

3M™ PELTOR™ Optime™ Earmuffs

Technical datasheet



Product description

The 3M™ PELTOR™ Optime™ Earmuffs are available in headband, neckband, foldable or helmet mounted version. These products are designed to provide moderate to very high levels of attenuation that meets the needs of an extensive range of industrial applications.

Providing attenuation value ranging from SNR 26dB to SNR 35dB they can meet the needs of a wide range of noisy environments.

The helmet mounted version is designed to fit a wide range of industrial safety helmets (see below for further details).

Key features

- ▶ Low profile light-weight design (lightest version 165g)
- ▶ Sealing rings are available as combination fluid and foam in most models or soft foam cushion only – see model type for more information
- ▶ Stainless steel headband design helps maintain constant pressure during wear time
- ▶ Large space inside cup helps reduce moisture and heat build-up
- ▶ Soft wide cushions help reduce pressure around the ears and improves comfort and wearability
- ▶ Replaceable cushions and inserts are available separately to extend the life of your earmuffs
- ▶ Helmet mounted version fits directly to many industrial safety helmets without the need of any adapter
- ▶ 3M™ PELTOR™ Optime™ Earmuffs feature a double cup design that helps improve attenuation at lower frequencies
- ▶ Some models are available in a high visibility colour for enhanced visibility in at risk environments



3M™ PELTOR™ Optime™ I Earmuffs
(Headband)



3M™ PELTOR™ Optime™ II Earmuffs
(Helmet Mounted)



3M™ PELTOR™ Optime™ III Earmuffs
(Neckband)

Helmet mounted version approved combination:

| Helmet brand | Model number | P3 Adapter | 3M™ PELTOR™ Optime™ I Earmuffs | 3M™ PELTOR™ Optime™ II Earmuffs | 3M™ PELTOR™ Optime™ III Earmuffs |
|------------------|-----------------------------------|------------|--------------------------------|---------------------------------|----------------------------------|
| 3M | Airstream AH1, AH4 | AE | ML | ML | L |
| 3M | Airstream AH7 | AE | ML | ML | L |
| 3M | Airstream HT-701, HT-702, HT-705 | AE | ML | ML | L |
| 3M | Airstream HT-707 | AE | ML | ML | L |
| 3M | G500 Headgear | E | SML | SML | SML |
| 3M | Versaflo M-106 and M-107 | AF | ML | ML | ML |
| 3M | Versaflo M-306 and M-307 | AF | ML | ML | ML |
| 3M | Speedglas™ Welding Helmet 9100 MP | AF | ML | ML | ML |
| 3M | G2000 | K | SML | SML | SML |
| 3M | G22 (Basic Combination) | E | SML | SML | SML |
| 3M | G3000 | E | SML | SML | SML |
| 3M | G3501 | E | SML | SML | SML |
| 3M | H-700 | E | ML | SML | L |
| Auboueix | Brennus | F | SML | SML | SML |
| Auboueix | Fondelec | F | SML | SML | SML |
| Auboueix | Iris | E | ML | ML | ML |
| Auboueix | Iris 2 | E | ML | ML | ML |
| Auboueix /Seybol | KARA | E | SML | SML | ML |
| Centurion | 1100/ARCO Type 2 | H | SML | SML | ML |
| Centurion | 1125/ARCO Plus | H | SML | SML | SML |
| Centurion | 1540/ARCO | A | ML | ML | ML |
| Centurion | Concept | E | SML | SML | S |
| Grolls | Balance | E | ML | ML | ML |
| Grolls | Balance AC | E | ML | ML | ML |
| Grolls | Balance HD | M | SML | SML | SML |
| Grolls | Robust | E | SML | SML | SML |
| JSP | EVOLITE | E | ML | ML | L |
| JSP | MK6R/MK7R | E | SML | SML | L |
| JSP | MK8 | E | L | ML | L |
| Kemira | Top Cap | A | SML | SML | SML |
| LAS | LP2002 | E | SML | SML | SML |
| LAS | LP2006 | E | SML | SML | SML |
| MSA | Super V-Gard II | E | SML | SML | SML |
| MSA | V-Gard | E | SML | SML | SML |
| Petzl | Vertex | E | SML | SML | SML |
| Protector/Scott | Style 300* | E | SML | SML | SML |
| Protector/Scott | Style 600 | E | SML | SML | SML |
| Protector/Scott | Tuffmaster II | E, G | ML | ML | ML |
| Romer | Bravo 2 Nomaz | B | SML | SML | SML |
| Romer | Marcus Top 2 Atlas Nomaz | B | SML | SML | SML |
| Romer | N2 Atlas Nomaz | BB | SML | SML | SML |
| Romer | Profi Expo | E | SML | SML | SML |
| Romer | Profi Momaz | E | SML | SML | SML |
| Romer | Top Expo Atlas | B | SML | SML | SML |
| Schuberth | BEN | BB | SML | SML | SML |
| Schuberth | BER S | E | SML | SML | SML |
| Schuberth | BER80/WPC80 | EA | SML | SML | SML |
| Schuberth | BOP R | B | SML | SML | SML |
| Schuberth | Piomier | B | SML | SML | SML |

*Protector Style 300 includes all 300-versions of this helmet.

Helmet mounted version approved combination:

| Helmet brand | Model number | P3 Adapter | 3M™ PELTOR™ Optime™ I Earmuffs | 3M™ PELTOR™ Optime™ II Earmuffs | 3M™ PELTOR™ Optime™ III Earmuffs |
|------------------|--------------|------------|--------------------------------|---------------------------------|----------------------------------|
| Schuberth | SH 91/WPL 91 | EB | SML | SML | SML |
| Schuberth | SW1 | EB | ML | ML | ML |
| Sofop Taliaplast | Oceanic | E | ML | ML | ML |
| Sofop Taliaplast | Opus | E | ML | ML | ML |
| Uvex | Airwing | E | SML | SML | SML |
| Voss | Inap 88 | E | SML | SML | SML |
| Voss | Inap Master | E | ML | ML | ML |
| Voss | Inap PCG | G | ML | ML | ML |
| Voss | Inap Star | E | ML | ML | ML |

Mass

| Model | Mass (grams) |
|---|--------------|
| 3M™ PELTOR™ Optime™ I Earmuffs (H510A) | 180 |
| 3M™ PELTOR™ Optime™ I Earmuffs (H510F) | 200 |
| 3M™ PELTOR™ Optime™ I Earmuffs (H510B) | 165 |
| 3M™ PELTOR™ Optime™ I Earmuffs (H510P3) | 205 |
| 3M™ PELTOR™ Optime™ II Earmuffs (H520A) | 210 |
| 3M™ PELTOR™ Optime™ II Earmuffs (H520F) | 230 |
| 3M™ PELTOR™ Optime™ II Earmuffs (H520B) | 195 |
| 3M™ PELTOR™ Optime™ II Earmuffs (H520P3) | 235 |
| 3M™ PELTOR™ Optime™ III Earmuffs (H540A) | 285 |
| 3M™ PELTOR™ Optime™ III Earmuffs (H540B) | 270 |
| 3M™ PELTOR™ Optime™ III Earmuffs (H540P3) | 310 |

Standards and approvals:

The 3M™ PELTOR™ Optime™ Earmuffs are type approved against the European Regulation (EU) 2016/425 by Finnish Institute of Occupational Health (FIOH), Topeliuksenkatu 41aA, FIN-00250 Helsinki, Finland (Notified Body number 0403). These products meet the requirement of the Harmonised European Standard EN 352-1:2002 (for headband and neckband version) and EN 352-3:2002 (for helmet mounted version). The applicable Certificate(s) and Declaration(s) of Conformity are available at www.3M.com/Hearing/certs.

Material listing

| | Headband, neckband and foldable version | Helmet mounted version |
|------------------------------------|---|---|
| Headband/neckband and cover/sleeve | Stainless steel wire, PVC, Acetal | N/A |
| Helmet attachment arm | N/A | Stainless steel, acetal, polyamide |
| Cups | ABS | ABS |
| Insert (liner) | Polyether foam | Polyether foam |
| Cushions and cushion covers | PU foam and PVC | Polyether/Glycerine. (applies to 3M™ PELTOR™ Optime™ I Earmuffs and 3M™ PELTOR™ Optime™ II Earmuffs only) |
| Cushion cover | PVC | PVC |

Accessories/replacement

The cushions and inserts on the 3M™ PELTOR™ Optime™ range can be replaced with the hygiene kits listed below for improved comfort and reassured protection.

Hygiene kits:

| Earmuff model | Hygiene kit |
|---|-------------|
| 3M™ PELTOR™ Optime™ I Earmuffs (H510A, H510F, H510B, H510P3) | HY51 |
| 3M™ PELTOR™ Optime™ II Earmuffs (H520A, H520F, H520B, H520P3) | HY52 |
| 3M™ PELTOR™ Optime™ III Earmuffs (H540A, H540B, H540P3) | HY54 |

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

Attenuation values

3M™ PELTOR™ Optime™ I Earmuffs (H510A headband)

| Frequency (Hz) | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|----------------|------|------|------|------|------|------|------|------|
| Mf (dB) | 14.1 | 11.6 | 18.7 | 27.5 | 32.9 | 33.6 | 36.1 | 35.8 |
| sf (dB) | 4.0 | 4.3 | 3.6 | 2.5 | 2.7 | 3.4 | 3.0 | 3.8 |
| APVf (dB) | 10.1 | 7.3 | 15.1 | 25.0 | 30.1 | 30.2 | 33.2 | 32.0 |

SNR = 27dB H = 32dB M = 25dB L = 15dB

3M™ PELTOR™ Optime™ I Earmuffs (H510B neckband)

| Frequency (Hz) | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|----------------|------|------|------|------|------|------|------|------|
| Mf (dB) | 13.3 | 10.9 | 17.1 | 25.4 | 31.5 | 32.6 | 36.3 | 34.8 |
| sf (dB) | 4.1 | 3.5 | 2.8 | 1.8 | 2.6 | 4.3 | 3.4 | 3.6 |
| APVf (dB) | 9.1 | 7.3 | 14.3 | 23.6 | 28.9 | 28.3 | 32.9 | 31.1 |

SNR = 26dB H = 30dB M = 24dB L = 15dB

3M™ PELTOR™ Optime™ I Earmuffs (H510F folding headband)

| Frequency (Hz) | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|----------------|------|------|------|------|------|------|------|------|
| Mf (dB) | 14.6 | 12.2 | 18.7 | 27.1 | 32.9 | 35.0 | 36.5 | 34.4 |
| sf (dB) | 3.8 | 3.4 | 3.2 | 3.0 | 2.1 | 4.0 | 2.9 | 3.9 |
| APVf (dB) | 10.8 | 8.7 | 15.5 | 24.1 | 30.8 | 31.0 | 33.6 | 30.6 |

SNR = 26 dB H = 32 dB M = 23 dB L = 15 dB

3M™ PELTOR™ Optime™ I Earmuffs (H510P3 helmet mounted)

| Frequency (Hz) | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|----------------|------|------|------|------|------|------|------|------|
| Mf (dB) | 13.1 | 11.2 | 13.4 | 26.9 | 33.9 | 32.0 | 33.5 | 36.9 |
| sf (dB) | 2.3 | 2.0 | 1.9 | 1.8 | 1.9 | 2.4 | 1.8 | 1.8 |
| APVf (dB) | 10.8 | 9.2 | 11.5 | 25.1 | 31.9 | 29.6 | 31.7 | 35.1 |

SNR = 26dB H = 32dB M = 23dB L = 15dB

Attenuation values

3M™ PELTOR™ Optime™ II Earmuffs (H520A headband)

| Frequency (Hz) | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|----------------|------|------|------|------|------|------|------|------|
| Mf (dB) | 16.2 | 14.6 | 20.2 | 32.5 | 39.3 | 36.4 | 34.4 | 40.2 |
| sf (dB) | 1.9 | 1.6 | 2.5 | 2.3 | 2.1 | 2.4 | 4.0 | 2.3 |
| APVf (dB) | 14.3 | 13.0 | 17.7 | 30.2 | 37.2 | 34.0 | 30.4 | 37.9 |

SNR = 31dB H = 34dB M = 29dB L = 20dB

3M™ PELTOR™ Optime™ II Earmuffs (H520A neckband)

| Frequency (Hz) | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|----------------|------|------|------|------|------|------|------|------|
| Mf (dB) | 15.9 | 14.7 | 20.4 | 32.3 | 39.6 | 36.2 | 35.4 | 40.2 |
| sf (dB) | 2.1 | 1.8 | 2.6 | 2.5 | 2.2 | 2.4 | 4.2 | 2.4 |
| APVf (dB) | 13.8 | 12.9 | 17.8 | 29.8 | 37.4 | 33.8 | 31.2 | 37.8 |

SNR = 31dB H = 34dB M = 29dB L = 20dB

3M™ PELTOR™ Optime™ II Earmuffs (H520F folding headband)

| Frequency (Hz) | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|----------------|------|------|------|------|------|------|------|------|
| Mf (dB) | 16.1 | 14.5 | 20.3 | 32.6 | 39.1 | 35.1 | 34.7 | 39.8 |
| sf (dB) | 2.0 | 1.8 | 2.6 | 2.4 | 2.5 | 2.3 | 2.7 | 2.5 |
| APVf (dB) | 14.1 | 12.7 | 17.7 | 30.2 | 36.6 | 32.8 | 32.0 | 37.3 |

SNR = 31dB H = 34dB M = 28dB L = 20dB

3M™ PELTOR™ Optime™ II Earmuffs (H520P3 helmet mounted)

| Frequency (Hz) | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|----------------|------|------|------|------|------|------|------|------|
| Mf (dB) | 15.1 | 14.1 | 19.4 | 32.0 | 39.9 | 36.2 | 35.4 | 39.2 |
| sf (dB) | 2.1 | 2.3 | 2.7 | 2.7 | 2.4 | 2.6 | 4.4 | 2.6 |
| APVf (dB) | 13.0 | 11.8 | 16.7 | 29.3 | 37.5 | 33.6 | 31.0 | 36.6 |

SNR = 30 dB H = 34 dB M = 28 dB L = 19 dB

3M™ PELTOR™ Optime™ III Earmuffs (H540A headband)

| Frequency (Hz) | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|----------------|------|------|------|------|------|------|------|------|
| Mf (dB) | 20.8 | 17.4 | 24.7 | 34.7 | 41.4 | 39.3 | 47.5 | 42.6 |
| sf (dB) | 3.1 | 2.1 | 2.6 | 2.0 | 2.1 | 1.5 | 4.5 | 2.6 |
| APVf (dB) | 17.7 | 15.3 | 22.1 | 32.7 | 39.3 | 37.8 | 43.0 | 40.0 |

SNR = 35dB H = 40dB M = 32dB L = 23dB

Attenuation values

3M™ PELTOR™ Optime™ III Earmuffs (H540B neckband)

| Frequency (Hz) | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|----------------|------|------|------|------|------|------|------|------|
| Mf (dB) | 20.9 | 17.5 | 24.5 | 34.5 | 41.4 | 39.5 | 47.3 | 42.0 |
| sf (dB) | 3.3 | 2.3 | 2.7 | 2.0 | 2.2 | 2.0 | 4.4 | 2.8 |
| APVf (dB) | 17.6 | 15.2 | 21.8 | 32.5 | 39.2 | 37.5 | 42.9 | 39.2 |

SNR = 35dB H = 40dB M = 32dB L = 23dB

3M™ PELTOR™ Optime™ III Earmuffs (H540P3 helmet mounted)

| Frequency (Hz) | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|----------------|------|------|------|------|------|------|------|------|
| Mf (dB) | 20.1 | 17.1 | 24.5 | 34.8 | 40.2 | 39.6 | 46.7 | 43.1 |
| sf (dB) | 3.3 | 2.3 | 2.8 | 2.2 | 2.0 | 1.8 | 4.2 | 2.5 |
| APVf (dB) | 16.8 | 14.8 | 21.7 | 32.6 | 38.2 | 37.8 | 42.5 | 40.6 |

SNR = 34 dB H = 40 dB M = 32 dB L = 22 dB

Attenuation table key:

f = Test frequency

APVf = Assumed Protection Value

Mf = Mean attenuation value

sf = Standard deviation

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).

Important notice

The use of the 3M product described within this document assumes that the user has previous experience of this type of product and that it will be used by a competent professional. Before any use of this product it is recommended to complete some trials to validate the performance of the product within its expected application. All information and specification details contained within this document are inherent to this specific 3M product and would not be applied to other products or environment. Any action or usage of this product made in violation of this document is at the risk of the user. Compliance to the information and specification relative to the 3M product contained within this document does not exempt the user from compliance with additional guidelines (safety rules, procedures). Compliance to operational requirements especially in respect to the environment and usage of tools with this product must be observed. The 3M group (which cannot verify or control those elements) would not be held responsible for the consequences of any violation of these rules which remain external to its decision and control. Warranty conditions for 3M products are determined with the sales contract documents and with the mandatory and applicable clause, excluding any other warranty or compensation.

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