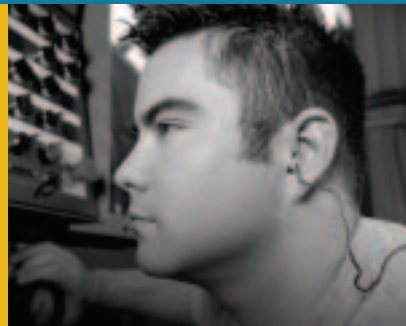
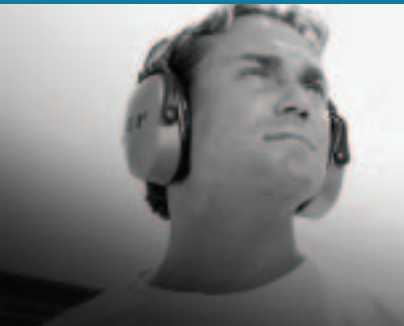


## 2008 Product Selection Guide



It's a matter  
of choice.



Hearing conservation is about more than supplying your employees with earplugs or earmuffs that block the most noise. It is about finding the solution that's right for your people.

At Howard Leight, we realize that the people who depend on our products to protect their hearing are as diverse as you can imagine. And the ways people select the right hearing protection are just as diverse. We've designed this Selection Guide with these guidelines in mind.

What's most important to you and your employees? Reusability vs. hygiene? Long-term comfort? NRR? Detectability? Convenience? Unique industry requirements? You'll find all of Howard Leight®'s hearing protection products indexed in ways that help you find the solution you need, your way.

## The right fit for every user, every environment

This product selection guide helps you learn more about the products you currently use and explore new options.

**Noise-Induced Hearing Loss is 100% Preventable.**



### Hearing Conservation

Understand the basics of hearing conservation, regulations that impact your decision making and best practices designed to make your hearing conservation program more effective.

**Pages 2-7**

### Earplugs

Already know that earplugs work well for your environment? Explore our full line of products to discover options for fit, NRR, materials and more.

**Pages 7-20**



### Earmuffs

Need to understand all the options for your employees? Discover a range of wearing styles, choices for enhancing communications and a wide range of special features for every environment.

**Pages 21-37**



### Search By...

Does your industry or application have special requirements? Our Search By sections will help guide your product selection.

**Pages 38-43**



### Attenuation Charts

Review the full attenuation charts for all our products.

**Pages 45-47**

### VeriPRO™

Determine each employee's actual attenuation in minutes.

**Pages 48**

Still looking for the right hearing protector? Visit the Hearing Protector Selector at [howardleight.com](http://howardleight.com) for more solutions!

# Noise-induced hearing loss is 100% preventable.

Unlike most occupational injuries, there is no visible evidence of noise-induced hearing loss (NIHL). It is not traumatic and often goes unnoticed when it first occurs. Noise-induced hearing loss accumulates over time, its effects realized long after the damage has been done. NIHL is **permanent and irreversible**. With proper education, motivation and protection, however, it is also **100% preventable**.

**According to the World Health Organization, noise-induced hearing loss is the most common permanent and preventable occupational illness in the world.** In the United States alone, more than 30 million workers are exposed to hazardous noise on a daily basis, and 10 million workers suffer from noise-induced hearing loss (source: NIOSH).

Howard Leight is committed to providing new motivational and training tools to build an effective Hearing Conservation Program that works for your employees. Visit [howardleight.com](http://howardleight.com) throughout the year to learn more and receive these tools.

## **When is noise considered hazardous?**

Anytime you must shout at someone an arm's length away to be heard. While exposure to hazardous noise is common, prevention of NIHL is simple: consistent use of properly fitted hearing protection when exposed to hazardous noise. That is the goal of every Hearing Conservation Program.

**Noise-induced hearing loss is not solely a workplace issue.** It can happen off the job, too. Many employees use power tools, attend loud rock concerts and sporting events, or participate in shooting sports. All are opportunities for exposure to hazardous noise. Prevention is the key, on and off the job.

# Indicators of Noise-Induced Hearing Loss

Although there are no visual signs, there are a few simple indicators of NIHL. Identification in its early stages can help prevent further damage.

## Gradual Progression

NIHL rarely happens overnight. Rather, it accumulates over time with every unprotected exposure to hazardous noise, usually in both ears. This progression can be detected through healthy hearing practices, including the performance of annual audiograms on all employees in your Hearing Conservation Program. Audiograms can identify whether your employees are experiencing a Temporary Threshold Shift (TTS), or a Standard Threshold Shift (STS), which indicates permanent damage and requires further preventative action.

## High-Frequency Hearing Loss

When hearing impairment begins, the high frequencies are often lost first, which is why people with NIHL often have difficulty hearing high pitched sounds such as human voices, alarms and signals. Compared to other sounds, they will seem muffled or distorted.

With normal hearing, conversations are understandable if they are loud enough. When someone suffers from noise-induced hearing loss, simply turning up the volume does not make speech clearer. The clarity is adversely affected regardless of how loud the volume.

## Common Symptoms

Those suffering from noise-induced hearing loss will experience tinnitus (ringing in the ears) or muffled hearing. Non-auditory effects of NIHL may include increased stress, high blood pressure, sleep problems and/or headaches.

# Create a successful Hearing Conservation Program through best practices.

In the United States, OSHA's Occupational Noise Standard 29 CFR 1910.95 requires that employers implement a Hearing Conservation Program if they have work areas with noise levels at or above 85 dBA (at an 8-hour Time Weighted Average). Employees exposed to those levels must undergo annual audiograms, have access to hearing protection when noise reaches 85 dBA and must wear hearing protection at 90 dBA.

While implementing a Hearing Conservation Program may appear complicated, there are a number of best practices safety managers can employ to ensure compliance with regulations and promote employee hearing safety.

	Noise Monitoring	Audiometry
<p><b>Required by OSHA when employees are exposed to 85 dBA or higher (8-hour TWA)</b></p>	<p><b>Noise monitoring is required within the facility.</b></p> <p><b>Area Noise Sampling</b> – Using a sound level meter, take a general measurement of noise in each section of your facility.</p> <p><b>Personal Noise Sampling</b> – Using a dosimeter, measure each employee's exposure to noise over his/her workshift.</p>	<p><b>Annual hearing tests must be available to all employees, and performed by a professional or qualified technician.</b></p> <p><b>Baseline Audiogram</b> – Required within six months of first exposure or hire.</p> <p><b>Audiogram Evaluation</b> – Problem audiograms must be reviewed by an audiologist, otolaryngologist or physician.</p> <p><b>Standard Threshold Shift (STS)</b> – Employees who experience a 10 dB or more shift at 2000, 3000 and 4000 Hz in either ear compared to baseline must be notified in writing within 21 days. If the loss is determined to be occupational, the employer must evaluate the employee's current hearing protectors and re-train the employee on use and fit.</p>
<p><b>Best practices that promote and motivate hearing conservation</b></p>	<p><b>Document Changing Conditions</b> – Whenever you make a change in equipment or process, you need to document this change, even if the noise level is reduced.</p> <p><b>Post a Noise Map</b> – A noise map in common areas is an effective way to notify employees of area noise and related changes.</p> <p><b>Document Exposure</b> – Each employee's TWA noise exposure should be recorded in his/her personnel file.</p>	<p><b>Retain Records</b> – This will help your audiologist compare audiograms serially over time.</p> <p><b>Get Follow-Up Reports</b> – Ensure that your testing service provides understandable follow-up reports.</p> <p><b>Review Results Immediately</b> – Studies show that reviewing audiometric test results with employees right after testing yields a more positive impact.</p>



Hearing Protectors	Training	Recordkeeping
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**A variety of suitable hearing protectors must be made available at no cost to employees.**

**Action Level 85 dBA** – Hearing protectors must be made available at no cost to your employees – those exposed to an 8-hour TWA of 85 dBA. Those with established Standard Threshold Shifts (STS) are required to wear HPDs, as are new employees who have not taken their baseline audiogram.

**Permissible Exposure Limit 90 dBA** – Hearing protectors are required to be worn by all employees when exposed to an 8-hour TWA of 90 dBA or higher.

**Offer a True Variety** – Make available to all your employees at least one style of single-use, multiple-use, and banded earplugs, and one earmuff.

**Personal Attenuation Rating (PAR)** – Determine employees’ earplug fit effectiveness by using field verification systems, such as VeriPRO™. Find out if they are receiving optimal protection, require additional training on earplug fitting, or need to try a different model.

**Make HPDs Convenient** – Increase accessibility to hearing protection by installing earplug dispensers near time clock or by placing earmuffs at supervisor stations.

**Provide annual hearing conservation training to all employees on the following:**

- Effects of Noise Exposure
- Use, Selection and Fitting of Hearing Protection Devices (HPD)
- Audiometric Test Procedures

**Provide One-on-One Training** – This individualized attention will make for a more memorable training experience.

**Offer Ongoing Education** – Distribute informational flyers and hang motivational posters in common areas and near hearing protection sources. Offer “toolbox” trainings throughout the year.

**Retain all employee records, including exposure measurements and audiometric tests.**

**Records to Keep** – Exposure measurements, audiometric tests and OSHA Form 300.

**Accessible Records** – All records must be made accessible to employees upon request and transferred to new organizations upon acquisition or close of business.

**Get Follow-Up Reports** – Make sure your testing service provides follow-up reports that allow you to track audiograms over time.

**Post OSHA Guidelines** – As required, post a copy of the OSHA Occupational Noise Standard in a visible location.

# Understanding the Risks

Employees are generally unaware of the potentially harmful noise levels they are exposed to every day — both on the job and off. The Howard Leight® Noise Thermometer is a highly effective visual tool that helps employees understand noise risks in everyday activities and OSHA hearing protection requirements.

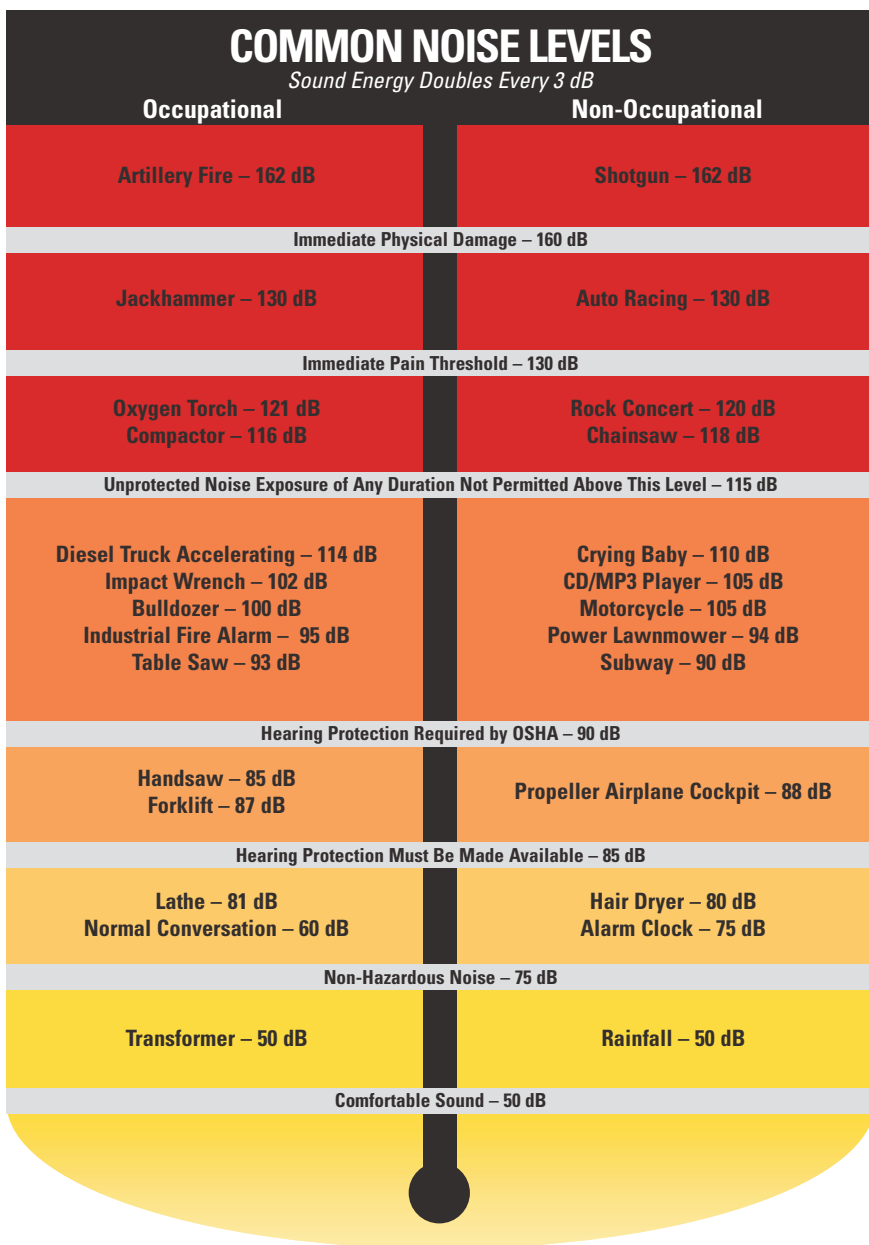
## Main Components of OSHA Occupational Noise Standard 29 CFR 1910.95

### OSHA Action Level - 85 dBA

Monitor all noise levels  
Annual audiometric testing for exposed workers  
Annual training for exposed workers  
Variety of suitable hearing protectors must be made available at no cost to the employee

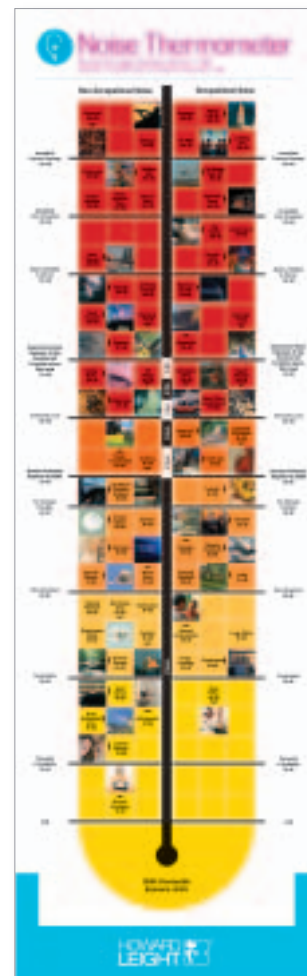
### OSHA Permissible Exposure Limit - 90 dBA

Hearing protectors required for noise-exposed workers



### OSHA Permissible Exposure Limit - 90 dBA TWA

Hearing protectors required for all exposures over these levels:	Hours Per Day	8	6	4	3	2	1.5	1	0.5
	Sound Level (dBA)	90	92	95	97	100	102	105	110







# Earplugs

It's all about choice.

A commitment to hearing protection means considering all the features that make one earplug different from another: material, shape, size and NRR. Howard Leight makes it easy to compare products and ensure that all your employees receive the right fit and protection.

Selecting the right protection for your employees means more than choosing the earplug with the highest NRR.

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# Fit.

**Fitting ear canals of all shapes and sizes doesn't have to be difficult.**

The right earplug should feel comfortable in the ear canal without compromising protection. Howard Leight® earplugs offer a combination of advanced design and material science that ensures the proper fit for every employee.

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# Selection.

**Why so many earplugs?**

Because people, their ears and their environments are all so different. Howard Leight offers the widest range of styles to accommodate almost any situation.

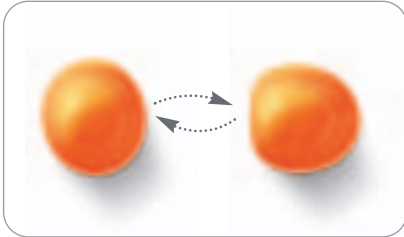
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# Protection.

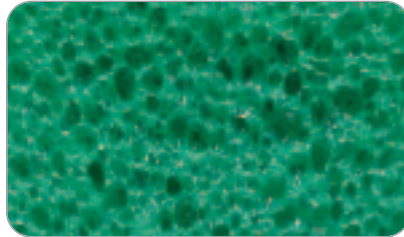
**Hearing protection only works when people use it.**

Howard Leight earplugs provide a range of Noise Reduction Ratings that target hearing protection without compromising overall employee safety.

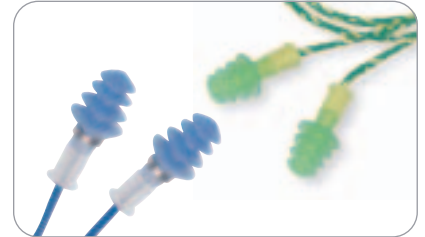
**Conforming Material Technology™ (CMT)** A marvel of user-friendly design, the CMT in SmartFit® utilizes body heat to adapt to each wearer's ear canal for a comfortable, personalized fit.



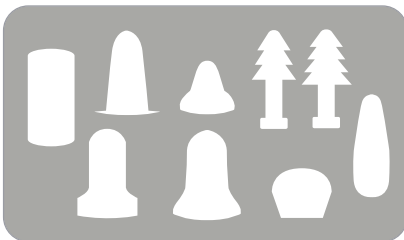
**Polyurethane Foam** Our patented open-cell polyurethane foam formulation used in Single-Use earplugs delivers a comfortable fit without compromising protection.



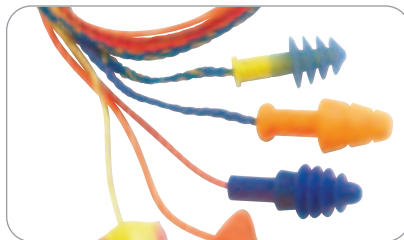
**Sized Earplugs** One size doesn't always fit all. That's why Howard Leight® offers many Multiple-Use earplugs in a variety of sizes.



**Shapes** To provide the best fit for every ear, Howard Leight earplugs are available in a range of shapes to match your individual comfort preference.



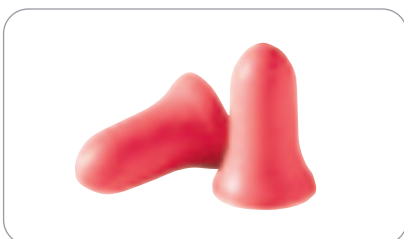
**Cording Options** In many environments, employees need to remove earplugs during the course of the day. Our range of corded products makes removing and refitting more convenient.



**Dispensers** Dispensers are an economical and convenient way to ensure easy access to hearing protection. Use them everywhere you find hazardous noise.



**Highest Attenuation** For those exposed to high levels of hazardous noise, our Max® earplug's NRR 33 offers the highest attenuation available.



**Lower Attenuation** Avoid overprotection in marginal noise environments with lower NRR earplugs, like our new Clarity® multiple-use earplugs (NRR 21).



**Intermittent Noise** For employees who are in and out of noisy areas, banded earplugs are a convenient solution; they can be put on and removed in a snap.



# Earplug Overview

Every ear has different requirements for fit. Every environment has different requirements for protection. That's why Howard Leight provides a wide range of earplug choices.



## Single-Use

Ideal for work situations that demand a high degree of comfort, frequent changes or where hygiene presents a problem for reuse.



## Multiple-Use

Ideal for environments where employees can retain and store earplugs for reuse over time.

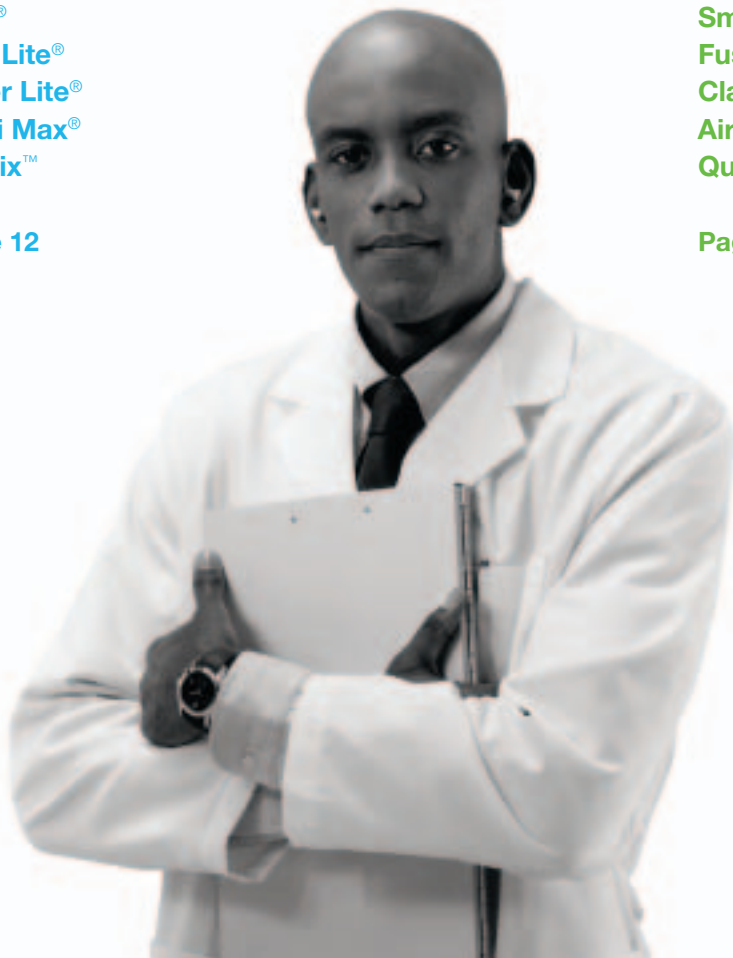


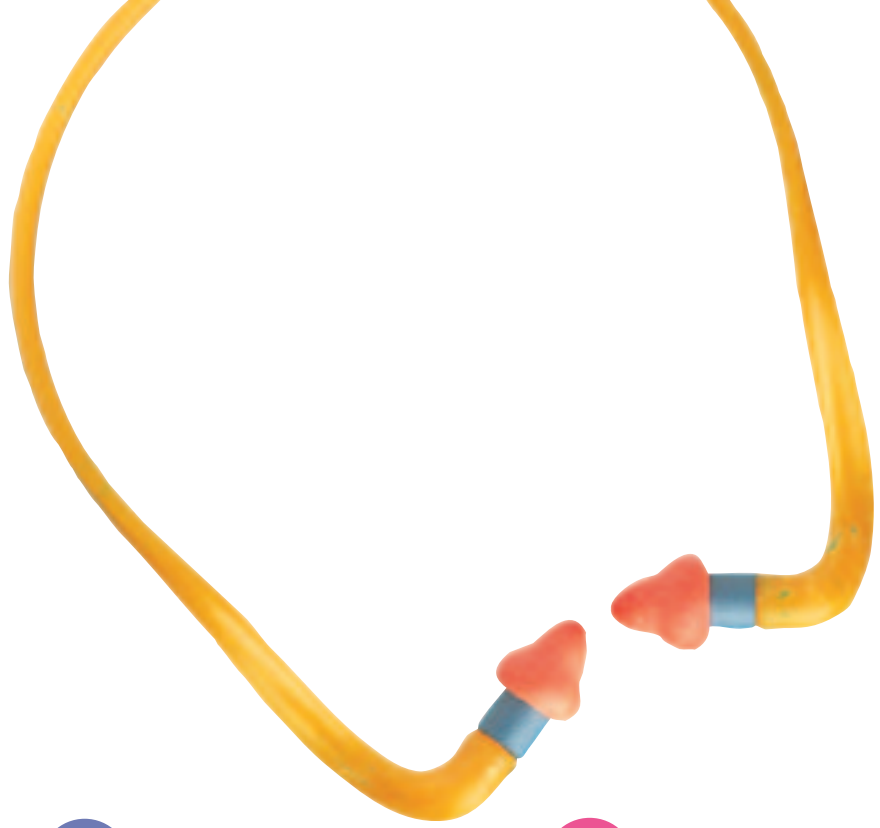
**Max<sup>®</sup>**  
**Max Lite<sup>®</sup>**  
**Laser Lite<sup>®</sup>**  
**Multi Max<sup>®</sup>**  
**Matrix<sup>™</sup>**

**Page 12**

**SmartFit<sup>®</sup>**  
**Fusion<sup>®</sup>**  
**Clarity<sup>®</sup> New!**  
**AirSoft<sup>®</sup>**  
**Quiet<sup>®</sup>**

**Page 14**





## Detectable

Specially created for environments where contamination from foreign objects is unacceptable.

**Laser Trak®**  
**SmartFit® Detectable**  
**Fusion® Detectable**

Page 16



## Dispensers

Save time and space, reduce waste and increase convenience with earplug dispensers.

**Leight® Source 400**  
**Leight® Source 500**

Page 17



## Banded

An alternative style of hearing protection for those who work in areas of intermittent noise.

**QB1HYG®**  
**QB2HYG®**  
**QB3HYG®**  
**PerCap®**

Page 18



# Single-Use

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



**Max®**  
NRR 33

### Highest NRR in Single-Use

- The world's most-used polyurethane foam earplug
- Bell shape for maximum in-ear comfort
- Contoured design for easy insertion, resists tendency to back out of the ear canal
- Polyurethane foam enhances comfort, especially for long-term wear
- Smooth, soil-resistant skin prevents dirt build-up
- Max® USA style in patriotic red, white and blue

Available in paper bag packaging

### SKU / Style / Packaging

MAX-1	Uncorded	Polybag
MAX-5	Uncorded	5 Pair, Resealable Bag
MAX-LS4	Uncorded	Leight® Source 400 bulk refill bag
MAX-1-D	Uncorded	Leight® Source 500 bulk refill box
MAX-30	Corded	Polybag
MAX-30-PB	Corded	Paper Bag
MAX1-USA	USA / Uncorded	Polybag
MAX-1-D-USA	USA / Uncorded	Leight® Source 500 bulk refill box
MAX30-USA	USA / Corded	Polybag



Available in patriotic red, white and blue striped colors.



**Max Lite®**  
NRR 30

### Comfort for smaller ear canals

- Ideal for people with smaller ear canals
- Low-pressure polyurethane foam expands gently for comfortable, long-term wear
- Contoured T-shape for easy handling and fit
- Smooth, soil-resistant skin prevents dirt build-up
- Available in paper bag packaging and/or with cotton cords

### SKU / Style / Packaging

LPF-1	Uncorded	Polybag
LPF-1-PB	Uncorded	Paper Bag
LPF-LS4	Uncorded	Leight Source 400 bulk refill bag
LPF-1-D	Uncorded	Leight Source 500 bulk refill box
LPF-30	Corded	Polybag
LPF-30-P	Cotton Cord	Paper Bag



**Laser Lite®**  
NRR 32

### Highly visible protection

- Vibrant colors for high visibility
- Self-adjusting polyurethane foam expands to fit virtually every wearer
- Contoured T-shape for easy insertion and fit
- Smooth, soil-resistant skin prevents dirt build-up
- Available in paper bag packaging

### SKU / Style / Packaging

LL-1	Uncorded	Polybag
LL-1-PB	Uncorded	Paper Bag
LL-LS4	Uncorded	Leight Source 400 bulk refill bag
LL-1-D	Uncorded	Leight Source 500 bulk refill box
LL-30	Corded	Polybag
LL-30-PB	Corded	Paper Bag

## Industries and Applications

Agriculture + Farming  
Automotive  
Aviation  
Building Construction  
Forestry  
Furniture Manufacturing  
General Contracting

Heavy Construction  
Landscaping  
Lumber/Wood Products  
Manufacturing  
Metal Fabrication  
Military + Law Enforcement  
Mining

Petrochemical  
Pulp + Paper  
Sporting  
Steel  
Transportation Equipment  
Utility/Waste Management

### Multi Max® NRR 31



#### One earplug, two sizes

Improves individual fit while simplifying inventory

Self-adjusting polyurethane foam expands to fit virtually every wearer

Smooth, soil-resistant skin prevents dirt build-up

Available in paper bag packaging

#### SKU / Style / Packaging

MM-1	Uncorded	Polybag
MM-1-PB	Uncorded	Paper Bag
MM-LS4	Uncorded	Leight Source 400 Bulk refill bag
MM-1-D	Uncorded	Leight Source 500 Bulk refill box

### Matrix™ NRR 23



#### No-roll insertion

Patented no-roll design makes insertion fast and easy

Smooth outer skin and reduced diameter provide long-term comfort

Instant protection upon proper insertion – no need to wait for foam to expand

Uniform attenuation profile blocks out noise while voice frequencies can be heard more naturally

Three attenuation levels targeted for specific noise levels

#### SKU / Style / Packaging

MTX-1-OR	Orange / Uncorded	Polybag
MTX-1-GR	Green / Uncorded	Polybag
MTX-1-BU	Blue / Uncorded	Polybag
MTX-30-OR	Orange / Corded	Polybag
MTX-30-GR	Green / Corded	Polybag
MTX-30-BU	Blue / Corded	Polybag
MTX-OR-LS4	Orange / Corded	Leight Source 400 bulk refill bag
MTX-GR-LS4	Green / Corded	Leight Source 400 bulk refill bag
MTX-BU-LS4	Blue / Corded	Leight Source 400 bulk refill bag
MTX-1-OR-D	Orange / Corded	Leight Source 500 bulk refill box
MTX-1-GR-D	Green / Corded	Leight Source 500 bulk refill box
MTX-1-BU-D	Blue / Corded	Leight Source 500 bulk refill box
MTX-30-OR	Orange / Corded	Polybag
MTX-30-GR	Green / Corded	Polybag
MTX-30-BU	Blue / Corded	Polybag

## Packaging options

Our earplugs are available in a variety of packaging options, including polybags and paper bags for process industries.



## Convenient dispenser options

Our Leight® Source earplug dispensers provide added convenience for workers who change earplugs frequently. See page 17.





# Multiple-Use

Ideal for environments where employees can retain and store earplugs for reuse over time — reducing waste and saving money.



**SmartFit®**  
NRR 25

### Revolution in personalized fit

Patented Conforming Material Technology™ (CMT) uses body heat to adapt earplug 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

Detachable cord system and HearPack® storage case

SmartFit Process Industry style features attached cotton cord and paper bag, ideal for pulp & paper or tobacco processing industries (SMF-30W-P)

### SKU / Style / Packaging

SMF-30	Detachable Fabric Cord	HearPack
SMF-30W-P	Attached Cotton Cord	Paper Bag



**Fusion®**  
NRR 27

### All-day comfort, easy handling

Patented dual-material design combines firm core for easy handling with soft flanges for comfort and fit

FlexiFirm® stem is easy to grasp, ensuring easy insertion into the ear canal

SoftFlanges™ create comfortable seal in the ear canal for superior comfort and protection

Unique detachable cord system adapts to virtually any application

Two sizes fine-tunes fit for personal comfort and safety (blue/regular, green/small)

### SKU / Style / Packaging

FUS30	Regular (blue) / Corded	Flip-Top Box
FUS30S	Small (green) / Corded	Flip-Top Box
FUS30-HP	Regular (blue) / Corded	HearPack
FUS30S-HP	Small (green) / Corded	HearPack



**Clarity® New!**  
NRR 21

### Enhanced communication

Patented Sound Management Technology™ (SMT) filter technology blocks low and medium frequencies while higher frequencies (voice, signals, alarms) can be heard more naturally, with less distortion

Prevents employee isolation by enhancing communication

Lower attenuation ideal for marginal noise environments of 95 dB or lower, preventing overprotection

Woven cord adjusts to user needs and reduces sound transmission, cord adjuster adapts length to suit personal preference or application

Reusable case with hook allows wearers to attach to belt loop, apron, bag or other work tools

Two sizes fine-tunes fit for personal comfort and safety

### SKU / Style / Packaging

1005329	Regular (blue) / Corded	Reusable Case
1005328	Small (green) / Corded	Reusable Case





**Industries  
and Applications**

Agriculture + Farming  
Assembly/Light Manufacturing  
Automotive  
Aviation  
Building Construction  
Food + Beverage

Forestry  
General Contracting  
Landscaping  
Lumber/Wood Products  
Manufacturing  
Metal Fabrication

Military  
Petrochemical  
Pulp + Paper  
Printing  
Utility/Waste Management  
Warehousing



**Reusable cases for long-term use**

For employees who are able to store their earplugs between use, we offer a choice of durable storage cases that improve hygiene and protect earplugs from damage.



**Optimized for comfort**

Delivers optimal protection and increased long-term comfort

Advanced air pocket design features internal noise-blocking fins

Four-flange profile creates better seal in the ear canal

Less pressure in the ear canal eliminates that “plugged up” feeling

Rounded flanges fit better in the ear canal

Firm stem facilitates easy insertion and removal

Outstanding noise-blocking protection – highest attenuation in Multiple-Use

**SKU / Style / Packaging**

DPAS-1	Uncorded	Flip-Top Box
DPAS-30R	Red Polycord	Flip-Top Box
DPAS-30W	White Nylon Cord	Flip-Top Box
AS-1	Uncorded	Reusable Case
AS-30R	Red Polycord	Reusable Case
AS-30W	White Nylon Cord	Reusable Case

**Easy handling, better fit**

Patented no-roll design is easy to handle and fit

Contoured shape comfortably matches contours of the ear canal

Smooth, non-irritating skin provides all-day comfort, easy to clean for long-term use

Built-in insertion stem makes insertion quick and easy

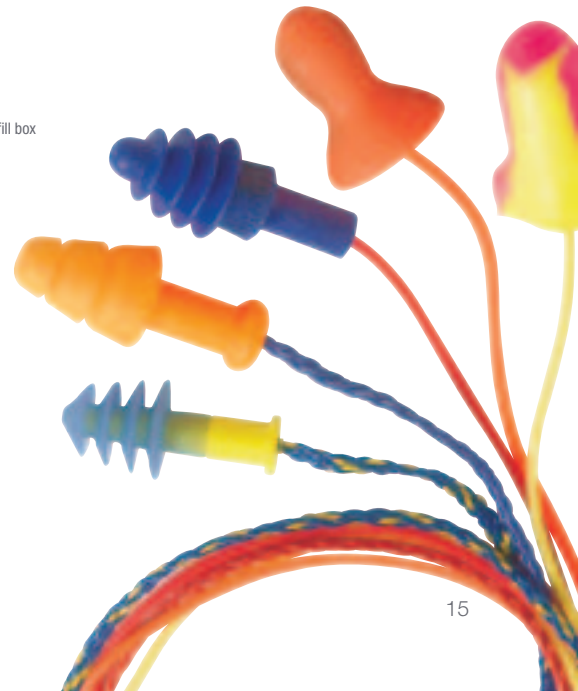
Three sizes fine-tunes fit for personal comfort and safety (small, regular, large)

**SKU / Style / Packaging**

QD1	Uncorded	Flip-Top Box
QD1-RC	Uncorded	Reusable Case
QD-1-DS	Uncorded	Leight® Source 500 bulk refill box
QD1-SM	Small / Uncorded	Flip-Top Box
QD1-RC-SM	Small / Uncorded	Reusable Case
QD1-LG	Large / Uncorded	Flip-Top Box
QD1-RC-LG	Large / Uncorded	Reusable Case
QD30	Corded	Flip-Top Box
QD30-RC	Corded	Reusable Case
QD30-SM	Small / Corded	Flip-Top Box
QD30-RC-SM	Small / Corded	Reusable Case
QD30-LG	Large / Corded	Flip-Top Box
QD30-RC-LG	Large / Corded	Reusable Case

**Cords for Added Convenience**

Some workers need to remove their earplugs during the course of a day’s work. We offer a variety of products with cords that make removing/refitting earplugs more convenient and reduce product loss.

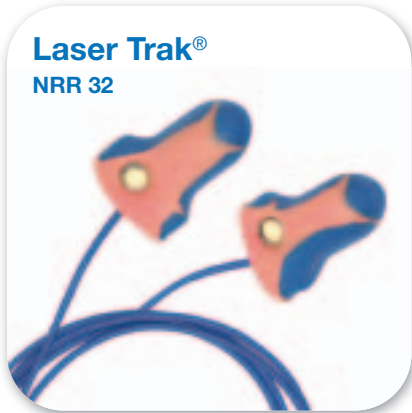




# Detectable

Specially created for environments where contamination from foreign objects is unacceptable.

**Industries and Applications**  
Food + Beverage Processing  
Lumber/Wood Products  
Pulp + Paper  
Tobacco



**Laser Trak®**  
NRR 32

### High attenuation in Single-Use

Visual and metal detectability plus long-term comfort

Non-ferrous metal grommet and bright colors easily detected by visual and automated inspection

Self-adjusting polyurethane foam expands to fit virtually any wearer

Contoured T-shape for easy insertion and wear

Smooth soil-resistant skin prevents dirt build-up

### SKU / Style / Packaging

LT-30 Corded Polybag



**SmartFit® Detectable**  
NRR 25

### Revolution in personalized fit

Patented Conforming Material Technology™ (CMT) adapts to the shape of the surrounding ear canal when inserted and returns to its original shape when removed

Delivers superior comfort and a truly individual fit

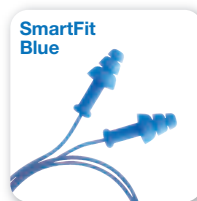
Simplifies inventory control — a single product fits almost every wearer

Blue color provides high visibility in visual detection (SmartFit Detectable, SmartFit Blue)

Metal ring on stem detectable by automated equipment (SmartFit Detectable only)

### SKU / Style / Packaging

SDT-30 SmartFit Detectable/Attached Polycord Polybag  
SMF-30BU SmartFit Blue/Nylon Cord Polybag



**SmartFit Blue**



**Fusion® Detectable**  
NRR 25

### Total protection, comfort and fit

Patented dual-material design

FlexiFirm® stem is easy to grasp, ensuring easy insertion into the ear canal

SoftFlanges™ create comfortable seal in the ear canal for superior comfort and protection

Metal stem ring easily detected by automated equipment

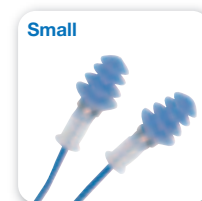
Blue color provides high visibility in detection

Two sizes fine-tunes fit for personal comfort and safety (regular, small)

HearPack® case for storage between use

### SKU / Style / Packaging

FDT-30 Regular (translucent blue stem) / Corded HearPack  
FDT-30-SM Small (clear stem) / Corded HearPack



**Small**



# Dispensers

Save time and space, and reduce waste with earplug dispensers. For big or small operations, dispensers offer an economical, hygienic and user-friendly source for hearing protection.

## Leight® Source 400 Bag Refills



### Versatile earplug dispenser

Tabletop or wall-mount plastic dispenser provides a user-friendly source for earplugs

Durable plastic design is an economical choice for dispensing earplugs

Twist knob to dispense earplugs

Catch basin prevents earplugs from falling to the ground

Holds 400 pairs of Howard Leight Single-Use earplugs: Max®, Max Lite®, Laser Lite®, Multi Max®, Matrix™

### SKU / Style / Packaging

LS-400 Leight Source 400 Box

## Leight® Source 500 Box Refills



### Permanent mounted dispenser

Heavy-duty anodized aluminum withstands constant use

Mount on wall for easy access

Crank handle to dispense earplugs

Ideal for large factories and process industries

Holds 500 pairs of Howard Leight earplugs: Max, Max Lite, Laser Lite, Multi Max, Matrix, Quiet®

### SKU / Style / Packaging

LS-500 Leight Source 500 Box

## Bulk refill options

Following is a complete listing of compatible products and packaging options for use with Leight Source Dispensers.

**Leight Source 400**  
**Bulk refill bag**  
200 pair/bag

**Max**  
MAX-LS4

**Max Lite**  
LPF-LS4

**Laser Lite**  
LL-LS4

**Multi Max**  
MM-LS4

**Matrix**  
MTX-OR-LS4  
Orange

MTX-GR-LS4  
Green

MTX-BU-LS4  
Blue

**Leight Source 500**  
**Bulk refill box**  
500 pair/box

**Max**  
MAX-1-D

MAX-1-D-USA

**Max Lite**  
LPF-1-D

**Laser Lite**  
LL-1-D

**Multi Max**  
MM-1-D

**Matrix**  
MTX-1-OR-D  
Orange

MTX-1-GR-D  
Green

MTX-1-BU-D  
Blue

**Quiet**  
QD-1-DS  
200 pair/box





# Banded

An alternative for those who work in intermittent noise or for managers and visitors who move in and out of noisy areas.



**QB1HYG®**  
NRR 27

### Inner-aural protection

Smooth, ergonomic pods fit in the ear canal for maximum protection

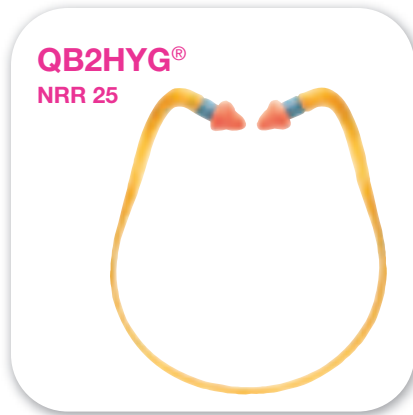
Patented band design prevents ear pods from touching dirty or contaminated surfaces

Lightweight and portable — designed especially for environments with intermittent noise hazards

Includes pair of replacement pods for extended use

### SKU / Style / Packaging

QB1HYG Inner-Aural Band Resealable Bag  
QB100HYG Replacement Pods Polybag



**QB2HYG®**  
NRR 25

### Supra-aural protection

Soft pods rest partially in the ear for a balance of comfort and protection

Patented band design prevents ear pods from touching dirty or contaminated surfaces

Lightweight and portable — designed especially for environments with intermittent noise hazards

Includes pair of replacement pods for extended use

### SKU / Style / Packaging

QB2HYG Supra-Aural Band Resealable Bag  
QB200HYG Replacement Pods Polybag



**QB3HYG®**  
NRR 23

### Semi-aural protection

Super-soft lightweight pods rest outside the ear for superior comfort

Patented band design prevents ear pods from touching dirty or contaminated surfaces

Lightweight and portable — designed especially for environments with intermittent noise hazards

Includes pair of replacement pods for extended use

### SKU / Style / Packaging

QB3HYG Semi-Aural Band Resealable Bag  
QB300HYG Replacement Pods Polybag



**Industries  
and Applications**

Assembly/Light Manufacturing  
Aviation  
Food + Beverage Processing  
General Contractor

Landscaping  
Manufacturing  
Metal Fabrication  
Petrochemical

Pulp + Paper  
Supervisors  
Warehousing



**Folding semi-aural protection**

Super-soft lightweight pods rest outside the ear for superior comfort

Compact, folding design easy to store in pocket

Lightweight and portable – designed especially for environments with intermittent noise hazards

Multiple positions provide flexibility: over-the-head, under-the-chin or behind-the-neck wear

**SKU / Style / Packaging**

PERCAP	Folding Band	Resealable Bag
PC100	Replacement Pods	Polybag



**Banded earplugs  
and other PPE**

Banded earplugs are a good choice for workers who need to use other PPE, such as safety eyewear, hard hats or respirators.



**Pods remove for  
easy maintenance**

Replacement pods, available in multiple packs, improve hygiene and extend use.



**Designed for  
good hygiene**

Patented band design prevents ear pods from touching dirty or contaminated surfaces when set down.



# Earplug Fitting Instructions

## Keys to Successful Hearing Protection with Earplugs

### Wear

Read and follow all earplug fitting instructions

### Selection

Avoid overprotection in minimal noise environments – in selecting the best earplug for your situation, consider noise levels and your need to communicate with co-workers or hear warning signals on the job




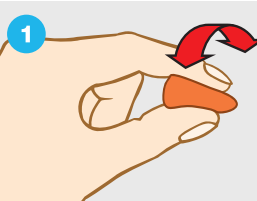
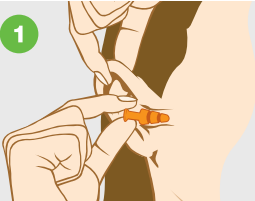
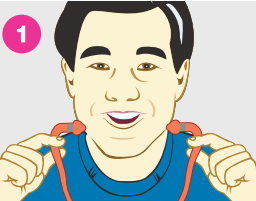
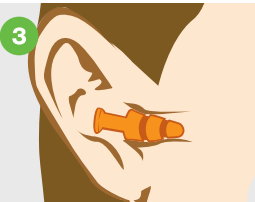

### Maintenance

Inspect earplugs prior to wear for dirt, damage or hardness – discard immediately if compromised

For proper hygiene, discard Single-Use earplugs after use

With proper maintenance, Multiple-Use earplugs can last for 2-4 weeks; clean with mild soap/water and store in a case when not in use

Clean and replace pods on Banded earplugs regularly

Single-Use	Single-Use	Multiple-Use	Banded	The Do's and Don'ts of Howard Leight® Earplugs
<p><b>No-Roll foam</b></p>  <p>Matrix™</p>	<p><b>Roll-Down foam</b></p>  <p>Max®</p>	<p><b>Multiple-Use</b></p>  <p>SmartFit®</p>	<p><b>Banded</b></p>  <p>QB2HYG®</p>	
<p><b>1</b></p>  <p>Reach over your head with a free hand, pull your ear up and back, and insert the earplug well inside your ear canal.</p>	<p><b>1</b></p>  <p>With clean hands, roll the entire earplug into narrowest possible crease-free cylinder.</p>	<p><b>1</b></p>  <p>While holding the stem, reach a hand over your head and gently pull top of your ear up and back.</p>	<p><b>1</b></p>  <p>Position band under your chin as shown above. Use your hands to press the ear pods well into the ear canal using an inward motion.</p>	 <p><b>Proper Fit</b> If either or both earplugs do not seem to be fitted properly, remove the earplug and reinsert.</p>
<p><b>2</b></p>  <p>Earplugs should be inserted as shown in this drawing. Stop pushing earplug when your finger touches your ear.</p>	<p><b>2</b></p>  <p>Reach over your head with a free hand, pull your ear up and back, and insert the earplug well inside your ear canal.</p>	<p><b>2</b></p>  <p>Insert the earplug so all flanges are well inside your ear canal.</p>	<p><b>2</b></p>  <p>Protection levels are improved by pulling your ear up and back when fitting as shown.</p>	 <p><b>Removal</b> Gently twist earplug while slowly pulling in an outward motion for removal.</p>
<p><b>3</b></p>  <p>If properly fitted, the end of the earplugs should not be visible to someone looking at you from the front.</p>	<p><b>3</b></p>  <p>Hold for 30 – 40 seconds, until the earplug fully expands in your ear canal. If properly fitted, the end of the earplugs should not be visible to someone looking at you from the front.</p>	<p><b>3</b></p>  <p>If properly fitted, the tip of the earplug stem may be visible to someone looking at you from the front.</p>	<p><b>3</b></p>  <p>In a noisy environment, lightly press the band inward with your fingertips as shown. You should not notice a significant difference in noise level.</p>	 <p><b>Acoustical Check</b> In a noisy environment, with earplugs inserted, cup your hands over your ears and release. Earplugs should block enough noise so that covering your ears with your hands should not result in a significant noise difference.</p>

Download a copy of our Earplug Instruction Poster at [howardleight.com](http://howardleight.com) or call 800.430.5490 to request a copy.



# Earmuffs

## **The ultimate in safety and protection.**

Every day, employees count on Howard Leight® earmuffs to block noise and manage sound in some of the world's most acoustically challenging environments. Utilizing Bilsom® Technology, we offer a range of earmuffs with varying product features and attenuation levels targeted to the demands of different users and environments.

We offer the widest range of advanced earmuff protection so that every employee can work comfortably and safely.

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# Fit.

**Our engineers know that wearers value both comfort and protection.**

We engineer all our products to balance comfort, safety and performance for employees in all kinds of environments.

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# Selection.

**Why so many choices?**

We offer the most innovative product features and widest choices for every user, in every environment.

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# Protection.

**Your employees need the right level of protection.**

Not enough and they're vulnerable to hearing damage.

Too much and they become isolated from their environment.

Our innovations deliver protection at both extremes.

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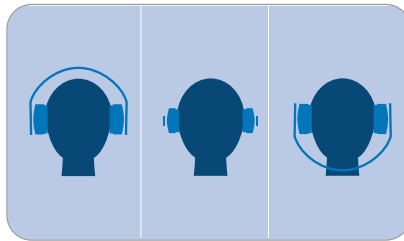
### Ultraslim Earcups

Avoid overprotection in lower levels of hazardous noise and improve employee safety, without the bulk and weight of standard earmuffs.



### Multiple-Position Headbands

More personalized comfort with options for over-the-head, behind-the-neck or under-the-chin. Great for use with other PPE.



### Earmuff Accessories

Accessories available for climate protection, accessibility and maintenance allow you to customize for any job.



### Variety of Wearing Styles

A choice of styles provides options for every individual comfort preference and allows easy integration with other PPE.



### Dielectric Construction

Robust, non-deforming construction protects employees in electrical environments. Available in Thunder®, Viking™, Mach™1, QM24+® and Clarity®.



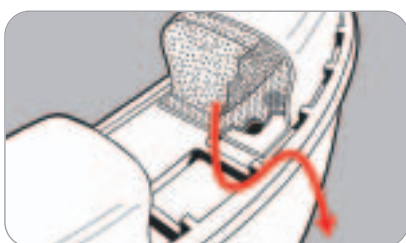
### High Visibility

Improve employee safety in low-lighting or outdoor applications. We offer the widest variety of high-visibility earmuffs in the industry.



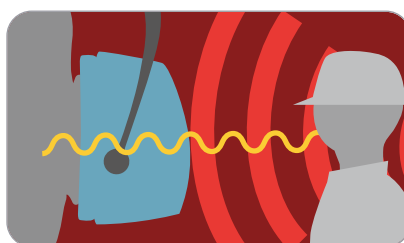
### Air Flow Control™ (AFC) Technology

This patented technology delivers optimal attenuation across all frequencies without increasing earcup size or weight. Standard on most Noise Blocking earmuffs.



### Sound Management Technology™ (SMT)

Patented SMT blocks harmful noise while allowing surrounding sounds like alarms, warnings and co-workers' voices to be heard more naturally.



### Electronic Earmuffs

AM/FM Radio earmuffs block hazardous noise and provide superior radio sound quality for increased employee motivation and productivity.



# Earmuff Overview

Our products meet the demands of challenging environments by combining advanced technology with performance and comfort features that put people first.



## Noise Blocking

From maximum attenuation to maximum value, we set the standard for noise blocking and hearing protection.

Leightning®  
Leightning® Hi-Visibility  
Thunder®  
Viking™  
Mach™1  
QM24+®

Page 26





## Sound Management

Our patented passive and electronic technologies block noise while allowing alarms, warnings and even co-workers' voices to be heard more naturally.

**Clarity®**  
**Impact®**  
**Impact® Sport**

**Page 32**



## Radio

Add music and routine jobs become more satisfying. Protect employees from noise – and provide a built-in AM/FM radio.

**AM/FM Radio**  
**Radio Hi-Visibility**  
**Electo®**

**Page 34**

## Accessories

Explore a range of accessories for added convenience, comfort and hygiene.

**Page 36**





# Leightning®

Maximum protection and contemporary design

The Leightning series delivers high performance and robust steel wire durability that withstands daily use and abuse without compromising comfort. Features patented Air Flow Control™ technology for optimal attenuation across all frequencies and snap-in ear cushions for easy maintenance.

## Features

Robust steel headband withstands demanding use and tough environments  
Patented Air Flow Control™ for optimal attenuation across all frequencies, without increased size or weight

Snap-in ear cushions make replacement quick and easy  
Padded foam headband for long-wearing comfort with minimal pressure on the head  
Multiple attenuation levels for targeted attenuation across a variety of environments

Telescopic height adjustment remains fixed during use  
Superior comfort – ultraslim styles are ideal when compact earmuffs and reliable protection are required



**L3**  
NRR 30



**L3H**  
NRR 27



**L3N**  
NRR 28



**L2**  
NRR 27



**L1**  
NRR 25



**L2H**  
NRR 25



**L1H**  
NRR 23



**L2N**  
NRR 26



**L1N**  
NRR 25



**L0N**  
NRR 22

## Headband

Comfortable over-the-head design ideal for many applications

### SKU / Description

1010922	L1
1010923	L2
1010924	L3

## Helmet

Earcups snap in place during use and swing back when not needed

Earcups work with a wide range of popular hard hats

Pair of adapters included

### SKU / Description

1011991	L1H
1011992	L2H
1011993	L3H

## Neckband

Sleek, behind-the-head design works with face shields, visors, hard hats and other PPE

Includes attached elastic headband strap for better positioning

L0N features ultraslim, lightweight earcups, ideal for use with welding helmets

### SKU / Description

1013460	L0N
1011994	L1N
1011995	L2N
1011996	L3N

# Leightning<sup>®</sup> Hi-Visibility

Maximum attenuation  
and high visibility

With all the features of Leightning<sup>®</sup> earmuffs, Leightning Hi-Visibility models have added features designed for environments or conditions where protection and visibility are paramount. Bright green earcups provide high visibility and contrast and an exclusive reflective headband that illuminates when exposed to light.

## L3HV

NRR 30



### Headband

Comfortable over-the-head design ideal for many applications

#### SKU / Description

1013941 L3HV

## L2F

NRR 27



## L1HHV

NRR 23



### Helmet

Earcups snap in place during use and swing back when not needed

Earcups work with a wide range of popular hard hats

Pair of adapters included

#### SKU / Description

1015020 L1HHV

## L0F

NRR 23



### Folding

Convenient folding design for easy storage

L0F ultrathin design folds to less than 4" wide

Belt storage case also available

#### SKU / Description

1013461 L0F  
1011997 L2F

## L2FHV

NRR 27



### Folding

Convenient folding design for easy storage

Belt storage case also available

#### SKU / Description

1013942 L2FHV



# Thunder<sup>®</sup>

Top-of-the-line protection and comfort

The Thunder series is engineered with all-day comfort in mind. Its dielectric construction withstands use and abuse, while protecting employees in electrical environments. Patented Air Flow Control™ technology provides optimal attenuation across all frequencies and snap-in ear cushions for easy maintenance.

## Features

Dielectric construction suitable for all workplaces, especially electrical environments

Patented Air Flow Control™ for optimal attenuation across all frequencies, without increased size or weight

Uniform headband pressure for all head sizes, providing better comfort for long-term wear

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



**T3**  
NRR 30



**T3H**  
NRR 27



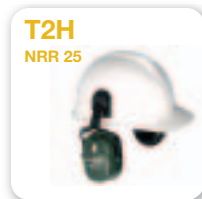
**T1F**  
NRR 25



**T2**  
NRR 28



**T1**  
NRR 26



**T2H**  
NRR 25



**T1H**  
NRR 23

## Headband

Comfortable over-the-head design, ideal for many applications

Inner-ventilated headband minimizes pressure on the head; breathes easier in warm/humid climates (T2 and T3 only)

### SKU / Description

1010928	T1
1010929	T2
1010970	T3

## Helmet

Earcups snap in place during use and swing back when not needed

Earcups work with a wide range of popular hard hats

Pair of adapters included

### SKU / Description

1011601	T1H
1011602	T2H
1011603	T3H

## Folding

Convenient folding design for easy storage

Belt storage case also available

### SKU / Description

1011600	T1F
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**T2HV**  
NRR 28



### Hi-Visibility

Bright green earcups provide high visibility and contrast

Reflective headband illuminates under light for increased visibility and safety

### SKU / Description

1015820 T2HV

# Air Flow Control™ Technology

## Patented Bilsom® Technology solves the problem of poor low-frequency attenuation

Traditional earmuffs traditionally attenuate very well in high frequencies, but poorly in the low frequencies. With our patented Air Flow Control (AFC) technology, we found a way to deliver superior low-frequency attenuation and more consistent performance across the whole frequency range without increasing the size or weight of the earmuff.

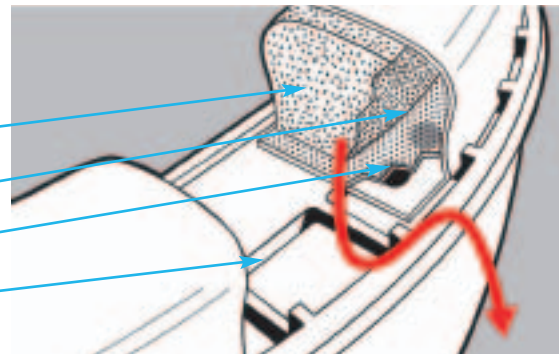
### How it works:

Inside the snap-in AFC ear cushion, a series of holes allows the cushion to breathe more effectively and channels the air out of the base cushion, much like a car shock absorber. This controlled flow of air dampens low-frequency vibrations while maintaining excellent high frequency attenuation.

Air Flow Control is a standard feature on all Leightning®, Leightning® Hi-Visibility, Thunder® and Viking™ series earmuffs.

### Air Flow Control Earmuff cross-section

- Foam
- Non-Woven Area
- Ear Cushion Holes
- Baseplate Chamber





# Viking™

Multiple-position headband for alternative use

Viking earmuffs give employees the flexibility to wear their earmuffs in three positions, making it easy to use with other PPE. Its robust dielectric construction withstands use and abuse and provides protection in electrical environments. Features patented Air Flow Control™ technology and snap-in cushions for easy maintenance.

## Features

Multiple-position headband allows for a variety of wearing styles; a great alternative to cap-mounted earmuffs – wear when using other PPE

Patented Air Flow Control™ technology delivers optimal attenuation across all frequencies, without increasing earcup size or weight

Inner-ventilated headband reduces pressure on head; breathes easier in warm/humid climates

Snap-in ear cushions make replacement quick and easy

Elastic headband strap for better positioning when worn behind-the-head or under-the-chin

Non-deforming, dielectric construction suitable for electrical environments



## Earmuffs and Eyewear: The thinner the frame, the better the attenuation.

The attenuation of an earmuff depends on a tight seal between the ear cushion and the head. Research conducted at the Howard Leight Acoustical Laboratory shows that safety eyewear with a thin frame (a width of 2 mm or less at the temples, where the earmuff cushion meets the frame), caused no significant decline in attenuation. However, eyewear with wider frames caused noticeable gaps in the seal and lowered attenuation – up to 5 dB – particularly at low frequencies.



## Multiple-Position

Allows wearer to select position: over-the-head, behind-the-head or under-the-chin

### SKU / Description

1010925	V1
1010926	V2
1010927	V3



Economical protection

# Mach™ 1

Economical protection for short-term use. Lightweight dielectric construction offers protection at a low price.

# QM24+®

Ultra-lightweight, multiple-position, dielectric earmuff designed for extended wear at an affordable price.

## Features

Extremely lightweight construction provides comfort for all-day wear

Dielectric construction suitable for electrical environments

## Features

Multiple-position headband for over-the-head, behind-the-head or under-the-chin wearing

Alternative to cap-mounted earmuffs when using other PPE

Dielectric construction suitable for electrical environments

### Dual Protection: Proceed with caution.

Dual protection is often the only method for achieving maximum protection in the most hazardous noise environments – but it has its limitations. It is required in mining operations for exposures over 105 dBA (8-hour TWA per MSHA) and recommended by NIOSH for exposures over 100 dBA (8-hour TWA). However, some research suggests that dual protection is overused. In less extreme environments, a properly fitted high attenuating earplug or earmuff may be the best solution to providing the right level of protection.



### Headband

#### SKU / Description

1010421 Mach 1



### Multiple-Position

#### SKU / Description

QM24+ QM24+



# Clarity<sup>®</sup>

Advanced Sound Management  
Technology enhances communication

Using Bilsom's patented Sound Management Technology™ (SMT), Clarity series earmuffs improve employee safety by blocking harmful noise while allowing voice and signal frequencies to be heard more naturally.

## Features

SMT's uniform attenuation allows wearer to hear co-workers, instructions and other important sounds more naturally while blocking out harmful noise

Dielectric construction suitable for all workplaces, especially electrical environments

Uniform headband pressure for all head sizes, providing better comfort for long-term wear

Quick-Click height adjustment remains fixed during wear

Snap-in ear cushions make replacement quick and easy

**C1F**  
NRR 20



**C3**  
NRR 27



**C3H**  
NRR 25



**C2**  
NRR 23



**C1**  
NRR 20



**C1H**  
NRR 20



### Headband

Comfortable over-the-head design, ideal for many applications.

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

### SKU / Description

1011142 C1  
1011146 C3

### Helmet

Earcups snap in place during use and swing back when not needed

Earcups work with a wide range of popular hard hats

Pair of adapters included

### SKU / Description

1011144 C1H  
1011147 C3H

### Multiple-Position

Allows wearer to select position over-the-head, behind-the-head or under-the-chin.

### SKU / Description

1011145 C2

### Folding (above)

Convenient folding design for easy storage.

Belt storage case also available

### SKU / Description

1011145 C1F

# Impact®

Electronic sound amplification

Impact earmuffs enhance awareness through advanced sound amplification technology. Wearers hear important sounds in their environment – co-workers, alarms and warning signals – at a safely amplified level. Ideal for the hearing-impaired. Helps eliminate the feeling of isolation.

## Features

Amplifies ambient sound to safe 82 dB – response technology reverts to passive hearing protector if noise reaches 82 dB

Sound amplification increases communication and awareness – employees can hear alarms/warning signals, co-workers’ voices

Directionally placed stereo microphones amplify and enhance sound for more natural hearing

Snap-in ear cushions make replacement quick and easy

Automatic shut-off after 4 hours

Includes 2 AA batteries for 140 hours of use

# Impact® Sport

Impact Sport has the basic features of Impact, with added features designed for sport shooting and field use.

## Features

Wearers can hear important ambient sounds, including other shooters and environmental noise

Low-profile design with cut-out for full clearance of firearm eliminates interference while shooting

AUX input allows connection to external MP3 or other audio devices for listening off the field

**Impact**  
NRR 23



**Impact H**  
NRR 21



**Impact Sport**  
NRR 22



## Headband

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

### SKU / Description

1010376 Impact

## Helmet

Earcups snap in place during use and swing back when not needed

Earcups work with a wide range of popular hard hats

Pair of adapters included

### SKU / Description

1010632 Impact H

## Folding

Patented Air Flow Control™ technology for optimal attenuation across all frequencies

Convenient folding design for easy storage

Automatic shut-off after 4 hours

Includes 2 AAA batteries for 350 hours of use

Belt storage case also available

### SKU / Description

R-01526 Impact Sport





# Radio

Enhanced employee motivation and productivity

Add music and routine jobs become more satisfying. Our AM/FM Radio earmuffs deliver superior reception and sound while lightweight designs and unique headband ensure superb comfort for all-day wear.

## Features

High-quality AM/FM radio reception  
Radio volume does not exceed 82 dB  
Inner-ventilated headband minimizes pressure on the head; breathes easier in warm/humid climates

Non-deforming outer headband withstands rough treatment in demanding environments  
Snap-in ear cushions make replacement quick and easy  
Includes 2 AA batteries for 140 hours of use

### AM/FM Radio NRR 23



### Radio Hi-Visibility NRR 25



### Music increases motivation for wearers

Where appropriate, radio earmuffs can increase employee motivation and productivity - all within safe listening levels.

### Headband

Comfortable over-the-head design, ideal for many applications

Quick-Click height adjustment remains fixed during wear

#### SKU / Description

1010375 AM/FM Radio

### High Visibility

Bright green earcups and a reflective headband provide high visibility, contrast and safety

AUX input connects to MP3 players and other audio devices

Features patented Air Flow Control™ Technology for optimal attenuation across all noise frequencies, without increasing size or weight of the earcup

Includes 3.5mm connection cable

#### SKU / Description

1015543 Radio Hi-Visibility



Combines the entertainment benefit of our AM/FM Radio earmuff with advanced sound amplification technology. Allows wearers to hear important communications – other co-workers' voices, alarms and important warning signals – at a safely amplified level, while listening to the radio.

## Features

Sound amplification increases environmental awareness – employees can hear alarms/warning signals, co-workers' voices

AM/FM radio volume does not exceed 82 dB; separate controls for amplification and radio volume

Directionally placed stereo microphones amplify and enhance sound for more natural hearing

Snap-in ear cushions make replacement quick and easy

Includes 2 AA batteries for 140 hours of use

### Electo NRR 23



### Headband

Comfortable over-the-head design, ideal for many applications

Inner-ventilated headband reduces pressure on 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

### SKU / Description

1010374 Electo

### Electo H NRR 21



### Helmet

Earcups snap in place during use and swing back when not needed

Earcups work with a wide range of popular hard hats

Pair of adapters included

### SKU / Description

1010631 Electo H

### Radio earmuffs as hearing protection devices?

A radio earmuff should allow the enjoyment of music at safe levels and reduce background disturbance in a noisy environment. In order to do this, our radios feature circuitry that limits volume output. When the radio is turned on (active mode), the sound volume is electronically limited to a safe 82 dBA. Since the output is limited to a safe maximum, the radio adds minimal additional noise exposure. In a high-noise job that is also repetitive or monotonous, a radio earmuff can add considerable enjoyment for workers, without sacrificing hearing protection. To learn more about Radio Earmuffs, visit our website to download our Sound Source™ article at [howardleight.com](http://howardleight.com)

# Earmuff Accessories

Our Earmuff Accessories provide a combination of comfort and convenience, ensuring that Howard Leight protectors perform well in the most demanding environments.



## **Polar Hood™ New!**

This balaclava-style hood with bright green accents provides protection from cold while maintaining optimal attenuation and high-visibility. Patented side panels help eliminate gaps between earcup and ear, reducing hazardous noise exposure. Ideal for airport ground crews, construction workers and other employees exposed to cold weather conditions. For use with all Howard Leight earmuffs. Fits under most hard hats.

### **SKU / Description**

1016871	Polar Hood – Small/Medium
1016870	Polar Hood – Large/Extra Large

## Slim Belt Clip **New!**

A simple and convenient solution for attaching earmuffs to belt or pocket when not in use. Lightweight, low profile design.

### SKU / Description

1016730 Slim Belt Clip



## Cool™ II Pads

Apply to ear cushions to improve overall comfort and hygiene. A dermatologically tested material absorbs 15 times its weight in moisture and keeps ears warm in cold climates. Fits all Howard Leight earmuffs.

### SKU / Description

13910031 100 pair dispenser pack  
13910032 5 pair packs

## Folding Belt Case

Durable nylon with belt loops and easy-to-open Velcro® flap. Folds flat. Fits Leightning® L2F, Leightning® Hi-Visibility L2FHV, Thunder® T1F, Clarity® C1F and Impact® Sport earmuffs.

### SKU / Description

1000251 Folding Earmuff Belt Case



## Hygiene Kits

For extended earmuff performance and life as well as improved hygiene, these snap-in ear cushions and foam inserts should be replaced every 6 months, more often with heavy use. Each kit comes with one pair of ear cushions and one pair of foam inserts.

### SKU / Description

1006080 Clarity C1/C1F/C1H  
1006017 Clarity C2  
1006081 Clarity C3/C3H  
1010974 Thunder T1/T1H/T1F  
1010975 Thunder T2/T2H/T2HV  
1010976 Thunder T3/T3H  
1011998 Leightning L1/L1H/L1N/L0N/L1HHV/Viking V1  
1011999 Leightning L2/L2H/L2N/L2F/L2FHV/Viking V2  
1012000 Leightning L3/L3H/L3N/L3HV/Viking V3  
1008000 Radio/Radio HV/Electo/Electo H/Impact/Impact H/  
1015280 Impact Sport  
HK4 QM24+

## OptiSorb®

Washable, 100% cotton sleeve slides over earcup to absorb sweat or provide warmth. For comfort and improved hygiene in most climates. Fits all Howard Leight® earmuffs.

### SKU / Description

OPSB OptiSorb



## Helmet Adapters

Howard Leight offers a large selection of easy-to-snap-on adapters to accommodate a variety of hard hats. The durable plastic and metal styles withstand demanding conditions.

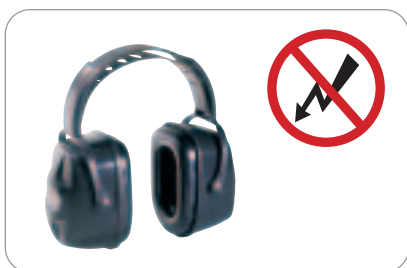
### SKU / Style / Description

13910033 3702 Clip-On Adapter  
13910034 3710 Dielectric Screw-On Adapter  
13910035 3711 Centurion  
13910036 3712 Balance, Bullard, LAS, MSA, Voss, Opus  
13910037 3713 Norton, Bullard  
13910038 3714 Protector, AO, JSP, Domeguard  
13910039 3718 AO Safety, Bullard, Jackson, MSA North, Sperian

# Search by Special Feature

Diverse conditions and employee populations can limit and focus product selection. The following are key special features among earplugs and earmuffs that target special requirements.

## Dielectric



Working under conditions with dielectric requirements? Most Howard Leight® earplugs are free from metal components. And many of our earmuffs feature a robust non-deforming dielectric construction that withstands use and abuse, while protecting your employees in electrical environments.

### Earplugs

All Single-Use, Multiple-Use and Banded Earplugs

### Earmuffs

Thunder® series, Viking™ series, Mach™ 1, QM24+® and Clarity® series

## High-Visibility



High-visibility products improve overall employee safety for some outdoor or low lighting environments. Brightly colored earplugs improve visibility for both safety and compliance checks. Howard Leight Hi-Visibility earmuffs not only feature bright green earcups, but also reflective headbands for additional visual reference.

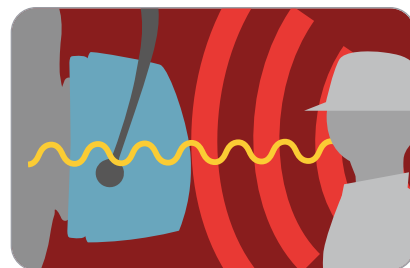
### Earplugs

Laser Lite, QB1HYG® and QB2HYG®

### Earmuffs

Leightning® Hi-Visibility L1HHV/L2FHV/L3HV, Thunder® Hi-Visibility T2HV and Radio Hi-Visibility

## Sound Management



Sometimes blocking sound isn't enough. You need to block noise out and let information in. Howard Leight offers a variety of earplugs and earmuffs that deliver Uniform Attenuation, blocking out noise while alarms, warnings and even co-workers' voice frequencies can be heard more naturally. Earmuffs that feature Sound Amplification enhance users' awareness of their environment to safe levels and revert to passive protection in hazardous noise.

### Earplugs

Uniform Attenuation:  
Single-Use - Matrix™ Orange/Green/Blue  
Multiple-Use - Clarity®

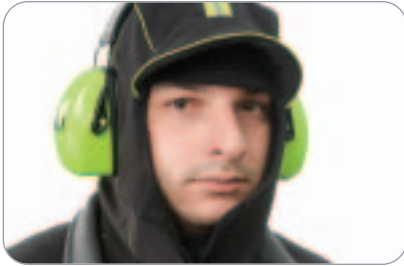
### Earmuffs

Uniform Attenuation:  
Clarity® series

Sound Amplification:  
Impact® series  
Impact® Sport  
Electo® series



## Climate



Indoors or outdoors, it is important to select the appropriate HPDs for your physical environment and ensure comfort over a work shift.

### Hot Climates

In hot/humid environments, employees may be most comfortable in Single-Use, Multiple-Use or Banded earplugs.

### Earplugs

All Single-Use, Multiple-Use and Banded Earplugs

### Cold Climates

Colder climates generally require earmuffs to protect from exposure to hazardous noise and inclement weather.

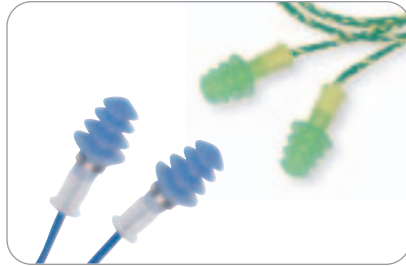
### Earmuffs

All Noise Blocking, Sound Management and Radio models

### Earmuff Accessories

Polar Hood™, Cool™ II Pads and OptiSorb®

## Small Sizes



Employees with smaller ear canals should be fitted with low-pressure or self-adjusting polyurethane foam earplugs, or Multiple-Use earplugs that are available in a variety of sizes.

### Earplugs

Max Lite®	Low-Pressure Foam
Laser Lite®	Self-Adjusting Foam
Fusion®	Small/Regular
Clarity®	Small/Regular
Quiet®	Small/Regular/Large
Fusion® Detectable	Small/Regular

## Other PPE



Avoid compromising overall employee safety when utilizing other types of personal protective equipment (PPE).

### Safety Eyewear

Thick frames (6mm) can cause a gap between the head and earmuffs, reducing optimal attenuation by 2 – 5 dB. Switch to thin temple frames or use any of our Single-Use, Multiple-Use or Banded Earplugs.

### Hard Hats

Use Cap-Mounted earmuffs that slot onto hard hats when possible. For full-brim hard hats, select Multiple-Position or Neckband earmuffs, or Banded earplugs. All of our Cap-Mounted earmuffs come with hard hat adapters.

### Earmuffs

Cap-Mounted:  
Lightning® L1H/L2H/L3H, Lightning® Hi-Visibility L1HHV, Thunder® T1H/T2H/T3H and Clarity® C1H/C3H  
Neckband:  
Lightning L0N/L1N/L2N/L3N

### Respirators

Choose any segment/style of earplugs, or ultraslim Neckband earmuffs that allow clearance between earcup and hood.

### Earplugs

All Single-Use, Multiple-Use and Banded Earplugs

### Earmuffs

Neckband: Lightning L0N

# Search by Industry

From experience working with a variety of industries and customers worldwide, we offer top product recommendations in key industries. If your industry is not listed, use these insights to help with your decision.

## Automotive



### Automobile + Vehicle Manufacturing, Auto Repair, Automotive Aftermarket

Employees throughout the automotive industry are exposed to a wide range of constant and intermittent hazardous noise, often over long periods of time. For these exposures, both comfort and convenience are priorities. Selecting polyurethane foam Single-Use or conforming Multiple-Use earplugs enhances comfort, while Banded earplugs or earmuffs are ideal for employees who are intermittently exposed to noise. Also, dispensers offer a convenient earplug source for any workforce

#### Earplugs

Max®, Max Lite®, Laser Lite®, SmartFit®, AirSoft®, Quiet®, QB1HYG®, QB2HYG®, Leight® Source 400 and Leight® Source 500

#### Earmuffs

Leightning® L0F/L3, Thunder® T1/T2, Viking™ V1/V2, Clarity® C1 and Impact®

## Aviation



### Airport Ground Crews, Gate Agents, Aircraft Mechanics, Aircraft Manufacturing, Aeronautics

As mobile employees, airport workers are exposed to a wide range of hazardous noise levels, often intermittently. Banded earplugs and earmuffs are the best line of defense, as they are easily accessible. Polar Hoods in cold climates help protect against inclement weather. Corded earplugs are ideal for gate agents, especially worn around the neck when not in use. Aircraft mechanics and those in aeronautics are often exposed to high levels of noise and should utilize high attenuation HPDs.

#### Earplugs

Max, Laser Lite, SmartFit, Fusion®, QB1HYG, QB2HYG and PerCap®

#### Earmuffs

Leightning L2F/L3, Leightning Hi-Visibility L2FHV, L3HV, Thunder Hi-Visibility T2HV, Thunder T3 and Clarity C3

#### Earmuff Accessories

Slim Belt Clip, Folding Earmuff Belt Case and Polar Hood™

## Construction



### Steel Work, Masonry, Carpentry, Pipefitting, Electrical, HVAC, Painting, Welding, Roofing

Construction workers face a wide range of hazards (falls, electrocution, debris, chemicals) in addition to hazardous noise exposure. Ensure overall employee safety by selecting HPDs that do not compromise other PPE and offer a high degree of visibility. Also, avoid overprotection by selecting HPDs with attenuation suited for your employees' exposure, especially in marginal noise environments.

#### Earplugs

Max, Laser Lite, SmartFit, Fusion, AirSoft, Quiet, Clarity and QB2HYG

#### Earmuffs

Any Noise Blocking Earmuff and Clarity series

## Energy Production



### Oil + Gas Production, Chemical Manufacturing, Mining, Energy Production, Utilities

Employees in these industries face a wide variety of worksite hazards (respiratory hazards, falls, explosions) in addition to exposure to hazardous noise. Employees are required to wear other PPE (safety eyewear, hard hats, respirators, gas monitors). They also face the additional risk of hearing loss due to exposure to ototoxic chemicals (solvents, heavy metals). Make sure your employees are properly protected with HPDs that work with other PPE and are dielectric in explosive environments.

#### Earplugs

Max<sup>®</sup>, Laser Lite<sup>®</sup>, SmartFit<sup>®</sup>, Fusion<sup>®</sup>, AirSoft<sup>®</sup>, Clarity<sup>®</sup> and QB2HYG<sup>®</sup>

#### Earmuffs

Leightning<sup>®</sup> L0N/L2H/L3N, Leightning<sup>®</sup> Hi-Visibility L1HHV/L2FHV/L3HV, Thunder<sup>®</sup> T2/T3H, Viking<sup>™</sup> V3 and Clarity<sup>®</sup> C3H

#### Earmuff Accessories

Slim Belt Clip, Cool<sup>™</sup> II Pads, OptiSorb<sup>®</sup> and Polar Hood<sup>™</sup>

## Process Industries



### Food + Beverage Processing, Food Service, Pulp + Paper, Tobacco

Many process industries utilize control procedures such as visual and metal detection to avoid contamination of the final product. We recommend attached corded or banded earplugs in contrasting colors (especially blue) and/or styles that are metal detectable. Earmuffs should match the noise level for your specific application as well as work with other PPE your employees may use.

#### Earplugs

Laser Trak<sup>®</sup>, AirSoft, SmartFit Process Industry, SmartFit Detectable, SmartFit Blue, Fusion Detectable and PerCap<sup>®</sup>

#### Earmuffs

Leightning L0F/L2/L3/L2H/L0N/L3N and Clarity C1

## Industrial Manufacturing



### Consumer Goods, Light Assembly/Manufacturing, Furniture, Textiles, Printing, Warehousing

Those who work in industrial manufacturing need protection against hazardous noise and a highly comfortable HPD. If it's not comfortable, it won't be worn properly or at all. We recommend HPDs that ensure proper protection and superb comfort over time. Our polyurethane foam Single-Use earplugs and Multiple-Use earplugs, featuring Conforming Material Technology<sup>™</sup>, deliver on both. Our earmuffs also deliver a wide range of attenuation and comfort features that put industrial employees first.

#### Earplugs

All Single-Use, Multiple-Use and Banded Earplugs

#### Earplug Dispensers

Leight<sup>®</sup> Source 400 and Leight Source 500

#### Earmuffs

Leightning L2/L3, Thunder T1/T1F/T3, Viking V2, Clarity C1 and Radio HV

# Search by Exposure Level

Start with the level of noise to which your employees are exposed. Then use the index below to identify the earplug and earmuff options with attenuation levels that are right for their work environment.

Noise Exposure dBA      80      85      90      95      100      105      110      115 - 118



85 dB  
Hearing Protection  
must be made  
available at 85 dB

90 dB  
Hearing Protection is  
required for exposures  
of 90 dB or higher

115 dB  
Unprotected noise  
exposure of any  
duration not permitted  
above this level

## Keep these tips in mind as you choose:

1

Match product choices to the specific attenuation levels for your environment

2

Too much protection may put employees at risk, especially in low levels of hazardous noise

3

Optimal protection is based on proper earplug fit

4

Make sure employees receive proper training on how to use their earplugs or earmuffs

85 dB  
Hearing Protection  
must be made  
available at 85 dB

90 dB  
Hearing Protection is  
required for exposures  
of 90 dB or higher

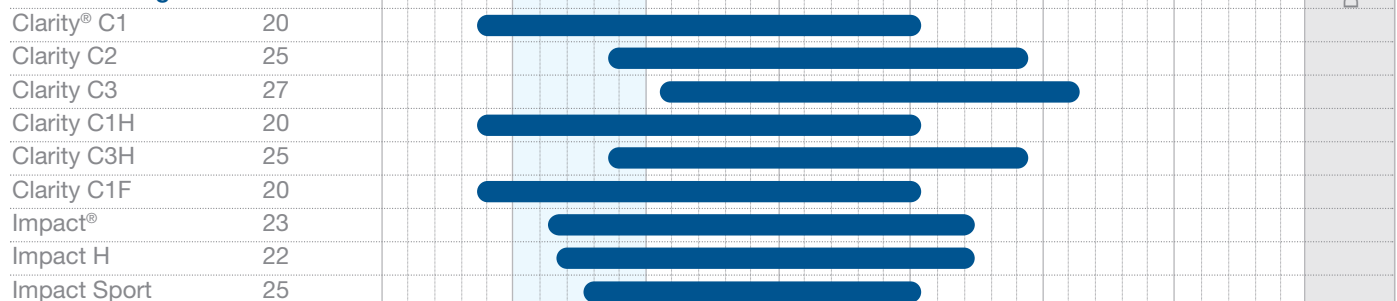
115 dB  
Unprotected noise  
exposure of any  
duration not permitted  
above this level

Noise Exposure dBA 80 85 90 95 100 105 110 115 - 118

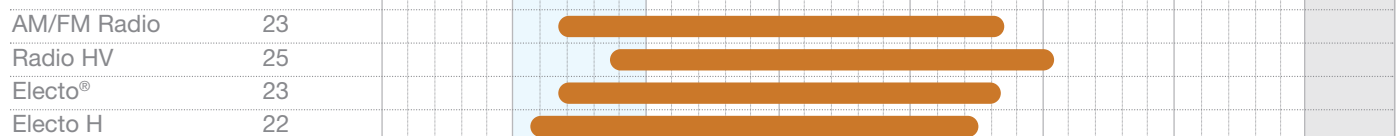
**Noise Blocking NRR**



**Sound Management NRR**



**Radio NRR**



DUAL PROTECTION RECOMMENDED

# Earmuff Fitting Instructions

## Keys to Successful Hearing Protection with Earmuffs

### Wear

Read and follow all earmuff fitting instructions

Remove all hair under ear cushions

### Selection

Avoid overprotection in minimal noise environments – consider noise levels and need to communicate with co-workers or hear warning signals on the job

### Maintenance

Regularly inspect earcups and ear cushions for cracks and leaks – discard if earcups are visibly damaged or compromised

Clean earcups and ear cushions regularly with mild soap and water

Replace ear cushions and foam inserts every 6 months under normal wear, every 3 months with heavy use or in humid/extreme climates

Headband	Folding	Multiple-Position	Cap-Mounted	Neckband
 <p>Thunder® T3</p>	 <p>Leightning® L2F</p>	 <p>Viking™ V3</p>	 <p>Clarity® C3H</p>	 <p>Leightning® L1N</p>
<p><b>1</b></p>  <p>Place earcups over each ear.</p>	<p><b>1</b></p> 	<p><b>1</b></p>  <p>Place the earcups over each ear.</p>	<p><b>1</b></p>  <p>Attach adapters to each side of the hard hat by sliding them into the slots.</p>	<p><b>1</b></p> 
<p><b>2</b></p>  <p>Adjust the headband by sliding the headband up or down.</p>	 <p>Fold out the earcups as shown.</p>	<p><b>2</b></p>  <p>Adjust the headband by sliding the headband up and down.</p>	<p><b>2</b></p>  <p>Attach each earmuff into its adapter by sliding the earmuff housing down into the adapter.</p>	 <p>Adjust the length of the headband strap between the earcups so the earmuff fits well on top of the head.</p>
	<p><b>2</b></p>  <p>Place earcups over each ear.</p>	<p><b>3</b></p>  <p>Multiple-Position earmuffs can be worn either over-the-head, behind-the-head or under-the-chin.</p>	<p><b>3</b></p>  <p>Place the hard hat on the head and adjust the earmuffs by sliding the cups up and down.</p>	<p><b>3</b></p>  <p>Place earcups over each ear.</p>
	<p><b>3</b></p>  <p>Adjust the headband by sliding the headband up or down.</p>	<p><b>4</b></p>  <p>When the earmuff is worn with the headband behind-the-head or under-the-chin, the headband strap must be attached to the slot in the upper part of the earcup as shown.</p>	<p><b>4</b></p>  <p>Ensure that the earmuff is firmly attached by lifting the arm up and down.</p>	

# Attenuation Data

NRR testing in accordance with ANSI S.3.19-1974

## Single-Use Earplugs

<b>Max®</b>	NRR 33			Canada A (L)					
Frequency/Hz	125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.	40.9	43.0	44.8	38.9	37.2	47.4	48.5	47.7	47.8
Std. Dev.	3.5	3.9	3.8	2.8	2.7	4.5	3.1	4.4	3.9

<b>Max Lite®</b>	NRR 30			Canada A (L)					
Frequency/Hz	125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.	33.5	33.6	36.0	37.5	39.4	42.5	43.9	43.7	45.2
Std. Dev.	3.6	3.4	3.2	3.5	3.5	3.4	5.1	4.8	5.1

<b>Laser Lite®</b>	NRR 32			Canada A (L)					
Frequency/Hz	125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.	36.8	38.0	40.4	41.1	40.1	44.4	48.5	46.4	45.8
Std. Dev.	4.0	4.5	5.5	4.0	2.7	4.5	4.1	5.4	5.2

<b>Multi Max®</b>	NRR 31			Canada A (L)					
Frequency/Hz	125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.	30.9	32.4	33.9	34.9	36.5	46.1	47.1	50.9	52.1
Std. Dev.	2.1	2.5	2.7	1.9	1.9	3.3	2.6	2.7	2.5

<b>Matrix™ – orange</b>	NRR 29			Canada A (L)					
Frequency/Hz	125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.	31.4	34.3	38.3	34.5	36.0	40.3	39.2	40.9	44
Std. Dev.	3.6	4.0	3.9	3.0	2.7	3.4	3.1	3.5	3.4

<b>Matrix – green</b>	NRR 27			Canada A (L)					
Frequency/Hz	125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.	25.9	29.7	35.5	34.4	35.2	39.0	37.3	40.1	43.2
Std. Dev.	3.8	3.7	4.1	3.1	3.0	3.2	2.4	3.8	3.4

<b>Matrix – blue</b>	NRR 23			Canada A (L)					
Frequency/Hz	125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.	21.4	26.4	31.3	31.8	34.2	39.6	39.6	40.3	43.5
Std. Dev.	5.8	4.5	4.6	4.9	3.2	2.8	2.0	2.4	2.5

## Multiple-Use Earplugs

<b>SmartFit®</b>	NRR 25			Canada A (L)					
Frequency/Hz	125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.	29.5	28	30.5	31.6	33.5	40.5	40.0	41.8	42.1
Std. Dev.	3.5	4.1	3.6	3.2	3.5	3.3	4.2	5.3	4.7

<b>Fusion®</b>	NRR 27			Canada A (L)					
Frequency/Hz	125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.	29.5	29.9	32.3	33.9	37.3	41.1	42.7	47.9	47.6
Std. Dev.	4.6	3.7	2.8	2.8	4.1	3.6	4.6	4.8	3.2

<b>Clarity®</b>	NRR 21			Canada A (L)					
Frequency/Hz	125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.	27.7	27.4	25.1	29.6	33.5	31.2	31.6	39.0	41.5
Std. Dev.	3.3	3.6	3.2	4.1	3.2	3.4	4.0	5.4	3.5

<b>AirSoft®</b>	NRR 27			Canada A					
Frequency/Hz	125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.	31.0	32.3	31.4	35.2	39.6	39.7	42.2	43.5	44.2
Std. Dev.	4.3	4.1	3.6	3.6	4.1	4.8	5.1	4.1	3.3

<b>Quiet®</b>	NRR 26			Canada A (L)					
Frequency/Hz	125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.	26.3	29.0	28.7	31.2	36.3	44.0	45.1	49.1	47.2
Std. Dev.	3.3	2.6	2.8	2.5	3.9	3.6	4.4	4.4	3.7

## Detectable Earplugs

<b>Laser Trak®</b>	NRR 32			Canada A (L)					
Frequency/Hz	125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.	33.3	36.1	41.7	42.3	40.5	48.3	49.7	49.7	52.0
Std. Dev.	4.4	3.6	2.6	4.4	3.5	3.2	3.6	2.9	3.6

<b>Fusion Detectable</b>	NRR 25			Canada A (L)					
Frequency/Hz	125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.	33.4	31.8	33.1	38.4	33.9	41.0	43.6	45.4	44.4
Std. Dev.	4.9	4.4	4.1	5.9	4.6	4.1	4.9	5.4	5.7

<b>SmartFit Detectable</b>	NRR 25			Canada A (L)					
Frequency/Hz	125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.	29.5	28.0	30.5	31.6	33.5	40.5	40.0	41.8	42.1
Std. Dev.	3.5	4.1	3.6	3.2	3.5	3.3	4.2	5.3	4.7

## Banded Earplugs

<b>QB1HYG®</b>	NRR 27			Canada B (L)		Under-the-Chin			
Frequency/Hz	125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.	31.2	31.5	31.6	32.3	35.1	42.6	45.8	47.0	48.0
Std. Dev.	2.6	2.8	3.3	3.3	2.5	2.3	2.0	2.7	3.2

<b>QB2HYG®</b>	NRR 25			Canada B (L)		Under-the-Chin			
Frequency/Hz	125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.	28.2	28.3	26.8	29.6	34.4	40.7	40.3	43.3	42.4
Std. Dev.	2.5	2.5	2.8	2.0	1.2	2.7	1.2	2.3	2.2

<b>QB3HYG®</b>	NRR 23			Canada B (L)		Under-the-Chin			
Frequency/Hz	125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.	26.9	26.0	24.1	26.0	34.4	40.7	40.3	43.3	42.4
Std. Dev.	1.8	2.2	2.4	2.1	1.7	1.5	2.3	2.1	1.7

<b>PerCap®</b>	NRR 21			Canada B (L)		Under-the-Chin			
Frequency/Hz	125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.	28.3	25.7	24.3	25.6	34.2	39.0	40.0	43.8	42.1
Std. Dev.	5.2	4.1	3.0	3.5	2.6	2.1	2.5	3.5	3.0

	NRR 20			Canada B (L)		Over-the-Head			
Mean Attn.	24.9	22.3	21.1	23.9	32.5	37.4	37.9	40.8	42.1
Std. Dev.	3.9	3.1	2.6	2.5	2.4	3.2	3.6	3.8	2.8

	NRR 20			Canada B (L)		Behind-the-Head			
Mean Attn.	24.9	23.8	22.4	25.1	32.3	37.6	38.4	42.1	41.2
Std. Dev.	3.7	3.6	3.3	2.6	2.8	3.7	4.6	4.0	3.6

 **Noise Blocking Earmuffs**

<b>Leightning® L1</b>	NRR 25			Canada B					
Frequency/Hz	125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.	19.7	23.8	29.0	31.3	32.1	37.8	39.2	39.5	39.5
Std. Dev.	2.6	2.9	2.6	2.5	2.4	3.1	2.0	2.3	2.4

<b>Leightning L2</b>	NRR 27			Canada B (L)					
Frequency/Hz	125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.	21.8	26.6	31.8	35.2	32.9	37.7	37.6	39.1	39.6
Std. Dev.	3.2	3.1	2.5	2.1	2.1	2.4	2.2	2.4	2.6

<b>Leightning L3/HV</b>	NRR 30			Canada A (L)					
Frequency/Hz	125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.	23.8	28.8	36.5	39.9	35.3	38.7	39.0	41.0	40.8
Std. Dev.	2.2	2.3	2.4	1.9	2.3	2.8	2.1	2.4	2.3

<b>Leightning L1H/HV</b>	NRR 23			Canada B (L)					
Frequency/Hz	125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.	20.0	22.4	26.9	29.6	32.1	36.4	37.4	40.2	39.6
Std. Dev.	2.9	3.4	2.8	2.2	2.8	3.3	2.9	3.7	4.9

<b>Leightning L2H</b>	NRR 25			Canada B (L)					
Frequency/Hz	125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.	20.0	25.1	30.5	32.6	32.6	37.8	36.5	38.3	39.7
Std. Dev.	3.0	2.5	2.6	2.4	2.5	2.4	2.7	3.4	4.0

<b>Leightning L3H</b>	NRR 27			Canada A (L)					
Frequency/Hz	125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.	22.5	26.5	34.2	36.9	33.6	36.8	37.3	40.4	37.7
Std. Dev.	3.4	2.5	3.4	3.2	2.4	3.0	2.9	1.9	2.8

<b>Leightning LON</b>	NRR 22			Canada B					
Frequency/Hz	125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.	15.6	19.9	24.2	26.8	30.2	35.9	39.1	39.3	39.9
Std. Dev.	2.5	2.1	2.0	2.0	2.5	3.2	2.8	2.2	2.7

<b>Leightning L1N</b>	NRR 25			Canada B					
Frequency/Hz	125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.	19.3	23.3	28.9	33.2	32.0	36.2	37.3	38.2	38.5
Std. Dev.	2.6	2.4	2.9	2.0	2.2	2.9	2.7	2.9	2.8

<b>Leightning L2N</b>	NRR 26			Canada A (L)					
Frequency/Hz	125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.	20.4	25.3	31.2	35.0	33.2	37.7	37.7	38.9	39.4
Std. Dev.	3.4	2.9	2.7	2.2	2.5	3.2	2.2	2.3	2.7

<b>Leightning L3N</b>	NRR 28			Canada A (L)					
Frequency/Hz	125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.	22.5	27.8	33.7	37.1	33.7	38.5	38.6	40.8	40.3
Std. Dev.	3.3	2.6	2.9	2.7	2.1	2.7	2.7	2.3	2.6

<b>Leightning L0F</b>	NRR 23			Canada B					
Frequency/Hz	125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.	16.8	22.1	25.2	27.2	31.3	36.2	40.3	40.2	42.1
Std. Dev.	2.5	2.1	2.0	2.2	2.3	2.8	2.9	2.1	3.5

<b>Leightning L2F/HV</b>	NRR 27			Canada B (L)					
Frequency/Hz	125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.	21.5	26.8	31.8	34.7	32.0	37.7	37.5	38.6	39.9
Std. Dev.	2.9	2.6	2.5	1.9	2.1	2.8	2.5	2.4	2.8

<b>Thunder® T1</b>	NRR 26			Canada A					
Frequency/Hz	125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.	19.1	25.0	30.4	33.5	35.1	35.5	35.6	39.5	39.4
Std. Dev.	2.9	2.3	2.5	2.5	2.7	3.2	3.0	2.3	3.6

<b>Thunder T2/T2HV</b>	NRR 28			Canada A (L)					
Frequency/Hz	125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.	22.3	28.1	34.7	37.2	36.2	36.8	36.8	38.8	38.8
Std. Dev.	2.8	3.3	2.6	2.9	2.5	3.1	2.7	2.7	2.6

<b>Thunder T3</b>	NRR 30			Canada A (L)					
Frequency/Hz	125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.	24.7	29.8	35.5	38.5	37.9	39.6	39.6	41.9	42.3
Std. Dev.	2.8	2.7	2.8	3.0	2.5	3.1	2.4	2.6	2.4

<b>Thunder T1H</b>	NRR 23			Canada A					
Frequency/Hz	125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.	16.9	22.0	28.4	31.6	33.1	33.7	34.7	39.6	38.6
Std. Dev.	3.6	2.9	3.4	2.9	3.1	2.8	3.0	2.7	4.0

<b>Thunder T2H</b>	NRR 25			Canada A (L)					
Frequency/Hz	125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.	20.7	26.9	31.6	34.1	34.9	35.2	36.6	39.4	39.6
Std. Dev.	3.5	3.8	3.7	3.7	3.5	3.3	3.2	2.4	3.5

<b>Thunder T3H</b>	NRR 27			Canada A (L)					
Frequency/Hz	125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.	23.6	27.7	34.1	34.5	32.9	36.4	39.1	40.6	41.4
Std. Dev.	3.3	3.4	3.1	1.8	2.0	2.6	3.0	3.1	2.8

<b>Thunder T1F</b>	NRR 25			Canada A					
Frequency/Hz	125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.	19.6	23.2	29.6	32.6	33.6	34.7	36.3	39.8	38.3
Std. Dev.	3.4	2.1	3.0	2.4	2.8	2.7	2.9	2.2	4.2

<b>Viking™ V1</b>	NRR 25			Canada B			Over-the-Head		
Frequency/Hz	125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.	18.4	23.1	28.1	32.1	33.8	37.9	37.0	37.4	37.6
Std. Dev.	3.1	2.2	2.6	2.2	2.5	3.0	2.8	3.0	2.4

	NRR 24			Canada B			Behind-the-Head		
Mean Attn.	18.8	22.5	26.7	31.1	32.2	37.3	37.5	36.4	36.3
Std. Dev.	3.5	2.7	2.4	2.2	2.5	2.8	2.3	2.3	3.7

	NRR 24			Canada B			Under-the-Chin		
Mean Attn.	18.8	22.8	27.4	32.5	32.0	37.5	36.8	35.5	36.1
Std. Dev.	3.6	3.0	2.7	2.1	2.7	3.1	2.7	2.0	2.2

<b>Viking V2</b>	NRR 27			Canada A (L)			Over-the-Head		
Frequency/Hz	125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.	20.4	25.6	30.6	34.0	35.0	36.7	36.1	36.3	37.4
Std. Dev.	3.5	1.9	2.6	1.8	2.2	2.6	2.0	1.9	2.7

	NRR 25			Canada A			Behind-the-Head		
Mean Attn.	19.8	24.2	28.6	32.5	33.7	36.3	36.8	36.5	36.6
Std. Dev.	2.9	2.2	2.8	3.2	2.6	2.6	2.6	2.2	2.4

	NRR 25			Canada A			Under-the-Chin		
Mean Attn.	19.8	24.1	28.7	34.1	34.4	36.8	37.3	35.4	36.3
Std. Dev.	3.1	2.9	2.9	2.3	2.9	3.0	3.4	3.2	3.4

<b>Viking V3</b>	NRR 29			Canada A (L)			Over-the-Head		
Frequency/Hz	125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.	23.8	28.7	32.9	36.7	36.0	38.6	39.6	39.3	40.4
Std. Dev.	2.5	2.3	2.4	2.0	2.5	3.2	2.8	2.3	2.8

	NRR 27			Canada A (L)			Behind-the-Head		
Mean Attn.	20.9	26.5	31.1	36.6	34.4	36.8	38.7	38.8	38.8
Std. Dev.	4.2	2.7	3.1	2.0	2.3	3.4	1.8	2.0	2.9

	NRR 27			Canada A (L)			Under-the-Chin		
Mean Attn.	22.2	26.3	31.8	36.7	35.2	38.1	39.0	38.9	38.1
Std. Dev.	2.9	3.2	3.2	2.1	2.7	3.1	2.8	2.7	2.6

<b>Mach™1</b>	NRR 18			Canada B					
Frequency/Hz	125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.	9.3	14.5	23.2	29.6	30.7	31.5	31.7	31.5	31.9
Std. Dev.	3.2	2.6	2.8	3.2	3.0	3.0	2.9	3.2	2.8

<b>QM24+®</b>	NRR 25			Canada B					
Frequency/Hz	125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.	12.9	20.1	25.8	34.3	37.4	41.9	38.9	37.8	40.3
Std. Dev.	1.3	1.5	2.2	1.8	2.0	1.9	1.7	2.4	1.4





## Sound Management Earmuffs

<b>Clarity® C1</b>		NRR 20			Canada B					
Frequency/Hz		125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.		16.6	23.9	28.7	23.2	28.4	33.7	33.2	33.9	37.1
Std. Dev.		1.9	3.0	2.5	1.9	3.5	2.8	3.0	2.5	3.2

<b>Clarity C2</b>		NRR 23			Canada B		Over-the-Head			
Frequency/Hz		125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.		18.2	25.1	29.0	29.7	29.4	30.7	30.6	30.7	31.9
Std. Dev.		2.7	3.0	2.6	2.1	2.0	2.5	2.2	2.7	2.2

		NRR 22			Canada B		Behind-the-Head			
Mean Attn.		17.0	25.2	30.0	28.3	29.3	31.1	30.7	30.3	31.3
Std. Dev.		2.9	3.0	2.4	2.2	2.3	2.7	2.6	3.0	2.7

		NRR 22			Canada B		Under-the-Chin			
Mean Attn.		18.6	25.0	30.1	28.8	28.6	31.0	30.8	30.4	31.3
Std. Dev.		2.4	2.6	2.9	2.1	2.7	2.5	3.2	2.4	2.0

<b>Clarity C3</b>		NRR 27			Canada B (L)					
Frequency/Hz		125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.		26.5	31.2	36.0	31.7	31.4	33.6	36.4	37.3	37.6
Std. Dev.		3.1	3.2	2.1	1.7	2.2	2.0	1.6	2.7	2.6

<b>Clarity C1H</b>		NRR 20			Canada B					
Frequency/Hz		125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.		19.2	22.6	27.0	22.0	28.1	33.7	32.2	33.6	35.0
Std. Dev.		2.9	2.8	2.5	1.7	2.2	3.2	3.0	2.5	2.3

<b>Clarity C3H</b>		NRR 25			Canada B (L)					
Frequency/Hz		125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.		26.5	30.0	34.0	29.8	29.4	33.6	37.4	36.6	38.1
Std. Dev.		2.7	3.0	2.9	1.9	2.1	2.7	2.9	2.7	2.2

<b>Clarity C1F</b>		NRR 20			Canada B					
Frequency/Hz		125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.		19.5	23.3	27.8	24.2	27.6	32.0	32.9	31.5	30.1
Std. Dev.		4.0	2.8	2.9	2.2	2.7	2.9	2.9	3.2	3.4

<b>Impact®</b>		NRR 23			Canada B					
Frequency/Hz		125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.		13.6	19.3	29.4	30.1	32.4	37.3	40.8	43.9	45.6
Std. Dev.		2.4	2.3	1.9	2.1	2.8	2.6	2.4	2.7	2.2

<b>Impact H</b>		NRR 21			Canada B					
Frequency/Hz		125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.		14.2	19.2	29.7	26.9	28.8	35.4	41.0	43.8	44.9
Std. Dev.		3.5	2.9	2.1	3.1	2.3	2.5	2.3	2.4	2.3

<b>Impact Sport</b>		NRR 22			Canada B					
Frequency/Hz		125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.		18.1	21.4	23.5	27.5	27.1	35.3	36.8	29.6	39.2
Std. Dev.		2.7	1.9	1.9	2.0	1.8	3.6	3.8	3.0	3.9



## Radio Earmuffs

<b>Radio</b>		NRR 23			Canada B					
Frequency/Hz		125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.		13.6	19.3	29.4	30.1	32.4	37.3	40.8	43.9	45.6
Std. Dev.		2.4	2.3	1.9	2.1	2.8	2.6	2.4	2.7	2.2

<b>Radio HV</b>		NRR 25			Canada B (L)					
Frequency/Hz		125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.		20.6	26.0	29.8	31.0	31.7	36.6	40.4	42.3	42.0
Std. Dev.		2.6	2.5	2.9	2.3	2.5	1.8	3.5	3.3	4.1

<b>Electo®</b>		NRR 23			Canada B					
Frequency/Hz		125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.		13.6	19.3	29.4	30.1	32.4	37.3	40.8	43.9	45.6
Std. Dev.		2.4	2.3	1.9	2.1	2.8	2.6	2.4	2.7	2.2

<b>Electo H</b>		NRR 21			Canada B					
Frequency/Hz		125	250	500	1000	2000	3150	4000	6300	8000
Mean Attn.		14.2	19.2	29.7	26.9	28.8	35.4	41.0	43.8	44.9
Std. Dev.		3.5	2.9	2.1	3.1	2.3	2.5	2.3	2.4	2.3

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## About Howard Leight

From our beginnings as a one-man operation more than 30 years ago, Howard Leight has grown into one of the largest global manufacturers of hearing protectors in the industrial market and the recognized innovator in protection and people-oriented fit. Howard Leight/Sperian Hearing Protection, LLC, is a division of Sperian Protection. Please visit us online at [www.howardleight.com](http://www.howardleight.com)

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HP.101 v1.0 RPI 04/08

