

All Bilsom and Howard Leight hearing protectors are CE-certified and have been tested in accordance with the relevant EN352 standards.



From our beginnings as a one-man operation more than 30 years ago, Howard Leight Industries has grown into one of the largest manufacturers of in-ear hearing protection in the industrial market and the recognized innovator in protection and fit. Since 2001, we've been part of the BACOU-DALLOZ group, a world leader in personal protective equipment.

Bilsom

Founded in Sweden in 1968, Bilsom leads the industry in developing innovative sound management technologies and products that are used in some of the most challenging environments in the world. Bilsom is a part of the BACOU-DALLOZ group, a world leader in personal protective equipment.

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HEARING protection





Bacou-Dalloz is the world leader in personal protective equipment (PPE). The group takes advantage of this position to constantly innovate and develop total solutions for the protection of people in the workplace or in risky situations.

With its two complementary product lines (earplugs and earmuffs), Bacou-Dalloz can cover all noise-related hazards. At the cutting edge of research and development, the solutions offered by the Group guarantee optimal protection and exceptional user comfort.





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Howard Leight leads the industry by offering the most choices of in-ear hearing protection. Our complete line of Disposable, Reusable, Detectable and Banded Earplugs includes options for material, shape, size and SNR (Single Number Rating) that provide a unique Comfort Profile for every user, every environment. As the innovation leader, only Howard Leight is continually developing new designs, materials and technologies that take comfort and protection to the next level.



Bilsom

p 10 - 16

For more than 30 years, Bilsom has built a legacy of engineering excellence. Our innovative hearing protection devices are tested to the limit every day in some of the most challenging environments in the world. We continue the Bilsom legacy today by introducing many new and technologically advanced earmuffs.

Whether you need to protect workers from long-term exposure to harmful noise or facilitate communication among co-workers in hazardous environments, Bilsom has the expertise to deliver innovative and reliable solutions for hearing protection and sound management.

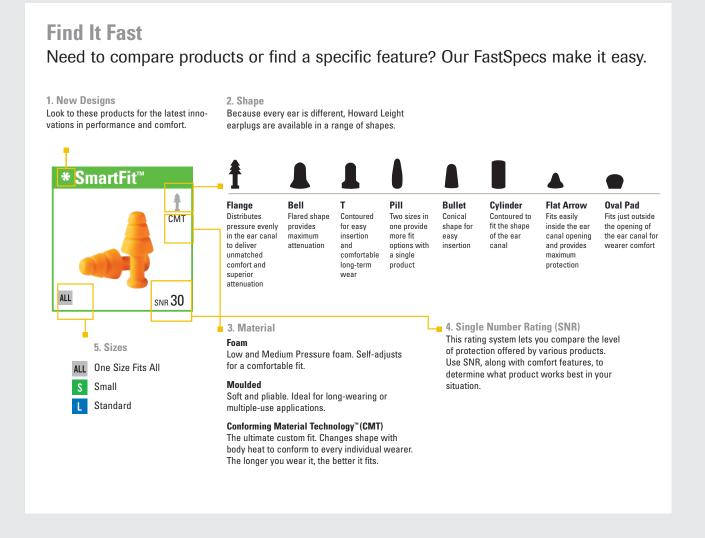




It's all about choice.

Selecting the right protection for your workers means more than choosing the earplug with the highest SNR. A better way to ensure that hearing protection is used consistently and properly is to select earplugs by Comfort Profile.

That means considering all the features that make one earplug work and fit differently than another: material, shape, size and SNR. Howard Leight makes it easy to compare products and ensures that all your workers receive the right fit and protection.





Disposable Earplugs

Disposable shouldn't mean single choice. Howard Leight offers a comprehensive choice of disposable products that include the comfort features your employees deserve, plus the highest SNR available.

An economic and convenient choice for work situations that demand a high degree of comfort, frequent changes or where hygiene presents a problem for reuse.

All disposable uncorded plugs delivered: 200 pair-box, 2000 pair-case All disposable corded plugs delivered: 100 pair-box, 1000 pair-case

(Except Bilsom 303)



High SNR & great comfort

- Improved design easier to insert, counters tendency to back out of the ear
- The world's most-used polyurethane earplug
- Bell shape delivers maximum in-ear comfort
- Smooth, soil-resistant skin prevents dirt buildup

Max uncorded : **33 011 61** Max corded : **33 011 30**



Comfort for smaller wearers

- Ideal size for female workers
- Low pressure foam expands gently for comfortable longterm wear
- Contoured T-shape for easy handling and wear

Max Lite uncorded : 33 011 20 Max Lite corded : 33 011 21



Two sizes in one product

- Improves individual fit, while simplifying inventory
- Smooth, soil-resistant skin prevents dirt buildup
- · Self-adjusting foam expands to fit virtually every wearer

MultiMax uncorded: 33 011 09



The bright idea in protection

- Vibrant colours make protection visible and fun
- Self-adjusting foam expands to fit virtually every wearer
- Contoured T-shape for easy insertion and wear

Laser Lite uncorded : 33 011 05 Laser Lite corded : 33 011 06







New no-roll foam

- Patented no-roll design mak ertion easy
- Smooth outer skin and resulted diameter provide long-term comfort
- Delivers instant protection upon proper insertion no need to wait for foam to expand
- Three attenuation levels for targeted attenuation (Orange SNR 29, Green SNR 27, Blue SNR 23)

Matrix Orange uncorded: 10 112 36 Matrix Green uncorded: 10 112 37 Matrix Blue uncorded: 10 112 38 Matrix Orange corded: 10 125 21 Matrix Green corded: 10 125 20 Matrix Blue Corded: 10 127 20



Conical shape for easy insertion

- Polyurethane foam plug available in 2 sizes to ensure a proper and comfortable fit
- Smooth outer surface for better hygiene
- PVC-free

Bilsom 303 Large: 10 050 73 (1 pair-pouch, 200 pair-box, 2000 pair-case)
Bilsom 303 Small: 10 050 74 (1 pair-pouch, 200 pair-box, 2000 pair-case)
Bilsom 303 Large: 10 071 92 (10 pair-pouch, 200 pair-box, 2000 pair-case)
Bilsom 303 Small: 10 071 93 (10 pair-pouch, 200 pair-box, 2000 pair-case)
Bilsom 304 Large (corded): 10 001 06 (1 pair-pouch, 100 pair-box, 500 pair-case)
Bilsom 304 Small (corded): 10 001 07 (1 pair-pouch, 100 pair-box, 500 pair-case)



Earplugs dispensers

Leight Source LS-500 and LS-400 as well as Bilsomat 400 and Bilsomat 100 are efficient dispensers that ensure a ready supply of earplugs in any workplace. They are easy to use, highly visible thus increasing compliance, reducing packaging waste, and saving money.



LS-500 dispenser

LS-500 dispenser is made of heavy-duty anodised aluminium and designed for wall-mounting. The system dispenses earplugs with a simple turn of the handle. Ideal for large factories and process industries that have zero tolerance for packaging waste.

Leight Source 500 pair dispenser: **33 012 73** (delivered empty) Leight Source Refills: 500 pair-refill, 2000 pair-case:

Max: 33 011 65 Max Lite : 33 012 72 Laser Lite: 33 012 71 MultiMax: 33 012 61 Matrix Orange : 10 127 23 Matrix Green: 10 127 22 Matrix Blue : 10 127 21

















LS-400 dispenser

LS-400 dispenser is a wall-mounted dispenser. Fully transparent, it can be refilled before it is empty. Dispenser parts are 100% reusable. Dispense earplugs by a simple twist of the knob.

Leight Source 400 pair dispenser: 10 130 40 (delivered empty) Leight Source Refills: 200 pair-refill, 2000 pair-case:

Max: 10 130 46 Max Lite: 10 130 48 Laser Lite: 10 130 47 MultiMax : 10 130 45 Matrix Orange : 10 130 42 Matrix Green: 10 130 41 Matrix Blue: 10 129 11





















Bilsomat 400 and Bilsomat 100 for Bilsom 303 earplugs

Bilsomat 400 for Bilsom 303 earplugs

Bilsomat 400 with 400 pairs of Bilsom 303 earplugs

10 062 02 for 303 Large 10 062 03 for 303 Small

Bilsomat 400 refill with 200 pair-pouch, 2000 pair-case of Bilsom 303

10 061 86 for 303 Large 10 061 87 for 303 Small

Bilsomat 100 for Bilsom 303 earplugs

Dispenser of 100 pairs of Bilsom 303 earplugs

10 058 52 for 303 Large 10 058 50 for 303 Small





Reusable Earplugs

Reusable Earplugs last for weeks, reduce waste and save money. Simply clean with warm water. Ideal for environments where workers can retain and store earplugs for reuse.



A revolution in personal fit

- Advanced material uses body heat to adapt to the individual shape of each wearer's ear canal
- Delivers superior comfort and a truly individual fit
- Simplifies inventory control a single product fits almost every wearer
- HearPack® storage case; unique detachable cord system

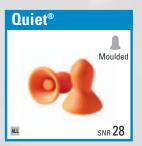
SmartFit corded: 10 112 39 (HearPack / 50 pair-box, 500 pair-case)



Total protection, comfort and fit

- FlexiFirm® core for easy handling
- SoftFlange[™] design for comfort and fit
- · Unique detachable cord system

Fusion standard size corded: 10 112 82 (HearPack / 50 pair-box, 500 pair-case) Fusion small size corded: 10 112 81 (HearPack / 50 pair-box, 500 pair-case)



Easy handling and better fit

- Patented "no-roll" design is easy to handle and fit
- Contoured shape comfortably matches contours of the ear canal
- Built-in insertion stem

Quiet uncorded: 33 011 70 (flip-top box / 100 pair-box, 1000 pair-case)
Quiet corded: 33 011 72 (flip-top box / 100 pair-box, 1000 pair-case)
Quiet 200 pair-refill for Leight Source dispenser (2000 pair-case): 33 012 75



An industry standard

- Patented internal air cushion
- Maintains superior comfort during extended wear
- Highest SNR available in reusable earplugs

Airsoft uncorded: **33 011 75** (flip-top box / 100 pair-box, 1000 pair-case)
Airsoft white nylon cord: **33 012 74** (flip-top box / 100 pair-box, 1000 pair-case)
Airsoft red PVC cord: **33 011 76** (flip-top box / 100 pair-box, 1000 pair-case)

Bilsom® 656 NST Moulded SNR 22

Clarity™ technology in an earplug

- Rigid stem and soft flanges combined with the built-in miniature membrane provide uniform and moderate attenuation
- Uniform attenuation so that the ability to talk to co-workers is enhanced
- · Supersoft flanges for a perfect fit and great comfort
- Rigid stem for easy insertion, fitting and removal
- Handy plastic storage case

Bilsom 656 Large: 10 053 29 (10 pair-box, 100 pair-case) Bilsom 656 Small: 10 053 28 (10 pair-box, 100 pair-case)



Detectable Earplugs

Our comprehensive selection of detectable earplugs are designed for high visibility and detectability. Available in disposable and reusable options. Specially created for environments where contamination from foreign objects is unacceptable.



Long wearing comfort in reusable detectable

- Advanced material uses body heat to adapt to the individual shape of each wearer's ear canal
- Delivers superior comfort and a truly individual fit
- Blue colour for visual detection
- Metallic cord and shaft ring easily detected by automated equipment

SmartFit Detectable corded: 10 125 22 (polybag / 50 pair-box, 500 pair-case)



Total protection, comfort and fit in reusable

- · Patented dual material design
- FlexiFirm® core for easy handling; SoftFlanges™ for comfort and fit
- Metallic cord and shaft ring easily detected by automated equipment
- · Cleans with warm water, lasts for weeks

Fusion Detectable standard size corded : 10 112 34 (HearPack / 50 pair-box, 500 pair-case) Fusion Detectable small size corded : 10 112 35 (HearPack / 50 pair-box, 500 pair-case)



Highest SNR available in disposable detectable

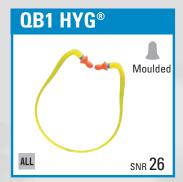
- Self-adjusting foam expands to fit virtually any wearer
- Non-ferrous metal and bright colours easily detected by visual and automated inspection

Laser Track corded: 33 011 67 (100 pair-box, 1000 pair-case)



Banded Earplugs

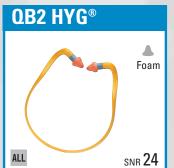
We offer a variety of performance features, including a patented band design that prevents earpads from touching dirty or contaminated surfaces when set down. Great for managers or for use in environments with intermittent sound hazards.



Inner-aural protection

- Smooth, ergonomic pads fit in the ear for maximum protection
- Patented band design prevents ear pads from touching dirty or contaminated surfaces
- Lightweight and portable designed especially for environments with intermittent noise hazards

QB1 HYG: **33 012 82** (10 pair-box, 100 pair-case) Replacement pods: **33 012 81** (50 pair-box, 200 pair-case)



Supra-aural protection

- Soft pads rest partially in the ear for a balance of protection and comfort
- Patented band design prevents ear pads from touching dirty or contaminated surfaces
- Lightweight and portable

QB2 HYG: **33 012 80** (10 pair-box, 100 pair-case)
Replacement pods: **33 011 81** (50 pair-box, 200 pair-case)



Semi-aural protection

- Super soft pads rest outside the ear for outstanding comfort
- Patented band design prevents ear pads from touching dirty or contaminated surfaces
- Lightweight and portable designed especially for environments with intermittent noise hazards

QB3 HYG: **33 012 79** (10 pair-box, 100 pair-case) Replacement pods: **33 011 83** (50 pair-box, 200 pair-case)



Foldable headband and soft foam plugs

- Perfect solution when there is a temporary need for hearing protection
- Exchangeable plugs
- Lightweight & foldable it fits easily into a pocket when not needed

Bilsom PerCap: 10 059 52 (1 pair-pocket pack, 10 pair-box) Replacement pods: 10 059 80 (10 pair-box)



Bilsom[®]

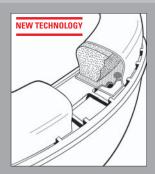
Hearing safety tools for the most demanding work environments.

Every day, workers count on Bilsom products to block noise and manage sound in some of the world's most acoustically challenging environments. Bilsom products meet these demands through a combination of advanced technology, performance and comfort features that put people first.

Find It Fast

Need to compare products or find a specific feature? Our FastSpecs make it easy.





AIR FLOW CONTROL™

Patented High Performance Technology available only from Bilsom.

Bilsom's patented Air Flow Control™ technology delivers improved overall attenuation – especially in low frequencies – optimal for all noise environments.

How does it work?

- · Air is the primary medium through which sounds travels
- Unique patented design allows air to move freely from the inside of the ear cushion to the outside
- · Reduces ear cup vibration caused by low frequency noise

Air Flow Control is a standard feature on all Thunder and Leightning series earmuffs.



Noise Blocking Earmuffs

When you need to block the noise, Bilsom gives you the tools to do the job. From the maximum attenuation available in an earmuff to economical designs, we set the standard for noise blocking and hearing protection. Our Thunder®, Leightning®, Viking™, and Mach 1 earmuffs provide a choice of features and protection, ideal for many workers and environments.











Thunder®

NEW TECHNOLOGY

Top-of-the-line protection and comfort Now with patented Air Flow Control™

- Maximum protection from an earmuff
- · Non-deforming comfort headband to fit all head sizes
- Ventilated inner headband and soft pads for maximum comfort
- Quick-Click height adjustment
- Dielectric design safe for electrical environments

Thunder® Headband Earmuffs

Thunder T1 Earmuff : **10 109 28** Thunder T2 Earmuff : **10 109 29** Thunder T3 Earmuff : **10 109 70**

Thunder® Helmet Earmuffs

- For use with wide variety of popular hard hats
- Ear cups snap-lock in place and swing-back when not in use
- Extensive range of adapters available

Thunder T1H Helmet Earmuff: 10 116 01 Thunder T2H Helmet Earmuff: 10 116 02 Thunder T3H Helmet Earmuff: 10 116 03

Thunder® Folding Earmuff

- $\bullet \ \, \text{Convenient folding headband design for easy storage} \\$
- Quick-Click height adjustment for personalized fit
- Belt storage case available separately
 Thunder T1F Folding Earmuff: 10 116 00

Hygiene Kits

Hygiene kit for T1, T1H, T1F: 10 109 74 Hygiene Kit for T2, T2H: 10 109 75 Hygiene Kit for T3, T3H: 10 109 76

Noise Blocking Earmuffs







Leightning® NEW TECHNOLOGY

Maximum comfort and contemporary design Now with patented Air Flow Control™

- Robust steel headband withstands demanding use
- Exclusive snap-in cushions make upkeep and ear cushion replacement fast and easy
- · Padded foam headband delivering long-wearing comfort
- Contemporary design improves wearer compliance
- Telescoping height adjustment remains fixed during use

Leightning® Headband Earmuffs

Leightning L1 Earmuff: 10 109 22 Leightning L2 Earmuff : **10 109 23** Leightning L3 Earmuff: 10 109 24

Leightning® Helmet Earmuffs

- For use with wide variety of popular hard hats
- Ear cups snap-lock in place and swing-back when not in
- Extensive range of adapters available

Leightning L1H Helmet Earmuff: 10 119 91 Leightning L2H Helmet Earmuff: 10 119 92 Leightning L3H Helmet Earmuff: 10 119 93

Leightning® Neckband Earmuffs

- Sleek, anatomic behind-the-head design
- Use with faceshields, visors, hart hats, and other PPE
- Includes headband strap for better positioning

Leightning L1N Neckband Earmuff: 10 119 94 Leightning L2N Neckband Earmuff: 10 119 95 Leightning L3N Neckband Earmuff: 10 119 96

Leightning® Folding Earmuff

- Convenient folding headband design for easy storage
- · Belt storage case available separately Leightning L2F Folding Earmuff: 10 119 97

Hygiene Kits

Hygiene kit for L1, L1H, L1N: 10 109 71 Hygiene kit for L2, L2H, L2N, L2F: 10 109 72 Hygiene kit for L3, L3H, L3N: 10 109 73







Viking™

Multiple-position headband

- Three position headband offers more wearing options and works with helmets, shields and other protective equipments
- Super soft ear cushions deliver longwearing comfort
- Dielectric design is safe for electrical environments
- Headband strap allows multiple-position wear

Viking V1 : 10 109 25 Viking V2 : 10 109 26 Viking V3 : 10 111 70

Hygiene Kits

Hygiene Kit for V1 : 10 060 18 Hygiene Kit for V2 : 10 109 77 Hygiene Kit for V3 : 10 109 78



Mach 1™

Sets new records for value-for-money hearing protection

- Dielectric design
- Low weight
- Broad ear cushions





Sound Management Earmuffs

Sometimes blocking sound isn't enough. You need to block noise and let information in. Our Sound Management earmuffs use patented electronic and non-electronic technologies that block noise while letting alarms, warning signals and co-workers' voice frequencies be heard more naturally.









Clarity™

Bilsom's Clarity Sound Management Technology improves worker safety by blocking noise while voice and signal frequencies can be heard more naturally. Clarity earmuffs provide uniform attenuation that blocks low frequency noise but enhances perception of higher voice and warning signal frequencies without distortion.

Advanced Sound Management Technology enhances on-the-job communication

- Uniform attenuation allows wearer to hear co-workers, instructions and other important sounds more naturally while blocking out harmful noise
- Does not isolate worker from environment, improves overall safety especially in sensitive environments
- Dielectric construction suitable for all workplaces, especially electrical environments
- Uniform headband pressure for all head sizes, providing better comfort for long-term wear
- Inner-ventilated headband minimizes pressure on the head, breathes easier in warm/humid climates
- Non-deforming outer headband withstands rough treatment in the toughest workplaces
- Quick-Click height adjustment remains fixed during wear
- Snap-in ear cushions make replacement quick and easy

Clarity™ Headband Earmuffs

Clarity C1 Earmuff : 10 111 42 Clarity C2 Earmuff : 10 111 45 Clarity C3 Earmuff : 10 111 46

Clarity™ Helmet Earmuffs

- For use with wide variety of popular hard hats
- Ear cups snap-lock in place and swing-back when not in
- Extensive range of adapters available

Clarity C1H Helmet Earmuff: 10 112 42 Clarity C3H Helmet Earmuff: 10 112 43

Clarity™ Folding Earmuff

- Convenient folding headband design for easy storage
- Belt storage case available separately
- · Quick-Click height adjustment for personalized fit

Clarity C1F Folding Earmuff: 10 111 43

Hygiene Kits

Hygiene kit for C1, C1H, C1F: 10 060 80 Hygiene kit for C2: 10 060 17 Hygiene kit for C3, C3H: 10 060 81





Impact™

Electronic noise filtering + sound amplification

- Directional stereo microphones amplify and enhance sound for more natural hearing
- Ideal for hearing impaired workers
- Limits sound amplification to 82dB(A)
- 700 hour battery life, automatic shut-off function
- New easy access battery compartment

Impact™ Headband Earmuff

Impact : 10 103 76

Impact™ Helmet Earmuff

Impact H : 10 106 32

Hygiene Kit

Hygiene Kit for Impact & Impact H: 10 080 00



Radio Earmuffs

Add music and routine jobs become more satisfying. Our Radio earmuffs provide protection from noise – and let you listen to music from a built-in FM/AM radio.



Radio

Listen to built-in FM/AM radio while you work

- Built tough for outdoor work environments
- Limits sound radio volume to 82dB(A)
- 140 hour battery life from two AA batteries

Radio: 10 103 75

Hygiene Kit Radio: 10 080 00





Electo®

Protection, sound amplification and built-in FM/AM radio

- Separate controls for radio and sound amplification
- Directional microphones amplify and enhance voice sounds
- Limits sound amplification and radio volume to 82dB(A)
- 130 hour battery life from two AA batteries

Electo : **10 103 74** Electo H : **10 106 31** Hygiene Kit : **10 080 00**



3702

3710

3711











3715









Adapters

For helmets without slots:

Universal adapter **10 002 40 -** 3702 Bolt-on adapter **10 002 41 -** 3710

Blade adapters:

Centurion **10 002 42** - 3711 Balance, Bullard, LAS, MSA, Voss, Opus **10 002 43** - 3712

Norton, Bullard 10 002 44 - 3713

Protector, AO, JSP Domeguard **10 002 45** - 3714

Auboueix 10 002 46 - 3715

Schubert 10 002 47 - 3716 JSP Invincible/European MK II 10 002 48 - 3717 AO, Bullard, Jackson, MSA, North, Willson Alpha 10 002 49 - 3718 JSP 10 002 50 - 3719

Protector 300/600, Sofup Oceanic II

10 052 92 - 3721



Bilsom Audiometric Cabin

Cabin is delivered dismantled, it is simple and quick to assemble. Both the window and the door can be positioned either on the left or on the right for more flexibility. Excellent sound attenuation particularly at the critical frequency 500 Hz for reliable hearing test results. Exterior dimensions: Width 950 mm, Depth 1050 mm, Height 2100 mm. The cabin features large observation window, comfortable patient bench seat, interior light, and efficient ventilation fan.

Attenuation

Hz	125	250	500	1000	2000	4000	8000
dB	25	33	47	51	51	56	61





Easy to attach to the belt or other parts of clothing. Slide the Headband of the Bilsom earmuff into the belt-clip and you have handy storage solution when the muff is not in use and then very easy to get hold of once you enter noisy areas again.

10 002 52



Bilsom Belt Case

The practical design of this robust bag with its velcro inside makes it popular to use together with Bilsom C1F, L2F, T1F and contributes to increasing user acceptance and reaching 100% wearing time.

10 002 51



Bilsom COOL II Pads

Sweat absorbing earmuff pad for increased comfort and hygiene. Made of dermatologically tested material, it is able to absorb 15 times its own weight in water. Bilsom® COOL fits most brands of earmuffs on the market. 5-pair paper envelope: 10 003 65 - 100-pair dispenser pack: 10 003 64



Hygiene Kits

Spare part kit containing ear cushions and foam closing pads.

Ref.	Description	Ref.	Description
10 109 74	Hygiene kit for T1, T1H, T1F	10 060 18	Hygiene kit for V1
10 109 75	Hygiene kit for T2, T2H	10 109 77	Hygiene kit for V2
10 109 76	Hygiene kit for T3, T3H	10 109 78	Hygiene kit for V3
10 109 71	Hygiene kit for L1, L1H, L1N	10 060 80	Hygiene kit for C1, C1H, C1F
10 109 72	Hygiene kit for L2, L2H, L2N, L2F	10 111 45	Hygiene kit for C2
10 109 73	Hygiene kit for L3, L3H, L3N	10 111 46	Hygiene kit for C3, C3H
		10 080 00	Hygiene kit for Impact, Impact H, Radio, Electo,
			Flecto H

Attenuation data



Attenuation according to EN 352/ISO 4869 - Media: Mean value in dB - SD: Standard deviation in dB - APV: Assumed protection in dB

	Frequency in Hz		63	125	250	500	1000	2000	4000	8000	SNR	Н	M	L
Disposable earplugs		Media	34.6	37.1	37.4	38.8	38.2	37.9	47.3	44.8				
	Max	SD APV	3.0 31.6	4.5 32.6	4.3 33.1	3.7	3.5	4.0	3.5	7.2	37	36	35	34
		Media	31.0	35.5	36.7	35.1 39.0	34.7	33.9	43.8	37.6 43.3				
	Max Lite	SD	-	6.3	7.1	6.6	6.1	3.7	3.8	43.3	34	32	32	31
		APV	-	29.2	29.6	32.4	31.3	30.1	38.1	38.6				
		Media	33.4	34.1	35.5	37.6	34.9	35.7	42.5	44.1		34		
	Laser Lite	SD APV	4.6 28.8	4.7 29.4	4.6 30.9	4.1 33.5	5.0 29.9	2.8 32.9	2.9 39.6	4.2 39.9	35		32	31
		Media	17.6	21.8	26.1	28.7	29.5	34.9	37.2	39.8		31		
	Matrix orange	SD	5.1	4.7	5.4	5.2	5.3	3.8	2.7	4.0	29		25	22
		APV	12.5	17.1	20.7	23.5	24.2	31.1	34.5	35.8				
	Matrix green	Media SD	17.3 5.4	21.0 5.3	24.5 6.7	27.3 6.6	27.9 4.8	33.8 3.7	36.1 5.2	40.8 6.5	27	29	23	20
sod	Wattix green	APV	11.9	15.7	17.8	20.7	23.1	30.1	30.9	34.3	21		23	20
Dis		Media	11.9	14.8	17.4	22.9	25.5	30.3	36.7	37.5				
	Matrix blue	SD	3.2	4.5	4.8	6.2	4.4	5.0	5.1	6.4	23	26	20	15
		APV Media	8.7 34.5	10.3 37.7	12.6 37.8	16.7 39.8	21.1 36.2	25.3 35.9	31.6 41.5	31.1 42.9				
	MultiMax	SD	34.5 6.7	7.6	6.7	6.8	30.2 5.1	35.9	41.5	6.1	35	33	32	32
		APV	27.8	30.1	31.1	33.0	31.1	32.0	37.3	36.8			02	
		Media	28.4	37.3	37.9	39.1	36.0	34.6	42.5	46.4		32	29	29
	Bilsom 303/304	SD APV	6.4 22.0	9.0 28.3	9.2 28.7	9.7 29.4	7.9 28.1	4.6 30.0	4.9 37.6	4.7 41.8	33			
	Frequency in Hz	AFV	63	20.3 125	250	500	1000	2000	4000	8000	SNR	Н	М	L
	Trequency in tiz	Media	26.1	29.0	28.8	29.1	29.5	33.1	43.3	44.5	Sitili			-
Reusable earplugs	Quiet	SD	6.1	6.9	6.4	7.2	5.1	5.3	6.9	3.4	28	29	25	23
		APV	20.0	22.1	22.4	21.9	24.4	27.8	36.4	41.1				
	AirSoft	Media	25.8	29.6	30.7	30.2	30.9	33.4	42.6	43.5	00	30	26	0.5
		SD APV	5.9 19.8	5.4 24.2	5.7 25.0	7.2 23.0	4.8 26.0	4.8 28.6	6.1 36.5	4.9 38.6	30			25
		Media	24.6	28.3	28.6	27.9	29.4	31.0	40.0	40.9				
	Fusion	SD	6.0	5.1	5.6	5.0	5.6	3.7	5.6	5.5	28	29	25	24
		APV	18.6	23.2	23.0	22.9	23.8	27.3	34.4	35.4				
	SmartFit	Media SD	30.9 6.2	31.4 7.3	28.8 8.9	32.5 8.1	33.8 7.3	35.6 4.3	39.3 6.0	41.9 5.0	30	32	27	23
<u>~</u>		APV	24.7	24.1	19.9	24.4	26.5	31.3	33.3	36.9				
	Bilsom 656 NST	Media	23.3	23.0	21.3	21.5	24.3	30.8	28.6	39.4				17
		SD APV	5.4 17.9	5.9 17.1	6.2 15.1	5.3 16.2	5.5 18.8	3.9 26.9	6.3 22.3	6.4 33.0	22	24	19	
	Frequency in Hz	AL Y	63	125	250	500	1000	2000	4000	8000	SNR	Н	М	L
	rroquonoy in the	Media	33.4	34.1	35.5	37.6	34.9	35.7	42.5	44.1	0			_
són	Laser Trak	SD	4.6	4.7	4.6	4.1	5.0	2.8	2.9	4.2	35	34	32	31
횬		APV	28.8	29.4	30.9	33.5	29.9	32.9	39.6	39.9				
etectable earplugs	0 5 5 5 11	Media	30.9	31.4	28.8	32.5	33.8	35.6	39.3	41.9		32		23
ple	SmartFit Detectable	SD APV	6.2 24.7	7.3 24.1	8.9 19.9	8.1 24.4	7.3 26.5	4.3 31.3	6.0 33.3	5.0 36.9	30		27	
cta		Media	24.6	28.3	28.6	27.9	29.4	31.0	40.0	40.9				
ete	Fusion Detectable	SD	6.0	5.1	5.6	5.0	5.6	3.7	5.6	5.5	28	29	25	24
		APV	18.6	23.2	23.0	22.9	23.8	27.3	34.4	35.4				
	Frequency in Hz		63	125	250	500	1000	2000	4000	8000	SNR	Н	M	L
	QB1	Media	24.8	28.1	26.5	24.5	25.1	31.7	42.5	40.9		00		
		SD APV	4.3 20.5	3.2 24.9	5.6 20.9	5.7 18.8	3.3 21.8	4.0 27.7	1.8 40.7	4.7 36.2	26	28	22	21
ds	QB2	Media	22.5	24.7	22.7	18.7	22.5	30.8	35.8	34.6				
Banded earplugs		SD	5.4	4.4	4.8	1.8	3.6	4.9	3.8	5.8	24	26	20	19
		APV	17.1	20.3	17.9	16.9	18.9	25.9	32.0	28.8				
ed	QB3	Media SD	23.5 4.3	22.3 4.2	20.6 3.7	16.8 2.4	22.7 4.0	30.6 3.5	34.2 3.8	33.7 6.1	23	25	19	17
Bande		APV	19.2	18.1	16.9	14.4	18.7	27.1	32.4	27.6	23		13	
	Percap	Media	21.4	22.5	21.5	19.0	22.6	30.3	35.7	38.8		27		
		SD	4.8	3.5	3.6	2.9	2.7	3.1	4.2	4.3	24		20	18
		APV	16.6	19.0	17.9	17.9 16.1 19.9 27.2 31.5 34.5								

Bilsom

Attenuation according to EN 352/ISO 4869 - Media: Mean value in dB - SD: Standard deviation in dB - APV: Assumed protection in dB

	Attenuation according to EN 352/ISO 4869 -		63 125 250			500	1000	2000	4000	SNR	Н	М	L	
	Frequency in Hz	Mean	16.4	125 18.3	23.3	26.6	32.9	33.8	36.0	8000 37.9	SNK	п	IVI	L
	Thunder T1s	SD APV	5.4 11.0	18.3 4.3 14.0	23.3 2.7 20.6	26.6 2.3 24.3	32.9 2.3 30.6	33.8 2.9 30.9	36.0 2.3 33.7	37.9 3.2 34.7	30	32	28	21
	Thunder T2s	Mean SD	20.3 4.2	20.5 3.6	28.0 2.8	31.9 3.5	38.5 2.7	37.1 3.4	37.6 3.1	38.0 5.2	33	34	31	25
	Tilulider 125	APV	16.1	16.9	25.2	28.4	35.8	33.7	34.5	32.8	აა	34	31	
	Thunder T3s	Mean SD	21.5 3.6	23.6 5.3	30.8 4.5	34.6 3.0	40.3 2.2	38.3 3.4	43.1 3.4	40.3 3.6	36	37	34	26
		APV Mean	17.9 17.6	18.3 19.9	26.3 25.3	31.6 28.6	38.1 34.3	34.9 35.7	39.7 37.4	36.7 37.8				—
	Thunder T1Fs	SD APV	4.9 12.7	4.7 15.2	4.7 20.6	4.7 23.9	3.1 31.2	2.9 32.8	3.4 34.0	3.8 34.0	31	33	28	22
	Thundet T1Hs	Mean SD	15.9 2.7	18.7 3.8	22.5 3.9	23.4 2.5	32.4 2.2	34.4 2.3	35.5 2.3	37.9 4.7	29	32	26	20
		APV Mean	13.2	14.9 20.1	18.6 24.9	20.9	30.2	32.1 33.9	33.2 36.2	33.2 38.1				
	Thundet T2Hs	SD APV	2.9 14.0	3.3 16.8	2.8 22.1	2.4 23.0	2.3 31.7	2.9 31.0	3.2 33.0	4.6 33.5	30	32	28	23
	Thundet T3Hs	Mean SD	x x	X X	X X	X X	X X	X X	X X	X X	х	х	х	х
		APV Mean	17.9	x 20.3	22.9	x 28.3	x 32.9	x 32.3	x 39.3	x 35.1				
	Leightning L1s	SD APV	5.3 12.6	2.5 17.8	2.8 20.1	1.7 26.6	2.9 30.0	3.8 28.5	2.8 36.5	4.0 31.1	30	31	28	23
	Laightning L2a	Mean SD	20.0 4.5	20.1	24.5 2.9	29.3 3.2	34.4 2.6	32.4 3.0	35.9 2.6	35.6 3.2	31	31	29	
uffs	Leightning L2s	APV	15.5	16.1	21.6	26.1	31.8	29.4	33.3	32.4	31	31	23	23
Earmuffs	Leightning L3s	Mean SD APV	23.6 6.4	24.6 3.6	27.8 2.0	32.6 2.0	37.4 3.3	35.2 3.2	38.8 3.1	35.8 3.3	34	33	32	27
ng E		Mean	17.2 18.3	21.0 17.9	25.8	30.6 27.9	34.1	32.0 32.1	35.7 35.4	32.5 35.8				
ocki	Leightning L1Ns	SD APV	5.5 12.8	3.5 14.4	3.2 18.7	3.0 24.9	2.9 29.8	2.9 29.2	3.5 31.9	3.8 32.0	29	31	27	21
Noise Blocking	Leightning L2Ns	Mean SD	18.3 3.9	18.0 2.9	24.3 2.9	29.8 1.8	35.4 2.8	34.9 4.4	35.3 3.0	34.5 4.4	31	31	29	22
lois		APV Mean	14.4 21.0	15.1 21.6	21.4	28.0 32.1	32.6 36.5	30.5 32.4	32.3 38.3	30.1 37.4				
2	Leightning L3Ns	SD APV	3.5 17.5	3.2 18.4	2.8 25.0	2.3 29.8	3.0 33.5	3.6 28.8	4.1 34.2	5.0 32.4	32	31	31	26
	Leightning L2Fs	Mean SD	19.6 4.3	21.1 3.6	25.8 2.1	30.5 2.6	35.7 3.0	33.6 3.1	37.8 2.7	37.3 3.6	32	32	30	24
		APV Mean	15.3 14.3	17.5	23.7	27.9	32.7 32.6	30.5 32.9	35.1 36.6	33.7 35.5				
	Leightning L1Hs	SD APV	4.1 10.2	3.8 13.8	3.9 17.7	4.4 20.7	3.4 29.2	3.1 29.8	4.8 31.8	3.9 31.6	28	31	25	19
	Laightning LOHa	Mean SD	х	х	Х	Х	х	х	х	Х				
	Leightning L2Hs	APV	X X	X X	X X	X X	X X	X X	X X	X X	х	х	Х	Х
	Leightning L3Hs	Mean SD APV	X X X	X X X	X X X	X X X	X X X	X X X	X X X	X X X	х	х	х	х
	Viking V1 Over head -	Mean	11.8	10.7	15.9	26.1	31.8	34.3	32.7	33.3		01		
	Behind neck - Under chin	SD APV	3.4 8.4	3.3 7.4	3.4 12.5	2.9 23.2	3.0 28.8	3.9 30.4	2.7 30.0	3.0 30.3	26	31	23	14
	Viking V2 Over head - Behind neck - Under chin	Mean SD	14.7 3.8	14.9 3.1	19.5 2.6	26.6 2.5	32.6 2.3	34.4 2.6	37.3 3.8	36.5 3.5	29	33	26	18
	Viking V3 Over head -	APV Mean	10.9 16.9	11.8 16,8	16.9 20,8	24.1 30.4	30.3 36.8	31.8 36.7	33.5 41.4	33.0 37.8				
	Behind neck - Under chin	SD APV	3.0 13.9	3.6 13.2	3.1 17.7	3.1 27.3	3.3 33.5	4.6 32.1	3.5 37.9	4.9 32.9	30	34	28	20
	Mach 1	Mean SD	14.4 3.8	13.3 2.9	11.7 1.8	17.6 2.4	31.8 2.9	30.9 2.8	34.7 2.4	31.4 4.9	23	29	20	13
		APV Mean	10.6 12.6	10.4 15.7	9.9 23.9	15.2 27.8	28.9	28.1 25.8	32.3 29.0	26.5 31.0				
	Clarity C1	SD APV	4.5 8.1	3.3 12.4	23.9 2.7 21.2	2.8 25.0	2.9 20.4	2.0 23.8	3.0 26.0	2.6 28.4	25	24	22	20
	Clarity C1H	Mean SD	12.9 4.0	15.3 3.0	22.1 3.0	24.6 2.3	24.5 2.6	29.5 2.9	29.3 2.7	33.5 3.2	26	26	23	19
uffs	•	APV Mean	8.9 12.8	12.3 14.9	19.1	22.3	21.9 25.2	26.6 28.6	26.6 29.3	30.3 28.7				
arm	Clarity C1F	SD APV	4.0 8.8	3.8 11.1	3.8 20.4	2.6 25.1	2.1	2.9 25.7	3.4 25.9	4.2 24.5	26	25	24	19
E E	Clarity C2 Over head - Behind neck - Under chin	Mean SD	16.9 4.4	20.7 3.1	29.5 3.2	32.2 2.3	31.0 2.7	32.1 2.0	35.8 3.5	31.1 3.8	30	30	29	25
eme	Berlind floor Chact Chill	APV	12.4	17.6	26.3	29.9	28.3	30.0	32.3	27.3 33.5			20	
ınag	Clarity C3	Mean SD APV	4.1 17.0	25.6 3.1 22.4	33.3 2.5 30.8	37.5 2.9 34.6	34.9 2.9 32.0	1.9 30.3	38.8 4.0 34.8	33.5 4.4 29.1	33	31	32	29
Sound Management Earmuffs	01 : 0011	Mean	15.4	22.8	27.4	31.3	30.5	28.2	35.0	34.6		00	00	
JII N	Clarity C3H	SD APV	3.5 11.9	4.3 18.5	3.2 24.2	2.8 28.5	1.8 28.7	2.3 25.9	3.6 31.4	3.0 31.6	30	28	28	24
Š	Impact	Mean SD	-	15.5 2.1	21.6 2.8	29.7 3.8	28.5 3.6	30.5 2.7	39.3 4.6	42.7 3.7	28	30	25	20
		APV Mean	13.3	13.4	18.8	25.9 29.8	24.9	27.8 27.1	34.7 36.4	39.0 39.2				
	Impact H	SD APV	4.0 9.3	3.6 11.1	2.3 18.4	2.9 26.9	2.7 25.0	2.6 24.5	3.3 33.1	5.1 34.1	27	27	25	19
ffs	Radio	Mean SD	Ī	15.5 2.1	21.6 2.8	29.7 3.8	28.5 3.6	30.5 2.7	39.3 4.6	42.7 3.7	28	30	25	20
T T		APV Mean	-	13.4 15.5	18.8 21.6	25.9 29.7	24.9 28.5	27.8 30.5	34.7 39.3	39.0 42.7				
Radio Earmuffs	Electo	SD APV	-	2.1 13.4	2.8 18.8	3.8 25.9	3.6 24.9	2.7 27.8	4.6 34.7	3.7 39.0	28	30	25	20
	Electo H	Mean SD	13.3 4.0	14.7 3.6	20.7	29.8 2.9	27.7 2.7	27.1 2.6	36.4 3.3	39.2 5.1	27	27	25	19
		APV	9.3	11.1	18.4	26.9	25.0	24.5	33.1	34.1				.0