                                                       |
| Mf (dB)   | 17.8                    | 22.1 | 30.6 | 39.5 | 37.3 | 43.8 | 42.1 | 39.3 | 32.1 | 24.2 | 34.3 | 234 g                                                                                 |
| SD (dB)   | 2.3                     | 2.5  | 1.8  | 2.9  | 4.1  | 2.8  | 4.0  | 2.9  | 1.9  | 2.2  | 1.9  |                                                                                       |
| APVf (dB) | 15.5                    | 19.6 | 28.8 | 36.6 | 33.2 | 41.1 | 38.2 | 36   | 30   | 22   | 32   |                                                                                       |

3M™ PELTOR™ X5A Earmuff EN 352-1:2020

|           | Frequency (Hz) <i>f</i> |      |      |      |      |      |      | H    | M    | L    | SNR  |  |
|-----------|-------------------------|------|------|------|------|------|------|------|------|------|------|---------------------------------------------------------------------------------------|
|           | 125                     | 250  | 500  | 1000 | 2000 | 4000 | 8000 |      |      |      |      |                                                                                       |
| Mf (dB)   | 22.3                    | 28.8 | 39.7 | 44.2 | 39.8 | 43.0 | 40.2 | 40.8 | 37.8 | 29.9 | 39.0 | 351 g                                                                                 |
| SD (dB)   | 2.4                     | 2.4  | 2.7  | 3.4  | 4.6  | 2.8  | 2.9  | 3.2  | 1.7  | 2.1  | 1.9  |                                                                                       |
| APVf (dB) | 19.9                    | 26.4 | 37.0 | 40.9 | 35.2 | 40.2 | 37.3 | 38   | 36   | 28   | 37   |                                                                                       |

Attenuation table key:

f = Test frequency

Mf = Mean attenuation value

SD = Standard deviation

APVf (Mf - SD) = Assumed Protection Value

H = High-frequency attenuation value (predicted noise level reduction for noise with LC – LA = -2dB)

M = Medium-frequency attenuation value (predicted noise level reduction for noise with LC – LA = +2dB)

L = Low-frequency attenuation value (predicted noise level reduction for noise with LC – LA = +10dB)

SNR = Single Number Rating (the value that is subtracted from the measured C-weighted sound pressure level, LC in order to estimate the effective A-weighted sound pressure level inside the ear).

## Attenuation values and weights - Neckband versions

### 3M™ PELTOR™ X1B Earmuff

EN 352-1:2020

|           | Frequency (Hz) <i>f</i> |      |      |      |      |      |      | H    | M    | L    | SNR  |  |
|-----------|-------------------------|------|------|------|------|------|------|------|------|------|------|-------------------------------------------------------------------------------------|
|           | 125                     | 250  | 500  | 1000 | 2000 | 4000 | 8000 |      |      |      |      |                                                                                     |
| Mf (dB)   | 12.4                    | 15.3 | 25.3 | 31.4 | 34.1 | 38.2 | 33.9 | 33.8 | 25.6 | 17.8 | 28.0 | 149 g                                                                               |
| SD (dB)   | 4.7                     | 2.2  | 2.2  | 3.2  | 4.4  | 3.4  | 5.4  | 2.9  | 1.8  | 2.7  | 2.0  |                                                                                     |
| APVf (dB) | 7.7                     | 13.1 | 23.1 | 28.2 | 29.7 | 34.8 | 28.5 | 31   | 24   | 15   | 26   |                                                                                     |

### 3M™ PELTOR™ X2B Earmuff

EN 352-1:2020

|           | Frequency (Hz) <i>f</i> |      |      |      |      |      |      | H    | M    | L    | SNR  |  |
|-----------|-------------------------|------|------|------|------|------|------|------|------|------|------|-------------------------------------------------------------------------------------|
|           | 125                     | 250  | 500  | 1000 | 2000 | 4000 | 8000 |      |      |      |      |                                                                                     |
| Mf (dB)   | 13.6                    | 19.7 | 32.5 | 39.5 | 35.8 | 35.2 | 35.7 | 36.2 | 30.0 | 20.8 | 31.7 | 186 g                                                                               |
| SD (dB)   | 3.5                     | 2.3  | 2.3  | 3.3  | 2.2  | 1.9  | 2.7  | 1.4  | 1.7  | 2.7  | 1.6  |                                                                                     |
| APVf (dB) | 10.1                    | 17.4 | 30.2 | 36.2 | 33.6 | 33.3 | 33.0 | 35   | 28   | 18   | 30   |                                                                                     |

### 3M™ PELTOR™ X3B Earmuff

EN 352-1:2020

|           | Frequency (Hz) <i>f</i> |      |      |      |      |      |      | H    | M    | L    | SNR  |  |
|-----------|-------------------------|------|------|------|------|------|------|------|------|------|------|-------------------------------------------------------------------------------------|
|           | 125                     | 250  | 500  | 1000 | 2000 | 4000 | 8000 |      |      |      |      |                                                                                     |
| Mf (dB)   | 19.5                    | 24.5 | 29.7 | 40.0 | 37.6 | 38.3 | 36.7 | 37.4 | 32.6 | 25.8 | 34.4 | 223 g                                                                               |
| SD (dB)   | 5.0                     | 3.7  | 2.6  | 3.2  | 3.5  | 2.3  | 4.3  | 2.1  | 2.9  | 4.1  | 2.9  |                                                                                     |
| APVf (dB) | 14.5                    | 20.8 | 27.1 | 36.8 | 34.1 | 36.0 | 32.4 | 35   | 30   | 22   | 32   |                                                                                     |

### 3M™ PELTOR™ X4B Earmuff

EN 352-1:2020

|           | Frequency (Hz) <i>f</i> |      |      |      |      |      |      | H    | M    | L    | SNR  |  |
|-----------|-------------------------|------|------|------|------|------|------|------|------|------|------|---------------------------------------------------------------------------------------|
|           | 125                     | 250  | 500  | 1000 | 2000 | 4000 | 8000 |      |      |      |      |                                                                                       |
| Mf (dB)   | 18.0                    | 20.7 | 32.9 | 40.8 | 38.5 | 45.9 | 40.4 | 40.1 | 32.0 | 23.6 | 34.2 | 202 g                                                                                 |
| SD (dB)   | 3.2                     | 1.6  | 3.1  | 2.7  | 3.1  | 2.2  | 3.8  | 2.1  | 1.7  | 2.1  | 1.7  |                                                                                       |
| APVf (dB) | 14.8                    | 19.1 | 29.8 | 38.1 | 35.4 | 43.7 | 36.6 | 38   | 30   | 22   | 33   |                                                                                       |

### 3M™ PELTOR™ X5B Earmuff

EN 352-1:2020

|           | Frequency (Hz) <i>f</i> |      |      |      |      |      |      | H    | M    | L    | SNR  |  |
|-----------|-------------------------|------|------|------|------|------|------|------|------|------|------|---------------------------------------------------------------------------------------|
|           | 125                     | 250  | 500  | 1000 | 2000 | 4000 | 8000 |      |      |      |      |                                                                                       |
| Mf (dB)   | 21.5                    | 29.0 | 42.4 | 44.6 | 40.3 | 40.9 | 38.1 | 40.0 | 37.8 | 29.4 | 38.5 | 319 g                                                                                 |
| SD (dB)   | 3.3                     | 1.9  | 3.7  | 3.5  | 2.7  | 2.5  | 3.9  | 1.8  | 1.5  | 2.4  | 1.5  |                                                                                       |
| APVf (dB) | 18.2                    | 27.1 | 38.7 | 41.1 | 37.6 | 38.4 | 34.2 | 38   | 36   | 27   | 37   |                                                                                       |

## Important notice

**Product Selection and Use:** Many factors beyond 3M's control and uniquely within user's knowledge and control can affect the use and performance of a 3M product in a particular application.

As a result, customer is solely responsible for evaluating the product and determining whether it is appropriate and suitable for customer's application, including conducting a workplace hazard assessment and reviewing all applicable national and/or European regulations and standards. Failure to properly evaluate, select, and use a 3M product in accordance with all applicable instructions and with appropriate safety equipment, or to meet all applicable safety regulations, may result in injury, sickness, death, and/or harm to property.

**Warranty, Limited Remedy, and Disclaimer:** A limitation of liability applies to the 3M product(s). For warranty statement and limitation of liability, refer to your supply agreement or the 3M terms & conditions of sale.

3M industrial and occupational products are intended, labeled, and packaged for sale to trained industrial and occupational customers for workplace use.



## Standards

The 3M™ PELTOR™ X Series X4A and X5A Headband Earmuff have been tested by an accredited laboratory in accordance with the requirements stipulated in Australian/New Zealand Standard AS/NZS 1270:2002.

Declaration(s) of Conformity are available at: [www.3M.com/Hearing/certs](http://www.3M.com/Hearing/certs).

## Fitting Instructions

Research suggests that user may receive less noise reduction than indicated by the attenuation label value(s).

Performance will be reduced by anything that impairs the seal of the cushions against the wearer's head e.g., thick spectacle frames, goggles, respirator straps, balaclavas, etc. If spectacles are worn, cushions must be soft and subtle to ensure seal. Select thin, flat temples or straps when wearing this product in combination with other PPE (safety glasses, goggles, or respiratory protection), to minimize interference with the seal of the earmuff cushions (i.e., acoustic seal).

Prior to fitting, inspect the product to ensure it is not damaged. Follow manufacturers instructions.

*To fit the hearing protector:*

1. Pull the cups apart and place the earmuffs over the ears so that the cushions form a snug seal around the ears (Fig 1).
2. Adjust the height for optimum comfort and fit by sliding the cups up or down the guide whilst holding the headband in place (Fig 2).
3. Figure 3 shows the product correctly fitted.



## Fit Check

When hearing protectors are correctly worn your own voice should sound hollow and sounds around you should not sound as loud as before.

## Hearing Protector Fit Testing

### The 3M™ E-A-Rfit™ Dual-Ear Validation System

The success of your hearing conservation program requires more than offering earplugs or earmuffs. Each worker needs to wear the most effective hearing protector for the environment and the correct fit for their unique anatomy.

With 3M™ E-A-Rfit™ Dual-Ear Validation System, you can quickly identify how much protection each worker receives from their 3M hearing protectors.

### The Technology Behind 3M™ E-A-Rfit™

The 3M™ E-A-Rfit™ Dual-Ear Validation System is based on Field Microphone-In-Real Ear (F-MIRE) technology that measures the effectiveness of hearing protectors from inside a worker's ears, providing accurate, quantitative results.

The tester wears a pair of modified 3M™ probed hearing protectors connected to a dual-element microphone. A loudspeaker is placed in front of the tester. When it emits a broadband noise, the dual-element microphone measures the signal in the ear canal and outside the ear plug. In less than five seconds, the difference between the two measurements is calculated and a Personal Attenuation Rating (PAR) is displayed.

### It Starts with PAR.

The 3M™ E-A-Rfit™ Validation System puts the worker in the context of their noise environment and helps you understand their level of attenuation.

The results you get from the 3M™ E-A-Rfit™ is displayed as a PAR. The PAR is a numerical value that shows the reduction in sound level within the ear when a hearing protector is worn. The resulting PAR, combined with the worker's exposure to noise, is used to determine if a worker is receiving appropriate protection from the noise hazard.

Knowing the PAR lets you identify workers who are inadequately protected, so you can provide real-time intervention and training.

### Key Benefits of the 3M™ E-A-Rfit™ Dual-Ear Validation System include:

- Tests both ears simultaneously in less than 5 seconds
- Science-based, quantitative testing
- Fast, clear and accurate results
- Tests 7 frequencies—125Hz to 8000Hz
- 3M™ Earplug, earmuff, and headset (comms) testing capability

Contact your 3M Personal Safety Specialist to find out more about our 3M™ E-A-Rfit™ Dual-Ear Validation System or for assistance in solving your complex or day-to-day hearing conservation challenges.



**THADHANI®**  
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## Cleaning and Maintenance

Follow recommended care and cleaning instructions in order to maintain best noise reduction and function.

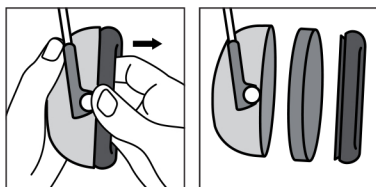
### Cleaning

1. After use, wipe outside cups and earmuff cushions so they remain clean and hygienic. The product be cleaned using mild detergent and water. Do not immerse in water. Do not clean with solvents such as acetone, or with waterless hand cleaners or products containing lanolin.
2. If the earmuffs cannot be cleaned or are damaged, dispose of the product and obtain a new pair.

### Maintenance

Cushions and inserts can be replaced by using the approved Hygiene Kits for your 3M™ PELTOR™ Product. See 'Ordering Information' section.

1. Remove the existing earmuff cushion from your headset by placing your fingers in the cup to help enable you to pull the earmuff cushion out.



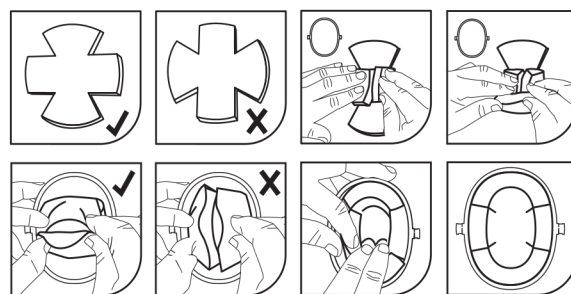
2. Once you have removed the earmuff cushion from the headset, proceed with the removal of the grey spacer from the existing earmuff. To separate the ear cushion from the grey spacer, carefully pull apart the cushion with one hand whilst forcing apart the grey spacer with the other. Use your finger nail to prong open.



3. Remove the foam inserts located inside the hearing protector cups and replace with the new foam inserts located in the new hygiene kit.



- 3a. For the X5 series headsets, firstly pull out the foam insert from your new hygiene kit and place it on a flat surface as depicted in picture with the tick below. Fold side tabs into the middle and then fold top and bottom tabs on top of the side tabs. Place folded foam into the cup and maneuver until the hygiene kit is sitting snugly in the cup.



4. Connect the new earmuff cushion located in your hygiene kit onto the grey spacer by pressing down and around the cushion until the cushion securely clicks into place. The new cushion will only lock onto the rough side of the grey spacer, and not the smooth side. Securely lock the new cushion and grey spacer onto the hearing protector cups with the newly inserted foam inserts.



- 3M recommends replacing the hygiene kit every six months to maintain acceptable noise reduction, hygiene and comfort. In hot and humid environments more frequent changes may be required to maintain acceptable hygiene.
- 3M™ PELTOR™ HY100A Clean Hygiene Pads can be applied onto the earmuff cushions to help absorb sweat and moisture for improved comfort and hygiene.



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