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Technical Bulletin
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Effective Communications in Data Centers

Description

Worker communication in data centers can be challenging because ambient noise from server fans, cooling equipment, and power infrastructure often reaches levels that interfere with normal speech, particularly in high-density server halls and mechanical rooms. Published measurements indicate that server areas often reach 85–92 dBA, and locations immediately adjacent to high-density racks can reach 92–96 dBA. In hyperscale and AI-focused facilities, sustained sound levels of 85–95 dBA are increasingly common due to higher cooling demands. These levels approach or exceed occupational hearing-conservation thresholds; OSHA's permissible exposure limit is 90 dBA over an 8-hour workday, while NIOSH recommends limiting exposure to 85 dBA over 8 hours. In Canada, the occupational exposure limit for most provinces is 85 dBA for an 8-hour workday and 87 dBA for federally regulated employees.

These noise levels can reduce speech intelligibility, requiring workers to raise their voices, repeat instructions, or move closer together to communicate effectively. These challenges can increase the risk of misunderstandings during maintenance, troubleshooting, equipment installations, and emergency response activities. The use of hearing protection, while necessary in louder areas, can further complicate verbal communication unless specialized communication headsets or hearing-protection systems with integrated voice capabilities are used. Practices such as noise assessments, communication planning, and appropriate hearing and communication technologies can be used to help maintain worker safety and operational efficiency in data center environments.

3M™ PELTOR™ Protective Communication Solutions help protect workers' hearing while making it easier to communicate clearly in noisy environments, supporting both safety and productivity. They are designed to help reduce exposure to hazardous noise, may improve team coordination, help maintain awareness of important surrounding sounds such as alarms or warning signals, and provide comfort and durability for extended use. Many options also integrate with radios or other communication systems, making them useful across a wide range of industrial and high-noise work settings.

Below are some potential 3M™ PELTOR™ Communications Solutions to help improve communications in data centers.

3M™ PELTOR™ Electronic Earplug, EEP-100



The 3M™ PELTOR™ EEP-100 Electronic Earplug helps protect your hearing, and can help improve situational awareness and communications in noisy environments. This kit includes a protective charging case and an assortment of eartips. The earpieces are rechargeable via a micro-USB jack on the charging case. The case also provides easy and convenient storage of the earpieces when not being used. The small and lightweight design helps improve the overall comfort and user experience and makes it compatible with most head borne Personal Protective Equipment (PPE), such as helmets and face shields. The earpieces and case are green colored. Technical Data Sheet: https://multimedia.3m.com/mws/media/1620204O/3mtm-peltortm-electronic-earplug-eep-100.pdf

3M™ PELTOR™ LiteCom Plus Headset



The 3M™ PELTOR™ LiteCom Plus Headset is a hearing protector with an integrated analog two-way radio and a noise-canceling speech microphone to help deliver a wireless, hands-free protective communication solution. The PELTOR LiteCom Plus headset also includes environmental listening technology, allowing workers to hear environmental sounds in low noise while also providing protection against loud working conditions. The 3M™ PELTOR™ LiteCom Plus Headset is designed for use in manufacturing, processing, equipment maintenance, crane operations, construction, and many other applications in noisy environments. All settings and controls on this headset are designed to be intuitively simple; its noise-canceling microphone can be activated by pressing the Push-to-Talk button on the earcup or by using voice-operated transmission (VOX). As you speak into the microphone, the channel is opened in milliseconds, allowing for near-instantaneous, clear communication in noisy environments. As an added benefit, this technology is combined with the professional-grade durability and all-day wearability you've grown to expect from the PELTOR Brand, making it a robust hearing protection solution. Technical Data Sheet: https://multimedia.3m.com/mws/media/2076453O/3m-peltor-sellsheet-litecom-plus-usac-pdf.pdf

3M™ PELTOR™ WS™ LiteCom Plus Headset



3M™ PELTOR™ WS™ LiteCom Plus Headset is a hearing protector with an integrated analog two-way radio, Bluetooth® communication, and a noise-cancelling speech microphone to deliver a wireless hands-free protective communication solution. The environmental listening technology assists workers to hear environmental sounds in low noise and helps provide protection when it's loud. The 3M™ PELTOR™ WS™ LiteCom Plus Headset is a next generation protective communication solution. The analog UHF two-way radio enables clear, hands-free communication in high levels of noise. With Bluetooth® multipoint connectivity, the headset can be simultaneously connected to two Bluetooth® enabled devices. And with the noise-cancelling boom microphone that carries a water and dust-proof IP68 rating, workers can have clear, hands-free communication in noisy and harsh environments.

Designed for use in construction, manufacturing, processing, equipment maintenance, crane operations, and many other applications in noisy environments, the 3M™ PELTOR™ WS™ LiteCom Plus Headset helps your workgroup communicate while also helping provide hearing protection when workers are exposed to hazardous noise. All settings and controls on the 3M™ PELTOR™ WS™ LiteCom Plus Headset are designed to be intuitively simple. The noise-cancelling microphone can be activated by pressing the Push-to-Talk button on the earcup or by using voice operated transmission (VOX). As you speak into the microphone, the channel is opened in milliseconds, allowing for near instantaneous, clear communication in noisy environments. And all of this technology is combined with the professional-grade durability and all-day wearability you've grown to expect from the PELTOR Brand.

The 3M™ PELTOR Brand is a respected global leader in hearing protection and communication solutions. With production facilities in several countries. including the US, the 3M PELTOR Brand supplies innovative solutions to numerous industries worldwide including elite tactical military teams and law enforcement agencies. The PELTOR Brand is built tough for the working professional. Contact us today to discover how PELTOR protective communication solutions can help keep workers safe while promoting productivity. Technical Data Sheet: https://multimedia.3m.com/mws/media/1777495O/3m-peltor-ws-litecom-plus-headset-technical-data-specification.pdf

References

1. OSHA. Occupational Noise Exposure – Overview. Occupational Noise Exposure - Overview | Occupational Safety and Health Administration
2. AcousPlan. Data Center Noise Control — Server Room Acoustics & Worker Safety (2026). AcousPlan™ — Data Center Noise Control — Server Room Acoustics & Worker Safety | AcousPlan
3. TechTarget. Understanding the Impact of Data Center Noise Pollution. Understanding the impact of data center noise pollution | TechTarget
4. Data Center Knowledge. Why Data Centers Are Loud, and How to Quiet Them Down. Why Data Centers Are Loud, and How to Quiet Them Down
5. NIOSH, Occupational Noise Exposure. DHHS (NIOSH) Publication Number 98-126 Occupational Noise Exposure (98-126) | NIOSH | CDC
6. Canadian Centre for Occupational Health and Safety (CCOHS), Noise, CCOHS: Noise - Occupational Exposure Limits in Canada

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3M PSD products are occupational use only.

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