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# 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 Taliplast	Oceanic	E	ML	ML	ML
Sofop Taliplast	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](http://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	Ployether 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 = 37dB    H = 37dB    M = 35dB    L = 27dB

## 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.

### Personal Safety Division

3M United Kingdom PLC  
3M Centre  
Cain Road, Bracknell  
Berkshire RG12 8HT  
t: 0870 60 800 60  
www.3M.eu/PPEsafety

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