

Star Search

Finding the right large-room projection system for your church facility

by Jennifer Andrews

Leading lessons in congregations of 500 or more can be made more effective using a big screen projection system. Large screens can be used to display lyrics, sermon notes and other information, engaging your parishioners with visual queues. But how do you know which is the right system to fit your needs and your budget? In this article, we will talk about what to look for in a video projector, screen and mount. We will also offer you a few tips for do-it-yourself installation that are designed to help you avoid the cost of hiring a consultant. With the right information, you can save your church valuable time and money.

Selecting Your Projector

Your first step should be to determine “how much” projector you will need to create an image the congregation can see. Brightness and resolution are arguably the two most important specifications to shop for. Higher resolutions and higher brightness projectors will be more costly. Features and technology type are also factors, but will have less impact on your final cost.

How do you determine the brightness and resolution you need for your church? Sanctuaries have unique layouts and designs, which means there isn’t one simple answer. Ambient light from windows, the location where the projector is mounted, and other issues will make a difference in the brightness and resolution you need.

Resolution and Brightness suggestions for large audiences:
Large Community Spaces [100 to 250 seats]
Suggested Lumens: 2,000-2,500
Suggested Resolution: XGA

Large Congregational Gatherings [251-500 plus seats]
Suggested Lumens: 3,000 on up
Suggested Resolution: XGA

Lumens = Brightness—Lumen suggestions are based on the assumption there is not a great deal of ambient light in the viewing area. If your church or gathering area has several large windows that let in a lot of light, or a lighting system

that may bleed onto your projection screen, you should use the brighter end of the suggested lumen output, or possibly more.

High Resolution More “Future-Proof”—Higher resolution projectors are a good idea when projecting images on a larger screen, because pixelization becomes more apparent when “blown-up” on an SVGA projector. Text (such as lyrics) will also be crisper and easier to read. Image quality will be best when the resolution of the computer matches the resolution of the projector. XGA is the most common high-resolution projector available, and will help to “future-proof” your purchase.

Features That Can Save Time & Money

Additional features can help make using or installing your projector much easier as well. Economy modes will help extend the life of your lamps, but will also lower lumen outputs by approximately 30 percent. Lens shift is preferable to keystone correction for overall image quality, and will make installation a bit easier. Projector control software may come with your projector, or can be purchased as an add-on from many projector resellers. The control software is used to perform the same functions as a remote control from a computer source. This is very handy when the range of the remote control cannot



reach the projector, or when remotes are often lost.

Projector Features to Watch For:

- ▶ Computer out for monitor and projector display.
- ▶ Economy mode for longer lamp life (may reduce lumen output).
- ▶ Lens shift for installation flexibility.
- ▶ Networking capability for remote operation and maintenance reminders.
- ▶ Long-throw lens (if projector is mounted 20 feet or more from screen).
- ▶ Projector control software (for basic projector control from computer).
- ▶ Power optical zoom and focus (easier installs when replacing old projector).

Using Multiple Projectors

Some churches may decide that instead of one projector at the front of the sanctuary, they prefer several less powerful projectors to the side of the congregation. Those projectors can be smaller and more portable, and can be used for multiple applications. It's a good idea to consult a projector expert when going this route. An integrator or consultant may not be necessary, but getting the projectors to work together will take some additional steps. An expert will help walk you through the process.

The first rule in selecting a screen is, buy your projector first. Then match your screen to the size of the image displayed by your projector in the location you want. There are many reasons for this, but the most important is that if you get the wrong size, you will most likely have to pay a fee to return it, if you are able to return it at all. Also, projector throw distances vary from projector-to-projector, and the projector you want may not have the throw you need. Following is a four-step method to choosing a screen for your church.

Quick Summary

- ▶ Projectors with a standard lens project around one foot of image for every two feet back from the screen.
- ▶ Projectors mounted more than 25 to 30 feet from the screen will likely need a long throw lens.
- ▶ Projectors can be mounted out of sight, but should still be accessible for routine maintenance.
- ▶ Long throw lenses for projectors typically run between \$1,200-\$2,500.

#1 Choose Mounting Orientation

Several screen styles are available today. They are portable, manual, electric, and fixed frame. Screens range in price from \$150 on up, and are most dependent on the size of the screen and mounting option you choose.

- ▶ **Portable**—Projector screens that travel from location to location readily.
- ▶ **Manual (pull-down)**—An economical choice for projector screens that stay in one location most of the time.
- ▶ **Electric**—High-end projection screens add elegance in permanent locations.
- ▶ **Fixed Frame**—Permanently tensioned screen stretched around a frame and installed in a fixed location.

#2 Select Screen Surface

The way a screen surface refracts light is what differentiates one screen fabric from another. Manufacturers specify both gain and viewing angle to help you decide which surface is best for you. The most common surface types on the market are matte white and high-contrast gray.

#3 Choose Aspect Ratio

The two most common aspect ratios found on projectors today are 4:3 and 16:9. The majority of churches or businesses will choose the 4:3 aspect ratio, and will therefore be best served by using a screen with the same dimensions. If the projector is sometimes used for video display, there are still a number of video signals that are in the 4:3 aspect ratio, including video from most camcorders, standard television broadcasts, and some DVDs.

#4 Determine Screen Size

Be realistic when deciding how large you want your screen to be. Screen manufacturers have outlined suggestions for size based on audience. Some tips have been included further along in this article. The exact size of your screen will also depend in part on the throw distance of the projector you choose.

Choosing Your Mount

Mounts are fairly straightforward. They start at around \$189. Your mounting options will depend on the type of ceiling you have and on the desired location of your screen. If your church has a high ceiling, your projector will need to be extended down using a pipe drop. The projector should be mounted as near to level (even) with the top of your screen as possible, for the best looking images. Mounting the projector and tilting it beyond a 30 degree angle will produce severely distorted images, even if the projector has digital keystone correction.

Quick Tip: Lens shift and power zoom and focus are handy projector features to have during installations.

The first rule in selecting a screen is, buy your projector first.

When you are ready to make your purchase, remember that authorized AV resellers offer special discounts to churches and other non-profit organizations on several brands of projectors. To get the discount, you just need to call the reseller directly and ask for this special pricing. Authorized resellers may also offer longer warranties on select units.

If you are planning a do-it-yourself installation, be sure to purchase from a reseller who offers technical support after the sale. These resellers typically offer reasonably priced extended warranty options as well. Buying from an online reseller will spare you the additional cost of tax if you purchase from outside your state, and often offer free shipping if your purchase is over a set amount.

Large screen projection opens up new ways to share God's word with your parishioners. Don't be overwhelmed by the process, but imagine the possibilities of what your church can achieve using these new tools.

Installation Tips

Planning to install a high-powered projector in your sanctuary? Before you buy, here are a few things to consider.

Projector Throw Distance—Every projector has what is known as a throw distance. The throw distance of the projector will determine the size of the projected image from a specific distance. The exact throw distance varies from projector to projector due to differences in optics.

Generally speaking, you get about one foot of image for every two feet back your projector is from the viewing surface. That means, using a typical lens, if your projector is 10 feet back from the screen, you should get an image of around five feet wide.

What does this mean to you? It means you will need to make a couple of important decisions before choosing an installation projector. First, you need to decide how and where the projector will be mounted. You should also have a range of acceptable screen sizes in mind.

Where to Mount Your Projector—In our experience, most churches prefer to keep their projectors out of sight and out of mind during services. Projectors can be mounted from the ceiling or wall, and can be virtually unnoticeable.

However, if you mount your projector from farther than 25 to 30 feet from your screen, you may need to invest in a

long throw lens to keep your image size smaller. Remember our rule about one foot of image for every two feet back? With a regular lens at 30 feet back you would have a 15-foot diagonal image, a bit larger than recommended.

Long throw lenses run from \$1,200 to \$2,500 in addition to the cost of your projector. Many high-powered projectors ship without a lens, with the understanding that a long throw lens will most likely be needed.

Quick Tip: When installing your projector, try and make it accessible for regularly scheduled filter changes and maintenance. Projectors with network capabilities can be set up to send reminder E-mails when routine maintenance is required.

Determining Screen Size

Da-Lite recommends the following steps in determining the size of screen that is best for you. Screen height should be approximately equal to one-sixth the distance from the screen to the last row of seats, allowing text to be read and detail to be seen in the projected image. Ideally, the first row of seats should be approximately two screen heights away.

The bottom of the screen should be a minimum of four feet above the audience floor, allowing those seated toward the rear of the audience to see the screen. This may require additional screen "drop" for ceiling hung screens.

Quick Tip: We recommend that you buy your multi-media projector before purchasing your screen. Why? Because even with a good plan, things happens, and custom-made screens often cannot be returned. Install your projector (and long throw lens if necessary) first. This will give you a chance to make sure the projector meets your brightness and usability expectations.

Can We Install The Projector & Screen Ourselves?

The answer to this question is usually yes. With the help of a few qualified members of your congregation, and our dedicated tech support, most of our church customers have been able to install the projector without the need for a costly technician. We suggest that you use your best judgment for difficult installs, since saving money is not nearly as important as keeping your congregation safe.

Quick Tip: When installing a screen, be careful to avoid locations in front air conditioning vents and drafty areas. A swaying screen can be an unpleasant distraction. If unavoidable, a tensioned screen may be an alternative.

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