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Tel: +86-755-8981 8866 Fax: +86-755-8427 6832
Email & Skype: info@chipsmall.com Web: www.chipsmall.com
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

Technical Datasheet

3M™ Peltor™ X Series Ear Muffs

Product Description

Products Included:
Headband version:- X1A, X2A, X3A, X4A and X5A
Helmet mounted version:- X1P3, X2P3, X3P3, X4P3 and X5P3

The 3M Peltor X Series range of passive ear muffs are available in headband and helmet mounted version. These products are designed to provide moderate to very high level of attenuation and meet the needs of an extensive range of industrial applications.

When correctly selected and worn these products help reduce exposure to hazardous levels of noise and loud sounds.

The helmet mounted version is designed to fit a wide range of industrial safety helmets and rigid head tops.

NOTE: The headband version is electrically insulated - sometimes referred to as 'dielectric'.

The metal components of the headband have been covered by non-conductive material for use in a low voltage electrical hazard (less than 440 V ac). As there are no applicable standards for testing ear muffs against electrical insulating properties, the product has been evaluated at an external laboratory against a modified test method based on EN397:1995.

During assessment, the leakage current did not exceed 1.2mA when the external surface of the product made contact with an electrical source.

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 CE approved.

Key Features

- Modern, attractive low profile design
- Light-weight
- Twin headband design for greater balance and increased comfort
- Electrically insulated wire headband for greater and reliable protection
- Soft wide cushions help reduce pressure around the ears and improve comfort and wearability
- New innovative damping pads and spacer that helps improve attenuation
- New patented sealing ring foam technology for effective seal and protection
- Large space inside cup helps reduce moisture and heat build-up
- Easy to replace cushions and inserts help keep them hygienically clean
- Helmet mounted version fits directly to many industrial safety helmets

Materials

Component	Headband Version	Helmet Mounted Version
Headband and headband cover/ sleeve	Stainless steel wire, TPE, Polyester, Polypropylene, Acetal	N/A
Helmet Attachment Arm	N/A	Stainless steel wire, Acetal, Polyamide
Cups	ABS/TPU	ABS/TPU
Insert (Liner)	PU Foam	PU Foam
Cushions and Cushion Covers	PU Foam and PVC	PU Foam and PVC

Helmet Mounted Version Approved Combination

Helmet Brand	Model Number	P3 Adapter	Size Combination				
			X1P3	X2P3	X3P3	X4P3	X5P3
3M	G500 Headgear	E	S/M/L	S/M/L	S/M/L	S/M/L	S/M/L
3M	G22	E	S/M/L	S/M/L	M/L	S/M/L	L
3M	G2000	K*	S/M/L	S/M/L	S/M/L	S/M/L	M/L
3M	G3000	E	S/M/L	S/M/L	S/M/L	S/M/L	M/L
3M	Versaflo™ M-106 and M-107	AF*	S/M/L	S/M/L	S/M/L	S/M/L	S/M/L
3M	Versaflo™ M-306 and M-307	AF*	S/M/L	M/L	M/L	S/M/L	L
Auboueix/Seybol	Kara	E	S/M/L	S/M/L	S/M/L	S/M/L	M/L
MSA	V-Gard 500	E	S/M/L	S/M/L	S/M/L	S/M/L	S/M/L
Peltz	Vertex Best	E	M/L	M/L	M/L	M/L	L
Protector	Style 300	E	M/L	M/L	M/L	M/L	M/L
Protector	Style 600	E	S/M/L	S/M/L	S/M/L	S/M/L	M/L

Key: *Adapter to be ordered separately.

Mass

Model	Mass (g)
X1A	184
X1P3	185
X2A	220
X2P3	220
X3A	245
X3P3	247
X4A	234
X4P3	236
X5A	351
X5P3	353

Standards and Approval

The 3M™ Peltor™ X Range Ear Muffs have been tested against EN352-1:2002 (Headband Version) and EN352-3:2002 (Helmet Mounted Version).

These products meet the Basic Safety Requirements as laid out in Annex II of the European Community Directive 89/686/EEC, and have been examined at the design stage by Combitech AB,. Box 168, SE-73223 Arboga, Sweden. (Notified Body number 2279).

Applications

The 3M™ Peltor™ X Series range ear muffs are ideal for protection against noise arising from a wide range of applications in the workplace and leisure activity. Examples of typical applications include:-

- Metal processing
- Automotive
- Airports
- Construction
- Textile manufacture
- Chemical & pharmaceutical manufacture
- Cement manufacture
- Printing
- Woodworking
- Heavy engineering
- Foundry
- Steelworks
- Mining and quarrying

Attenuation Values

3M™ Peltor™ X1A

Frequency (Hz)	63	125	250	500	1000	2000	4000	8000
Mean attenuation (dB)	15.6	11.9	15.4	24.5	34.3	32.8	37.4	37.4
Std deviation (dB)	3.6	2.0	2.6	2.6	2.3	3.3	2.5	3.8
Assumed Protection Value (dB)	12.0	9.9	12.8	22.0	31.9	29.5	34.9	33.5

SNR=27 dB H=32 dB M=24 dB L=16 dB

3M™ Peltor™ X2A

Frequency (Hz)	63	125	250	500	1000	2000	4000	8000
Mean attenuation (dB)	19.0	14.1	22.2	31.1	39.7	36.6	37.0	37.9
Std deviation (dB)	4.5	2.2	2.1	2.7	3.2	3.2	3.7	3.4
Assumed Protection Value (dB)	14.5	11.9	20.1	28.4	36.6	33.5	33.3	34.5

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

3M™ Peltor™ X3A

Frequency (Hz)	63	125	250	500	1000	2000	4000	8000
Mean attenuation (dB)	21.5	22.8	25.1	27.0	40.0	35.8	38.5	38.9
Std deviation (dB)	3.0	2.1	3.1	1.7	2.8	2.2	2.7	2.9
Assumed Protection Value (dB)	18.4	20.7	22.0	25.4	37.2	33.6	35.8	35.9

SNR=33 dB H=35 dB M=30 dB L=25 dB

3M™ Peltor™ X4A

Frequency (Hz)	63	125	250	500	1000	2000	4000	8000
Mean attenuation (dB)	19.6	17.8	22.1	30.6	39.5	37.3	43.8	42.1
Std deviation (dB)	4.1	2.3	2.5	1.8	2.9	4.1	2.8	4.0
Assumed Protection Value (dB)	15.5	15.5	19.6	28.8	36.6	33.2	41.1	38.2

SNR=33 dB H=36 dB M=30 dB L=22 dB

3M™ Peltor™ X5A

Frequency (Hz)	63	125	250	500	1000	2000	4000	8000
Mean attenuation (dB)	23.0	22.3	28.8	39.7	44.2	39.8	43.0	40.2
Std deviation (dB)	3.1	2.4	2.4	2.7	3.4	4.6	2.8	2.9
Assumed Protection Value (dB)	19.8	19.9	26.4	37.0	40.9	35.2	40.2	37.3

SNR=37 dB H=37 dB M=35 dB L=27 dB

3M™ Peltor™ X1P3

Frequency (Hz)	63	125	250	500	1000	2000	4000	8000
Mean attenuation (dB)	14.7	11.4	15.8	24.5	32.5	32.0	35.6	35.1
Std deviation (dB)	3.3	3.7	2.4	2.9	2.9	3.7	2.5	4.9
Assumed Protection Value (dB)	11.4	7.7	13.4	21.6	29.7	28.3	33.1	30.1

SNR=26 dB H=30 dB M=23 dB L=15 dB

3M™ Peltor™ X2P3

Frequency (Hz)	63	125	250	500	1000	2000	4000	8000
Mean attenuation (dB)	15.9	13.8	20.2	30.0	37.7	35.4	34.9	35.8
Std deviation (dB)	4.6	2.8	2.1	3.2	2.6	3.0	3.0	4.7
Assumed Protection Value (dB)	11.3	11.0	18.1	26.8	35.1	32.4	31.9	31.1

SNR=30 dB H=33 dB M=28 dB L=19 dB

3M™ Peltor™ X3P3

Frequency (Hz)	63	125	250	500	1000	2000	4000	8000
Mean attenuation (dB)	18.9	20.0	24.2	27.4	40.1	36.0	39.7	37.0
Std deviation (dB)	3.3	2.8	1.7	2.1	3.0	3.0	3.5	3.7
Assumed Protection Value (dB)	15.6	17.2	22.6	25.3	37.1	33.1	36.2	33.3

SNR=32 dB H=34 dB M=30 dB L=24 dB

3M™ Peltor™ X4P3

Frequency (Hz)	63	125	250	500	1000	2000	4000	8000
Mean attenuation (dB)	16.6	16.8	21.8	30.6	40.1	36.7	43.1	41.9
Std deviation (dB)	3.6	2.5	2.1	1.9	2.3	3.7	2.7	4.7
Assumed Protection Value (dB)	12.9	14.3	19.7	28.7	37.8	32.9	40.4	37.2

SNR=32 dB H=36 dB M=30 dB L=21 dB

3M™ Peltor™ X5P3

Frequency (Hz)	63	125	250	500	1000	2000	4000	8000
Mean attenuation (dB)	20.4	22.0	26.9	38.2	43.5	38.7	41.0	40.4
Std deviation (dB)	3.3	3.1	2.2	2.8	3.4	4.5	2.5	3.3
Assumed Protection Value (dB)	17.1	18.9	24.7	35.4	40.2	34.2	38.5	37.2

SNR=36 dB H=36 dB M=34 dB L=26 dB

Key

APVf = Assumed Protection Value

Mf = Mean attenuation value

sf = Standard deviation

H = High-frequency attenuation value (predicted noise level reduction for noise with $L_C - L_A$ = -2dB)

M = Medium-frequency attenuation value (predicted noise level reduction for noise with $L_C - L_A$ = +2dB)

L = Low-frequency attenuation value (predicted noise level reduction for noise with $L_C - L_A$ = +10dB)

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

Accessories/Replacement

The cushions and inserts on the X Series can be replaced with the Hygiene Kits listed below for improved comfort and reassured protection.

Hygiene Kits

Ear Muff Model	Hygiene Kit
X1A / X1P3	HYX1
X2A / X2P3	HYX2
X3A / X3P3	HYX3
X4A / X4P3	HYX4
X5A / X5P3	HYX5

In addition, the HY100A and HY100A-01 Hygiene Pads can be placed on the cushions to help absorb moisture and sweat.

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Personal Safety Division

3M United Kingdom plc
3M Centre,
Cain Road, Bracknell
Berkshire RG12 8HT
United Kingdom
Tel: 0870 60 800 60
www.3M.co.uk/safety
twitter.com/3M_UK_Safety

3M Ireland Limited
The Iveagh Building
The Park
Carrickmines
Dublin 18
Tel: 1800 320 500

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