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.

**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 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 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

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.

<table>
<thead>
<tr>
<th>Noise Monitoring</th>
<th>Audimetry</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Required by OSHA when employees are exposed to 85 dBA or higher (8-hour TWA)</strong></td>
<td><strong>Annual hearing tests must be available to all employees, and performed by a professional or qualified technician.</strong></td>
</tr>
<tr>
<td>Noise monitoring is required within the facility.</td>
<td><strong>Baseline Audiogram</strong> – Required within six months of first exposure or hire.</td>
</tr>
<tr>
<td>Area Noise Sampling – Using a sound level meter, take a general measurement of noise in each section of your facility.</td>
<td><strong>Audiogram Evaluation</strong> – Problem audiograms must be reviewed by an audiologist, otolaryngologist or physician.</td>
</tr>
<tr>
<td>Personal Noise Sampling – Using a dosimeter, measure each employee’s exposure to noise over his/her workshift.</td>
<td><strong>Standard Threshold Shift (STS)</strong> – 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.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Best practices that promote and motivate hearing conservation</th>
<th>Retain Records – This will help your audiologist compare audiograms serially over time.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Document Changing Conditions – Whenever you make a change in equipment or process, you need to document this change, even if the noise level is reduced.</td>
<td><strong>Get Follow-Up Reports</strong> – Ensure that your testing service provides understandable follow-up reports.</td>
</tr>
<tr>
<td>Post a Noise Map – A noise map in common areas is an effective way to notify employees of area noise and related changes.</td>
<td><strong>Review Results Immediately</strong> – Studies show that reviewing audiometric test results with employees right after testing yields a more positive impact.</td>
</tr>
<tr>
<td>Document Exposure – Each employee’s TWA noise exposure should be recorded in his/her personnel file.</td>
<td></td>
</tr>
<tr>
<td>Hearing Protectors</td>
<td>Training</td>
</tr>
<tr>
<td>----------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>A variety of suitable hearing protectors must be made available at no cost to employees.</td>
<td>Provide annual hearing conservation training to all employees on the following:</td>
</tr>
</tbody>
</table>
| **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. | Effects of Noise Exposure Use, Selection and Fitting of Hearing Protection Devices (HPD) Audiometric Test Procedures | **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. |
| **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. | Provide annual hearing conservation training to all employees on the following: | Retain all employee records, including exposure measurements and audiometric tests. |

**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 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.  

**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.

### Common Noise Levels

<table>
<thead>
<tr>
<th>Non-Occupational</th>
<th>Sound Energy Doubles Every 3 dB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Artillery Fire – 162 dB</td>
<td>Shotgun – 162 dB</td>
</tr>
<tr>
<td>Immediate Physical Damage – 160 dB</td>
<td></td>
</tr>
<tr>
<td>Jackhammer – 130 dB</td>
<td>Auto Racing – 130 dB</td>
</tr>
<tr>
<td>Immediate Pain Threshold – 130 dB</td>
<td></td>
</tr>
<tr>
<td>Oxygen Torch – 121 dB</td>
<td>Rock Concert – 120 dB</td>
</tr>
<tr>
<td>Compactor – 116 dB</td>
<td>Chainsaw – 118 dB</td>
</tr>
<tr>
<td>Unprotected Noise Exposure of Any Duration Not Permitted Above This Level – 115 dB</td>
<td></td>
</tr>
<tr>
<td>Diesel Truck Accelerating – 114 dB</td>
<td>Crying Baby – 110 dB</td>
</tr>
<tr>
<td>Impact Wrench – 102 dB</td>
<td>CD/MP3 Player – 105 dB</td>
</tr>
<tr>
<td>Bulldozer – 100 dB</td>
<td>Motorcycle – 105 dB</td>
</tr>
<tr>
<td>Industrial Fire Alarm – 95 dB</td>
<td>Power Lawnmower – 94 dB</td>
</tr>
<tr>
<td>Table Saw – 93 dB</td>
<td>Subway – 90 dB</td>
</tr>
<tr>
<td>Hearing Protection Required by OSHA – 90 dB</td>
<td></td>
</tr>
<tr>
<td>Handsaw – 85 dB</td>
<td>Propeller Airplane Cockpit – 88 dB</td>
</tr>
<tr>
<td>Forklift – 87 dB</td>
<td></td>
</tr>
<tr>
<td>Hearing Protection Must Be Made Available – 85 dB</td>
<td></td>
</tr>
<tr>
<td>Lathe – 81 dB</td>
<td>Hair Dryer – 80 dB</td>
</tr>
<tr>
<td>Normal Conversation – 60 dB</td>
<td>Alarm Clock – 75 dB</td>
</tr>
<tr>
<td>Non-Hazardous Noise – 75 dB</td>
<td></td>
</tr>
<tr>
<td>Transformer – 50 dB</td>
<td>Rainfall – 50 dB</td>
</tr>
<tr>
<td>Comfortable Sound – 50 dB</td>
<td></td>
</tr>
</tbody>
</table>

### OSHA Permissible Exposure Limit - 90 dBA

- Hearing protectors 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.

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**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

Download a copy of the Howard Leight Noise Thermometer at [howardleight.com](http://howardleight.com) or order copies to hang in your facility by calling 800.430.5490
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.

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.

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.

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.

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.

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

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.

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

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.

- **Max**
- **Max Lite**
- **Laser Lite**
- **Multi Max**
- **Matrix**

**Multiple-Use**

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

- **SmartFit**
- **Fusion**
- **Clarity** *New!*
- **AirSoft**
- **Quiet**
Detectable

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

Laser Trak®
SmartFit® Detectable
Fusion® Detectable

Dispensers

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

Leight® Source 400
Leight® Source 500

Banded

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

QB1HYG®
QB2HYG®
QB3HYG®
PerCap®

Page 16
Page 17
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, Reusable Bag
MAX-LS4 Uncorded MaxLite® Source 400 bulk refill bag
MAX-1-D Uncorded MaxLite® Source 500 bulk refill box
MAX-30 Corded Polybag
MAX-30-PB Corded Paper Bag
MAXX1-USA USA / Uncorded Polybag
MAXX1-USA USA / Corded Polybag
MAXX30-USA USA / Corded MaxLite® Source 500 bulk refill box

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 MaxLite® Source 400 bulk refill bag
LPF-1-D Uncorded MaxLite® 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 MaxLite® Source 400 bulk refill bag
LL-1-D Uncorded MaxLite® Source 500 bulk refill box
LL-30 Corded Polybag
LL-30-PB Corded Paper Bag

Available in patriotic red, white and blue striped colors.
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

**Fusion®**
NRR 27

**Clarity® New!**
NRR 21

### 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).

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

### 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
- **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

- **1005329**
  - Regular (blue) / Corded
  - Reusable Case
- **1005338**
  - Small (green) / Corded
  - Reusable Case
**Industries and Applications**

<table>
<thead>
<tr>
<th>Agriculture + Farming</th>
<th>Forestry</th>
<th>Military</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assembly/Light Manufacturing</td>
<td>General Contracting</td>
<td>Petrochemical</td>
</tr>
<tr>
<td>Automotive</td>
<td>Landscaping</td>
<td>Printing</td>
</tr>
<tr>
<td>Aviation</td>
<td>Lumber/Wood Products</td>
<td>Utility/Waste Management</td>
</tr>
<tr>
<td>Building Construction</td>
<td>Manufacturing</td>
<td>Warehousing</td>
</tr>
<tr>
<td>Food + Beverage</td>
<td>Metal Fabrication</td>
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</tr>
</tbody>
</table>

**AirSoft®**

NRR 27

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

**Quiet®**

NRR 26

**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-S | 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-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 |

**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.

**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.

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 Corde Polybag

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

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

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

### 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™

### 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®

### Leight® Source 400
**Bag Refills**

<table>
<thead>
<tr>
<th>SKU / Style / Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>LS-400</td>
</tr>
</tbody>
</table>

### Leight® Source 500
**Box Refills**

<table>
<thead>
<tr>
<th>SKU / Style / Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>LS-500</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Leight Source 400 Bulk refill bag 200 pair/bag</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max</td>
</tr>
<tr>
<td>Max Lite</td>
</tr>
<tr>
<td>Laser Lite</td>
</tr>
<tr>
<td>Multi Max</td>
</tr>
<tr>
<td>Matrix</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Leight Source 500 Bulk refill box 500 pair/box</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max</td>
</tr>
<tr>
<td>Max-1-D-USA</td>
</tr>
<tr>
<td>Max Lite</td>
</tr>
<tr>
<td>Laser Lite</td>
</tr>
<tr>
<td>Multi Max</td>
</tr>
<tr>
<td>Matrix</td>
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<td></td>
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<tr>
<td></td>
</tr>
<tr>
<td>Quiet</td>
</tr>
</tbody>
</table>
Banded

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

**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
- QB100HYG Replacement Pods
- Reusable Bag

**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
- QB200HYG Replacement Pods
- Reusable Bag

**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
- QB300HYG Replacement Pods
- Reusable Bag

Visit us online at howardleight.com
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

---

**The Do’s and Don’ts of Howard Leight® Earplugs**

**Proper Fit**
If either or both earplugs do not seem to be fitted properly, remove the earplug and reinset.

**Removal**
Gently twist earplug while slowly pulling in an outward motion for removal.

**Acoustical Check**
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.

---

Download a copy of our Earplug Instruction Poster at howardleight.com or call 800.430.5490 to request a copy.
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.

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

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.

Selection.

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

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

![Ultraslim Earcups Image]

**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.

![Multiple-Position Headbands Image]

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

![Earmuff Accessories Image]

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

![Variety of Wearing Styles Image]

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

![Dielectric Construction Image]

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

![High Visibility Image]

**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.

![Air Flow Control™ (AFC) Technology Image]

**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.

![Sound Management Technology™ (SMT) Image]

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

![Electronic Earmuffs Image]
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+®
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®

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

Headband

Comfortable over-the-head design ideal for many applications

SKU / Description

<table>
<thead>
<tr>
<th>SKU</th>
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<tbody>
<tr>
<td>1010922</td>
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<tr>
<td>1010924</td>
<td>L3</td>
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Helmet

Ear cups snap in place during use and swing back when not needed

Ear cups work with a wide range of popular hard hats

Pair of adapters included

SKU / Description

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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 ear cups, ideal for use with welding helmets

SKU / Description

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<td>1011996</td>
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Leightning® Hi-Visibility

With all the features of Leightning® 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.

**Headband**
Comfortable over-the-head design ideal for many applications

<table>
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**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

<table>
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<th>SKU / Description</th>
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<td>L1HHV</td>
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</table>

**Folding**
Convenient folding design for easy storage
L0F ultraslim design folds to less than 4" wide
Belt storage case also available

<table>
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<tr>
<th>SKU / Description</th>
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<td>L0F</td>
</tr>
<tr>
<td>1011997 L2F</td>
<td>L2F</td>
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</tbody>
</table>
Thunder®

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

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

Visit us online at howardleight.com
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.

**Hi-Visibility**

Bright green earcups provide high visibility and contrast

Reflective headband illuminates under light for increased visibility and safety

**SKU / Description**

1015820 T2HV
Viking™

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

V3
NRR 29

V2
NRR 27

V1
NRR 25

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

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.
Economical protection

Mach™ 1
Economical protection for short-term use. Lightweight dielectric construction offers protection at a low 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.

QM24+®
Ultra-lightweight, multiple-position, dielectric earmuff designed for extended wear at an affordable price.

Headband
SKU / Description
1010421  Mach 1

Multiple-Position
SKU / Description
QM24+  QM24+
Clarity®

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.

**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.

**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**

<table>
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<tr>
<td>1011147</td>
<td>C3H</td>
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**C1F**

NRR 20

**C3**

NRR 27

**C3H**

NRR 25

**C2**

NRR 23

**Multiple-Position**

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

**SKU / Description**

<table>
<thead>
<tr>
<th>SKU</th>
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<tbody>
<tr>
<td>1011145</td>
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**Folding (above)**

Convenient folding design for easy storage.

Belt storage case also available.

**SKU / Description**

<table>
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<tr>
<th>SKU</th>
<th>Description</th>
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<tbody>
<tr>
<td>1011146</td>
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Impact®

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

**Impact**

- NRR 23

**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

---

**Impact 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**

1010632 Impact H

---

**Impact Sport**

- NRR 22

**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

---

**Electronic sound amplification**

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® Sport**

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

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

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

Music increases motivation for wearers
Where appropriate, radio earmuffs can increase employee motivation and productivity - all within safe listening levels.
Electo®

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

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

Electro H

NRR 21

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
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
**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.

<table>
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<td>5 pair packs</td>
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**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.

<table>
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<td>QM24+</td>
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**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.

<table>
<thead>
<tr>
<th>SKU / Description</th>
<th>1000251</th>
<th>Folding Earmuff Belt Case</th>
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</table>

**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          | 0058     | 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.

<table>
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<tr>
<td>13910039</td>
<td>AG Safety, Bullard, Jackson, MSA North, Sperian</td>
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</table>

**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            |

**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.

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| SKU / Description          | 0058     | 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.

<table>
<thead>
<tr>
<th>SKU / Style / Description</th>
<th>13910033</th>
<th>3702 Clip-On Adapter</th>
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<tr>
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<td>13910039</td>
<td>AG Safety, Bullard, Jackson, MSA North, Sperian</td>
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</table>
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.

<table>
<thead>
<tr>
<th>Dielectric</th>
<th>High-Visibility</th>
<th>Sound Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>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.</td>
<td>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.</td>
<td>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.</td>
</tr>
</tbody>
</table>

**Earplugs**
- All Single-Use, Multiple-Use and Banded Earplugs

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

**Earplugs**
- Laser Lite, QB1HYG® and QB2HYG®

**Earmuffs**
- Leightning® Hi-Visibility L1HV/L2FHV/L3HV, Thunder® Hi-Visibility T2HV and Radio Hi-Visibility

**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
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®

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**

<table>
<thead>
<tr>
<th>Type</th>
<th>Size</th>
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</thead>
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<tr>
<td>Max Lite®</td>
<td>Low-Pressure Foam</td>
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<tr>
<td>Laser Lite®</td>
<td>Self-Adjusting Foam</td>
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<tr>
<td>Fusion®</td>
<td>Small/Regular</td>
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<td>Clarity®</td>
<td>Small/Regular</td>
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<td>Quiet®</td>
<td>Small/Regular/Large</td>
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<tr>
<td>Fusion® Detectable</td>
<td>Small/Regular</td>
</tr>
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</table>

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:

Leightning® L1H/L2H/L3H, Leightning® Hi-Visibility L1HHV, Thunder® T1H/T2H/T3H and Clarity® C1H/C3H

Neckband:

Leightning L0N/L1N/L2N/L3N

**Respirators**

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

**Earplugs**

All Single-Use, Multiple-Use and Banded Earplugs

**Earmuffs**

Neckband: Leightning L0N
Automotive + 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®

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™

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, 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®, Laser Lite®, SmartFit®, Fusion®, AirSoft®, Clarity® and QB2HYG®

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

Earmuff Accessories
Slim Belt Clip, Cool™ II Pads, OptiSorb® and Polar Hood™

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®, AirSoft, SmartFit Process Industry, SmartFit Detectable, SmartFit Blue, Fusion Detectable and PerCap®

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™, 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® 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.

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
### Noise Exposure dBA

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### Sound Management NRR

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### Radio

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<td>Electro H</td>
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**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.

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**Dual Protection Recommended**

80 dB Hearing Protection required for exposures of 80 dB or higher.
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
Place earcups over each ear.
Adjust the headband by sliding the headband up or down.

### Folding
Fold the earcups as shown.
Adjust the headband by sliding the headband up and down.

### Multiple-Position
Place earcups over each ear.
Multiple-Position earmuffs can be worn either over-the-head, behind-the-head or under-the-chin.
Adjust the headband by sliding the headband up or down.

### Cap-Mounted
Place earcups over each ear.
Adjust the headband by sliding the headband up or down.
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.

### Neckband
Place earcups over each ear.
Adjust the length of the headband strap between the earcups so the earmuff fits well on top of the head.
Ensure that the earmuff is firmly attached by lifting the arm up and down.
### Attenuation Data

#### Single-Use Earplugs

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#### Multiple-Use Earplugs

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#### Detectable Earplugs

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#### Banded Earplugs

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<td>Under-the-Chin</td>
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<tr>
<td>PerCap®</td>
<td>NRR 21</td>
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<td>Under-the-Chin</td>
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<tr>
<td>NRR 20</td>
<td>Canada B (L)</td>
<td>Over-the-Head</td>
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NRR testing in accordance with ANSI S3.19-1974
## Attenuation Data Continued.

### Thunder T3

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<td>30</td>
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**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 3.0 2.5 3.1 2.4 2.6 2.4 2.4

### Thunder T1H

<table>
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<tr>
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<tr>
<td>23</td>
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</tbody>
</table>

**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

### Thunder T2H

<table>
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<th>NRR</th>
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</table>

**Mean Attn.:** 20.7 26.9 31.6 34.1 34.9 35.2 36.8 39.4 39.6

**Std. Dev.:** 3.5 3.8 3.7 3.5 3.3 3.2 2.4 3.5 3.5

### Thunder T3H

<table>
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</tbody>
</table>

**Frequency/Hz:** 125 250 500 1000 2000 3150 4000 6300 8000

**Mean Attn.:** 23.6 27.7 34.1 34.9 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

### Thunder T1F

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</tbody>
</table>

**Frequency/Hz:** 125 250 500 1000 2000 3150 4000 6300 8000

**Mean Attn.:** 19.6 23.2 29.6 32.6 33.4 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

### Thor O™ V1

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</table>

**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

### Thunder 2144

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**Frequency/Hz:** 125 250 500 1000 2000 3150 4000 6300 8000

**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

### Thunder 2282

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**Frequency/Hz:** 125 250 500 1000 2000 3150 4000 6300 8000

**Mean Attn.:** 18.8 22.8 27.4 32.5 32.0 37.5 37.5 36.5 35.6

**Std. Dev.:** 3.6 3.0 2.7 2.1 2.7 3.1 2.7 2.0 2.2

### Thunder 2283

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</tbody>
</table>

**Frequency/Hz:** 125 250 500 1000 2000 3150 4000 6300 8000

**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

### Thunder 2284

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**Frequency/Hz:** 125 250 500 1000 2000 3150 4000 6300 8000

**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

### Mach™1

<table>
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**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

### QM24+®

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**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

---

### Noise Blocking Earmuffs

<table>
<thead>
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<th>NRR</th>
<th>Canada A (L)</th>
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</table>

**Frequency/Hz:** 125 250 500 1000 2000 3150 4000 6300 8000

**Mean Attn.:** 19.1 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
### Sound Management Earmuffs

<table>
<thead>
<tr>
<th>Clarity® C1</th>
<th>NRR 20</th>
<th>Canada B</th>
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<tbody>
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<td>Frequency/Hz</td>
<td>Mean Attn.</td>
<td>Std. Dev.</td>
</tr>
<tr>
<td>125 250 500 1000 2000 3150 4000 6300 8000</td>
<td>16.6 23.9 28.7 23.2 28.4 33.7 33.2 33.9 37.1</td>
<td>1.9 3.0 2.5 1.9 3.5 2.8 3.0 2.5 3.2</td>
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<table>
<thead>
<tr>
<th>Clarity® C2</th>
<th>NRR 23</th>
<th>Canada B Over-the-Head</th>
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<td>Frequency/Hz</td>
<td>Mean Attn.</td>
<td>Std. Dev.</td>
</tr>
<tr>
<td>125 250 500 1000 2000 3150 4000 6300 8000</td>
<td>18.2 25.1 29.0 29.7 29.4 30.7 30.6 30.7 31.9</td>
<td>2.7 3.0 2.6 2.1 2.0 2.5 2.2 2.7 2.2</td>
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<td>Std. Dev.</td>
</tr>
<tr>
<td>125 250 500 1000 2000 3150 4000 6300 8000</td>
<td>26.5 31.2 36.0 31.7 31.4 33.6 36.4 37.3 37.6</td>
<td>3.1 3.2 2.1 1.7 2.2 2.0 1.6 2.7 2.6</td>
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### Radio Earmuffs

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<tbody>
<tr>
<td>Frequency/Hz</td>
<td>Mean Attn.</td>
<td>Std. Dev.</td>
</tr>
<tr>
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<td>2.4 2.3 1.9 2.1 2.8 2.6 2.4 2.7 2.2</td>
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</table>

<table>
<thead>
<tr>
<th>Radio HV</th>
<th>NRR 25</th>
<th>Canada B (L)</th>
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<tbody>
<tr>
<td>Frequency/Hz</td>
<td>Mean Attn.</td>
<td>Std. Dev.</td>
</tr>
<tr>
<td>125 250 500 1000 2000 3150 4000 6300 8000</td>
<td>20.6 26.0 29.8 31.0 31.7 36.6 40.4 42.3 42.0</td>
<td>2.6 2.5 2.9 2.3 2.5 1.8 3.5 3.3 4.1</td>
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<table>
<thead>
<tr>
<th>Electo®</th>
<th>NRR 23</th>
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<tbody>
<tr>
<td>Frequency/Hz</td>
<td>Mean Attn.</td>
<td>Std. Dev.</td>
</tr>
<tr>
<td>125 250 500 1000 2000 3150 4000 6300 8000</td>
<td>14.2 19.2 29.7 26.9 28.8 35.4 41.0 43.8 44.9</td>
<td>3.5 2.9 2.1 3.1 2.3 2.5 2.3 2.4 2.3</td>
</tr>
</tbody>
</table>
VeriPRO makes it easy to get an accurate, real-world picture of your employees’ hearing protection. Find out whether they are receiving optimal protection, require additional training on how to fit their earplugs, or need to try a different model. VeriPRO uses sophisticated software in a user-friendly format to find out the Personal Attenuation Rating (PAR) your employees are receiving from their earplugs.

Developed in conjunction with the House Ear Institute (www.hei.org), VeriPRO’s three-part process checks the effectiveness of an employee’s earplug fit in each ear over a range of frequencies. This information is then captured in individual and group reports, accessible by the safety manager.

By verifying earplug effectiveness and providing an ideal opportunity for education, VeriPRO becomes an integral part of a successful Hearing Conservation Program.

On-site verification has never been easier

Measures real world attenuation by using unmodified earplugs
Simple software installation and hardware set-up
Fast, accurate, easy-to-understand results displayed within minutes

Captures and stores historical information on employee PAR
Fulfills OSHA requirements to “ensure proper initial fitting” of hearing protectors
Works with any earplug

Call 877-VERIPRO or learn more online at howardleightveripro.com
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

Sperian Hearing Protection, LLC
7828 Waterville Road
San Diego, CA 92154 USA
Tel: 800/430-5490
Fax: 401/232-3110

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