



Sound & Worship Volume Information

Crossway Christian Church - Worship Arts Ministry

Introduction

The Crossway Worship Arts Ministry strives to provide our services with an atmosphere that is safe and conducive to worship. Our goal and passion is to use our gifts in music and production to honor the Lord with excellence, while providing his people an atmosphere of worship that encourages growth in their relationships with him. We love Jesus, and love gathering together as a church of diverse people to worship our God in community.

While the overall volume and the mix of the instruments and vocalists are important to a pleasant listening experience, other factors play a role as well. The EQ (equalization) is very important; if the sound system or even an instrument is not EQ'ed well, it can cause an uncomfortable or painful listening experience. In addition, the better the mix of all instruments and vocals, the more pleasant the listening experience will be. The size of the room and how many people are present also influences one's listening experience. If an audio experience is not pleasant to one's ear the culprit may be something besides simply the overall volume.

With the diversity at Crossway comes individuals with unique preferences for a worship service, from the style of the music, to the selection of the songs, to the volume and sound of the service. And while we strive to accommodate these preferences, we are unfortunately unable to please everyone all the time. However, in order to better facilitate greater consistency and excellence throughout our ministry, we have established procedures and standards to act as a guide for the worship services across our campuses.

Sound & Worship Volumes at Crossway

Core to establishing a guide for sound volume at Crossway is understanding the elements that create good sound and how we, as a ministry, can create the "best" possible sound for each service. To accomplish this we looked at how our sound engineers perform their roles today, conducted research on existing standards in use at similar churches, reviewed industry standards for sound level safety and consulted with industry experts, including a professional sound engineer.

Specific to the sound at our services we looked for the best methods for measuring volume, an understanding of what industry experts have set as the standards for safe volume levels and how Crossway compared against these standards. Through this process, we found Crossway has consistently done a good job monitoring sound levels and keeping them within acceptable levels for safety.

The basis of our sound policy comes from the expertise of OSHA (US Government - Occupational Safety and Health Administration) and their published [Standard for Hearing Safety](#), with this table being the most relevant portion:

OSHA Permissible Noise Exposures

15 minutes per day = 115 dBA
30 minutes per day = 110 dBA
1 hour per day = 105 dBA
1.5 hours per day = 102 dBA
2 hours per day = 100 dBA
3 hours per day = 97 dBA

This table represents the amount of time per day that an individual can be exposed to sound at a specific volume level before hearing damage may occur. It is important to note that this is a *continuous* duration of time within the 24-hour period. OSHA, and the industry in general, measure sound volume in decibels which represents the sound pressure level (SPL) of the sound. While there are several scales that can be used, Crossway has focused on two specific scales for use in monitoring sound levels at our services, dBA-weighted and dBC-weighted. More detailed information on the decibel scales and the variations can be found the internet, but the key difference between dBA and dBC for our purpose, is that dBA weighting has less focus of the low frequencies and dBC measures the overall sound at all frequencies; dBA focuses more on the mid and high frequencies similar to how the human ear hears, while dBC is a more accurate representation of the sound being measured as it takes into account the entire frequency spectrum.

Therefore, Crossway has chosen to use dBC as the standard for monitoring sound levels across our campuses as it is a more true measurement of the sound level in each room. It is important to note that when measuring the same sound source, dBA will always register approximately 6 decibels lower than dBC.

Crossway services are currently running between 92 and 98 dBC and we have set a peak limit of 105 dBC for all regular services. Since our dBC measurements will always be higher than dBA, our services will always be well below the OSHA permissible level of 105 dBA per day for all in attendance including our volunteers and staff.

In order to keep within this standard, we at Crossway look for ways to reduce noise and better manage and control our sound levels. We do this in several ways:

- **Drum Shield:** Acoustic drums create a significant amount of stage noise forcing the sound system volume higher simply to balance with the other instruments and vocals. The drum shield helps to control this sound making it easier for the sound engineer to control the overall volume of the mix.
- **In-Ear Monitors:** Every band member on stage uses in-ear monitors, through which they can hear a mix of every instrument on stage through specialized earphones. Traditional monitors (speakers on the stage pointed up at the musicians) means an increase in volume coming from the stage and, therefore, an increase in the overall sound level in the entire auditorium. Using In-ear monitor systems allows the sound engineer to better control the volume level in the auditorium. This also protects the band members from being exposed to dangerous volume levels.
- **Sound Pressure Level Meter:** During every service at Crossway, an SPL meter is in use, so that our sound engineers can always monitor decibel levels using the DBC standard. This ensures we will always have our volume levels within the guidelines we have set forth.

Finally, in addition to regular monitoring and adjusting of sound volumes during weekly services, the worship and production leadership regularly review all aspects of our services including sound levels for compliance and fine tuning of policy, standards and processes.

Thank you for your interest in sound and worship volume at Crossway's services. We truly care for you and for your safety and look forward to worshipping with you. If you have additional questions or concerns, please contact our Production & Tech Resident, [Evan Duriga](#).

Frequently Asked Questions

“Are we too loud?”

After much review and consultation we can confidently say ‘no’, we are not too loud and can also confirm that we are operating at safe sound levels that are well below noise exposure regulations. This allows us to find the BEST volume for each of our services, not simply the loudest volume.

“Are we monitoring the volume?”

In short, ‘yes’. Crossway's sound policy and standards require that our sound engineers and production staff use an SPL meter at each campus to monitor the decibel levels of all services.

“What can I do if it's still too loud for me?”

We know we cannot satisfy everyone's diverse sounds preferences all the time, but please know we are concerned for the safety of all who attend Crossway and have a few options to help those that still feel the sound volume is too loud.

- [Seating](#) – There are a variety of seats at each campus that experience higher and lower volumes during services. We're working on a seating map that highlights different volume levels throughout the auditorium. Please check back for a pdf of this seating map.
- [Ear Plugs](#) – Each campus has ear plugs available for individuals that would like to use them.