



**Evangelical Lutheran Church in America**

God's work. Our hands.

## Worship Resources: Frequently Asked Questions

*The worship staff receives a number of similar inquiries on worship-related topics from across the church.*

*These responses should not be considered the final word on the topic, but useful guides that are to be considered in respect to local context with pastoral sensitivity.*

*The response herein may be reproduced for congregational use as long as the web address is cited on each copy.*

### **What components are needed for a video projection system?**

The pace of technology can be difficult to grasp. Technology that at one time cost churches thousands of dollars to utilize now would cost hundreds of dollars. The cost of technology continues to diminish. At the same time the performance of technology continues to increase. With the pace of technology in mind, it is difficult to give specific examples and recommendations for any type of electronic equipment. Today's technology may be obsolete in the near future. This article serves as a brief overview of the possible components needed to utilize video projection in worship.

#### **Software**

It is helpful to begin by considering which presentation software will be used in the video projection system. The software that is best suited for your needs will often determine the specifications of the computer needed in the video projection system. The software is the computer application that the user will operate to create the visual presentation. The software is also how the user will manipulate the presentation during worship. Many people are familiar with Microsoft PowerPoint and have seen it used in meetings and even worshiping assemblies. While there are some benefits to PowerPoint (its wide availability and common operational knowledge), there is a growing number of presentation software built specifically for use in worship. They offer features like built in song databases and Bible integration. There are both free and paid options available. A list of the major worship presentation software options is listed in the Resources.

#### **Computer**

Once the worship presentation software has been selected, the type of computer needed to operate the software can be determined. Be sure to select a computer with specifications that meet the minimum requirements to operate the software. Some software is only available for Windows or Mac (not both). This will lead to determining which type of computer is needed. Both laptop and desktop computers can serve as operators of worship presentation software, depending on the specified requirements. Video

processing is one of the key abilities for presentation computers. Dual graphics cards are often a system requirement when operating presentation software. Dual graphics cards allow the computer to send different images to two different monitors (one to the projector that the assembly sees, and one that the software operator sees). Other components that are often upgraded on a presentation computer to maximize performance are the memory (RAM), hard disk drive (for storing video and picture files), and processor (CPU).

### **Cabling**

The computer will be connected to the video display through some type of cabling. Common cabling options include VGA, HDMI, or DVI. Depending on the distance between the computer and projector, a cable amplifier may be required to strengthen the signal over long throws. A balun is another device that can be used to transmit video signal over long distances via CAT-5 cable. Wireless video projection is also possible. Transmitters are available to connect the computer to the projector wirelessly.

### **Video projector or monitor**

There are many options when it comes to the video projector component. Generally the most important specification will be the light output of the projector, measured in lumens. The higher the lumens, the brighter the projector will be. It is necessary to take into account the brightness of the room in which the projector will be used. Are there windows providing natural light? Is other lighting in the room dimmable? The brighter the room, the more powerful the projector will need to be to compensate for the brightness. In general, 5000 lumens is a good starting specification for most projectors. It will also need to be determined what aspect ratio will be displayed. The aspect ratio is the proportional relationship of the width and height of the screen. Two common aspect ratios are 4:3 or 16:9 (also known as “wide screen”). What resolution will be displayed? Higher resolutions will provide a better picture quality. Two common projector resolutions are XGA (1024x768) or HD (1920x1080). Depending on the distance from the projector to the screen, an additional lens may be required. Typically when a video projector is located at the back of a worship space and the screen is located at the front of the worship space, there is a large distance between them. A long throw lens allows the projector to zoom its image across a greater distance. Alternatively, [short throw projectors](#) are able to display their image from a much shorter distance. Instead of a video projector, another option for displaying content is a flat panel monitor. This option works well in smaller worship spaces.

### **Screen**

The final consideration is what type of screen will the projected image be displayed on. Screens can be chosen for either projection in a front or rear format. In front projection, the video projector is positioned in front of the screen. In rear projection, the video projector is positioned behind the screen. In some cases the video projector may be housed inside a small, enclosed room hidden behind the screen for rear projection. Screens may be permanently fixed on a wall, or may be portable and used in different settings. Electric screens have a motor that allows the screen to be retracted when not in use. It is possible to project directly onto a blank wall without a screen as well.

## Other considerations

Once the location of the projector has been determined, consideration should be given as to how it will be mounted. Projectors are often mounted from the ceiling with additional hardware. They can also be mounted from a balcony or nearly anywhere in a room. If the projector is located in a gymnasium or multipurpose space consider using a protective security cage to prevent damage.

Maintenance for video projectors includes regular cleaning of the air filters. This will allow the fan to properly cool the projector and prolong the life of the lamp. It is also necessary to budget for replacement lamps and other maintenance that may arise. It is recommended that when buying a replacement lamp to only purchase lamps from the original manufacturer of the projector.

Other video sources such as DVD players and camera feeds can be incorporated along with the signal from the computer for projected display. A switcher/scaler is a device that allows multiple video sources to be selected from and sent to one output signal.

## RESOURCES

### [Frequently Asked Questions](#)

- 🔗 What are some considerations on art and environment for worship?
- 🔗 How do we make decisions about art and materials used in worship?
- 🔗 Can technology help lead congregational singing?
- 🔗 How can video projection be used in worship?

### [Resources Available for Download on the ELCA Website](#)

- 📄 *Principles for Worship*. Minneapolis: Augsburg Fortress, 2002. (Available in English and Spanish)

### [Resources Available from Augsburg Fortress](#)

- 📖 Crowley, Eileen D. *A Moving Word: Media Art in Worship*. Minneapolis: Augsburg Fortress, 2006.
- 📖 *Leading Worship Matters: A Sourcebook for Preparing Worship Leaders*. Minneapolis: Augsburg Fortress, 2013.

### [Other Resources](#)

- 📖 Herring, Brad. *Sound, Lighting and Video: A Resource for Worship*. Burlington: Focal Press, 2009.
- 📖 Proctor, Stephen. *Leading Visual Worship*. Ebook available at <http://illuminate.us/>
- 📖 Schultze, Quentin J. *High-Tech Worship?: Using Presentational Technologies Wisely*. Grand Rapids: Baker Books, 2004.
- 📖 Technologies for Worship Magazine – [tfwm.com](http://tfwm.com)
- 📖 Worship Facilities Magazine – [worshipfacilities.com](http://worshipfacilities.com)

Online retailers for projectors and equipment:

-  projectorpeople.com – church friendly, offers a helpful church buyer’s guide (<http://www.projectorpeople.com/resources/church-projector-guide.asp>)
-  tigerdirect.com (<http://www.tigerdirect.com>)

Some of the most popular worship presentation software options:

-  Easy Worship – <http://www.easyworship.com>
-  ProPresenter - <http://www.renewedvision.com/propresenter>
-  Media Shout - <http://www.mediashout.com>
-  Faithlife Proclaim - <https://proclaimonline.com>

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